SUMMARY OF VALVE ISLANDS AND FIELDBUS

EB 80

EB 80 ELECTRO-PNEUMATIC SYSTEM

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- EB 80 - ELECTRICAL CONNECTION - E — B2.23
  - EB 80 - MULTI-POLE ELECTRICAL CONNECTION - E — B2.25
  - EB 80 - ELECTRICAL CONNECTION WITH FIELDBUS - E — B2.29
  - EB 80 - ADDITIONAL ELECTRICAL CONNECTION - E — B2.43
- EB 80 - COMPRESSED-AIR SUPPLY - P — B2.46
- EB 80 - BASES FOR VALVES - B — B2.49
- EB 80 - VALVES — B2.52
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- HDM + AS-Interface — B2.112
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EB 80 ELECTRO-PNEUMATIC SYSTEM

EB 80 is defined as an electro-pneumatic system as it would be simplistic to use the term "solenoid valve island". In effect, a single assembly can combine solenoid valves of all types, multi-position bases, pneumatic and electric supplies arranged as desired in a system, digital or analogue input or output signal control modules and much more besides.
The EB 80 system is protected by numerous patents and utility models, which enhance the most innovative design solutions.
The possible combinations are endless, but the most amazing thing is that they can be obtained using a small number of basic components.
In order to achieve this objective, a single size of small yet high-performance valves to cover the vast majority of applications was conceived.
A single electronic control unit is provided when supplying 12VDC or 24VDC valves with multi-pole cables or with a field bus for each protocol.
All EB 80 versions come with an efficient diagnostic system.
The EB 80 catalogue consists of a first overall introductory chapter followed by a chapter for each subsystem.
NSF H1-certified grease is used to lubricate the valve spool and seals.

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%					
Minimum operating voltage	VDC	10.8 *					
Maximum operating voltage	VDC	31.2					
Maximum admissible voltage	VDC	32 ***					
Power for each controlled pilot	W	3 for 15 ms, then holding 0.3					
Drive (for multi-pole)		PNP or NPN					
Solenoid rating		100% ED					
Solenoid valve supply power		See chapter "Electrical connection - E"					
Signal module supply power		See chapter "Signal module - S"					
Protection		Overload and short-circuit protected solenoid pilot Output					
Diagnostics		See chapter "Electrical connection - E"					
Maximum number of solenoid pilots		21 or 38 multi-pole connection; field bus 128					
Ambient temperature	°C	-10 to + 50 (at 8 bar)					
	°F	14 to 122 (at 8 bar)					
Operating pressure		**5/2 and 5/3**			**2/2 and 3/2**		
Non-assisted valves	bar	3 to 8			3.5 to 8		
	MPa	0.3 to 0.8			0.35 to 0.8		
	psi	43 to 116			51 to 116		
Assisted valves	bar	Vacuum to 10					
	MPa	Vacuum to 1					
	psi	Vacuum to 145					
Servo pressure	bar	3 to 8			min. (see graph on page **B2**.53) / max. 8		
	MPa	0.3 to 0.8			min. (see graph on page **B2**.53) / max. 0.8		
	psi	43 to 116			min. (see graph on page **B2**.53) / max. 116		
Valve flow rate, at 6.3 bar ΔP 1 bar		**Ø 4 (5/32")**	**Ø 6**	**Ø 8 (5/16")**	**Ø 1/4"**	**Ø 10 ****	**Ø 3/8" ****
valve 2/2	Nl/min	350	430	500	430	-	-
valve 3/2	Nl/min	350	600	700	600	1250	1250
valve 5/2	Nl/min	350	650	800	650	1250 - 1400	1250 - 1400
valve 5/3	Nl/min	350	460	500	460	1000 - 1250	1000 - 1250
valve V3V (R)	Nl/min	-	-	-	-	1000	1000
Actuation response time (TRA) / reset response time (TRR) at 6 bar							
TRA/TRR valve 2/2 and 3/2	ms	14 / 28					
TRA/TRR valves 5/2 monostable and shut-off valve	ms	12 / 45					
TRA/TRR valve 5/2 bistable	ms	12 / 14					
TRA/TRR valve 5/3	ms	15 / 45					
TRA/TRR valve 3/2 high flow	ms	13 / 36					
Fluid		Unlubricated air					
Air quality required		ISO 8573-1 class 4-7-3					
Degree of protection		IP65 (with connectors connected or plugged if not used)					
Category ATEX		Ⓔx II 3G Ex ec IIC T5 Gc X -10°C<Ta<50°C Ⓔx II 3D Ex tc IIIC T100°C Dc X					
Certifications		CE - EAC - c UL us - Ⓔx					

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24
** Using high-flow valves or connected valves - see pages **B2**.54
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**
N.B.: Refer to the chapter of each EB 80 sub-assembly for specific technical data.

CERTIFICATIONS

The c UL us certification for the part concerning only CSA (Canadian market) is bound to the following conditions of use:

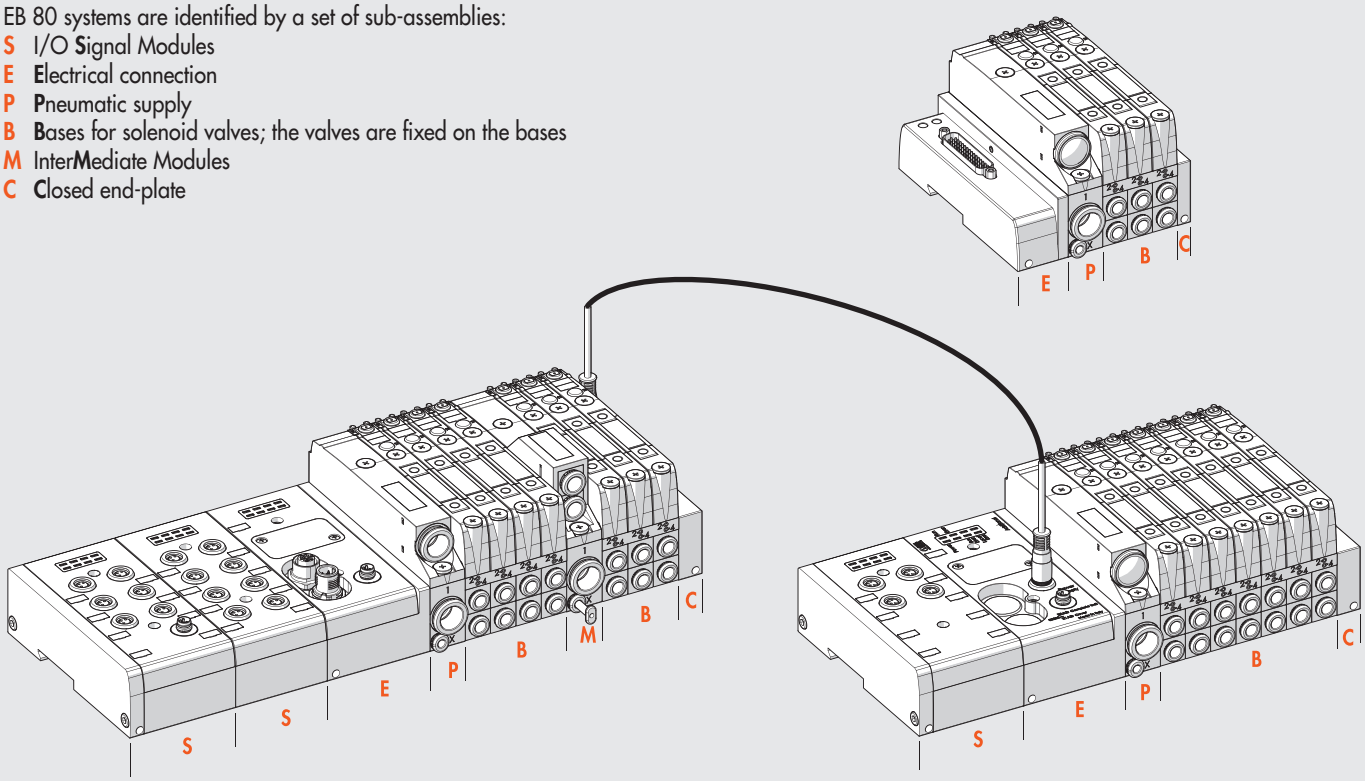
- environment temperature: max 45°C
- ED max 70%

If non-adjoining valves are used, ED max can reach 100% (environment temperature max 45°C)

COMPONENTS

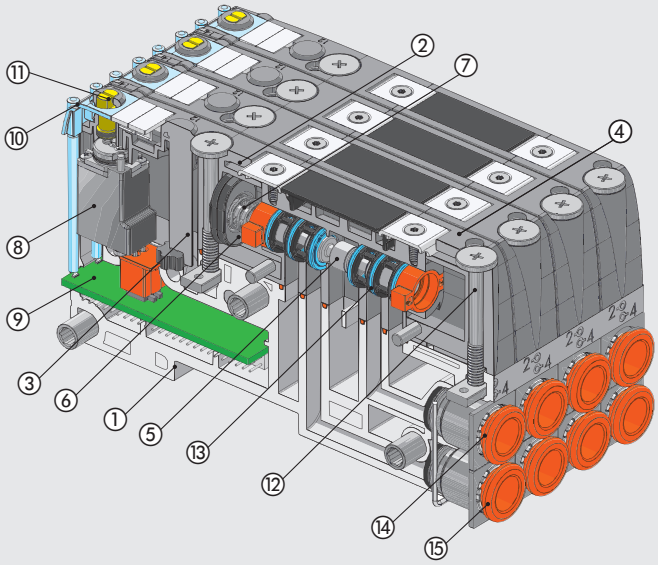
EB 80 systems are identified by a set of sub-assemblies:

S I/O **S**ignal Modules
E **E**lectrical connection
P **P**neumatic supply
B **B**ases for solenoid valves; the valves are fixed on the bases
M Inter**M**ediate Modules
C **C**losed end-plate



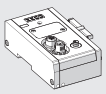
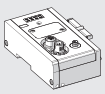
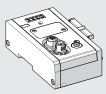
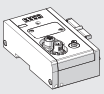
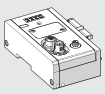
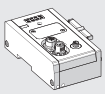
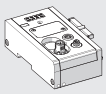
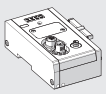
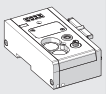
COMPONENTS – SOLENOID VALVE AND BASE

① BASE: technopolymer
② VALVE BODY: technopolymer
③ CONTROL: technopolymer
④ BASE: technopolymer
⑤ SPOOL: chemically nickel-plated aluminium
⑥ CONTROL PISTON: Stainless steel and NBR
⑦ SPRING: Oteva® steel and Dacromet treatment
⑧ SOLENOID VALVE
⑨ ELECTRONIC BOARD
⑩ LED light display: technopolymer
⑪ MANUAL CONTROL: nickel-plated brass
⑫ SCREW SECURING VALVE TO THE BASE: zinc-plated steel
⑬ SPOOL GASKET: NBR
⑭ Push-in fitting CARTRIDGE for port 2
⑮ Push-in fitting CARTRIDGE for port 4

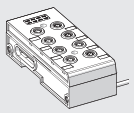
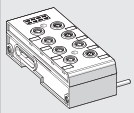
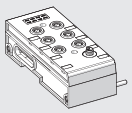
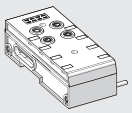
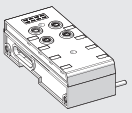
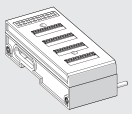
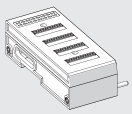
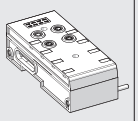


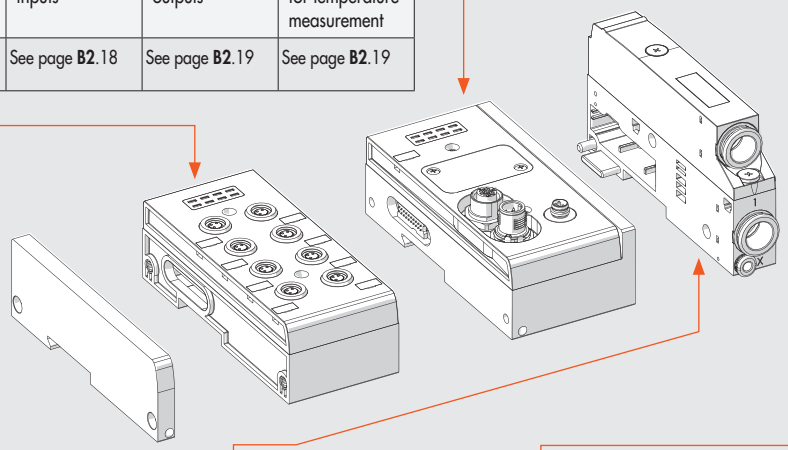
THE EB 80 WORLD

ELECTRICAL CONNECTION - E

E025	E044	E0EN	E0EC	E0PN	E0CN	E0PB	E0PL	E0IO	E0LK	E0CC	E0AD
											
EB 80 25-pin electrical connection	EB 80 44-pin electrical connection	EB 80 Electrical connection EtherNet/IP	EB 80 Electrical connection EtherCAT	EB 80 Electrical connection Profinet IO	EB 80 Electrical connection CANopen	EB 80 Electrical connection Profibus-DP	EB 80 Electrical connection Ethernet POWERLINK	EB 80 Electrical connection IO-Link 32 IN/32 OUT	EB 80 Electrical connection IO-Link 64 OUT	EB 80 Electrical connection CC-Link IE Field Basic	Additional electrical connection EB 80
See page **B2**.26	See page **B2**.26	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.39	See page **B2**.44

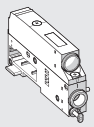
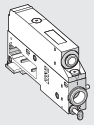
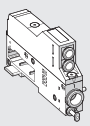
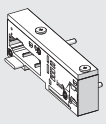
SIGNAL MODULE - S

S01	S02	S03	S04	S05	S06	S07	S08
							
EB 80 module with 8 M8 digital inputs	EB 80 module with 8 M8 digital outputs	EB 80 module with 6 M8 digital outputs + electrical supply	EB 80 module with 4 M8 analogue inputs	EB 80 module with 4 M8 analogue outputs	EB 80 module with 16 digital terminal block inputs	EB 80 module with 16 digital terminal block outputs	EB 80 module with 4 M8 analogue inputs for temperature measurement
See page **B2**.16	See page **B2**.16	See page **B2**.17	See page **B2**.17	See page **B2**.18	See page **B2**.18	See page **B2**.19	See page **B2**.19

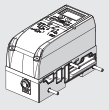
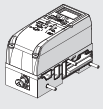


Part included in the **ELECTRICAL CONNECTION - E** with Fieldbus

COMPRESSED-AIR SUPPLY - P

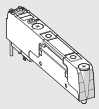
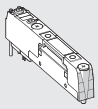
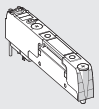
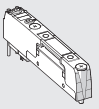
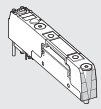
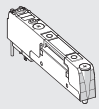
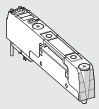
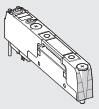
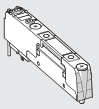
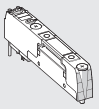
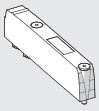
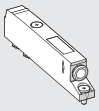
P_ _Z00	P_ _Z_ _	P_ _Z_0	P91Z90
			
Compressed air supply - Silenced relief	Compressed air supply - Conveyed relief	Compressed air supply - Separate reliefs	Module for electric version only
See page **B2**.47	See page **B2**.47	See page **B2**.47	See page **B2**.48

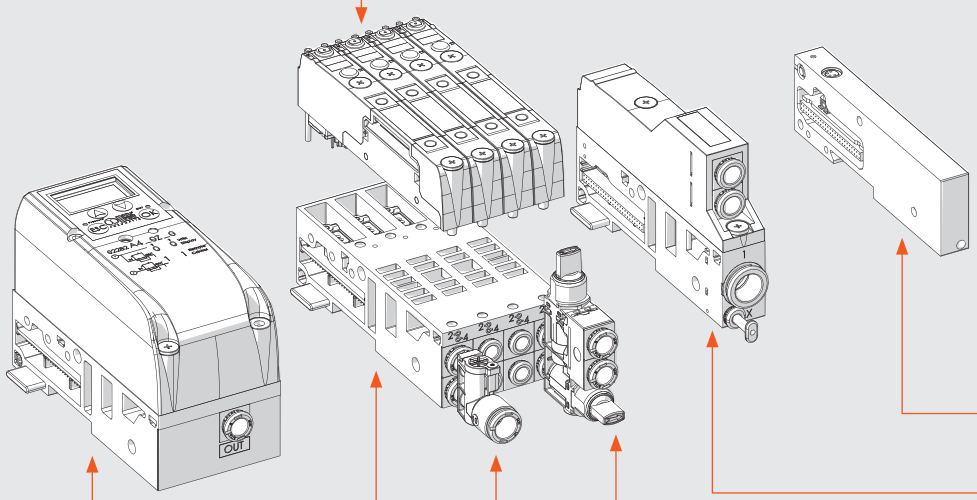
PROPORTIONAL PRESSURE REGULATOR - A

A40_Z_0	A41_Z_0
	
Base port 1 pass-through local outlet	Base port 1 sectioned in-series regulation
See page **B2**.61	See page **B2**.61

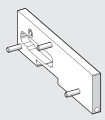
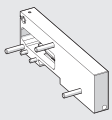
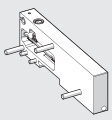
METAL WORK PNEUMATIC

VALVES

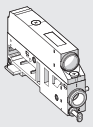
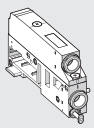
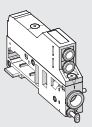
Z_ ▲	I_ ▲	W_ ▲	L_ ▲	V_	K_ ▲	O_ ▲	G_	J_	R_ ✚	N0	Y8
											
2 valvole 2/2 NC	2 valvole 3/2 NC (vale come 5/3 OC)	2 valvole 3/2 NO (vale come 5/3 PC)	3/2 NC + 3/2 NO	5/2 monostabile	5/2 bistabile	5/3 CC	3/2 NC alta portata	3/2 NO alta portata	Valvola sezionatrice di circuito	Falsa valvola	Bypass
See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.54	See page **B2**.54	See page **B2**.55	See page **B2**.56	See page **B2**.56



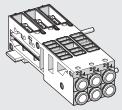
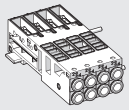
CLOSED END-PLATE - C

C1	C2	C3
		
Closed end-plate for islands with multi-pole connector	Closed end-plate for islands with fieldbus	Closed end-plate for electrical connection of islands with fieldbus to additional islands
See page **B2**.70	See page **B2**.70	See page **B2**.70

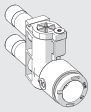
INTERMEDIATE SUPPORT - M

M_ _ _ Z0_	M_ _ _ Z_ _	M_ _ _ Z_ _
		
Intermediate module - Silenced relief	Intermediate module - Conveyed relief	Intermediate module - Separate relief
See page **B2**.65	See page **B2**.66	See page **B2**.67

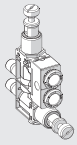
BASES FOR VALVES - B

B3_ _ _ _ _0	B4_ _ _ _ _ _
	
3-position base for valves	4-position base for valves
See page **B2**.50	See page **B2**.50

Y-FITTING

R2

Y-fitting
See page **B2**.57

MULTI-FUNCTION MODULE


Fittings with pneumatic functions
See page **B2**.88

▲ Can only be used with 6 or 8 control bases.
✚ Requires inlet port X slave synchronisation.

FIXING OPTIONS

1 - Fixing on a DIN bar: tighten the grub screws into modules E (electrical connection) and C (closed end-plate).
For islands with more than 40 valves or 5 modules, also use the additional plate code 02282R4001.

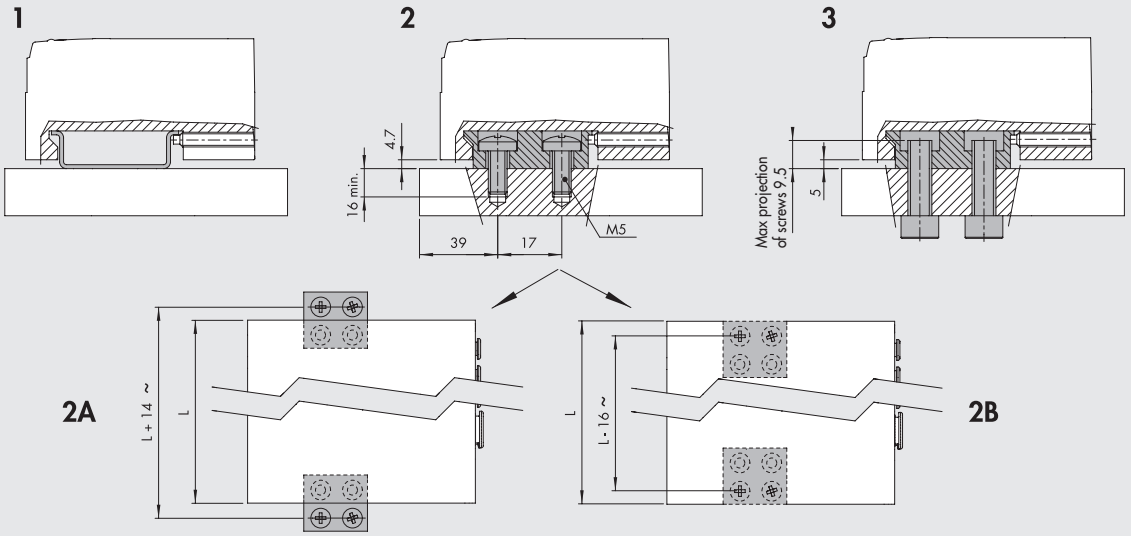
2 - Fixing on a flat surface: use the pair of brackets code 02282R4000 and the M5x20 screws supplied.
You can choose where to position the brackets in relation to the island:

2A - *Protruding brackets*: can be used to install the island + brackets unit from above. First secure the brackets to the modules E and C using the grub screws, then secure everything with M5x20 screws.

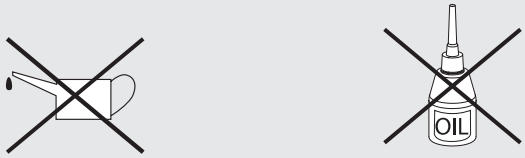
2B - *Concealed brackets*: the overall dimensions of the island are reduced. First secure the brackets to the flat top with M5x20 screws, then place the island onto the brackets and lock the two grub screws provided in the modules E and C.

3 - Fixing through a wall: use the brackets code 02282R4000. The brackets come with M6 threaded holes and can be fixed with M6 screws (not included in the supply) passing through the wall. The brackets can fixed either protruded or concealed.

N.B.: Planar surfaces are required to ensure correct fixing. Avoid twisting or bending the valve units.



LUBRICATION



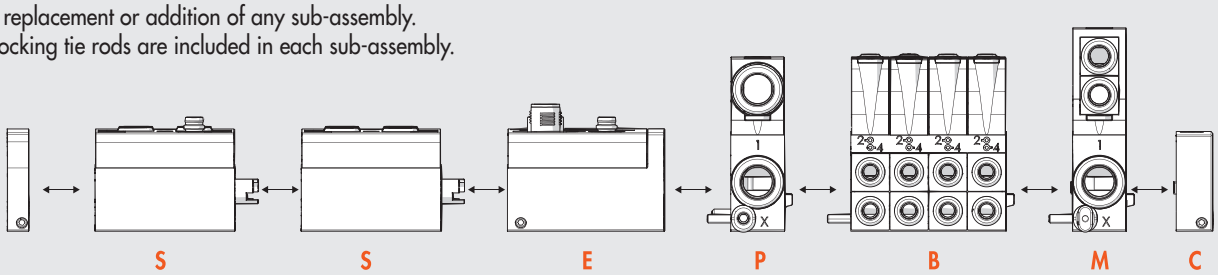
NO LUBE NO OIL

The EB 80 electro-pneumatic system is designed to run millions of cycles without the need for any lubrication. This is possible thanks to the optimisation of its components and the use of a special grease with excellent properties and NSF H1 certified. To avoid removing the grease, it is highly recommended not to lubricate the valve input and output ports and check the quality (to ISO 8573-1 class 4-7-3) of the compressed air used, which is often contaminated by particularly aggressive oils that are released by compressors and are not always compatible with the elastomers used in the valves.

SOME CHARACTERISTICS OF EB 80 SYSTEMS

HORIZONTAL MODULARITY

- Easy replacement or addition of any sub-assembly.
  The locking tie rods are included in each sub-assembly.

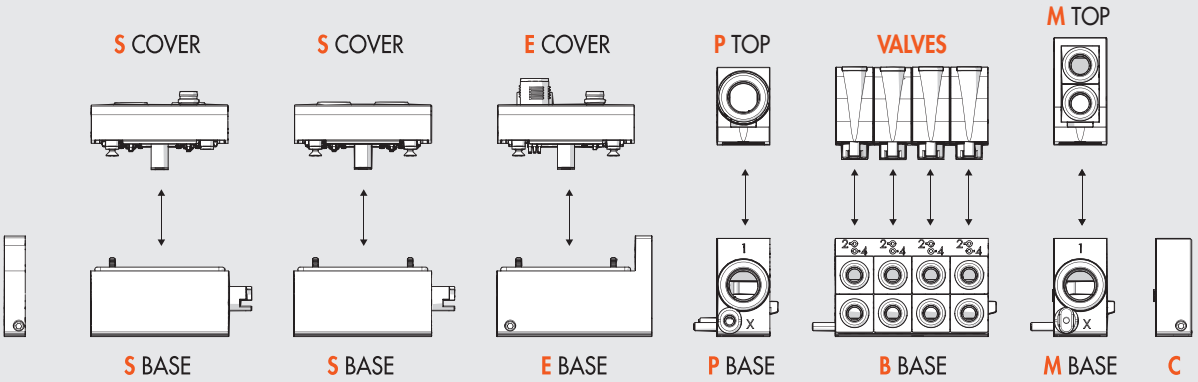


METAL WORK PNEUMATIC

VERTICAL MODULARITY

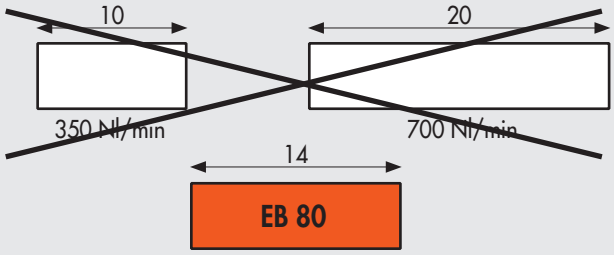
- Easy replacement – no need to disassemble the pack – of the valves on the Bases – B and also of the top part (cover) of subsystems **S**, **E**, **P**, **M** using a single Phillips-head screwdriver.

N.B.: All protocols can be mounted on the base for field buses and all input or output modules can be mounted on the same base for signals.



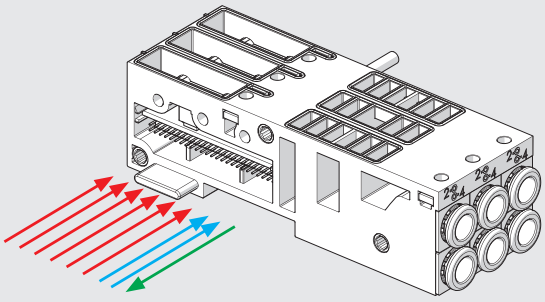
ONE SIZE FITS ALL

- Reduced dimensions
- High flow rate
- One warehouse and spares



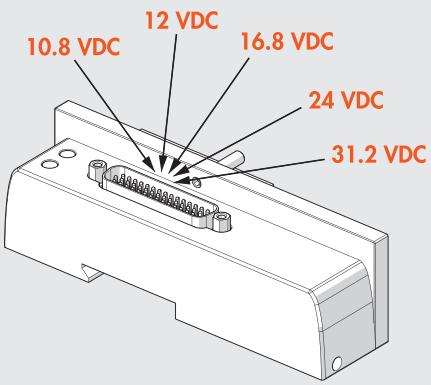
THE SAME BASE FITS BOTH MULTI-POLE CONNECTIONS AND FIELD BUSES

- Controls from multi-pole connection
- Controls from field buses
- Diagnostics



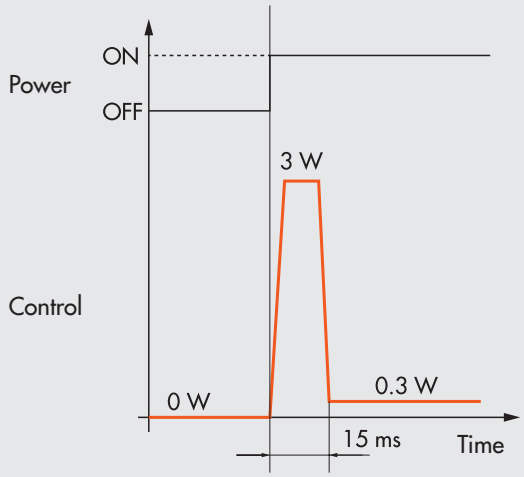
PATENTED

THE SAME ISLAND CAN BE SUPPLIED 10.8 - 31.2 VDC



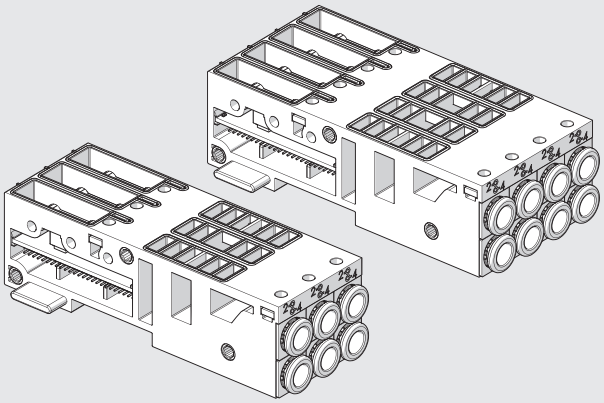
ONLY 0.3 W FOR EACH SOLENOID VALVE

- Speed-up solenoid valve control:
  - high power for a few milliseconds ensures high performance and rapid and safe switching;
  - reduced holding power resulting in reduced temperatures and energy saving.



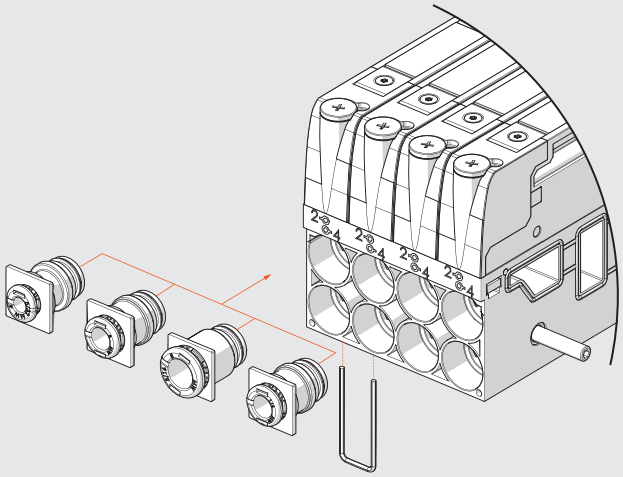
3- OR 4-POSITION BASES FOR VALVES

- Island layout options:
  - **3** 1 base with 3 positions
  - **4** 1 base with 4 positions
  - (**5** 2 bases with 3 positions and 1 dummy valve)
  - **6** 2 bases with 3 positions
  - **7** 1 base with 3 and 1 with 4 positions
  - **8** 2 bases with 4 positions
  - ...
- Compared to single-base solutions, this configuration is advantageous because:
  - just a few bases are required for multiple positions;
  - the base is sturdy and rigid;
  - there is plenty of space to accommodate smart electronics



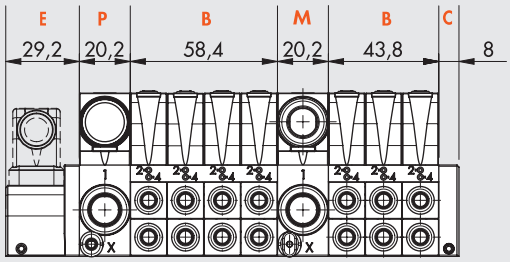
INTERCHANGEABLE CARTRIDGE FITTINGS

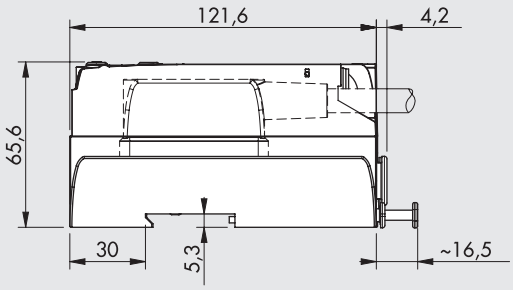
- For pipes Ø 4 (5/32"), 6, 8 (5/16"), 1/4"

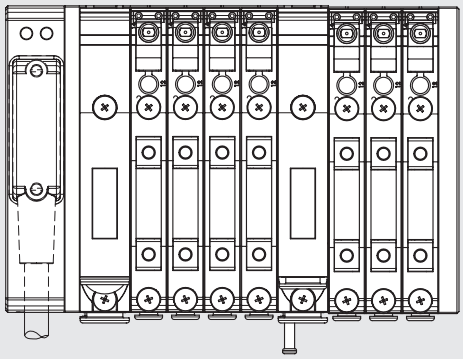


DIMENSIONS

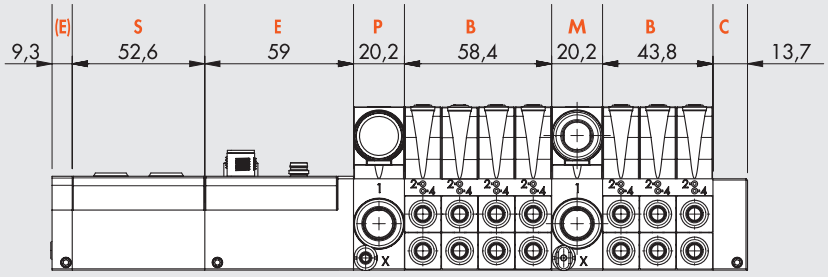
DIMENSION OF VERSIONS WITH MULTI-POLE CONNECTION

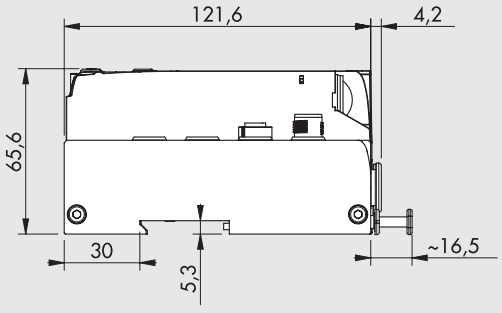


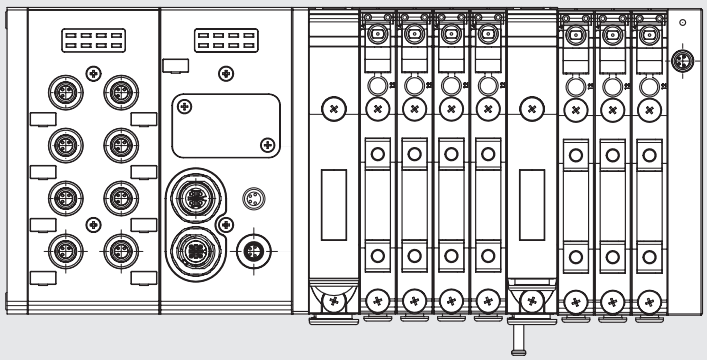




DIMENSION OF VERSIONS WITH FIELD BUS OR ADDITIONAL CONNECTION







DESCRIPTION

A complete system has a compound **description** of all its subsystems listed in sequence from left to right, as shown below.
The abbreviation of each subsystem is obtained by taking the code and omitting the first digits 02282.
For example: the digital 8-input signal module is identified with code 02282S01; only write S01 in the description.

The abbreviation of each base for valves consists of:

Abbreviation of the Base	**Manual valve control**	**Type of valves**
Obtained from the code, after removing 02282	0 = monostable 1 = bistable	Valves Dummy valve Bypass
Example		
4-position base, 8 solenoid pilots, Ø 6 pipe; code 02282B4086666	Monostable	2 monostable 5/2 valves - V 1 double 3/2 NO - W 1 dummy valve - F
Abbreviation		
B4086666	0	VVWF

The description is therefore a sequence of this type:

EB 80	**- S_ _**	**- E_ _ _**	**- P_ _ _ _ _**	**- B_ _ _ _ _ _ _ _ _ _ _**	**- M_ _ _ _ _ _**	**- C_**
EB 80 system	**Signal module** (if present)	**Electrical connection**	**Compressed air supply**	**Base for valves** (as many as there are) with normal or dummy	**Intermediate** (if present)	**Closed end-plate**
For the codes:	see page **B2**.20	see page **B2**.24	see page **B2**.48	see page **B2**.51 and **B2**.56	see page **B2**.68	see page **B2**.71

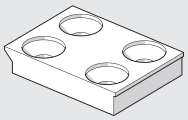
Example:
EB 80-S01-E0EN-P3XZ00-B40866660VWKN-M300Z30-B30388800VVN-C2

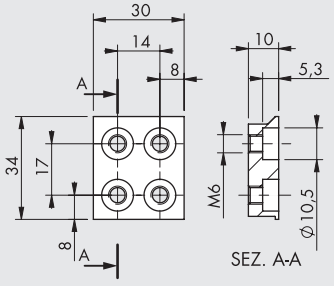
EB 80	**- S01**	**- E0EN**	**- P3XZ00**	**- B40866660VWKN**	**- M300Z30**	**- B30388800VVN**	**- C2**
EB 80 system	**Signal module** complete 8 M8 digital inputs	**Electrical connection** EtherNet/IP	**Compressed air supply** - fitting Ø 12 - pilot servo Ø 4 - silenced relief	**Base for valves** - 4 positions - 8 controls - fittings for pipe Ø 6 - manual monostable control - 5/2 monostable valve - 2 3/2 NO valves - bistable 5/2 valve - dummy valve	**Intermediate** - fittings for pipe Ø 12 - through ports - without supplementary power supply	**Base** - 3 positions - 3 controls - fittings for pipe Ø 8 - manual monostable control - 5/2 monostable valve - 5/2 monostable valve - dummy valve	**Closed end-plate** for valve Island with field bus

Endless number of EB 80 systems can be obtained and their description is variable in length, which can be very extended.
The actual ordering CODE of an EB 80 system is created by Metal Work S.p.a. with a limited number of characters.
The ordering code is not explicative. The description only is univocal, complete and explicative.

ACCESSORIES

FIXING BRACKET





Code	**Description**	**Weight [g]**
02282R4000	EB 80 base fixing bracket	47

Note: 2 pieces per pack complete with 4 M5x20 screws

NOTES

Please refer to the subsystem chapter for other accessories (e.g. connectors) and spare parts.

EB 80 INDUSTRY 4.0

The new advanced EB 80 diagnostic functions, known as EB 80 I4.0, provide a powerful analysis tool for traditional maintenance operations, ensuring the safe, reliable and lasting operation of production units.
They are available for all electrical connections with fieldbuses and bases marked I4.0, with advanced diagnostics integrated in accordance with Industry 4.0 philosophy.
These functions use the original EB 80 diagnostics, integrating them with the ability of the station itself to control IOs.
They re-organise and optimise maintenance management by developing predictive maintenance in order to:
- predict faults;
- intervene early to avoid system downtime;
- have all information on equipment operation available in real time;
- monitor component end-of-lifetime;
- optimise warehouse spare parts management.

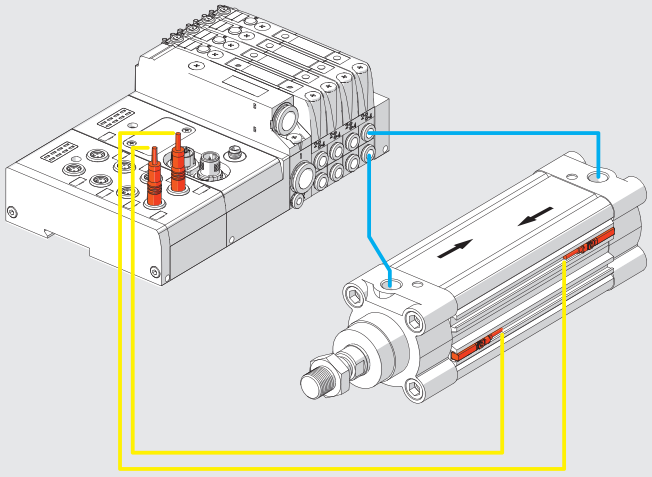
This makes it possible to turn the data collected into concrete actions using standard EB 80 stations without needing additional modules.

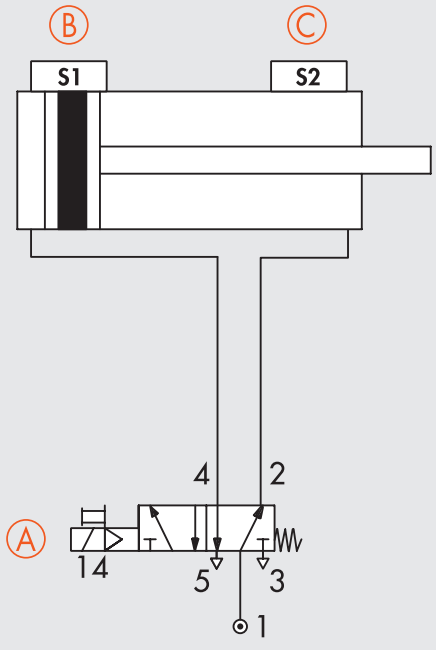
Description of EB 80 I4.0 functions:

• System data:
- EB 80 system startup counter;
- supply alert counter.

• Valve data. Each valve base for each solenoid valve permanently stores the following information:
- cycle counter;
- counter for total solenoid valve excitation time;
- activation of a flag to signal average lifetime exceeded;
- short circuit alert counter;
- open circuit alert counter.

• Electropneumatic system control functions (data updated with each cycle):
- measurement of the delay between activating the solenoid valve "A" and actuator movement commencing via the signal of sensor "B", with delays that exceed the limit flagged;
- measurement of actuator movement time using two linked sensors "B" and "C", with exceeded time limits flagged;
- measurement of the delay between deactivating the solenoid valve "A" (or activating a second valve) and actuator return commencing via the signal of sensor "B", with exceeded time limits flagged;
- measurement of actuator return time using two linked sensors "B" and "C", with exceeded time limits flagged;
- counter for actuator range of motion.

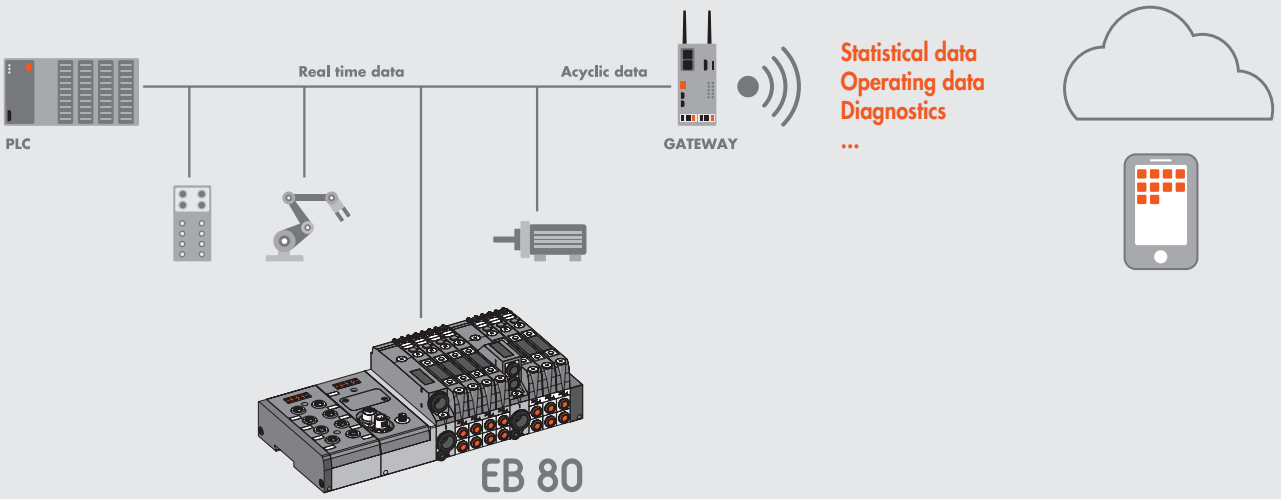




Electrical connection modules can be used to complement the EB 80 with the main field buses available in the market. In this way, the control system (generally a PLC) can handle in real time the behaviour of the solenoid valve island, including signal modules.

With the introduction of the I4.0 version, the field bus connection modules also send to the network the historical and diagnostic data relating to the behaviour of the island (such as the number of cycles for each solenoid pilot, total activation time and alarms) and the controlled pneumatic circuit (such as the delay times in sensor switching and actuator activation times).

This data is also sent to the control system and can be handled differently depending on the situation: in some cases, it can be used in real time, like in the case of fault alarms; in other cases, it can be sent to a storage local unit or one remotely controlled on a cloud server, and is analysed in a subsequent stage; in other cases, the alarms can be sent to a teleservice station that can monitor the state of the system remotely.



EB 80 SIGNAL MODULES - S

The EB 80 systems come with numerous input or output signal modules, which can be mounted on systems with fieldbus electrical connection or additional systems.
The signal modules can be added at any time. You only need to unscrew the aluminium plate to the left side of the "Electrical connection - E" module and install the "Signal Modules - S" (ready fitted with fixing tie rods) and retighten the end plate to the left.
Each signal module consists of two parts: the lower part, which contains transmission electronics of the controls, is unique and valid for all modules; the upper part, which is specific for each type.
This design highlights the modular features of the EB 80 system: the upper part of the "Signal Module - S" can be replaced either with a similar one by simply unscrewing the screws in the event of failure or one of another type.
All this without having to remove anything from the system.

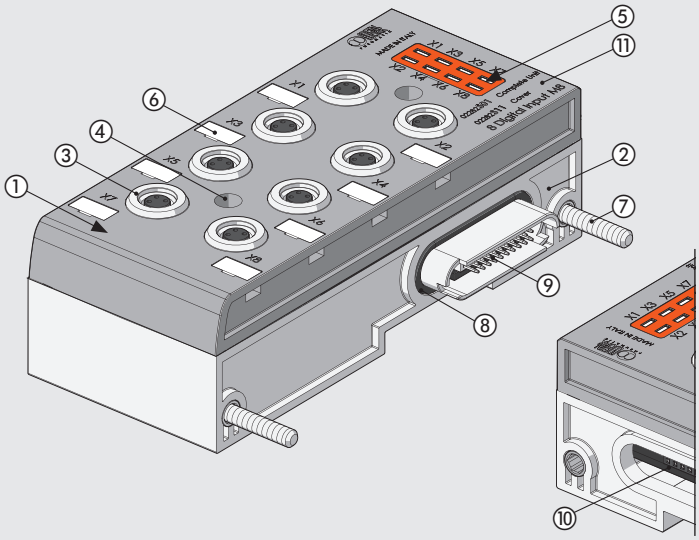
TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power and current		see individual "Signal Modules - S"
Protection		Overload and polarity inversion protection
Diagnostics		Local via LED light and software message
		Undervoltage, overvoltage, short-circuit and overload of individual connector and the entire module,
Maximum number of signal modules		16 digital inputs modules 8 M8 +
		16 digital outputs modules 8 M8 (or 8 modules with 16 Inputs + 8 modules with 16 Outputs) ** +
		4 analogue inputs modules + 4 analogue outputs modules +
		4 analogue input modules for temperature measurement
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		digital input, digital output, analogue input, analogue output
Degree of protection		IP65 (with connectors connected or plugged if not used)
		IP40 for 16-position I/O modules

* **Minimum voltage 10.8V required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24
** **For 16-IN/OUT modules, powered via the fieldbus. Check that the total current of simultaneously connected Inputs and Outputs is not greater than 3.5 A.**
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**
N.B.: Refer to the following pages for specific technical data of each module.

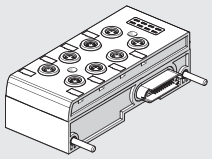
COMPONENTS

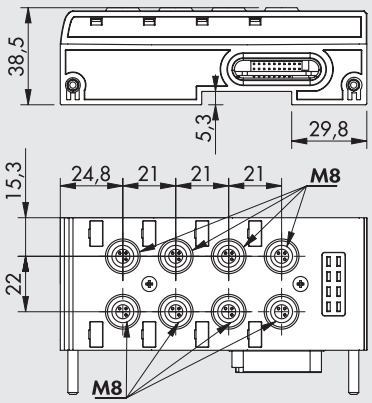
① UPPER PART BODY: technopolymer
② LOWER PART BODY: technopolymer
③ M8 CONNECTOR: signal connection
④ SCREW securing the upper part to the lower part
⑤ LED light
⑥ NAMEPLATE: removable
⑦ TIE ROD to secure modules: nickel-plated brass + stainless steel grub screw
⑧ GASKET: NBR
⑨ MALE CONNECTOR for other modules - S or fieldbus connection - E
⑩ FEMALE CONNECTOR for other modules - S or fieldbus connection - E
⑪ IDENTIFICATION of wording with laser

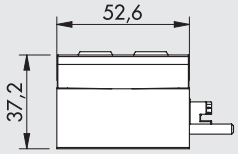


DIMENSIONS - ORDERING CODES

8 M8 DIGITAL INPUTS



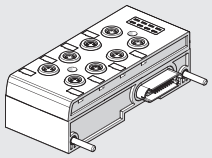


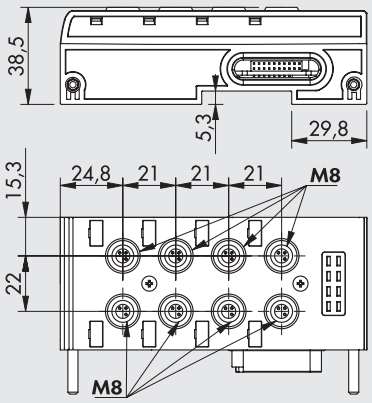


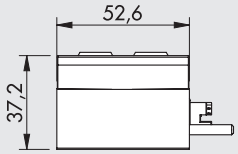
Code	Description	Weight [g]
02282**S01**	EB 80 module with 8 M8 digital inputs	240

TECHNICAL DATA		
Sensors supply voltage		Corresponding to the supply voltage
Current for each connector	mA	max 200
Current for each module	mA	max 500
Input impedance	kΩ	3.9
Type of input		Software-configurable PNP/NPN
Protection		Overload and short-circuit protected inputs
Connections		8 M8 3-pole female connectors
Input active signals		One LED for each input

8 M8 DIGITAL OUTPUTS



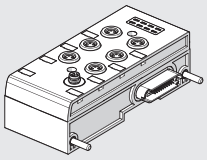


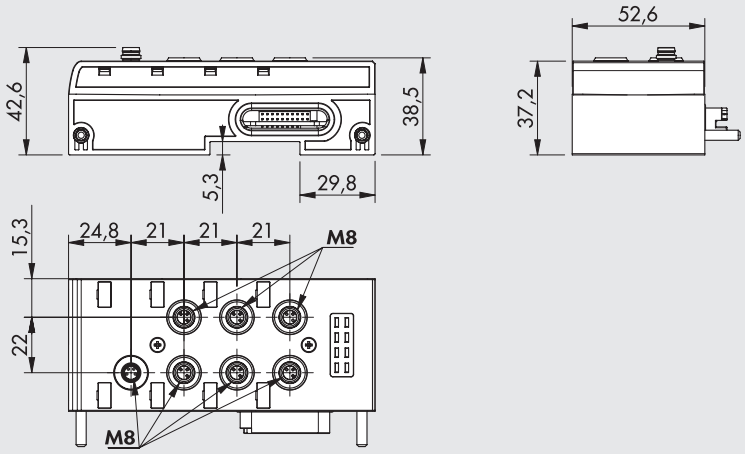


Code	Description	Weight [g]
02282**S02**	EB 80 module with 8 M8 digital outputs	240

TECHNICAL DATA		
Output voltage		Corresponding to the supply voltage
Current for each connector	mA	max 500
Current for each module	mA	max 3000
Type of output		Software-configurable PNP/NPN
Protection		Overload and short-circuit protected outputs
Connections		8 M8 3-pole female connectors
Outputs active signals		One LED for each output

6 M8 DIGITAL OUTPUTS + ELECTRICAL POWER SUPPLY





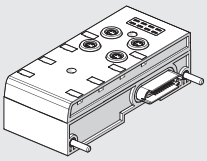
Code	Description	Weight [g]
02282**S03**	EB 80 module with 6 M8 digital outputs + electrical supply	248

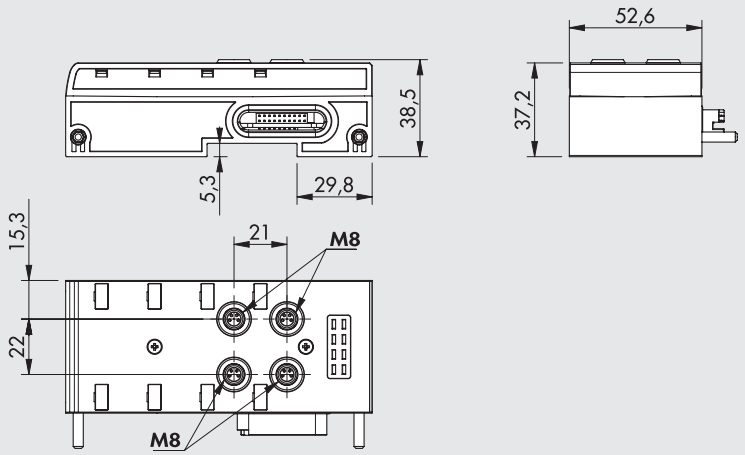
TECHNICAL DATA		
Bus supply voltage range	VDC	12 -10% 24 +30%
Digital out supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Output voltage		Corresponding to the supply voltage
Current for each connector	mA	max 1000
Current for each module	mA	max 4000
Type of output		Software-configurable PNP/NPN
Protection		Overload and short-circuit protected outputs
Connections		6 M8 3-pole female connectors for Signals
		1 M8 4-pole male connector for Supply
Output active signals		One LED for each output

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

4 M8 ANALOGUE INPUTS

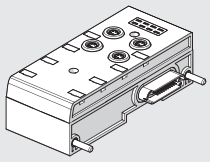


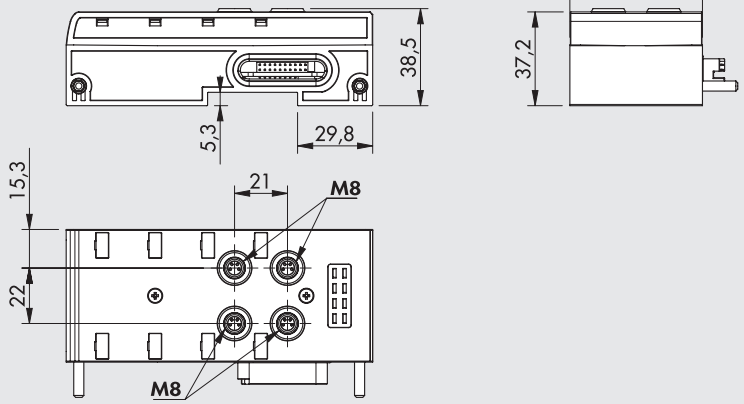


Code	Description	Weight [g]
02282**S04**	EB 80 module with 4 M8 analogue inputs	223

TECHNICAL DATA		
Sensors supply voltage		Corresponding to the supply voltage
Current for each connector	mA	max 200
Current for each module	mA	max 650
Type of input, software configurable		0/10VDC; 0/5VDC; +/-10VDC; +/-5VDC; 4/20 mA; 0/20 mA
Protection		Overload and short-circuit protected inputs
Connections		4 M8 4-pin female connectors
Local diagnostic signal via LED		Overload, short-circuit or type of input not complying with the configuration
Digital convert resolution		15 bit + prefix

4 M8 ANALOGUE OUTPUTS

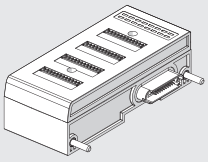


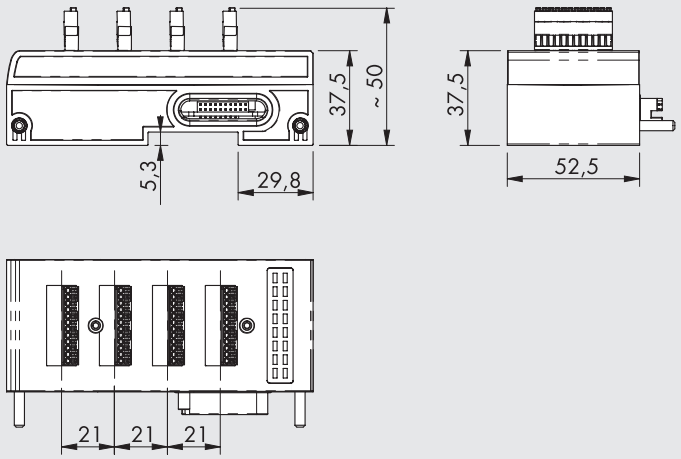


Code	Description	Weight [g]
02282**S05**	EB 80 module with 4 M8 analogue outputs	223

TECHNICAL DATA		
Devices supply voltage		Corresponding to the supply voltage
Current for each connector	mA	max 200
Current for each module	mA	max 650
Type of output		0/10VDC; 0/5VDC; +/-10VDC; +/-5VDC; 4/20 mA; 0/20 mA
Protection		Overload and short-circuit protected outputs
Connections		4 M8 4-pole female connectors
Local diagnostic signal via LED		Overload, short-circuit or type of connection not complying with the configuration
Digital convert resolution		15 bit + prefix

16 DIGITAL TERMINAL BLOCK INPUTS

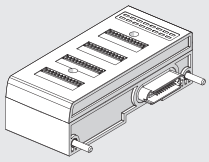


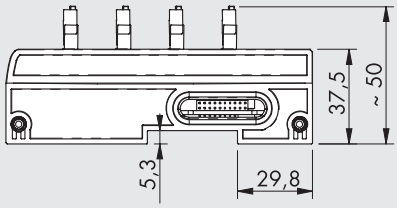


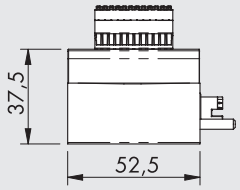
Code	Description	Weight [g]
02282**S06**	EB 80 module with 16 digital terminal block inputs	240

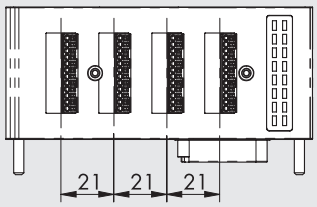
TECHNICAL DATA		
Sensors supply voltage		Corresponding to the supply voltage
Current for each connector	mA	max 200
Current for each module	mA	max 500
Input impedance	kΩ	3.9
Type of input		Software-configurable PNP/NPN
Protection		Overload and short-circuit protected inputs
Connections		4 12-pin connectors with spring clamping
Input active signals		One LED for each input
Degree of protection		IP40

16 DIGITAL TERMINAL BLOCK OUTPUTS







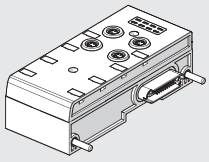


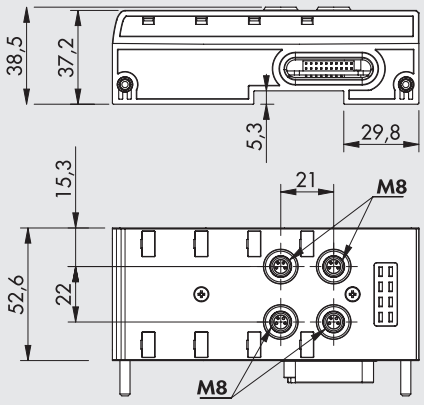
Code	Description	Weight [g]
02282**S07**	EB 80 module with 16 digital terminal block outputs	240

TECHNICAL DATA		
Output voltage		Corresponding to the supply voltage
Current for each connector	mA	max 500
Current for each module	mA	max 3000 *
Type of output		Software-configurable PNP/NPN
Protection		Overload and short-circuit protected outputs
Connections		4 12-pin connectors with spring clamping
Outputs active signals		One LED for each Output
Degree of protection		IP40

*** IMPORTANT: the module is powered via the fieldbus. Check that the total current of connected outputs is not greater than 3.5A.**

4 M8 ANALOGUE INPUTS FOR TEMPERATURE MEASUREMENT





Code	Description	Weight [g]
02282**S08**	EB 80 module with 4 M8 analogue inputs for temperature measurement	223

TECHNICAL DATA		
Sensors supply voltage		Corresponding to the supply voltage
Maximum input voltage	VDC	30
Sensor type (RTD)		
platinum (-200 to +850°C)		Pt100, Pt200, Pt500, Pt1000 (TK = 0.00385 and TK = 0.00391)
nickel (-60 to +180°C)		Ni100, Ni120, Ni500, Ni1000 (TK = 0.00618)
Connections type (RTD)		2, 3 or 4-wire
Type of thermocouple (TC)		J, E, T, K, N, S, B, R
Cold junction compensation for thermocouples		
internal		With internal electronic sensor included
external (recommended in case of sudden changes in the ambient temperature)		PT1000 sensor for connection with the M8 thermocouple connector
Temperature range	°C	– 200 to + 800
	°F	– 328 to + 1472
Digital convert resolution		15 bit + prefix
Max error compared to ambient temperature		±0.5% (TC)
		±0.06% (RTD)
Max. basic error (ambient T 25°C)		±0.4% (TC)
	°C	±0.6 (with 4-wire RTD with 0.1 resolution)
	°C	±0.2 (with 4-wire RTD with 0.01 resolution)
Repeatability (ambient T 25°C)		±0.03%
Address employment		2 bytes for each input - 8 bytes per module
Cycle time (module)	ms	240
Software linearization		
for RTD		Piecewise linear approximation
for TC		NIST (National Institute of Standards and Technology) Linearization based on ITS-90 scale (International Temperature Scale of 1990) for the thermocouple linearization
Maximum length of shielded cable for the connection	m	< 30
Diagnostics		One LED for each input and reporting to the Master

KEY TO CODES

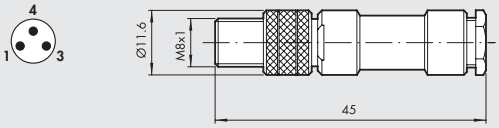
02282	S	0	1
FAMILY	**SUBSYSTEM**	**SUPPLY**	**TYPE**
02282 EB 80	**S** Signals	**0** Complete	**1** 8 M8 digital inputs **2** 8 M8 digital outputs **3** 6 M8 digitaloutputs + electrical supply **4** 4 M8 analogue inputs **5** 4 M8 analogue outputs **6** 16 digital terminal block inputs **7** 16 digital terminal block outputs **8** 4 M8 analogue inputs for temperature measurement

ACCESSORIES

M8 PLUG

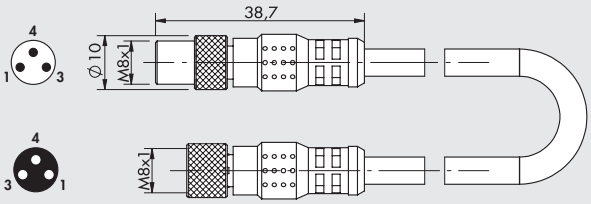
Code	Description
0240009039	Plug for M8 connector

M8 CONNECTOR FOR DIGITAL INPUTS / OUTPUTS



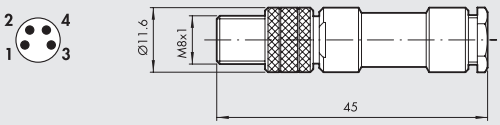
Code	Description
0240009010	M8 3-pin straight connector

M8 CONNECTOR WITH CABLE FOR DIGITAL INPUTS /OUTPUTS



Code	Description
0240009009	M8-M8 3-pin straight connector with cable L = 3 m

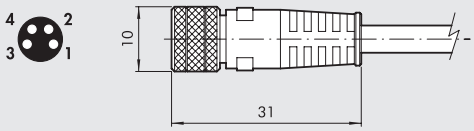
M8 MALE CONNECTOR FOR ANALOGUE INPUTS/OUTPUTS



Code	Description
0240010300	M8 4-pin male connector

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

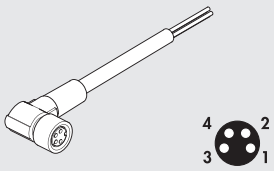


Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

90° M8 CONNECTORS WITH SHIELDED CABLE

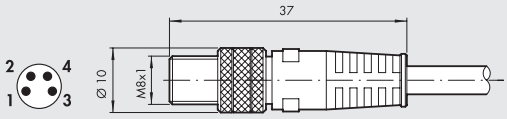
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009102	M8 4-pin female, 90° connector with shielded cable L = 2 m
0240009103	M8 4-pin female, 90° connector with shielded cable L = 5 m

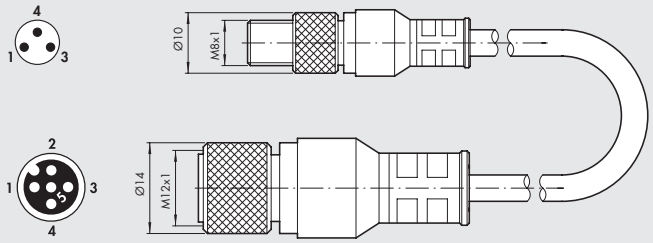
M8 4-POLE MALE CONNECTOR

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240010105	M8 4-pin connector shielded cable L = 5 m

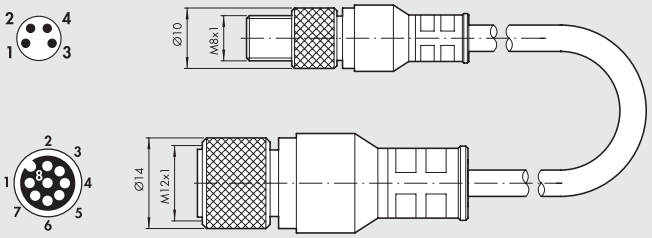
M8 3-POLE MALE – M12 5-POLE FEMALE CONNECTOR WITH CABLE FOR DIGITAL INPUTS/OUTPUTS



Code	Description
0240009045	M8 3-pole male straight - M12 5-pole female connector with cable L= 0.2 m

M8	M12
pin 1	pin 1
pin 4	pin 4
pin 3	pin 3

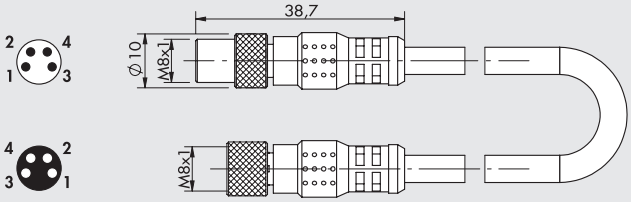
M8 4-POLE MALE – M12 8-POLE FEMALE CONNECTOR WITH CABLE FOR REGTRONIC CONNECTION



Code	Description
0240009046	M8 4-pole male straight - M12 8-pole female connector with cable L= 1 m

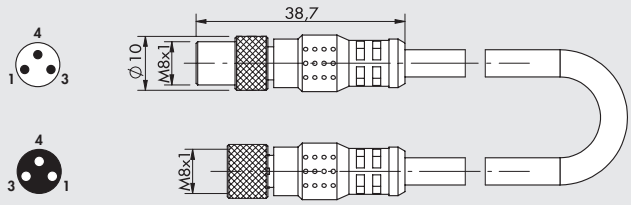
M8	M12
pin 1	pin 8
pin 2	pin 3
pin 3	pin 7
pin 4	disconnect

M8 CONNECTOR WITH SHIELDED CABLE FOR ANALOGUE INPUTS/OUTPUTS



Code	Description
0240005005	M8-M, M8-F 4-pole straight connector with shielded cable L = 1 m
0240005006	M8-M, M8-F 4-pole straight connector with shielded cable L = 3 m
0240005003	M8-M, M8-F 4-pole straight connector with shielded cable L = 5 m
0240005008	M8-M, M8-F 4-pole straight connector with shielded cable L = 10 m

M8 ADAPTER CABLE FOR CONNECTING THE PRESSURE SWITCH TO THE DIGITAL INPUTS MODULE

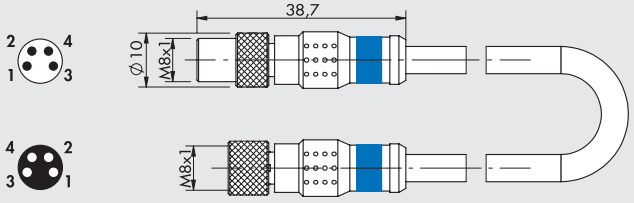


Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 0.3 m

Note: Can be used for connecting **1/8-1/4**, **Syntesi®**, **Skillair®**, **PRS L** pressure switches to the module of digital INPUT **S01** of the EB 80 valves. Contact type NO (Normally-Open)

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 2	Signal NO
pin 4	disconnect	

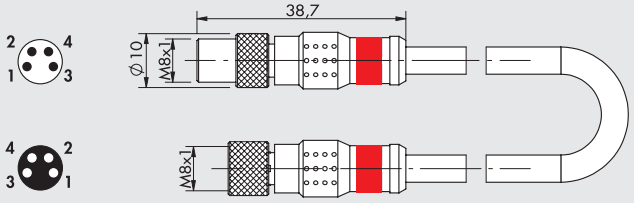
M8 SHIELDED ADAPTER CABLE FOR CONNECTING THE LTS-LTL POSITION TRANSDUCERS TO THE ANALOGUE INPUTS MODULE



Code	Description
0240010601	M8-M, M8-F 4-pole adapter with shielded cable L = 0.3 m (**blue collar**)

Note: Can be used for connecting the **4/20 mA** analog output of the LTL-LTS position sensors to the module of analog INPUT **S04** of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 2	pin 2	Signal 4/20 mA
pin 3	pin 3	Power supply –
pin 4	disconnect	

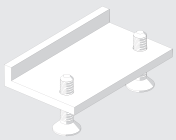


Code	Description
0240010701	M8-M, M8-F 4-pole adapter with shielded cable L = 0.3 m (**red collar**)

Note: Can be used for connecting the **0/10 VDC** analog output of the LTL-LTS position sensors to the module of analog INPUT **S04** of the EB 80 valves.

M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 4	pin 2	Signal 0/10 V
pin 3	pin 3	Power supply –
pin 2	disconnect	

ADDITIONAL FIXING BRACKET TO OMEGA BAR



Code	Description	Weight [g]
02282R4001	Additional fixing bar accessory to EB 80 Omega bar	5

Individually packed

N.B.: to be used to improve the fixing to Omega bars of islands with more than 10 modules. The bracket must be positioned every 5-6 modules.

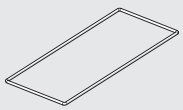
SPARE PARTS

EB 80 BUS/SIGNAL INTERFACE OR SEAL

Code	Description
02282R1005	EB 80 BUS/Signal interface OR seal

Comes in 10-pc. packs

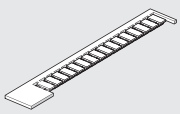
EB 80 GASKET BETWEEN BASE AND BUS/SIGNAL COVER



Code	Description
02282R1004	Kit of gaskets between base and BUS/Signal cover

Comes in 10-pc. packs

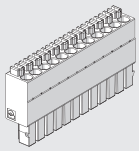
IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

CONNECTOR 12 POSITIONS



Code	Description
02282R5010	Connector 12 positions for modules S06 and S07

Comes in 4-pc. packs

EB 80 ELECTRICAL CONNECTION - E

METAL WORK PNEUMATIC

The job of the "Electrical Connection - E" subsystem is to power the EB 80 systems, transmit control signals for the solenoid valves, send and receive signals for the input/output management modules and control diagnostics. Versions with a multi-pole connector or fieldbus are also available.
It is worth noting that the island of solenoid valves functions equally with both systems. This means that all the valves, bases and intermediate elements can work both with parallel and serial controls (patented).
Smart electronics of all electrical connection modules, including multi-pole ones, can be used to control unexpected functions, including very interesting diagnostics.
The system can be supplied with a very wide voltage range, so much so that the EB 80 island can be controlled either at 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2VDC, are admitted. The minimum voltage for solenoid pilots can be 10.8VDC, i.e. 12VDC-10%.
The body of the multi-pole version is made of metal in one piece (as the IO-Link 64 OUT version); simplified versions that can only manage solenoid valves, but that keeps the whole modularity and diagnostics of the EB 80 family.
Versions with a fieldbus instead consist of two parts: a lower part, with a single metal body separate from the bus protocol; an upper part with a technopolymer body dedicated to each specific bus protocol.

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%					
Minimum operating voltage	VDC	10.8 *					
Maximum operating voltage	VDC	31.2					
Maximum admissible voltage	VDC	32 ***					
Drive (for multi-pole)		PNP or NPN					
Solenoid rating		100% ED					
Power supply without controlled valves:							
steady rate, with multi-pole connection	W	0.1 for "Electrical connection - E" + 0.25 for each "Base - B"					
steady rate, with fieldbus connection	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"					
Signal module supply power		See chapter "Signal module - S"					
Maximum operating power supply (data useful for the sizing of the power supply unit)	W	3.15 for each solenoid pilot operated simultaneously + input and output					
Maximum current admissible							
with multi-pole connection	A	6 continuous, 9 instantaneous					
with fieldbus connection	A	4 continuous, 6 instantaneous for valve supply					
		4 continuous, 6 instantaneous for bus and signal supply					
Protection		Overload and short-circuit protected solenoid pilot Output					
Diagnostics		LED signal on valve, LED light on electrical connection.					
		With multi-pole: fault signal OUT activation.					
		With field bus: software message.					
Faults signalled		Short-circuited solenoid pilot; Solenoid pilot broken or missing					
		Power supply out of range (under-voltage or over-voltage)					
		With fieldbus only, different configuration, on switching on, compared to that stored; communication control between modules					
Ambient temperature	°C	-10 to + 50					
	°F	14 to 122					
Versions		Plug connectors, fieldbus with various protocols, additional island					
		25-pin connector	44-pin connector	Fieldbus	IO-link 32 IN / 32 OUT	IO-link 64 OUT	additional island
Maximum number of controllable solenoid pilots		21	38	128	32	64	128
Maximum number of controllable solenoid valves		Ditto as above, depending on the number of solenoid pilots and type of base					
Degree of protection		IP65 (with connectors connected or plugged if not used)					
Weight	g	180	180	350	350	180	320

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24**
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

SYSTEM VOLTAGE DROP

Voltage drop depends on the input maximum current drawn by the system and the length of the cable for connection to the system.
In a 24VDC-powered system, with cable lengths up to 20 m, voltage drops do not need to be taken into account.
In a 12VDC-powered system, there must be enough voltage to ensure correct operation. It is necessary to take into account any voltage drops due to the number of active solenoid valves, the number of valves controlled simultaneously and the cable length.
The actual voltage supplied to the solenoid pilots must be at least 10.8VDC.
More details are given in the instruction manual (please refer to the Metal Work website).
A synthesis of the verification algorithm is shown here below.

$$\text{Maximum current: I max [A]} = \frac{\text{no. of solenoid pilots controlled simultaneously x 4 + no. of active solenoid valves x 0.5}}{\text{VDC}}$$

Voltage drop: with a 25-pole connector: ΔV = Imax [A] x Rs [0.067Ω/m] x 2L [m]
Voltage drop: with a 44-pole connector: ΔV = Imax [A] x Rs [0.067Ω/m] x L [m]
Where Rs is the cable resistance and L its length.

The voltage at the cable inlet, Vin must be at least 10.8VDC + ΔV

Example:
12VDC supply voltage, 5 m cable, 25-pin connector, 3 pilots activate while other 10 are already active:

$$\text{I max} = \frac{3x4 + 10x0.5}{12} = 1.41 \text{ A}$$

ΔV = (1.41 x 0.067 x 2x5) = 0.95VDC

This means that at the power supply voltage greater than or equal to 10.8 + 0.95 = 11.75VDC is required.
Vin =12VDC > 11.75 --> OK

KEY TO CODES

02282	E	0	25
FAMILY	**SUBSYSTEM**	**SUPPLY**	**TYPE**
02282 EB 80	**E** Electrical connection	**0** Complete	**25** 25-pin connector **44** 44-pin connector **EN** EtherNet/IP **EC** EtherCAT **PN** Profinet IO **CN** CANopen **PB** Profibus-DP **PL** Ethernet POWERLINK **IO** IO-Link 32 IN / 32 OUT **LK** IO-Link 64 OUT **CC** CC-Link IE Field Basic **AD** Additional island

NOTE

EB 80 MULTI-POLE ELECTRICAL CONNECTION - E

The job of the multi-pole version of the electrical connection subsystem is to power the EB solenoid valve islands. The system accepts to be supplied with a very wide range of voltages, to such an extent that the EB 80 island alone can be controlled at either 12VDC or 24VDC (patented).
Overvoltages up to 30% of the rated value, i.e. up to 31.2VDC, are admitted.
The minimum voltage for the solenoid pilots can be 10.8VDC, i.e. 12VDC - 10%.
The body of the multi-pole version is made of metal in a single piece.

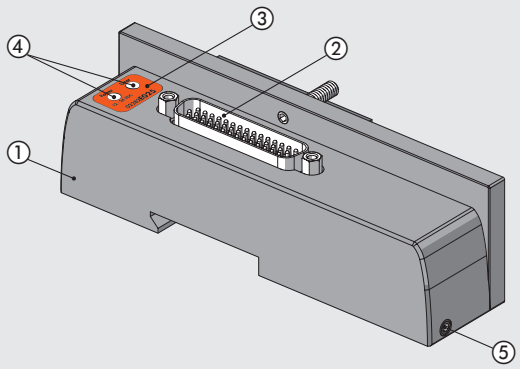
TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%	
Minimum operating voltage	VDC	10.8 *	
Maximum operating voltage	VDC	31.2	
Maximum admissible voltage	VDC	32 ***	
Drive		Configurable PNP or NPN	
Power supply without controlled valves	W	0.1 for "Electrical connection - E" + 0.25 for each "Base - B"	
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec	
Solenoid pilot power after start-up (holding)	W	0.3	
Maximum admissible current	A	6 continuous, 9 instantaneous	
Protection		System protected against overload	
		short-circuit protected solenoid pilot Output	
Diagnostics		FAULT signal red light and Out signal on "Electrical connection - E"	
		LED light signal on valve	
Faults signalled		Short-circuited solenoid pilot; Solenoid pilot broken or missing	
		Power supply out of range (under-voltage or over-voltage)	
Ambient temperature	°C	-10 to + 50	
	°F	14 to 122	
Electrical connection		Plug connectors	
		25-pin connector	44-pin connector
Maximum number of controllable solenoid pilots **		21	38
Maximum number of controllable solenoid valves		Ditto as above, depending on the number of solenoid pilots and type of base	
Maximum number of simultaneously controllable solenoid pilots:			
at 24VDC		21	38
at 12VDC		Depending on the voltage drop – see page **B2**.24	
Maximum current at 24VDC	A	3	5
Maximum current at 12VDC	A	6	9
Degree of protection		IP65 (with connectors connected or plugged if not used)	
Weight	g	180	180

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24
** If the units are made up of bases exceeding the maximum number of controllable solenoid pilots (by mounting a dummy valve N or a bypass Y in the excess positions), operation is only possible on the islands with a positive signal (PNP), conversely (with an NPN signal), an error message is generated by the diagnostic system.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

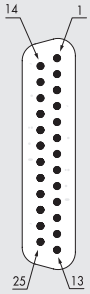
COMPONENTS

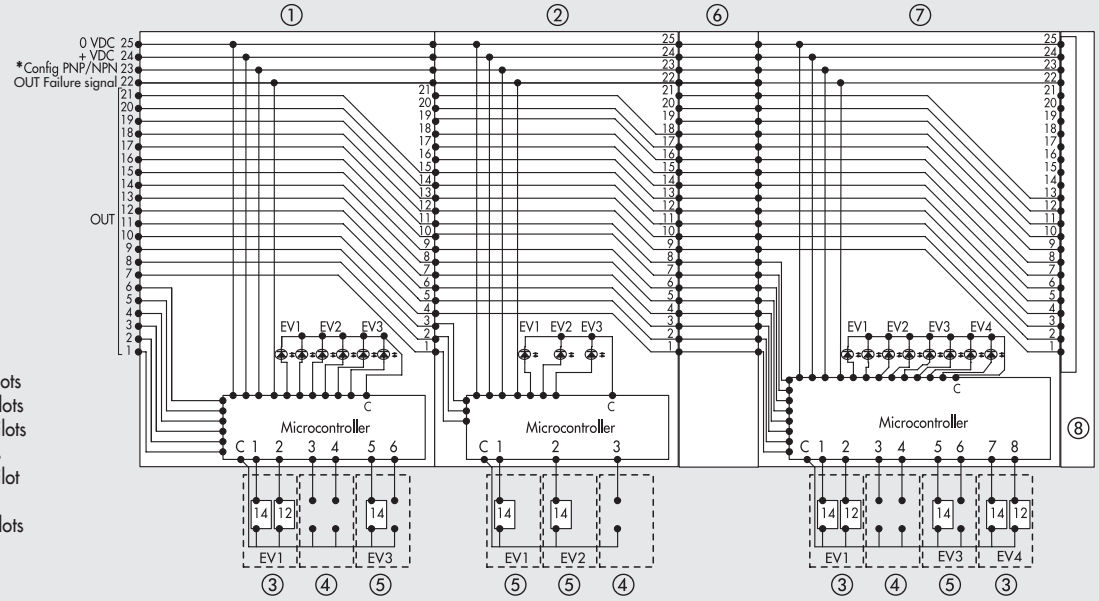
① BODY: painted metal
② CONNECTOR: plug type
③ NAMEPLATE: with product code
④ LED: signal on and alarm
⑤ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel



WIRING DIAGRAM

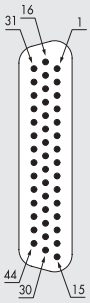
D-Sub 25-pin CONNECTOR

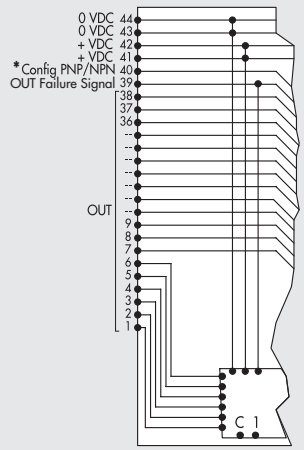




① 3-position base for 6 pilots
② 3-position base for 3 pilots
③ Valve with 2 solenoid pilots
④ Dummy valve or bypass
⑤ Valve with 1 solenoid pilot
⑥ Intermediate module
⑦ 4-position base for 8 pilots
⑧ Closed end-plate

D-Sub 44-pin CONNECTOR

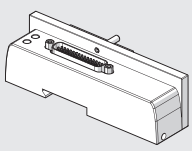


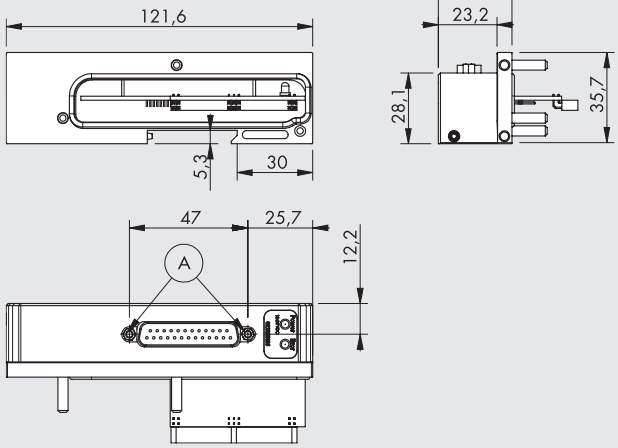


* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

DIMENSIONS - ORDERING CODES

DIMENSION OF A MULTI-POLE ELECTRICAL CONNECTION



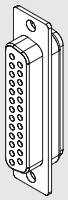


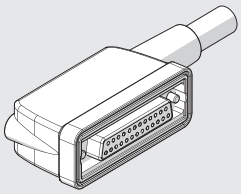
Ⓐ = Holes for D-Sub connector 25-pin or 44-pin

Code	Description	Weight [g]
02282**E025**	EB 80 25-pin electrical connection	180
02282**E044**	EB 80 44-pin electrical connection	180

ACCESSORIES

IP65 25-PIN PRE-WIRED PLUG CONNECTOR





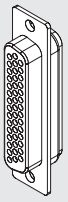
Code	Description	Weight [g]
02269A0100	IP65 25-pin 90° connector, UL cable L = 1 m	180
02269A0250	IP65 25-pin 90° connector, UL cable L = 2.5 m	365
02269A0500	IP65 25-pin 90° connector, UL cable L = 5 m	680
02269A1000	IP65 25-pin 90° connector, UL cable L = 10 m	1220
02269A2000	IP65 25-pin 90° connector, UL cable L = 20 m	2350
02269C0100 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 1 m	180
02269C0250 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 2.5 m	365
02269C0500 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 5 m	680
02269C1000 **	IP65 25-pin 90° connector, UL H-FLEX CL6, cable L = 10 m	1220

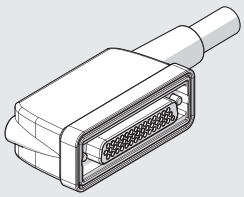
** Very flexible cables, class 6 according to IEC 60228

Position of electrical contact	Colour of the corresponding wire	Function
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Fault reporting
23	White + Red ring	Config. PNP/NPN *
24	Brown + Red ring	+VDC
25	White + Black ring	0VDC

* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

IP65 44-PIN PRE-WIRED PLUG CONNECTOR





Code	Description	Weight [g]
02269B0100	IP65 44-pin 90° connector, UL cable L = 1 m	275
02269B0250	IP65 44-pin 90° connector, UL cable L = 2.5 m	630
02269B0500	IP65 44-pin 90° connector, UL cable L = 5 m	1180
02269B1000	IP65 44-pin 90° connector, UL cable L = 10 m	2210
02269B2000	IP65 44-pin 90° connector, UL cable L = 20 m	4340
02269D0100 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 1 m	275
02269D0250 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 2.5 m	630
02269D0500 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 5 m	1180
02269D1000 **	IP65 44-pin 90° connector, UL H-FLEX CL6, cable L = 10 m	2210

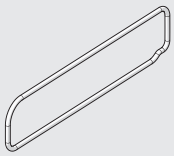
** Very flexible cables, class 6 according to IEC 60228

Position of electrical contact	Colour of the corresponding wire	Function
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Out 22
23	White + Red ring	Out 23
24	Brown + Red ring	Out 24
25	White + Black ring	Out 25
26	Brown + Black ring	Out 26
27	Grey + Green ring	Out 27
28	Yellow + Grey ring	Out 28
29	Pink + Green ring	Out 29
30	Yellow + Pink ring	Out 30
31	Green + Blue ring	Out 31
32	Yellow + Blue ring	Out 32
33	Green + Red ring	Out 33
34	Yellow + Red ring	Out 34
35	Green + Black ring	Out 35
36	Yellow + Black ring	Out 36
37	Grey + Blue ring	Out 37
38	Pink + Blue ring	Out 38
39	Grey + Red ring	Fault reporting
40	Pink + Red ring	Config. PNP/NPN *
41	Grey + Black ring	+VDC
42	Pink + Black ring	+VDC
43	Blue + Black ring	0VDC
44	Red + Black ring	0VDC

* Connect to +VDC if (Out) valves with a POSITIVE signal are to be controlled
Connect to 0VDC if (Out) valves with a NEGATIVE signal are to be controlled

SPARE PARTS

EB 80 ELECTRICAL CONNECTION INTERFACE OR SEAL



Code	Description
02282R1003	EB 80 electrical connection interface OR seal

Comes in 10-pc. packs

NOTES

EB 80 ELECTRICAL CONNECTION WITH FIELDBUS - E

The job of the electrical connection with fieldbus is to power the EB 80 systems, transmit control signals for the solenoid valves, send or receive signals for input/output management modules and control diagnostics.
The system can be supplied with a very wide voltage range, so much so that the EB 80 island can be controlled either at 12VDC or 24VDC (patented). Overvoltages up to 30% of the rated value, i.e. up to 31.2VDC, are admitted. The minimum voltage for solenoid pilots can be 10.8VDC, i.e. 12VDC - 10%.
The modules come into parts: a lower part, with a single aluminium body separate from the bus protocol; an upper part with a technopolymer body dedicated to each specific bus protocol.
The exception is the IO-Link 64 OUT version which is composed of a single aluminum element and can only manage solenoid valves (32 or 64) while maintaining all the modularity and diagnostic features of the EB 80 family.

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power supply without controlled valves	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec
Solenoid pilot power after start-up (holding)	W	0.3
Maximum admissible current	A	4 continuous, 6 instantaneous for valve supply
		4 continuous, 6 instantaneous for bus and signal supply
Protection		Overload and short-circuit protected solenoid pilot Output
Diagnostics		LED signal on valve, LED on electrical connection and software message regarding:
		short-circuited solenoid pilot; solenoid pilot with coil failure;
		voltage out of range (undervoltage and overvoltage); module communication control;
		on switching, configuration other than that stored
Maximum number of solenoid pilots		128 (32 for IO-Link 32 IN / 32 OUT; 64 for IO-Link 64 OUT)
Maximum number of simultaneously controllable solenoid pilots		38
to actuate a greater number of solenoid pilots at the same time, add "Intermediate modules - M" with electrical connection		
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs
		(32 for IO-Link 32 IN / 32 OUT)
Maximum number of nodes **		40 Bases for valves + 16 digital inputs + 16 digital outputs + 4 analogue inputs + 4 analogue outputs
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		EtherNet/IP, EtherCAT, CANopen, Profinet IO, Profibus-DP, Ethernet POWERLINK, IO-Link, CC-Link IE Field Basic
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	g	350 (180 for IO-Link 64 OUT)

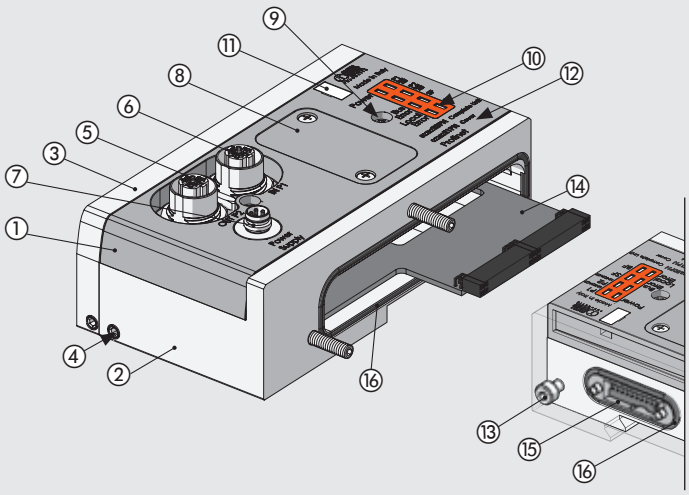
* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24**

** For topological limits (maximum lengths, etc.) see the instructions.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

COMPONENTS

① UPPER PART BODY: technopolymer
② LOWER PART BODY: painted aluminium
③ CLOSING PLATE: painted aluminium
④ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel
⑤ Fieldbus signal receive CONNECTOR
⑥ Fieldbus signal send CONNECTOR
⑦ M8 power supply CONNECTOR
⑧ COVER for access to bus address switches: technopolymer
⑨ SCREW securing the upper part to the lower part
⑩ LED light
⑪ NAMEPLATE: removable
⑫ IDENTIFICATION wording: laser etched
⑬ SCREW securing the end plate
⑭ CONNECTOR for solenoid valve base modules
⑮ CONNECTOR for input/output signal modules
⑯ GASKETS interfacing: NBR



EtherNet/IP WIRING DIAGRAM

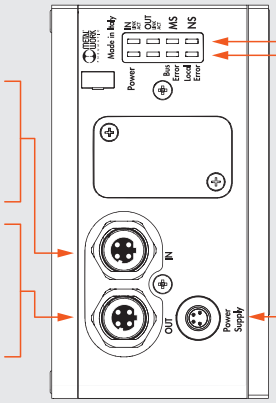
Connection to the EtherNet/IP network

IN (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield

OUT (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield



EtherNet/IP diagnostic signaling LED

EB 80 Net diagnostic signaling LED

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

End plate with intermediate control

EB 80 Net (M8 female connector)

1 = CAN H
2 = CAN L
3 = Token
4 = GND

TECHNICAL DATA		
Fieldbus		10 - 100 Mbit/S - Full-duplex - Half-duplex - Supports auto-negotiation and Quick Connect
Factory settings		IP address: 192.168.192.32
Addressing		Software - DHCP hardware
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: 2 M12 F, D encoding, internal switch. Power supply: M8, 4-pin
Diagnostics **		EtherNet/IP: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

EtherCAT WIRING DIAGRAM

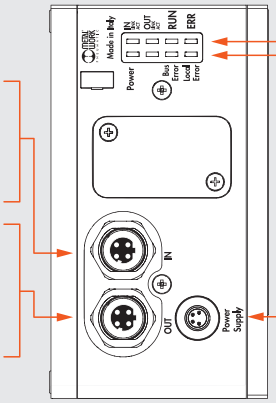
Connection to the EtherCAT network

IN (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield

OUT (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield



EtherCAT diagnostic signaling LED

EB 80 Net diagnostic signaling LED

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

End plate with intermediate control

EB 80 Net (M8 female connector)

1 = CAN H
2 = CAN L
3 = Token
4 = GND

TECHNICAL DATA		
Fieldbus		100 Mbit/S - Full-duplex - Supports auto-negotiation
Factory settings		module denomination: EB80series
Addressing		Automatic from the master depending on its topological position. Fixes with the second slave address function
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. outputs protected from overloads and short-circuits.
Connections		Fieldbus: 2 M12 F D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **		EtherCAT: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

CANopen WIRING DIAGRAM

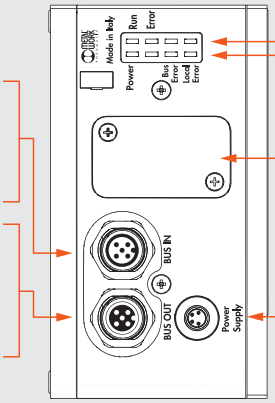
Connection to the CANopen network

BUS IN (M12 male connector, A encoding)

1 = CAN_SHLD
2 = - - -
3 = CAN_GND
4 = CAN_H
5 = CAN_L
Metal ring nut = Shield

BUS OUT (M12 female connector, A encoding)

1 = CAN_SHLD
2 = - - -
3 = CAN_GND
4 = CAN_H
5 = CAN_L
Metal ring nut = Shield



CANopen diagnostic signaling LED

EB 80 Net diagnostic signaling LED

The following is under the cover plate:
- address assignment switches
- transmission speed setting and the entry of the terminating resistors

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

End plate with intermediate control

EB 80 Net (M8 female connector)

1 = CAN H
2 = CAN L
3 = Token
4 = GND

TECHNICAL DATA		
Fieldbus		Complying with CiA DS401 specification
Factory settings		Module denomination: EB80series - Address 5
Addressing		Hardware via DIP SWITCH
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: BUS IN M12 Male, 5 poles, A encoding - BUS OUT M12 Female, 5 poles, encoding A - Power supply: M8, 4-PIN
Diagnostics**		CANopen: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

METAL WORK PNEUMATIC

Profinet IO WIRING DIAGRAM

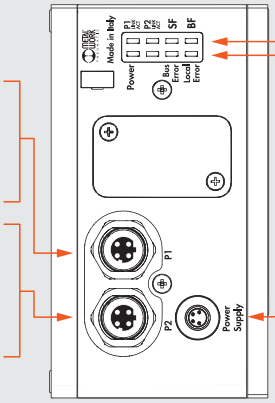
Connection to the Profinet IO network

P1 (M12 female connector, D encoding)

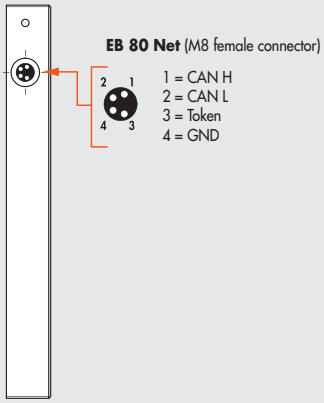
1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield

P2 (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield



End plate with intermediate control



TECHNICAL DATA		
Fieldbus		100 Mbit/s - Full-duplex – Supports Fast Start Up, RT communication, Shared Device, Identification & Maintenance 1-4
Factory settings		Module denomination: EB80series – IP address: 0.0.0.0
Addressing		DCP Software
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **		Profinet IO: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

Profibus-DP WIRING DIAGRAM

Connection to the Profibus-DP network

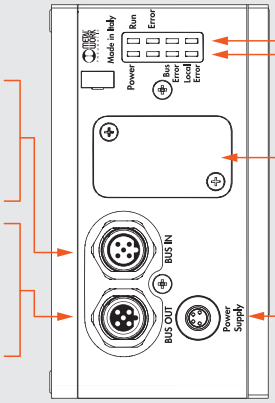
BUS IN (M12 Male Connector, B encoding)

1 = 5 VDC*
2 = A
3 = 0 VDC*
4 = B
5 = Shield

BUS OUT (M12 female connector, B encoding)

1 = 5 VDC*
2 = A
3 = 0 VDC*
4 = B
5 = Shield

* DO NOT CONNECT PIN 1 and PIN 3:
Only the power supply of external terminating resistors must be used.



Profibus-DP diagnostic signaling LED

EB 80 Net diagnostic signaling LED

The following is under the cover plate:
- address assignment switches
- the entry of the terminating resistors

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

End plate with intermediate control

EB 80 Net (M8 female connector)

1 = CAN H
2 = CAN L
3 = Token
4 = GND

TECHNICAL DATA		
Fieldbus		Complying with Profibus-DP DIN E 1924 specification
Factory settings		Module denomination: EB80series - Address 5
Addressing		Hardware via ROTARY SWITCH
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: BUS IN M12 Male, 5 poles, B encoding - BUS OUT M12 Female, 5 poles, B encoding - Power supply: M8, 4-PIN
Diagnostics **		Profibus-DP: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.24**

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

Ethernet POWERLINK WIRING DIAGRAM

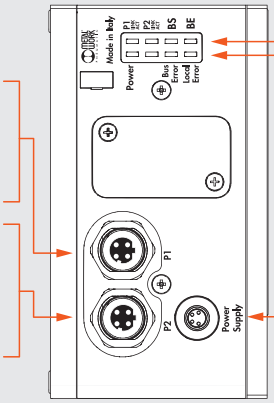
Connection to the Ethernet POWERLINK network

P1 (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield

P2 (M12 female connector, D encoding)

1 = TD+
2 = RD+
3 = TD-
4 = RD-
Metal ring nut = Shield



Ethernet POWERLINK diagnostic signaling LED

EB 80 Net diagnostic signaling LED

Power Supply (M8 male connector)

Connection for node power supply and auxiliary valve power supply

1 = +24VDC bus (Brown)
2 = +24VDC valve (White)
3 = GND (Blue)
4 = GND (Black)

End plate with intermediate control

EB 80 Net (M8 female connector)

1 = CAN H
2 = CAN L
3 = Token
4 = GND

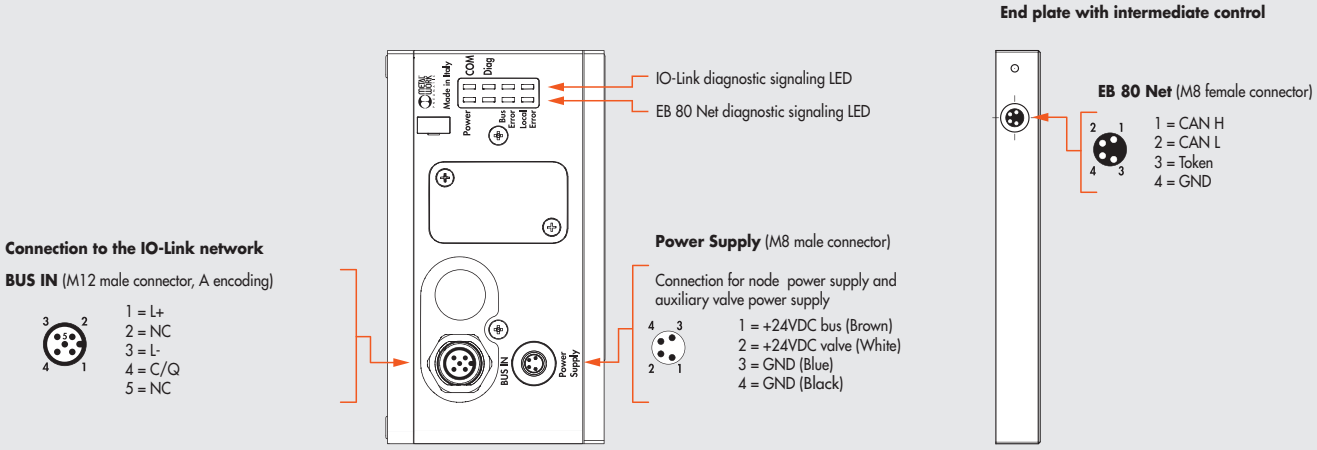
TECHNICAL DATA		
Fieldbus		100 Mbit/S - Half-duplex - Supports auto-negotiation
Factory settings		module denomination: EB80series address number 2
Addressing		Hardware by rotary switch
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **		Ethernet POWERLINK: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

IO-Link 32 IN / 32 OUT WIRING DIAGRAM



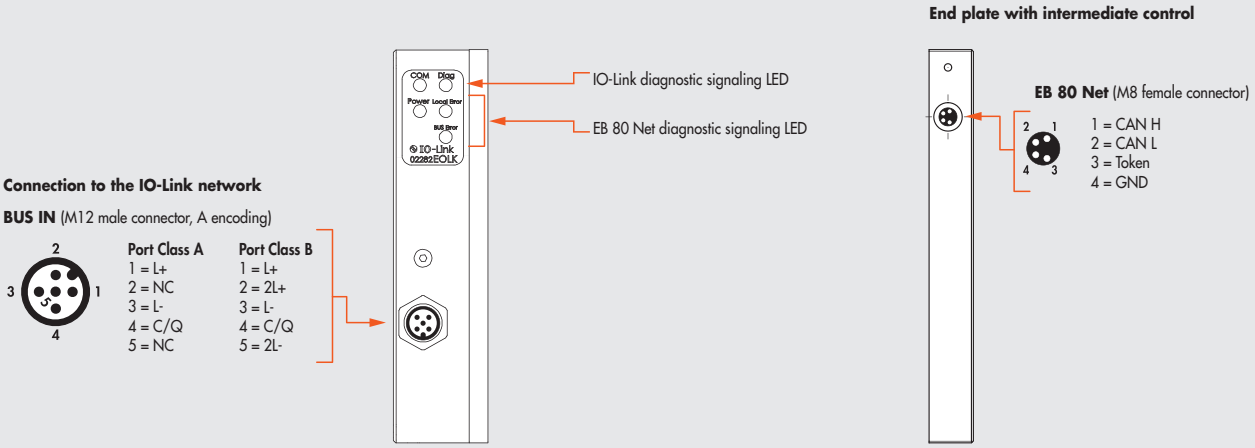
TECHNICAL DATA		
Fieldbus		IO-Link version 1.1
Communication speed	Kbps	230.4 (COM3)
Vendor ID / Device ID		1046 (hex 0x0416) / 32 (hex 0x000020)
Minimum cycle time	ms	2.8
Process data length		5 byte of Input / 4 byte of Output
Supply voltage range (M8 connector)	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC	min 20, max 30
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: M12 male, A-coded - port class A. Power supply: M8, 4-PIN
Diagnostics **		IO-Link: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Power supply current absorption		See IO-Link instruction manual
Maximum number of pilots		32
Maximum number of digital inputs		32
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.**24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

IO-Link 64 OUT WIRING DIAGRAM



TECHNICAL DATA		
Fieldbus		IO-Link version 1.1
Communication speed	Kbps	230.4 (COM3)
Vendor ID / Device ID		1046 (hex 0x0416) / 64 (hex 0x000040)
Minimum cycle time	ms	2.8
Process data length		1 byte of Input / 8 byte of Output
Valves supply voltage range	VDC	12 -10% 24 +30%
Minimum valves operating voltage	VDC	10.8 *
Maximum valves operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC	min 18, max 30
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: M12 male, A-coded - port class A - port class B
Diagnostics**		IO-Link: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Power supply current absorption		See IO-Link 64 OUT instruction manual
Maximum number of pilots		64
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

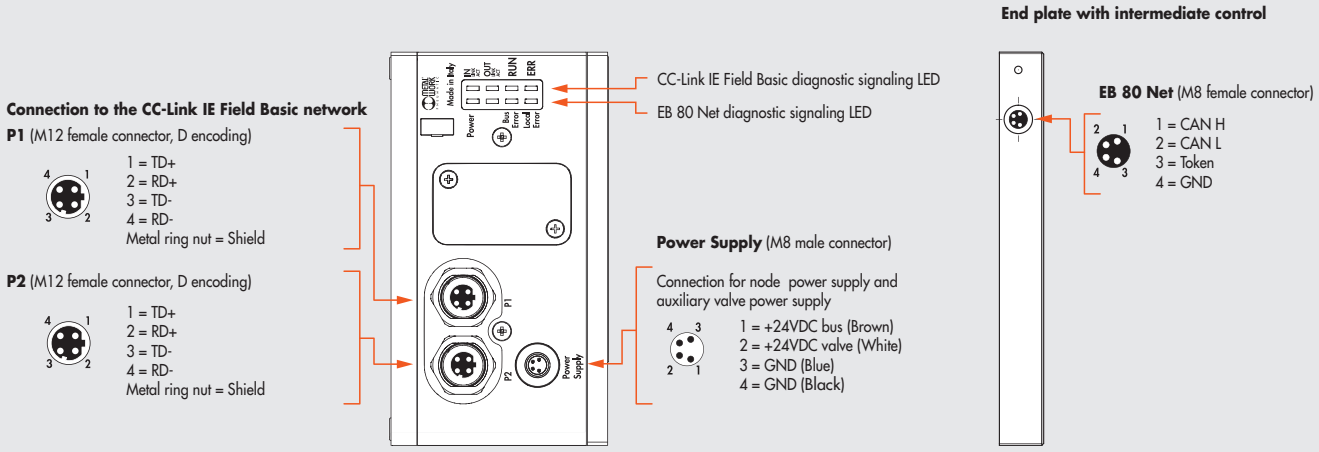
* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

N.B.: The EB 80 island with IO-Link 64 OUT can be connected with an EB 80 island with Additional electrical control, but the latter cannot manage IN or OUT modules.

CC-Link IE Field Basic WIRING DIAGRAM



TECHNICAL DATA		
Fieldbus		100 Mbit/s Number of occupied stations: from 1 to 4
Factory settings		IP address: 192.168.3.32 Subnet Mask: 255.255.255.0
Addressing		Software
Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads and short-circuits.
Connections		Fieldbus: 2 M12 Female, D encoding, internal switch. Power supply: M8, 4-PIN
Diagnostics **		CC-Link IE Field Basic: via local LED lights and software messages. Outputs: via local LED lights and state bytes
Bus power supply current absorption		nominal Icc 180 mA at 24VDC
Maximum number of pilots		128
Maximum number of digital inputs		128
Maximum number of digital outputs		128
Maximum number of analogue inputs		16
Maximum number of analogue outputs		16
Maximum number of inputs for temperatures		16
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

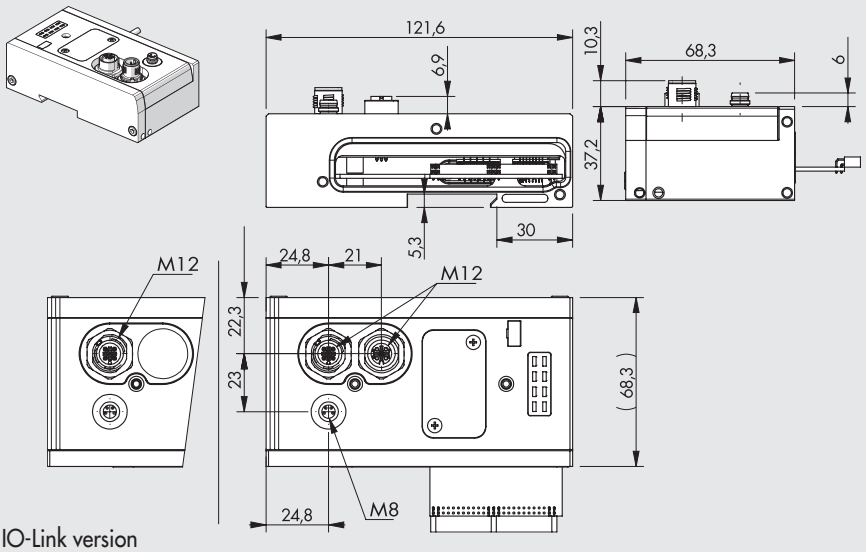
* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2.**24

** Refer to the user manual for a detailed description.

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

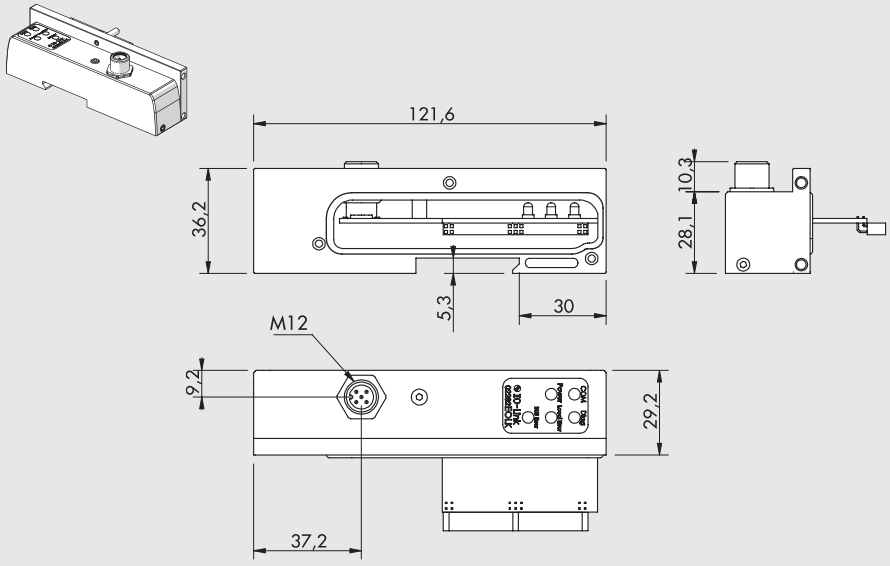
DIMENSIONS - ORDERING CODES

ELECTRICAL CONNECTION FIELDBUS DIMENSION



IO-Link version

Code	Description	Weight [g]
02282**E0EN**	EB 80 Electrical connection EtherNet/IP	350
02282**E0EC**	EB 80 Electrical connection EtherCAT	350
02282**E0PN**	EB 80 Electrical connection Profinet IO	350
02282**E0CN**	EB 80 Electrical connection CANopen	350
02282**E0PB**	EB 80 Electrical connection Profibus-DP	350
02282**E0PL**	EB 80 Electrical connection Ethernet POWERLINK	350
02282**E0IO**	EB 80 Electrical connection IO-Link 32 IN / 32 OUT	350
02282**E0LK**	EB 80 Electrical connection IO-Link 64 OUT	180
02282**E0CC**	EB 80 Electrical connection CC-Link IE Field Basic	350

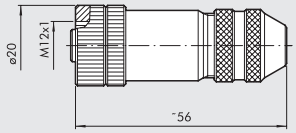


IO-Link 64 Output version

NOTES

ACCESSORIES

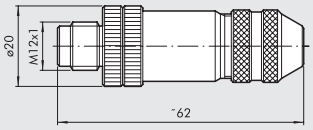
M12 FEMALE CONNECTOR FOR BUS-IN, A ENCODING



Code	Description
0240009055	M12 5-pin female connector, encoding A

Note: Can be used for Bus CANopen and IO-Link

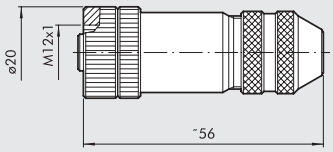
M12 MALE CONNECTOR FOR BUS-IN, A ENCODING



Code	Description
0240009038	M12 5-pin male connector, encoding A

Note: Can be used for Bus CANopen

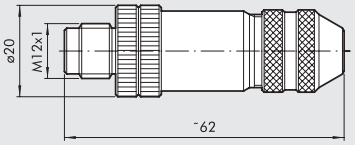
M12 FEMALE CONNECTOR FOR BUS-IN, B ENCODING



Code	Description
0240009036	M12 5-pin female connector, encoding B

Note: Can be used for Profibus-DP

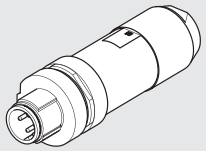
M12 MALE CONNECTOR FOR BUS-IN, B ENCODING



Code	Description
0240009035	M12 5-pin male connector, encoding B

Note: Can be used for Profibus-DP

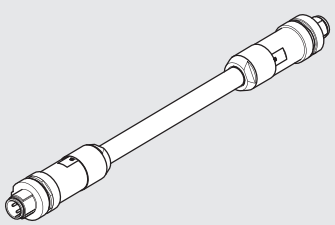
M12 BUS CONNECTOR, D ENCODING



Code	Description
0240005051	M12 4-pin BUS connector, D-coded

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

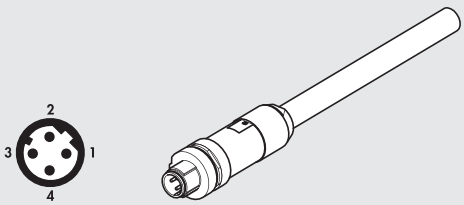
STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED



Code	Description
0240005103	Straight connector for M12-M12 4-pin BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 4-pin BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 4-pin BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED



Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue

Code	Description
0240005093	Straight connector for M12 4-pin BUS, D-coded, with 3 m cable
0240005095	Straight connector for M12 4-pin BUS, D-coded, with 5 m cable
0240005100	Straight connector for M12 4-pin BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

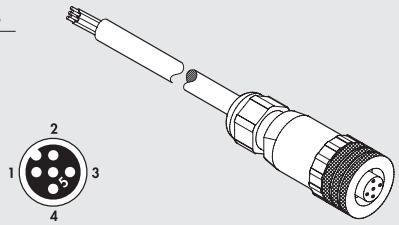
STRAIGHT CONNECTOR FOR M12, A-CODED

Code	Description
W0970513001	5-PIN M12x1 straight connector

Note: Can be used for IO-Link

STRAIGHT CONNECTOR WITH WIRE FOR M12, A-CODED

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray



Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 5 m

Note: Can be used for IO-Link

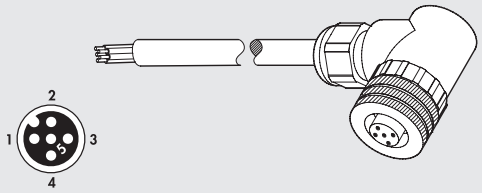
90° CONNECTOR FOR M12, A-CODED

Code	Description
W0970513003	M12x1 5-PIN 90° connector

Note: Can be used for IO-Link

90° CONNECTOR WITH WIRE FOR M12, A-CODED

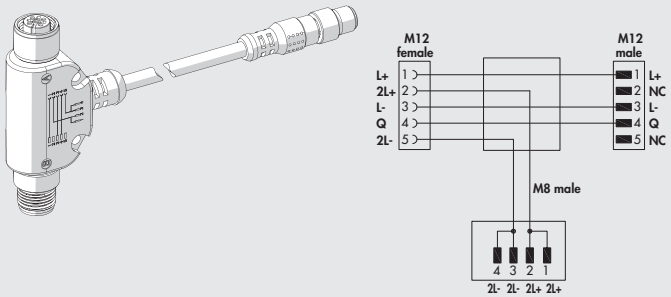
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray



Code	Description
W0970513004	M12x1 5-PIN 90° connector with wire L = 5 m

Note: Can be used for IO-Link

T-CONNECTOR M12 A-CODED / M8 MALE FOR AUXILIARY POWER



Code	Description
0240009070	T - connector for auxiliary power

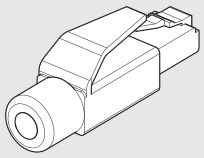
Note: Can be used for IO-Link 64 OUT

CABLE FOR BUS

Code	Description
0240005220*	Cable for BUS 20 m
0240005250	Cable for BUS CANopen BUS 20 m

* Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP, Ethernet POWERLINK, CC-Link IE Field Basic)

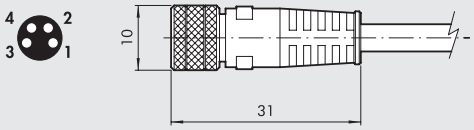
RJ45 CONNECTOR



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60603-7

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

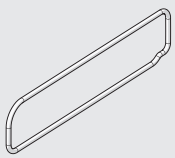
* Very flexible cables, class 6 according to IEC 60228

M8-M12 PLUG

Code	Description
0240009039	Plug for M8 connector
0240009040	Plug for M12 connector

SPARE PARTS

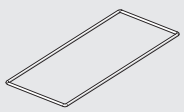
EB 80 ELECTRICAL CONNECTION INTERFACE OR-SEAL



Code	Description
02282R1003	EB 80 electrical connection interface or-seal

Comes in 10-pc. packs

GASKET BETWEEN EB 80 BASE AND COVER BUS/SIGNALS



Code	Description
02282R1004	Kit of gaskets between EB 80 base and cover bus/signals

Comes in 10-pc. packs

EB 80 BUS/SIGNAL INTERFACE OR-SEAL

Code	Description
02282R1005	EB 80 BUS/Signal interface OR-seal

Comes in 10-pc. packs

EB 80 ADDITIONAL ELECTRICAL CONNECTION - E

The additional electrical connection can be used to connect different EB 80 systems to a single bus node. To do this, the main island is equipped with a C3-type closed end-plate, equipped with an M8 connector.
An M8-M8 connected cable relays the signal to the additional system.
The system can be supplied with a very wide range of voltages, so much so that the EB 80 island can be controlled at either 12VDC or 24VDC (patented). Overvoltages up to 30% of the nominal value are admitted, i.e. up to 31.2VDC. The minimum voltage for the solenoid pilots can be 10.8VDC, i.e. 12VDC-10%. The modules consist of two parts: a lower part with a single aluminium body similar to that used for fieldbuses; an upper part with a technopolymer body specific for the additional model.

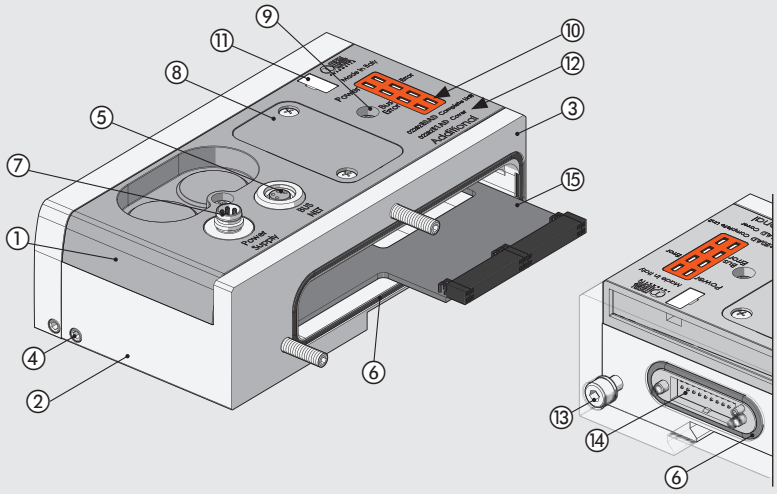
TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
Power supply without controlled valves	W	4 for "Electrical connection - E" + 0.25 for each "Base - B"
Solenoid pilot power on start-up (Speed Up)	W	3 for 15 msec
Solenoid pilot power after start-up (holding)	W	0.3
Maximum admissible current	A	4 continuous, 6 instantaneous for valve supply
		4 continuous, 6 instantaneous for bus and signal supply
Protection		Overload and short-circuit protected solenoid pilot Output
Diagnostics		LED signal on valve, LED on electrical connection and software message regarding:
		short-circuited solenoid pilot; solenoid pilot with coil failure;
		voltage out of range (undervoltage and overvoltage);
		module communication control; on switching, configuration other than that stored.
Maximum number of solenoid pilots		128 **
Maximum number of simultaneously controllable solenoid pilots		38
(to actuate a greater number of pilots at the same time, add "Intermediate modules - M" with "Electrical connection - E")		
Maximum number of signals **		128 digital inputs, 128 digital outputs, 16 analogue inputs, 16 analogue outputs
Maximum number of nodes **		40 Bases for valves + 16 Digital inputs + 16 Digital outputs + 4 Analogue inputs + 4 Analogue outputs
Maximum length of the connection cables ****	m	40
Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Degree of protection		IP65 (with connectors connected or plugged if not used)
Weight	g	320

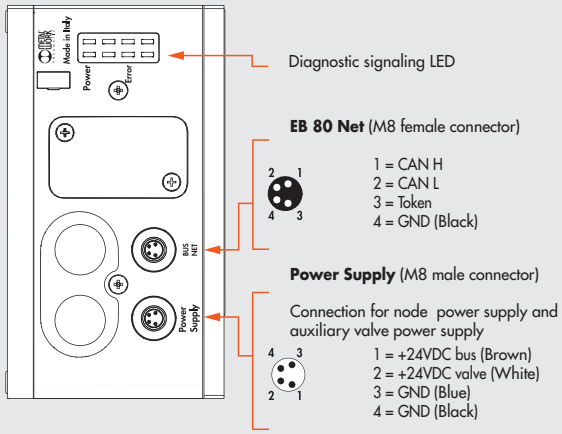
* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24
** Total numbers, by summing up those of the fieldbus connection and all additional connections.
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**
**** Sum of the lengths of the cables between the fieldbus electrical connection and any additional electrical connections.

COMPONENTS

① UPPER PART BODY: technopolymer
② LOWER PART BODY: painted aluminium
③ END PLATE: painted aluminium
④ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel
⑤ CONNECTOR for connection to the valve island (main one)
⑥ GASKETS interfacing: NBR
⑦ M8 power supply CONNECTOR
⑧ COVER for access to bus address switches: technopolymer
⑨ SCREW securing the upper part to the lower part
⑩ LED light
⑪ NAMEPLATE: removable
⑫ IDENTIFICATION wording: laser etched
⑬ SCREW securing the end plate
⑭ CONNECTOR for solenoid valve base modules
⑮ CONNECTOR for Input/Output signal modules

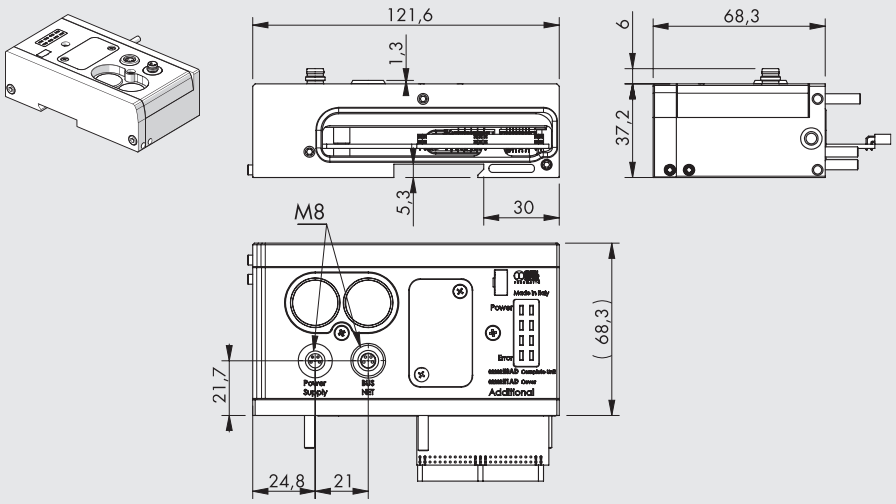


WIRING DIAGRAM



DIMENSIONS - ORDERING CODES

DIMENSION OF ADDITIONAL ELECTRICAL CONNECTION

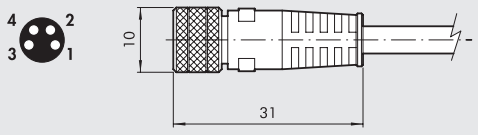


Code	Description	Weight [g]
02282**E0AD**	Additional electrical connection EB 80	320

ACCESSORIES

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



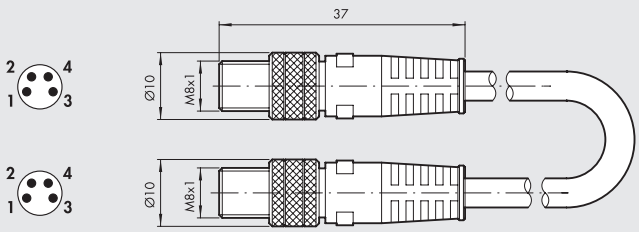
Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

M8 PLUG

Code	Description
0240009039	Plug for M8 connector

M8 CONNECTOR WITH CABLE FOR CONNECTION BETWEEN EB 80 ISLANDS

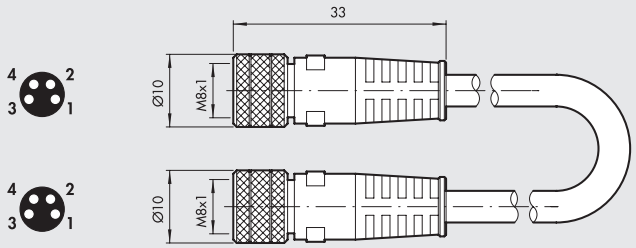


Code	Description	Weight [g]
0240010201	M8-M8 4-pin male straight connector with shielded cable L = 1 m	45
0240010205	M8-M8 4-pin male straight connector with shielded cable L = 5 m	185
0240010210	M8-M8 4-pin male straight connector with shielded cable L = 10 m	330
0240010215	M8-M8 4-pin male straight connector with shielded cable L = 15 m	475
0240010220	M8-M8 4-pin male straight connector with shielded cable L = 20 m	620
0240010405 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 5 m	185
0240010410 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 10 m	330
0240010415 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 15 m	475
0240010420 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 20 m	620

* Very flexible cables, class 6 according to IEC 60228

N.B.: For correct operation of the entire EB 80 system, use M8-M8 pre-wired, twisted and shielded cables only.

M8 ADAPTER CABLE

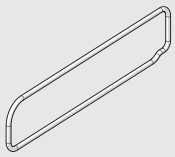


Code	Description	Weight [g]
0240010350	M8-M8 4-pin female adapter cable with shielded cable L = 200 mm	16

N.B.: Cannot be used with cables for mobile laying (H-FLEX CL6)

SPARE PARTS

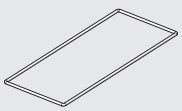
EB 80 ELECTRICAL CONNECTION INTERFACE OR-SEAL



Code	Description
02282R1003	EB 80 electrical connection interface OR-seal

Comes in 10-pc. packs

GASKET BETWEEN EB 80 BASE AND COVER BUS/SIGNALS



Code	Description
02282R1004	Kit of gaskets between EB 80 base and cover bus/signals

Comes in 10-pc. packs

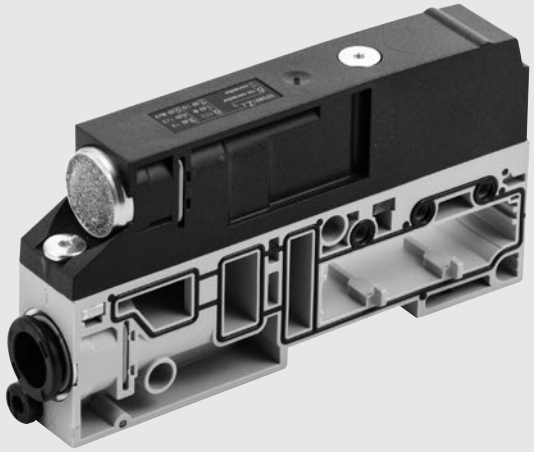
EB 80 BUS/SIGNAL INTERFACE OR-SEAL

Code	Description
02282R1005	EB 80 BUS/Signal interface OR-seal

Comes in 10-pc. packs

EB 80 COMPRESSED-AIR SUPPLY - P

The Compressed air supply - P modules power the valve base and collect the air coming from the relief ports. Various versions are available, with pipe fittings of different diameter. The product code also identifies whether the module is set to supply the pilots without servo-assistance, in which case you only need to connect compressed air to the supply fitting; or with servo-assistance (recommended), in which case you only need to connect the compressed air to the Ø 4 pilot fitting. Switching from servo to non-servo operation or vice versa is possible, however, by changing the position of the orange gasket situated between the lower and the upper part of the module; the configuration is identified by a tab protruding at the back.
Relief ports 3 and 5 can be either connected using a silencer or conveyed via a fitting.
A version with separate ports 3 and 5 is also available. This feature is useful in versions with pilot servo-assistance to power the valves from ports 3 and 5, at different pressures from vacuum to 8 bar at different pressures from vacuum to 8 bar, including the version to configure a fieldbus island with signal modules only, without the pneumatic part.

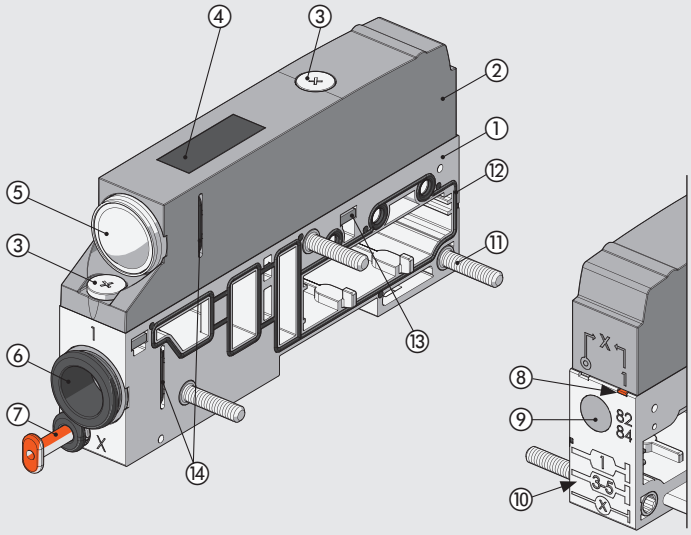


TECHNICAL DATA

Operating pressure					
Non-servo versions and solenoid pilot servo pressure		**5/2 and 5/3**		**2/2 and 3/2**	
	bar	3 to 8		min. (see graph on page **B2**.53) / max. 8	
	MPa	0.3 to 0.8		min. (see graph on page **B2**.53) / max. 0.8	
	psi	43 to 116		min. (see graph on page **B2**.53) / max. 116	
Assisted valves	bar	Vacuum to 10			
	MPa	Vacuum to 1			
	psi	Vacuum to 145			
Ambient temperature	°C	-10 to + 50			
	°F	14 to 122			
Flow rate at 6.3 bar ΔP 1 bar		**Ø 8 (5/16")**	**Ø 10**	**Ø 12**	**Ø 1/2"**
Feeding (port 1)	Nl/min	1800	2800	3500	3500
Exhaust with fitting (ports 3 and 5)	Nl/min	2000	3200	4400	4400
Separate exhausts Ø 8 (N.B.: Pmax 8 bar)	Nl/min	1800 x 2	-	-	-
Flow rate at 6.3 bar free exhaust					
Exhaust with fitting (ports 3 and 5)	Nl/min	2700	3900	6100	6100
Silenced exhaust	Nl/min	3600			
Exhaust with fitting Ø12 and silencer W0970530086	Nl/min	6000			
Separate exhausts Ø 8 (N.B.: Pmax 8 bar)	Nl/min	2700 x 2	-	-	-
Fluid		Unlubricated air			
Versions		Silenced relief or conveyed relief, fittings for pipes Ø 8, 10, 12, 1/2"			
Degree of protection		IP65			
Weight	g	140	130	125	125

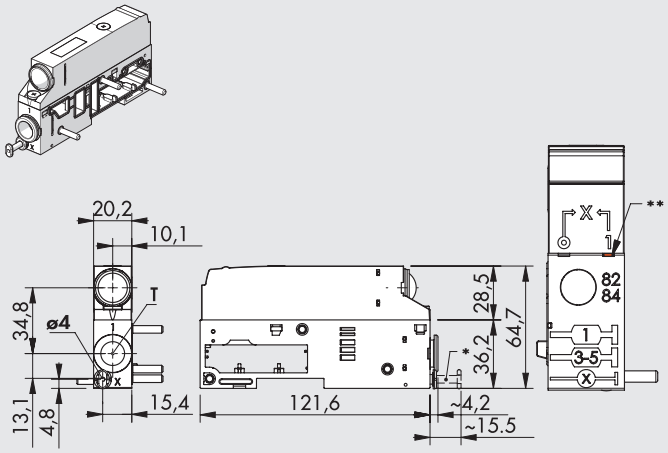
COMPONENTS

① LOWER PART BODY: technopolymer
② UPPER PART BODY: technopolymer
③ SCREWS securing the island bodies: zinc-plated steel (Tightening torque: 1.2 Nm)
④ TAG: with laser etched wording - technopolymer
⑤ RELIEF: silencer or pipe fitting
⑥ POWER SUPPLY: pipe fitting
⑦ PILOTING (X): Ø 4 pipe fitting
⑧ INDICATOR: indicaes whether pilot power supply is separate or not
⑨ PILOT RELIEF: HDPE silencer
⑩ PICTOGRAM: showing compressed air system layout
⑪ TIE ROD: zinc-plated steel
⑫ GASKET: NBR
⑬ THREADED PLATE: zinc-plated steel
⑭ CARTRIDGE FIXING CLIP: stainless steel



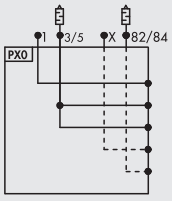
DIMENSIONS - ORDERING CODES

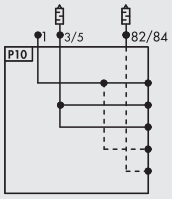
COMPRESSED AIR SUPPLY - SILENCED RELIEF



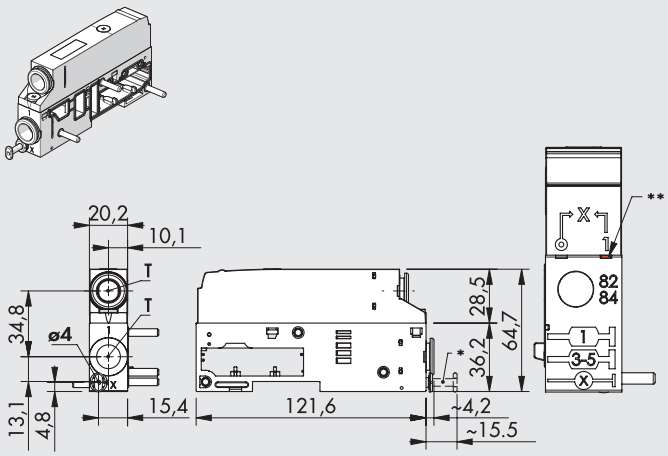
* R9 plug for NON-SERVO-ASSISTED versions
** Orange tab in SERVO-ASSISTED (◎) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [g]
Servo-assisted	Ø 8 (5/16″)	02282**P1XZ00**	140
	Ø 10	02282**P2XZ00**	130
	Ø 12	02282**P3XZ00**	125
	Ø 1/2″	02282**P5XZ00**	125
Non-servo-assisted	Ø 8 (5/16″)	02282**P11Z00**	140
	Ø 10	02282**P21Z00**	130
	Ø 12	02282**P31Z00**	125
	Ø 1/2″	02282**P51Z00**	125



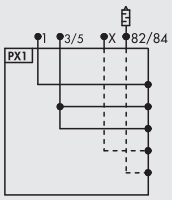


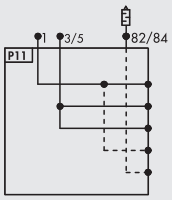
COMPRESSED AIR SUPPLY - CONVEYED RELIEF



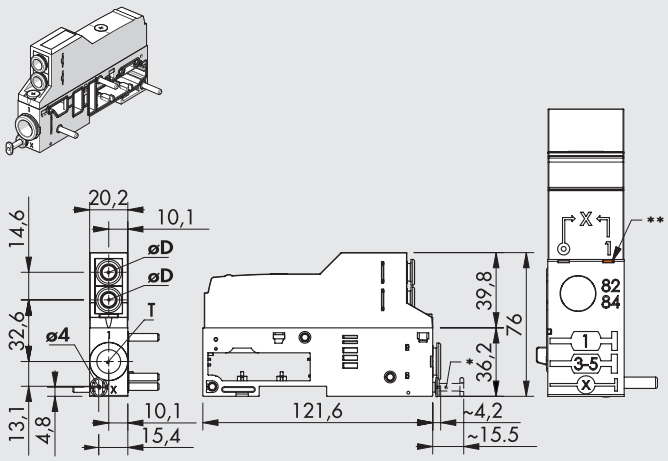
* R9 plug for NON-SERVO-ASSISTED versions
** Orange tab in SERVO-ASSISTED (◎) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [g]
Servo-assisted	Ø 8 (5/16″)	02282**P1XZ10**	140
	Ø 10	02282**P2XZ20**	130
	Ø 12	02282**P3XZ30**	125
	Ø 1/2″	02282**P5XZ50**	125
Non-servo-assisted	Ø 8 (5/16″)	02282**P11Z10**	140
	Ø 10	02282**P21Z20**	130
	Ø 12	02282**P31Z30**	125
	Ø 1/2″	02282**P51Z50**	125





COMPRESSED AIR SUPPLY - SEPARATE RELIEFS

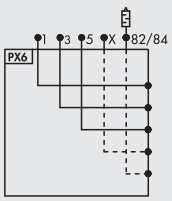


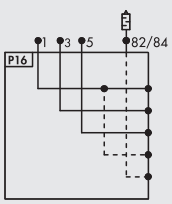
* R9 plug for NON-SERVO-ASSISTED versions
** Orange tab in SERVO-ASSISTED (◎) or NON-SERVO-ASSISTED (1) position

Symbol	T - Pipe fitting	Code	Weight [g]
Servo-assisted	Ø 8 (5/16″)	02282**P1XZ_0**	155
	Ø 10	02282**P2XZ_0**	145
	Ø 12	02282**P3XZ_0**	140
	Ø 1/2″	02282**P5XZ_0**	140
Non-servo-assisted	Ø 8 (5/16″)	02282**P11Z_0**	155
	Ø 10	02282**P21Z_0**	145
	Ø 12	02282**P31Z_0**	140
	Ø 1/2″	02282**P51Z_0**	140

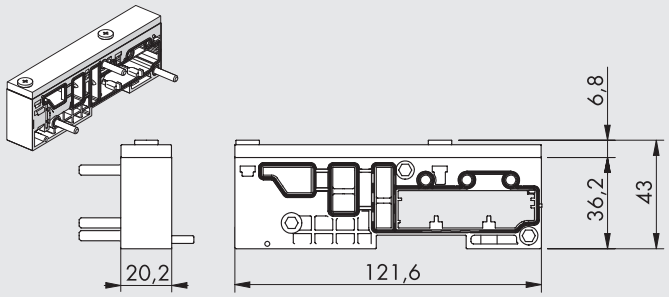
_ = To complete the code enter:
6: øD = 8 mm; **7**: øD = 6 mm; **8**: øD = 4 mm

N.B.: Maximum pressure in the ports 3 and 5: 8 bar



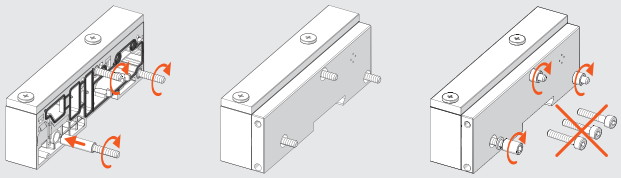


MODULE FOR ELECTRIC VERSION ONLY



Code	Description	Weight [g]
02282**P91Z90**	Module for electric version only	120

N.B.: Version used to make up an EB 80 island without pneumatic part, but only with "S" signal modules and fieldbus or additional electrical connection "E". Bases and valves cannot be added.



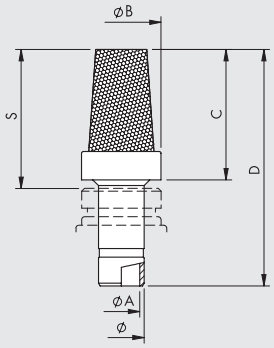
KEY TO CODES

02282	P	3	1	Z	3	0
FAMILY	**SUBSYSTEM**	**PORT FITTING 1**	**PILOT SERVO-ASSISTED**	**UPPER PART**	**PORTS 3 AND 5 FITTING**	**SPECIALTY**
02282 EB 80	**P** Compressed air supply	**1** Pipe fitting Ø 8 (5/16") **2** Pipe fitting Ø 10 **3** Pipe fitting Ø 12 **5** Pipe fitting Ø 1/2" **9** Module for electric version only	**1** Non-servo-assisted **X** Servo-assisted **1** Non-servo-assisted	**Z** The upper part is present	**0** Silencer ▲ **1** Pipe fitting Ø 8 (5/16") ▲ **2** Pipe fitting Ø 10 ▲ **3** Pipe fitting Ø 12 ▲ **5** Pipe fitting Ø 1/2" **6** 2 pipes fitting Ø 8 (5/16") (one for port 3, one for port 5) **7** 2 pipes fitting Ø 6 (one for port 3, one for port 5) **8** 2 pipes fitting Ø 4 (5/32") (one for port 3, one for port 5) **9** Without connection	**0** Standard

▲ For ports 3 and 5 use the same pipe Ø of port 1.

ACCESSORIES

SILENCER FOR FITTING



Ø	Ø A	Ø B	C	D	S
8	6.5	14	23	42	24.5
12	10	18.8	29	51.5	31.5

Code	Description	Flow rate at 6.3 bar [Nl/min]	Weight [g]
W0970530084	Silencer for fitting, Ø 8	2400	15
W0970530086	Silencer for fitting, Ø 12	6000	24

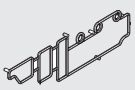
SPARE PARTS

CARTRIDGE

Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 (5/16")
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

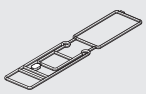
BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

LOWER /UPPER BODY GASKET

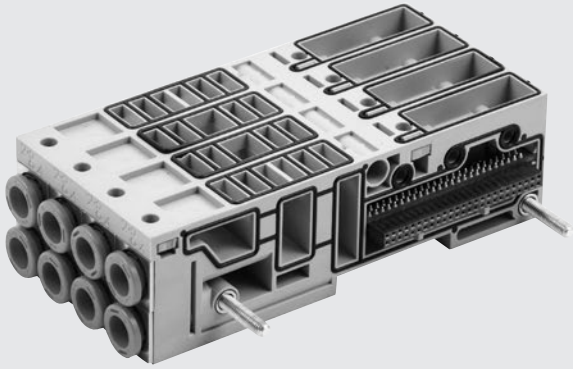


Code	Description
02282R1001	EB 80 lower/upper body gasket kit

Comes in 10-pc. packs

EB 80 BASES FOR VALVES - B

The EB 80 "Bases for valves - B" can be provided with 3 or 4 positions.
A version is available with an electrical connection for a single control of each position, suitable for 5/2 monostable solenoid valves (physically impossible to install other valves). Another version comes with two electrical connections for each position and is suitable for all types of valves.
The electronics in the base controls the signal coming from both the multi-pole connector and the fieldbus, so the base is the same, regardless of the control system of the island.
The air delivery ducts (ports 2 and 4) are made up of cartridge-type push-in fittings. The cartridge can be replaced, for example when the pipe diameter needs to be changed, by pulling out the clip placed under the base.
The air flow ducts (ports 1, 3, 5, X) of the 4-position base are the full flow type. For the 3-position base, either full-flow or one or more sectioned ports can be mounted. With this solution, islands with zones with differentiated pressure can be created.



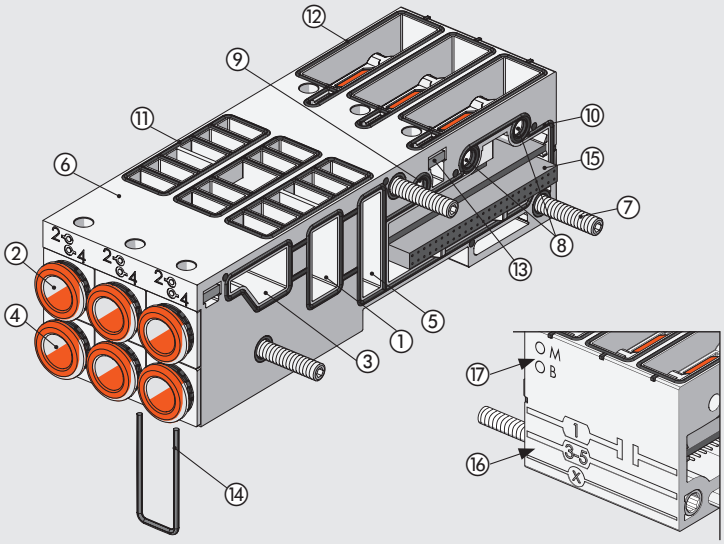
PATENTED

TECHNICAL DATA

Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Fluid		Unlubricated air
Versions		3-position base for controlling 3 solenoid pilots; 3 positions for 6 solenoid pilots; 4 positions for 4 solenoid pilots; 4 positions for 8 solenoid pilots.
		Pipe fittings Ø 4 (5/32"), 6, 8 (5/16"), 1/4" Ducts
		1, 3, 5 and X full flow
		3-position base with 1 sectioned duct; 1, 3 a 5 sectioned; 3 and 5 sectioned (after the first position)
Degree of protection		IP65

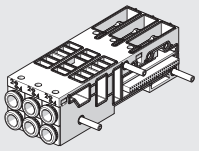
COMPONENTS

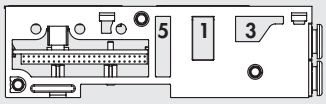
① PORT 1 DUCT
② PORT 2 CARTRIDGE: push-in fitting
③ PORT 3 DUCT
④ PORT 4 CARTRIDGE: push-in fitting
⑤ PORT 5 DUCT
⑥ BODY: technopolymer
⑦ TIE ROD: nickel-plated brass + stainless steel grub screw
⑧ 82/84 DUCT: pilot air relief
⑨ X DUCT: pilot control
⑩ GASKET BETWEEN BASES: NBR
⑪ GASKET FOR THE VALVE: NBR
⑫ GASKET FOR IP65:NBR
⑬ THREADED PLATE for securing the valves: zinc-plated steel
⑭ CLIP for securing the cartridge: stainless steel
⑮ ELECTRONICS
⑯ PICTOGRAM: indication of compressed air system layout
⑰ INDICATION of the type of electronic board:
M = to 3 or 4 controls - B = to 6 or 8 controls

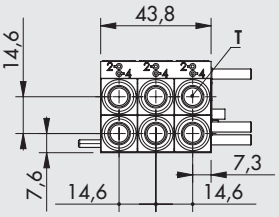


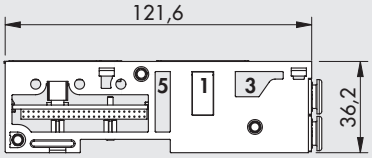
DIMENSIONS - ORDERING CODES

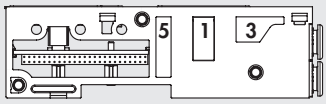
3-POSITION BASE FOR VALVES

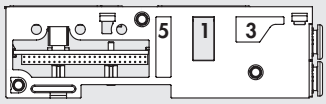




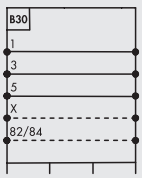


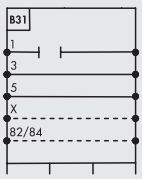


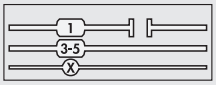


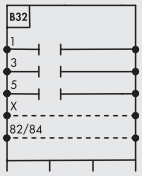


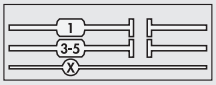
Symbol	T - Pipe fitting	Code 3 CONTROLS	Code 6 CONTROLS	Weight [g]
Full-flow ports	without cartridges	02282**B3031110**	02282**B3061110**	148
	Ø 4 (5/32")	02282**B3034440**	02282**B3064440**	210
	Ø 6	02282**B3036660**	02282**B3066660**	200
	Ø 8 (5/16")	02282**B3038880**	02282**B3068880**	183
	Ø 1/4"	02282**B3032220**	02282**B3062220**	200
Port 1 sectioned after the first position	without cartridges	02282**B3131110**	02282**B3161110**	148
	Ø 4 (5/32")	02282**B3134440**	02282**B3164440**	210
	Ø 6	02282**B3136660**	02282**B3166660**	200
	Ø 8 (5/16")	02282**B3138880**	02282**B3168880**	183
	Ø 1/4"	02282**B3132220**	02282**B3162220**	200
Ports 1, 3 and 5 sectioned after the first position	without cartridges	02282**B3231110**	02282**B3261110**	148
	Ø 4 (5/32")	02282**B3234440**	02282**B3264440**	210
	Ø 6	02282**B3236660**	02282**B3266660**	200
	Ø 8 (5/16")	02282**B3238880**	02282**B3268880**	183
	Ø 1/4"	02282**B3232220**	02282**B3262220**	200
Ports 3 and 5 sectioned after the first position	without cartridges	02282**B3331110**	02282**B3361110**	148
	Ø 4 (5/32")	02282**B3334440**	02282**B3364440**	210
	Ø 6	02282**B3336660**	02282**B3366660**	200
	Ø 8 (5/16")	02282**B3338880**	02282**B3368880**	183
	Ø 1/4"	02282**B3332220**	02282**B3362220**	200

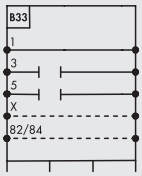


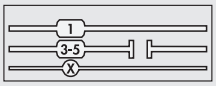




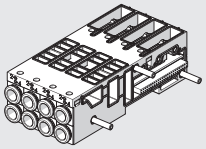


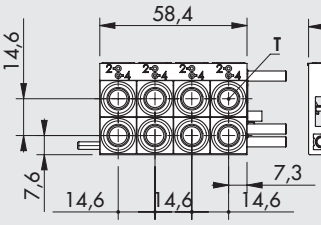


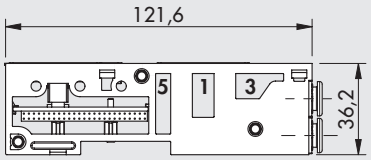




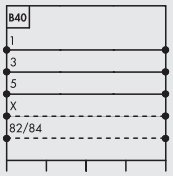
4-POSITION BASE FOR VALVES

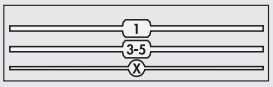






Symbol	T - Pipe fitting	Code 4 CONTROLS	Code 8 CONTROLS	Weight [g]
Full-flow ports	without cartridges	02282**B4041111**	02282**B4081111**	196
	Ø 4 (5/32")	02282**B4044444**	02282**B4084444**	276
	Ø 6	02282**B4046666**	02282**B4086666**	256
	Ø 8 (5/16")	02282**B4048888**	02282**B4088888**	244
	Ø 1/4"	02282**B4042222**	02282**B4082222**	256





METAL WORK PNEUMATIC

KEY TO CODES

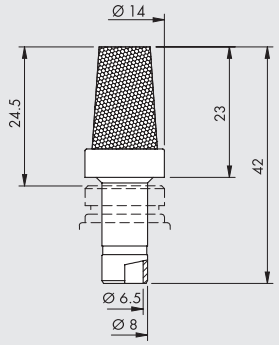
02282	B	3	0	6	8	8	8	0
FAMILY	SUBSYSTEM	NUMBER OF POSITIONS	PORTS IN THE BASE	NUMBER OF SOLENOID PILOT CONTROLS	FITTINGS 1st position (from left)	FITTINGS 2nd position	FITTINGS 3rd position	FITTINGS 4TH position
02282 EB 80	**B** Base for valve	**3** 3 positions **4** 4 positions	**0** Full-flow ports ▲ **1** Port 1 sectioned ▲ **2** Ports 1, 3 and 5 sectioned ▲ **3** Ports 3 and 5 sectioned	▲ **3** 3 controls ■ **4** 4 controls ▲ **6** 6 controls ■ **8** 8 controls	**1** Without cartridges **2** Pipe fitting Ø 1/4" **4** Pipe fitting Ø 4 (5/32") **6** Pipe fitting Ø 6 **8** Pipe fitting Ø 8 (5/16")			▲ **0** (for 3-position base) ■ **1** Without cartridges ■ **2** Pipe fitting Ø 1/4" ■ **4** Pipe fitting Ø 4 (5/32") ■ **6** Pipe fitting Ø 6 ■ **8** Pipe fitting Ø 8 (5/16")

▲ For 3-position base only.

■ For 4-position base only.

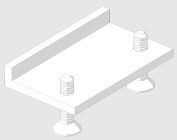
ACCESSORIES

SILENCER FOR FITTING, Ø 8



Code	Description	Flow rate at 6.3 bar [Nl/min]	Weight [g]
W0970530084	Silencer for fitting, Ø 8	2400	15

ADDITIONAL FIXING BRACKET TO OMEGA BAR



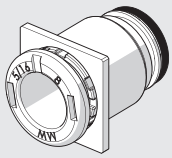
Code	Description	Weight [g]
02282R4001	Additional fixing bar accessory to EB 80 omega bar	5

Individually packed

N.B.: to be used to improve the fixing to Omega bars of islands with more than 40 valves. The bracket must be positioned every 20-25 valves.

SPARE PARTS

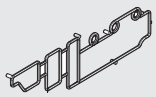
CARTRIDGE



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

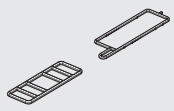
BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

BASE-VALVE GASKET

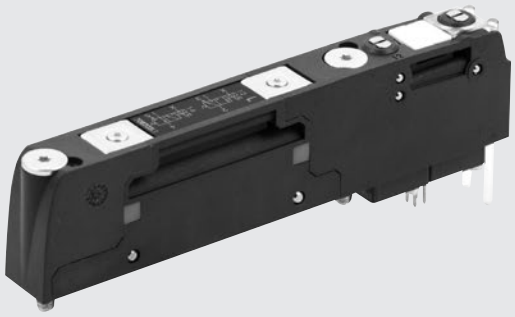


Code	Description
02282R1002	EB 80 base-valve gasket kit

Comes in 10-pc. packs

EB 80 VALVES

The valves in the EB 80 series are designed to ensure high flow using only one small size valve (14 mm wide), without the need of installing a larger size one, to the benefit of component standardisation.
Versions are available with all the main air supply diagrams - from 2/2 to 5/3. The valves are secured to the base with two sturdy M4 captive screws. They come with all the accessories that facilitate their use: manual control, monostable or bistable, LED light, plate with air supply diagram and technical data, white plates available to the customer.
The range also includes:
- High-flow valves which have an innovative system that reaches flow rates that are uncommon for this size of valve.
- Bypass element that makes it possible to boost supply and reliefs or create special pneumatic circuits.
- Circuit shut-off valve (V3V) to connect/disconnect all station valves.
- Dummy valve to plug blank base positions.



TECHNICAL DATA

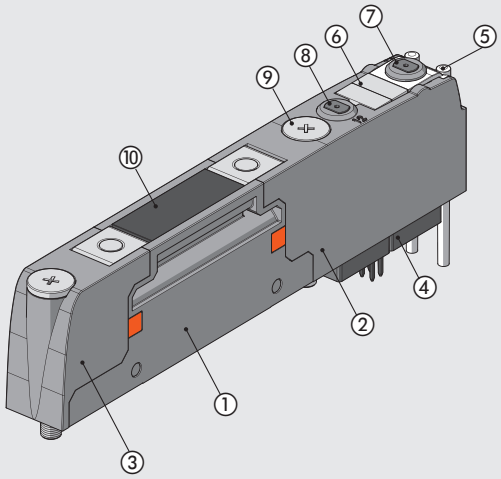
Operating pressure		**5/2 and 5/3**			**2/2 and 3/2**		
Non-assisted valves	bar	3 to 8			3.5 to 8		
	MPa	0.3 to 0.8			0.35 to 0.8		
	psi	43 to 116			51 to 116		
Assisted valves	bar	Vacuum to 10					
	MPa	Vacuum to 1					
	psi	Vacuum to 145					
Servo pressure	bar	3 to 8			min. (see graph on page **B2**.53) / max. 8		
	MPa	0.3 to 0.8			min. (see graph on page **B2**.53) / max. 0.8		
	psi	43 to 116			min. (see graph on page **B2**.53) / max. 116		
Ambient temperature	°C	-10 to 50 (at 8 bar)					
	°F	14 to 122 (at 8 bar)					
Flow rate at 6.3 bar ΔP 1 bar		**Ø 4 (5/32")**	**Ø 6**	**Ø 8 (5/16")**	**Ø 1/4"**	**Ø 10 ****	**Ø 3/8" ****
valve 2/2	Nl/min	350	430	500	430	-	-
valve 3/2	Nl/min	350	600	700	600	1250	1250
valve 5/2	Nl/min	350	650	800	650	1250 - 1400	1250 - 1400
valve 5/3	Nl/min	350	460	500	460	1000 - 1250	1000 - 1250
valve V3V (R)	Nl/min	-	-	-	-	1000	1000
Actuation response time (TRA) / reset response time (TRR) at 6 bar							
TRA/TRR valves 2/2 and 3/2	ms	14 / 28					
TRA/TRR valves 5/2 monostable and shut-off valve	ms	12 / 45					
TRA/TRR valve 5/2 bistable	ms	12 / 14					
TRA/TRR valve 5/3	ms	15 / 45					
TRA/TRR valve 3/2 high flow	ms	13 / 36					
Fluid		Unlubricated air					
Air quality required		ISO 8573-1 class 4-7-3					
Supply voltage range	VDC	12 -10% 24 +30%					
Minimum operating voltage	VDC	10.8 *					
Maximum operating voltage	VDC	31.2					
Maximum admissible voltage	VDC	32 ***					
Power for each valve	W	3 for a few milliseconds. Holding 0.3					
Drive		PNP or NPN					
Solenoid rating		100% ED					
Versions		Manual monostable or bistable control. Various compressed air diagrams					
Degree of protection		IP65					

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power pack output using the calculations shown on page B2**.24
** Using high-flow valves or connected valves - see pages **B2**.54
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

METAL WORK PNEUMATIC

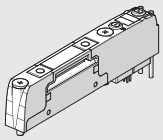
COMPONENTS

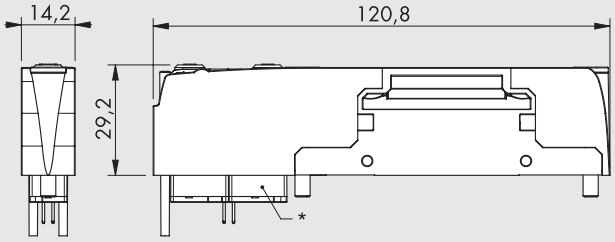
① BODY: technopolymer
② CONTROL: technopolymer
③ BASE: technopolymer
④ SOLENOID PILOT
⑤ DISPLAY: LED light and optical tester in technopolymer
⑥ TAG: removable
⑦ MANUAL CONTROL 14, for port 4: monostable or bistable, in brass
⑧ MANUAL CONTROL 12, for port 2: monostable or bistable, in brass
⑨ SCREW FOR FIXING TO THE BASE: M4 with PH 1 cross-head, zinc-plated steel. Tightening torque: 1.2 Nm
⑩ TAG: technopolymer with laser-etched wording



DIMENSIONS - ORDERING CODES

EB 80 VALVE



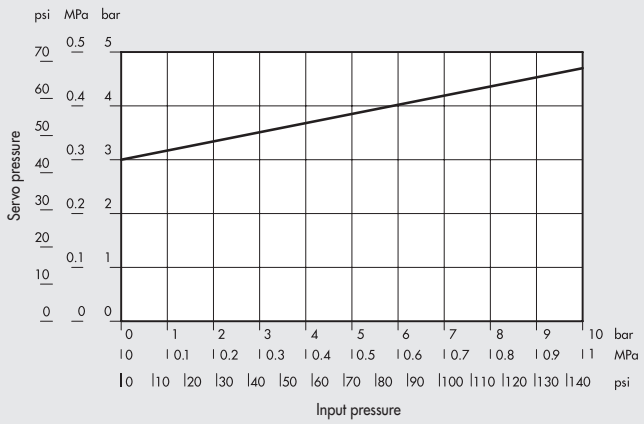


* The second solenoid pilot is not present in the valves V= 5/2 monostable.

N.B.: The valves Z, I, W, L, K, O can be mounted only on bases having 6 or 8 controls.

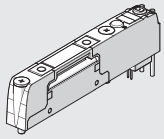
SERVO MINIMUM PRESSURE FOR VALVES 2/2 AND 3/2

If the island is configured without servo, minimum pressure 3.5 bar

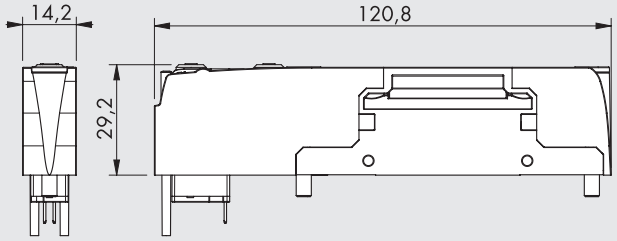


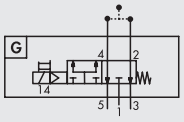
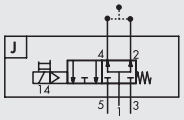
Symbol	Type	Code	Manual control	Weight [g]
Z	2 valves 2/2 NC	708203**Z0**	monostable	82
		708203**Z1**	bistable	82
I	2 valves 3/2 NC	708203**I0**	monostable	82
		708203**I1**	bistable	82
	valid as 5/3 OC			
W	2 valves 3/2 NO	708203**W0**	monostable	82
		708203**W1**	bistable	82
	valid as 5/3 PC			
L	3/2 NC + 3/2 NO	708203**L0**	monostable	82
		708203**L1**	bistable	82
V	monostable 5/2	708203**V0**	monostable	69
		708203**V1**	bistable	69
K	bistable 5/2	708203**K0**	monostable	81
		708203**K1**	bistable	81
O	5/3 CC	708203**O0**	monostable	82
		708203**O1**	bistable	82

EB 80 HIGH-FLOW VALVE



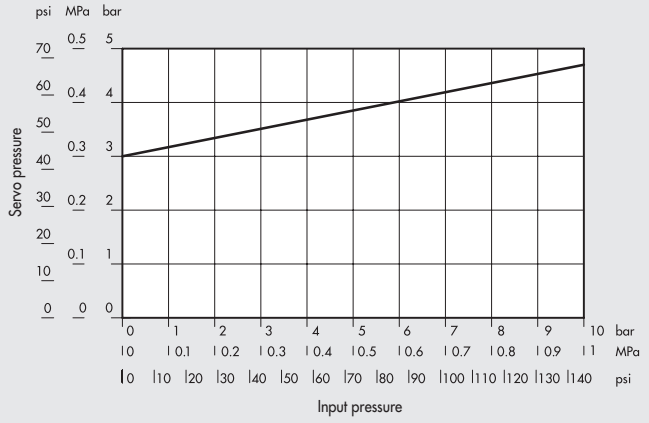
PATENTED



Symbol	Type	Code	Manual control	Weight [g]
G 	3/2 NC high flow	708203**G0**	monostable	69
		708203**G1**	bistable	69
J 	3/2 NO high flow	708203**J0**	monostable	69
		708203**J1**	bistable	69

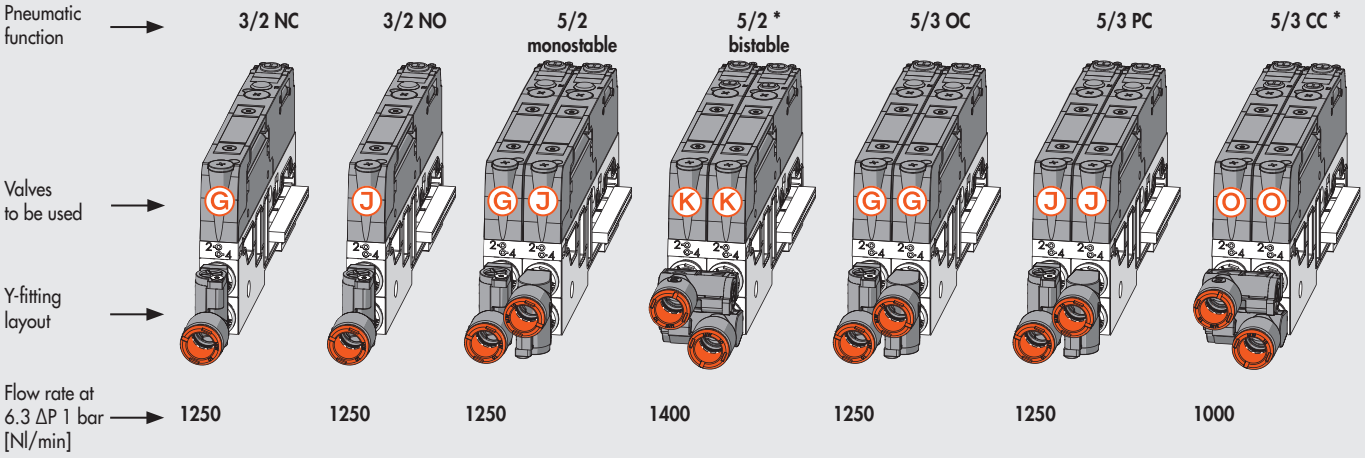
SERVO MINIMUM PRESSURE

If the island is configured without servo, minimum pressure 3.5 bar



HOW TO GET HIGH-FLOW RATE FOR EACH PNEUMATIC FUNCTION

N.B. The two cartridges on the base (2 and 4) must fit the Ø 8 mm pipe.
Outputs 2 and 4 must be connected one to the other. To do this, you can use the special Y-fitting.
When connecting one or more valves using the Y-fitting, the pneumatic system functions must be configured according to the following diagram.

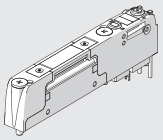


In order to get 5/2 monostable, 5/2 bistable and 5/3 DC high flow, use two parallel valves, by energizing the solenoids simultaneously.

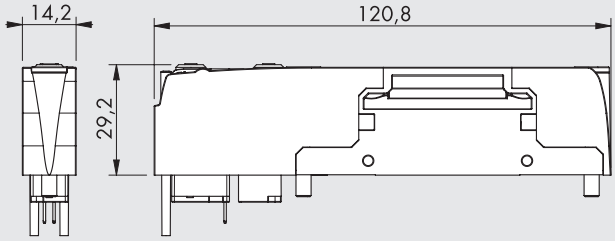
* The Y-fittings of this valve must be installed longitudinally with one Y-fitting connecting the two outputs (2) and the other the two outputs (4).
The solenoid pilots must be operated simultaneously.

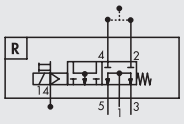
METAL WORK PNEUMATIC

EB 80 SHUT-OFF VALVE (V3V)



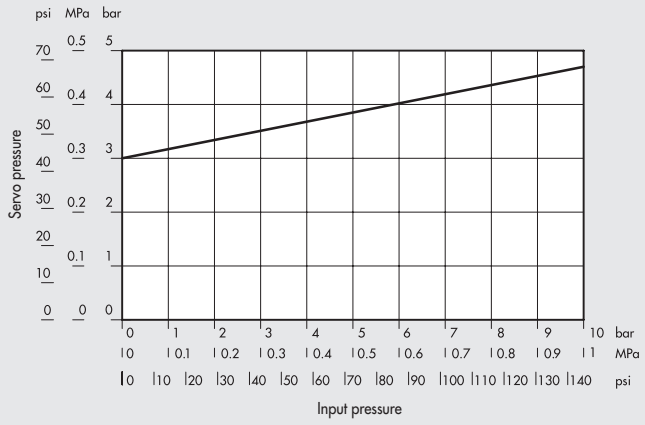
PATENTED



Symbol	Type	Code	Manual control	Weight [g]
R 	Shut-off valve	708203**R0**	monostable	69
		708203**R1**	bistable	69

SERVO MINIMUM PRESSURE

If the island is configured without servo, minimum pressure 3.5 bar

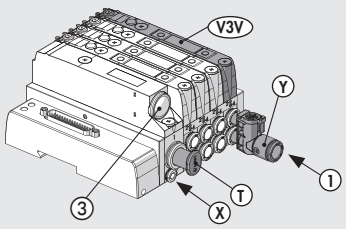


This valve enables the supply/relief of all station valves. The pneumatic supply is delivered via ports 2 and 4 on the base underneath the valve. It is discharged via ports 3 and 5 with general station discharge. Port 1 on pneumatic supply module P must be plugged for the system to operate and slave the island by supplying continuous pressure to port X.
The shut-off valve is designed for the following uses and benefits:
- the valve can be fitted in any position and not necessarily to the left of the others;
- if the station is split into areas with separate channels (1) via intermediate modules M or bases with port 1 selected, the shut-off valve only operates in the area where it is fitted.
- if the capacity of a shut-off valve is not sufficient for its use, two or more can be fitted and operated simultaneously.

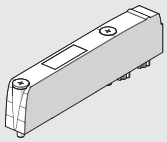
TECHNICAL DATA		
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	1000 (with 2 Ø 8 fittings or a Y fitting, pipe Ø 10 mm or 3/8")
Exhaust flow rate at 6.3 bar	Nl/min	660
Actuation response time (TRA) / reset response time (TRR) at 6 bar	ms	12/45
Servo pressure		See technical data 3/2 valves (page **B2**.52)

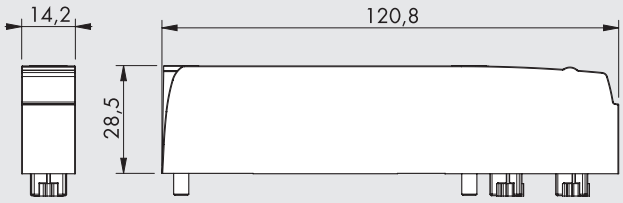
SHUT-OFF VALVE DIAGRAM

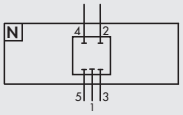
V3V Shut-off valve, can be fitted in any position
1 Pneumatic supply
3 Relief
Y Y-fitting with black bush (page **B2**.57)
T Plug port 1 of pneumatic supply P module
X Always use the pneumatic supply servo version



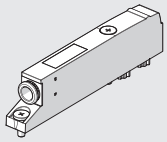
DUMMY VALVE (PLUG)

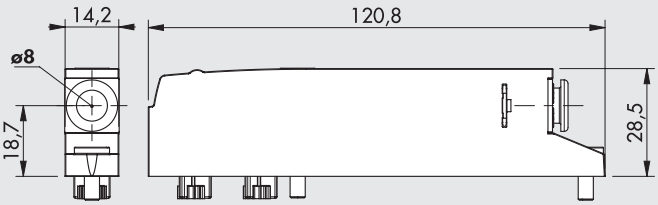


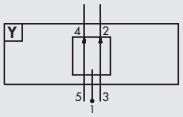


Symbol	Description	Code	Weight [g]
N 	Dummy valve	708203**N0**	47

BYPASS





Symbol	Description	Code	Weight [g]
Y 	Bypass Ø8	708203**Y8**	50

N.B.: Maximum pressure in the ports 2 and 4: 8 bar

Connects port 3 of the base to port 2 and port 5 to port 4.
The fitting present is connected to port 1.

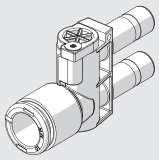
KEY TO CODES

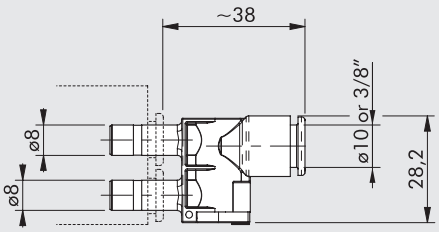
7082	03	V	0
FAMILY	**TYPE**	**SCHEMA**	**MANUAL CONTROL**
7082 EB 80	**03** Electric, servo-assisted	▲ **Z** 2 valves 2/2NC ▲ **I** 2 valves 3/2 NC ▲ **W** 2 valves 3/2 NO ▲ **L** 3/2 NC + 3/2 NO **V** 5/2 monostable ▲ **K** 5/2 bistable ▲ **O** 5/3 CC **G** 3/2 NC high flow **J** 3/2 NO high flow ✚ **R** Shut-off valve **Y** Bypass **N** Dummy valve (plug)	**0** Monostable or for dummy valve **1** Bistable **8** For bypass only

▲ Can only be used with 6 or 8 control bases.
✚ Requires inlet port X slave synchronisation.

ACCESSORIES

Y-FITTING





Code	Description	Release bushing color
02282R2Y04	Y-fitting for EB 80 Ø 8 (5/16") - Ø 10	Orange
02282R2Y14	Y-fitting for EB 80 Ø 8 (5/16") - Ø 10	Black
02282R2Y07	Y-fitting for EB 80 Ø 8 (5/16") - Ø 3/8"	Orange
02282R2Y17	Y-fitting for EB 80 Ø 8 (5/16") - Ø 3/8"	Black

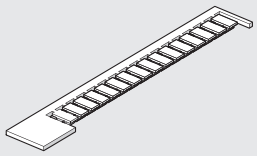
SPARE PARTS

BASE FIXING SCREW

Code	Description
02282R3000	Kit of screws for fixing the EB 80 base

Comes in 10-pc. packs

IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

NOTES

EB 80 PROPORTIONAL PRESSURE REGULATOR - A

The EB 80 proportional pressure regulator is an extremely precise and reliable component part. It is designed to regulate the pressure of a system with varying values according to the electrical control setting.
It can be inserted in any position and on all EB 80 islands.
Highly flexible, it comes in various types: for the 25/44-pin multi-pole islands, it is possible to use the analogue regulator with external M12 electrical connection, it accepts commands in Volts, mA and via RS232 protocol; in all the versions with a fieldbus, the connections and electrical controls are directly incorporated in the internal hardware/software that can be easily managed by the user in a simple and intuitive way every island and can accommodate up to 16 pressure regulators that are connected to all the protocols available for the EB 80 (also in additional islands).
An island of electronic regulators arranged in a row can be created, without necessarily requiring solenoid valves.

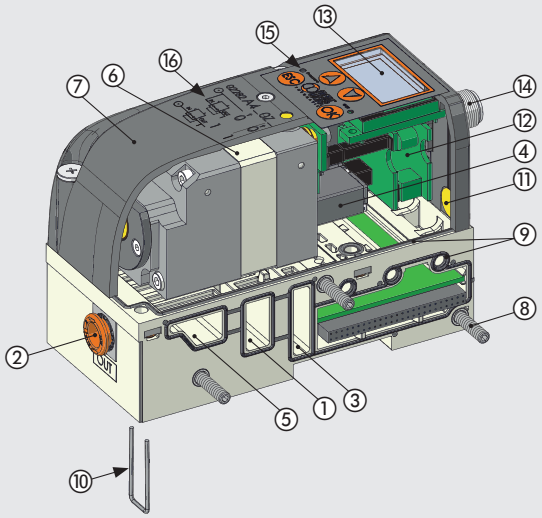
The "closed loop" system has a precision sensor that detects the output pressure value; the control system compares the value read with the value set in real time and two mini-solenoid valves adjust the pressure until the target value is reached.
As for the Regtronic family, in this case too, you can opt for a regulator with a screen that displays the pressure and a whole series of information including diagnostics that facilitates the configuration or a version without display where the configuration is done remotely.
As to the pneumatic system, there are two possibilities: with Local Regulation or Series Regulation. In the former case, the air taken from port 1 of the island is regulated by a quick-fit coupling with the front side in the base; in this way, several regulators can be placed in succession. In the latter case, the pressure is regulated directly at port 1 of the island, so all the valves downstream are supplied with the pressure set by the regulator. The front outlet fitting, which has an RL9 cap in this version, is still present and operational.

TECHNICAL DATA		LOCAL OUTPUT VERSION		SERIES CONTROL VERSION	
Fluid		Filtered, unlubricated air. The air must be filtered at least 10 µm			
MIN inlet pressure	bar	Regulation pressure + 0.5 to 1			
MAX inlet pressure	bar	10.5			
Temperature range	°C	from 0 to 50			
Pressure regulation range	bar	from 0.05 to 10 (settable full scale and minimum pressure)			
Flow rate at 6.3 bar ΔP 0.5	Nl/min	720		850	
Flow rate at 6.3 bar ΔP 1	Nl/min	1000		1250	
Exhaust flow rate at 6.3 bar with 0.1 bar overpressure	Nl/min	380		450	
Exhaust flow rate at 6.3 bar with 0.5 bar overpressure	Nl/min	800		1100	
Response time	Volume [cc]	100	1000	100	1000
from 6 to 7 bar	s	0.1	0.15	0.1	0.15
from 7 to 6 bar	s	0.1	0.15	0.1	0.15
Weight	kg	0.6			
Class of protection		IP 65			
Hysteresis		≤ ± 0.2% (Full scale)			
Repeatability		≤ ± 0.2% (Full scale)			
Sensitivity/Dead-band		setting range 10 to 300 mbar			
Output pressure (display version)	Accuracy	≤ ± 0.3% (Full scale)			
	Unit of measurement	bar, MPa, psi			
	Minimum resolution	0.01 bar - 0.001 MPa - 0.01 psi			
Temperature characteristics		Max 2 mbar / °C			
Installation position		In any position			
Current input in the fieldbus version		Max 220 mA at 12VDC			
Supply voltage range analog version	VDC	12 -10% to 24 +30%			
Minimum operating voltage	VDC	10.8			
Maximum operating voltage	VDC	31.2			
Maximum admissible voltage	VDC	32 *			
Current absorption		Max 220 mA at 12VDC			
Input signal (input impedence)	Voltage	0 to 5 VDC, 0 to 10 VDC (approx. 6.3 KΩ)			
	Current	4 to 20 mA (approx. 100 Ω)			
	Serial ports	RS 232			
	Manual	Keypad			
Output signals in the analogue version					
	Analog in current	4 to 20 mA			
	Analog voltage	0 to 10 VDC (1 VDC = 1 bar) - 1 mA max			
	Digital	PNP open collector output: max 24VDC 60 mA			
		NPN open collector output: max 24VDC 60 mA			
	Analog output accuracy	≤ ± 0.4% (Full scale)			
Notes		The features shown refer to the static condition only. With air consumption the pressure may vary.			
		On all anolog versions you can set the parameters using the software "MWRegtronic" downloadable from the website www.metalwork.eu; to connect the PC to Regtronic you can use the cable code W0970513019			
		For more details, please refer to the User Manual.			

*** IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

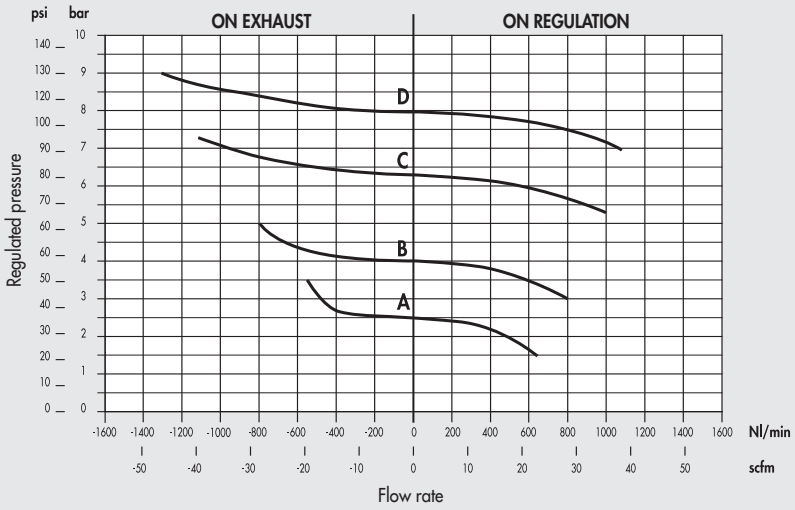
COMPONENTS

① PORT 1 DUCT
② CARTRIDGE Ø8: push-in fitting
③ PORT 3 DUCT
④ SOLENOID VALVE: 10 mm series PLT-10
⑤ PORT 5 DUCT
⑥ BODIES: aluminium
⑦ COVER: technopolymer
⑧ TIE ROD: nickel-plated brass with stainless stell grub screws
⑨ GASKETS: NBR
⑩ CLIP for securing the cartridge: stainless steel
⑪ Compensation DIAPHRAGM: PTFE
⑫ ELECTRONIC BOARDS
⑬ DISPLAY and keypad or cover
⑭ CONNECTOR M12 (for analog version)
⑮ INDICATOR LED
⑯ IDENTIFICATION of wording with laser



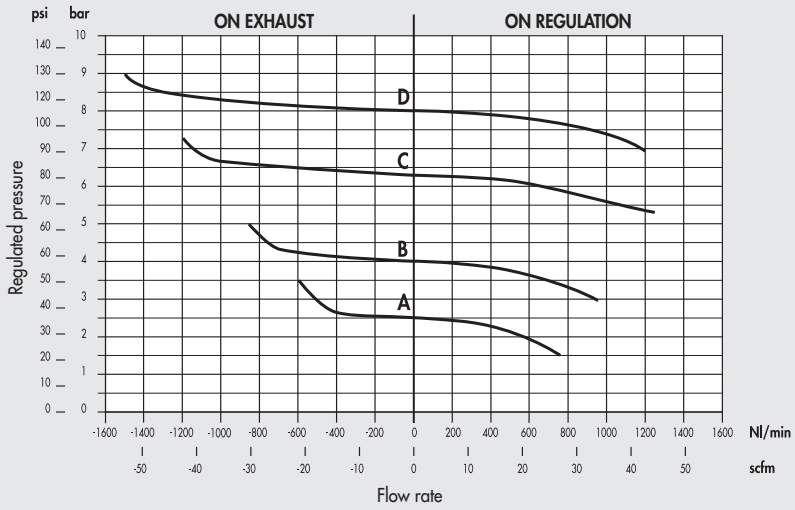
FLOW CHARTS

LOCAL OUTLET (Ø8)



A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
Pm = 10 bar

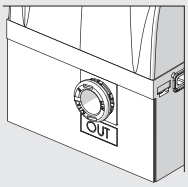
REGULATION IN SERIES

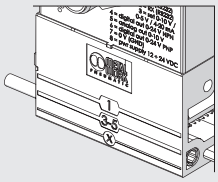


A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
Pm = 10 bar

VERSIONS

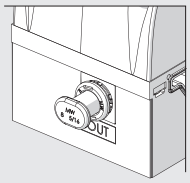
PASS-THROUGH BASE – LOCAL OUTLET

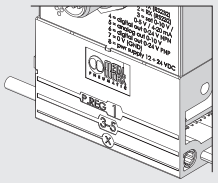




Air outlet regulated only by the front Ø8 fitting.

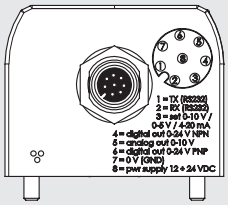
REGULATION IN SERIES





Air outlet adjusted to the next bases.
Front outlet closed, however usable by removing the cap from the fitting.

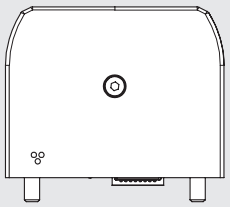
M12 EXTERNAL ANALOGUE CONTROL (MULTI-POLE ISLANDS)



8 PIN M12x1

Pin	Signal	Description	Lead colour
1	TX	RS232	White
2	RX	RS232	Brown
3	Pressure set	0 to 10 VDC / 0 to 5 VDC	Green
		4 to 20 mA	
4	Digital out	NPN	Yellow
5	Analog out	Voltage version 0 to 10 VDC	Gray
		Current version 4 to 20 mA	
6	Digital out	PNP	Pink
7	0 VDC	Power supply	Blue
8	+ VDC	Power supply	Red

FIELDBUS CONTROL



WITH REMOTE-CONTROL

The remote-control version of the Regtronic has two diagnostic LEDs.

WITH DISPLAY

The display version also has buttons for entering the various parameters.

PROGRAMMABLE AND FLEXIBLE

Setting options:

- **LANGUAGE**
- **UNIT OF MEASUREMENT**
- **TYPE OF INPUT**
- **TYPE OF DIGITAL OUTPUT**
- **DEAD-BAND**
- **FULL SCALE**
- **MINIMUM PRESSURE**

PRECISION

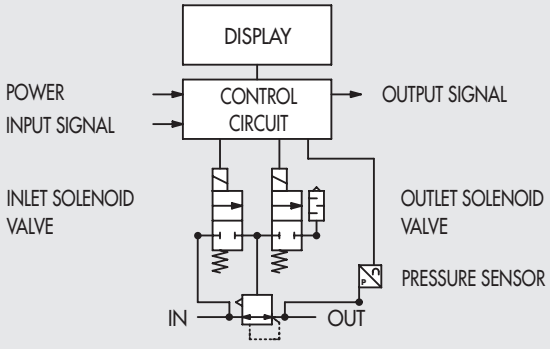
Linearity
± 0.5 % (full scale)

Hysteresis
± 0.2 % (full scale)

Repeatability
± 0.2 % (full scale)

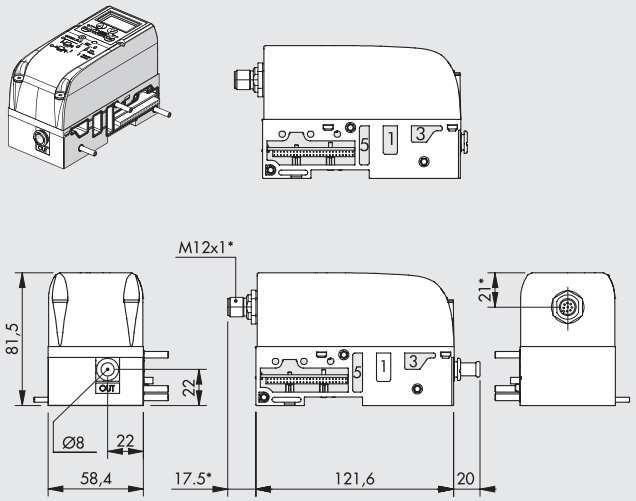
Sensitivity
range 10 to 300 mbar

FUNCTION DIAGRAM



DIMENSIONS - ORDERING CODES

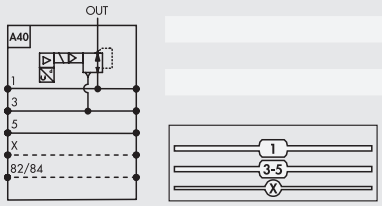
PROPORTIONAL PRESSURE REGULATOR



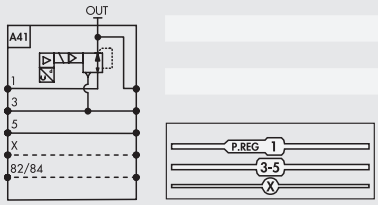
* For version with electrical analogue control only.

Electrical connection with M12 connector

Symbol	Display	Code 0-10V analogue OUT	Code 4-20 mA analogue OUT	Weight [g]
Port 1 pass-through	WITH	02282**A400Z00**	02282**A402Z00**	600
	WITHOUT	02282**A400Z10**	02282**A402Z10**	600

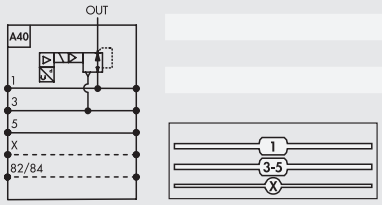


Port 1 sectioned	WITH	02282**A410Z00**	02282**A412Z00**	600
	WITHOUT	02282**A410Z10**	02282**A412Z10**	600

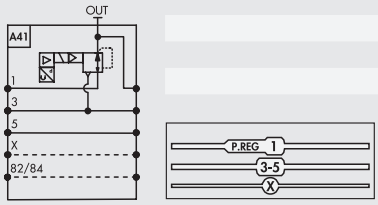


Electrical connection via fieldbus

Symbol	Display	Code	Weight [g]
Port 1 pass-through	WITH	02282**A401Z00**	600
	WITHOUT	02282**A401Z10**	600



Port 1 sectioned	WITH	02282**A411Z00**	600
	WITHOUT	02282**A411Z10**	600

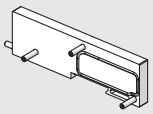


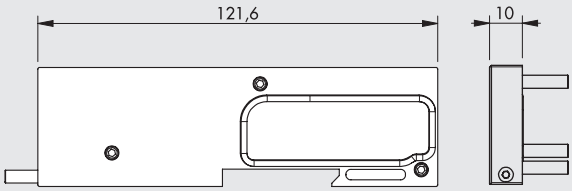
KEY TO CODES

02282	A4	0	1	Z	0	0
FAMILY	**SUBSYSTEM**	**TYPE OF BASE**	**TYPE OF ELECTRICAL CONNECTION**	**SPECIALTY**	**DISPLAY**	**SPECIALTY**
02282 EB 80	**A4** Proportional pressure regulator	**0** Base port 1 pass-through local outlet **1** Base port 1 sectioned in-series regulation	**0** External electrical analogue control connector M12 0-10V analogue OUT **1** Electrical control via fieldbus **2** External electrical analogue control connector M12, 4-20 mA analogue OUT	**Z** Standard	**0** With **1** Without	**0** Standard

ACCESSORIES: ANALOG VERSION

CLOSING PLATE FOR EB 80 MANIFOLD PRESSURE REGULATOR



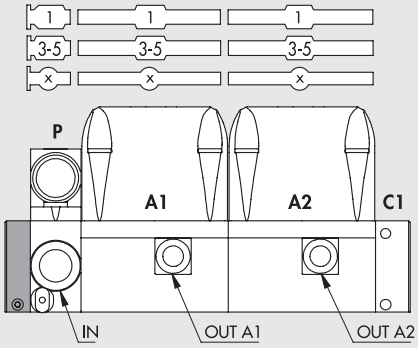


Code	Description	Weight [g]
02282R8000	Closing plate for EB 80 manifold proportional pressure regulator with M12 connector	118

N.B.: Can only be used with regulators code 02282**A400Z00** - 02282**A400Z10** - 02282**A410Z00** - 02282**A410Z10** - 02282**A402Z00** - 02282**A402Z10** - 02282**A412Z00** - 02282**A412Z10**

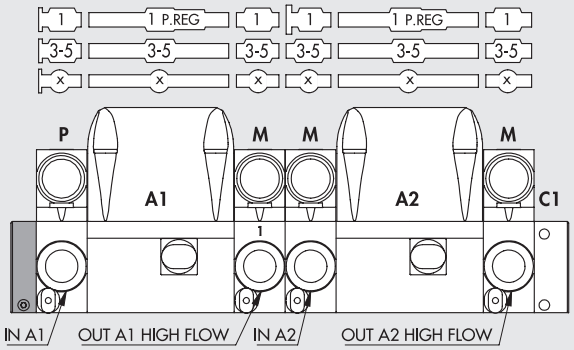
This terminal is used to fit multiple EB 80 pressure proportional regulators controlled by an M12 connector, without using EB 80 power supplies.
Each regular can be controlled individually via its own M12 connector.
Several configurable solutions can thus be obtained, as illustrated in examples below:

COMMON POWER SUPPLY



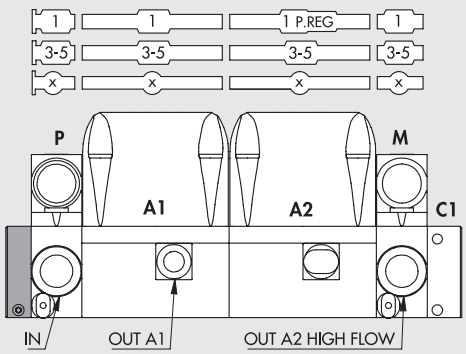
Island consisting of a single pneumatic supply (P) and front outlet from individual regulators.

INDEPENDENT POWER SUPPLY AND HIGH-FLOW RATE



Island consisting of independent regulator power supply, via P supplies and intermediate elements M (with port 1 closed) placed upstream of the regulator. High-flow outputs are obtained via intermediate elements M placed downstream of the individual regulators.

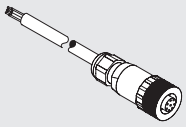
HYBRID



Hybrid island.
It consists of regulators with a local output (**A1**) and in-series high-flow rate regulators via intermediate element **M** downstream of regulator **A2**. Power supply **P** is in common.

P = compressed-air supply, page B2.46
M = intermediate support, page B2.64
C1 = closed end-plate for islands with multi-pole connector, page B2.70
A = proportional pressure regulator

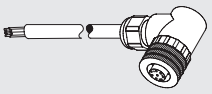
CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, STRAIGHT



Pin	Cable color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

Code	Description
W0970513010	Connector M12x1, 8-pin, A-coded, female, straight, with cable L = 5 m

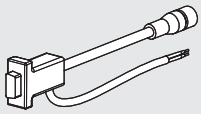
CONNECTOR M12x1, 8-PIN, A-CODED, FEMALE, 90°, WITH CABLE



Pin	Cable color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

Code	Description
W0970513011	Connector M12x1, 8-pin, A-coded, female, 90°, with cable L = 5 m

CONFIGURATION CABLE



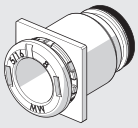
Code	Description
W0970513019	Configuration cable

The cable consists of:
- M12 8-PIN female connector to be connected to regulator
- RS232 serial connector to be connected to PC
- 2 wires to supply 24VDC power

The package also includes a RS232-USB adapter

SPARE PARTS

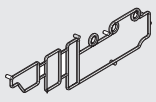
CARTRIDGE



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

BASE INTERFACE GASKET

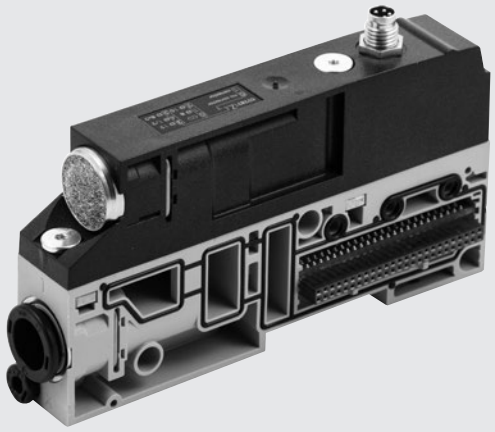


Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

EB 80 INTERMEDIATE SUPPORT - M

The "Intermediate modules - M" perform a series of functions.
They can help increase the flow rate available in an EB 80 island, when various valves are used at the same time. They can be used to divide an island in areas of different pressures.
They can also be used as additional electrical power supply, when there is a high number of solenoid pilots actuated simultaneously; or to electrically separate and cut out a part of the island, in the event of an emergency, for example.
Intermediate modules can be placed in any position in the EB 80 island.
Several versions are available, with fittings for pipes of different diameter.
Relief ports 3 and 5 can be either connected using a silencer or conveyed via a fitting.
A version with separate ports 3 and 5 is also available. This feature is useful in versions with pilot servo-assistance to power the valves from ports 3 and 5, at different pressures, from vacuum to 8 bar.
The lower body of the intermediate plate comes with different air flow ducts: with full flow ports or one or more closed ports.



TECHNICAL DATA

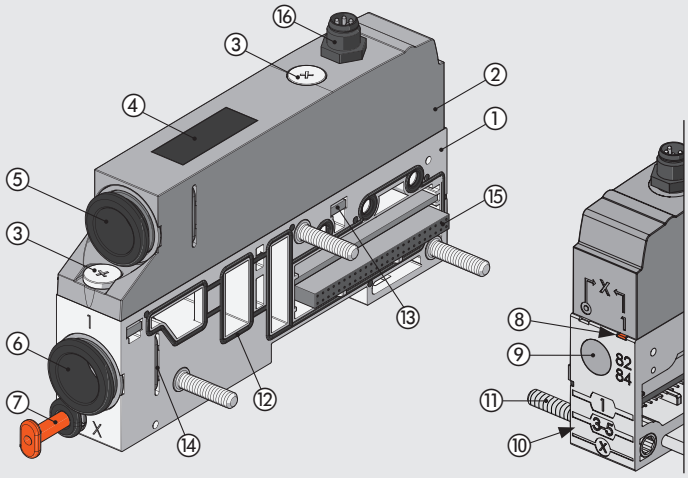
Operating pressure		Vacuum to 10 bar / Vacuum to 1 MPa / Vacuum to 145 psi			
Ambient temperature		-10 to + 50 °C / 14 to 122 °F			
Flow rate at 6.3 bar ΔP 1 bar		Ø 8 (5/16")	Ø 10	Ø 12	Ø 1/2"
Feeding (port 1)	Nl/min	1800	2800	3500	3500
Exhaust with fitting (ports 3 and 5)	Nl/min	2000	3200	4400	4400
Separate exhausts Ø 8	Nl/min	1800 x 2	-	-	-
Flow rate at 6.3 bar free exhaust					
Exhaust with fitting (ports 3 and 5)	Nl/min	2700	3900	6100	6100
Silenced exhaust	Nl/min	3600			
Exhaust with fitting Ø 12 and silencer W0970530086	Nl/min	6000			
Separate exhausts Ø 8 (N.B.: Pmax 8 bar)	Nl/min	2700 x 2	-	-	-
Fluid		Unlubricated air			
Additional electrical power supply		M8 4-pin connector *			
Voltage range	VDC	12 to 31.2			
Maximum number of solenoid pilots that can be actuated simultaneously					
from the additional electrical connection:					
at 24VDC		With 100% simultaneity: 48 / With 60% simultaneity: 80			
at 12VDC		With 100% simultaneity: 32 / With 60% simultaneity: 64			
Versions		Pipe fittings Ø 8, 10, 12, 1/2"; Silenced relief, conveyed relief, ports 3 and 5 separate			
		Full-flow ports in the base, 1 closed, 1, 3 and 5 closed, 3 and 5 closed, 1, 3, 5 and X closed			
		With or without additional electrical power supply			
Degree of protection		IP65 (with connectors connected or plugged if not used)			

IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.

* If electric power is not supplied: the red power LED light comes on and the LEDs at the base keep flashing (voltage out of range); in the version with multi-pin electrical connection, the "OUT" fault signal is triggered; in the version with fieldbus, a software message is sent.

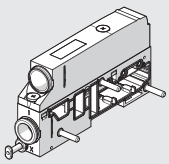
COMPONENTS

① LOWER PART BODY: technopolymer
② UPPER PART BODY: technopolymer
③ SCREWS for fixing between the bodies: zinc-plated steel (Tightening torque: 1.2 Nm)
④ TAG with laser-etched wording: technopolymer
⑤ AIR RELIEF: silencer or pipe fitting
⑥ POWER SUPPLY: pipe fitting
⑦ PILOTING (X): pipe fitting Ø 4
⑧ INDICATOR: indicating whether power supply to pilots is separate or not
⑨ PILOT RELIEF: silencer in HDPE
⑩ PICTOGRAM: indication of compressed air system layout
⑪ TIE RODS: zinc-plated steel
⑫ GASKET: NBR
⑬ THREADED PLATE: zinc-plated steel
⑭ CARTRIDGE FIXING CLIP: stainless steel
⑮ ELECTRONIC BOARD
⑯ M8 CONNECTOR: only for version with additional electrical power supply

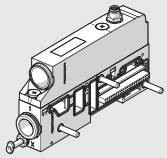


DIMENSIONS - ORDERING CODES

INTERMEDIATE MODULE - SILENCED RELIEF



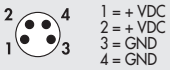
WITHOUT additional electrical power supply



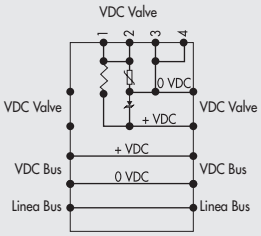
WITH additional electric power supply

WIRING DIAGRAM NTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

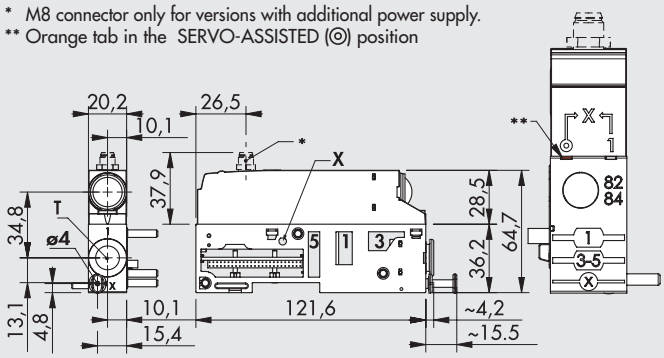
M8 male connector

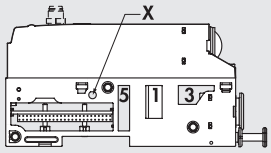


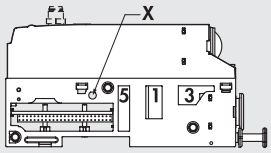
1 = + VDC
2 = + VDC
3 = GND
4 = GND

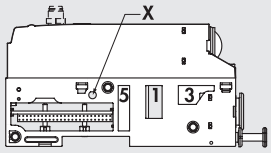


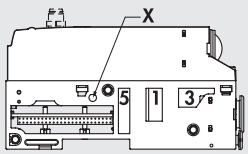
* M8 connector only for versions with additional power supply.
** Orange tab in the SERVO-ASSISTED (◎) position





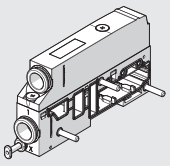




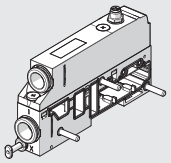


Symbol	T Pipe fitting	Code Additional electric power supply WITHOUT	 WITH	Weight [g]
Full-flow ports	Ø 8 (5/16")	02282**M100Z00**	02282**M101Z01**	168
	Ø 10	02282**M200Z00**	02282**M201Z01**	164
	Ø 12	02282**M300Z00**	02282**M301Z01**	160
	Ø 1/2"	02282**M500Z00**	02282**M501Z01**	160
Port 1 closed	Ø 8 (5/16")	02282**M110Z00**	02282**M111Z01**	168
	Ø 10	02282**M210Z00**	02282**M211Z01**	164
	Ø 12	02282**M310Z00**	02282**M311Z01**	160
	Ø 1/2"	02282**M510Z00**	02282**M511Z01**	160
Ports 1, 3 and 5 closed	Ø 8 (5/16")	02282**M120Z00**	02282**M121Z01**	168
	Ø 10	02282**M220Z00**	02282**M221Z01**	164
	Ø 12	02282**M320Z00**	02282**M321Z01**	160
	Ø 1/2"	02282**M520Z00**	02282**M521Z01**	160
Ports 3 and 5 closed	Ø 8 (5/16")	02282**M130Z00**	02282**M131Z01**	168
	Ø 10	02282**M230Z00**	02282**M231Z01**	164
	Ø 12	02282**M330Z00**	02282**M331Z01**	160
	Ø 1/2"	02282**M530Z00**	02282**M531Z01**	160
Ports 1, 3, 5 and X closed	Ø 8 (5/16")	02282**M140Z00**	02282**M141Z01**	168
	Ø 10	02282**M240Z00**	02282**M241Z01**	164
	Ø 12	02282**M340Z00**	02282**M341Z01**	160
	Ø 1/2"	02282**M540Z00**	02282**M541Z01**	160

INTERMEDIATE MODULE - CONVEYED RELIEF



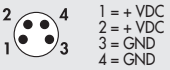
WITHOUT additional electrical power supply



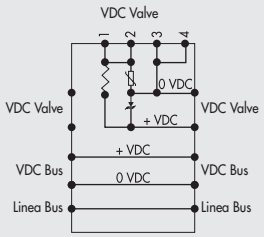
WITH additional electric power supply

WIRING DIAGRAM NTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

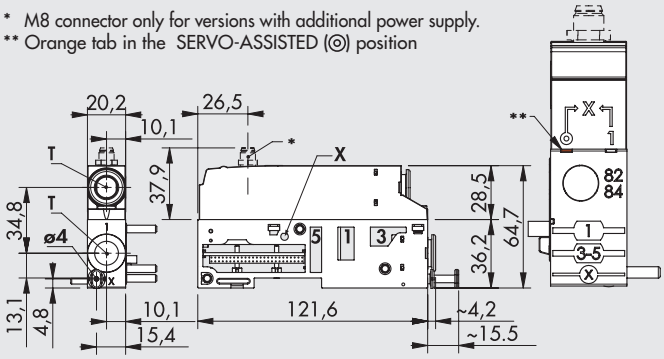
M8 male connector

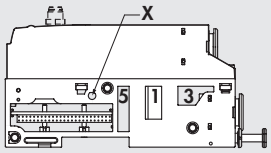


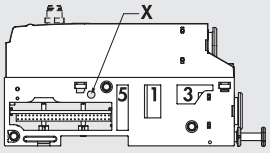
1 = + VDC
2 = + VDC
3 = GND
4 = GND

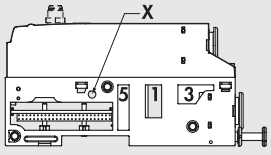


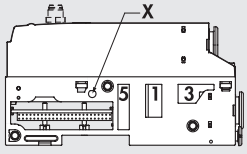
* M8 connector only for versions with additional power supply.
** Orange tab in the SERVO-ASSISTED (◎) position



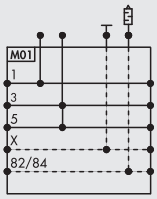


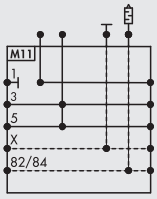


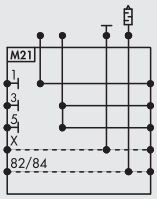


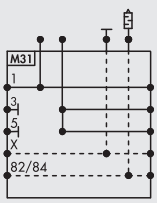


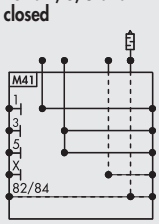
Symbol	T Pipe fitting	Code Additional electric power supply WITHOUT	 WITH	Weigh [g]
Full-flow ports	Ø 8 (5/16")	02282**M100Z10**	02282**M101Z11**	168
	Ø 10	02282**M200Z20**	02282**M201Z21**	164
	Ø 12	02282**M300Z30**	02282**M301Z31**	160
	Ø 1/2"	02282**M500Z50**	02282**M501Z51**	160
Port 1 closed	Ø 8 (5/16")	02282**M110Z10**	02282**M111Z11**	168
	Ø 10	02282**M210Z20**	02282**M211Z21**	164
	Ø 12	02282**M310Z30**	02282**M311Z31**	160
	Ø 1/2"	02282**M510Z50**	02282**M511Z51**	160
Ports 1, 3 and 5 closed	Ø 8 (5/16")	02282**M120Z10**	02282**M121Z11**	168
	Ø 10	02282**M220Z20**	02282**M221Z21**	164
	Ø 12	02282**M320Z30**	02282**M321Z31**	160
	Ø 1/2"	02282**M520Z50**	02282**M521Z51**	160
Ports 3 and 5 closed	Ø 8 (5/16")	02282**M130Z10**	02282**M131Z11**	168
	Ø 10	02282**M230Z20**	02282**M231Z21**	164
	Ø 12	02282**M330Z30**	02282**M331Z31**	160
	Ø 1/2"	02282**M530Z50**	02282**M531Z51**	160
Ports 1, 3, 5 and X closed	Ø 8 (5/16")	02282**M140Z10**	02282**M141Z11**	168
	Ø 10	02282**M240Z20**	02282**M241Z21**	164
	Ø 12	02282**M340Z30**	02282**M341Z31**	160
	Ø 1/2"	02282**M540Z50**	02282**M541Z51**	160





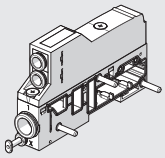




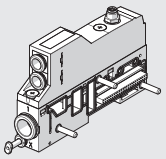


METAL WORK PNEUMATIC

INTERMEDIATE MODULE - SEPARATE RELIEF

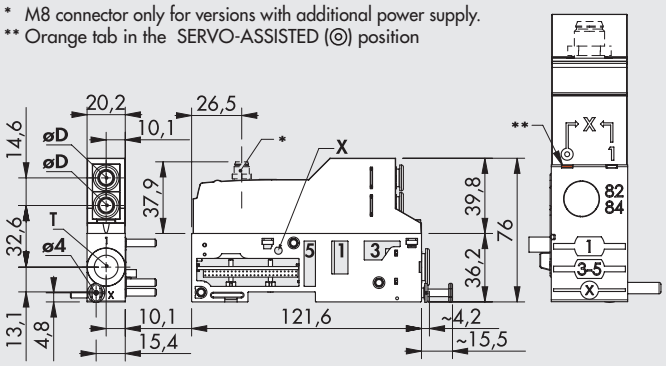


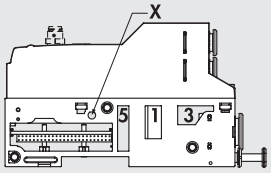
WITHOUT additional electrical power supply

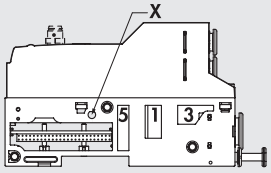


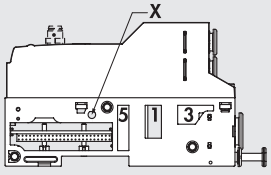
WITH additional electrical power supply

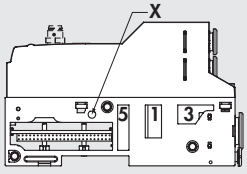
* M8 connector only for versions with additional power supply.
** Orange tab in the SERVO-ASSISTED (◎) position





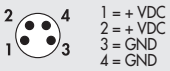




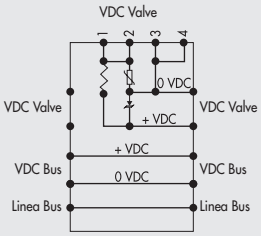


WIRING DIAGRAM NTERMEDIATE MODULE - M, WITH ADDITIONAL POWER SUPPLY

M8 male connector



1 = + VDC
2 = + VDC
3 = GND
4 = GND



N.B.: Maximum pressure in the ports 3 and 5: 8 bar

Symbol	T Pipe fitting	Code Additional electric power supply WITHOUT	Code Additional electric power supply WITH	Weight [g]
Full-flow ports	Ø 8 (5/16")	02282**M100Z_0**	02282**M101Z_1**	179
	Ø 10	02282**M200Z_0**	02282**M201Z_1**	175
	Ø 12	02282**M300Z_0**	02282**M301Z_1**	171
	Ø 1/2"	02282**M500Z_0**	02282**M501Z_1**	171
Port 1 closed	Ø 8 (5/16")	02282**M110Z_0**	02282**M111Z_1**	179
	Ø 10	02282**M210Z_0**	02282**M211Z_1**	175
	Ø 12	02282**M310Z_0**	02282**M311Z_1**	171
	Ø 1/2"	02282**M510Z_0**	02282**M511Z_1**	171
Ports 1, 3 and 5 closed	Ø 8 (5/16")	02282**M120Z_0**	02282**M121Z_1**	179
	Ø 10	02282**M220Z_0**	02282**M221Z_1**	175
	Ø 12	02282**M320Z_0**	02282**M321Z_1**	171
	Ø 1/2"	02282**M520Z_0**	02282**M521Z_1**	171
Ports 3 and 5 closed	Ø 8 (5/16")	02282**M130Z_0**	02282**M131Z_1**	179
	Ø 10	02282**M230Z_0**	02282**M231Z_1**	175
	Ø 12	02282**M330Z_0**	02282**M331Z_1**	171
	Ø 1/2"	02282**M530Z_0**	02282**M531Z_1**	171
Ports 1, 3, 5 and X closed	Ø 8 (5/16")	02282**M140Z_0**	02282**M141Z_1**	179
	Ø 10	02282**M240Z_0**	02282**M241Z_1**	175
	Ø 12	02282**M340Z_0**	02282**M341Z_1**	171
	Ø 1/2"	02282**M540Z_0**	02282**M541Z_1**	171

_ = To complete the code enter: **6**: øD = 8 mm; **7**: øD = 6 mm; **8**: øD = 4 mm

KEY TO CODES

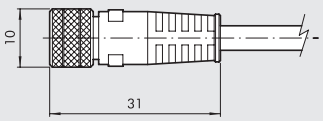
02282	M	3	0	0	Z	3	0
FAMILY	SUBSYSTEM	PORT FITTING 1	PORTS IN THE BASE	ADDITIONAL ELECTRICAL POWER SUPPLY	UPPER PART	PORTS 3 AND 5 FITTING	ELECTRICAL CONNECTOR
02282 EB 80	**M** Intermediate	**1** Pipe fitting Ø 8 (5/16″) **2** Pipe fitting Ø 10 **3** Pipe fitting Ø 12 **5** Pipe fitting Ø 1/2″	**0** Full-flow ports **1** Port 1 closed **2** Ports 1, 3 and 5 closed **3** Ports 3 and 5 closed **4** Ports 1, 3, 5 and X closed	■ **0** Without ● **1** With	**Z** The upper part is present	**0** Silencer ▲ **1** Pipe fitting Ø 8 (5/16″) ▲ **2** Pipe fitting Ø 10 ▲ **3** Pipe fitting Ø 12 ▲ **5** Pipe fitting Ø 1/2″ **6** 2 pipes fitting Ø 8 (5/16″) (one for port 3, one for port 5) **7** 2 pipes fitting Ø 6 (one for port 3, one for port 5) **8** 2 pipes fitting Ø 4 (5/32″) (one for port 3, one for port 5)	■ **0** Without ● **1** With

▲ For ports 3/5, use the same Ø pipe as port 1. ■ Same number for both positions. ● Same number for both positions.

ACCESSORIES

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

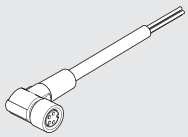


Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

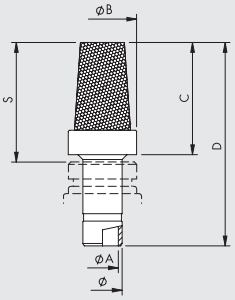
M8 90° CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009103	M8 4-pin connector - female, 90° angle L = 5 m

SILENCER FOR FITTING

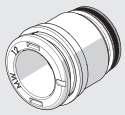


Ø	Ø A	Ø B	C	D	S
8	6.5	14	23	42	24.5
12	10	18.8	29	51.5	31.5

Code	Description	Flow rate at 6.3 bar [Nl/min]	Weight [g]
W0970530084	Silencer for fitting, Ø 8	2400	15
W0970530086	Silencer for fitting, Ø 12	6000	24

SPARE PARTS

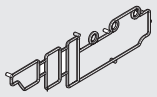
CARTRIDGE



Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 (5/16″)
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

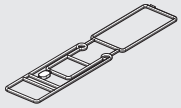
BASE INTERFACE GASKET



Code	Description
02282R1000	EB 80 base interface gasket kit

Comes in 10-pc. packs

LOWER /UPPER BODY GASKET



Code	Description
02282R1001	EB 80 lower/upper body gasket kit

Comes in 10-pc. packs

EB 80 CLOSED END-PLATE - C

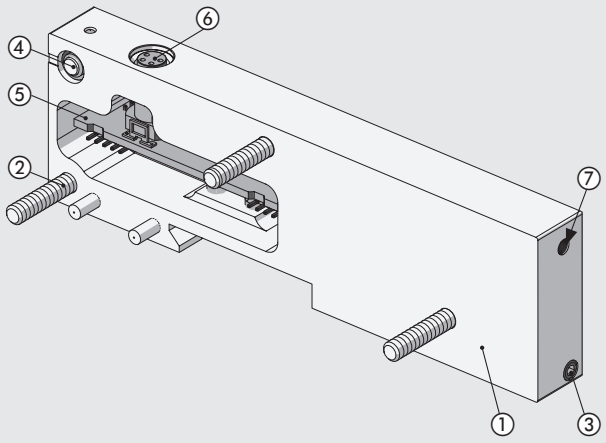
The "Closed end-plate - C" is the last element of each EB 80 system.
A version for islands with multi-pole connector is available.
One for islands with fieldbus, containing a small electronic board; one for connection to other additional EB 80 islands (only for systems with fieldbus).
The end plate houses the system for mechanically fixing the island to external supports.

TECHNICAL DATA

Ambient temperature	°C	-10 to + 50
	°F	14 to 122
Versions		For islands with multi-pole connection. For island with fieldbus. For connection to additional islands.
Degree of protection		IP65 (with connectors connected or plugged if not used)
Notes		All valve units (including multi-pole versions) require grounding protection. Use M4 thread on the end plate with braided cable code 02282R6000 provided or, when fixing the unit onto a DIN bar, connect the bar to grounding.

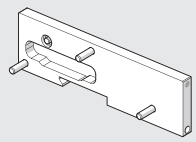
COMPONENTS

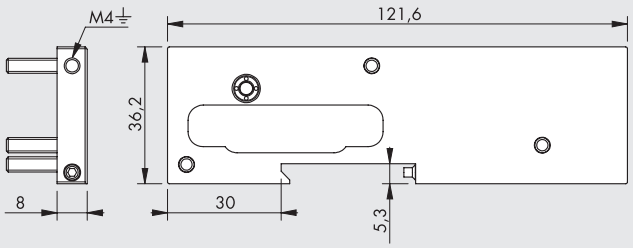
① BODY: painted metal
② FIXING SCREW: TCE M4x20 zinc-plated steel
③ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel
④ RELIEF VALVE: safety in case of internal pressure increase due to temperature or losses
⑤ ELECTRONIC BOARD: none in the Closed end-plate for islands with multi-pole connector
⑥ M8 CONNECTOR: only in the Closed end-plate for connection with additional islands
⑦ GROUNDING ⏚



DIMENSIONS - ORDERING CODES

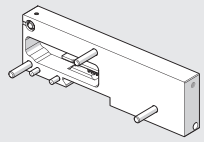
CLOSED END-PLATE FOR ISLANDS WITH MULTI-POLE CONNECTOR

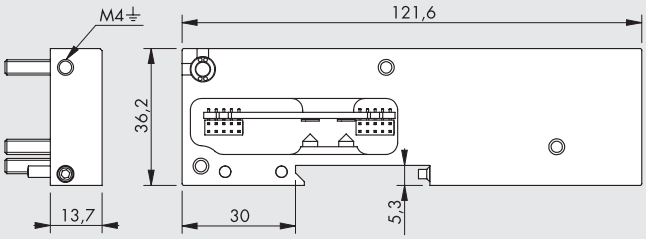




Symbol	Code	Description	Weight [g]
	02282**C1**	Closed end-plate for islands with multi-pole connector	92

CLOSED END-PLATE FOR ISLANDS WITH FIELDBUS

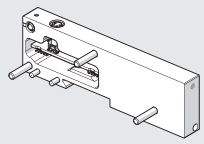


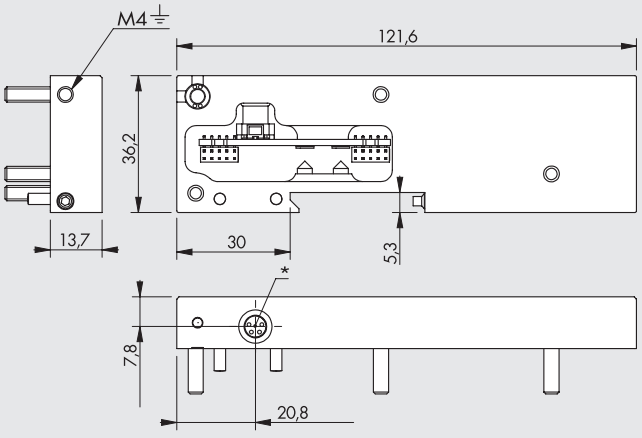


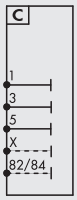
Symbol	Code	Description	Weight [g]
	02282**C2**	Closed end-plate for islands with fieldbus	148

Note: also usable for islands with multi-pole connector

CLOSED END-PLATE FOR ELECTRICAL CONNECTION OF ISLANDS WITH FIELDBUS TO ADDITIONAL ISLANDS





Symbol	Code	Description	Weight [g]
	02282**C3**	Closed end-plate for electrical connection to additional islands	148

Note: if you do not connect additional island you must mount the M8 end connector

* M8 connector for connection to additional islands.

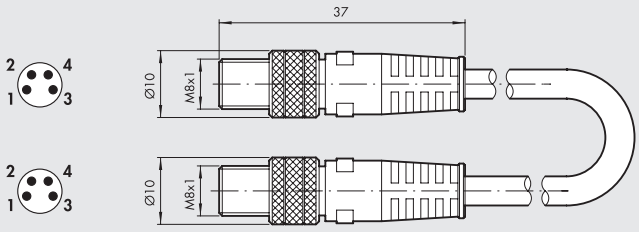
N.B.: The system does not work until the connector is connected to the "Additional electrical connection - E" module.

KEY TO CODES

02282	C	1
FAMILY	**SUBSYSTEM**	**TYPE**
02282 EB 80	**C** Closed end-plate	**1** For islands with multi-pole connection **2** For islands with fieldbus **3** For connection to additional islands

ACCESSORIES

M8 CONNECTOR WITH CABLE FOR CONNECTION BETWEEN EB 80 ISLANDS

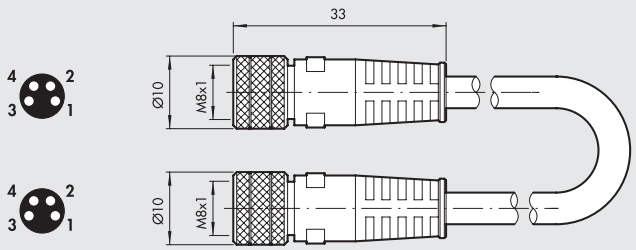


Code	Description	Weight [g]
0240010201	M8-M8 4-pin male straight connector with shielded cable L = 1 m	45
0240010205	M8-M8 4-pin male straight connector with shielded cable L = 5 m	185
0240010210	M8-M8 4-pin male straight connector with shielded cable L = 10 m	330
0240010215	M8-M8 4-pin male straight connector with shielded cable L = 15 m	475
0240010220	M8-M8 4-pin male straight connector with shielded cable L = 20 m	620
0240010405 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 5 m	185
0240010410 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 10 m	330
0240010415 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 15 m	475
0240010420 *	M8-M8 4-pin male straight connector with shielded cable H-FLEX CL6, L = 20 m	620

* Very flexible cables, class 6 according to IEC 60228

N.B.: For correct operation of the entire EB 80 system, use M8-M8 pre-wired, twisted and shielded cables only.

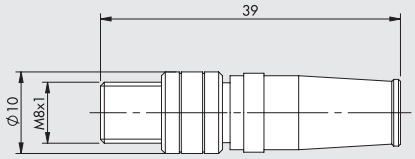
M8 ADAPTER CABLE



Code	Description	Weight [g]
0240010350	M8-M8 4-pin female adapter cable with shielded cable L = 200 mm	16

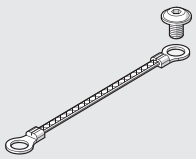
N.B.: Cannot be used with cables for mobile laying (H-FLEX CL6)

M8 END CONNECTOR FOR EB 80 VALVES



Code	Description
02282R5000	M8 end connector for EB 80 valves

BRAIDED GROUNDING CABLE



Code	Description
02282R6000	Braided grounding cable

EB 80 BOXI

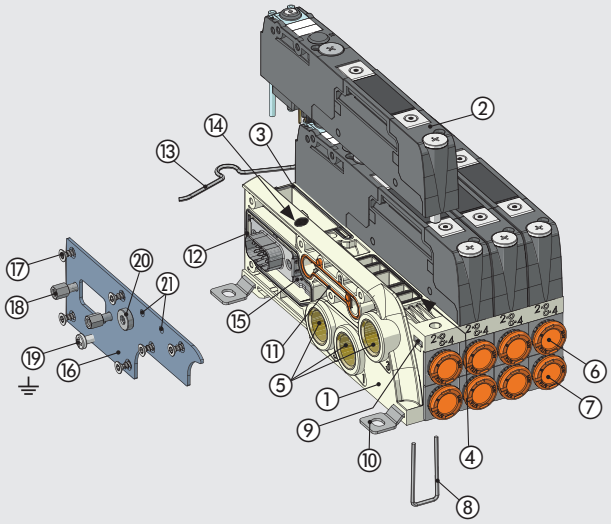
Being extremely modular, the EB 80 electro-pneumatic system is ideal for the construction of all types of valve island and size. This great versatility is not always being utilized, especially in the case of applications where only a few valves are needed and where there is no need to handle input or output signals.
BOXI was designed to best meet this requirement for simplicity.
Each version includes pneumatic and electrical connections, control electronics and the possibility of installing 4, 6, 8 or 12 valves.
BOXI retains most of the features that have made the EB 80 so popular, namely:

- All the EB 80 valves, from the twin 2/2 to the high-flow models, can be installed.
- Can be powered at 12VDC or 24VDC.
- Bases with single or double electric control, featuring interchangeable cartridge fittings.
- Only 0.3 W to keep each valve controlled.
- Diagnostics (open circuit, overload, voltage short-circuit) with LED signal lights.
- Possibility of connecting multifunction modules to the outputs.

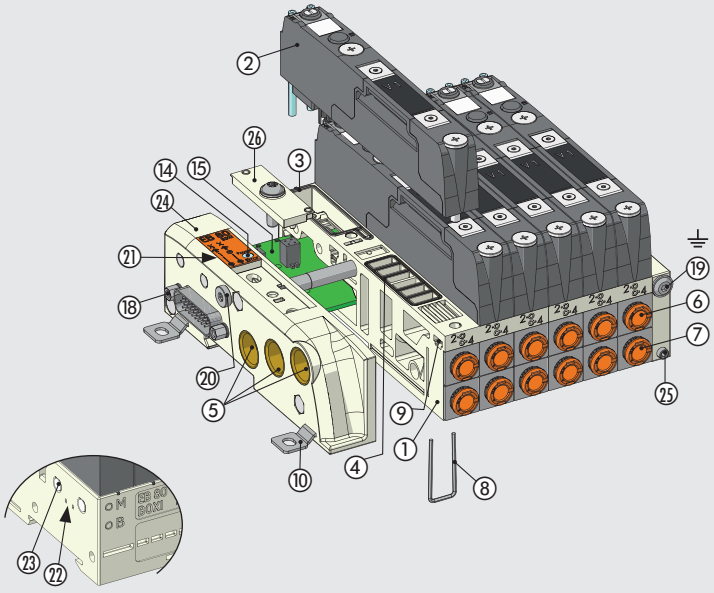
In addition, an extra supply and drain module to be fitted onto the 6, 8 or 12-position islands downstream the solenoid valves can be requested when ordering.

COMPONENTS

4-position valve island



6-8-12-position valve island



① BASE: technopolymer
② EB 80 VALVE (see page B2.5 and page B2.52)
③ GASKET: NBR
④ VALVE GASKET: NBR
⑤ PORTS 1-3-5: brass threaded element
⑥ PORT 2 CARTRIDGE: push-in fitting
⑦ PORT 4 CARTRIDGE: push-in fitting
⑧ CLIP for securing the cartridge: stainless steel
⑨ THREADED PLATE for securing the valves: zinc-plated steel
⑩ FIXING FOOT: zinc-plated steel
⑪ GASKET FOR SERVO-ASSISTING: NBR
⑫ GASKET FOR IP65: NBR
⑬ SPRING CLIP for omega bar: stainless steel
⑭ Alarm LED light display: technopolymer
⑮ ELECTRONIC BOARD
⑯ END PLATE: stainless steel
⑰ SCREW FOR FIXING THE CLOSING PLATE TO THE BASE: zinc-plated steel
⑱ ELECTRIC CONNECTOR FIXING COLUMNS: nickel-plated brass
⑲ GROUNDING SCREW: zinc-plated steel
⑳ A7/M5 PLUG (in the non-servo-assisted version only): nickel-plated brass
㉑ INDICATOR: indicaes whether pilot power supply is separate or not
㉒ RELIEF VALVE: safety in case of internal pressure increase due to temperature or losses
㉓ PILOT RELIEF: HDPE silencer
㉔ INPUT TERMINAL: technopolymer
㉕ GRUB SCREW securing the DIN bar or bracket: zinc-plated steel
㉖ INTERLOCKING SELECTOR SWITCH: zinc alloy

METAL WORK PNEUMATIC

TECHNICAL DATA

Supply voltage range	VDC	12 -10% 24 +30%					
Minimum operating voltage	VDC	10.8 *					
Maximum operating voltage	VDC	31.2					
Maximum admissible voltage	VDC	32 ***					
Power for each controlled pilot	W	3 for 15 ms, tthen holding 0.3					
Drive		PNP					
Solenoid rating		100% ED					
Protection		Overload protection					
Grounding		With screw on a metal closing plate					
Diagnostics		LED light signal on the base					
Faults signalled		Solenoid pilot broken or missing; solenoid pilot overload. power supply out of range					
Type of electric solenoid pilot control		Version with one electric control at each valve position Version with two electric controls at each valve position					
Electrical connection		D-Sub 9-pin multipole (BOXI 4-position); D-Sub 26-pin multipole (BOXI 6, 8, 12-position) I/O Link with M12x1 connector (BOXI 4-position)					
Ambient temperature	°C	-10 to + 50 (at 8 bar)					
	°F	14 to 122 (at 8 bar)					
Operating pressure		**5/2 and 5/3**			**2/2 and 3/2**		
Non-assisted valves	bar	3 to 8			3.5 to 8		
	MPa	0.3 to 0.8			0.35 to 0.8		
	psi	43 to 116			51 to 116		
Assisted valves	bar	Vacuum to 10					
	MPa	Vacuum to 1					
	psi	Vacuum to 145					
Servo pressure	bar	3 to 8			min (see graph on page **B2**.53) / max. 8		
	MPa	0.3 to 0.8			min (see graph on page **B2**.53) / max. 0.8		
	psi	43 to 116			min (see graph on page **B2**.53) / max. 116		
Pneumatic fittings		Supply (port 1) and exhaust (ports 3 and 5): 1/4" G (BSP) or 1/4" NPT. Piloting (X): M5 or 10/32" UNF (with adapter)					
Pneumatic outputs		Pipe fittings Ø 4 (5/32"), 6, 8 (5/16"), 1/4"					
Flow rate at 6.3 bar ΔP 1 bar Feeding (port 1)	Nl/min	4500					
6.3 bar flow rate with free exhaust from ports 3 and 5	Nl/min	5500 + 5500					
Valve flow rate, at 6.3 bar ΔP 1 bar		**Ø 4 (5/32")**	**Ø 6**	**Ø 8 (5/16")**	**Ø 1/4"**	**Ø 10 ****	**Ø 3/8" ****
valve 2/2	Nl/min	350	430	500	430	-	-
valve 3/2	Nl/min	350	600	700	600	1250	1250
valve 5/2	Nl/min	350	650	800	650	1250 - 1400	1250 - 1400
valve 5/3	Nl/min	350	460	500	460	1000 - 1250	1000 - 1250
valve V3V (R)	Nl/min	-	-	-	-	1000	1000
Actuation response time (TRA) / reset response time (TRR) at 6 bar							
TRA/TRR valve 2/2 and 3/2	ms	14 / 28					
TRA/TRR valves 5/2 monostable and shut-off valve	ms	12 / 45					
TRA/TRR valve 5/2 bistable	ms	12 / 14					
TRA/TRR valve 5/3	ms	15 / 45					
TRA/TRR valve 3/2 high flow	ms	13 / 36					
Fluid		Unlubricated air					
Air quality required		ISO 8573-1 class 4-7-3					
Degree of protection		IP65					
Category ATEX		Ⓔx II 3G Ex ec IIC T5 Gc X -10°C<Ta<50°C Ⓔx II 3D Ex tc IIIC T100°C Dc X					
Certifications		CE - EAC - c UL us - Ⓔx					
Weight (without valves)	g	330 (4-position); 640 (6-position); 780 (8-position); 1060 (12-position)					

* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Using high-flow valves or connected valves - see pages **B2**.54

*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

CERTIFICATIONS

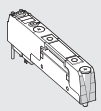
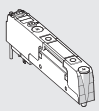
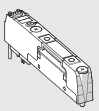
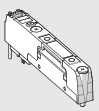
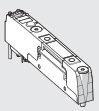
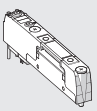
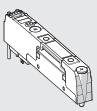
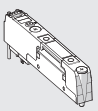
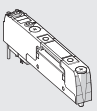
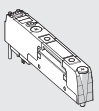
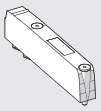
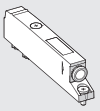
The c UL us certification for the part concerning only CSA (Canada) is bound to the following conditions of use:

- environment temperature: max 45°C
- ED max 70%

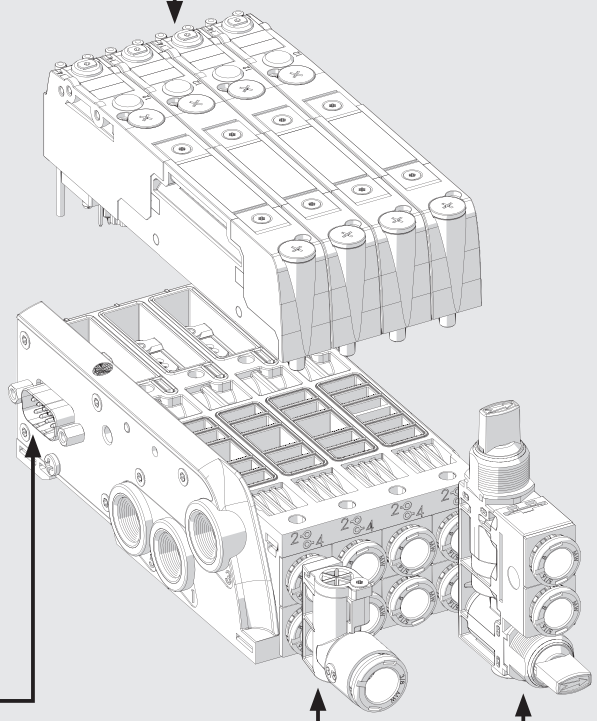
If non-adjoining valves are used, ED max can reach 100% (environment temperature max 45°C)

THE EB 80 BOXI WORLD

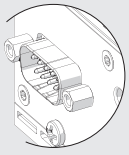
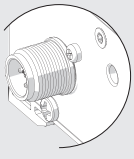
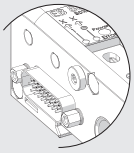
VALVES

Z_ ▲	I_ ▲	W_ ▲	L_ ▲	V_	K_ ▲	O_ ▲	G_	J_	R_ ✚	N0	Y8
											
2 valves 2/2 NC	2 valves 3/2 NC (valid as 5/3 OC)	2 valves 3/2 NO (valid as 5/3 PC)	3/2 NC + 3/2 NO	Monostable 5/2	Bistable 5/2	5/3 CC	3/2 NC high flow	3/2 NO high flow	Shut-off valve	Dummy valve	Bypass
See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.53	See page **B2**.54	See page **B2**.54	See page **B2**.55	See page **B2**.56	See page **B2**.56

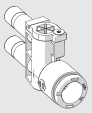
▲ Can only be used with 8 control bases.
✚ Requires inlet port X slave synchronisation.



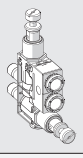
ELECTRICAL CONNECTION

4-position		6-8-12-position
		
D-Sub 9-pin multipole	I/O link M12x1 5 pin coding A	D-Sub 26-pin multipole
See page **B2**.78	See page **B2**.78	See page **B2**.86

Y-FITTING

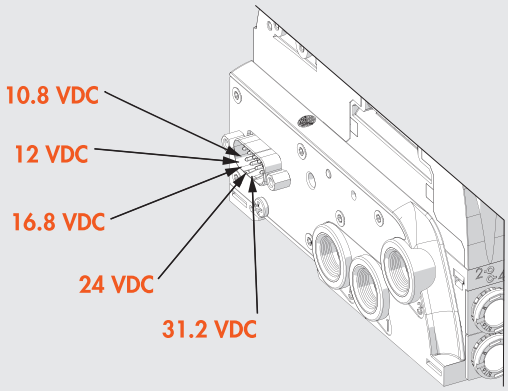
R2

Y-fitting
See page **B2**.57

MULTI-FUNCTION MODULE


Fittings with pneumatic functions
See page **B2**.88

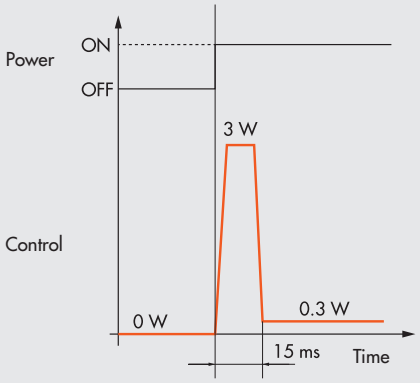
SOME CHARACTERISTICS OF EB 80 BOXI SYSTEMS

THE SAME ISLAND CAN BE SUPPLIED 10.8 - 31.2 VDC



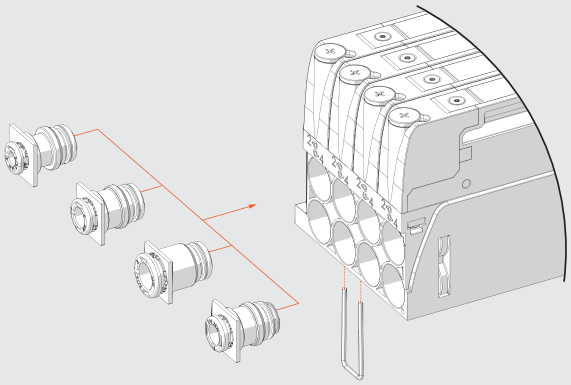
ONLY 0.3 W FOR EACH SOLENOID VALVE

- Speed-up solenoid valve control:
  - high power for a few milliseconds ensures high performance and rapid and safe switching;
  - reduced holding power resulting in reduced temperatures and energy saving.



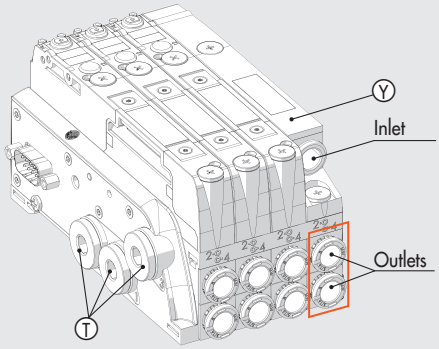
INTERCHANGEABLE CARTRIDGE FITTINGS

- For pipes Ø 4 (5/32"), 6, 8 (5/16"), 1/4"

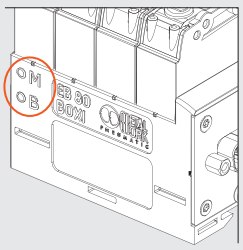


FRONT SUPPLY AND EXHAUSTS

On the BOXI islands, a Bypass module Ⓨ can be mounted in any position instead of a solenoid valve so as to obtain all front pneumatic connections.
In the case of 6-8-12-position islands, the additional power supply can be used (see page **B2**.86), so that no electrical control is lost and the number of useful valves remains unchanged.
The side inlets must be closed with A7 1/4 plugs Ⓣ.



TYPE OF DATA IN THE BASES



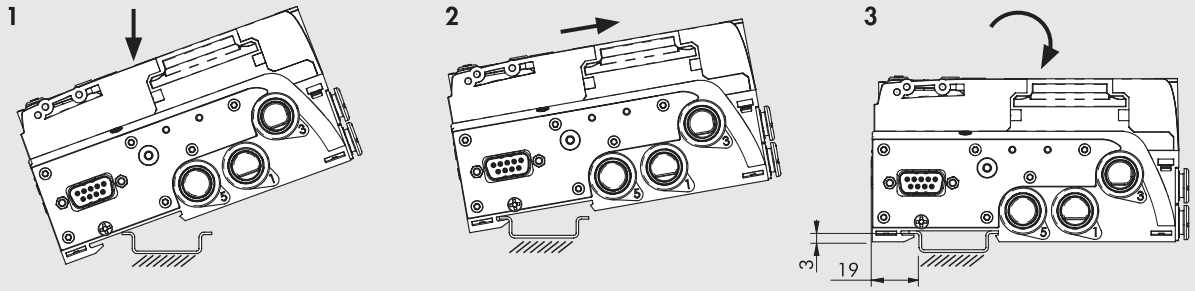
● M
○ B = only one electrical control for each position. Can only be used with valves with one solenoid pilot, types V, J, G and R. If you use a N dummy or Y bypass valve, it is occupied an electric position.

○ M
● B = 2 electrical controls for each position. It can be used for all types of valves. If you use a V, G, J or R type valves (with only one solenoid pilot), N dummy or Y bypass valve, both electrical positions get occupied.

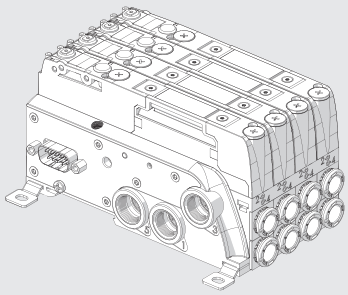
EB 80 BOXI - 4-POSITION VALVE ISLAND

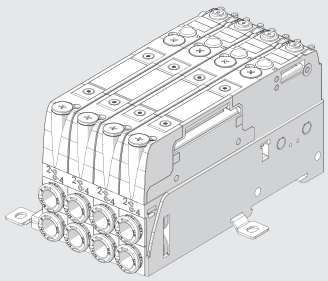
FIXING OPTIONS

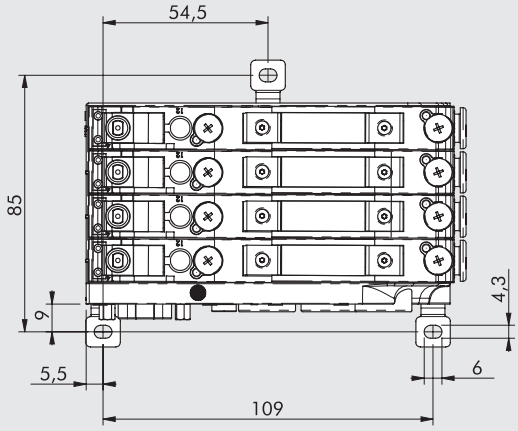
Fixing on a DIN bar: fixing on a DIN bar in the sequence indicated.



Fixing by means of brackets: 3 brackets are already included in each EB 80 BOXI pack. Push them firmly into the appropriate seats on the base up to the "click".





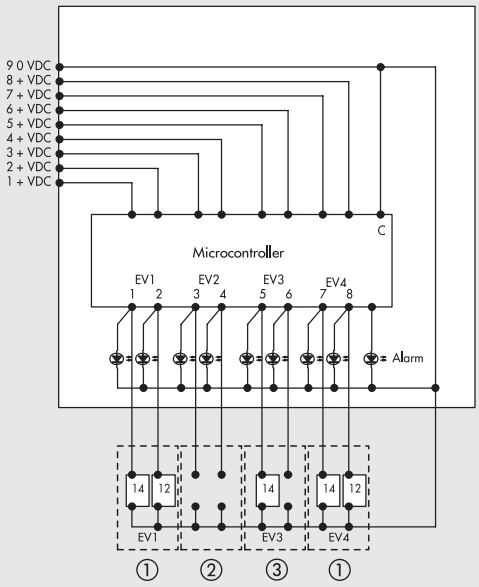


METAL WORK PNEUMATIC

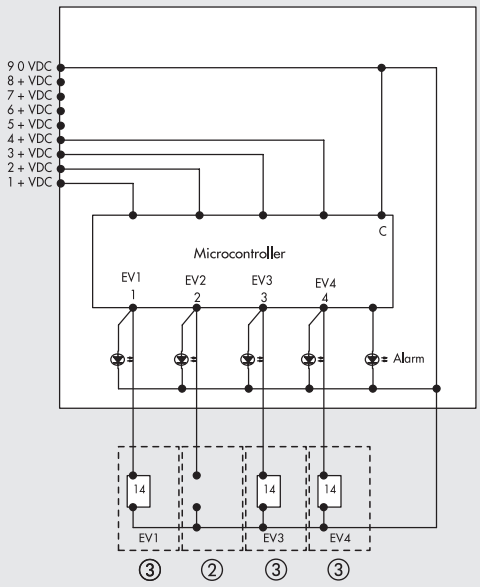
EB 80 BOXI WIRING DIAGRAM

D-Sub 9-PIN CONNECTOR

4-position base for 8 pilots

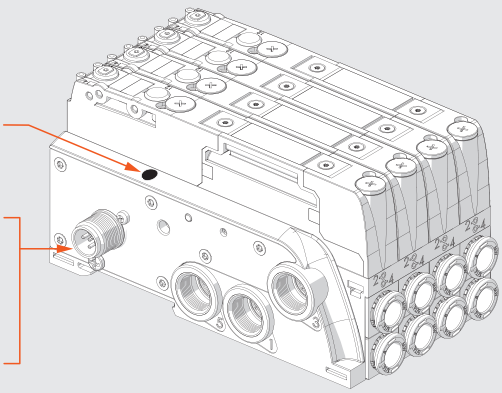


4-position base for 4 pilots



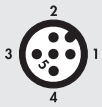
Examples of types of valves:
① Valve with 2 solenoid pilots
② Dummy valve or bypass
③ Valve with 1 solenoid pilot

EB 80 BOXI IO-Link WIRING DIAGRAM



Connection to the EB 80 IO-Link network

BUS IN (M12 male connector, A encoding)



Port Class A	Port Class B
1 = L+	1 = L+
2 = NC	2 = 2L+
3 = L-	3 = L-
4 = C/Q	4 = C/Q
5 = NC	5 = 2L-

TECHNICAL DATA		
Fieldbus		IO-Link version 1.1
Communication speed	Kbps	230.4 (COM3)
Vendor ID / Device ID		1046 (hex 0x0416) / 8 (hex 0x000008)
Minimum cycle time	ms	2.8
Process data length		1 byte of Input / 1 byte of Output
Supply voltage range (M8 connector)	VDC	12 -10% 24 +30%
Minimum operating voltage	VDC	10.8 *
Maximum operating voltage	VDC	31.2
Maximum admissible voltage	VDC	32 ***
IO-Link power supply (L+L - Bus IN connector)	VDC	min 20, max 30
Protection		Module protected from overload and polarity inversion. Outputs protected from overloads.
Connections		M12 male, A-coded - Port Class A - Port Class B.
Diagnostics**		IO-Link: via local LED lights and software messages. Outputs: via local LED
Power supply current absorption		See EB 80 Boxi IO-Link instruction manual
Maximum number of pilots		8
Data bit value		0 = non-active; 1= active
State of outputs in the absence of communication		Configurable for each output: non-active, holding of the state, setting of a preset state

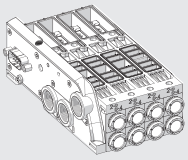
* **Minimum voltage 10.8VDC required at solenoid pilots. Check the minimum voltage at the power supply output using the calculations shown on page B2**.24

** Refer to the user manual for a detailed description.

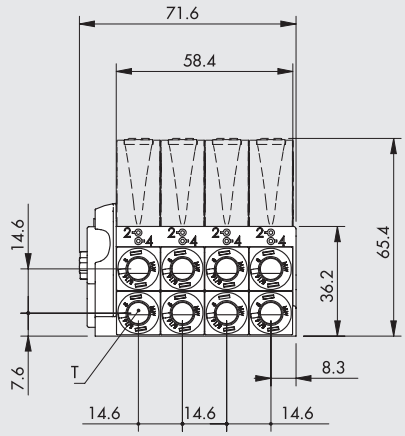
*** **IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.**

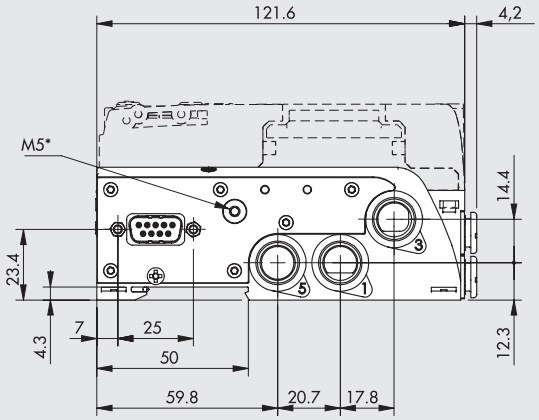
DIMENSIONS - ORDERING CODES

EB 80 BASE BOXI WITH D-Sub 9-PIN MULTIPOLE ELECTRICAL CONNECTION



* Pilot (only for servo-assisted version)





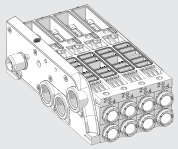
Port threads 1, 3, 5 in G (BSP)

		Code	
	T - Pipe fitting	4 CONTROLS	8 CONTROLS
Servo-assisted	without cartridges	0228**BGX4M1111**	0228**BGX8M1111**
	Ø 4 (5/32")	0228**BGX4M4444**	0228**BGX8M4444**
	Ø 6	0228**BGX4M6666**	0228**BGX8M6666**
	Ø 8 (5/16")	0228**BGX4M8888**	0228**BGX8M8888**
	Ø 1/4"	0228**BGX4M2222**	0228**BGX8M2222**
Non-servo-assisted	without cartridges	0228**BG14M1111**	0228**BG18M1111**
	Ø 4 (5/32")	0228**BG14M4444**	0228**BG18M4444**
	Ø 6	0228**BG14M6666**	0228**BG18M6666**
	Ø 8 (5/16")	0228**BG14M8888**	0228**BG18M8888**
	Ø 1/4"	0228**BG14M2222**	0228**BG18M2222**

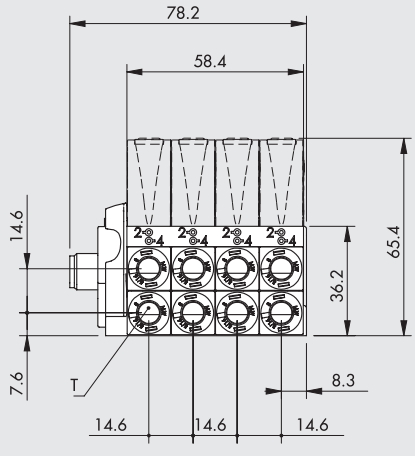
Port threads 1, 3, 5 in NPT

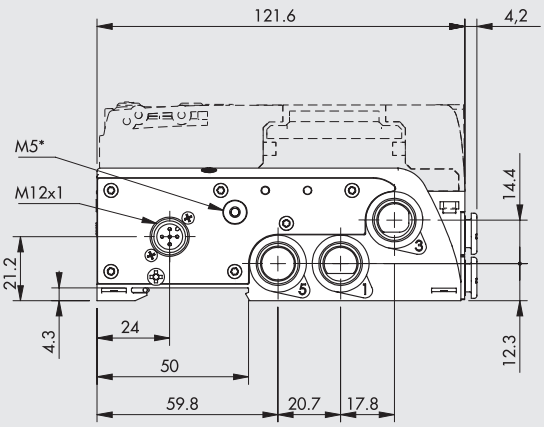
		Code	
	T - Pipe fitting	4 CONTROLS	8 CONTROLS
Servo-assisted	without cartridges	0228**BUX4M1111**	0228**BUX8M1111**
	Ø 4 (5/32")	0228**BUX4M4444**	0228**BUX8M4444**
	Ø 6	0228**BUX4M6666**	0228**BUX8M6666**
	Ø 8 (5/16")	0228**BUX4M8888**	0228**BUX8M8888**
	Ø 1/4"	0228**BUX4M2222**	0228**BUX8M2222**
Non-servo-assisted	without cartridges	0228**BU14M1111**	0228**BU18M1111**
	Ø 4 (5/32")	0228**BU14M4444**	0228**BU18M4444**
	Ø 6	0228**BU14M6666**	0228**BU18M6666**
	Ø 8 (5/16")	0228**BU14M8888**	0228**BU18M8888**
	Ø 1/4"	0228**BU14M2222**	0228**BU18M2222**

EB 80 BASE BOXI WITH ELECTRICAL CONNECTION I/O link (M12x1)



* Pilot (only for servo-assisted version)





Port threads 1, 3, 5 in G (BSP)

		Code
	T - Pipe fitting	8 CONTROLS
Servo-assisted	without cartridges	0228**BGX8L1111**
	Ø 4 (5/32")	0228**BGX8L4444**
	Ø 6	0228**BGX8L6666**
	Ø 8 (5/16")	0228**BGX8L8888**
	Ø 1/4"	0228**BGX8L2222**
Non-servo-assisted	without cartridges	0228**BG18L1111**
	Ø 4 (5/32")	0228**BG18L4444**
	Ø 6	0228**BG18L6666**
	Ø 8 (5/16")	0228**BG18L8888**
	Ø 1/4"	0228**BG18L2222**

Port threads 1, 3, 5 in NPT

		Code
	T - Pipe fitting	8 CONTROLS
Servo-assisted	without cartridges	0228**BUX8L1111**
	Ø 4 (5/32")	0228**BUX8L4444**
	Ø 6	0228**BUX8L6666**
	Ø 8 (5/16")	0228**BUX8L8888**
	Ø 1/4"	0228**BUX8L2222**
Non-servo-assisted	without cartridges	0228**BU18L1111**
	Ø 4 (5/32")	0228**BU18L4444**
	Ø 6	0228**BU18L6666**
	Ø 8 (5/16")	0228**BU18L8888**
	Ø 1/4"	0228**BU18L2222**

METAL WORK PNEUMATIC

KEY TO CODING OF THE EB 80 BOXI WITHOUT VALVES

0228B	G	1	8	M	4	4	4	4
FAMILY	PORT THREADS 1, 3, 5	PILOTING	NUMBER OF SOLENOID PILOT CONTROLS	ELECTRICAL CONNECTION	FITTINGS 1ª position (from left)	2ª position	3ª position	4ª position
0228B EB 80 BOXI	**G** 1/4" G (BSP) **U** 1/4" NPT	**1** Non-servo-assisted **X** Servo-assisted	**4** 4 controls **8** 8 controls	**M** D-Sub 9-pin multipole connection ▲ **L** I/O link, M12x1	**1** Without cartridges **2** Pipe fitting Ø 1/4" **4** Pipe fitting Ø 4 (5/32") **6** Pipe fitting Ø 6 **8** Pipe fitting Ø 8 (5/16")			

▲ Only for version with 8 controls.

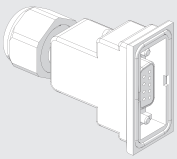
KEY TO CODING OF THE EB 80 BOXI COMPLETE WITH VALVES

0228B	G	1	8	M	4	4	4	4	0	V V K I
FAMILY	PORT THREADS 1, 3, 5	PILOTING	NUMBER OF SOLENOID PILOT CONTROLS	ELECTRICAL CONNECTION	FITTINGS 1ª position (from left)	2ª position	3ª position	4ª position	MANUAL CONTROL	VALVES
0228B EB 80 BOXI	**G** 1/4" G (BSP) **U** 1/4" NPT	**1** Non-servo-assisted **X** Servo-assisted	**4** 4 controls **8** 8 controls	**M** D-Sub 9-pin multipole connection ▲ **L** I/O link, M12x1	**1** Without cartridges **2** Pipe fitting Ø 1/4" **4** Pipe fitting Ø 4 (5/32") **6** Pipe fitting Ø 6 **8** Pipe fitting Ø 8 (5/16")				**0** Monostable **1** Bistable	▲ **Z** 2 valves 2/2 NC ▲ **I** 2 valves 3/2 NC ▲ **W** 2 valves 3/2 NO ▲ **L** 3/2 NC + 3/2 NO **V** 5/2 monostable ▲ **K** 5/2 bistable ▲ **O** 5/3 CC **G** 3/2 NC high flow **J** 3/2 NO high flow ✚ **R** Shut-off valve **Y** Bypass **N** Dummy valve (plug)

▲ Only for version with 8 controls.
✚ Requires inlet port X slave synchronisation.

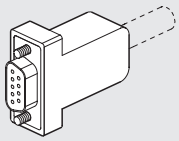
ACCESSORIES

STRAIGHT IP65 9-PIN PLUG CONNECTOR KIT



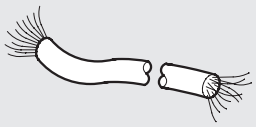
Code	Description	Weight [g]
02269G0000	Straight D-Sub 9-PIN IP65 connector kit	20

STRAIGHT IP40 9-PIN PLUG CONNECTOR KIT



Code	Description	Weight [g]
0226180102	Straight D-Sub 9-PIN connector kit	20

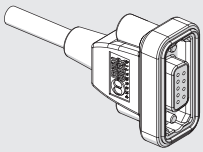
CABLE



Code	Description	Weight [g/m]
0226107201	10-PIN cable	60

Specify the number of metres desired.

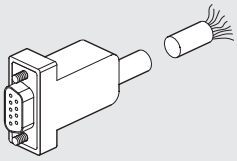
① PRE-WIRED STRAIGHT IP65 9-PIN PLUG CONNECTOR KIT



Code	Description	Weight [g/m]
02269G0100	Straight D-Sub 9-PIN IP65 connector + cable L = 1 m	80
02269G0250	Straight D-Sub 9-PIN IP65 connector + cable L = 2.5 m	170
02269G0500	Straight D-Sub 9-PIN IP65 connector + cable L = 5 m	320
02269G1000	Straight D-Sub 9-PIN IP65 connector + cable L = 10 m	620
02269H0100*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 1 m	80
02269H0250*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 2.5 m	170
02269H0500*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 5 m	320
02269H1000*	Straight D-Sub 9-PIN IP65 connector, UL H-FLEX CL6, cable L = 10 m	620

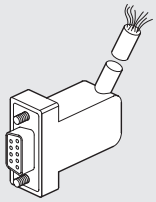
* Very flexible cables, class 6 according to IEC 60228

② PRE-WIRED STRAIGHT IP40 9-PIN PLUG CONNECTOR KIT



Code	Description	Weight [g/m]
0226900100	Straight D-Sub 9-PIN connector + cable L = 1 m	80
0226900250	Straight D-Sub 9-PIN connector + cable L = 2.5 m	170
0226900500	Straight D-Sub 9-PIN connector + cable L = 5 m	320
0226900750	Straight D-Sub 9-PIN connector + cable L = 7.5 m	470
0226901000	Straight D-Sub 9-PIN connector + cable L = 10 m	620
0226901500	Straight D-Sub 9-PIN connector + cable L = 15 m	920
0226902000	Straight D-Sub 9-PIN connector + cable L = 20 m	1220
0226905000	Straight D-Sub 9-PIN connector + cable L = 50 m	3020

② PRE-WIRED 90° IP40 9-PIN PLUG CONNECTOR



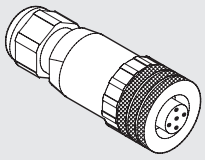
Code	Description	Weight [g/m]
0226910100	90° D-Sub 9-PIN connector + cable L = 1 m	80
0226910250	90° D-Sub 9-PIN connector + cable L = 2.5 m	170
0226910500	90° D-Sub 9-PIN connector + cable L = 5 m	320
0226910750	90° D-Sub 9-PIN connector + cable L = 7.5 m	470
0226911000	90° D-Sub 9-PIN connector + cable L = 10 m	620
0226911500	90° D-Sub 9-PIN connector + cable L = 15 m	920

WIRING DIAGRAM FOR PRE-WIRED 9-PIN PLUG CONNECTORS

Position of electrical contact	Colour of the corresponding wire Metal Work cable IP40 connector ②	Colour of the corresponding wire (DIN 47100) IP65 connector ①	Function	4-position base	8-position base
1	green/black	white	Out 1 + VDC	solenoid pilot 14 valve 1	solenoid pilot 14 valve 1
2	white	brown	Out 2 + VDC	solenoid pilot 14 valve 2	solenoid pilot 12 valve 1
3	blue/black	green	Out 3 + VDC	solenoid pilot 14 valve 3	solenoid pilot 14 valve 2
4	blue	yellow	Out 4 + VDC	solenoid pilot 14 valve 4	solenoid pilot 12 valve 2
5	yellow/black	grey	Out 5 + VDC	/	solenoid pilot 14 valve 3
6	yellow	pink	Out 6 + VDC	/	solenoid pilot 12 valve 3
7	red/black	blue	Out 7 + VDC	/	solenoid pilot 14 valve 4
8	green	red	Out 8 + VDC	/	solenoid pilot 12 valve 4
9	white/black	black	COM 0VDC	common	common

METAL WORK PNEUMATIC

STRAIGHT CONNECTOR FOR M12, A-CODED

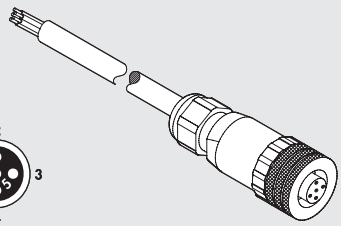


Code	Description
W0970513001	5-PIN M12x1 straight connector

Note: Can be used for IO-Link

STRAIGHT CONNECTOR WITH WIRE FOR M12, A-CODED

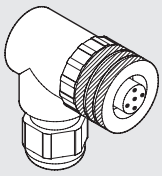
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray



Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 5 m

Note: Can be used for IO-Link

90° CONNECTOR FOR M12, A-CODED

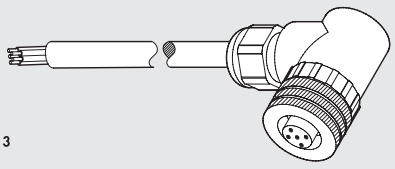


Code	Description
W0970513003	M12x1 5-PIN 90° connector

Note: Can be used for IO-Link

90° CONNECTOR WITH WIRE FOR M12, A-CODED

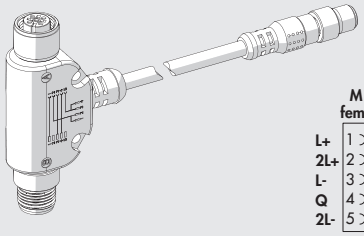
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Gray

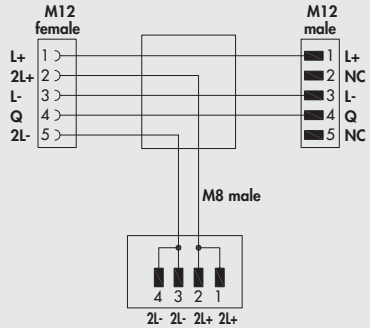


Code	Description
W0970513004	M12x1 5-PIN 90° connector with wire L = 5 m

Note: Can be used for IO-Link

T-CONNECTOR M12 A-CODED / M8 MALE FOR AUXILIARY POWER



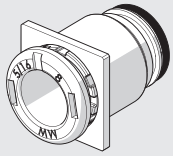


Code	Description
0240009070	T - connector for auxiliary power

Note: Can be used for IO-Link

SPARE PARTS

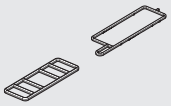
CARTRIDGE



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

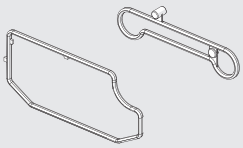
BASE-VALVE GASKET



Code	Description
02282R1002	EB 80 base-valve gasket kit

Comes in 10-pc. packs

GASKETS BETWEEN BASE AND COVER SHEET METAL



Code	Description
02282R1006	EB 80 BOXI kit of gaskets between base and cover sheet metal

Comes in 10-pc. packs

FIXING FOOT

Code	Description
02282R4002	EB 80 BOXI fixing foot

Comes in 3-pc. packs

KIT PNEUMATIC MOTION® EB 80 BOXI

The EB 80 BOXI complete with electrical connector, cable, fittings and silencers can be supplied under one ordering code only.

REQUEST THE KIT CODE BY SPECIFYING:

- The EB 80 BOXI code
- The code of the single connector or pre-wired connector
- The fitting and the quantity desired. We suggest choosing one among those listed below ▲
- The silencer and the quantity desired. We suggest choosing one among those listed below ◆

Example
0228BG18M66660KKKK
02269G0250
n° 1 2L01010
n° 2 W0970530053

▲ 1/4" FITTINGS FOR BOXI PNEUMATIC SUPPLIES *

Ø Pipe	Straight male cylindrical code (R1)	L rotary elbow, male, code (R34)
4	2L01003	2L34003
6	2L01008	2L34008
8	2L01010	2L34010
10	2L01012	2L34013
12	2001019	-

* Normally, one is used for port 1

◆ SILENCERS FOR EB 80 BOXI OUTLET PORTS **

	Code
SFE silencer with stainless steel mesh	W0970530053
SPLF silencer made of resin with felt	W0970530073

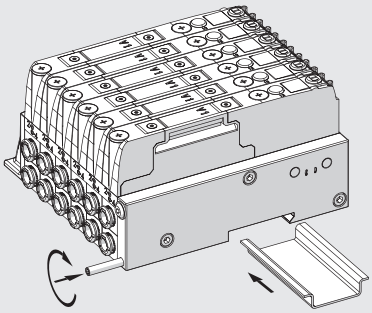
** Normally, two are used for ports 3 and 5

EB 80 BOXI - 6-8-12-POSITION VALVE ISLAND

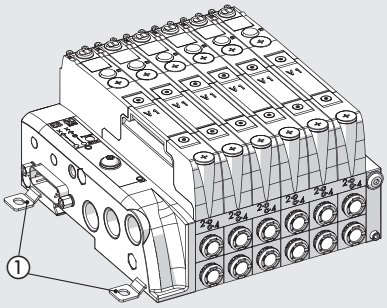


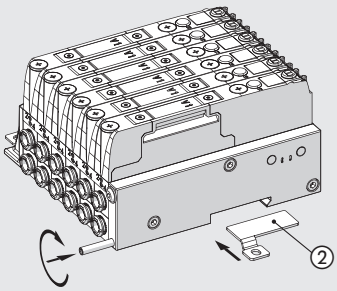
FIXING OPTIONS

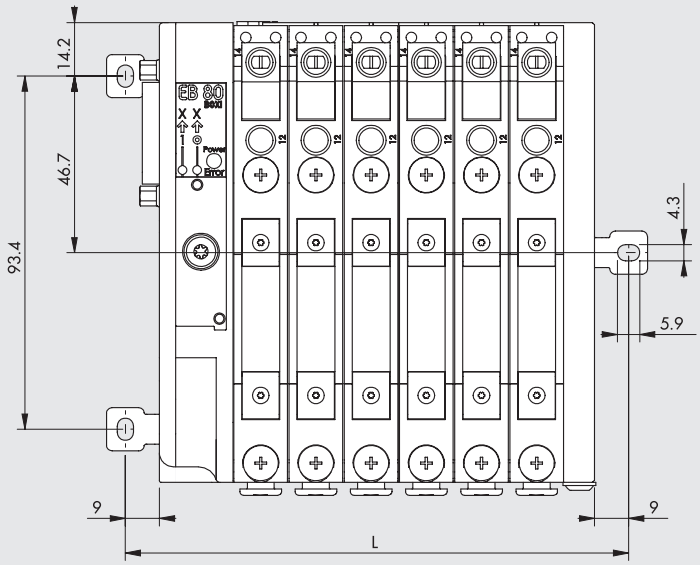
Fixing on a DIN bar: tighten the screw on the end plate.



Fixing by means of brackets: the 3 brackets are already included in each EB 80 BOXI island. On the pressure inlet side, push the two brackets ① firmly into the appropriate seats on the base up to the "click". Tighten the screw on the end plate to secure the third bracket ②.



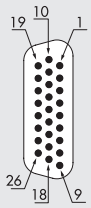




Boxi island	L (mm)
6 position	133
6 position with additional pneumatic supply	153
8 position	162
8 position with additional pneumatic supply	182.5
12 position	221
12 position with additional pneumatic supply	241

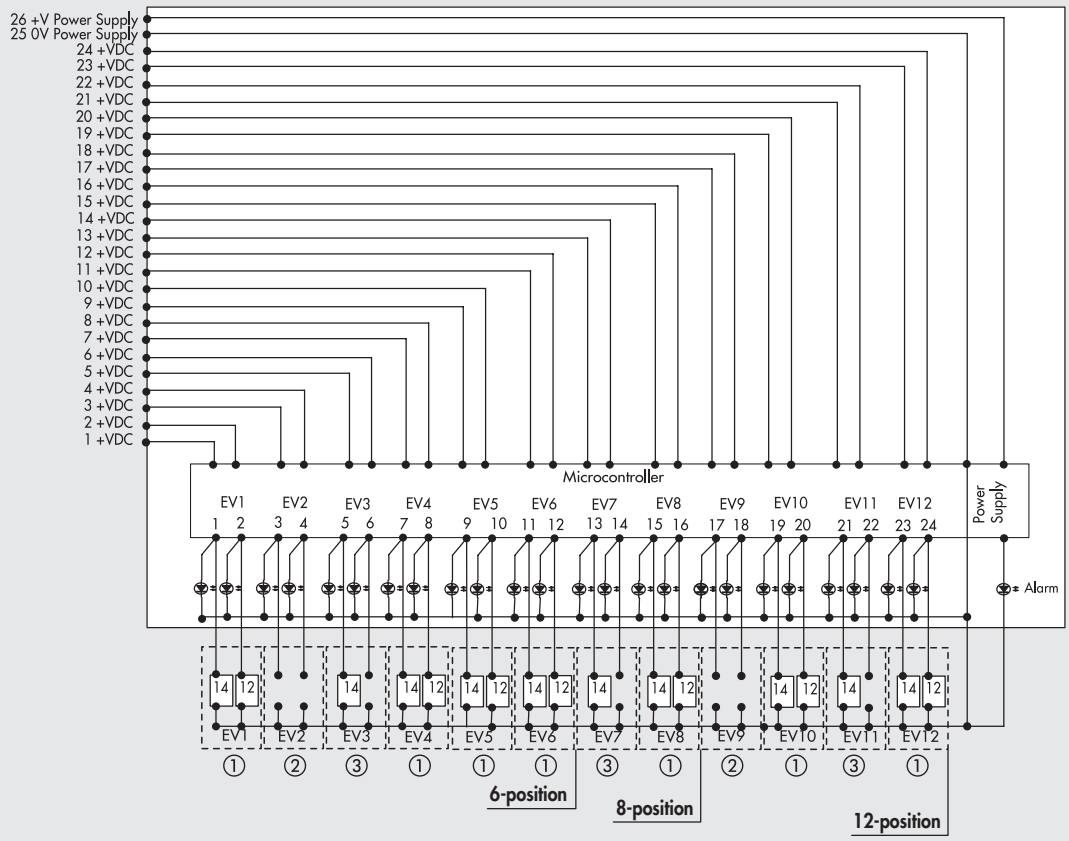
WIRING DIAGRAM

D-Sub 26-PIN CONNECTOR

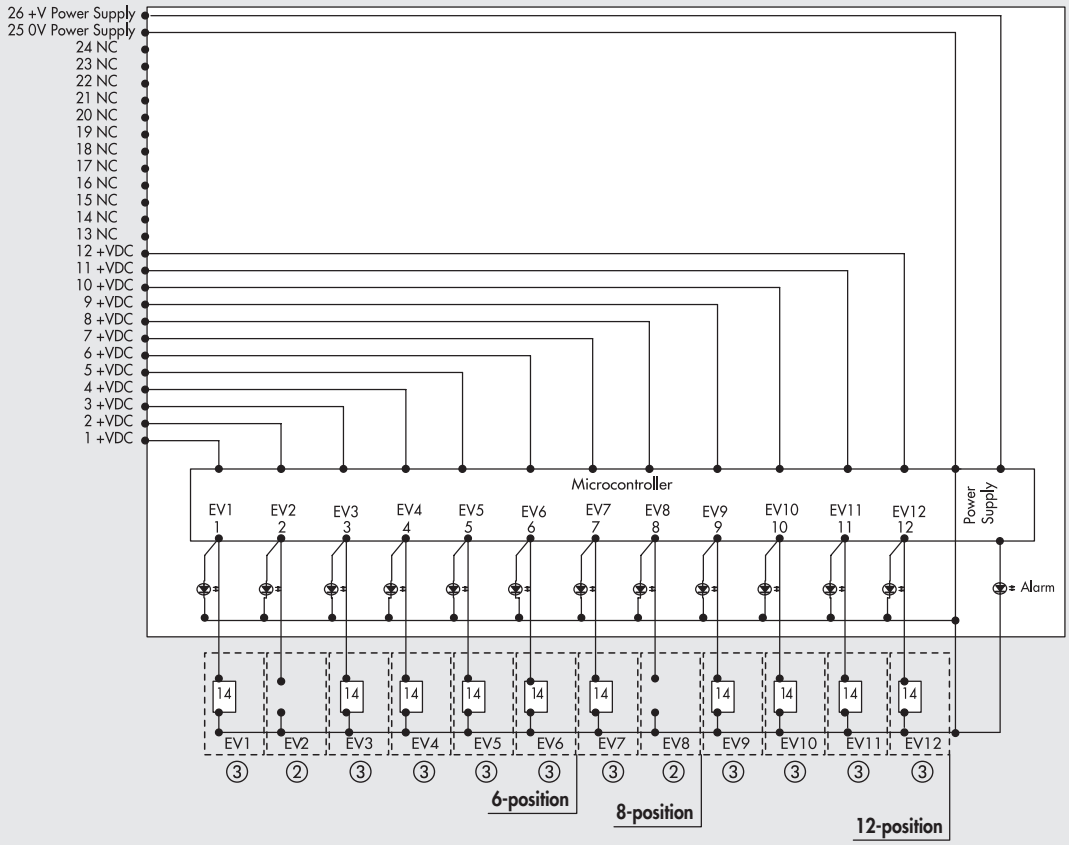


Examples of types of valves:
① Valve with 2 solenoid pilots
② Dummy valve or bypass
③ Valve with 1 solenoid pilot

Base with 2 electric controls at each valve position



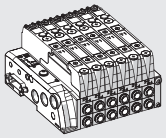
Base with 1 electric control at each valve position



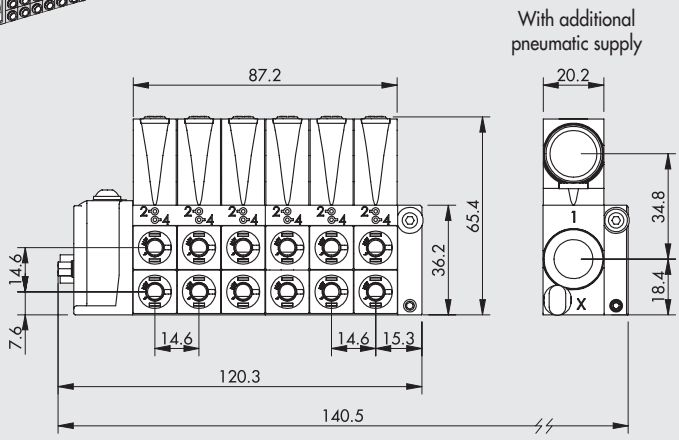
METAL WORK PNEUMATIC

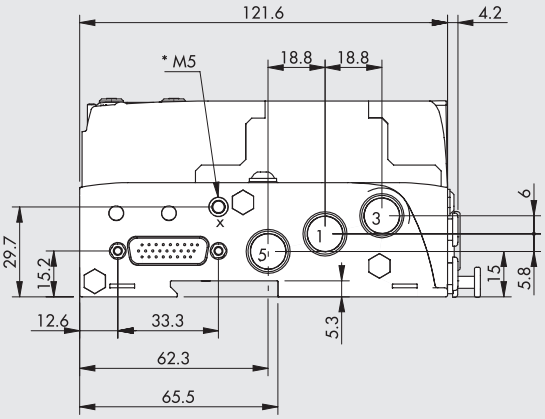
DIMENSIONS

6-POSITION

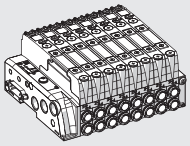


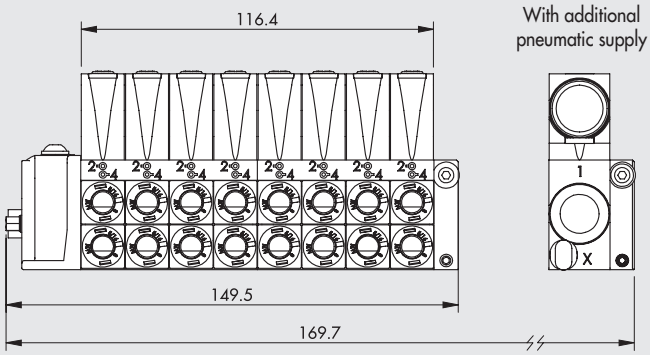
* Pilot (only for servo-assisted version)



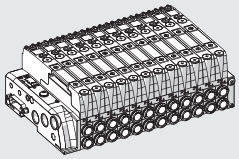


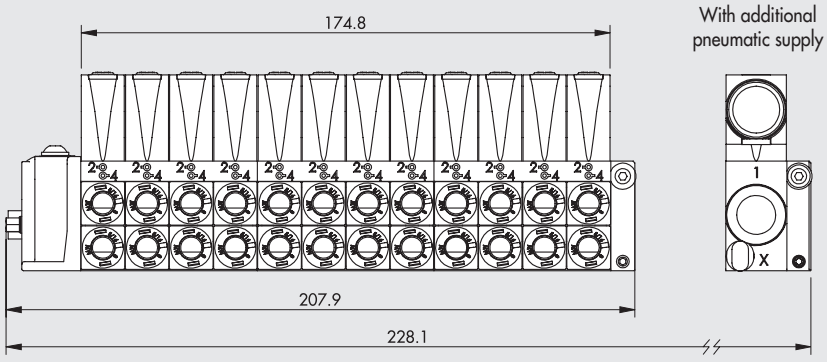
8-POSITION





12-POSITION

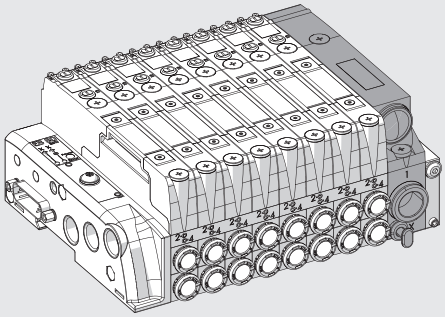


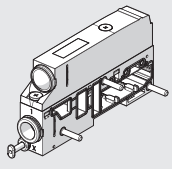
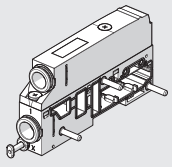


ADDITIONAL PNEUMATIC SUPPLY

During the configuration of the BOXI island, it is possible to insert, in the final position, an additional dedicated pneumatic supply and exhaust module, in order to increase the inlet and exhaust air flow rate of the island. **The module cannot be inserted into already assembled islands**.
It is recommended in cases where there is simultaneous operation of several solenoid valves, with a flow rate request exceeding 3000 Nl/min*, or when it becomes important to have a quick pressure relief from ports 3 and 5.
It can be requested with a silenced exhaust or with a conveyed exhaust with fittings for Ø 8 - Ø 10, Ø 12 or Ø 1/2" pipes.

* Indicative value, depending on the operating pressure, the supply hoses and the specific needs of the application.



Relief	Symbol	Pipe fitting	Configuration ID
Silenced		Ø 8 (5/16")	**M100B00**
		Ø 10	**M200B00**
		Ø 12	**M300B00**
		Ø 1/2"	**M500B00**
Conveyed		2 x Ø 8 (5/16")	**M100B10**
		2 x Ø 10	**M200B20**
		2 x Ø 12	**M300B30**
		2 x Ø 1/2"	**M500B50**

CONFIGURATION SEQUENCE

EB 80 BOXI	0 8	1 6	E 0 2 6	G	1	8 8 8 4 4 6 6 6	0	V V K I V V K I	M 1 0 0 B 0 0
FAMILY	NUMBER		ELECTRICAL CONNECTION	PORT THREADS 1, 3, 5	PILOTING	FITTINGS FOR PORTS 2-4 (Starting from the left)	MANUAL VALVE CONTROL	VALVES	ADDITIONAL PNEUMATIC SUPPLY (Optional)
	Positions	Electrical controls							
BOXI	**06**	**06**	**E026** Multi-pole Connection, D-Sub 26 pin	**G** 1/4" G (BSP)	**1** Non-servo-assisted	**1** Without cartridges	**0** Monostable	▲ **Z** 2 valves 2/2 NC	**SILENCED EXHAUST**
		12		**U** 1/4" NPT	**X** Servo-assisted	**2** Pipe fitting Ø 1/4"	**1** Bistable	▲ **I** 2 valves 3/2 NC	**M100B00** Pipe fitting Ø 8 (5/16")
	08	**08**				**4** Pipe fitting Ø 4 (5/32")	● **9** Without valves	▲ **W** 2 valves 3/2 NO	**M200B00** Pipe fitting Ø 10
		16				**6** Pipe fitting Ø 6		▲ **L** 3/2 NC + 3/2 NO	**M300B00** Pipe fitting Ø 12
	12	**12**				**8** Pipe fitting Ø 8 (5/16")		**V** 5/2 monostable	**M500B00** Pipe fitting Ø 1/2"
		24						▲ **K** 5/2 bistable	**CONVEYED EXHAUST**
								▲ **O** 5/3 CC	**M100B10** Pipe fitting Ø 8 (5/16")
								G 3/2 NC high flow	**M200B20** Pipe fitting Ø 10
								J 3/2 NO high flow	**M300B30** Pipe fitting Ø 12
								✚ **R** Shut-off valve	**M500B50** Pipe fitting Ø 1/2"
								Y Bypass	
								N Dummy valve (plug)	
								● **9** None	

▲ Only for version with 12, 16 or 24 electrical controls.
✚ Requires inlet port X slave synchronisation.
● The entire island without valves.

Example of configuration sequence for an island with valves

BOXI	12	24	E026	G	1	666666888888	1	IIIKKKIIIKKK	M100B00

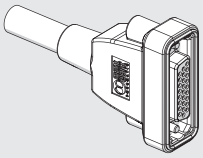
Example of configuration sequence for an island without valves

BOXI	12	24	E026	G	1	666666888888	9	999999999999	M100B00

As with the EB 80 islands, a full configuration sequence is required when ordering (see examples). The sales code for the desired configuration will be created by our sales departments.

ACCESSORIES

PRE-WIRED STRAIGHT D-Sub 26 PIN HIGH DENSITY PLUG CONNECTOR KIT



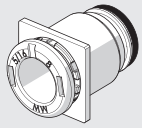
Code	Description	Weight [g]
02269K0100	Straight D-Sub HD 26 PIN IP65 connector + cable L = 1 m	160
02269K0250	Straight D-Sub HD 26 PIN IP65 connector + cable L = 2.5 m	350
02269K0500	Straight D-Sub HD 26 PIN IP65 connector + cable L = 5 m	680
02269K1000	Straight D-Sub HD 26 PIN IP65 connector + cable L = 10 m	1300

Position of electrical contact	Colour of the corresponding wire (DIN 47100)	Function for EB 80 BOXI
1	White	Out 1
2	Brown	Out 2
3	Green	Out 3
4	Yellow	Out 4
5	Grey	Out 5
6	Pink	Out 6
7	Blue	Out 7
8	Red	Out 8
9	Black	Out 9
10	Violet	Out 10
11	Grey + Pink ring	Out 11
12	Red + Blue ring	Out 12
13	White + Green ring	Out 13

Position of electrical contact	Colour of the corresponding wire (DIN 47100)	Function for EB 80 BOXI
14	Brown + Green ring	Out 14
15	White + Yellow ring	Out 15
16	Yellow + Brown ring	Out 16
17	White + Grey ring	Out 17
18	Grey + Brown ring	Out 18
19	White + Pink ring	Out 19
20	Pink + Brown ring	Out 20
21	White + Blue ring	Out 21
22	Brown + Blue ring	Out 22
23	White + Red ring	Out 23
24	Brown + Red ring	Out 24
25	White + Black ring	0VDC
26	Brown + Black ring	+ VDC

SPARE PARTS

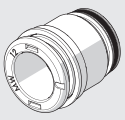
CARTRIDGE FOR BASES



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

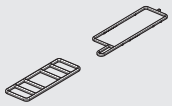
CARTRIDGE FOR ADDITIONAL PNEUMATIC SUPPLY



Code	Description	Ø
02282R2110	EB 80 silencer cartridge kit	silencer
02282R2113	EB 80 Ø 8 power supply round cartridge kit	8 (5/16")
02282R2114	EB 80 Ø 10 power supply round cartridge kit	10
02282R2115	EB 80 Ø 12 power supply round cartridge kit	12
02282R2118	EB 80 Ø 1/2 power supply round cartridge kit	1/2"

Comes in 10-pc. packs

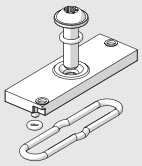
BASE-VALVE GASKET



Code	Description
02282R1002	EB 80 base-valve gasket kit

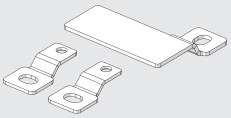
Comes in 10-pc. packs

SERVO SELECTOR



Code	Description
02282R9002	Kit servo selector with OR

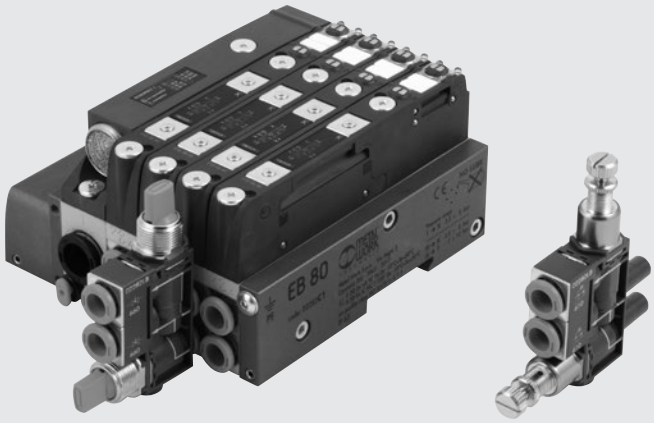
FIXING FOOT



Code	Description
02282R4003	Kit fixing foots

EB 80 MULTI-FUNCTION MODULE

The multi-function module is an important extension of the possibilities offered by the EB 80 systems to manage the performance of actuators controlled by individual solenoid valves. For each port, it can regulate the pressure and the flow rate, provide manual sectioning, display the presence of pressurized air and much more besides.
In line with the modular EB 80 configuration, the multi-function module is designed to ensure maximum flexibility: it can be installed at any time; the function connected to port 2 may differ from that connected to port 4 (e.g. regulating the pressure at output 2 and the air flow at port 4);
the modules can be mounted in series one after the other; the cartridge fittings for the pipes can be replaced at any time and are the same as those used in the EB 80 valve bases.
Given that the air input pipes have a Ø 8 mm, the multi-function module must be inserted in the EB 80 bases with cartridges suitable for Ø 8 fittings; but if the base to which you want to connect has a cartridge of a different diameter, you only need to buy a multi-function fitting with Ø 8 cartridges and replace those of the base with those of the module.
The code and the pneumatic diagram are laser etched on the technopolymer body.



PATENTED

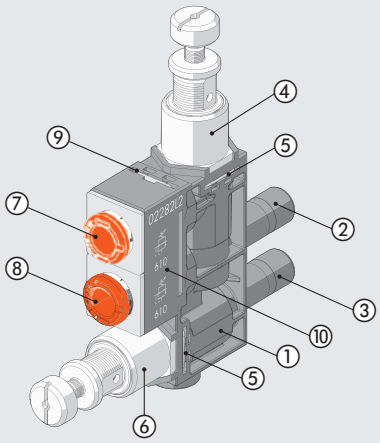
TECHNICAL DATA

Operating pressure	bar	10
	MPa	1
	psi	145
Temperature range	°C	-10 to + 50
	°F	14 to 122
Fluid		Unlubricated air
Air quality required		ISO 8573-1 class 4-7-3
Functions		Unidirectional flow regulator, bidirectional flow regulator, pressure regulator, quick-relief valve, check valve, 2- or 3-way shut-off valve, pneumatic valve, pressure display, calibrated choke.
Air inlet		Tubes for Ø 8 mm fittings
Air delivery		Cartridge fittings for pipes Ø 4 (5/32"), Ø 6, Ø 1/4", Ø 8 (5/16")
Recommended pipe		Rilsan PA 11 - Nylon 6 - Polyamide 12 - Polypropylene

N.B.: For more specific technical data, please refer to the chapters for individual function-modules

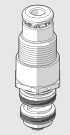
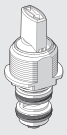
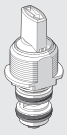
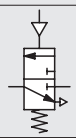
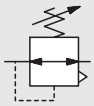
COMPONENTS

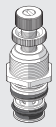
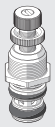
① BODY: technopolymer
② TUBE to be inserted into port 2 of the EB 80 base
③ TUBE to be inserted into port 4 of the EB 80 base
④ PNEUMATIC FUNCTION relating to port 2
⑤ CLIP for the pneumatic function, steel
⑥ PNEUMATIC FUNCTION relating to port 4
⑦ Cartridge FITTING for port 2
⑧ Cartridge FITTING for port 4
⑨ CLIP for the cartridges
⑩ CODE AND DIAGRAM, laser etched

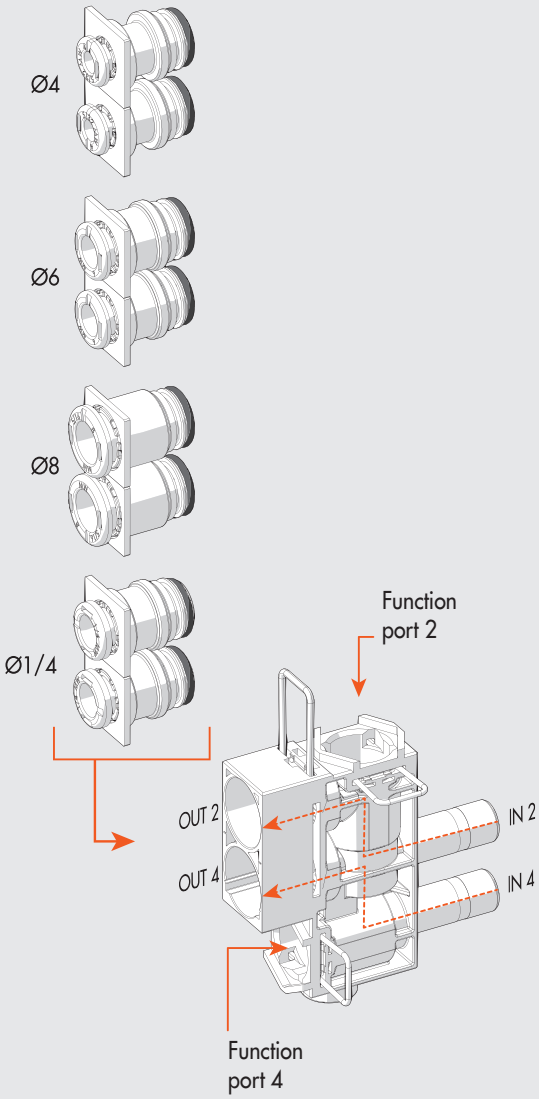


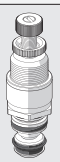
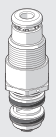
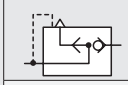
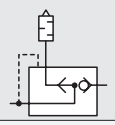
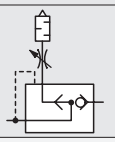
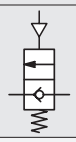
METAL WORK PNEUMATIC

EXPLODED FUNCTION DIAGRAM

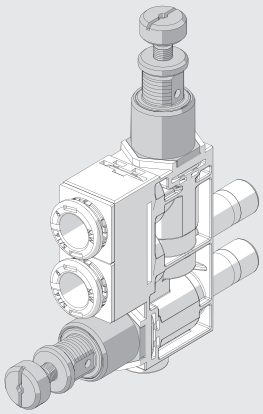
PNV	REG	LAM	V2V	V3V
				
3-way pneumatic valve	Pressure regulator	Pressure indicator	Shut-off valve 2-way	Shut-off valve 3-way
				
Code **670**	Code **610**	Code **680 / 682**	Code **650**	Code **660**
See page **B2**.92	See page **B2**.93	See page **B2**.94	See page **B2**.95	See page **B2**.95

RFL		RFF	
			
Flow regulator unidirectional	Flow regulator bidirectional	Calibrated choke unidirectional type V	Calibrated choke bidirectional type B
			
Code **410**	Code **411**	Code **7_ _**	Code **8_ _**
See page **B2**.96		See page **B2**.98	

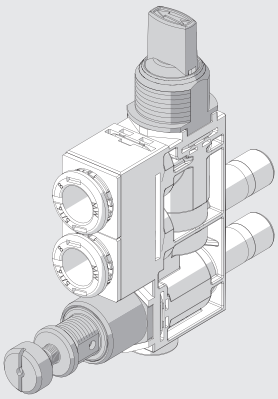


VSRC	VSRS	VSRR	P2V	VNR	NF
					
Quick-exhaust valve conveyed	Quick-exhaust valve silenced	Quick-exhaust valve regulated	Unidirectional 2-way pneumatic valve	Check valve	No function
					
Code **630**	Code **631**	Code **632**	Code **671**	Code **640**	Code **000**
See page **B2**.99	See page **B2**.99	See page **B2**.100	See page **B2**.102	See page **B2**.103	See page **B2**.104

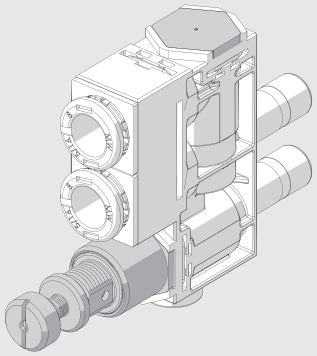
EXAMPLES OF MODULARITY



SAME FUNCTIONS ON PORTS 2 AND 4

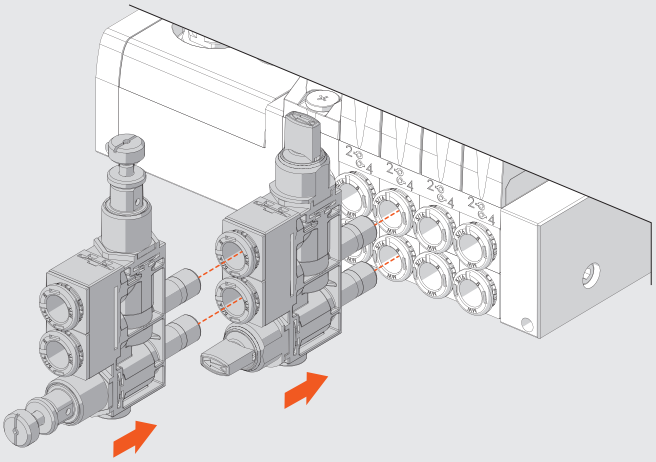


FUNCTION ON PORT 2 DIFFERENT FROM THAT ON PORT 4



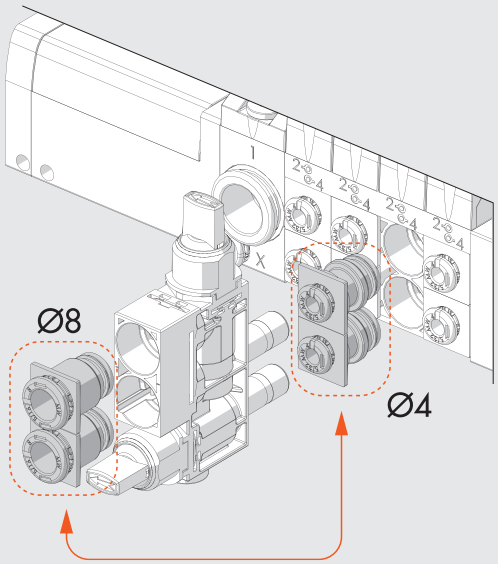
FUNCTION ON ONE PORT ONLY

SERIES ASSEMBLING



REPLACING THE CARTRIDGES

When fittings for pipes other than Ø 8 pipes are mounted on the base, choose a multi-function module with Ø 8 fittings and invert them with those of the base.



KEY TO CODES

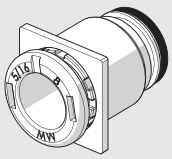
02282	L	6	610	410
FAMILY	**SUBSYSTEM**	**FITTINGS**	**FUNCTION PORT 2 (Top)**	**FUNCTION PORT 4 (Bottom)**
02282 EB 80	**L** Multi-function module	**2** Pipe fitting Ø 1/4" **4** Pipe fitting Ø 4 (5/32") **6** Pipe fitting Ø 6 **8** Pipe fitting Ø 8 (5/16")	**000** NF - No function **410** RFL - Flow regulator unidirectional **411** RFL - Flow regulator bidirectional **610** REG - Pressure regulator **630** VSRC - Quick-exhaust valve, conveyed **631** VSRS - Quick-exhaust valve, silenced **632** VSRR - Quick-exhaust valve, regulated **640** VNR - Check valve **650** V2V - 2-way shut-off valve **660** V3V - 3-way shut-off valve **670** PNV - 3-way pneumatic valve **671** P2V - Unidirectional 2-way pneumatic valve **680** LAM - Orange pressure indicator **682** LAM - Green pressure indicator **7_ _*** RFF - Calibrated choke unidirectional - type V **8_ _*** RFF - Calibrated choke bidirectional - type B	**000** NF - No function **410** RFL - Flow regulator unidirectional **411** RFL - Flow regulator bidirectional **610** REG - Pressure regulator **630** VSRC - Quick-exhaust valve, conveyed **631** VSRS - Quick-exhaust valve, silenced **632** VSRR - Quick-exhaust valve, regulated **640** VNR - Check valve **650** V2V - 2-way shut-off valve **660** V3V - 3-way shut-off valve **670** PNV - 3-way pneumatic valve **671** P2V - Unidirectional 2-way pneumatic valve **680** LAM - Orange pressure indicator **682** LAM - Green pressure indicator **7_ _*** RFF - Calibrated choke unidirectional - type V **8_ _*** RFF - Calibrated choke bidirectional - type B

* The last two digits indicate the narrowing Ø.

02 = Ø 0.2 mm	**05** = Ø 0.5 mm	**10** = Ø 1.0 mm
03 = Ø 0.3 mm	**06** = Ø 0.6 mm	**13** = Ø 1.3 mm
04 = Ø 0.4 mm	**08** = Ø 0.8 mm	**15** = Ø 1.5 mm

SPARE PARTS

CARTRIDGE



Code	Description	Ø
02282R2001	EB 80 Ø 4 base square cartridge kit	4 (5/32")
02282R2002	EB 80 Ø 6 base square cartridge kit	6
02282R2003	EB 80 Ø 8 base square cartridge kit	8 (5/16")
02282R2006	EB 80 Ø 1/4 base square cartridge kit	1/4"

Comes in 10-pc. packs

NOTES

EB 80 3-WAY PNEUMATIC VALVE – PNV

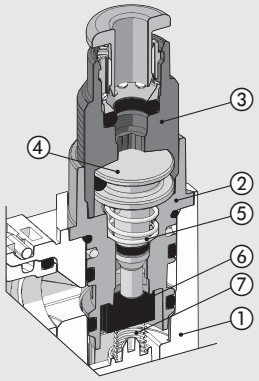
It is a normally closed 3/2 valve driven pneumatically via a Ø 4 pipe.
It intercepts the air flow leaving the EB 80 valve. If the PNV is activated, the flow opens up, when it is de-activated the pressure is discharged downstream.

TECHNICAL DATA

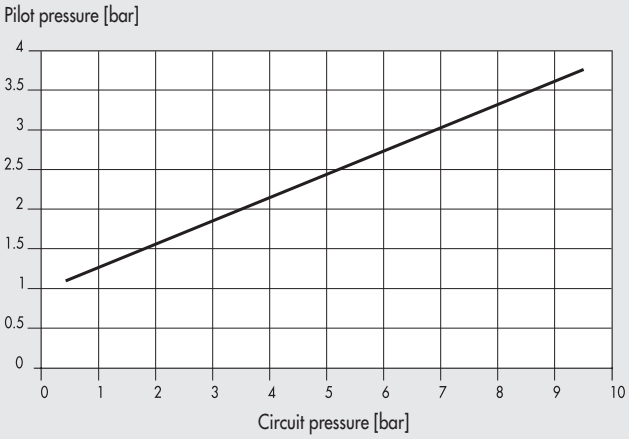
Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Max. operating pressure	bar	10			
	MPa	1			
	psi	145			
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	110	380	420	380
Flow rate at 6.3 bar free exhaust	Nl/min	80			
Minimum pilot pressure		See graph			

COMPONENTS

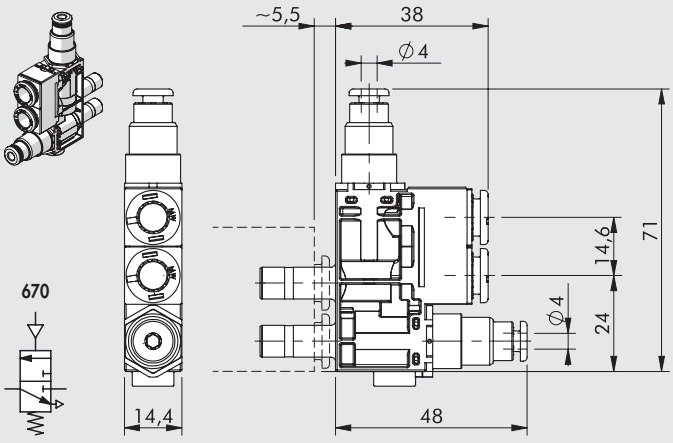
① BODY: technopolymer
② INSERT: nickel-plated brass
③ PILOT INSERT: nickel-plated brass
④ PISTON ROD: brass
⑤ CLAMPING SPRING: stainless steel
⑥ SEAL: NBR
⑦ POPPET SPRING: stainless steel



MINIMUM PILOT PRESSURE



DIMENSIONS



EB 80 PRESSURE REGULATOR - REG

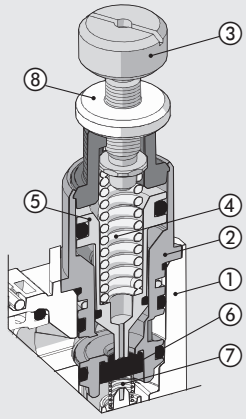
It regulates the pressure coming from the EB 80 base to individual branches.
It comes with an overpressure relief device.
It can be used as an economizer: if the thrust in a cylinder must be exerted in one direction, e.g. at the piston rod output, while a lower thrust is required in the other direction, a lot of energy can be saved by inserting the pressure regulator into the port connected to piston rod retraction.

TECHNICAL DATA

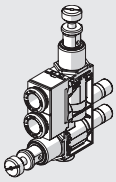
Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Setting range		1 to 8 bar - 0.1 to 0.8 MPa - 14.5 to 116 psi			
Input pressure	bar	2 to 10			
	MPa	0.2 to 1			
	psi	30 to 145			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar	Nl/min	80	130	150	130
Flow rate on exhaust at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	300	380	400	380
Adjustment		Manual or using a screwdriver			
Notes on use		The pressure must always be set upwards			

COMPONENTS

① BODY: technopolymer
② INSERT: nickel-plated brass
③ ADJUSTING SCREW: nickel-plated brass
④ ADJUSTING SPRING: steel
⑤ PISTON ROD: brass
⑥ SHUTTER: NBR
⑦ POPPET SPRING: stainless steel
⑧ ADJUSTING SCREW RING NUT: nickel-plated brass



DIMENSIONS



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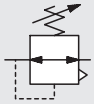
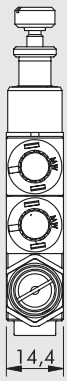
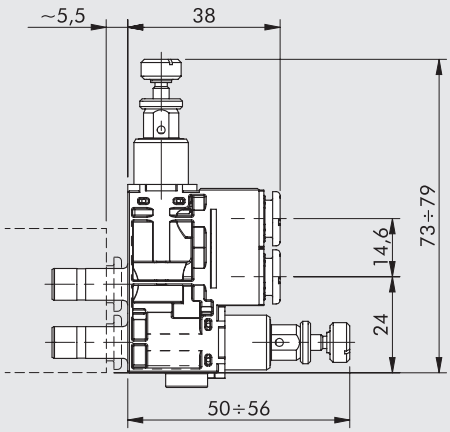






EB 80 PRESSURE INDICATOR - LAM

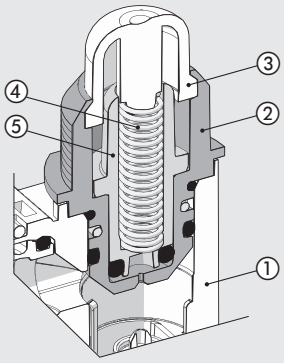
Also called pneumatic lamp, it optically indicate the presence of compressed air in the circuit.
If there is no pressure, the transparent technopolymer bell is empty; if there is pressure an orange or a green sign is indicated.

TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Operating pressure	bar	2 to 10			
	MPa	0.2 to 1			
	psi	29 to 145			
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	130	500	600	500
Colour with pressure		Orange - Green			

COMPONENTS

① BODY: technopolymer
② INSERT: nickel-plated brass
③ COVER: clear technopolymer
④ RETURN SPRING: stainless steel
⑤ MOBILE INDICATOR: technopolymer



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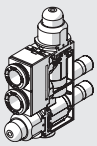

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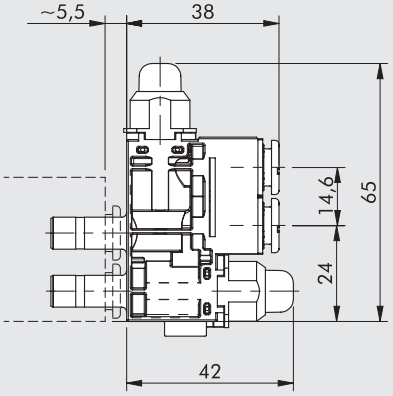


EB 80 SHUT-OFF VALVE - V2V-V3V

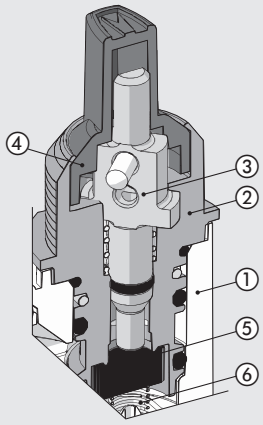
It shuts off the flow of air coming from the EB 80 via a manual command. Two versions are available: the two-way unidirectional V2V valve and the V3V 3-way valve. The latter, when deactivated, intercepts the flow from the EB 80 valve and relieves downstream pressure.

TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Max. operating pressure	bar	10			
	MPa	1			
	psi	145			
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	120	370	420	370
Flow rate of the V3V when relieving at 6.3 bar	Nl/min	110			

COMPONENTS

① BODY: technopolymer
② INSERT: nickel-plated brass
③ ROD: brass
④ KNOB: technopolymer
⑤ VALVE: NBR
⑥ VALVE COMPRESSION SPRING: stainless steel



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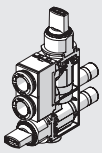

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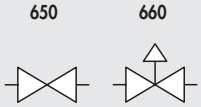
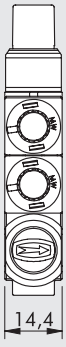
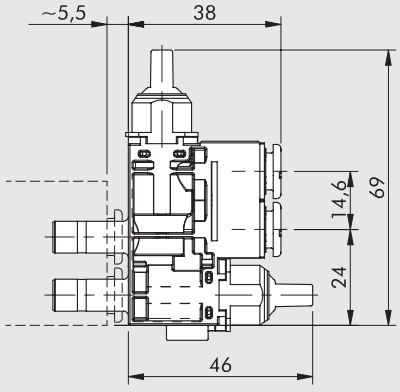






EB 80 FLOW REGULATOR - RFL

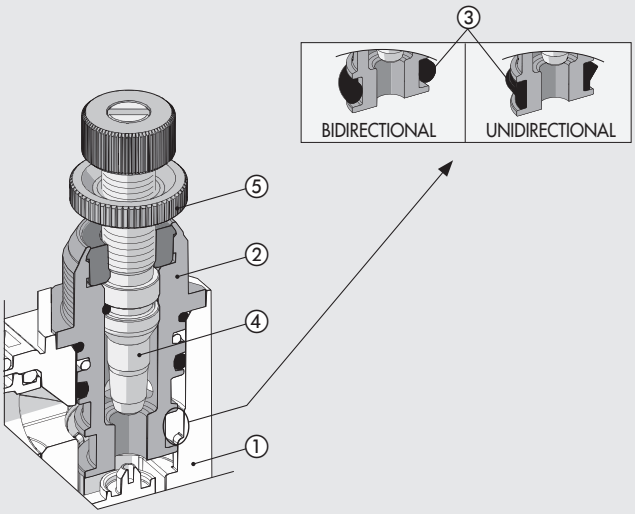
It regulates the air flow rate, and hence the speed, in pneumatic actuators. Two versions are available: the bidirectional one regulating the flow in both directions and the unidirectional one regulating the flow when the EB 80 valve is relieving.

TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Max. operating pressure	bar	10			
	MPa	1			
	psi	145			
Maximum flow rate during regulation at 6.3 bar	Nl/min	440	650	710	650
Exhaust flow rate (unidirectional version)	Nl/min	450	720	800	720
Adjustment		Manual or using a screwdriver			
Operating system		Tapered needle			

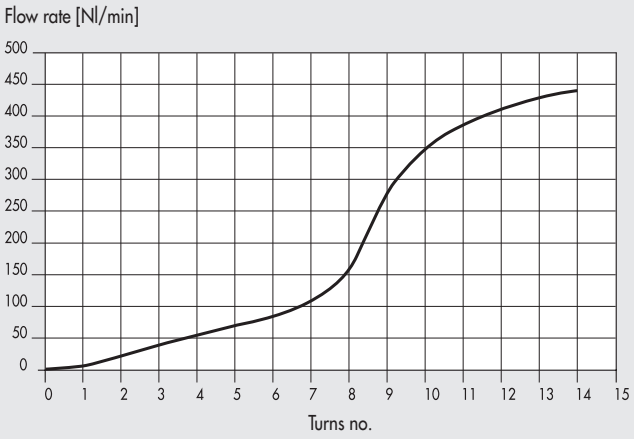
COMPONENTS

① BODY: technopolymer
② SEAL SUPPORT: nickel-plated brass
③ GASKET: NBR
④ ADJUSTING NEEDLE: brass
⑤ NEEDLE RING NUT: nickel-plated brass

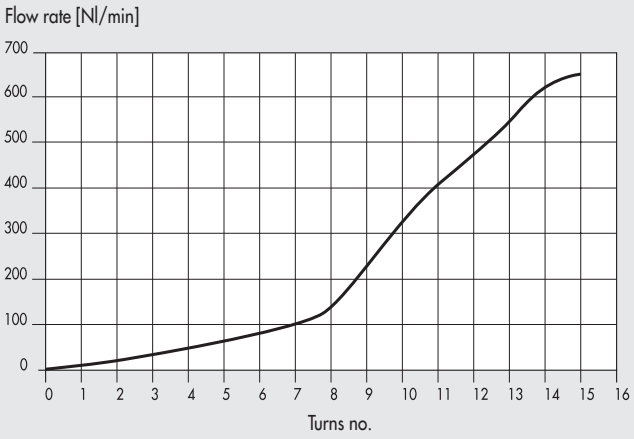


FLOW RATE CHARTS AT 6.3 bar DEPENDING ON THE TURNS EFFECTED BY THE REGULATION OF THE NEDDLE

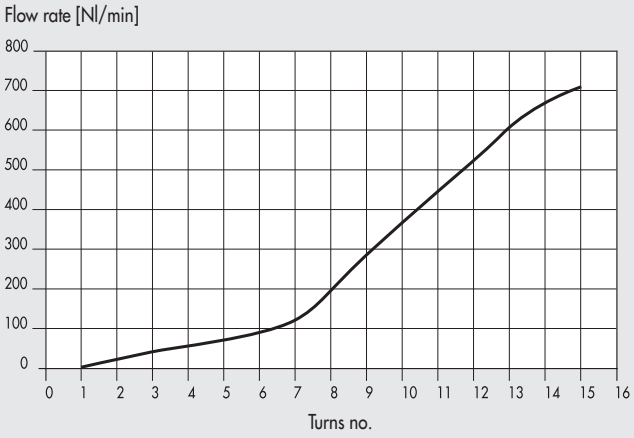
RFL Ø4



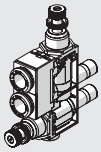
RFL Ø6 - Ø1/4

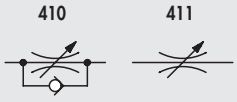


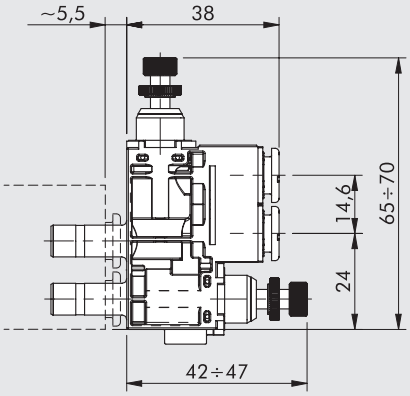
RFL Ø8



DIMENSIONS







EB 80 CALIBRATED CHOKE - RFF

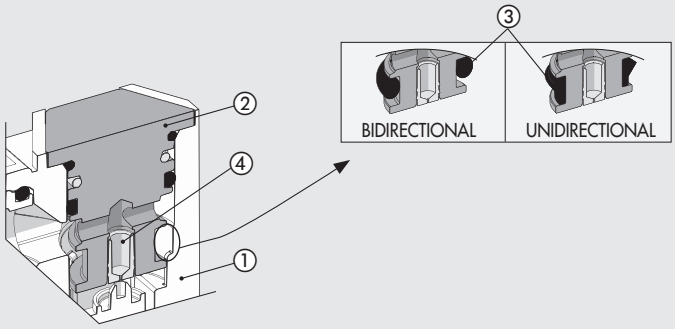
It regulates the air flow rate, and hence the speed, in pneumatic actuators. This is done by means of a choke of a calibrated diameter. In order to obtain the desired air flow rate, you can choose different choking diameters. Compared to adjustable versions, the main advantage is that it does not require any adjustments during the assembly of the machine and prevents from subsequent tampering.
Two versions are available: the bidirectional one regulating the flow in both directions and the unidirectional one regulating the flow when the EB 80 valve is relieving.

TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Max. operating pressure	bar	10			
	MPa	1			
	psi	145			
Flow rates		See tables			
Adjustment		Fixed			
Operating system		Calibrated hole			

COMPONENTS

① BODY: technopolymer
② SEAL SUPPORT: nickel-plated brass
③ GASKET: NBR
④ THROTTLE CARTRIDGE: brass



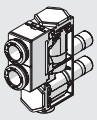
EXHAUST FLOW RATE AT 6.3 bar UNIDIRECTIONAL VERSION [Nl/min]

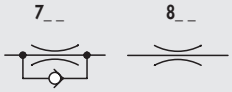
Choke [mm]	Ø 4	Ø 6 - Ø 1/4	Ø 8
Ø 0.2	240	550	640
Ø 0.3	242	552	642
Ø 0.4	245	555	645
Ø 0.5	250	560	650
Ø 0.6	255	565	660
Ø 0.8	265	570	690
Ø 1.0	275	580	710
Ø 1.3	290	610	750
Ø 1.5	300	620	800

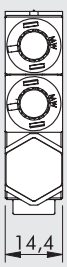
CHOKE FLOW-RATE AT 6 bar WITH FREE EXHAUST

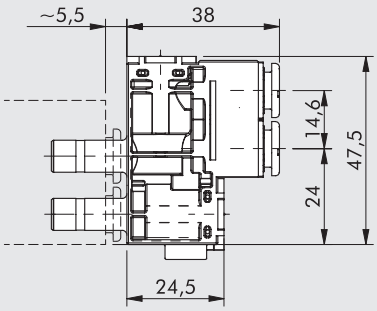
Choke [mm]	Flow rate [Nl/min]
Ø 0.2	2
Ø 0.3	4
Ø 0.4	7
Ø 0.5	13
Ø 0.6	15
Ø 0.8	32
Ø 1.0	50
Ø 1.3	85
Ø 1.5	110

DIMENSIONS









EB 80 QUICK-EXHAUST VALVE - VSR

It speeds up the relieving of air coming from the actuators to the EB 80 and releases it into the atmosphere.
If the air coming from the actuators is polluted, it prevents it from entering into the EB 80 island, where it could risk to damage the valves.
Air relieving can be either silenced with a stainless steel wire or conveyed via an automatic fitting.

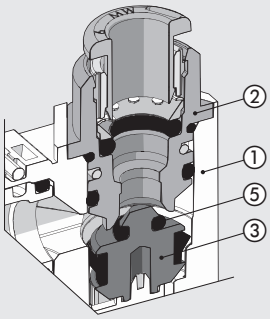
TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Operating pressure	bar	1 to 10			
	MPa	0.1 to 1			
	psi	14.5 to 145			
Inlet flow rate at 6.3 bar ΔP 1 bar	Nl/min	90	210	270	210
Exhaust flow rate at 6.3 bar	Nl/min	330	700	750	700

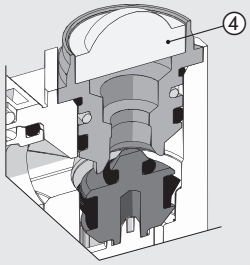
COMPONENTS

① BODY: technopolymer
② INSERT: nickel-plated brass
③ VALVE: brass
④ SILENCER: stainless steel wire
⑤ GASKET: NBR

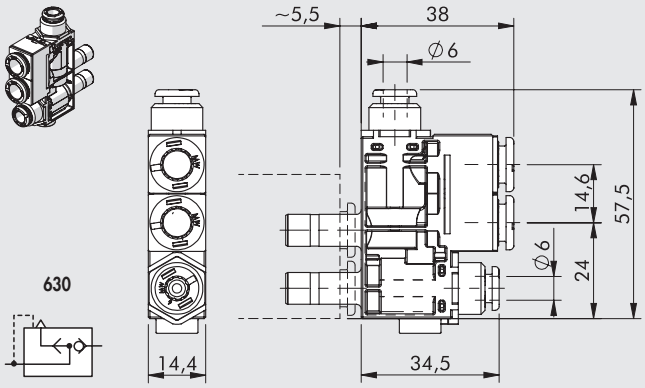
CONVEYED VERSION



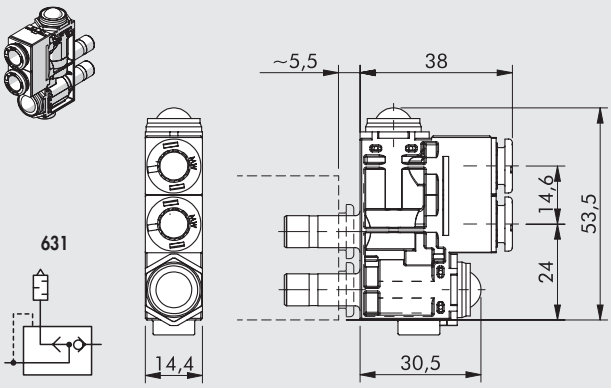
SILENCED VERSION



CONVEYED VERSION DIMENSIONS



SILENCED VERSION DIMENSIONS



EB 80 QUICK-EXHAUST VALVE WITH FLOW REGULATOR - VSRR

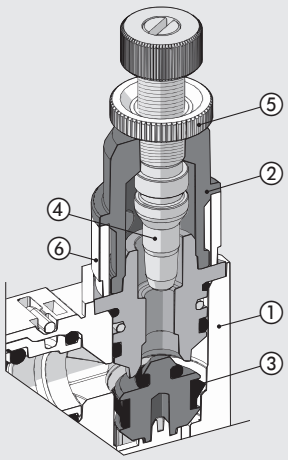
It speeds up the relieving of air coming from the actuators to the EB 80, releases it into the atmosphere and regulates the flow rate. It relieves the air coming from the utilities and regulates the quality of flow precisely by operating the knob provided.

TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Operating pressure	bar	1 to 10			
	MPa	0.1 to 1			
	psi	14.5 to 145			
Inlet flow rate at 6.3 bar ΔP 1 bar	Nl/min	90	210	270	210
Max flow rate on exhaust at 6.3 bar	Nl/min	450	530	560	530
Adjustment		Manual or using a screwdriver			
Internal system		Tapered needle			

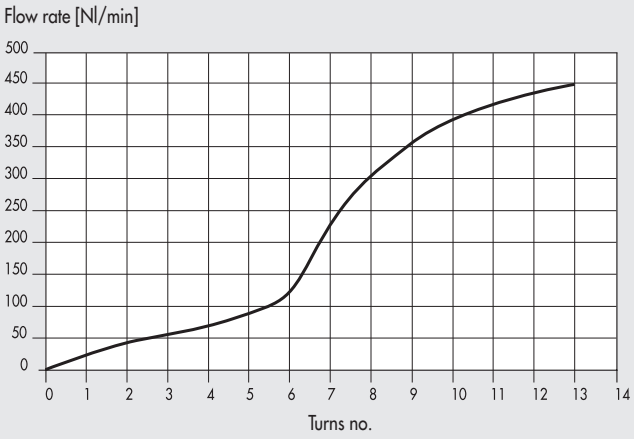
COMPONENTS

① BODY: technopolymer
② SEAL SUPPORT: nickel-plated brass
③ GASKET: NBR
④ ADJUSTING NEEDLE: brass
⑤ NEEDLE RING NUT: nickel-plated brass
⑥ SILENCER: sintered bronze

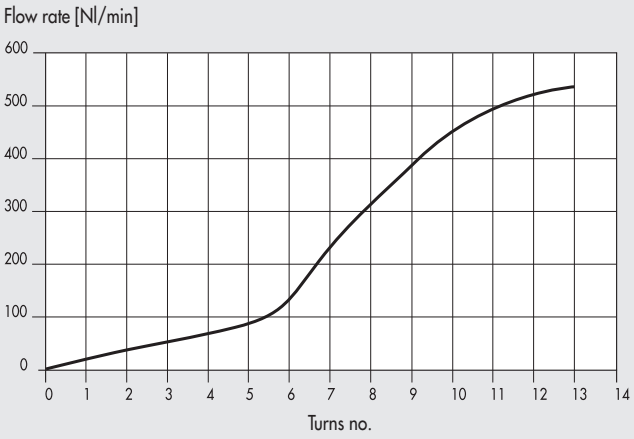


EXHAUST FLOW CHARTS AT 6.3 bar DEPENDING ON THE TURNS EFFECTED BY THE REGULATION OF THE NEDDLE

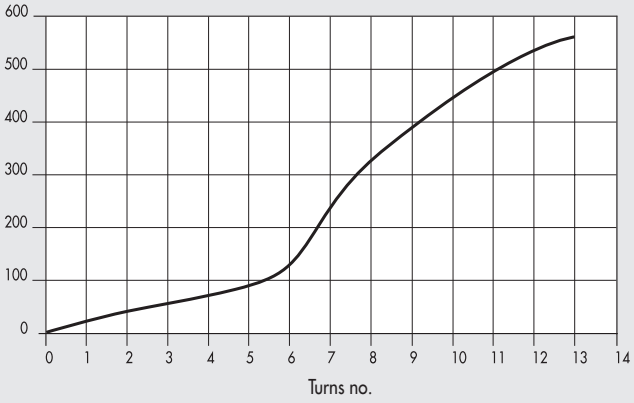
VSRR Ø4



VSRR Ø6 - Ø1/4



VSRR Ø8



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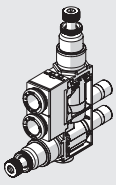

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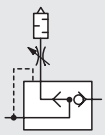
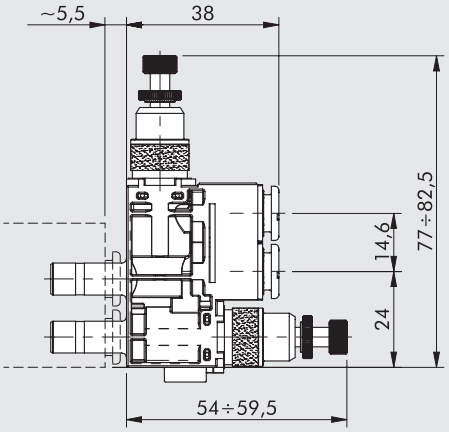




EB 80 UNIDIRECTIONAL 2-WAY PNEUMATIC VALVE – P2V

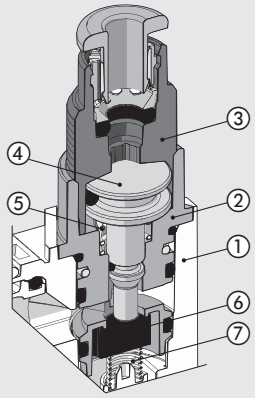
Unidirectional normally closed 2/2 valve pneumatically driven via a Ø 4 pipe.
Can intercept the flow of air coming from the EB 80 valve.
When enabled, it opens the flow; when disabled it closes the pressurised circuit.
N.B.: Given the direction of the flow, it cannot be used to block the flow of air coming out of a cylinder.

TECHNICAL DATA

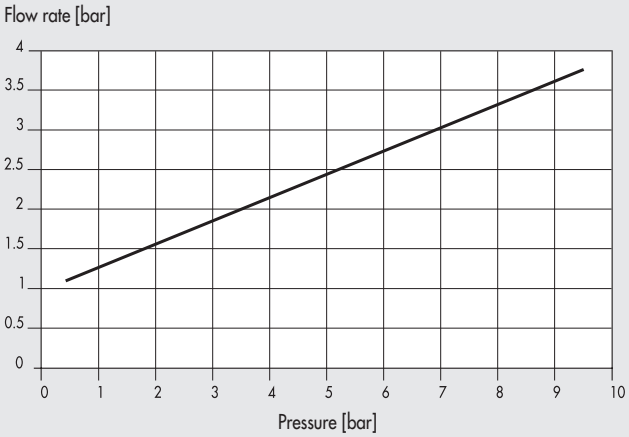
Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Max. operating pressure	bar	10			
	MPa	1			
	psi	145			
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	110	370	420	370
Minimum pilot pressure		See graph			

COMPONENTS

① BODY: technopolymer
② INSERT: nickel-plated brass
③ PILOT INSERT: nickel-plated brass
④ PISTON ROD: brass
⑤ CLAMPING SPRING: stainless steel
⑥ SEAL: NBR
⑦ POPPET SPRING: stainless steel



MINIMUM PILOT PRESSURE



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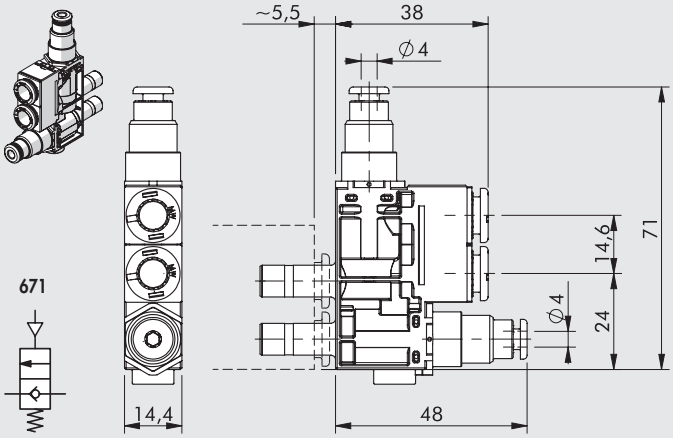


EB 80 CHECK VALVE - VNR

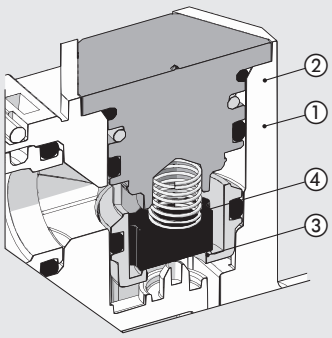
Check valve. Full flow from the EB 80 valve to the utility. It prevents the air flow from reversing downstream the VNR.

TECHNICAL DATA

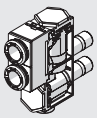
Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Operating pressure	bar	0.5 to 10			
	MPa	0.05 to 1			
	psi	7.2 to 145			
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	350	420	450	420

COMPONENTS

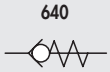
① BODY: technopolymer
② INSERT: nickel-plated brass
③ VALVE: NBR
④ VALVE COMPRESSION SPRING: stainless steel

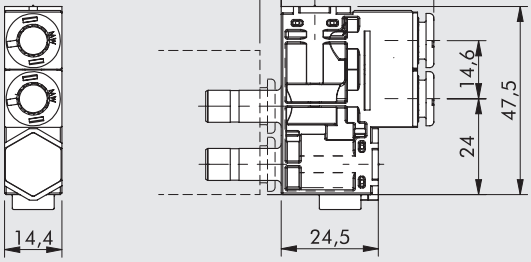


DIMENSIONS



640





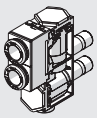
EB 80 NO FUNCTION - NF

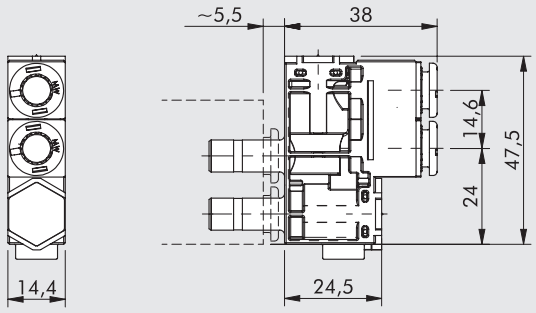
To be used when, on one of the two-way network, no pneumatic function is required.
The flow conveys directly from the inlet to the output fitting without any variation.

TECHNICAL DATA

Ø of cartridge fitting		Ø 4 (5/32")	Ø 6	Ø 8 (5/16")	Ø 1/4"
Max. operating pressure	bar		10		
	MPa		1		
	psi		145		
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	130	500	600	500

DIMENSIONS





NOTES

EB 80 SPLASH AREA

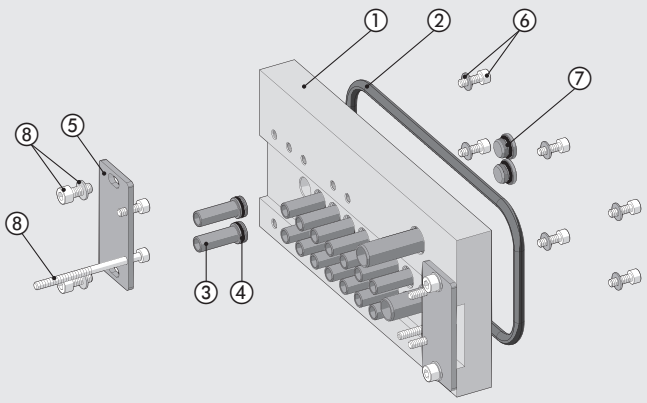
The splash-area assembly kits have been designed and developed for the Food & Beverage industry and, in general, for use in all the situations in which it is advisable to separate the solenoid valves from areas where there are fluids.
The kit can be used to fix a standard EB 80 island to a sheet metal plate, perforated by the customer, with compressed air fittings and pipes installed downstream.
Two models are available, one designed to accommodate 3-8 valves and one 8-12 valves. Other configurations can be made on specific request.
The plate is available in two optional materials: anticorodal 6082 anodized aluminium and AISI 304 stainless steel.
Threaded holes are provided in the splash-area side of the plate for air supply, relief, control and utilities.
The EB 80 islands of any type can be fixed to the kit, with either multi-pin or fieldbus connection and signal modules, provided that they have one pneumatic supply source to avoid changing the pitch between valves, and the ports 2 and 4 have Ø 8 fittings and the ports 1 and 3 have Ø 12 fittings.
The valve island can be used with silenced relief provided that the threaded port of the plate is closed.

TECHNICAL DATA	
General technical data	See page **B2**.4
Protection rating at the splash-area side	IP67
Versions	3 to 8 positions; 8 to 12 positions
Bases configurable with this number of valves	For maximum 8-position version: 3, 4, 6, 7, 8 valves
	For the maximum 12-position version: 8, 9, 10, 11, 12 valves
Pneumatic fittings	1/4" supply and discharge
	M5 piloting
	1/8" delivery

N.B.: The valve island to be used with the splash-area must be configured with Ø8 mm fittings on ports 2 and 4 and Ø12 mm fittings on ports 1, 3 and 5.

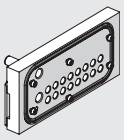
COMPONENTS

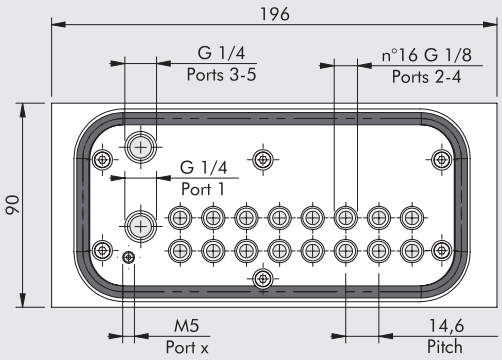
① SPLASH-AREA PLATE: 6082 anodized aluminium or AISI 304 stainless steel
② SPLASH-AREA GASKET: NBR
③ EXTENSIONS: nickel-plated brass
④ GASKETS: NBR
⑤ FIXING BRACKET: AISI 304 stainless steel
⑥ SCREWS AND WASHERS: stainless steel
⑦ 1/8" PLUGS: nickel-plated brass (to cover unused outputs)
⑧ SCREWS AND WASHERS: zinc-plated steel

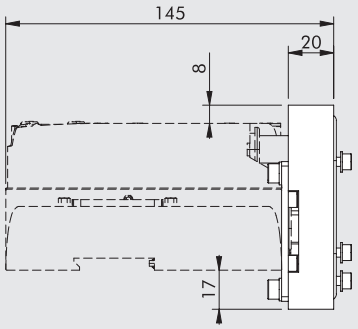


DIMENSIONS AND ORDERING CODES

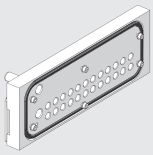
3 to 8 POSITION

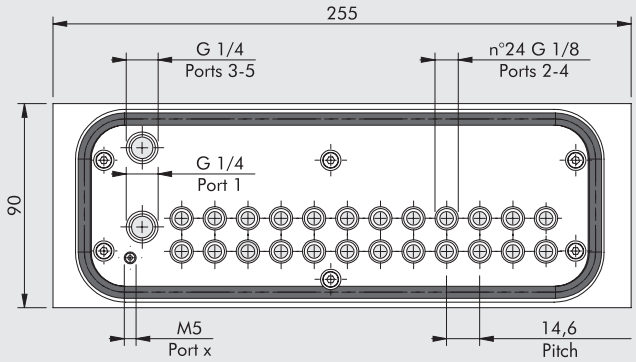






8 to 12 POSITION





Code	Description	Weight [g]
02282**R7080**	EB 80 splash-area kit 3-8 positions aluminum	919
02282**R7081**	EB 80 splash-area kit 3-8 positions stainless steel	2354
02282**R7120**	EB 80 splash-area kit 8-12 positions aluminum	1189
02282**R7121**	EB 80 splash-area kit 8-12 positions stainless steel	3046

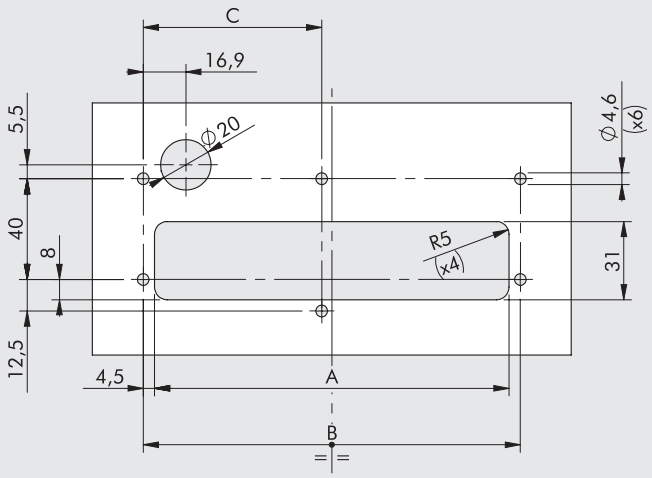
DIMENSIONS FOR THE DRILLING OF THE FIXING INTERFACE

3 to 8 POSITION

A	B	C
140.6	149.9	70.8

8 to 12 POSITION

A	B	C
199	208	100



KEY TO CODES

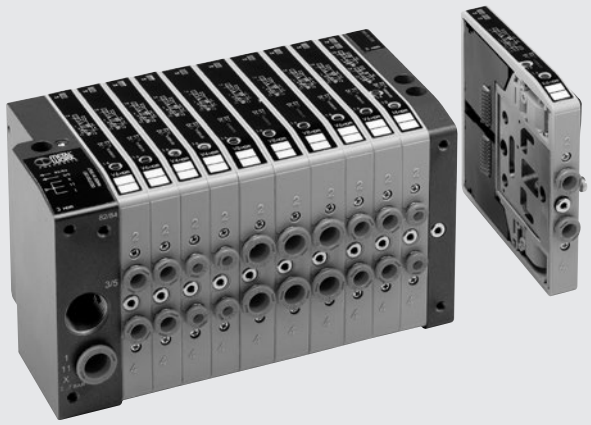
02282	R	7	08	0
FAMILY	**CATEGORY**	**SUBSYSTEM**	**NUMBER OF POSITIONS**	**MATERIAL**
02282 EB 80	**R** Spares and accessories	**7** Splash-area	**08** 8 positions **12** 12 positions	**0** Anodized aluminum plate 6082 **1** Plate AISI 304

METAL WORK PNEUMATIC

NOTES

HDM + MULTI-POLE CONNECTION

HDMs are the ideal solution for those requiring the unbeatable performance, flexibility and modularity of Multimach valves combined with sturdy mechanics and a high degree of protection against external agents. Each valve is enclosed in a reinforced technopolymer protective shell that acts as a shock-absorber and prevents the infiltration of dirt. The class of protection is IP65.
The smooth, rounded design makes HDMs ideal for applications requiring frequent washing without the deposit of residues. All the pneumatic connections are on one side, with built-in push-in fittings. The user interface is on another side so that the fitter and the service engineer have everything at hand.
Flexibility is total: there are 1-16 valves, input and output terminals for pipes of different sizes and intermediate modules for separate inputs and outputs.
One very important new feature is that valves of different capacities can be mounted as required. Three different valve sizes can be combined at will.
This means a valve can be replaced at any time by another one offering a different performance. It only takes a few seconds to replace or add a valve.
To do this, merely loosen the two grub screws fixing the valve to the adjacent ones. Since the electrical signal is relayed from one valve to the next by means of gold-plated contacts connected to an electronic board, the electrical connections are entirely automatic.
The ratio of the HDM's flow rate to its dimensions is unrivalled – miniaturisation and efficiency have reached a peak.

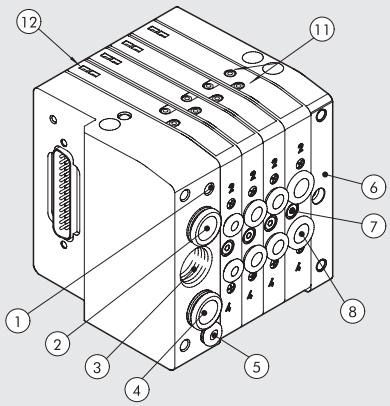


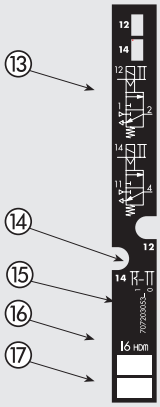
TECHNICAL DATA

Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or Ø 12 mm automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Connection on the end-plate for the supply of pilots		Automatic fitting Ø 4 mm				
Maximum number of pilots		16				
Maximum number of valves		16 (same as the max. no. of pilots)				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Pressure range	bar	X (pilot supply)			1-11 (valve supply)	
	Terminal 1-1	3 to 7			vacuum at 10	
	Terminal 1	3 to 7				
Voltage range		24VDC ± 10%				
Power	W	0.9				
Control		PNP o NPN				
Insulation class		F155				
Degree of protection		IP65 (with conveyed exhust)				
Solenoid rating		100% ED				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45			8 / 60	
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33			9 / 60	
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20			8 / 8	
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20			15 / 15	
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air.				
Compatibility with oils		See **chapter Z1**				

COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate or right end-plate 1-11
⑦ Screw for valve wall-mounting
⑧ Utility port for pipe Ø 4, 6, 8 or 10 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number

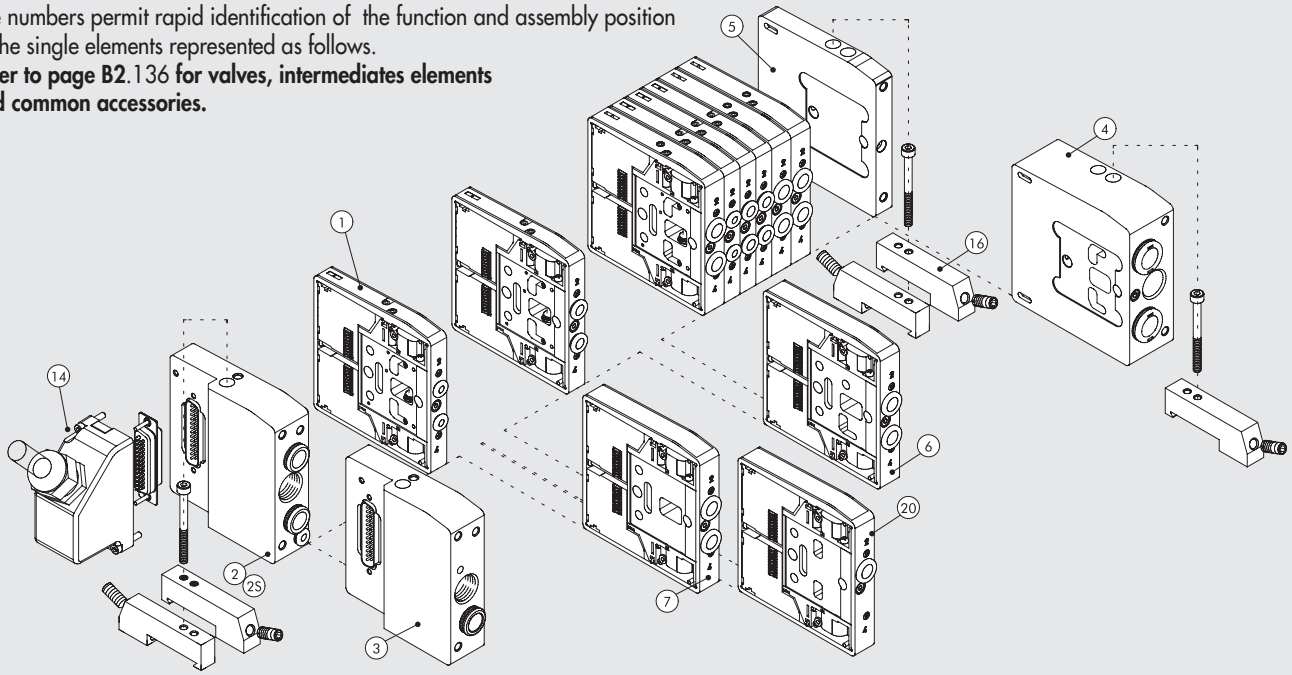




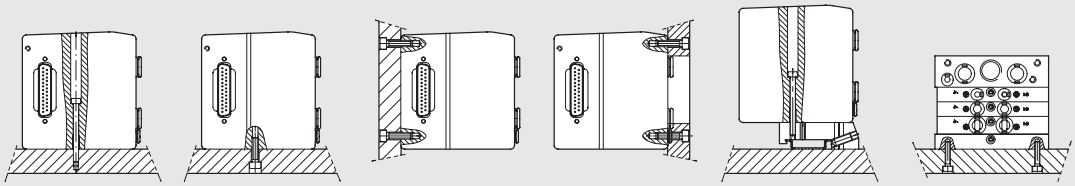
METAL WORK PNEUMATIC

THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.136 **for valves, intermediates elements and common accessories.**



FIXING THE BASE



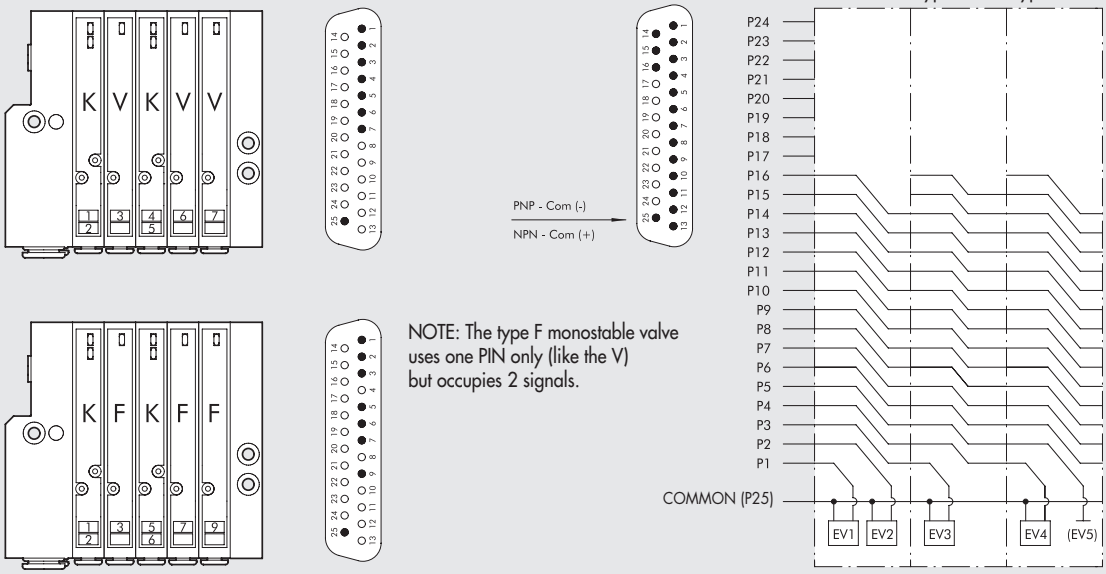
Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals. An opening for the pipes is made in the plate.
Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
Ⓕ Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.
Note: The sole fixing admitted is the one showed.

SYNOPTIC, SIZES AND VERSIONS

H D M VALVE	2 INPUT END-PLATE	8 ELECTRICAL BASE	M MANUAL TYPE	I6 - W 8 - W 6 - O 4 - L 8 - 5 TYPE OF VALVE	1 4 - 1 6 FURTHER DETAILS
Heavy duty Multimach IP65	**2** End-plate 1-11 pipe Ø 10 **3** End-plate 1 pipe Ø 10 **2S** End-plate 1-11 pipe Ø 12	**8** D-Sub 25 wire	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable ***F** 5/2 monostable **4** right-end-plate 1-11 pipe Ø12 **5** blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8 - 14 mm **8S** Cartridge 8 - 23 mm **10** Cartridge 10	**14** IP65 25-wire shell **16** n° 2 brackets for DIN bar

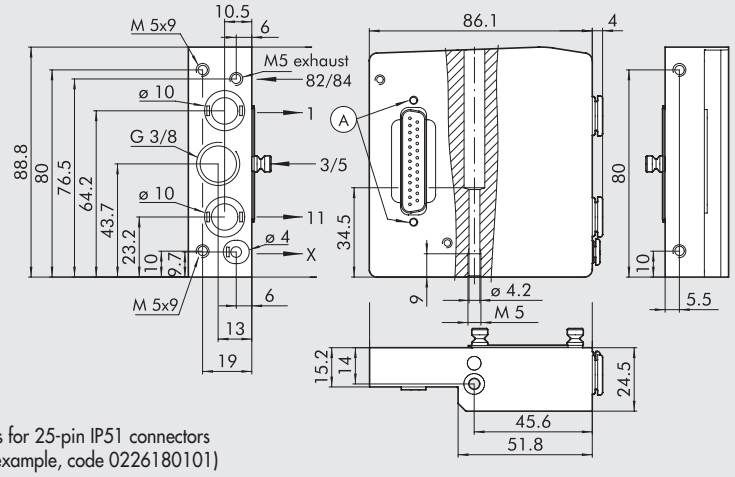
* Uses a single PIN (like the V) and occupies 2 signals.

WIRING DIAGRAM



NOTE: The type F monostable valve uses one PIN only (like the V) but occupies 2 signals.

② END-PLATE 1-11-25D - PIPE Ø10

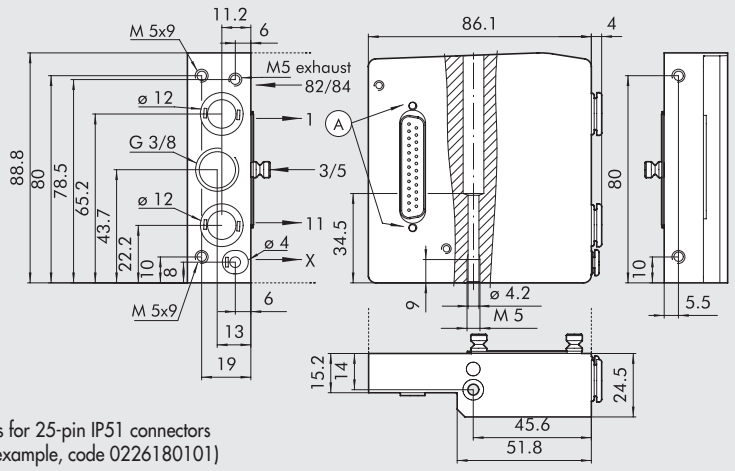


Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [g]
0227301200	End-plate HDM 1-11-25D Ø10	370

This end-plate allows for supplies to be differentiated
- Port 2
- Port 4
- Pilot supply

2S END-PLATE 1-11-25D - PIPE Ø12



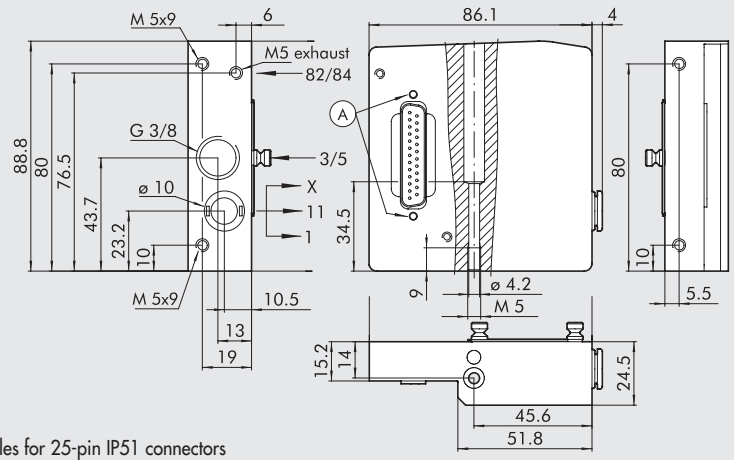
Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [g]
0227301220	End-plate HDM 1-11-25D Ø12	370

This end-plate allows for supplies to be differentiated
- Port 2
- Port 4
- Pilot supply

METAL WORK PNEUMATIC

③ END-PLATE 1-25D - PIPE Ø10

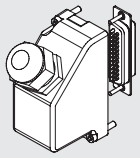


Ⓐ = Holes for 25-pin IP51 connectors (for example, code 0226180101)

Code	Description	Weight [g]
0227301201	End-plate HDM 1-25D Ø10	370

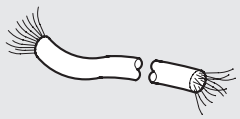
ACCESSORIES

⑭ 45° CONNECTOR KIT, 25 WIRES IP65



Code	Description	Weight [g]
0226180107	45° connector kit, 25 wires IP 65	65

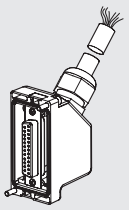
CABLES



Code	Description	Weight [g/m]
0226107201	10-wire cable	60
0226107101	19-wire cable	122
0226107102	25-wire cable	130

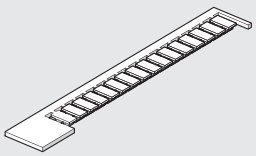
Specify the number of metres desired.

PRE-WIRED 45° CONNECTOR KIT, 25 WIRES IP65



Code	Description	Weight [g]
0226960100	Connector IP 65 + 25-wire 45° cable L = 1 m	190
0226960250	Connector IP 65 + 25-wire 45° cable L = 2.5 m	390
0226960500	Connector IP 65 + 25-wire 45° cable L = 5 m	740

IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTOR

25 PIN

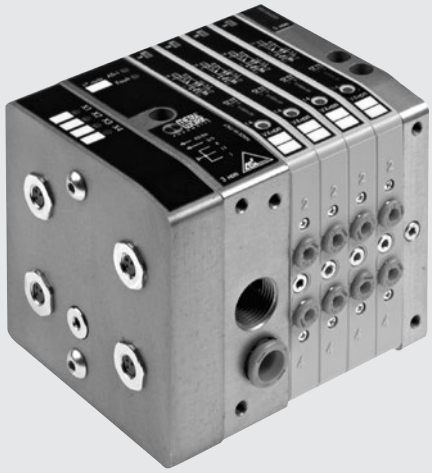
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	9	red/black	17	orange/white	25	green/black
2	red/brown	10	brown/white	18	green		
3	white/black	11	red/orange	19	yellow/black		
4	red/blue	12	light blue	20	white		
5	black/orange	13	yellow/white	21	blue/white		
6	yellow/red	14	yellow	22	brown		
7	black/brown	15	red/green	23	green/white		
8	white/red	16	orange	24	red		

HDM + AS-Interface

The HDM+AS-Interface system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and AS-I connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact. The valves and accessories are HDM standard, which means that you only need to replace the input terminal to convert the valve island with multiple connector into an AS-I island. All the advantages of the HDM system can be exploited: the possibility of mounting valves of different size, with fittings for pipes 4, 6, 8 or 10; the insertion of intermediate modules with separate power supply or outlets; aluminium valves with chemical nickel plating enclosed in a protective casing in reinforced technopolymer, with an index of protection IP65. The arrangement of the functions continues the traditional optimisation of the HDMs: the user interface of the valves and bus all on one side, so that the fitter and service engineer have everything within easy reach: all compressed air connections on the other side; the connectors for AS-I cables on the opposite side longitudinally, so that several valve islands can be arranged in line, fixed on a DIN bar.
There are many AS-I terminal variants to meet all possible requirements:

- with 1 node, for controlling up to 4 valve solenoid pilots;
- with 2 nodes, for controlling up to 8 solenoid pilots;
- with 1 note for output and input for controlling up to 4 solenoid pilots and receiving up to 4 input signals. The input connectors are M8 or M12;
- with 2 nodes for output and input for controlling up to 8 solenoid pilots and receiving up to 8 input signals with M8 connectors;
- power supply with the AS-I yellow cable only;
- power supply with two cables: the yellow AS-I cable and the black power supply cable.
- traditional V.2.1 addressing or extended AB V.3.0 address for an increase in the node numbers which can be connected up to 62 and for a better diagnostics

Note: if you use valves 8S type or 10 exploiting their flow capacity it is necessary that the feeding pressure is at least 6 bar (to avoid the pressure to decrease too much on the pilots).

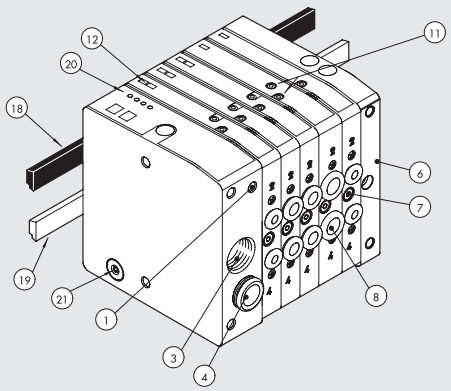


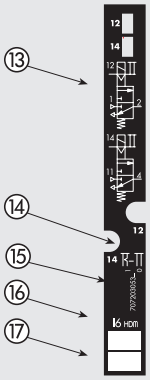
TECHNICAL DATA

Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Maximum number of pilots		Terminal with 1 node = 4 / terminal with 2 node = 8				
Maximum number of valves		Terminal with 1 node = 4 (same as the max. no. of pilots) / terminal with 2 node = 8 (same as the max. no. of pilots)				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Pressure range		X (pilot supply)		1-11 (valve supply)		
	Terminal 1-11	3 to 7 bar		vacuum at 10 bar		
	Terminal 1	3 to 7 bar				
Voltage range		24VDC ±10%				
Power for each pilot	W	0.9				
Solenoid Pilot Insulation class		F155				
Degree of protection		IP 65 (with conveyed exhaust, and unused INPUTS sealed with caps/plugs)				
Solenoid rating		100% ED				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45			8 / 60	
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33			9 / 60	
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20			8 / 8	
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20			15 / 15	
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air. *with right-end-plate 1-11				
Compatibility with oils		See **chapter Z1**				

COMPONENTS

① Exhaust - Solenoid pilot 82/84
③ Threaded connection of exhausts 3/5
④ Valve supply - port 1-11-X
⑥ Blind end-plate or right-end-plate 1-11
⑦ Screw for valve wall-mounting
⑧ Utility port for pipe Ø 4, 6, 8, 10 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ Black cable for 24V (if present)
⑲ AS-INTERFACE yellow cable
⑳ AS-INTERFACE led

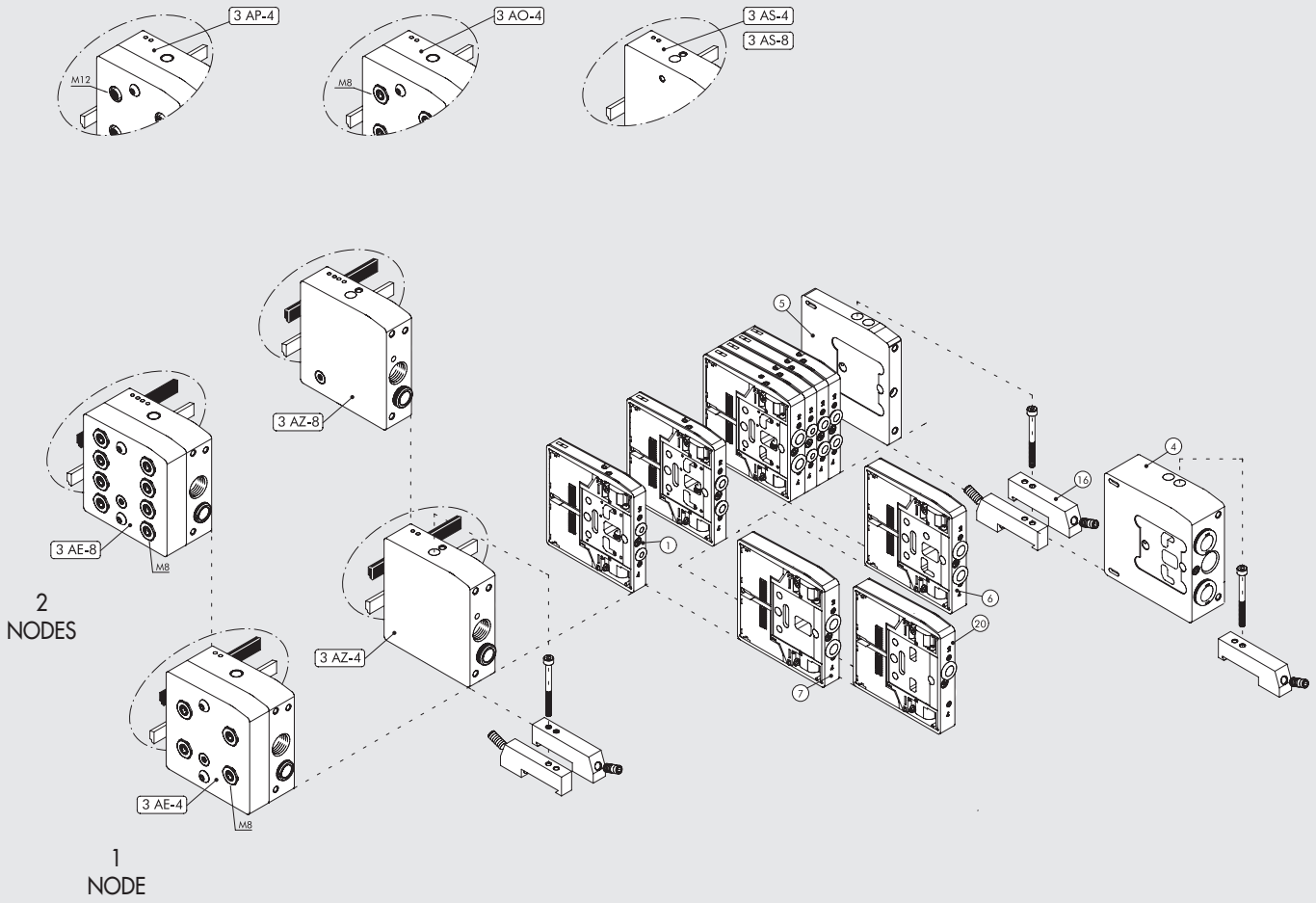




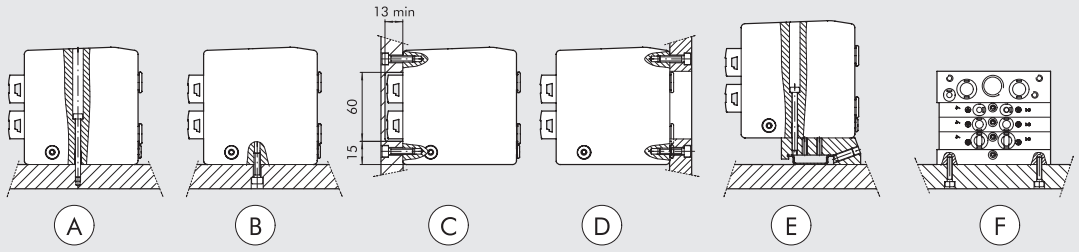
METAL WORK PNEUMATIC

THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.136 **for valves, intermediates elements and common accessories.**



FIXING THE BASE



Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals. An opening for the pipes is made in the plate.
Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate, using the push-in bracket code 0227301600.
Ⓕ Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.
Note: The sole fixing admitted is the one showed.

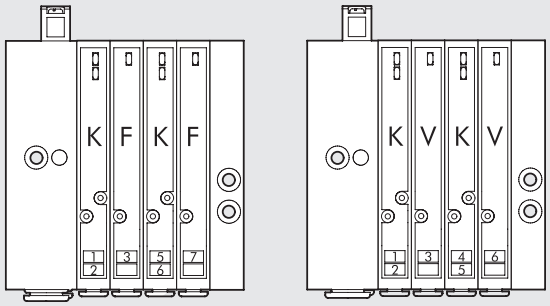
SYNOPTIC, SIZES AND VERSIONS

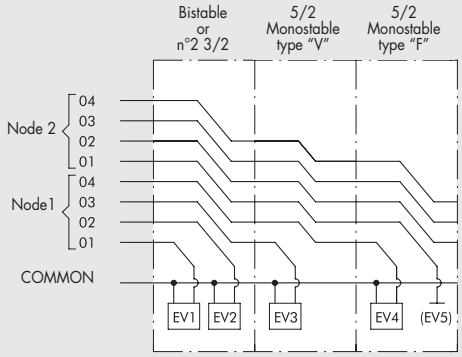
H D M	3	A S - 4	M	I6 - W 8 - 5	1 6
VALVE	**INPUT END-PLATE**	**ELECTRICAL BASE**	**MANUAL TYPE**	**TYPE OF VALVE**	**FURTHER DETAILS**
Heavy duty Multimach IP65	**3** End-plate 1	Version with standard address **AS-4** 1 node, 4 out, yellow cable **AS-8** 2 nodes, 8 out, yellow cable **AO-4** 1 node, 4 out e 4 in M8, yellow cable **AP-4** 1 node, 4 out e 4 in M12, yellow cable **AZ-4** 1 node, 4 out, yellow cable and black cable **AZ-8** 2 nodes, 8 out, yellow cable and black cable **AE-4** 1 node, 4 out e 4 in M8, yellow cable and black cable **AE-8** 2 nodes, 8 out e 8 in M8, yellow cable and black cable	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable ***F** 5/2 monostable **4** right-end-plate 1-11 pipe Ø12 **5** blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8 - 14 mm **8S** Cartridge 8 - 23 mm **10** Cartridge 10	**16** n° 2 brackets for DIN bar

* Uses a single PIN (like the V) and occupies 2 signals

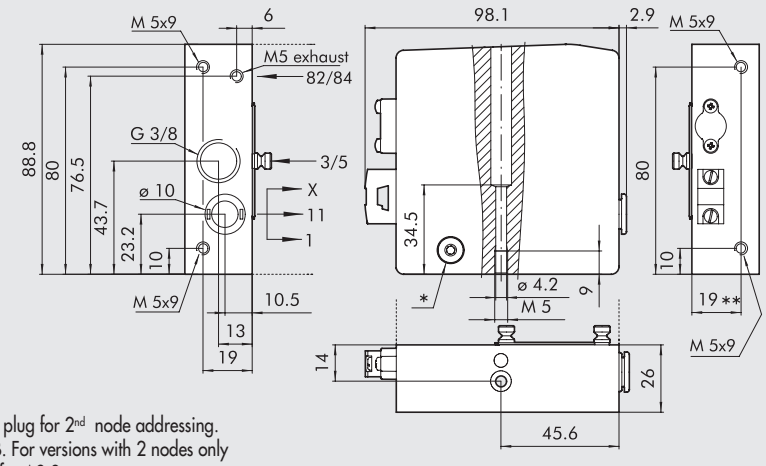
WIRING DIAGRAM

NOTE: The type f monostable valve uses one PIN only (like the V) but occupies 2 signals.





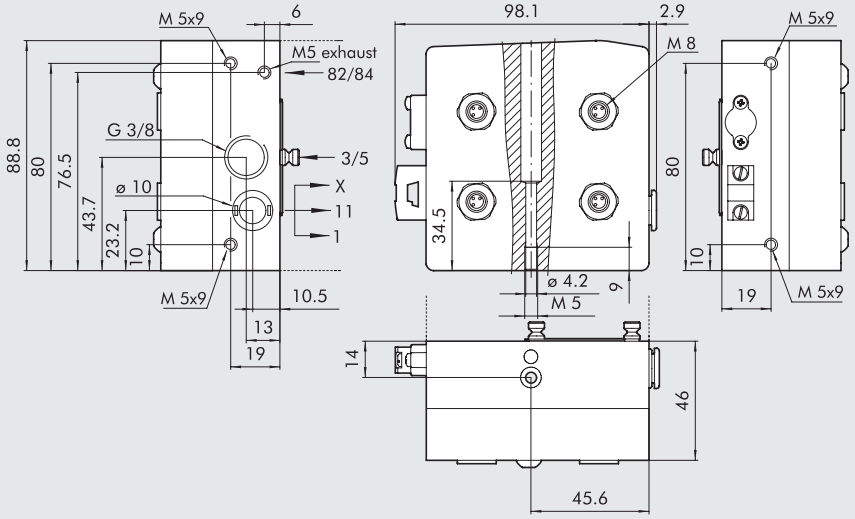
③ END-PLATE 1 AS-4, AS-8



* M7 plug for 2nd node addressing.
N.B. For versions with 2 nodes only
** 21 for AS-8

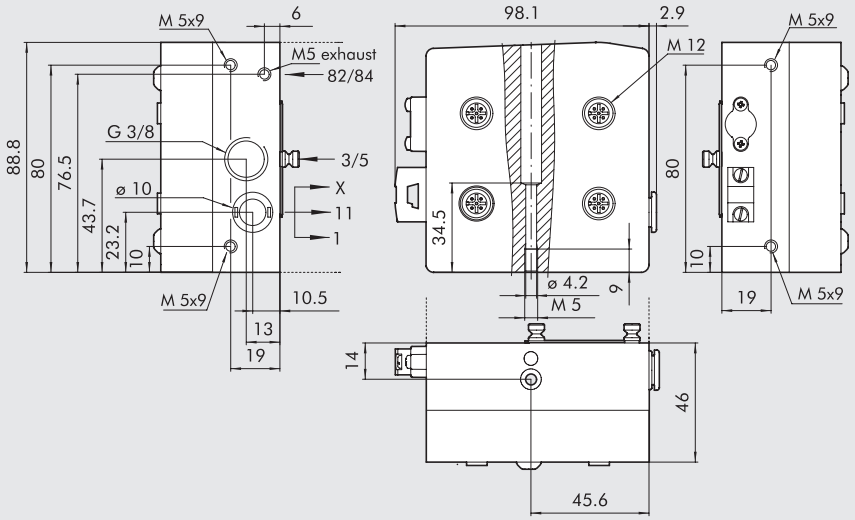
Code	Description	Weight [g]
0227301202	End-plate HDM 1 AS-4	465
	1 node, 4 Out, yellow cable	
0227301208	End-plate HDM 1 AS-8	454
	2 nodes, 8 Out, yellow cable	

③ END-PLATE 1 AO-4, M8



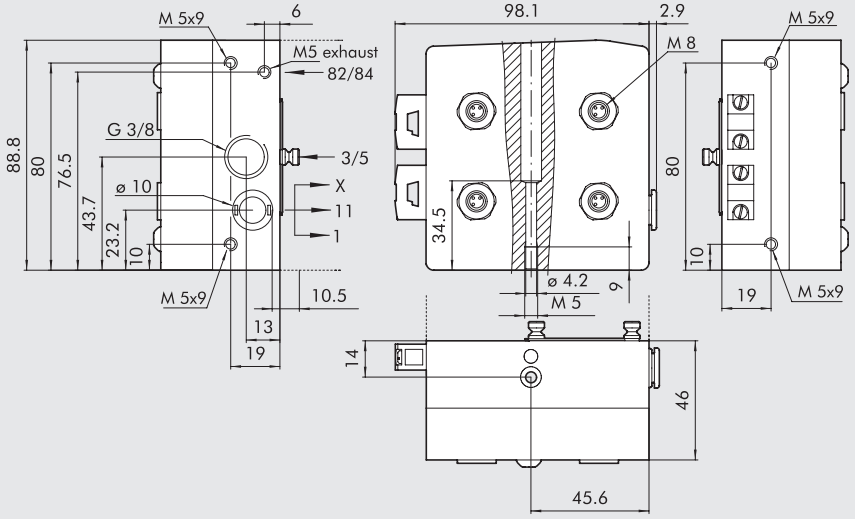
Code	Description	Weight [g]
0227301218	End-plate HDM 1 AO-4 1 node, 4 Out and 4 In M8, yellow cable	759

③ END-PLATE 1 AP-4, M12



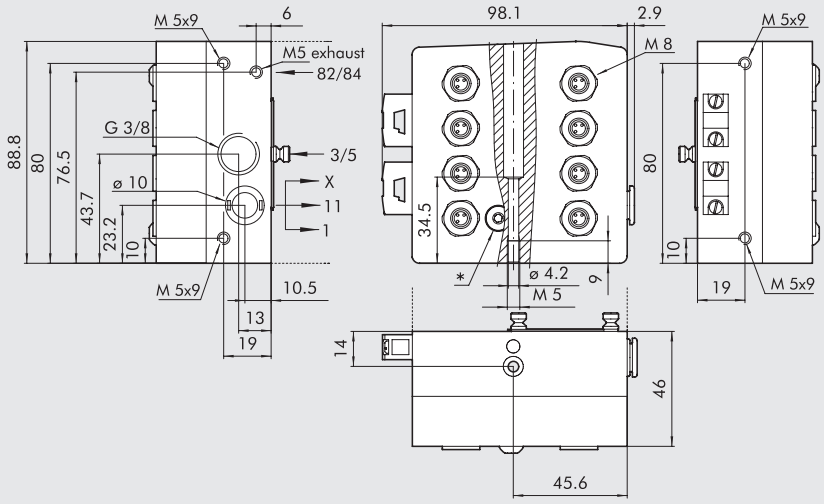
Code	Description	Weight [g]
0227301212	End-plate HDM 1 AP-4 1 node, 4 Out and 4 In M12, yellow cable	756

③ END-PLATE 1 AE-4, M8



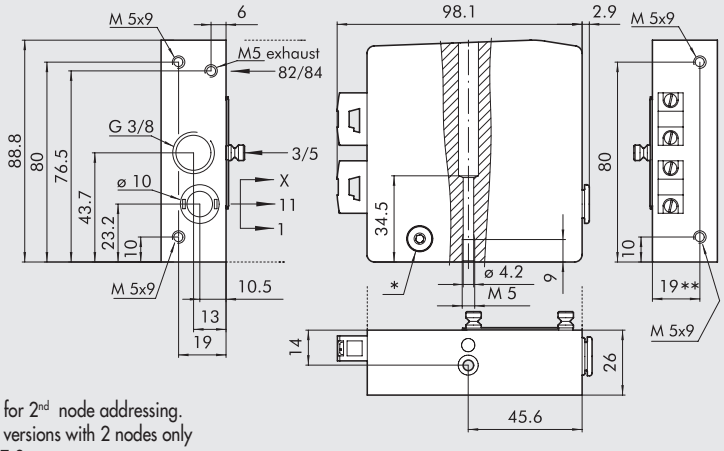
Code	Description	Weight [g]
0227301214	End-plate HDM 1 AE-4 1 node, 4 Out and 4 In M8, yellow cable and black cable	761

③ END-PLATE 1 AE-8, M8



Code	Description	Weight [g]
0227301216	End-plate HDM 1 AE-8 2 nodes, 8 Out and 8 In M8, yellow cable and black cable	773

③ END-PLATE 1 AZ-4, AZ-8

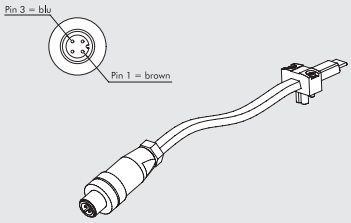


Code	Description	Weight [g]
0227301204	End-plate HDM 1 AZ-4 1 node, 4 Out, yellow cable and black cable	467
0227301210	End-plate HDM 1 AZ-8 2 nodes, 8 Out, yellow cable and black cable	456

* M7 plug for 2nd node addressing.
N.B. For versions with 2 nodes only
** 21 for AZ-8

ACCESSORIES

AS-interface ADDRESS CONNECTOR KIT



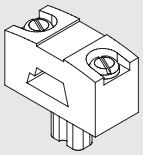
Code	Description
0226950150	AS-interface address connector cable L = 1 m

M8 - M12 PLUG

Code	Description
0240009039	PLUG M8
0240009040	PLUG M12

SPARES

AS-interface CONNECTOR KIT



Code	Description
0226950151	AS-interface connector kit

HDM + PROFIBUS-DP

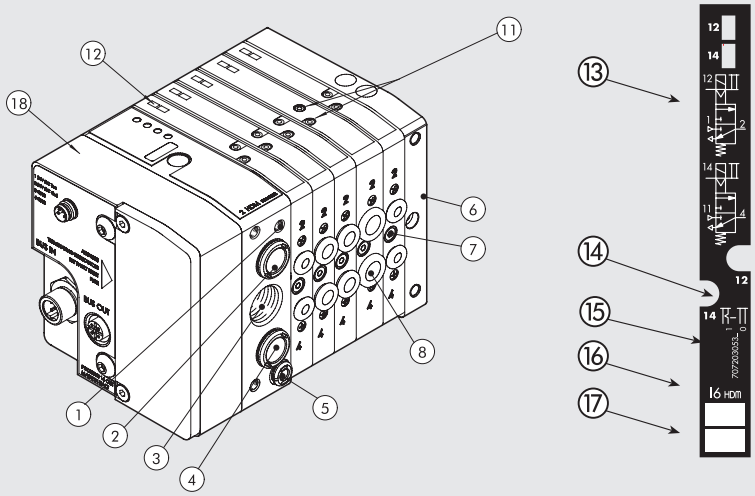
METAL WORK PNEUMATIC

The HDM+PROFIBUS system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact.
The valves and accessories are HDM standard, which means that you only need to replace the input terminal to convert the valve island with multiple connector into an PROFIBUS island. All the advantages of the HDM system can be exploited: the possibility of mounting valves of different size, with fittings for pipes 4, 6, 8 or 10; the insertion of intermediate modules with separate power supply or outlets; aluminium valves with chemical nickel plating enclosed in a protective casing in reinforced technopolymer, with an index of protection IP65.
The arrangement of the functions continues the traditional optimisation of the HDM: the user interface of the valves and bus all on one side, so that the fitter and service engineer have everything within easy reach: all compressed air connections are on the other side, and the electrical connectors and selectors are at the end of the island.
It is advisable to grounding the system to prevent electrical or electrostatic discharge from damaging the electronic circuit.

TECHNICAL DATA							
Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port					
Connection on the end-plate 1-11 for the supply of pilots		Automatic fitting Ø 4 mm					
Maximum number of pilots		16					
Maximum number of valves		16 (same as the max. no. of pilots)					
Operating temperature range	°C	-10 to +60					
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous					
Pressure range		X (pilot supply)			1-11 (valve supply)		
	Terminal 1-11	3 to 7 bar			vacuum at 10 bar		
	Terminal 1	3 to 7 bar					
Voltage range		24 VDC ±10%					
		(slave protected against overload and reverse polarity)					
Power for each pilot	W	0.9					
Solenoid Pilot Insulation class		F155					
Degree of protection		IP65 (with conveyed exhust, and that - in case of no use - the BUS OUT connector gets plugged)					
Solenoid rating		100% ED					
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10	
	version 5/2 and 3/2	200	500	650	1000	1200	
	version 5/3	200	300	300	500	500	
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45			8 / 60		
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33			9 / 60		
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20			8 / 8		
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20			15 / 15		
Note on use		Insert the pipes in the fittings, before passing air through the valves,otherwise the gasket may be pulled out of its seat by the flow of air.					
		*with right-end-plate 1-11					
Compatibility with oils		See **chapter Z1**					
Profibus-DP module for HDM valves							
Protection		Outputs protected against overloads and shortcircuits					
Max input power (all valves ON)		~500 mA					
Addressing		By rotary selectors					
Highest settable address number		99					
Default address		3					
Peripheral defect diagnosis		Local LED indicator and relay to Master					
Defects reported		Output shortcircuit or overload.					
		Auxiliary power supply failure.					
Module status in the event of peripheral defect		Profibus communication active.					
		The "peripheral defect" bit is active and accessible at the master station.					
Data bit value		0 = not enabled					
		1 = enabled					
Output status in the absence of communication		Disabled					

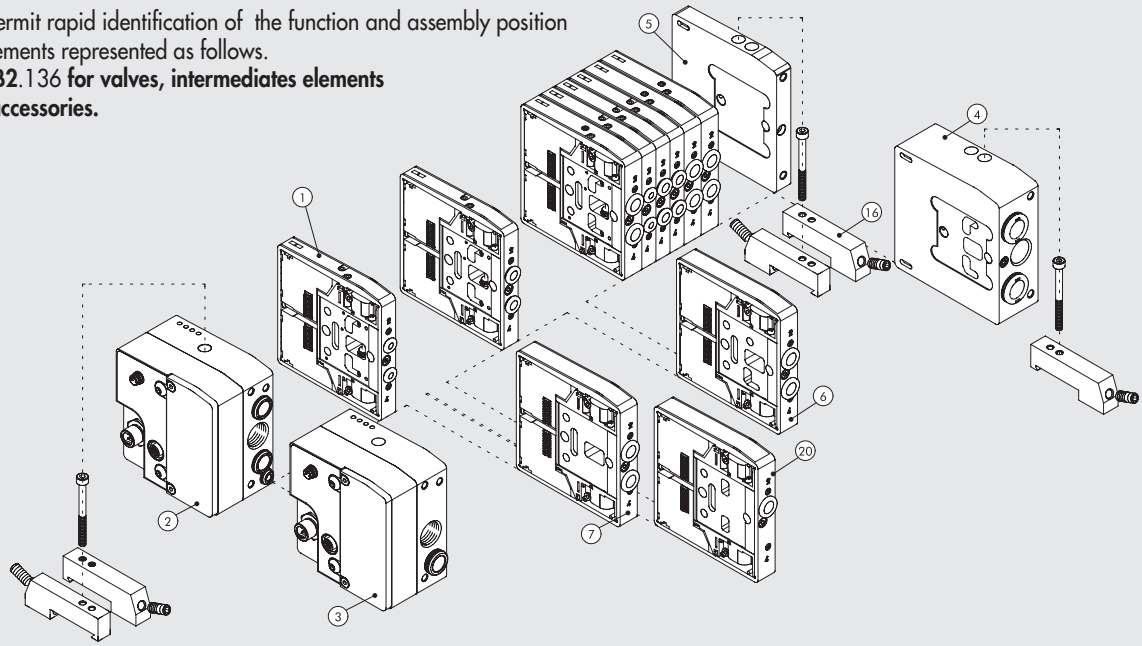
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate or right-end-plate-1-11
⑦ Screw for valve wall-mounting
⑧ Utility port for pipe Ø 4, 6, 8 or 10 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ Profibus terminal

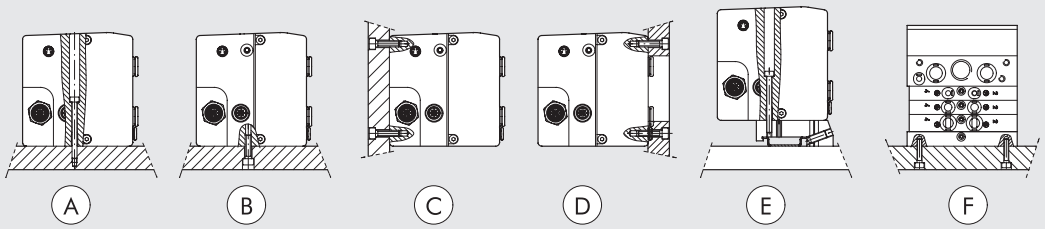


THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.136 **for valves, intermediates elements and common accessories.**



FIXING THE BASE



Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals. An opening for the pipes is made in the plate.
Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate , using the push-in bracket code 0227301600.
Ⓕ Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.
Note: The sole fixing admitted is the one showed.

SYNOPTIC, SIZES AND VERSIONS

H D M	2	P	M	I6 - W8 - W6 - O4 - L8 - 5	1 6
VALVE	**INPUT END-PLATE**	**ELECTRICAL BASE**	**MANUAL TYPE**	**TYPE OF VALVE**	**FURTHER DETAILS**
Heavy duty Multimach IP65	**2** End-plate 1-11 **3** End-plate 1	**P** Profibus-DP	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable ***F** 5/2 monostable **4** right-end-plate 1-11 pipe Ø12 **5** blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8 - 14 mm **8S** Cartridge 8 - 23 mm **10** Cartridge 10	**16** n° 2 brackets for DIN bar

* Uses a single PIN (like the V) and occupies 2 signals.

WIRING DIAGRAM

1 = +24V bus (brown)
2 = +24V valve (white)
3 = GND (blue)
4 = GND (black)

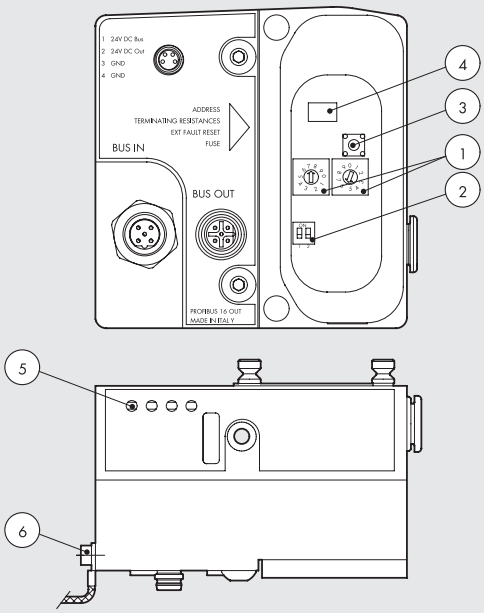
POWER SUPPLY (M8)

BUS OUT (female connector) (M12 COD. B)

BUS IN (male connector) (M12 COD. B)

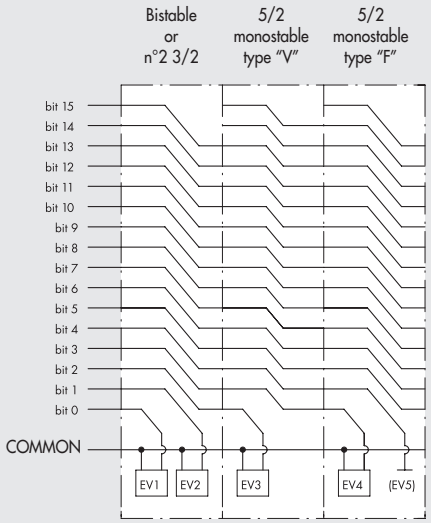
1 = +5V *
2 = A
3 = OV*
4 = B
5 = Shield

* DO NOT CONNECT PIN 1 and PIN 3: to be used only for feeding of the external terminating resistors.
- For correct communication, use Profibus cables at least 1 metre long.
- The shield should be evenly distributed around the thread. Should this not be possible, the shield can be connected to prin 5. Both of these methods can also be used in combination.

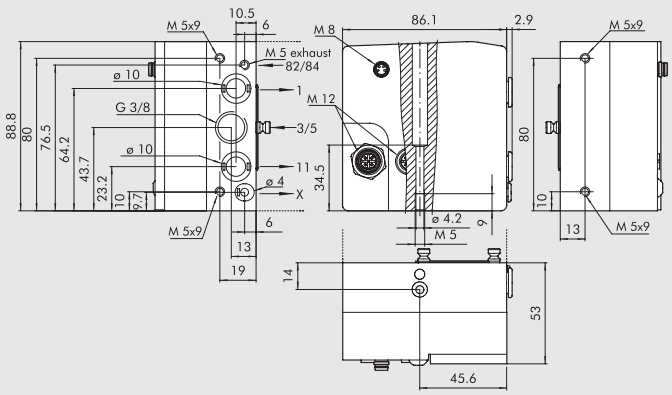


❶ Adressing
❷ Terminal resistances
❸ Reset button faulty
❹ Resettable fuse
❺ Indicator Led
❻ Grounding

NOTE: The type F monostable valve uses one PIN only (like the V) but occupies 2 signals.

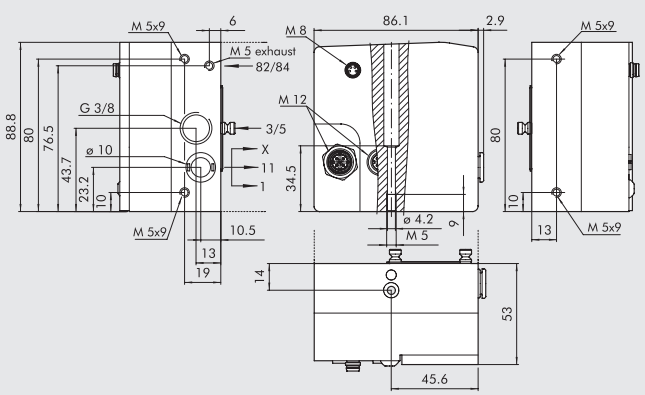


② END-PLATE 1-11 PROFIBUS-DP



Code	Description	Weight [g]
0227301231	End-plate HDM 1-11 PROFIBUS	730

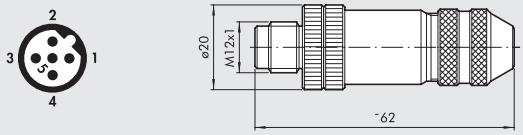
③ END-PLATE 1 PROFIBUS-DP



Code	Description	Weight [g]
0227301230	End-plate HDM 1 PROFIBUS	730

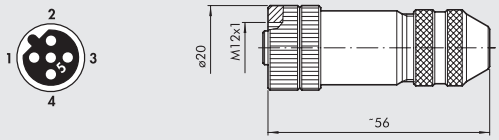
ACCESSORIES

M12 MALE CONNECTOR OUT-BUS



Code	Description
0240009035	M12 male connector B coding

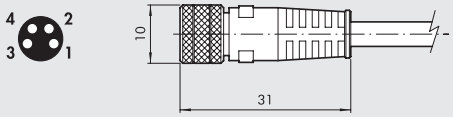
M12 FEMALE CONNECTOR IN-BUS



Code	Description
0240009036	M12 female connector B coding

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

M8 - M12 PLUG

Code	Description
0240009039	Plug M8
0240009040	Plug M12

HDM + EtherNet/IP

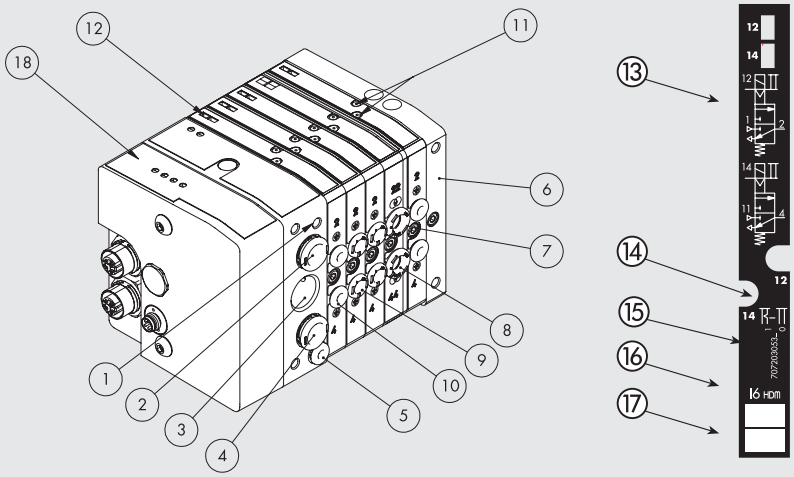
METAL WORK PNEUMATIC

The HDM+EtherNet/IP system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact.
The valves and accessories are HDM standard, which means that you only need to replace the input terminal to convert the valve island with multiple connector into an EtherNet/IP island. All the advantages of the HDM system can be exploited: the possibility of mounting valves of different size, with fittings for pipes 4, 6, 8 or 10; the insertion of intermediate modules with separate power supply or outlets; aluminium valves with chemical nickel plating enclosed in a protective casing in reinforced technopolymer, with an index of protection IP65.
The arrangement of the functions continues the traditional optimisation of the HDM: the user interface of the valves and bus all on one side, so that the fitter and service engineer have everything within easy reach: all compressed air connections are on the other side, and the electrical connectors and selectors are at the end of the island.
It is advisable to grounding the system to prevent electrical or electrostatic discharge from damaging the electronic circuit.

TECHNICAL DATA						
Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Connection on the end-plate 1-11 for the supply of pilots		Automatic fitting Ø 4 mm				
Maximum number of pilots		16				
Maximum number of valves		16 (same as the max. no. of pilots)				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Pressure range		X (pilot supply)			1-11 (valve supply)	
	Terminal 1-11	3 to 7 bar			vacuum at 10 bar	
	Terminal 1	3 to 7 bar				
Voltage range		24 VDC ±10%				
		(slave protected against overload and reverse polarity)				
Power for each pilot	W	0.9				
Solenoid Pilot Insulation class		F155				
Degree of protection		IP65 (with conveyed exhust, and that - in case of no use - the BUS OUT connector gets plugged)				
Solenoid rating		100% ED				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45			8 / 60	
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33			9 / 60	
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20			8 / 8	
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20			15 / 15	
Note on use		Insert the pipes in the fittings, before passing air through the valves,otherwise the gasket may be pulled out of its seat by the flow of air.				
		*with right-end-plate 1-11				
Compatibility with oils		See **chapter Z1**				
EtherNet/IP module for HDM valves						
Field buses		EtherNet/IP - 10/100 Mbit/s - Half-duplex - Full-duplex - Supports Auto-Negotiation				
Factory settings		Module name: Cmseries - Address IP 192.168.192.30				
Addressing		Software DHCP/BOOTP				
Voltage range		24VDC ± 10%				
Maximum number of pilots (Out)		16				
Maximum number of valves		16 (depending on the maximum number of solenoids)				
Icc bus supply current		Nominal Icc 120 mA - Instantaneous Icc (< 2 ms) 450 mA				
Maximum absorption of a valve distribution block with 16 mono-stable valves		Nominal Icc with 120mA OFF valves - Nominal Icc with 580 mA ON valves				
Protections		Module protected against overload and polarity reversal. Outputs protected against overloads and short-circuits				
Connections		Field bus: 2 M12 Female, D-coded, internal switch				
		Supply: M8 4 pin - input: M8 3 pin				
Data bit value		0 = not enabled - 1 = enabled				
Output status in the absence of communication		Disabled				

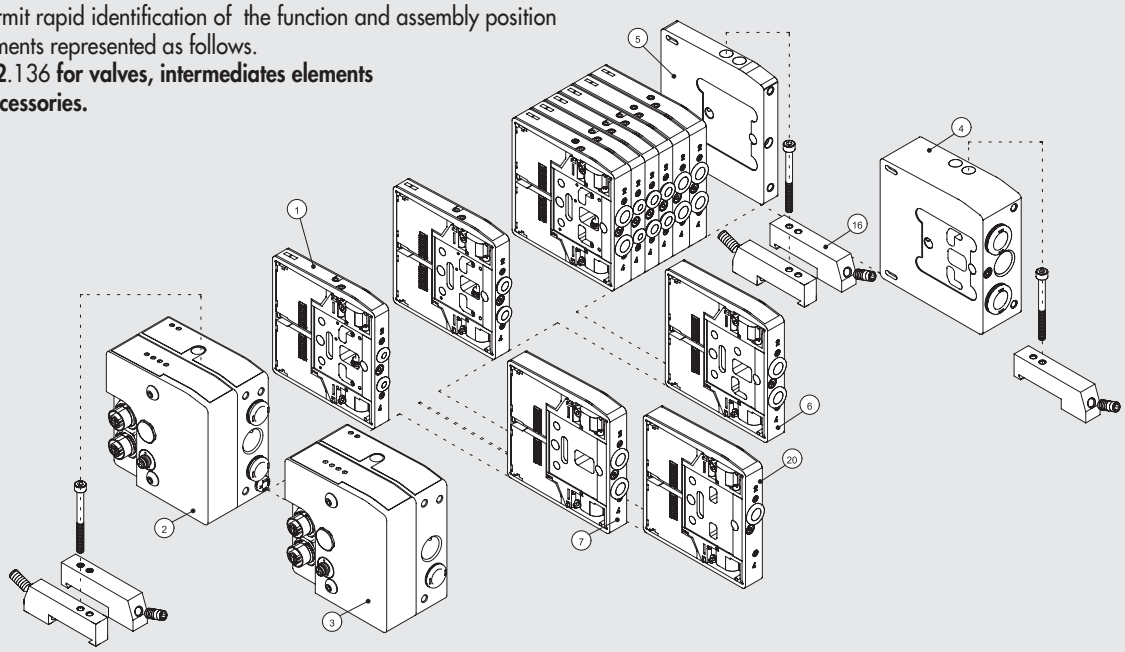
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate or right-end-plate-1-11
⑦ Screw for valve wall-mounting
⑧ Utility port for pipe Ø 4, 6, 8 or 10 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ Profibus EtherNet/IP

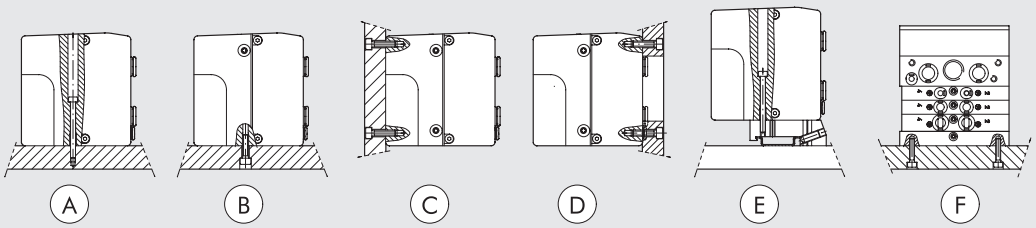


THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.136 **for valves, intermediates elements and common accessories.**



FIXING THE BASE



Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals. An opening for the pipes is made in the plate.
Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate , using the push-in bracket code 0227301600.
Ⓕ Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.
Note: The sole fixing admitted is the one showed.

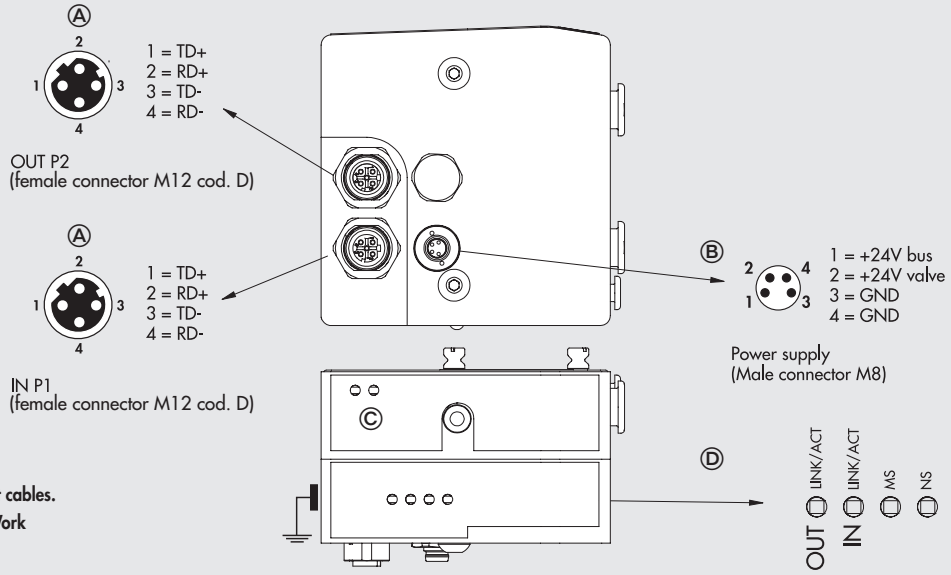
SYNOPTIC, SIZES AND VERSIONS

H D M	2	EN	M	I6 - W8 - W6 - O4 - L8 - 5	1 6
VALVE	**INPUT END-PLATE**	**ELECTRICAL BASE**	**MANUAL TYPE**	**TYPE OF VALVE**	**FURTHER DETAILS**
Heavy duty Multimach IP65	**2** End-plate 1-11 **3** End-plate 1	**EN** EtherNet/IP	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable ***F** 5/2 monostable **4** right-end-plate 1-11 pipe Ø12 **5** blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8 - 14 mm **8S** Cartridge 8 - 23 mm **10** Cartridge 10	**16** n° 2 brackets for DIN bar

* Uses a single PIN (like the V) and occupies 2 signals.

WIRING DIAGRAM

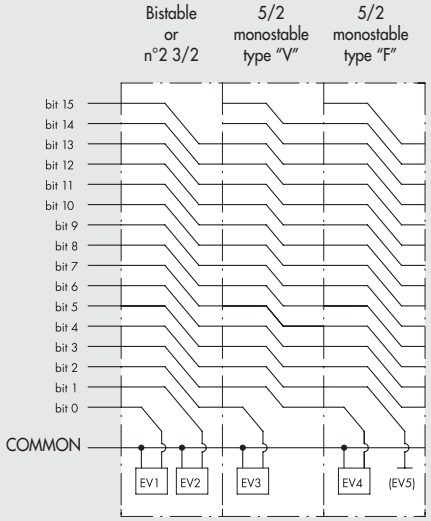
Ⓐ Connection to the EtherNet/IP network
Ⓑ Connection for node supply and auxiliary valve supply
Ⓒ HDM diagnostics indicator light
Ⓓ EtherNet/IP diagnostics indicator light



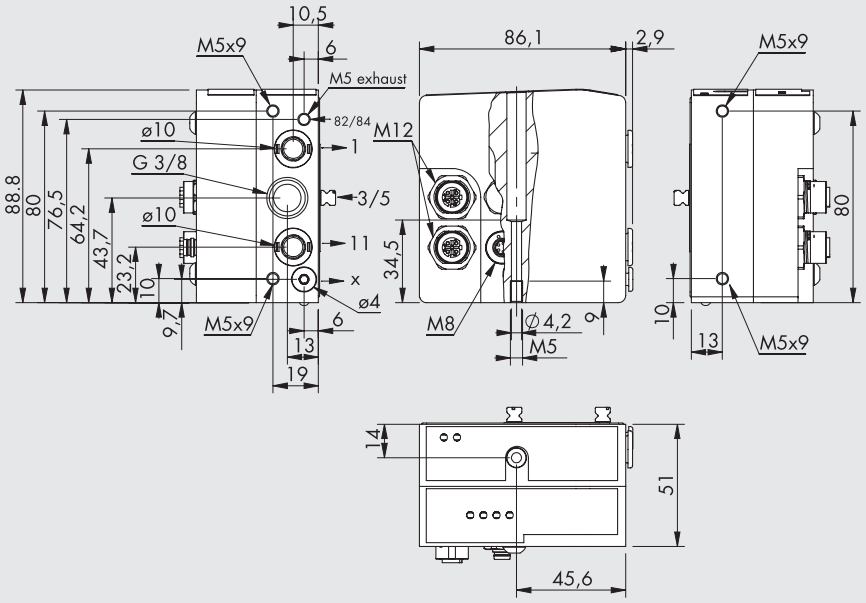
WARNING

For correct communication use only Industrial Ethernet cables. Cat. 5 / Class D 100 MHz, like the one in the Metal Work catalogue.

NOTE: The type F monostable valve uses one PIN only (like the V) but occupies 2 signals.

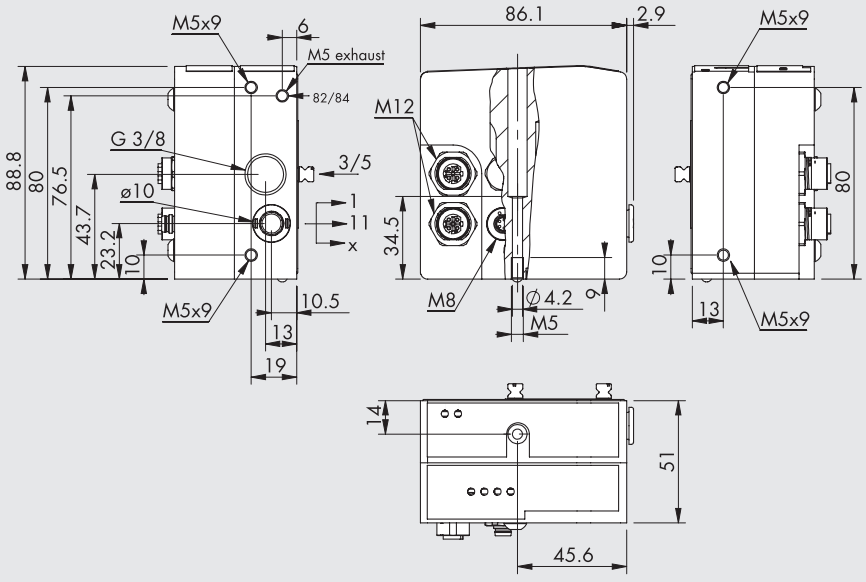


② END-PLATE 1-11 EtherNet/IP



Code	Description	Weight [g]
0227301242	End-plate HDM 1-11 EtherNet/IP	730

③ END-PLATE 1 EtherNet/IP

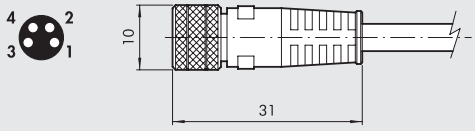


Code	Description	Weight [g]
0227301243	End-plate HDM 1 EtherNet/IP	730

ACCESSORIES

M8 CONNECTOR FOR POWER SUPPLY

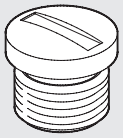
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

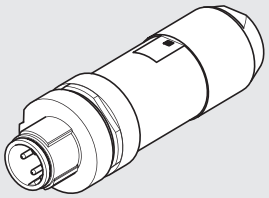
* Very flexible cables, class 6 according to IEC 60228

M12 PLUG



Code	Description
0240009040	Plug M12

M12 BUS CONNECTOR, D-CODED



Code	Description
0240005051	M12 BUS connector, D-coded

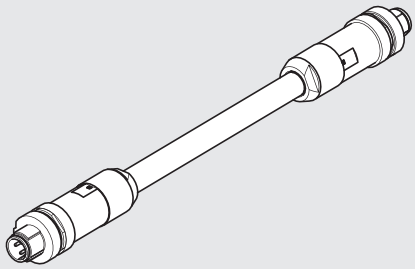
Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP....)

BUS CABLE

Code	Description
0240005220	BUS cable L = 20 m

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP....)

STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED

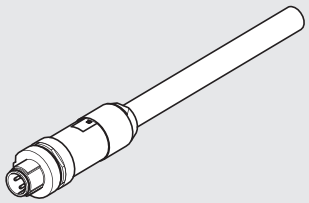


Code	Description
0240005103	Straight connector for M12-M12 BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP....)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED

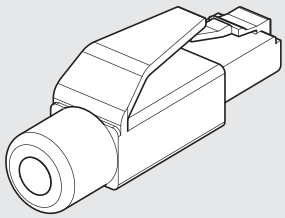
Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue



Code	Description
0240005093	Straight connector for M12 BUS, D-coded, with 3 m cable
0240005095	Straight connector for M12 BUS, D-coded, with 5 m cable
0240005100	Straight connector for M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP....)

RJ45 CONNECTOR



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60603-7

NOTES

HDM + CANopen

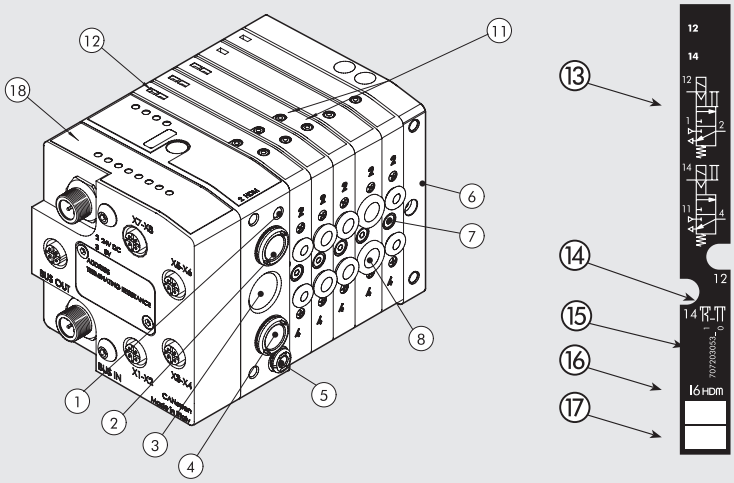
METAL WORK PNEUMATIC

The HDM+CANopen system has been designed in such a way that the pneumatic input terminal contains all the electronics, signals and connectors. It is a very compact and sturdy system where everything is housed in a thick casing aluminium to protect the delicate components against impact.
Two versions of end-plate are available: one can handle up to 16 controls (16 Out) and one up to 16 controls and 8 inputs (16 Out + 8 In).
The input connectors are M12. Two inputs can be connected to each connector. The functions are arranged to ensure the same optimisation as the HDMs. The user interface is all on one side to facilitate the work of the fitter and service engineer. All pneumatic connections are on one side; the electrical connectors and selectors are on top of the island.

TECHNICAL DATA						
Valve port connections		Ø 4,6,8,10 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 or 12* automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port				
Connection on the end-plate 1-11 for the supply of pilots		Automatic fitting Ø 4 mm				
Maximum number of pilots		16				
Maximum number of valves		16 (same as the max. no. of pilots)				
Operating temperature range	°C	-10 to +60				
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous				
Pressure range		X (pilot supply)			1-11 (valve supply)	
	Terminal 1-11	3 to 7 bar			vacuum at 10 bar	
	Terminal 1	3 to 7 bar				
Voltage range		24VDC ±10% (slave protected against overload and reverse polarity)				
Power for each pilot	W	0.9				
Solenoid Pilot Insulation class		F155				
Degree of protection		IP65 (with conveyed exhausts and with not used connectors plugged)				
Solenoid rating		100% ED				
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8	23 mm Ø 8	23 mm Ø 10
	version 5/2 and 3/2	200	500	650	1000	1200
	version 5/3	200	300	300	500	500
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45			8 / 60	
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33			9 / 60	
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20			8 / 8	
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20			15 / 15	
Note on use		Insert the pipes in the fittings, before passing air through the valves,otherwise the gasket may be pulled out of its seat by the flow of air. * with right-end-plate 1-11				
Compatibility with oils		See **chapter Z1**				
CANopen module for HDM valves						
Protection		Outputs protected against overloads and shortcircuits				
Max input power (all valves ON)		~800 mA				
Addressing		By DIP SWITCH				
Highest settable address number		127				
Default address		1				
Peripheral defect diagnosis		Local LED indicator and relay to Master				
Defects reported		Output shortcircuit or overload. Auxiliary power supply failure.				
Module status in the event of peripheral defect		CANopen communication active. The "peripheral defect" bit is active and accessible at the master station.				
Data bit value		0 = not enabled 1 = enabled				
Output status in the absence of communication		Disabled				
INPUT module for HDM valves						
Sensor supply voltage		24 VDC ±10% (depending on the supply of the CANopen module)				
Max sensor power (distribuited over eight connectors)	mA	40				
Type of input		PNP for sensor 2-3 wires according to EN 60947-5-2				
Protection		Protected inputs against overload and short-circuit				
Active INPUT signalling		One LED for each INPUT				

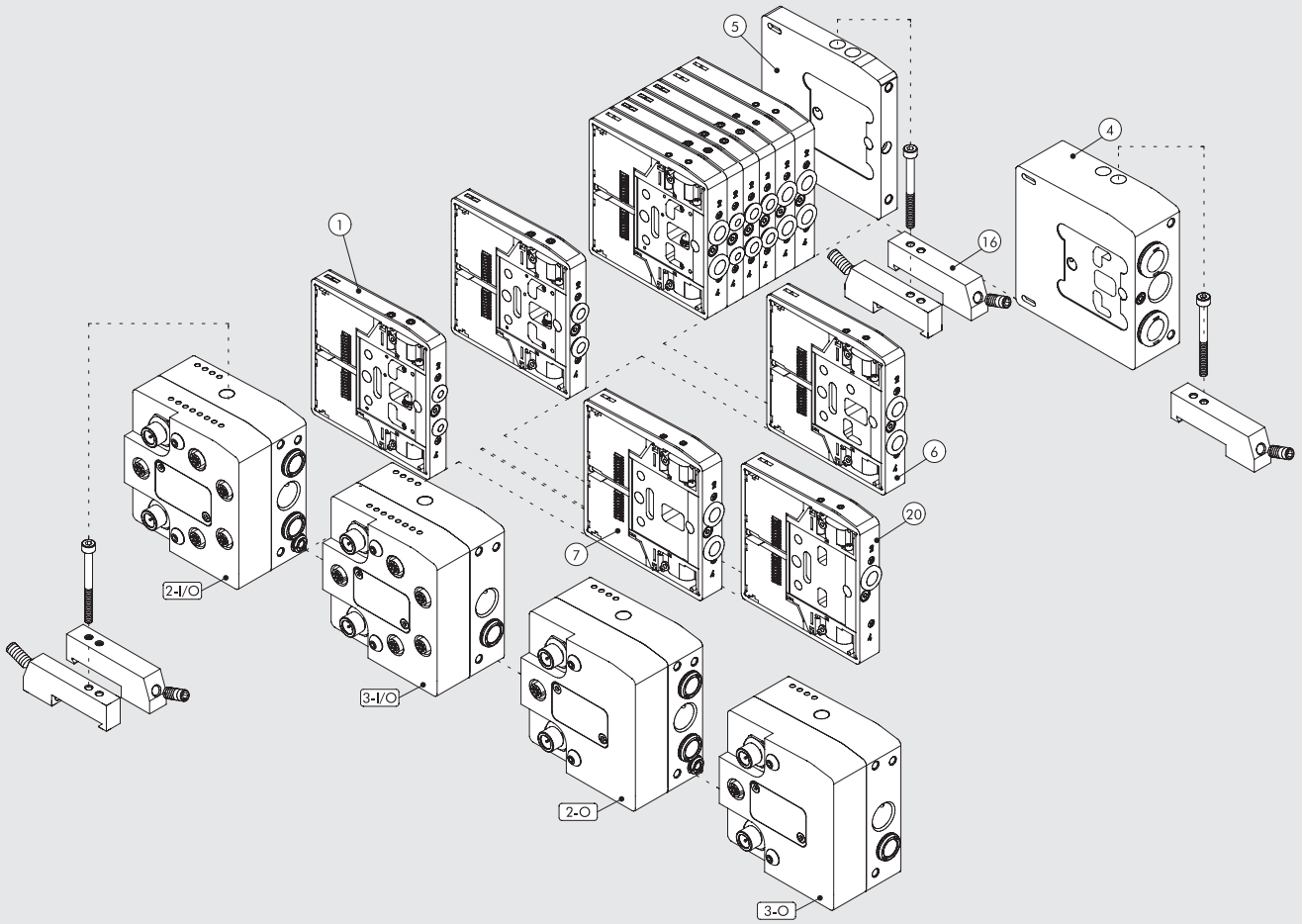
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate or right-end-plate 1-11
⑦ Screw for valve wall-mounting
⑧ Utility port for pipe Ø 4, 6, 8 or 10 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ CANopen terminal



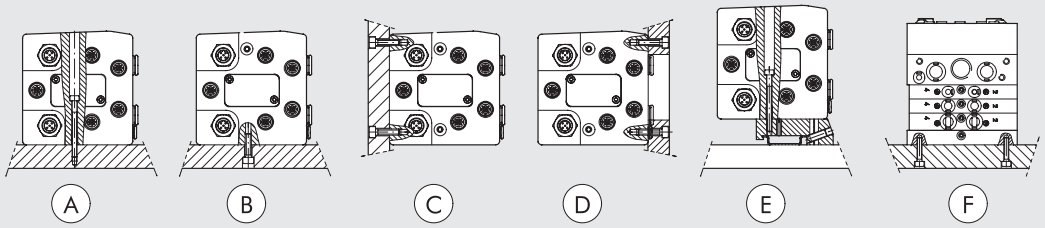
THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.136 **for valves, intermediates elements and common accessories.**



METAL WORK PNEUMATIC

FIXING THE BASE



Ⓐ Fixing from above using the 1 or 1-11 input terminal and the blind terminal.
Ⓑ Ⓒ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the bottom and the rear of the terminals.
Ⓓ Fixing from above using the 1 or 1-11 input terminal and the blind terminal, using the M5 threads on the front of the terminals. An opening for the pipes is made in the plate.
Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind and plate , using the push-in bracket code 0227301600.
Ⓕ Lateral fixing using the blind terminal, and its the M4 threads on the side lateral.
Note: The sole fixing admitted is the one showed.

SYNOPTIC, SIZES AND VERSIONS

H D M	2	CAN O	M	I6 - W 8 - W 6 - O 4 - L 8 - 5	1 6
VALVE	**INPUT END-PLATE**	**ELECTRICAL BASE**	**MANUAL TYPE**	**TYPE OF VALVE**	**FURTHER DETAILS**
Heavy duty Multimach IP65	**2** End-plate 1-11 **3** End-plate 1	**CAN O** CANopen 16 OUTPUT **CAN I/O** CANopen 8 INPUT e 16 OUTPUT	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable ***F** 5/2 monostable **4** right-end-plate 1-11 pipe Ø12 **5** blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8 - 14 mm **8S** Cartridge 8 - 23 mm **10** Cartridge 10	**16** n° 2 brackets for DIN bar

* Uses a single PIN (like the V) and occupies 2 signals.

WIRING DIAGRAM

POWER SUPPLY
(Male connector M12 cod. A)

1 = NC
2 = +24V
3 = 0V
4 = NC
5 = NC

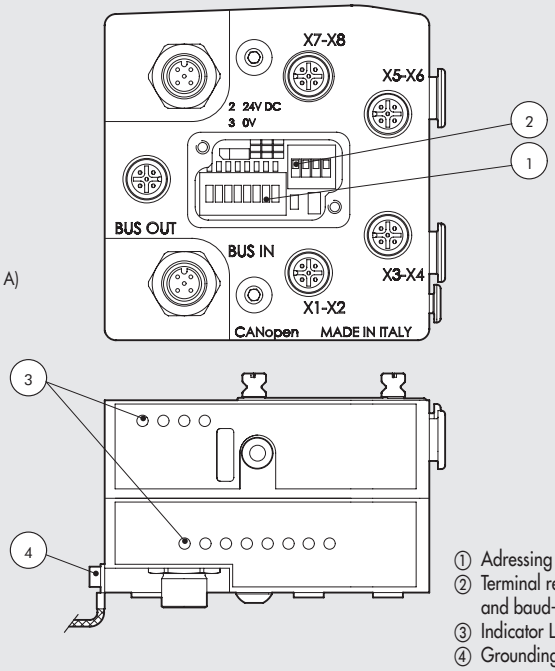
BUS IN
(Male connector M12 cod. A)

1 = CAN-SHLD
2 = CAN V+
3 = CAN-GND
4 = CAN-H
5 = CAN-L

BUS OUT
(Female connector M12 cod. A)

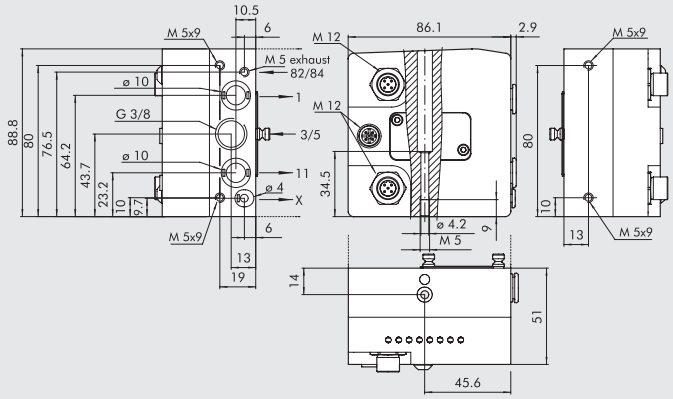
CONN. INPUT
(Female connector M12 cod. A)

1 = +24V
2 = IN 2 - 4 - 6 - 8
3 = 0V
4 = IN 1 - 3 - 5 - 7
5 = NC



① Adressing
② Terminal resistances and baud-rate setting
③ Indicator LED
④ Grounding

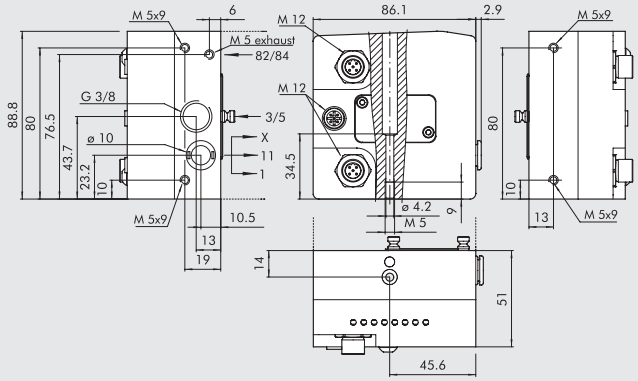
2 - O END-PLATE 1-11 CANopen O



Code	Description	Weight [g]
0227301251	End-plate 1-11 HDM CANopen OUTPUT	745

Handles 16 OUTPUTS (solenoid pilots)

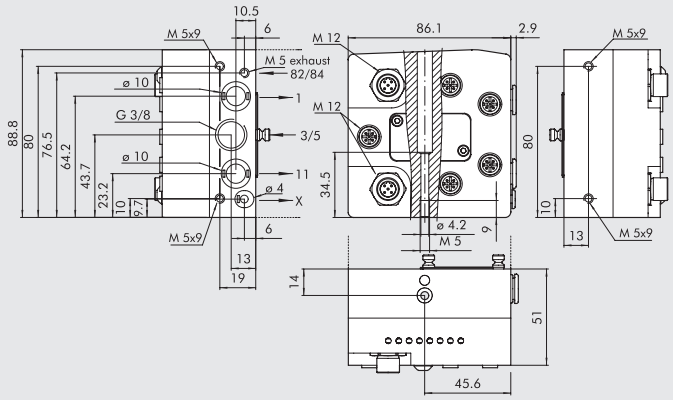
3 - O END-PLATE 1 CANopen O



Code	Description	Weight [g]
0227301253	End-plate 1 HDM CANopen OUTPUT	746

Handles 16 OUTPUTS (solenoid pilots)

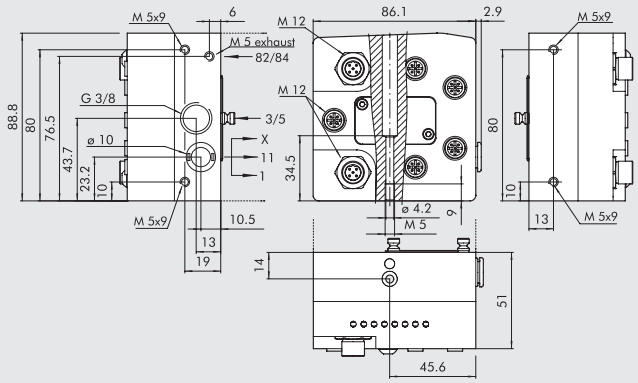
2 - I/O END-PLATE 1-11 CANopen I/O



Code	Description	Weight [g]
0227301250	End-plate 1-11 HDM CANopen IN-OUT	734

Handles 16 OUTPUTS (solenoid pilots)

3 - I/O END-PLATE 1 CANopen I/O



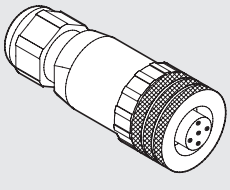
Code	Description	Weight [g]
0227301252	End-plate 1 HDM CANopen IN-OUT	735

Handles 16 OUTPUTS (solenoid pilots)

ACCESSORIES

STRAIGHT CONNECTOR FOR CANopen POWER SUPPLY

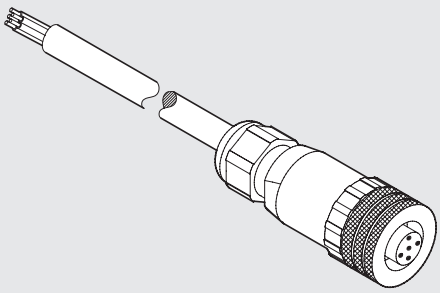
Code	Description
W0970513001	5-pin M12x1 straight connector



STRAIGHT CONNECTOR WITH CANopen POWER CABLE

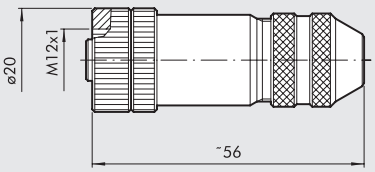
Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Grey

Code	Description
W0970513002	5-pin M12x1 straight connector with wire L = 5 m



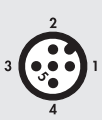
FEMALE CONNECTOR FOR CANopen BUS-IN

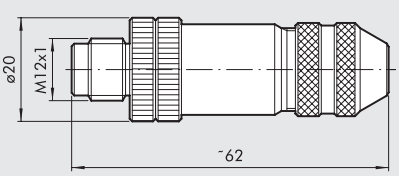
Code	Description
0240009055	M12 female connector, A coding



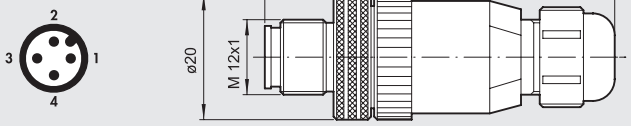
MALE CONNECTOR FOR CANopen BUS-OUT

Code	Description
0240009038	Male connector Bus A coding





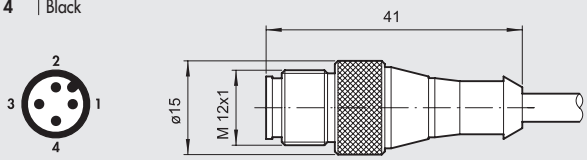
STRAIGHT CONNECTOR WITHOUT CABLE FOR CANopen INPUT



Code	Description
0240009021	Straight fitting without cable

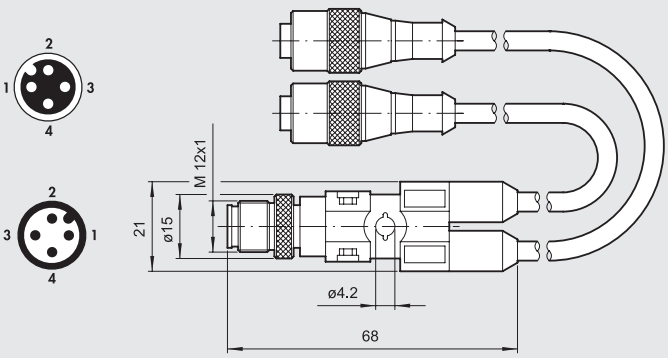
STRAIGHT CONNECTOR WITH CABLE FOR CANopen INPUT

Pin	Cable colour
1	Brown
2	White
3	Blue
4	Black



Code	Description
0240009002	Straight, with 1.5 m cable
0240009003	Straight, with 5 m cable

Y-DISTRIBUTOR WITH CABLE AND M12 STRAIGHT CONNECTORS FOR CANopen INPUT



Code	Description
0240009031	Y-Distributor cable 0.6 m
0240009032	Y-Distributor cable 1.5 m

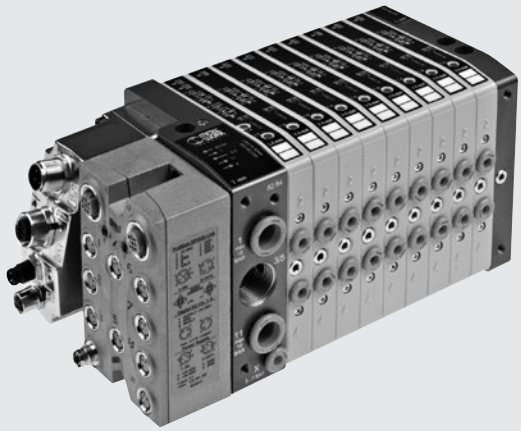
M12 PLUG FOR BUS OUT E INPUT CANopen

Code	Description
0240009040	Plug M12

HDM + B&R

METAL WORK PNEUMATIC

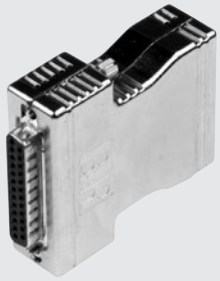
An advanced field bus system interfacing with the Multimach world.
B&R has developed a new standard for automation, called FORMULA X.
For further details about features, functions and qualities of this system, reference must be made to the B&R documentation, also available on the web site www.br-automation.com
An overview is given below.
The X-system is a system handling analogue and digital inputs and outputs for local or remote use, which B&R defines as decentralised backplane.
Different types of modules are available. We present those designed for connection with Multimach and HDM valve islands. We only indicate the B&R's code root, since each type of module comes in different variants, that differ by number of signals handled, that can be 8, 16 or 24, and by type of signal, that can be input, output or input/output indifferently.
Common to all the modules is the presence of 4 connections: a signal input, a signal output for the following modules, a power input (24V DC), a power output for the following modules.



B&R CONNECTORS AND MODULES

IP20 7XV---50-11 SMART CONNECTOR

It is a plug connector with IP20 protection that contains the X system electronics. It can be connected with HDM islands, using the special input end-plate, type 1, code 0227301207 or the special input end-plate type 1-11, code 0227301206.



IP67 7XV---50-51 SMART CONNECTOR

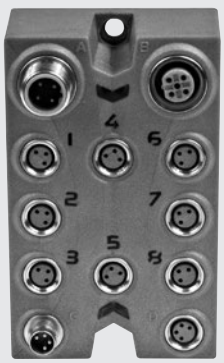
It is a plug connector with IP67 protection, that contains the X system electronics. It can be connected with HDM islands, using the special input end-plate type 1, code 0227301207, or the special input end-plate, type 1-11 code 0227301206.

X67 1/O SYSTEM MODULES

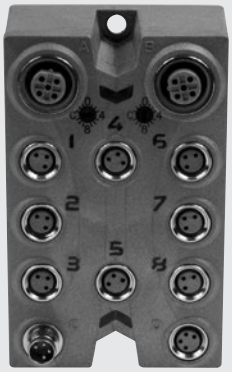
These are modules with IP67 protection, connected to the X system, for handling inputs and outputs. It is interesting to note that their size is such that they can be fixed directly to the HDM input end-plate type 1-11, code 0227301206
(N.B. NOT to be fixed to the HDM end-plate type 1, code 0227301207).

X67 BUS CONTROLLER MODULES

These are modules with protection IP67, receiving a signal according to one of the DP Profibus, CAN open, Device Net, Ethernet Powerlink protocols (the module code differs obviously according to the protocol being controlled). The output signal is according to the X-system.
These are gateways converting the signals of a field bus into an X-system. These modules control the inputs and/or outputs via the M8 connectors provided. They can be fixed directly to the HDM input end-plate type 1-11, code 0227301206
(N.B. NOT to be fixed to the HDM end-plate, type 1, code 0227301207).

X2X →  X2X →

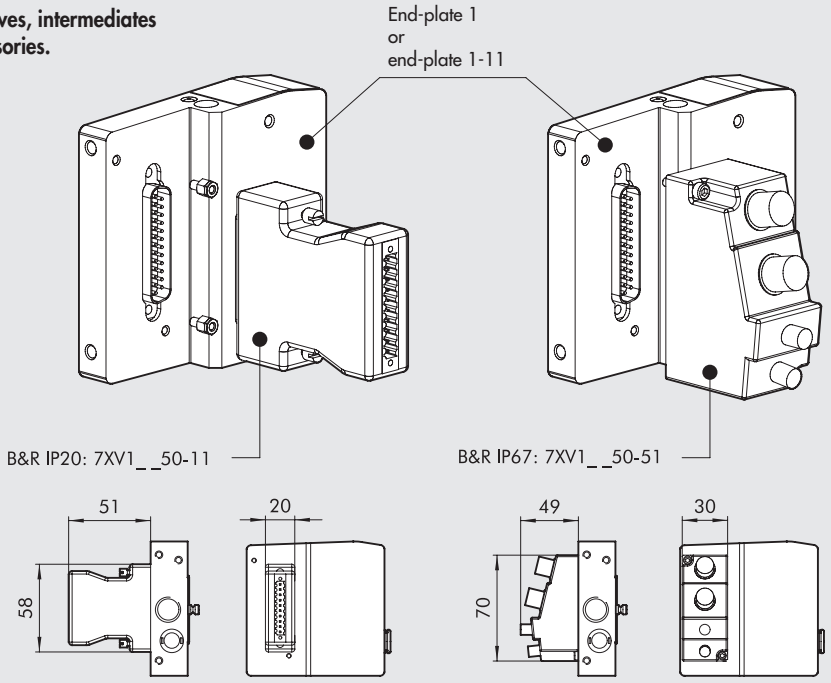
PROFIBUS-DP
DEVICE-NET
CAN-OPEN
ETHERNET →



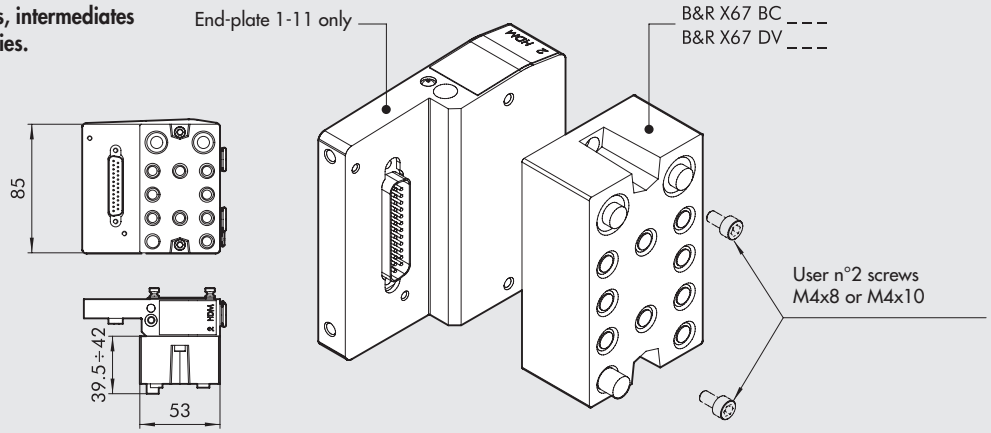
X2X →

APPLICATIONS OF B&R MODULES TO HDM END-PLATES

Refer to page B2.136 **for valves, intermediates elements and common accessories.**



Refer to page B2.136 **for valves, intermediates elements and common accessories.**

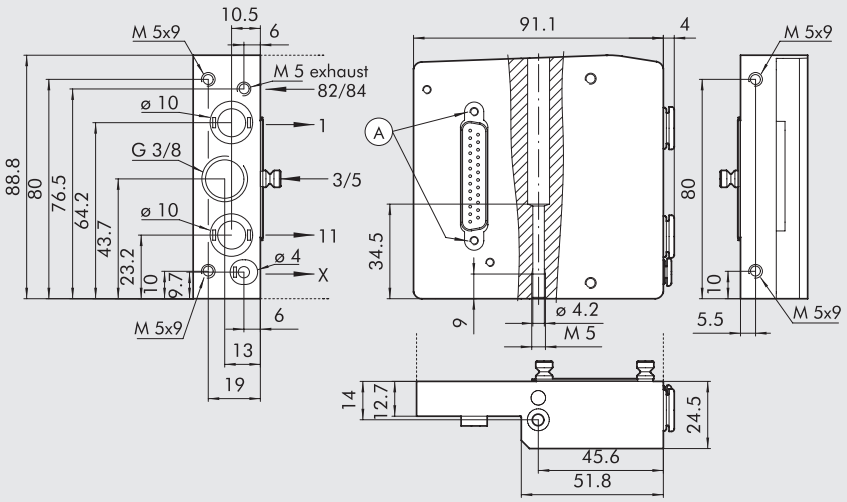


SYNOPTIC, SIZES AND VERSIONS

H D M	2	B & R	M	I6 - W 8 - W 6 - O 4 - L 8 - 5	1 6
VALVE	INPUT END-PLATE	ELECTRICAL BASE	MANUAL TYPE	TYPE OF VALVE	FURTHER DETAILS
Heavy duty Multimach IP65	**2** End-plate 1-11 **3** End-plate 1	**B&R** Fit for B&R	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable ***F** 5/2 monostable **4** Right-end-plate 1-11 pipe Ø12 **5** Blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8 - 14 mm **8S** Cartridge 8 - 23 mm **10** Cartridge 10	**16** n° 2 brackets for DIN bar

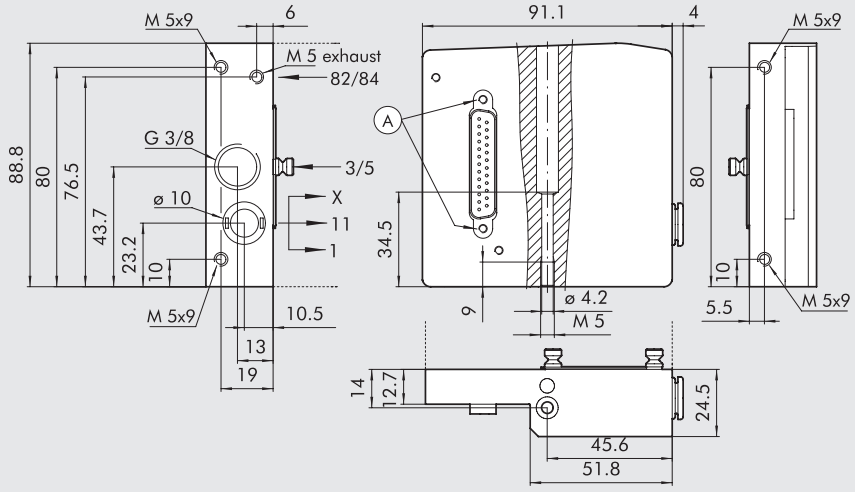
* Uses a single PIN (like the V) and occupies 2 signals.

HDM 1-11 END-PLATE FOR B&R



Code	Description	Weight [g]
0227301206	HDM 1-11 end-plate kit for B&R	340

HDM 1 END-PLATE FOR B&R



Code	Description	Weight [g]
0227301207	HDM 1 end-plate kit for B&R	380

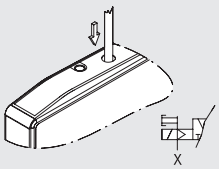
NOTES

HDM - VALVES, INTERMEDIATES ELEMENTS AND ACCESSORIES

HDM valve can be included in islands with any available input terminal. The same valve can be connected to the multiple connection end-plate and all the field bus end-plates.

Note: if you use valves 8S type or 10 exploiting their flow capacity, it is appropriate to choose the inlet end plate 1-11 type by feeding the pilots separately (to avoid the pressure to decrease too much on the pilots). If you use simultaneously more than one valve 8S or 10 it is necessary to potentiate the pneumatic feeding by inserting end plates having 12 mm pipe and/or through intermediate modules

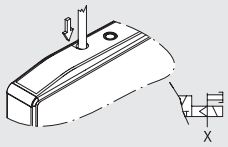
MANUAL CONTROLS



MONOSTABLE OVERRIDE PORT 2
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V, F, and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.



MONOSTABLE OVERRIDE PORT 4
servo-assisted

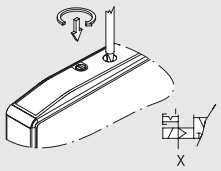
- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and F reposition.
  - The type K valve remains switched

With type F and V valves, this manual control is not present.

N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in 0 (2 for type F).

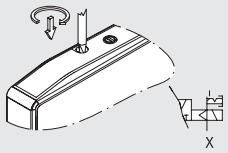
Example: 707203053 – 1 / 0



BISTABLE OVERRIDE PORT 2
servo-assisted

- Press the manual control right in then turn it clockwise 90 degrees and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
  - The manual control returns to the home position.
  - Valves type I, W, L, V, F, and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.



BISTABLE OVERRIDE PORT 4
servo-assisted

- Press the manual control right in then turn it 90 degrees clockwise and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it:
  - The manual control returns to the home position.
  - Valves type I, W, L and O reposition.
  - The type K valve remains switched

With type F and V valves, this manual control is not present.

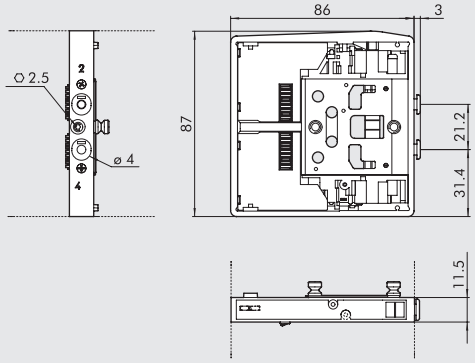
N.B.: The pilot power supply X must be present.

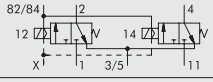
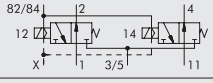
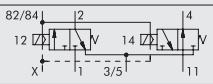
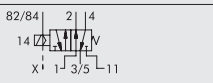
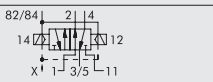
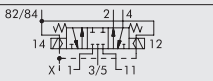
- The reference code for the monostable control ends in 1 (3 for type F).

Example: 707203053 – 1 / 0

① VALVE DIMENSIONS HDM Ø 4

*uses a single PIN (like the V) and occupies 2 signals

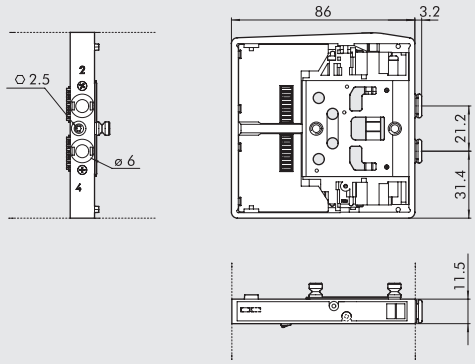


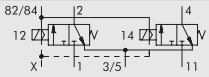
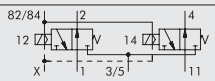
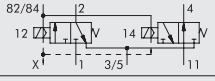
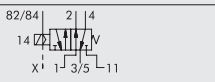
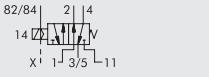
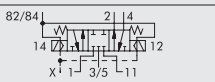
Symbol		Code	Manual control	Weight [g]
HDM I4		7071030530 7071030531	monostable bistable	130
HDM W4		7071030630 7071030631	monostable bistable	130
HDM L4		7071030730 7071030731	monostable bistable	130
HDM V4		7071030130 7071030131	monostable bistable	115
HDM *F4		7071030132 7071030133	monostable bistable	115
HDM K4		7071030110 7071030111	monostable bistable	130
HDM O4		7071030210 7071030211	monostable bistable	130

METAL WORK PNEUMATIC

① VALVE DIMENSIONS HDM Ø 6

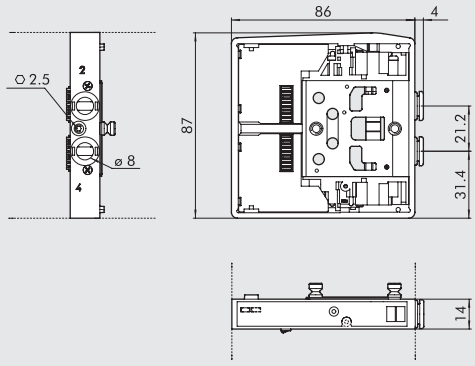
*uses a single PIN (like the V) and occupies 2 signals

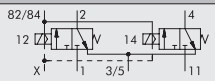
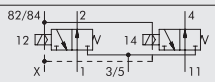
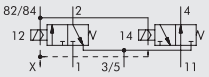
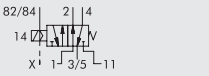
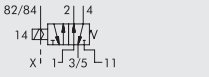
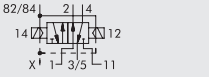
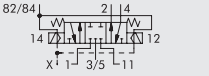


Symbol		Code	Manual control	Weight [g]
HDM I6		7072030530 7072030531	monostable bistable	130
HDM W6		7072030630 7072030631	monostable bistable	130
HDM L6		7072030730 7072030731	monostable bistable	130
HDM V6		7072030130 7072030131	monostable bistable	115
HDM *F6		7072030132 7072030133	monostable bistable	115
HDM K6		7072030110 7072030111	monostable bistable	130
HDM O6		7072030210 7072030211	monostable bistable	130

① VALVE DIMENSIONS HDM Ø 8

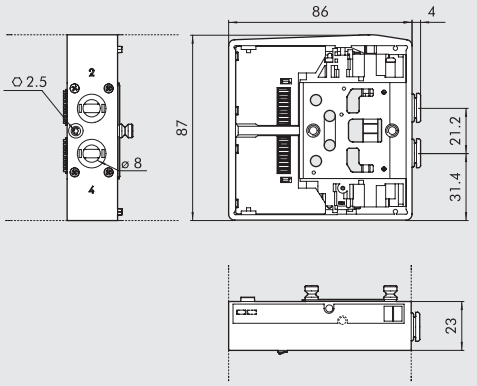
*uses a single PIN (like the V) and occupies 2 signals

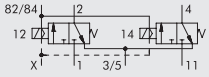
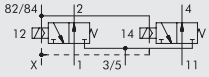
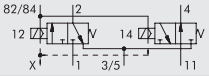
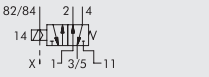
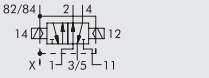


Symbol		Code	Manual control	Weight [g]
HDM I8		7073030530 7073030531	monostable bistable	140
HDM W8		7073030630 7073030631	monostable bistable	140
HDM L8		7073030730 7073030731	monostable bistable	140
HDM V8		7073030130 7073030131	monostable bistable	130
HDM *F8		7073030132 7073030133	monostable bistable	130
HDM K8		7073030110 7073030111	monostable bistable	140
HDM O8		7073030210 7073030211	monostable bistable	140

① VALVE DIMENSIONS HDM Ø 8S

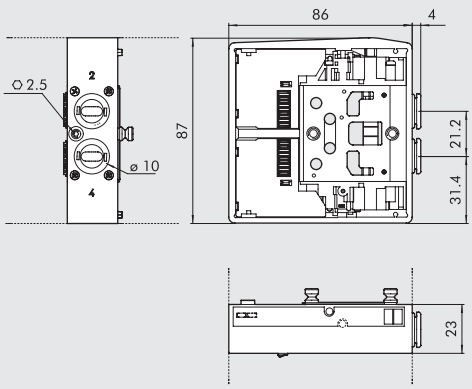
*uses a single PIN (like the V) and occupies 2 signals

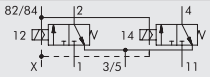
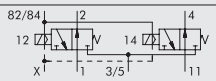
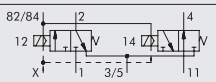
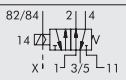
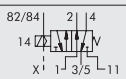
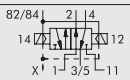
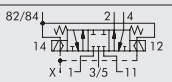


Symbol		Code	Manual control	Weight [g]
HDM I8S		7077030530 7077030531	monostable bistable	260
HDM W8S		7077030630 7077030631	monostable bistable	260
HDM L8S		7077030730 7077030731	monostable bistable	260
HDM V8S		7077030130 7077030131	monostable bistable	241
HDM *F8S		7077030132 7077030133	monostable bistable	241
HDM K8S		7077030110 7077030111	monostable bistable	253
HDM O8S		7077030210 7077030211	monostable bistable	262

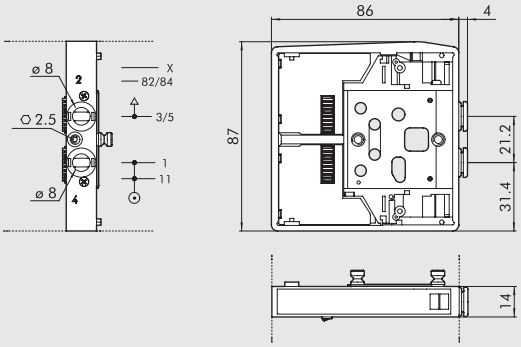
① VALVE DIMENSIONS HDM Ø 10

*uses a single PIN (like the V) and occupies 2 signals



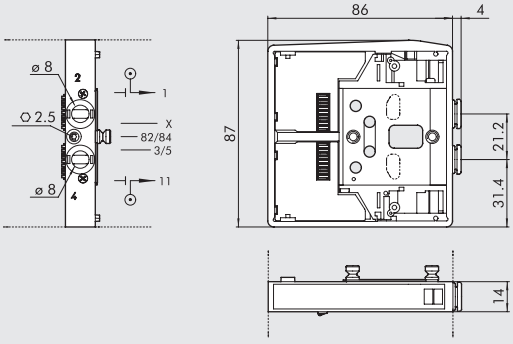
Symbol		Code	Manual control	Weight [g]
HDM I10		7078030530 7078030531	monostable bistable	250
HDM W10		7078030630 7078030631	monostable bistable	250
HDM L10		7078030730 7078030731	monostable bistable	250
HDM V10		7078030130 7078030131	monostable bistable	231
HDM *F10		7078030132 7078030133	monostable bistable	231
HDM K10		7078030110 7078030111	monostable bistable	243
HDM O10		7078030210 7078030211	monostable bistable	252

⑥ INTERMEDIATE THROUGH



Code	Description	Weight [g]
0227301301	Intermediate through HDM	120

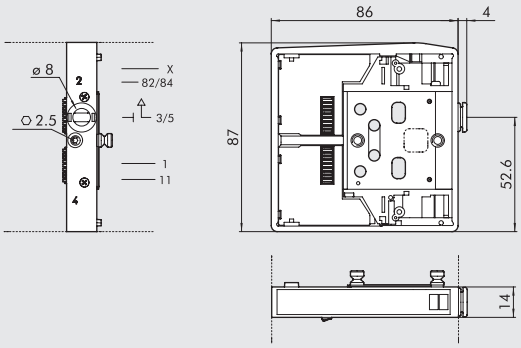
⑦ INTERMEDIATE BLIND



Code	Description	Weight [g]
0227301302	Intermediate blind HDM	117

⑳ INTERMEDIATE EXHAUST SWITCH

Code	Description	Weight [g]
0227301303	Intermediate exhaust switch HDM	125

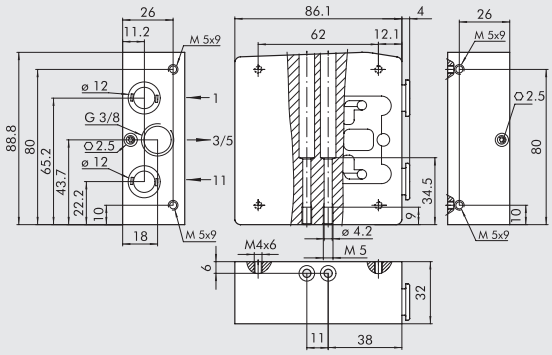


④ RIGHT-END-PLATE 1-11 PIPE Ø 12

Code	Description	Weight [g]
0227301221	Rigth-end-plate HDM 1-11 Ø 12	630

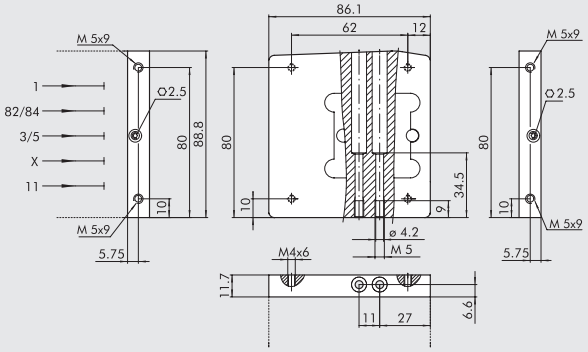
This end-plate allows for supplies to be differentiated:

- Port 2
- Port 4



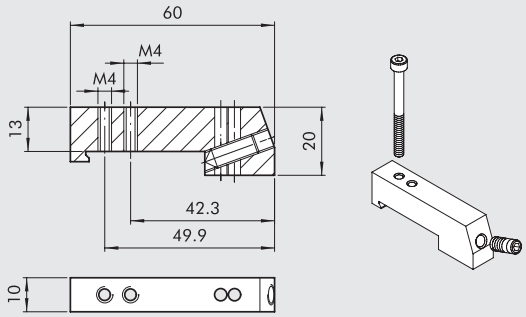
⑤ BLIND END-PLATE

Code	Description	Weight [g]
0227301500	Blind end-plate HDM	230



ACCESSORIES

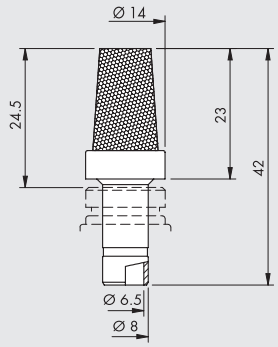
⑯ CONNECTION BRACKETS ON DIN BAR



Code	Description	Weight [g]
0227301600	Connection brackets on din bar HDM/CM	30

Supplied complete with one M4x45 screws and one M6 grub screw
Individually packed

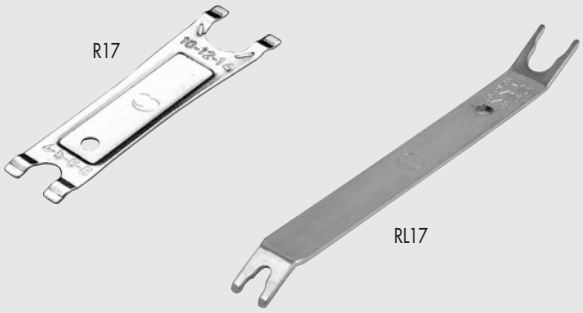
SILENCER FOR FITTING, Ø 8



Code	Description	Flow rate at 6.3 bar [Nl/min]	Weight [g]
W0970530084	Silencer for fitting, Ø 8	2400	15

At the 3/5-exhaust port of the intermediate throughreference 6 and of the exhaust switch reference 20

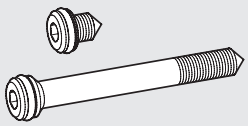
R17 - PIPE RELEASE SPANNER



Code	Rif.	Length [mm]	Ø Tube
2L17001	RL17	140	from 3 to 10
2017001	R17	95	from 4 to 14

SPARES

GRUB SCREW KIT



Code	Description
0227301800	Grub screw for Multimach HDM/CM

Comes in 1 + 1 pc. packs

CM CLEVER MULTIMACH

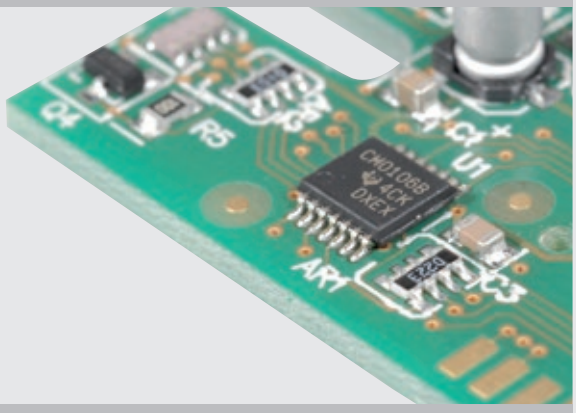
METAL WORK PNEUMATIC

THE VALVE IN DETAIL

Clever Multimach valves can be used to form autonomous and intelligent valve island subsystems. Each valve has a microchip that performs a series of functions connected with operation and dialogue with the valves before and after it. Valves communicate via serial transmission. CM refers to the communication protocol patented by Metal Work. It is a field-bus in its own right, designed specifically for very easy control of islands of pneumatic solenoid valves. CM valves have a diagnosis system that detects electrical faults. It can also be used to verify during installation that all connections are correct. Multi-pole connections and field buses with different communication protocols are available for controlling the valve distribution island. Addressing of single outputs is not required as the connection number of each solenoid pilot is assigned automatically based on the position occupied by the valve.

SMART VALVE

Each valve comes with a microchip that controls operation and dialogue with the other valves.



LOCAL DIAGNOSTICS

Each Clever Multimach valve has a LED diagnostic system that identifies immediately whether a pilot is energized, the contact is interrupted or there is a short-circuit.

LED 14	LED 12	DESCRIPTION OF THE FAUL
OFF ○	**OFF** ○	No fault, EV1-EV2=OFF
ON (green) ●	**OFF** ○	No fault, EV1=ON - EV2=OFF
ON (green) ●	**ON** (green) ●	No fault, EV1-EV2=ON
OFF ○	**ON** (green) ●	No fault, EV1=OFF - EV2=ON
RED (flashing) ✳	**OFF** ○	Solenoid pilot EV1 interrupted or disconnected
OFF ○	**RED** (flashing) ✳	Solenoid pilot EV2 interrupted or disconnected
ON (red) ●	**OFF** ○	Solenoid pilot EV1 short circuit
OFF ○	**ON** (red) ●	Solenoid pilot EV2 short circuit
GREEN (flashing) ✳	**OFF** ○	Data update time out, communication faulty

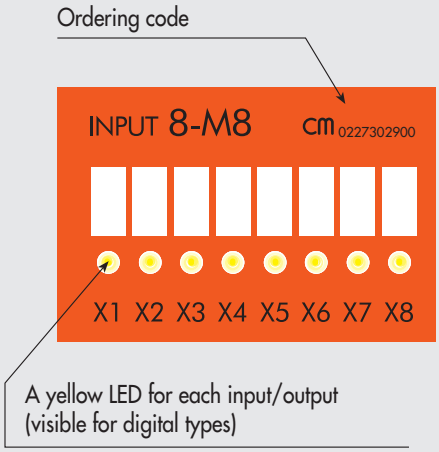
INPUT MODULES

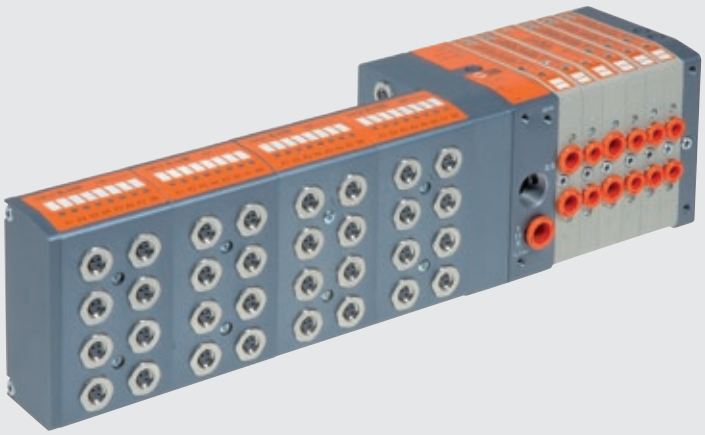
With a suitably arranged Clever Center, you can insert add-on modules.
When connecting buses, the add-on modules can only be used for e PNP INPUTs.
With a multi-pole connection, the following INPUTs and OUTPUTs can be used:
- DIGITAL INPUTS, as cylinder sensors for example
- DIGITAL OUTPUTS
- ANALOGUE INPUTS (but the LEDs do not light up)
- ANALOGUE OUTPUTS (but the LEDs do not light up)

They can be combined, even on the same module. You can choose between PNP or NPN connections via a dip switch-type selector.
All the INPUTS/OUTPUTS must be the same type, i.e. all PNP or NPN.

MAXIMUM EXTENSION OF ADD-ON MODULES

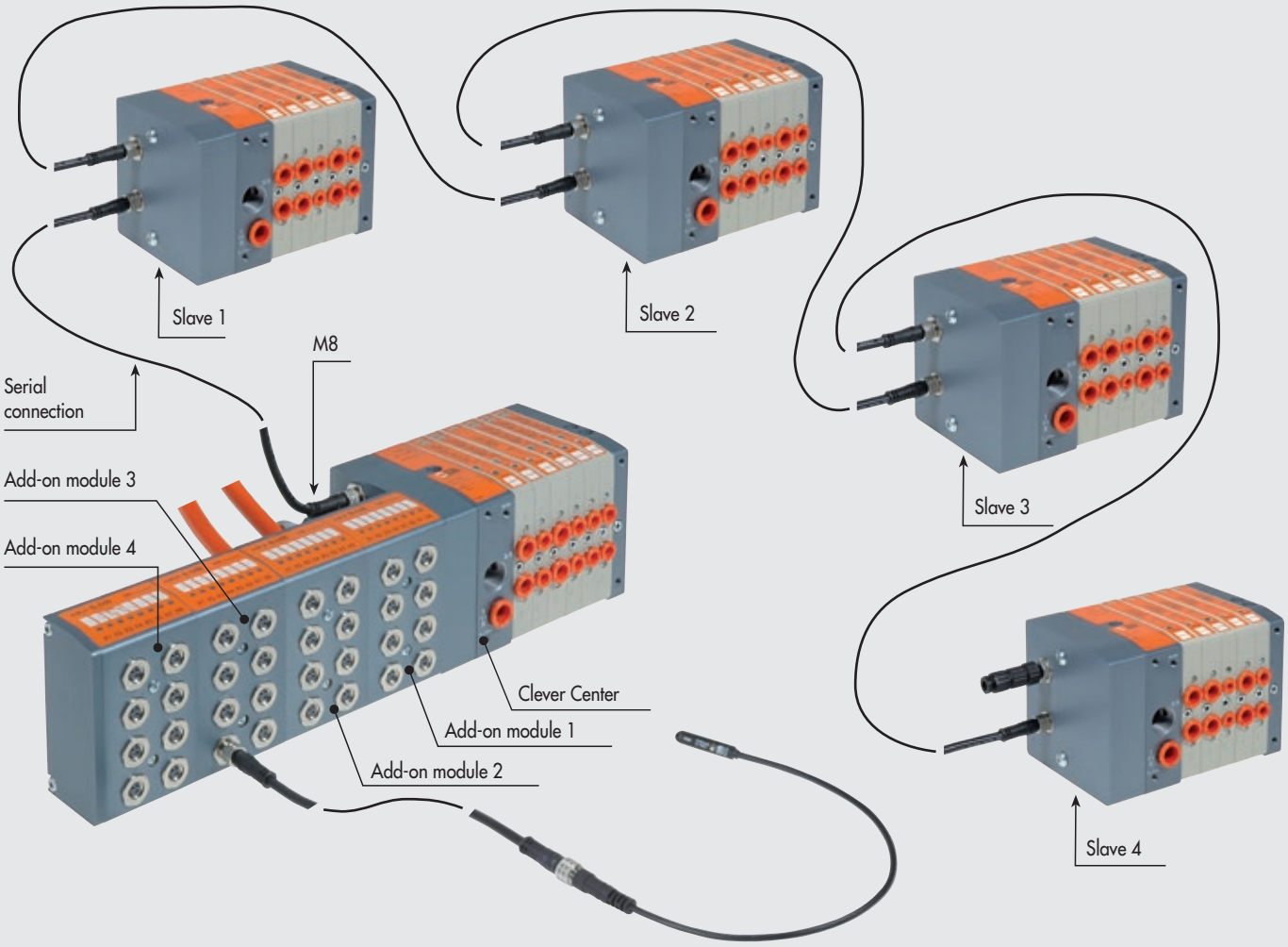
Up to 4 modules can be connected, giving a total of 32 input signals.





EXAMPLE OF A CM LAYOUT

The Clever Center can relay command signals to other islands of "slaves". Transmission, in serial mode, is via a cable with M8 connectors. Commands can be sent from the first slave island to other slave islands in cascade, again via cables with M8 connectors. Addresses are assigned automatically, based on intuitive sequential logic. This means that other slaves can be added downstream at any time, until all available outputs are in use.

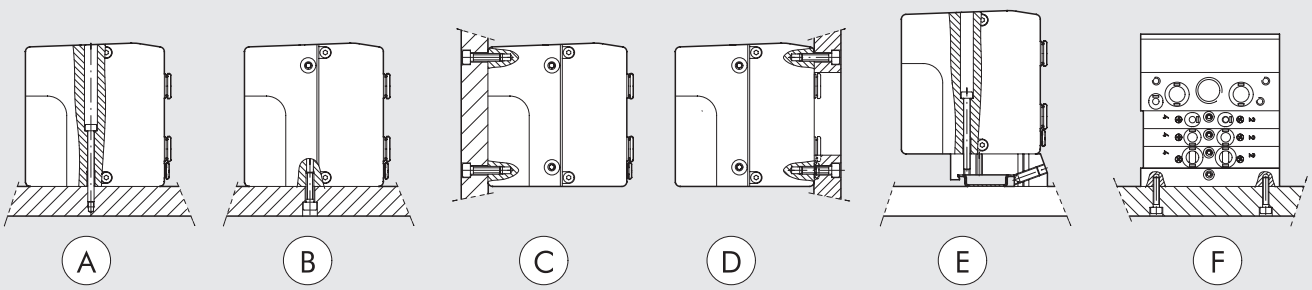


NOTES

TECHNICAL DATA

Valve port connections		Ø 4,6,8 mm automatic fitting for ports 2 and 4 / power supply port for Ø10 automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port		
Connection on the end-plate 1-11 for the supply of pilots		Automatic fitting Ø 4 mm		
Maximum number of pilots		See input end-plate technical data		
Maximum number of valves		See input end-plate technical data		
Operating temperature range	°C	-10 to +60		
Fluid		Filtered air without lubrication; lubrication, if used, must be continuous		
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	11.5 mm Ø 4	11.5 mm Ø 6	14 mm Ø 8
	version 5/2 and 3/2	200	500	650
	version 5/3	200	300	300
Pressure range		X (pilot supply)		1-11 (valve supply)
	end-plate 1-11	3 to 7 bar		vacuum at 10 bar
	end-plate 1	3 to 7 bar		
Voltage range		24 VDC ±10%		
		(slave protected against overload and reverse polarity)		
Power for each pilot	W	0.9		
Solenoid Pilot Insulation class		F155		
Degree of protection		IP65 (with conveyed exhust, and that - in case of no use)		
Diagnostics and protections		Local via PC/PLC fault led. For defects signalled look at the manual.		
		Outlets protected against overload and short-circuit		
Solenoid rating		100% ED		
Maximum latency time of the serial transmission	ms	<10		
TRA/TRR 2x3/2 monostable at 6 bar	ms	8 / 45		
TRA/TRR 5/2 monostable at 6 bar	ms	8 / 33		
TRA/TRR 5/2 bistable at 6 bar	ms	20 / 20		
TRA/TRR 5/3 cc monostable at 6 bar	ms	20 / 20		
Note on use		Insert the pipes in the fittings, before passing air through the valves, otherwise the gasket may be pulled out of its seat by the flow of air.		
Compatibility with oils		See **chapter Z1**		
Add-on module				
Sensor supply voltage		24 VDC ±10%		
Maximum current for each single connector	mA	200		
Maximum current for each module	mA	400		
Maximum total current of all the modules	mA	1000		
Input impedance	KΩ	3.9		
Max input voltage	Vcc	-5 to +30		
Type of input		With field bus: PNP		
		With multi-pole connection: PNP/NPN configurable via DIP SWITCH		
Protection		Protected inputs against overload and short-circuit		
Active input signalling		One LED for each INPUT		

FIXING THE BASE



Ⓐ Fixing from above using the 1 or 1-1 input end-plate and the blind end-plate.
Ⓑ Ⓒ Fixing from above using the 1 or 1-1 input end-plate and the blind end-plate, using the M5 threads on the bottom and the rear of the end-plates.
Ⓓ Fixing from above using the 1 or 1-1 input end-plate and the blind end-plate, using the M5 threads on the front of the end-plates. An opening for the pipes is made in the plate.
Ⓔ Fixing on the DIN bar with end-plate 1 or 1-11 and blind end-plate, using the push-in bracket code 0227301600.
Ⓕ Lateral fixing using the blind end-plate, and its the M4 threads on the side lateral.
Note: The sole fixing admitted is the one showed.

KEY TO CODES – CLEVER MULTIMACH CM

C M	2	I / O	M	I6 - W8 - W6 - O4 - L8 - 5	M8 - M8 - 15 - 16
VALVE	**INPUT END-PLATE**	**FUNCTION**	**MANUAL TYPE**	**TYPE OF VALVE**	**FURTHER DETAILS**
Clever Multimach	**2** End-plate 1-11 **3** End-plate 1	**O** Multi-pole connection, valves only **I/O** Multi-pole connection, valves and inputs **ADD** Additional (slave) valves only **PN O** Profinet IO, valves only **PN I/O** Profinet IO, valves and inputs **EC O** EtherCAT, valves only **EC I/O** EtherCAT, valves and inputs **EN O** EtherNet/IP, valves only **EN I/O** EtherNet/IP, valves and inputs **CAN O** CANopen, valves only **CAN I/O** CANopen, valves and inputs	**M** Monostable manual control **B** Bistable manual control	**I** n° 2 3/2 NC **W** n° 2 3/2 NO **L** 3/2 NO + 3/2 NC **V** 5/2 monostable **K** 5/2 bistable **O** 5/3 monostable **5** Blind end-plate **6** Passing-intermede **7** Blind intermediate **20** Exhaust section **4** Cartridge 4 **6** Cartridge 6 **8** Cartridge 8	● **M8** Module 8 input M8 ✱ **14** Shell 44 pin ✱ **15** Shell 44 + 44 pin **16** n° 2 brackets for DIN bar

● Not applicable with (add-on) ADD end-plate
✱ For multi-pole connection only

NOTES

CM + MULTI-POLE CONNECTION

CM end-plates + multi-pole connection can be used for connection to the PC/PLC using a 44-pin cable and connector.
The end-plates with provisions for INPUT/OUTPUT add-on modules are connected using an extra 44-pin cable.
Both valves and INPUTs/OUTPUTs can be PNP or NPN configured.

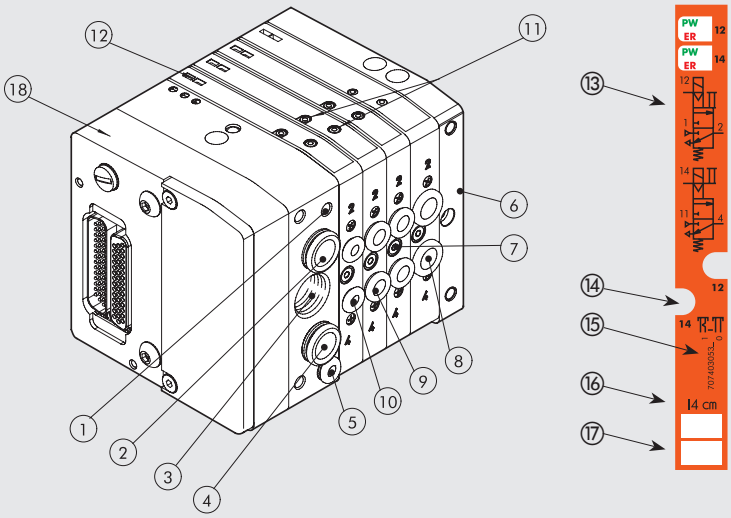
TECHNICAL DATA

Maximum number of pilots		32
Maximum number of valves		32 (same as the max. no. of pilotos)
Voltage range		24VDC ±10%
DC input current without valve modules		Nominal Icc 30 mA - Instantaneous Icc (≤25 ms) 650 mA
Max input current with all valves ON	A	1.5

Refer to page B2.144 **for general technical data**

COMPONENTS

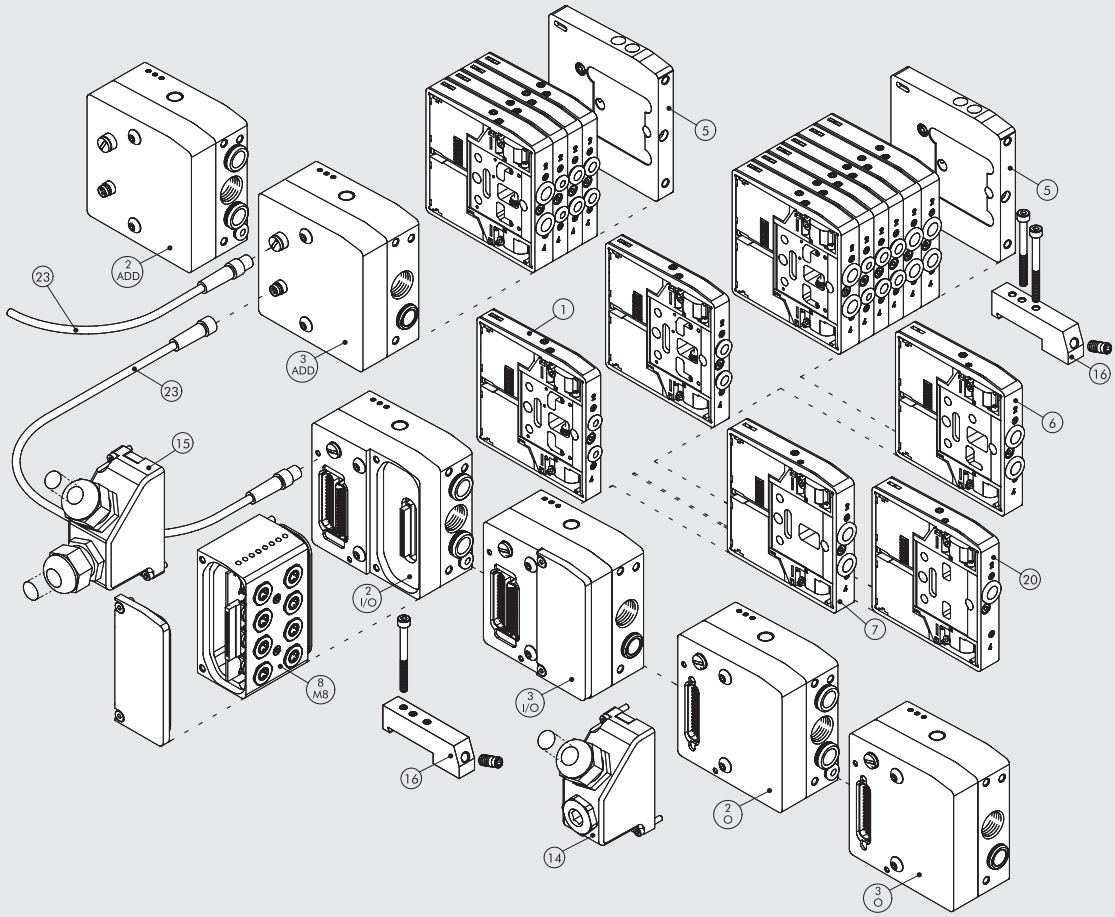
① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate
⑦ Screw for valve wall-mounting
⑧ ⑨ ⑩ Utility port for pipe Ø 4, 6 or 8 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ Clever Center end-plate multi-pole connection



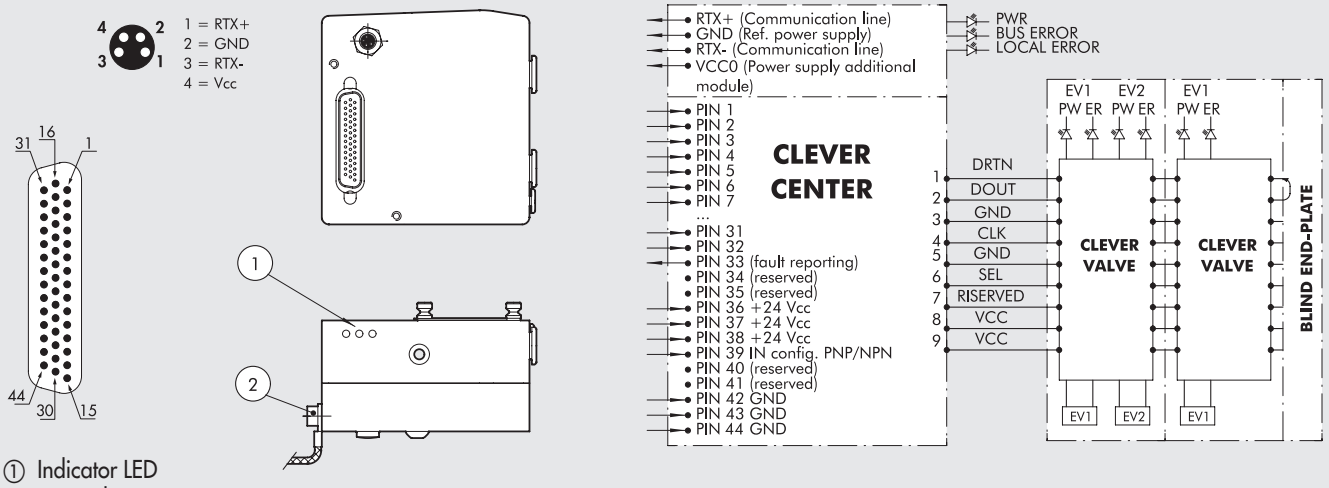
METAL WORK PNEUMATIC

VALVE ISLAND CONFIGURATION

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.166 **for valves, intermediates elements and common accessories.**

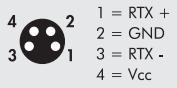


WIRING DIAGRAM FOR THE CLEVER CENTER TERMINAL - VALVES ONLY

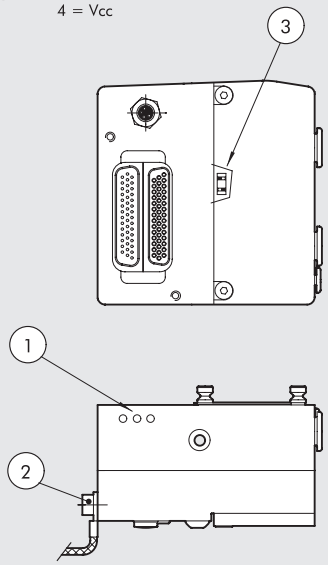


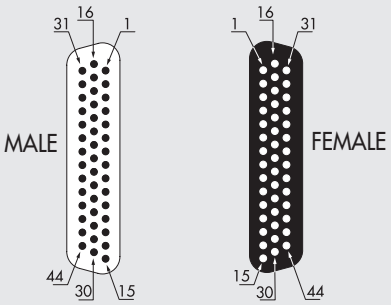
① Indicator LED
② Grounding

WIRING DIAGRAM FOR THE CLEVER CENTER TERMINAL FOR VALVES AND INPUTS/OUTPUTS

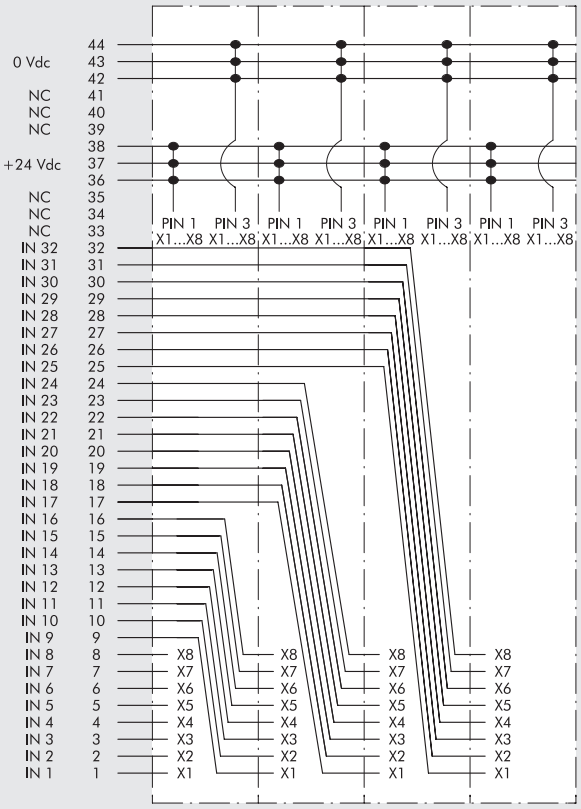


1 = RTX +
2 = GND
3 = RTX -
4 = Vcc



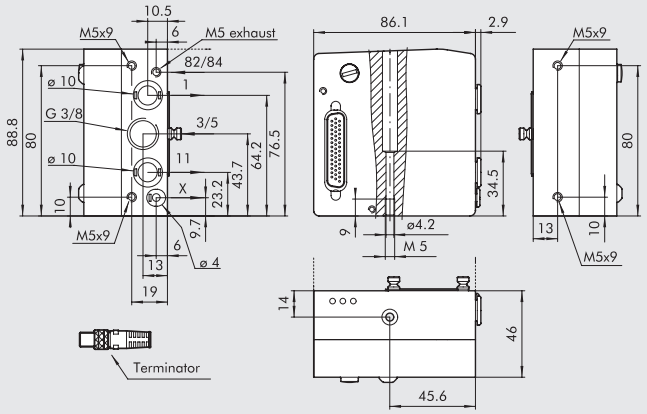


INPUT CONNECTION DIAGRAM



① Indicator LED
② Grounding
③ Input selector type PNP/NPN

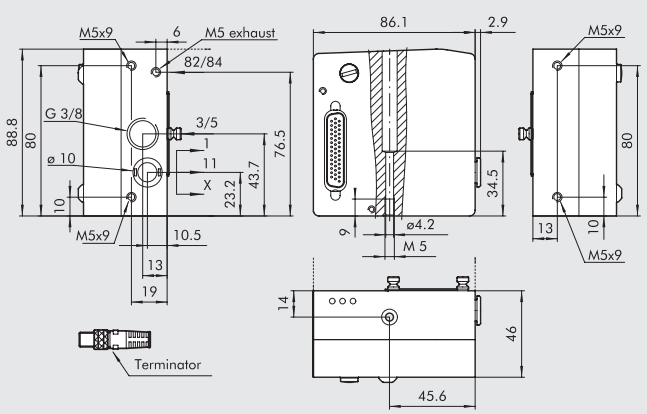
2 - O OUTPUT END-PLATE 1-11



Code	Description	Weight [g]
0227302200	End-plate CM kit 1-11 OUT	722

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

3 - O OUTPUT END-PLATE 1

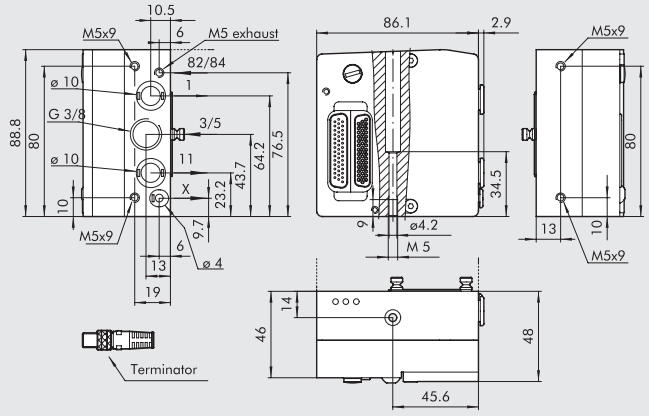


Code	Description	Weight [g]
0227302201	End-plate CM kit 1 OUT	722

Note: terminator included

METAL WORK PNEUMATIC

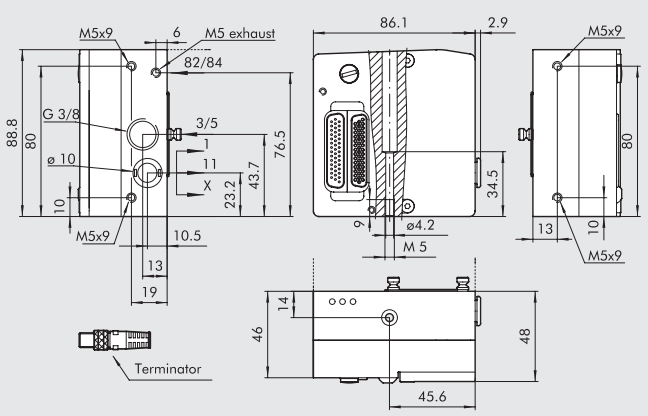
2 - I/O INPUT/OUTPUT END-PLATE 1-11



Code	Description	Weight [g]
0227302223	End-plate CM kit 1-11 IN/OUT	722

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

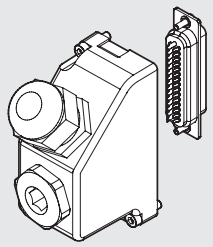
3 - I/O INPUT/OUTPUT END-PLATE 1



Code	Description	Weight [g]
0227302225	End-plate CM kit 1 IN/OUT	722

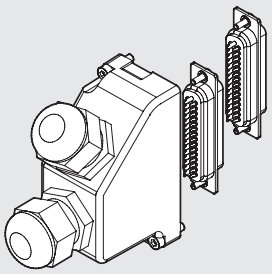
Note: terminator included

14 44-PIN CUP CONNECTOR KIT IP 65



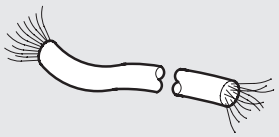
Code	Description	Weight [g]
0226180108	44-pin cup connector kit IP 65	60

15 44+44 PIN CUP CONNECTOR KIT IP 65 FOR I/O



Code	Description	Weight [g]
0226180109	44+44 pin cup connector kit IP 65 for I/O	80

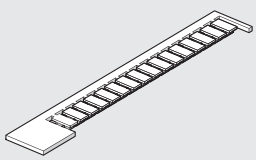
CABLES



Code	Description	Weight [g/m]
0226107201	10-wire cable	60
0226107101	19-wire cable	122
0226107102	25-wire cable	130
0226107103	44-wire cable	160

Specify the number of metres desired

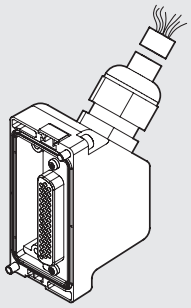
IDENTIFICATION PLATE KIT FOR 44-PIN CONNECTOR



Code	Description
0226107000	Identification plate kit

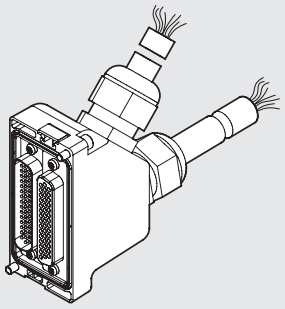
Comes in 16-pc. packs

44-PIN PRE-WIRED CUP CONNECTOR



Code	Description	Weight [g]
0226950500	Connet. IP 65 + cable 44-wire L = 5 m	740

44+44-PIN PRE-WIRED CUP CONNECTOR



Code	Description	Weight [g]
0226980500	Connet. IP 65 + cable 44 + 44-wire L = 5 m	1550

WIRING DIAGRAM FOR THE 44-PIN CUP CONNECTOR KIT

44 PIN FEMALE PRE-WIRED FOR VALVE

Position of electrical contact	Corresponding wire colour	Function
1	white	Out 1
2	brown	Out 2
3	green	Out 3
4	yellow	Out 4
5	gray	Out 5
6	pink	Out 6
7	blue	Out 7
8	violet	Out 8
9	gray + pink ring	Out 9
10	red + blue ring	Out 10
11	white + green ring	Out 11
12	brown + green ring	Out 12
13	white + yellow ring	Out 13
14	yellow + brown ring	Out 14
15	white + gray ring	Out 15
16	gray + brown ring	Out 16
17	white + pink ring	Out 17
18	pink + brown ring	Out 18
19	white + blue ring	Out 19
20	brown + blue ring	Out 20
21	white + red ring	Out 21
22	brown + red ring	Out 22
23	white + black ring	Out 23
24	brown + black ring	Out 24
25	gray + green ring	Out 25
26	yellow + gray ring	Out 26
27	pink + green ring	Out 27
28	yellow + pink ring	Out 28
29	green + blue ring	Out 29
30	yellow + blue ring	Out 30
31	green + red ring	Out 31
32	yellow + red ring	Out 32
33	green + black ring	Fault reporting
34	gray + blue ring	NC
35	gray + red ring	NC
36	red + green ring	+24VDC
37	red + brown ring	+24VDC
38	red + black ring	+24VDC
39	yellow + black ring	Config. PNP/NPN
40	pink + red ring	NC
41	pink + blue ring	NC
42	black + green ring	0 VDC
43	black + pink ring	0 VDC
44	black + red ring	0 VDC

44 PIN MALE PRE-WIRED FOR INPUT/OUTPUT

Position of electrical contact	Corresponding wire colour	Function
1	white	In 1
2	brown	In 2
3	green	In 3
4	yellow	In 4
5	gray	In 5
6	pink	In 6
7	blue	In 7
8	violet	In 8
9	gray + pink ring	In 9
10	red + blue ring	In 10
11	white + green ring	In 11
12	brown + green ring	In 12
13	white + yellow ring	In 13
14	yellow + brown ring	In 14
15	white + gray ring	In 15
16	gray + brown ring	In 16
17	white + pink ring	In 17
18	pink + brown ring	In 18
19	white + blue ring	In 19
20	brown + blue ring	In 20
21	white + red ring	In 21
22	brown + red ring	In 22
23	white + black ring	In 23
24	brown + black ring	In 24
25	gray + green ring	In 25
26	yellow + gray ring	In 26
27	pink + green ring	In 27
28	yellow + pink ring	In 28
29	green + blue ring	In 29
30	yellow + blue ring	In 30
31	green + red ring	In 31
32	yellow + red ring	In 32
33	green + black ring	NC
34	gray + blue ring	NC
35	gray + red ring	NC
36	red + green ring	+24VDC
37	red + brown ring	+24VDC
38	red + black ring	+24VDC
39	yellow + black ring	NC
40	pink + red ring	NC
41	pink + blue ring	NC
42	black + green ring	0 VDC
43	black + pink ring	0 VDC
44	black + red ring	0 VDC

CM + Profinet IO

METAL WORK PNEUMATIC

The CM + Profinet IO system has been designed with a pneumatic input end-plate that can contain all the electronic equipment, indicators and connectors. This system is very compact and sturdy and is housed in a thick aluminium body that protects sensitive components from impact and falls.
The end-plate is available in two electric versions: one handling up to 64 solenoids (64 OUTs) and one handling up to 64 solenoids (64 OUTs) and 32 inputs (32 INs).
Grounding is recommended to protect the electronic circuit against electric or electrostatic charges.
N.B. For the system to handle more than 32 pilots (33 to 64), it must be made up of valves bearing a label marked 64. If one or more valves are not marked 64, each island cannot handle more than 32 pilots.

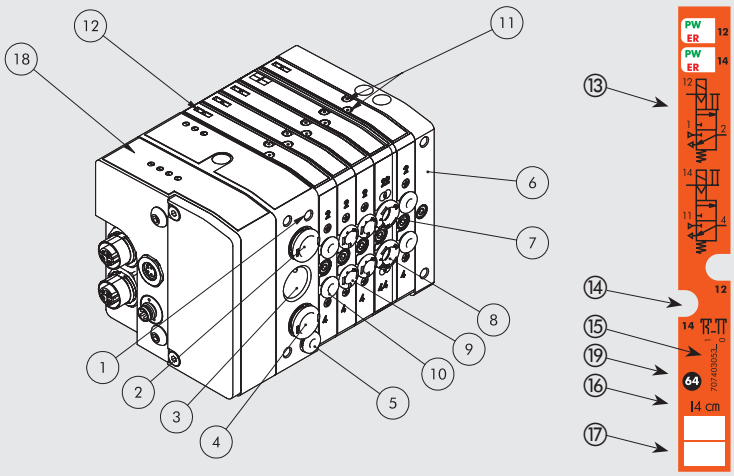
TECHNICAL DATA

Field buses	Profinet IO - 100 Mbit/s - Full-duplex
	Supports RT communication, Shared Device, Identification & Maintenance 1-4
Factory settings	Module name: Cmseries
	Address IP 0.0.0.0
Addressing	Software DCP
Voltage range	24VDC ± 10%
Maximum number of pilots (Out)	64
Maximum number of valves	64 (same as the max. no. of pilotos)
Maximum number of inputs (INs)	32
Icc bus supply current	Nominal Icc 120 mA - Instantaneous Icc (< 2 ms) 450 mA
Icc valve supply current	Instantaneous Icc (< 2 ms) 900 mA
Maximum absorption of a valve island with 64 monostable valves	Nominal Icc with 900 mA OFF valves – nominal Icc with 2700 mA ON valves
Protections	Module protected against overload and polarity reversal. Outputs protected against overloads and short-circuits
Connections	Field bus: 2 M12 Female, D-coded, internal switch
	supply: M8 4 pin
	input: M8 3 pin
BUS diagnostics	Using local LEDs and software messages
	Outputs: using local LEDs and status bytes
	Inputs: using local LEDs and status bytes
	N.B.: Refer to the user manual for a detailed description
Data bit value	0 = not enabled
	1 = enabled
Output status in the absence of communication	Disabled

See page B2.144 for general technical data

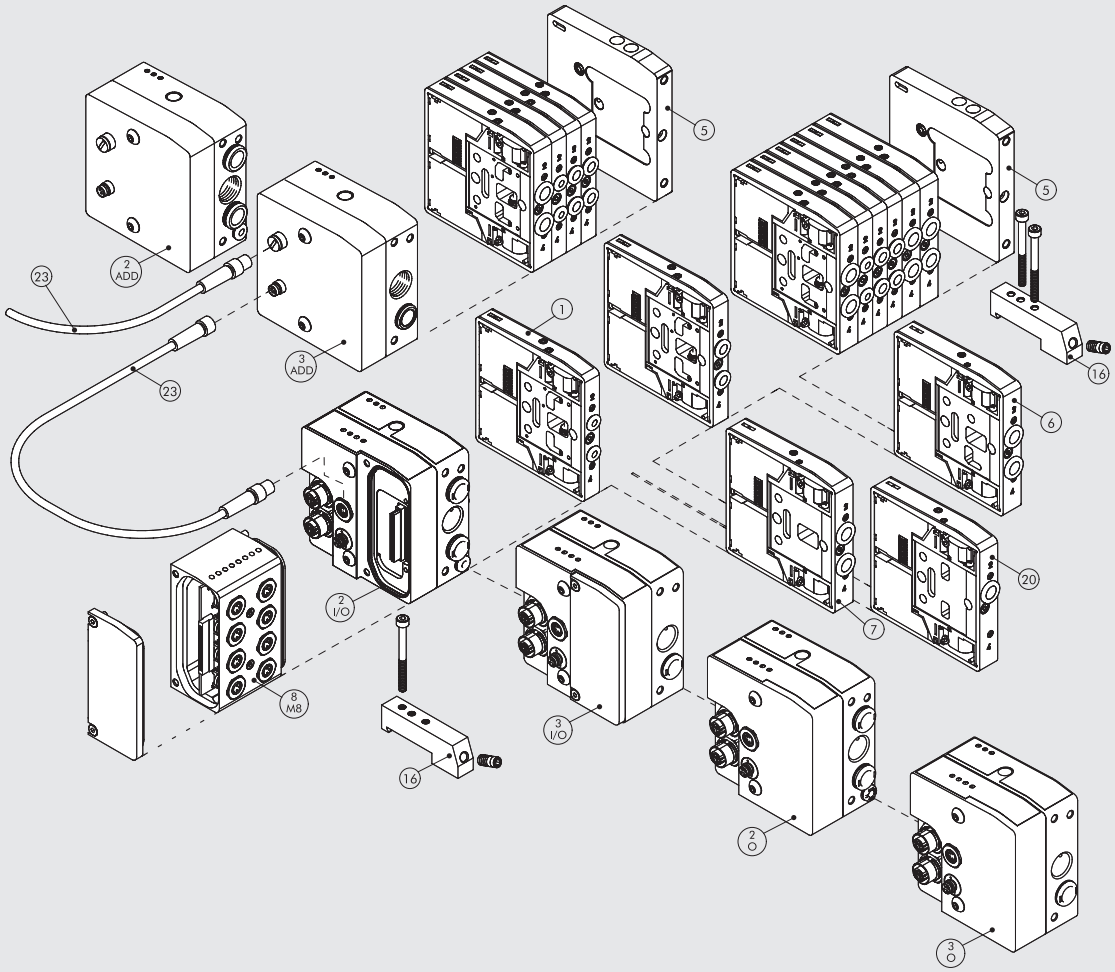
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate
⑦ Screw for valve wall-mounting
⑧ ⑨ ⑩ Utility port for pipe Ø 4, 6 or 8 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ CM Profinet IO end-plate
⑲ 64 = when present, it means that the valve is suitable for installation on islands with a field bus with up to 64 pilots, otherwise the limit is 32 pilots.

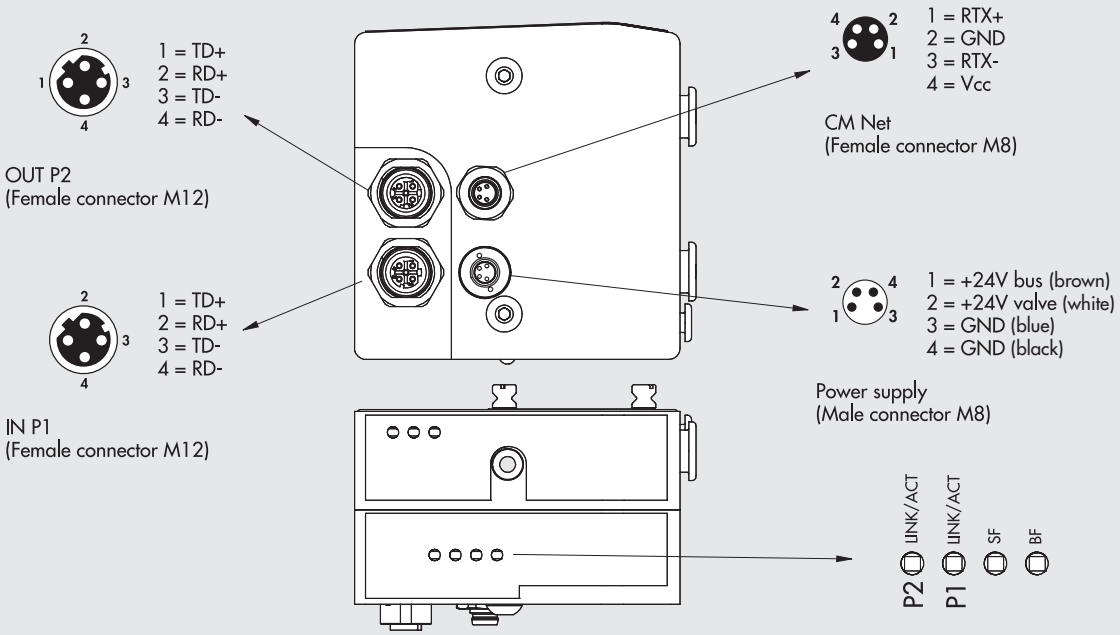


VALVE ISLAND CONFIGURATION

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.166 **for valves, intermediates elements and common accessories.**

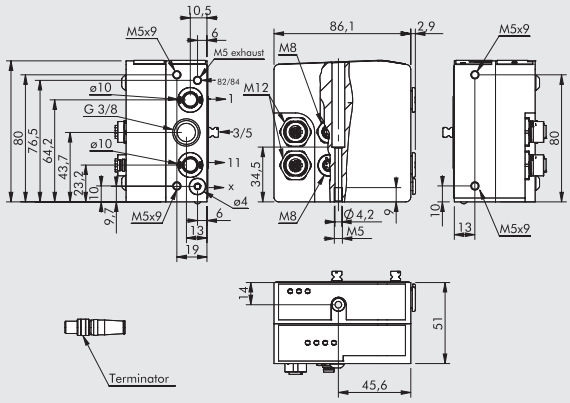


WIRING DIAGRAM



METAL WORK PNEUMATIC

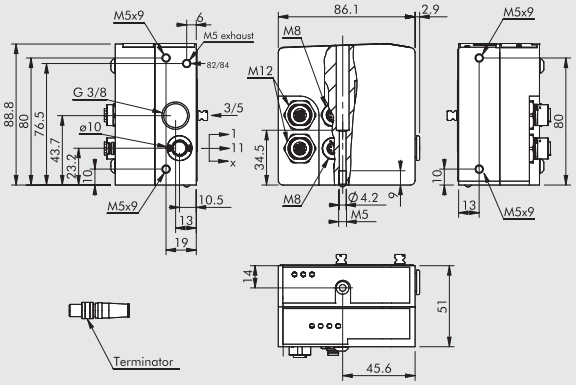
2 - O END-PLATE 1-11 Profinet IO OUTPUT



Code	Description	Weight [g]
0227302230	End-plate CM 1-11 Profinet IO OUTPUT	683

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

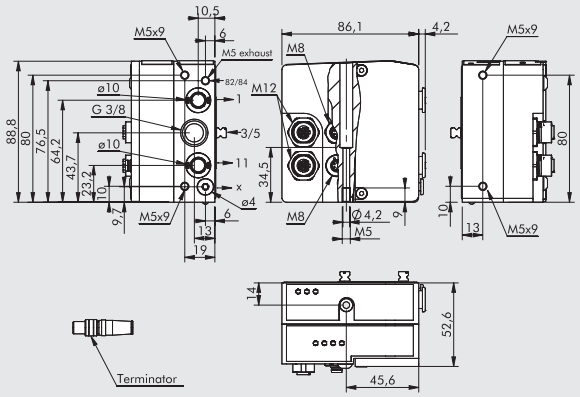
3 - O END-PLATE 1 Profinet IO OUTPUT



Code	Description	Weight [g]
0227302231	End-plate CM 1 Profinet IO OUTPUT	686

Note: terminator included

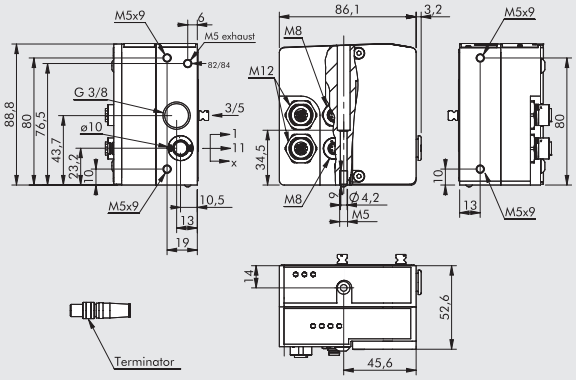
2 - I/O END-PLATE 1-11 Profinet IO INPUT/OUTPUT



Code	Description	Weight [g]
0227302232	End-plate CM 1-11 Profinet IO IN/OUT	643

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

3 - I/O END-PLATE 1 Profinet IO INPUT/OUTPUT

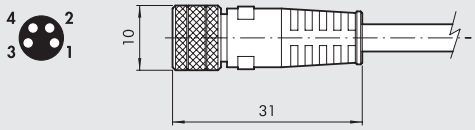


Code	Description	Weight [g]
0227302233	End-plate CM 1 Profinet IO IN/OUT	645

Note: terminator included

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable colour
1	brown
2	white
3	blue
4	black



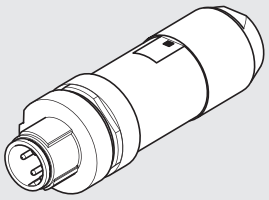
Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

M12 PLUG

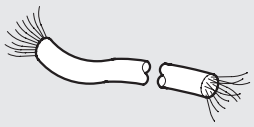
Code	Description
0240009040	Plug M12

M12 BUS CONNECTOR, D-CODED



Code	Description
0240005051	M12 BUS connector, D-coded

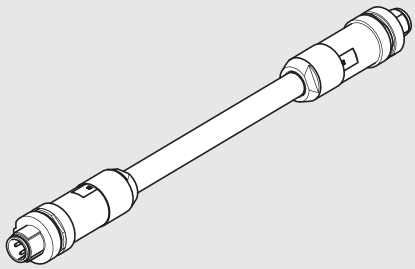
BUS CABLE



Code	Description
0240005220	BUS cable L = 20 m

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED

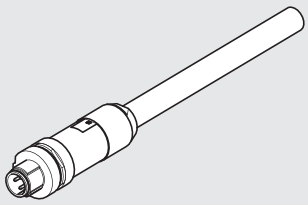


Code	Description
0240005103	Straight connector for M12-M12 BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED

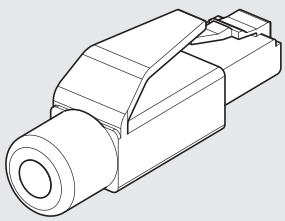
Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue



Code	Description
0240005093	Straight connector for M12 BUS, D-coded, with 3 m cable
0240005095	Straight connector for M12 BUS, D-coded, with 5 m cable
0240005100	Straight connector for M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

RJ45 CONNECTOR



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60603-7

NOTES

CM + EtherCAT

METAL WORK PNEUMATIC

The CM + EtherCAT system has been designed with a pneumatic input end-plate that can contain all the electronic equipment, indicators and connectors.
This system is very compact and sturdy and is housed in a thick aluminium body that protects sensitive components from impact and falls.
The end-plate is available in two electric versions: one handling up to 64 solenoids (64 OUTs) and one handling up to 64 solenoids (64 OUTs) and 32 inputs (32 INs). Grounding is recommended to protect the electronic circuit against electric or electrostatic charges.
N.B. For the system to handle more than 32 pilots (33 to 64), it must be made up of valves bearing a label marked 64. If one or more valves are not marked 64, each island cannot handle more than 32 pilots.

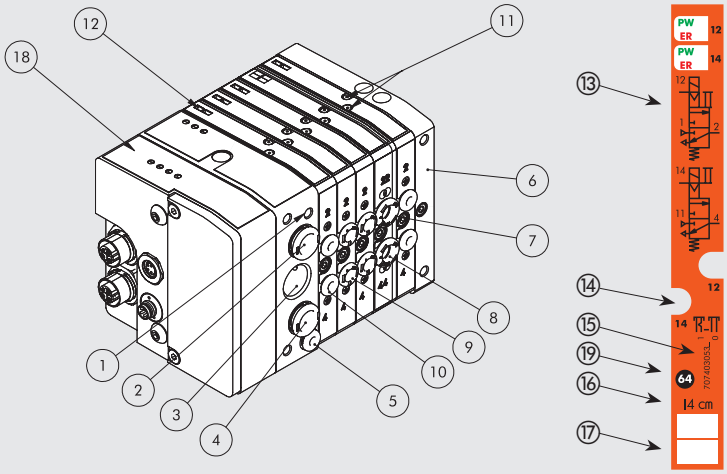
TECHNICAL DATA

Field buses	EtherCAT - 100 Mbit/s - Full-duplex - Supports auto-negotiation
Factory settings	Module name: Cmseries
Minimum cycle time	100 µS
Addressing	Autoincrement Address - Second Slave Address
Voltage range	24VDC ± 10%
Maximum number of pilots (Out)	64 (8 byte)
Maximum number of valves	64 (same as the max. no. of pilotos)
Maximum number of inputs (INs)	32 (4 byte + 1 status byte)
Icc bus supply current	Nominal Icc 120 mA - Instantaneous Icc (< 2 ms) 450 mA
Icc valve supply current	Instantaneous Icc (< 2 ms) 900 mA
Maximum absorption of a valve island with 64 monostable valves	Nominal Icc with 900 mA OFF valves – nominal Icc with 2700 mA ON valves
Protections	Module protected against overload and polarity reversal. Outputs protected against overloads and short-circuits
Connections	Field bus: 2 M12 Female, D-coded, internal switch
	supply: M8 4 pin
	input: M8 3 pin
BUS diagnostics	Using local LEDs and software messages
	Outputs: using local LEDs and status bytes
	Inputs: using local LEDs and status bytes
	N.B.: Refer to the user manual for a detailed description
Data bit value	0 = not enabled
	1 = enabled
Output status in the absence of communication	Disabled

See page B2.144 for general technical data

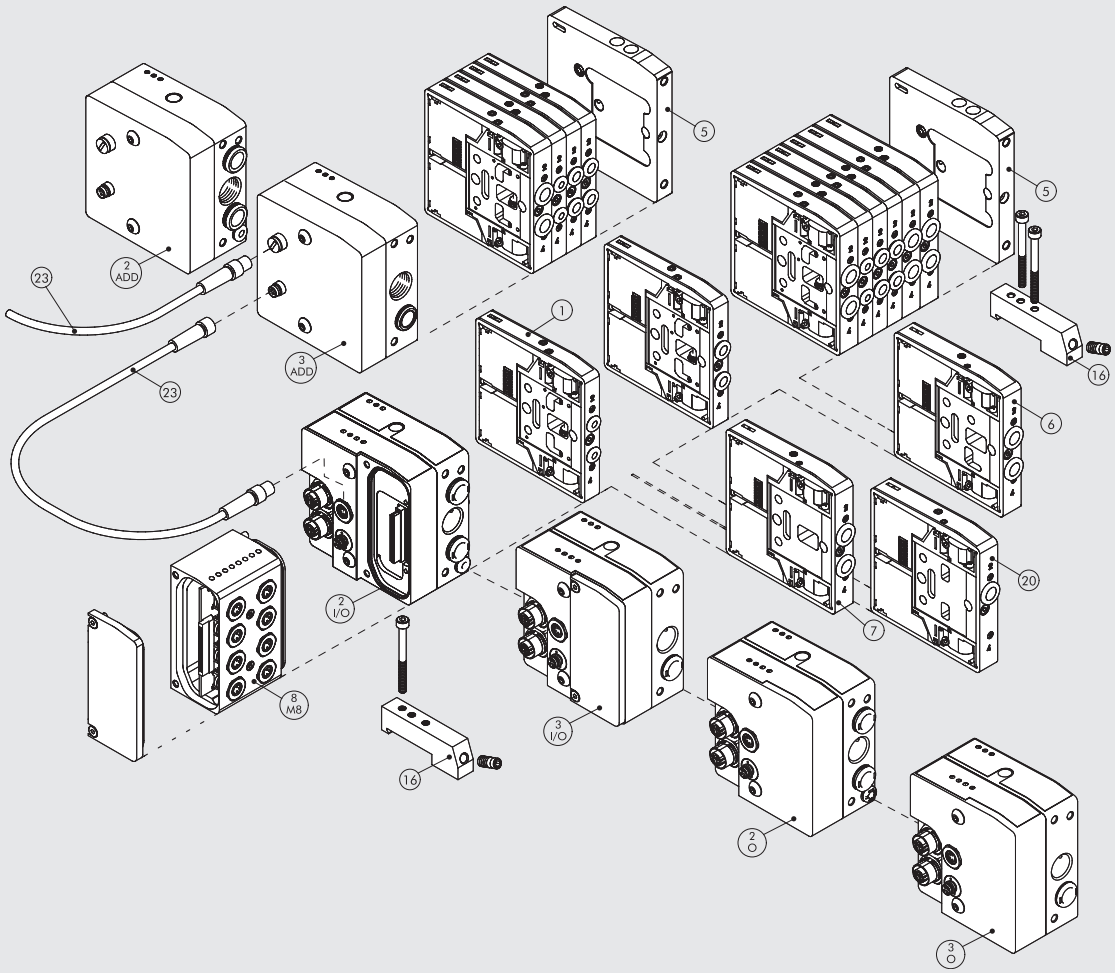
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate
⑦ Screw for valve wall-mounting
⑧ ⑨ ⑩ Utility port for pipe Ø 4, 6 or 8 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ CM EtherCAT end-plate
⑲ 64 = when present, it means that the valve is suitable for installation on islands with a field bus with up to 64 pilots, otherwise the limit is 32 pilots.

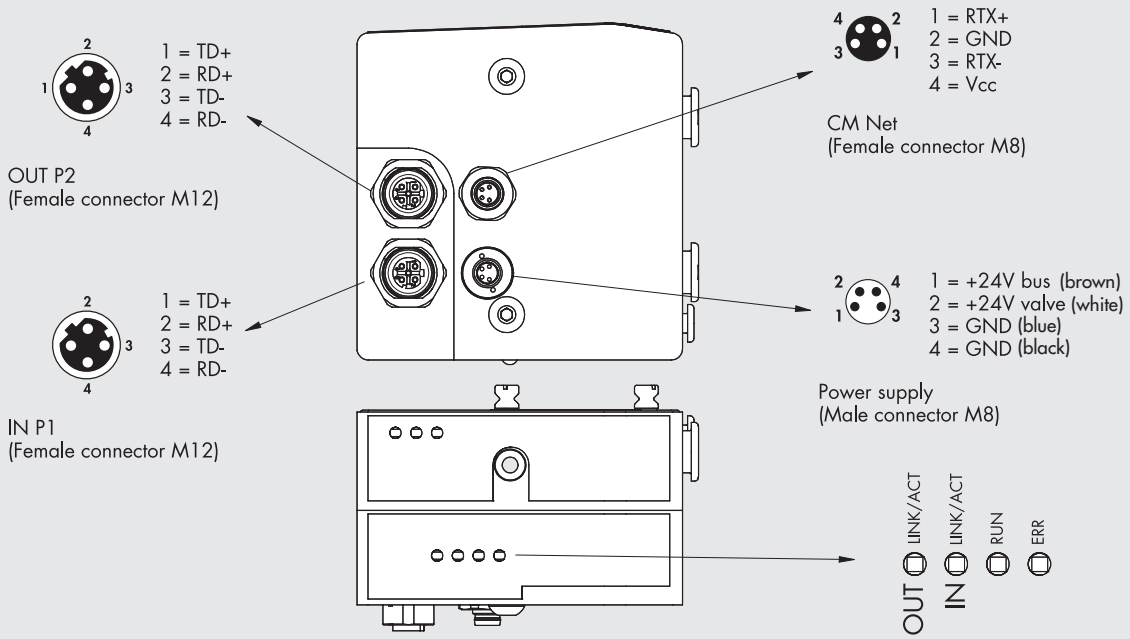


VALVE ISLAND CONFIGURATION

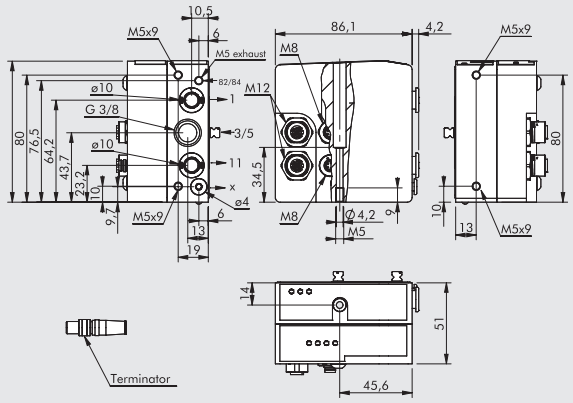
The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.166 **for valves, intermediates elements and common accessories.**



WIRING DIAGRAM



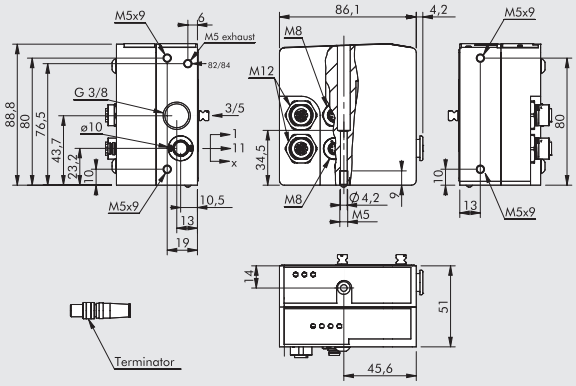
2 - O END-PLATE 1-11 EtherCAT OUTPUT



Code	Description	Weight [g]
0227302234	End-plate CM 1-11 EtherCAT OUTPUT	683

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

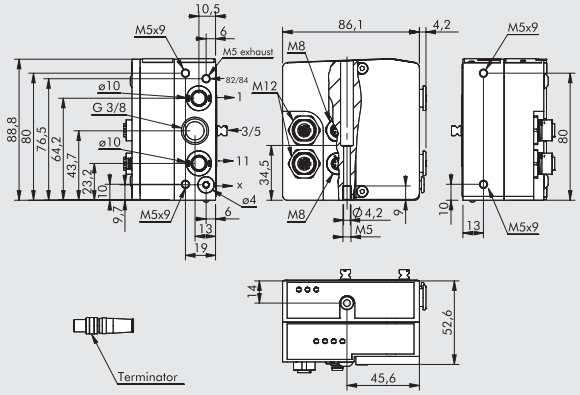
3 - O END-PLATE 1 EtherCAT OUTPUT



Code	Description	Weight [g]
0227302235	End-plate CM 1 EtherCAT OUTPUT	686

Note: terminator included

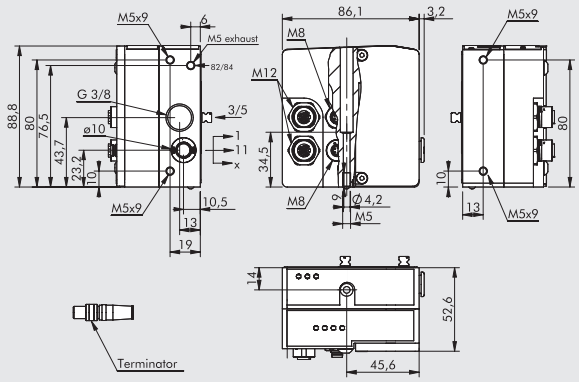
2 - I/O END-PLATE 1-11 EtherCAT INPUT/OUTPUT



Code	Description	Weight [g]
0227302236	End-plate CM 1-11 EtherCAT IN/OUT	643

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

3 - I/O END-PLATE 1 EtherCAT INPUT/OUTPUT

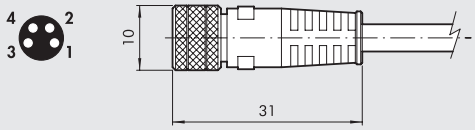


Code	Description	Weight [g]
0227302237	End-plate CM 1 EtherCAT IN/OUT	645

Note: terminator included

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable colour
1	brown
2	white
3	blue
4	black



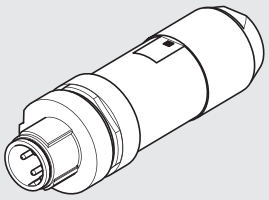
Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

M12 PLUG

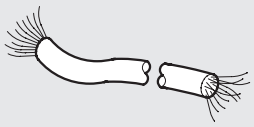
Code	Description
0240009040	Plug M12

M12 BUS CONNECTOR, D-CODED



Code	Description
0240005051	M12 BUS connector, D-coded

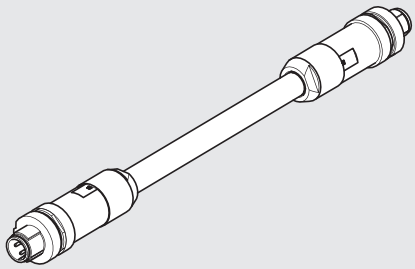
BUS CABLE



Code	Description
0240005220	BUS cable L = 20 m

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED

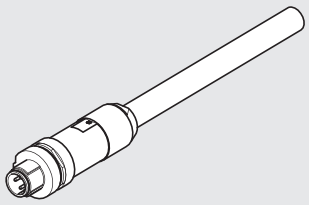


Code	Description
0240005103	Straight connector for M12-M12 BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED

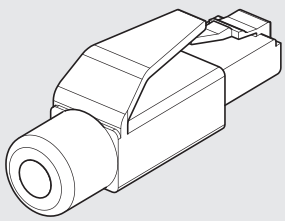
Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue



Code	Description
0240005093	Straight connector for M12 BUS, D-coded, with 3 m cable
0240005095	Straight connector for M12 BUS, D-coded, with 5 m cable
0240005100	Straight connector for M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

RJ45 CONNECTOR



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60603-7

NOTES

CM + EtherNet/IP

METAL WORK PNEUMATIC

The CM + Ether/IP system has been designed with a pneumatic input end-plate that can contain all the electronic equipment, indicators and connectors. This system is very compact and sturdy and is housed in a thick aluminium body that protects sensitive components from impact and falls.
The end-plate is available in two electric versions: one handling up to 64 solenoids (64 OUTs) and one handling up to 64 solenoids (64 OUTs) and 32 inputs (32 INs).
Grounding is recommended to protect the electronic circuit against electric or electrostatic charges.
N.B. For the system to handle more than 32 pilots (33 to 64), it must be made up of valves bearing a label marked 64. If one or more valves are not marked 64, each island cannot handle more than 32 pilots.

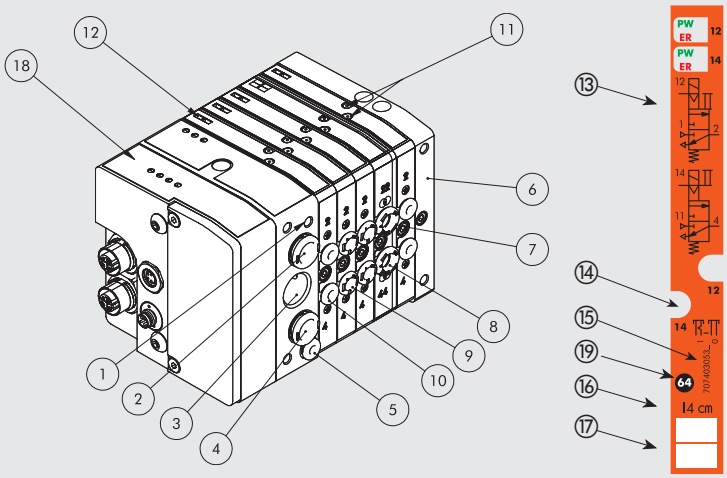
TECHNICAL DATA

Field buses	EtherNet/IP - 10/100 Mbit/s - Half-duplex - Full-duplex - Supports auto-negotiation
Factory settings	Module name: Cmseries
	Address IP 0.0.0.0
Addressing	Software DCP
Voltage range	24VDC ± 10%
Maximum number of pilots (Out)	64
Maximum number of valves	64 (same as the max. no. of pilotos)
Maximum number of inputs (INs)	32
Icc bus supply current	Nominal Icc 120 mA - Instantaneous Icc (< 2 ms) 450 mA
Icc valve supply current	Instantaneous Icc (< 2 ms) 900 mA
Maximum absorption of a valve island with 64 monostable valves	Nominal Icc with 900 mA OFF valves – nominal Icc with 2700 mA ON valves
Protections	Module protected against overload and polarity reversal. Outputs protected against overloads and short-circuits
Connections	Field bus: 2 M12, D-coded, internal switch
	supply: M8 4 pin
	input: M8 3 pin
BUS diagnostics	Using local LEDs and software messages
	Outputs: using local LEDs and status bytes
	Inputs: using local LEDs and status bytes
	N.B.: Refer to the user manual for a detailed description
Data bit value	0 = not enabled
	1 = enabled
Output status in the absence of communication	Disabled

See page B2.144 for general technical data

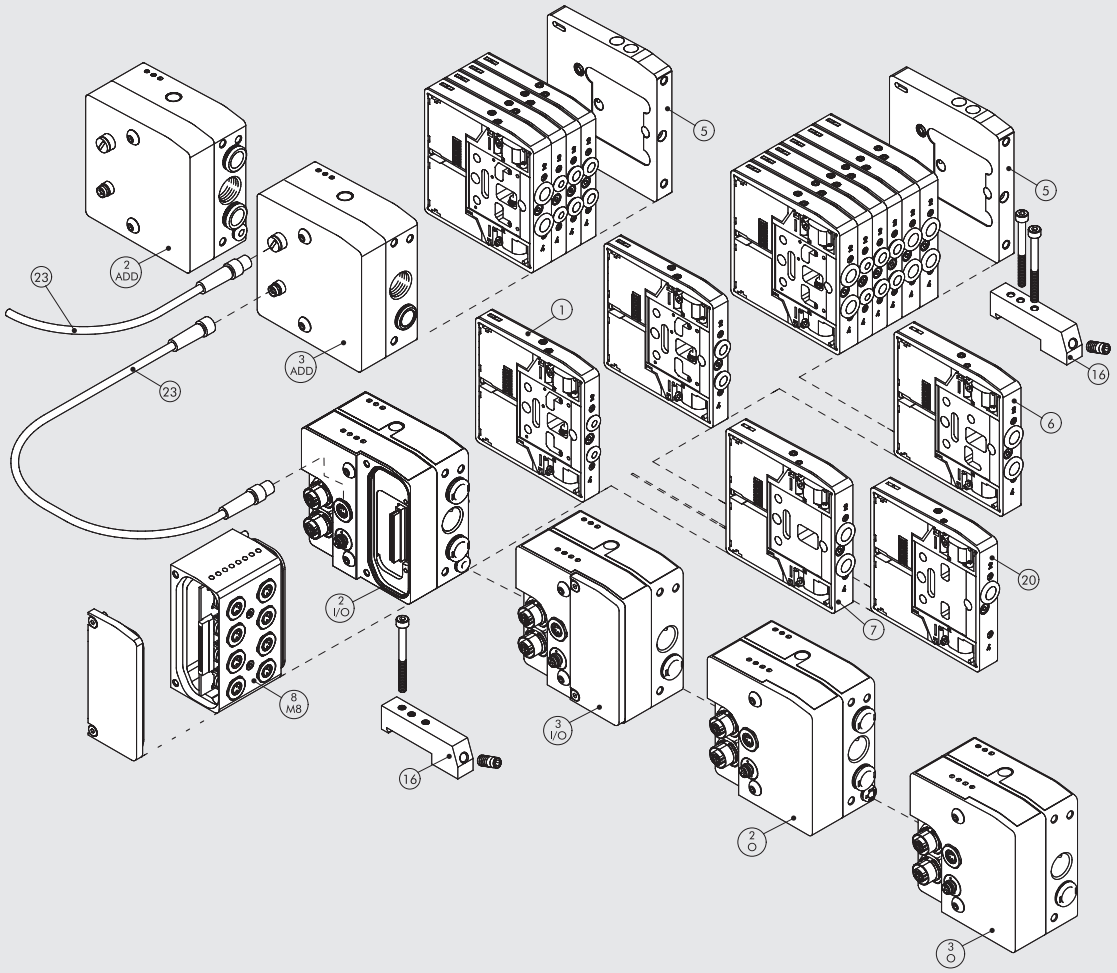
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate
⑦ Screw for valve wall-mounting
⑧ ⑨ ⑩ Utility port for pipe Ø 4, 6 or 8 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ CM EtherNet/IP end-plate
⑲ 64 = when present, it means that the valve is suitable for installation on islands with a field bus with up to 64 pilots, otherwise the limit is 32 pilots.

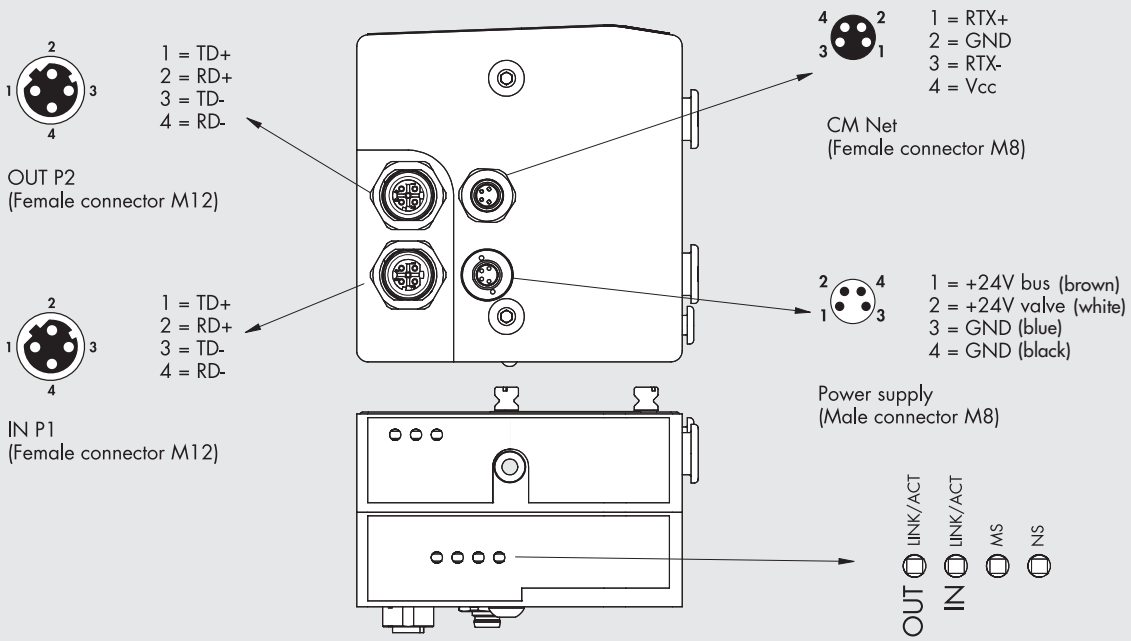


VALVE ISLAND CONFIGURATION

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.166 **for valves, intermediates elements and common accessories.**

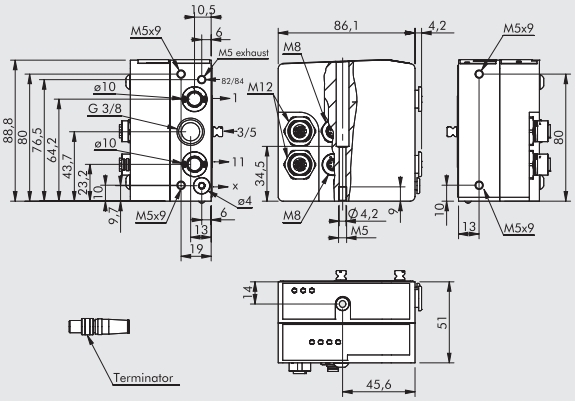


WIRING DIAGRAM



METAL WORK PNEUMATIC

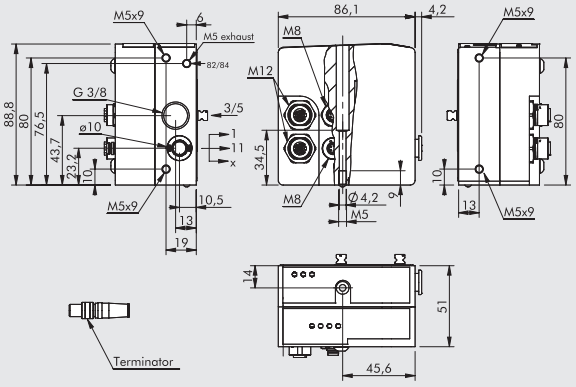
2 - O END-PLATE 1-11 EtherNet/IP OUTPUT



Code	Description	Weight [g]
0227302242	End-plate CM 1-11 EtherNet/IP OUTPUT	683

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

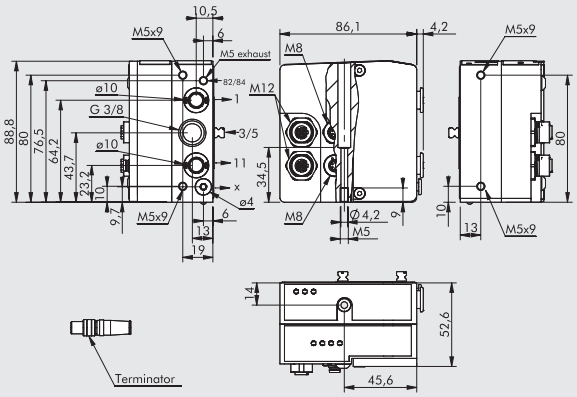
3 - O END-PLATE 1 EtherNet/IP OUTPUT



Code	Description	Weight [g]
0227302243	End-plate CM 1 EtherNet/IP OUTPUT	686

Note: terminator included

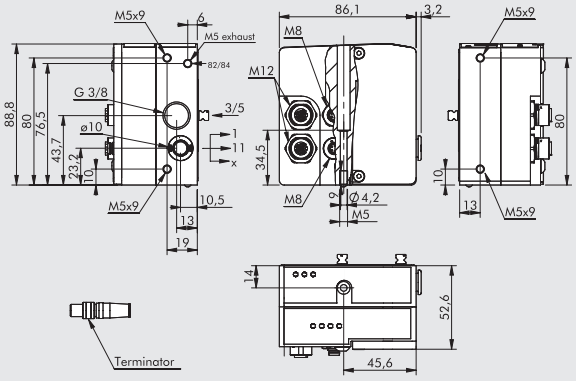
2 - I/O END-PLATE 1-11 EtherNet/IP INPUT/OUTPUT



Code	Description	Weight [g]
0227302244	End-plate CM 1-11 EtherNet/IP IN/OUT	643

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

3 - I/O END-PLATE 1 EtherNet/IP INPUT/OUTPUT

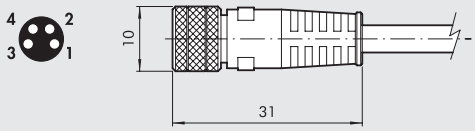


Code	Description	Weight [g]
0227302245	End-plate CM 1 EtherNet/IP IN/OUT	645

Note: terminator included

M8 CONNECTOR FOR POWER SUPPLY

Pin	Cable colour
1	brown
2	white
3	blue
4	black



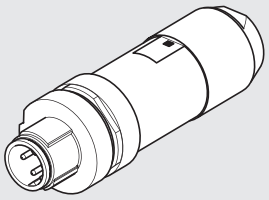
Code	Description
0240009060	M8 4-pin female connector for power supply, cable L = 3 m
0240009037	M8 4-pin female connector for power supply, cable L = 5 m
0240009058	M8 4-pin female connector for power supply, cable L = 10 m
0240009059	M8 4-pin female connector for power supply, cable L = 15 m
0240009P60 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 3 m
0240009P37 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 5 m
0240009P58 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 10 m
0240009P59 *	M8 4-pin female connector for power supply, H-FLEX CL6, cable L = 15 m

* Very flexible cables, class 6 according to IEC 60228

M12 PLUG

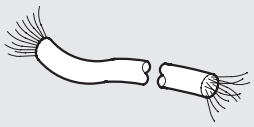
Code	Description
0240009040	Plug M12

M12 BUS CONNECTOR, D-CODED



Code	Description
0240005051	M12 BUS connector, D-coded

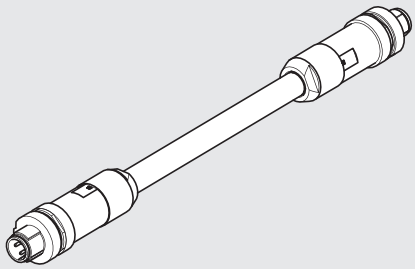
BUS CABLE



Code	Description
0240005220	BUS cable L = 20 m

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

STRAIGHT CONNECTOR FOR M12-M12 BUS, D-CODED

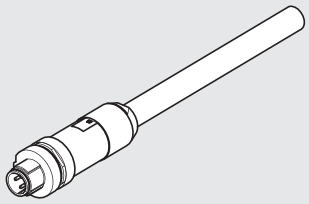


Code	Description
0240005103	Straight connector for M12-M12 BUS, D-coded, with 3 m cable
0240005105	Straight connector for M12-M12 BUS, D-coded, with 5 m cable
0240005110	Straight connector for M12-M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

STRAIGHT CONNECTOR FOR M12 BUS, D-CODED

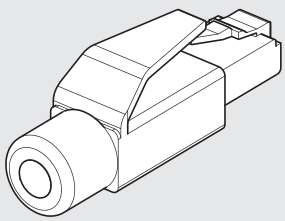
Pin	Cable color
1	Yellow
2	White
3	Red
4	Blue



Code	Description
0240005093	Straight connector for M12 BUS, D-coded, with 3 m cable
0240005095	Straight connector for M12 BUS, D-coded, with 5 m cable
0240005100	Straight connector for M12 BUS, D-coded, with 10 m cable

Note: Can be used for BUS units in the EtherNet family (Profinet IO, EtherCAT, EtherNet/IP….)

RJ45 CONNECTOR



Code	Description
0240005050	RJ45 connector with 4 contacts according to IEC 60603-7

NOTES

CM + CANopen

METAL WORK PNEUMATIC

The CM+CANopen system has been designed with a pneumatic input end-plate that can contain all the electronic equipment, indicators and connectors. This system is very compact and sturdy and is housed in a thick aluminium body that protects sensitive components impact and falls.
The end-plate is available in two electric versions: one handling up to 64 solenoids (64 OUTs) and one handling up to 64 solenoids (64 OUTs) and 32 inputs (32 INs).
Grounding is recommended to protect the electronic circuit against electric or electrostatic charges.
N.B. For the system to handle more than 32 pilots (33 to 64), it must be made up of valves bearing a label marked 64. If one or more valves are not marked 64, each island cannot handle more than 32 pilots.

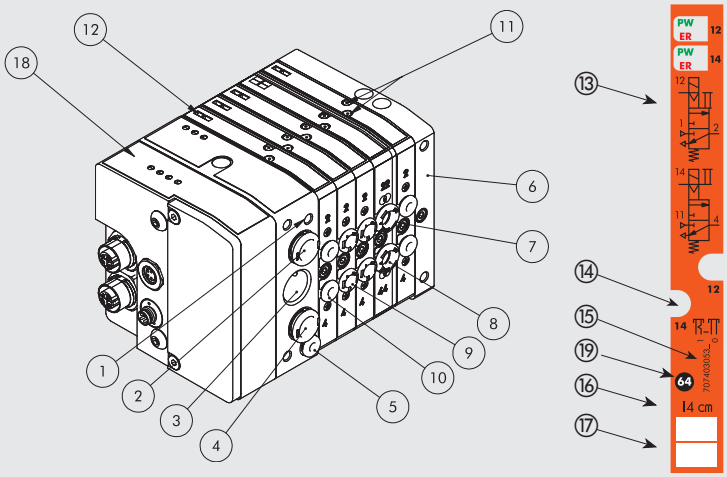
TECHNICAL DATA

Field buses	CANopen - Complies with CiA DS401 specifications
Factory settings	Module name: Cmseries
	Address 4
Addressing	Hardware via dip Switch
Voltage range	24VDC ± 10%
Maximum number of pilots (Out)	64
Maximum number of valves	* 64 (same as the max. no. of pilotos)
Maximum number of inputs (INs)	32
Icc bus supply current	Nominal Icc 30 mA - Instantaneous Icc (< 5 ms) 640 mA
Icc valve supply current	Instantaneous Icc (< 5 ms) 1100 mA
Maximum absorption of a valve island with 64 monostable valves	Nominal Icc with 900 mA OFF valves – nominal Icc with 2700 mA ON valves
Protections	Module protected against overload and polarity reversal. Outputs protected against overloads and short-circuits
Connections	Field bus: M12 Male inputs, 5 pins, A-coded; M12 Female outputs, 5 poles, A-coded
	supply: M8 4 pin
	input: M8 3 pin
BUS diagnostics	Using local LEDs and software messages
	Outputs: using local LEDs and status bytes
	Inputs: using local LEDs and status bytes
	N.B.: Refer to the user manual for a detailed description
Data bit value	0 = not enabled
	1 = enabled
Output status in the absence of communication	Disabled

*** N.B.: In case of "slaves" islands, the CANopen "clever center" can contain up to 34 valves (pilots can be even up to 64).**
See page B2.144 **for general technical data**

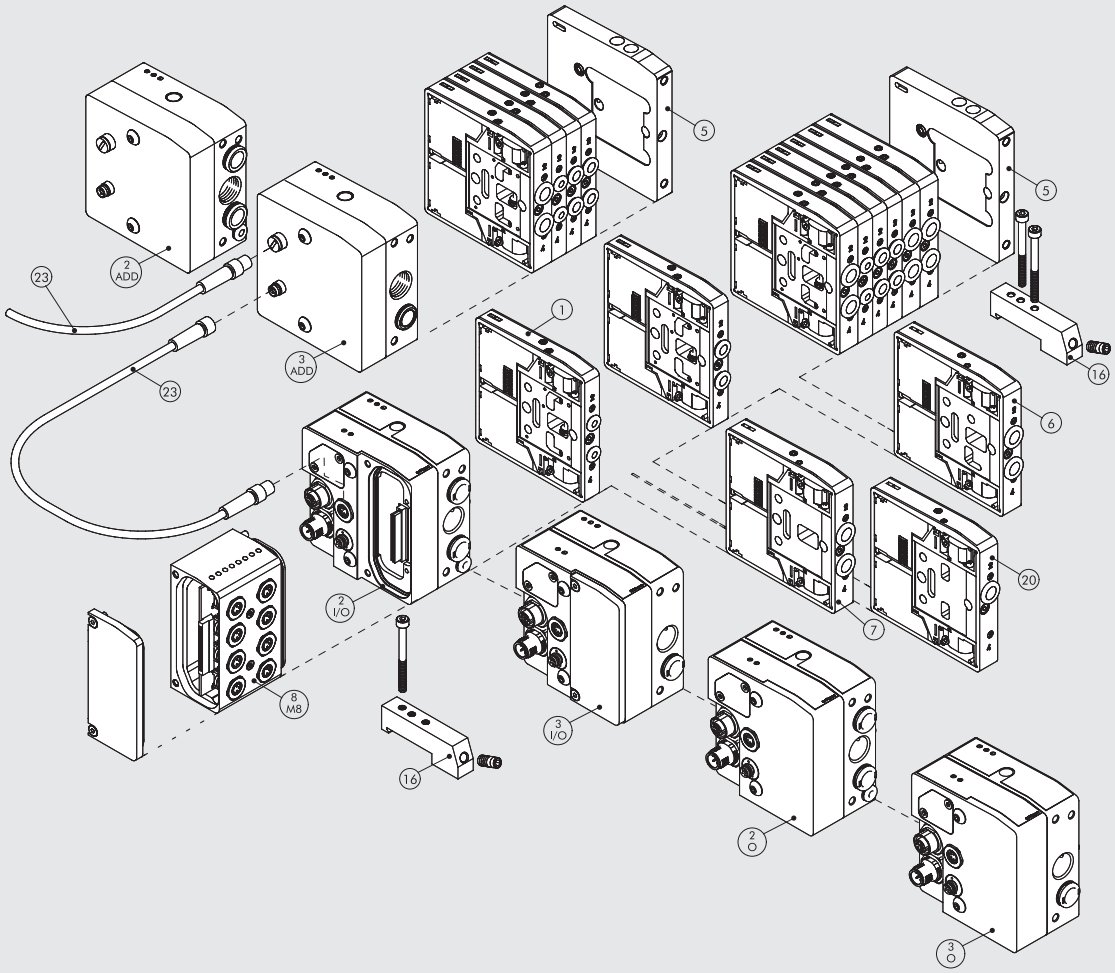
COMPONENTS

① Exhaust - Solenoid pilot 82/84
② Valve supply - port 1
③ Threaded connection of exhausts 3/5
④ Valve supply - port 11
⑤ Electrical control supply X
⑥ Blind end-plate
⑦ Screw for valve wall-mounting
⑧ ⑨ ⑩ Utility port for pipe Ø 4, 6 or 8 mm
⑪ Manual control
⑫ LED (LED on, solenoid valve energised)
⑬ Pneumatic symbol
⑭ Identification of the monostable or bistable manual control
⑮ Valve ordering code
⑯ Valve identification code
⑰ Blank space for valve number
⑱ CM CANopen end-plate
⑲ 64 = when present, it means that the valve is suitable for installation on islands with a field bus with up to 64 pilots, otherwise the limit is 32 pilots.

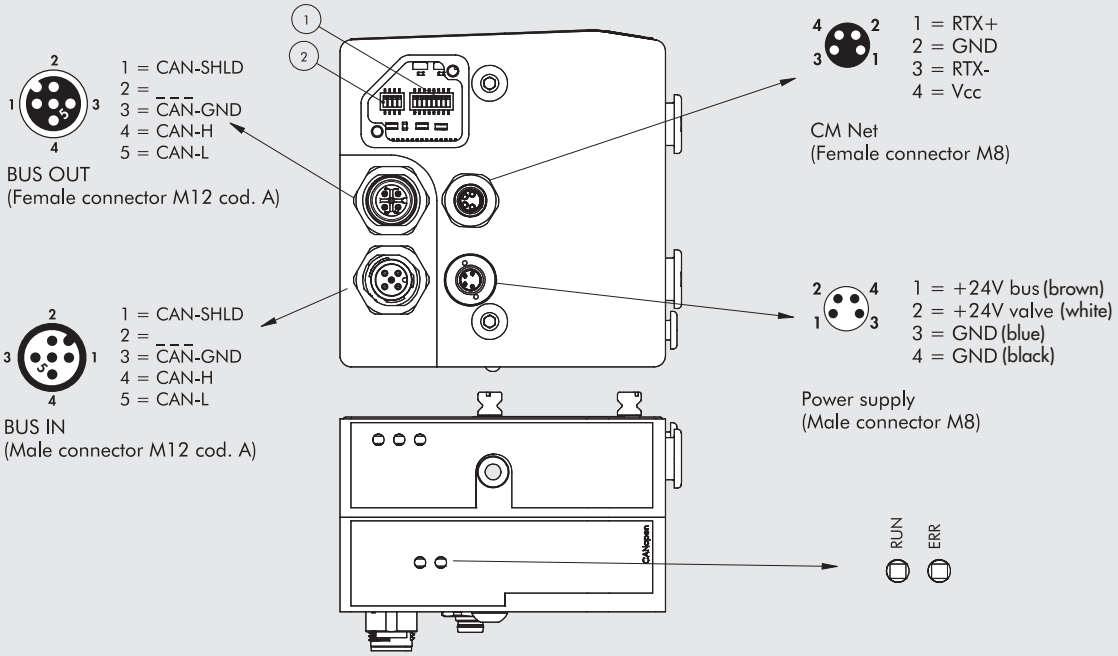


VALVE ISLAND CONFIGURATION

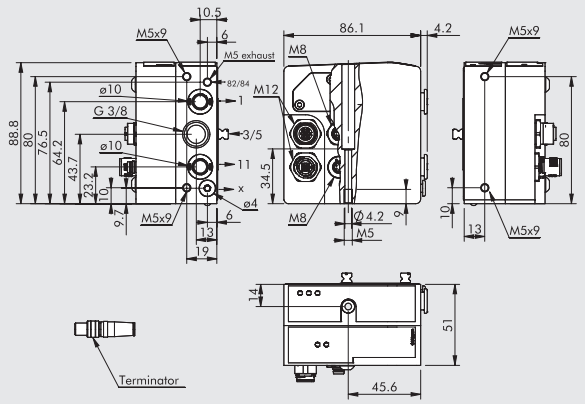
The numbers permit rapid identification of the function and assembly position of the single elements represented as follows.
Refer to page B2.166 **for valves, intermediates elements and common accessories.**



WIRING DIAGRAM



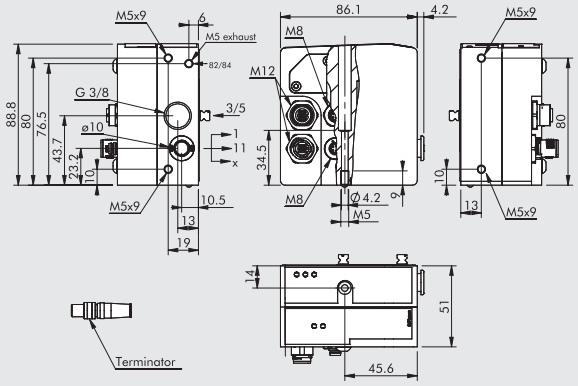
2 - O END-PLATE 1-11 CANopen OUTPUT



Code	Description	Weight [g]
0227302238	End-plate CM 1-11 CANopen OUTPUT	678

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

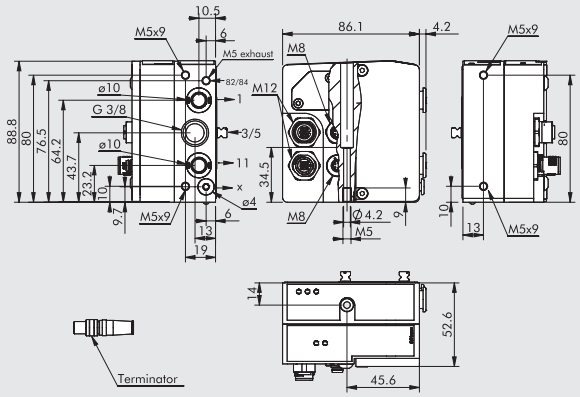
3 - O END-PLATE 1 CANopen OUTPUT



Code	Description	Weight [g]
0227302239	End-plate CM 1 CANopen OUTPUT	680

Note: terminator included

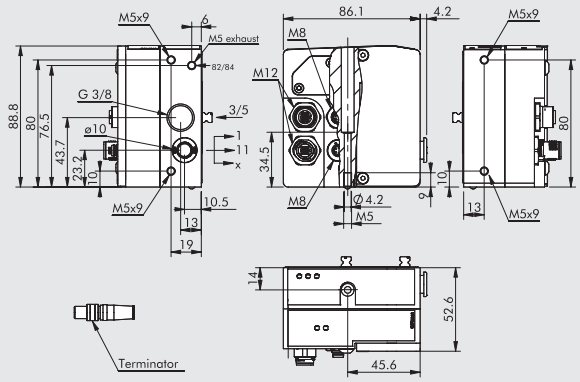
2 - I/O END-PLATE 1-11 CANopen INPUT/OUTPUT



Code	Description	Weight [g]
0227302240	End-plate CM 1-11 CANopen IN/OUT	632

This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply
Note: terminator included

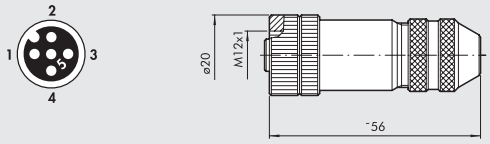
3 - I/O END-PLATE 1 CANopen INPUT/OUTPUT



Code	Description	Weight [g]
0227302241	End-plate CM 1 CANopen IN/OUT	635

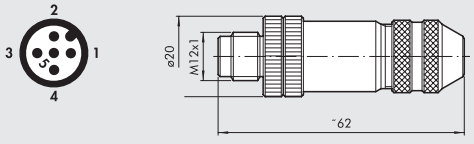
Note: terminator included

FEMALE CONNECTOR FOR CANopen BUS-IN



Code	Description
0240009055	M12 female connector, A-coded

MALE CONNECTOR FOR CANopen BUS-OUT



Code	Description
0240009038	M12 male connector, A-coded

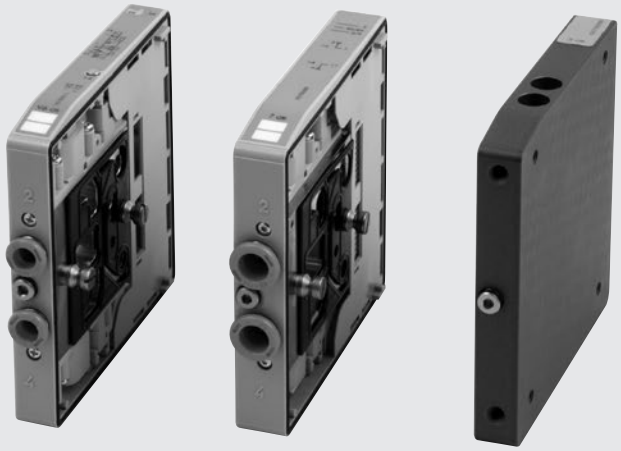
CABLE FOR CANopen BUS

Code	Description
0240005250	Cable for CANopen bus 20 m

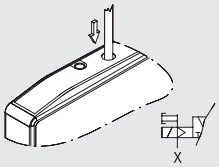
NOTES

CM - VALVES, INTERMEDIATES ELEMENTS AND ACCESSORIES

CM valve can be included in islands with any available input terminal.
The same valve can be connected to the multiple connection end-plate and all the field bus end-plates.



MANUAL CONTROLS



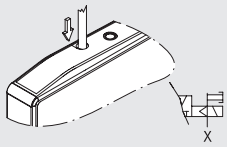
MONOSTABLE OVERRIDE PORT 2
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in "0".

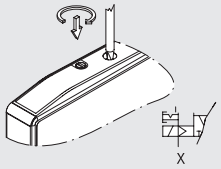
Example: 707403053 – 0



MONOSTABLE OVERRIDE PORT 4
servo-assisted

- Press and hold the manual control in position (not necessary for bistable type K valve)
- Release the manual control:
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.



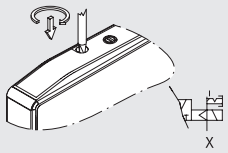
BISTABLE OVERRIDE PORT 2
servo-assisted

- Press the manual control right in then turn it clockwise 90 degrees and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it.
  - The manual control returns to the home position.
  - Valves type I, W, L, V and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.

- The reference code for the monostable control ends in "1".

Example: 707403053 – 1

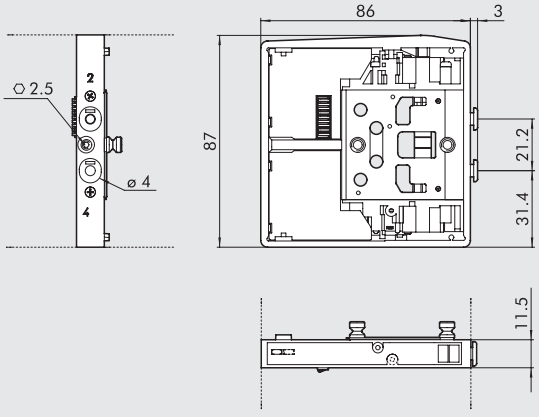


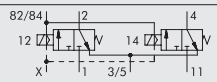
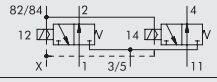
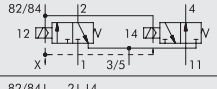
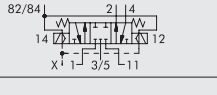
BISTABLE OVERRIDE PORT 4
servo-assisted

- Press the manual control right in then turn it 90 degrees clockwise and Leave it in position.
- Rotate the manual control 90 degrees anticlockwise, and then release it:
  - The manual control returns to the home position.
  - Valves type I, W, L and O reposition.
  - The type K valve remains switched

N.B.: The pilot power supply X must be present.

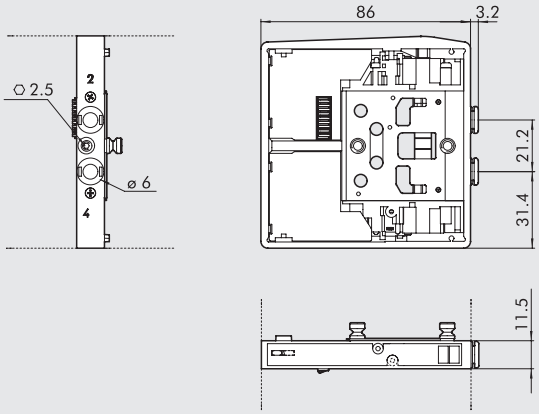
① VALVE DIMENSIONS CM Ø 4

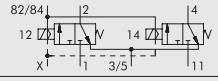
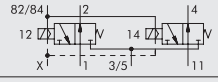
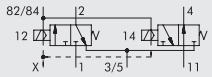
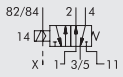
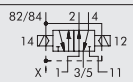
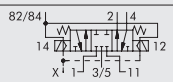


Symbol		Code	Manual control	Weight [g]
CM I4		7074030530 7074030531	monostable bistable	130
CM W4		7074030630 7074030631	monostable bistable	130
CM L4		7074030730 7074030731	monostable bistable	130
CM V4		7074030130 7074030131	monostable bistable	115
CM K4		7074030110 7074030111	monostable bistable	130
CM O4		7074030210 7074030211	monostable bistable	130

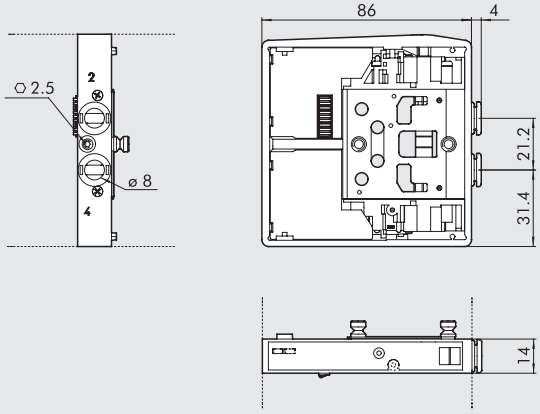
METAL WORK PNEUMATIC

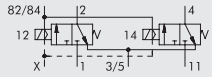
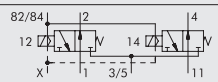
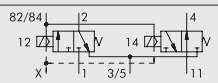
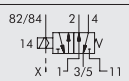
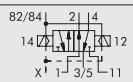
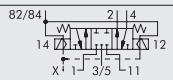
① VALVE DIMENSIONS CM Ø 6



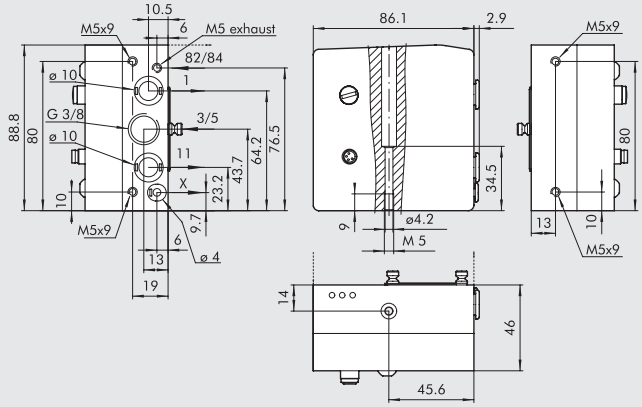
Symbol		Code	Manual control	Weight [g]
CM I6		7075030530 7075030531	monostable bistable	130
CM W6		7075030630 7075030631	monostable bistable	130
CM L6		7075030730 7075030731	monostable bistable	130
CM V6		7075030130 7075030131	monostable bistable	115
CM K6		7075030110 7075030111	monostable bistable	130
CM O6		7075030210 7075030211	monostable bistable	130

① VALVE DIMENSIONS CM Ø 8



Symbol		Code	Manual control	Weight [g]
CM I8		7076030530 7076030531	monostable bistable	140
CM W8		7076030630 7076030631	monostable bistable	140
CM L8		7076030730 7076030731	monostable bistable	140
CM V8		7076030130 7076030131	monostable bistable	130
CM K8		7076030110 7076030111	monostable bistable	140
CM O8		7076030210 7076030211	monostable bistable	140

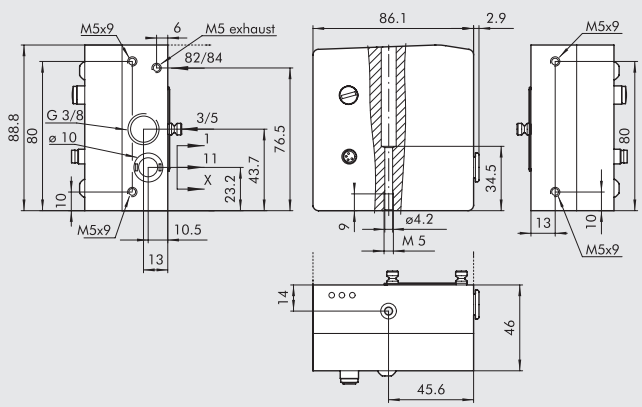
2 - ADD ADDITIONAL END-PLATE 1-11



Code	Description	Weight [g]
0227302224	End-plate CM kit 1-11 ADD	770

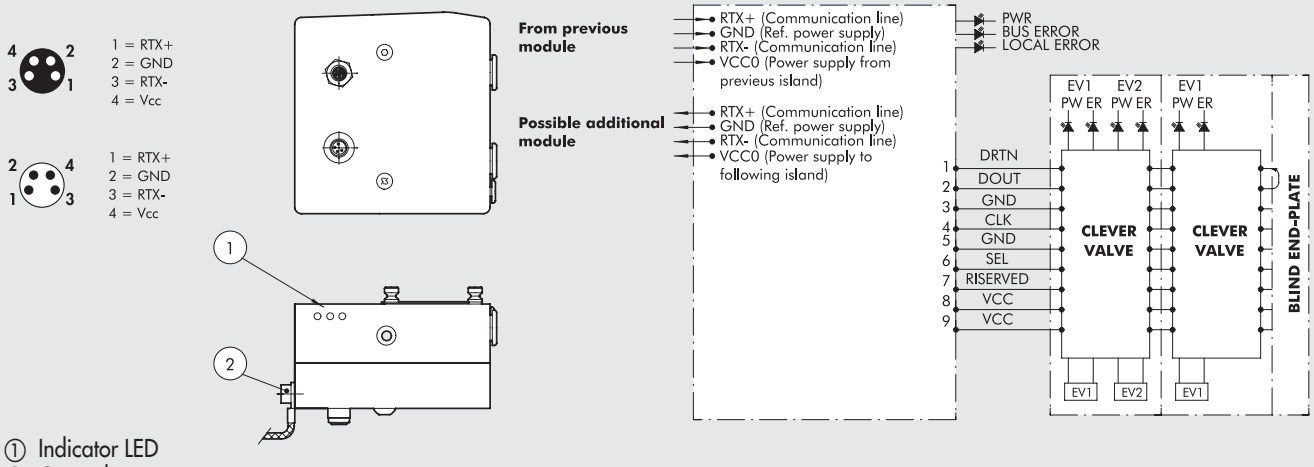
This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply

3 - ADD ADDITIONAL END-PLATE 1



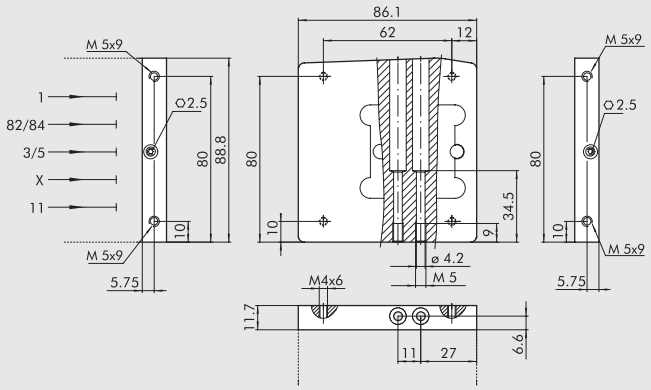
Code	Description	Weight [g]
0227302226	End-plate CM kit 1 ADD	770

WIRING DIAGRAM FOR THE ADDITIONAL TERMINAL



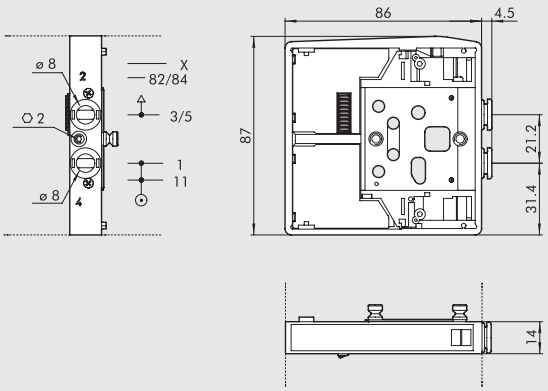
① Indicator LED
② Grounding

⑤ BLIND END-PLATE



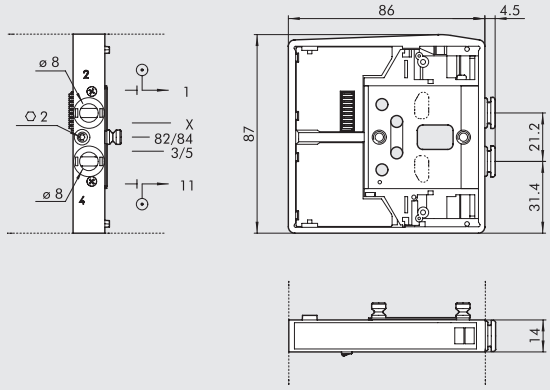
Code	Description	Weight [g]
0227302500	Blind end-plate CM	230

⑥ INTERMEDIATE THROUGHT



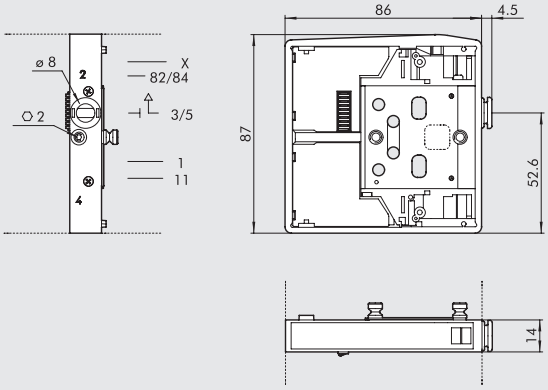
Code	Description	Weight [g]
0227302301	Intermediate throught CM	120

⑦ INTERMEDIATE BLIND



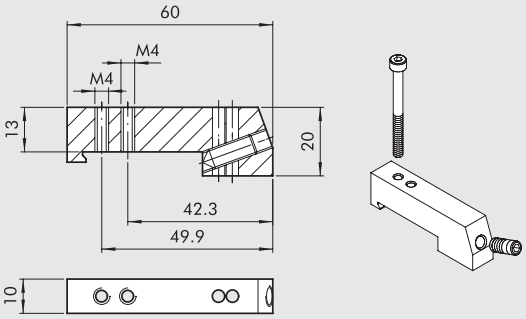
Code	Description	Weight [g]
0227302302	Intermediate blind CM	117

⑳ INTERMEDIATE EXHAUST SWITCH



Code	Description	Weight [g]
0227302303	Intermediate exhaust switch CM	125

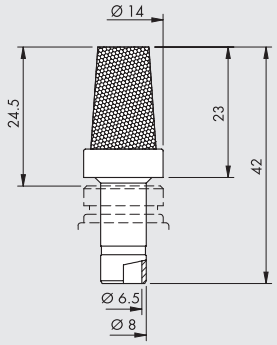
⑯ CONNECTION BRACKETS ON DIN BAR



Code	Description	Weight [g]
0227301600	Connection brackets on din bar HDM/CM	30

Supplied complete with one M4x45 screws and one grub screw
Individually packed

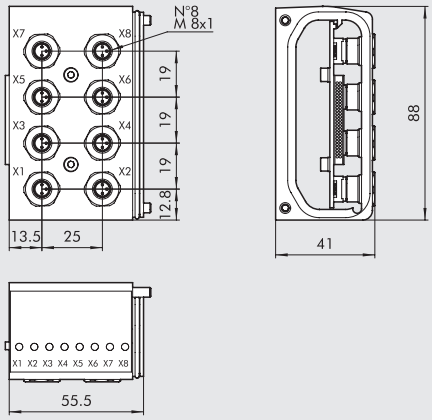
SILENCER FOR FITTING, Ø 8



Code	Description	Flow rate at 6.3 bar [Nl/min]	Weight [g]
W0970530084	Silencer for fitting, Ø 8	2400	15

At the 3/5-exhaust port of the intermediate through reference 6
and the exhaust switch reference 20

8 - M8 8-INPUT M8 ADD-ON MODULE (for BUS) – INPUTs / OUTPUTs (for multi-pole connection)

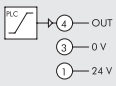
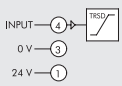


Code	Description	Weight [g]
0227302900	M8 8-input module CM	273

FIELD BUS CONNECTION

INPUT PNP
1 = + 24 VDC
3 = 0VDC
4 = INPUT

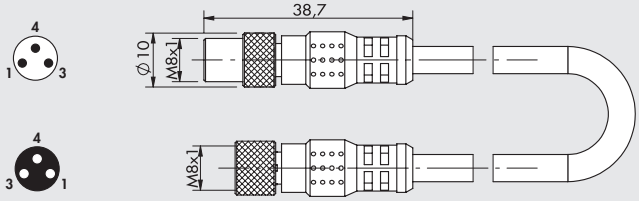
MULTI-POLE CONNECTION

INPUT PNP 1 = + 24 VDC 3 = 0VDC 4 = INPUT	
INPUT NPN 1 = + 24 VDC 3 = 0VDC 4 = INPUT	
OUTPUT PNP 1 = + 24 VDC 3 = 0VDC 4 = INPUT	
OUTPUT NPN 1 = + 24 VDC 3 = 0VDC 4 = INPUT	
DIP SWITCH	
DIP SWITCH	
OUTPUT ANALOGIC	
INPUT ANALOGIC	

M8 PLUG

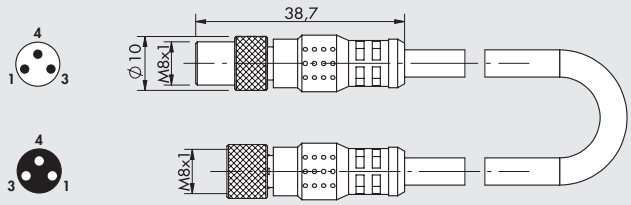
Code	Description
0240009039	Plug M8

M8 INPUT CONNECTOR



Code	Description
0240009009	M8-M8 straight connector with 3 m cable

M8 ADAPTER CABLE FOR CONNECTION OF THE PRESSURE SWITCH

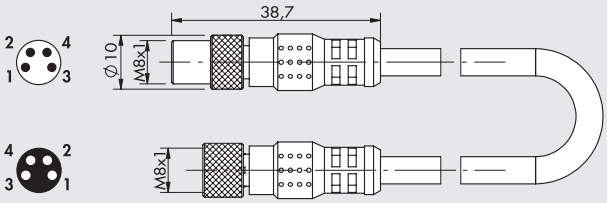


Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 0.3 m

Note: Can be used for connecting **1/8-1/4**, **Syntesi**®, **Skillair**®, **PRS L** pressure switches to the M8 additional module. Contact type NO (Normally open)

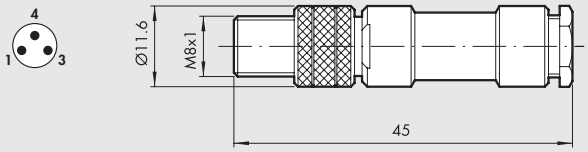
M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 2	Signal NO
pin 4	disconnect	

(23) M8 PREWIRED CONNECTOR FOR VALVE ISLANDS CONNECTIONS



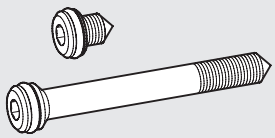
Code	Description
0240005003	M8 prewired connector for valve islands conn. CM L = 5 m
0240005005	M8 prewired connector for valve islands conn. CM L = 1 m
0240005006	M8 prewired connector for valve islands conn. CM L = 3 m
0240005008	M8 prewired connector for valve islands conn. CM L = 10 m

DISTRIBUTORS M8 INPUT CONNECTOR



Code	Description
0240009010	M8 3-pin straight connector

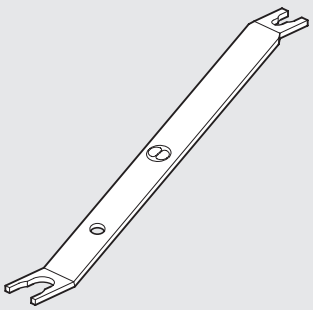
GRUB SCREW KIT



Code	Description
0227301800	Grub screw for Multimach HDM/CM

Comes 1 + 1 packs

R17 - DISASSEMBLY KEY



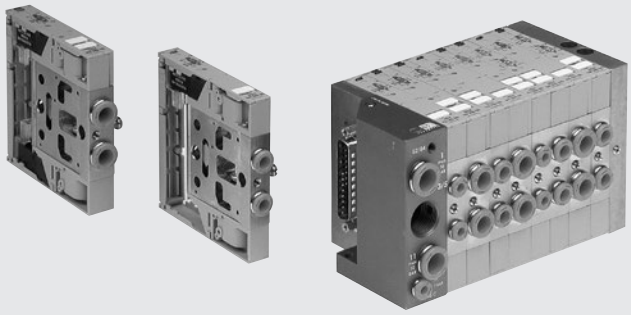
Lenght = 140 mm

Code	Description	Ø Tube	Tube
2L17001	RL17	from Ø 3 to Ø 10	For R fitting and Fox fitting

NOTES

MULTIMACH

Multimach is not a mere valve, it is an electropneumatic distribution "island" - a single block ready for connection to power and air delivery pipes and a multi-pin cable.
All the pneumatic connections are situated on one side with built-in push-in fittings. The user interface is on the other side so that the fitter or serviceman has everything within an easy reach: manual controls, active valve signalling lights, compressed air system diagram, valve identification plates.
The user can count on four different orientations for the electric connector.
Multimach provides full flexibility in the application of valves: 1 to 24 valves, power plates and drain for pipes of various sizes, electric 9- or 25-pin plug connector. But the real novelty, is the possibility of mounting valves of different flow rates: three different valves can be mounted at a time and a valve can be replaced with another of a different flow rate. This revolutionary concept enables the user to optimise space and costs and adapt the unit to different performance requirements.
The ratio between the flow rate of the Multimach system and sizes is incomparable: the top in terms of miniaturisation and efficiency.

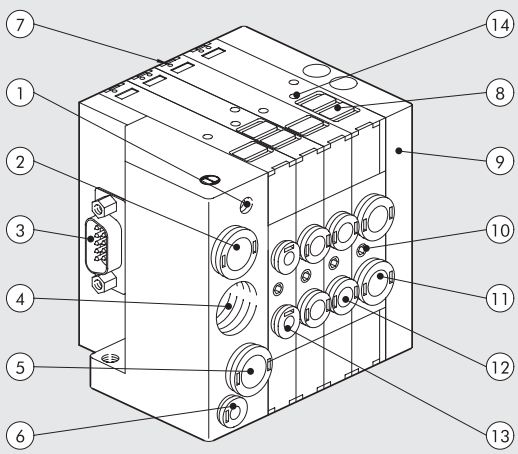


TECHNICAL DATA

Valve port connections			Ø 4,6,8 mm automatic fitting for ports 2 and 4 / power supply port for Ø8 or Ø10 automatic fitting / 3/8 thread for exhaust port, M5 thread for exhaust pilot port		
Connection on the end-plate for the supply of pilots			Automatic fitting Ø 4		
Operating temperature range		°C	-10 to +60		
Fluid			Filtered air without lubrication; lubrication, if used, must be continuous		
Screw for valve - wall-mounting			According to the end-plate used: see page **B2**.172		
Flow rate at 6 bar ΔP 1bar		Nl/min	11 mm Ø 4: 200	11 mm Ø 6: 500	14 mm Ø 8: 700
Voltage range			24 VDC ±10%		
Power		W	1.2		
Insulation class			F155		
Degree of protection			IP51		
Solenoid rating			100% ED		
Pressure range			X (pilot supply)		1-11 (valve supply)
	Terminal 1-11	bar	3 to 7 max		vacuum at 10 bar
	Terminal 1	bar	3 to 7		
	Terminal 1 reduced	bar	3 to 7		
TRA/TRR 2x3/2 monostable at 6 bar		ms	8 / 45		
TRA/TRR 5/2 monostable at 6 bar		ms	8 / 33		
TRA/TRR 5/2 bistable at 6 bar		ms	20 / 20		
TRA/TRR 5/3 cc monostable at 6 bar		ms	20 / 20		
Note on use			Insert the pipes in the fittings, before passing air through the valves, otherwise the basket may be pulled out of its seat by the flow of air.		
Compatibility with oils			See **chapter Z1**		

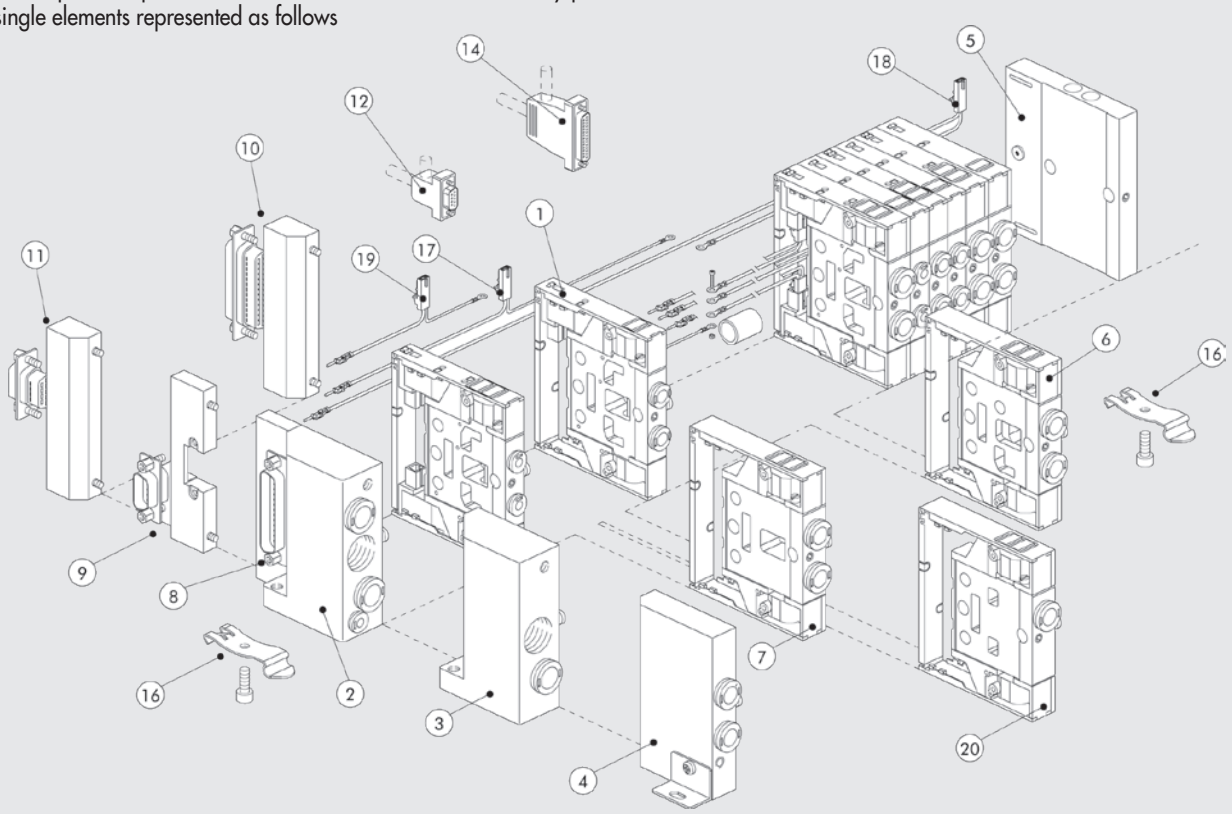
COMPONENTS

① Exhaust – Solenoid pilot
② Valve supply - port 1
③ Electrical multiple connection with 9 or 25 pins
④ Threaded connection of exhausts 3/5
⑤ Valve supply
⑥ Electrical control supply
⑦ LED (LED on, solenoid valve energised)
⑧ Removable identification labels
⑨ Blind end-plate
⑩ Screw for valve wall-mounting
⑪ Utility port for pipe Ø 8 mm
⑫ Utility port for pipe Ø 6 mm
⑬ Utility port for pipe Ø 4 mm
⑭ Manual control

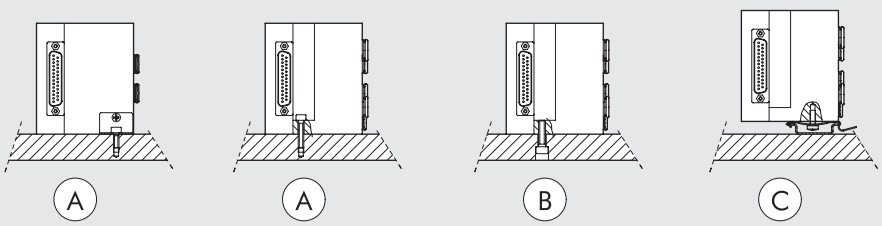


THE MULTIMACH WORLD: FLEXIBILITY

The numbers permit rapid identification of the function and assembly position of the single elements represented as follows



FIXING THE BASE



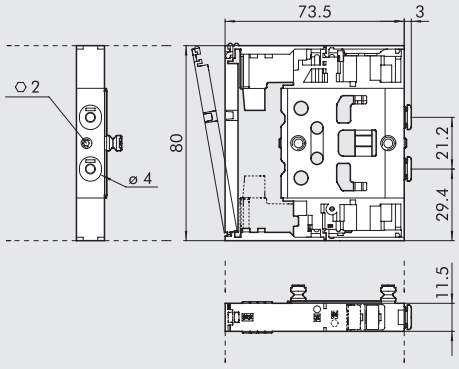
Ⓐ Fixing with reduced end-plate 1, CODE 0227300300, supplied complete with bracket
Ⓑ Fixing with end-plate 1-11 CODE 0227300200 or with end-plate CODE 0227300201
Ⓒ Fixing with end-plate 1-11 CODE 0227300200 or with end-plate 1 CODE 0227300201 using the M4-thread found on the M5 end-plate
Ⓓ Fixing on the DIN bar with end-plate 1-11 CODE 0227300 using the reduced end-plate 1 CODE 0227300300 or end-plate CODE 0227300201 using the push-in bracket CODE 0227300600.
If you have to remove the base from the bar, this is rapid and can be performed without using any tools.

SYNOPTIC, SIZES AND VERSIONS

M 5 1	2	8	I6 - W 8 - W 6 - O 4 - L 8 - 5	1 4
VALVE	**INPUT END-PLATE**	**ELECTRICAL BASE**	**TYPE OF VALVE**	**FURTHER DETAILS**
Multimach IP51	**2** End-plate 1-11	**8** Axial 25-wire connector base	**I** n° 2 3/2 NC	**12** 9-wire connector
	3 End-plate 1	**9** Axial 9-wire connector base	**W** n° 2 3/2 NO	**14** 25-wire connector
	4 Reduced End-plate 1	**10** 25-wire rear connector base	**L** 3/2 NO + 3/2 NC	**16** Brackets for DIN bar
		11 9-wire rear connector base	**V** 5/2 monostable	
			K 5/2 bistable	
			O 5/3 monostable	
			5 Blind end-plate	
			6 Passing-intermede	
			7 Blind intermediate	
			20 Exhaust section	
			4 Cartridge 4	
			6 Cartridge 6	
			8 Cartridge 8	

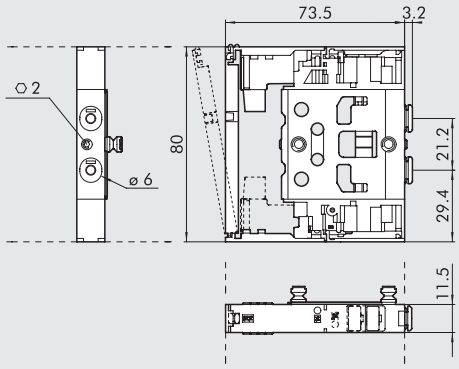
METAL WORK PNEUMATIC

① VALVE DIMENSIONS Ø 4



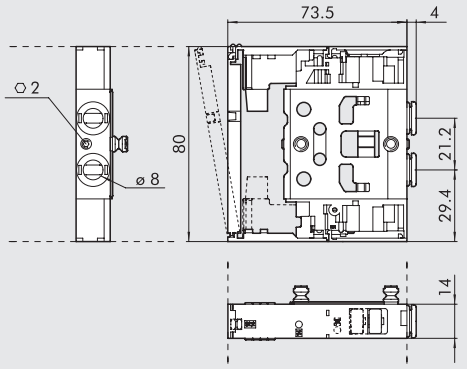
Symbol	Code	Manual control	Weight [g]
I4	7068030532	monostable	118
W4	7068030632	monostable	118
L4	7068030732	monostable	118
V4	7068030132	monostable	100
K4	7068030112	monostable	114
O4	7068030212	monostable	115

① VALVE DIMENSIONS Ø 6



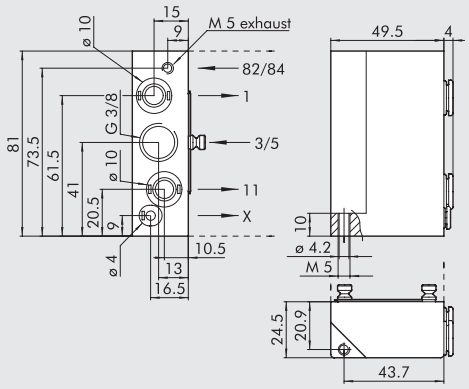
Symbol	Code	Manual control	Weight [g]
I6	7069030532	monostable	110
W6	7069030632	monostable	110
L6	7069030732	monostable	110
V6	7069030132	monostable	90
K6	7069030112	monostable	107
O6	7069030212	monostable	108

① VALVE DIMENSIONS Ø 8



Symbol	Code	Manual control	Weight [g]
I8	7070030532	monostable	124
W8	7070030632	monostable	124
L8	7070030732	monostable	124
V8	7070030132	monostable	105
K8	7070030112	monostable	120
O8	7070030212	monostable	121

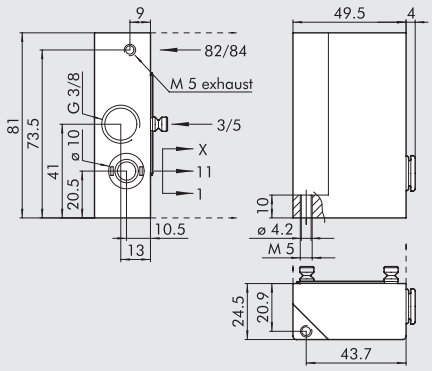
② END-PLATE 1-11



Code	Description	Weight [g]
0227300200	End-plate kit 1-11	223

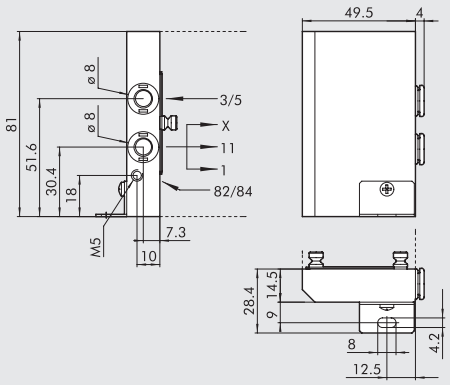
This end-plate allows for supplies to be differentiated:
port 2, port 4 and pilot supply

③ END-PLATE 1



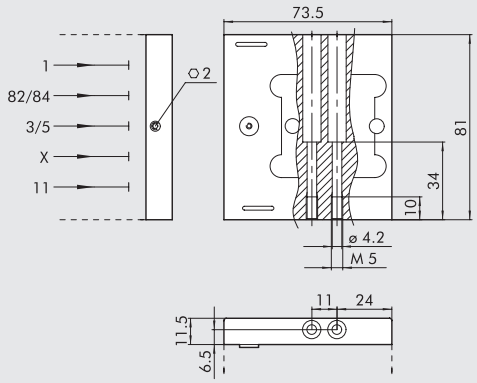
Code	Description	Weight [g]
0227300201	End-plate kit 1	224

④ REDUCED END-PLATE 1



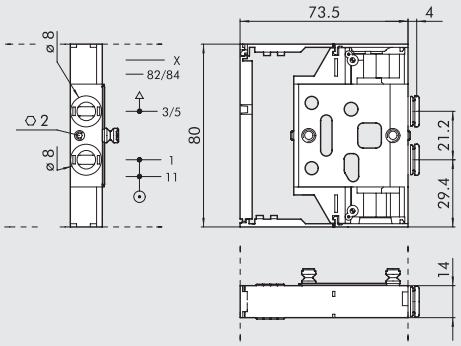
Code	Description	Weight [g]
0227300300	Reduced end-plate kit 1	148

⑤ BLIND END-PLATE



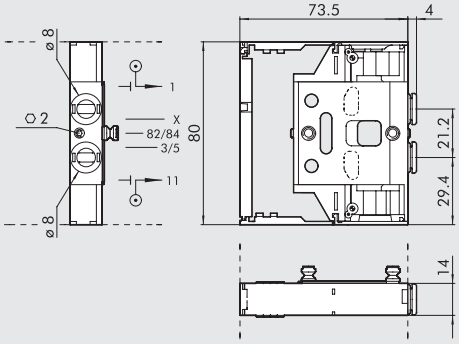
Code	Description	Weight [g]
0227300500	Blind end-plate	168

⑥ INTERMEDIATE THROUGH



Code	Description	Weight [g]
0227300301	Intermediate through	92

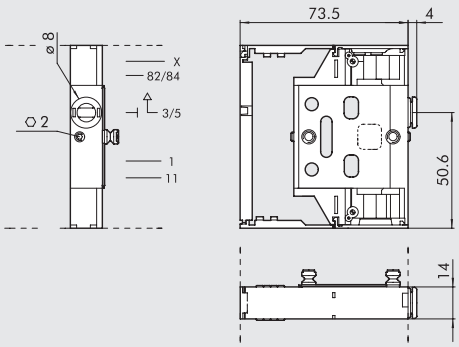
⑦ INTERMEDIATE BLIND



Code	Description	Weight [g]
0227300302	Intermediate blind	89

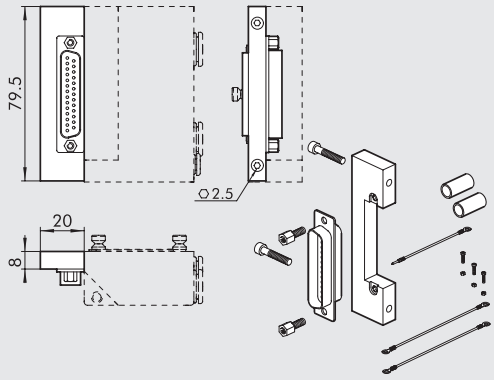
METAL WORK PNEUMATIC

⑳ INTERMEDIATE EXHAUST SWITCH



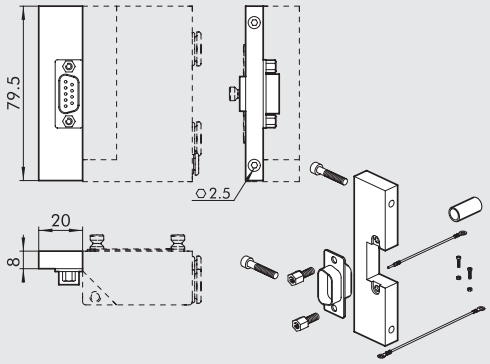
Code	Description	Weight [g]
0227300303	Intermediate exhaust switch	95

⑧ AXIAL CONNECTOR BASE, 25 WIRES



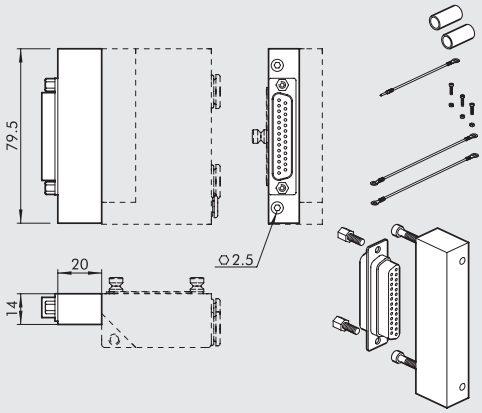
Code	Description	Weight [g]
0226180001	Axial connector base kit, 25 wires	54

⑨ AXIAL CONNECTOR BASE, 9 WIRES



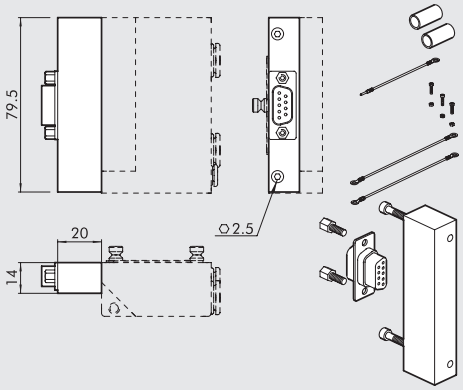
Code	Description	Weight [g]
0226180002	Axial connector base kit, 9 wires	51

⑩ REAR CONNECTOR BASE, 25 WIRES



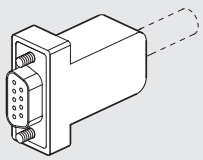
Code	Description	Weight [g]
0226180003	Rear connector base kit, 25 wires	73

⑪ REAR CONNECTOR BASE, 9 WIRES



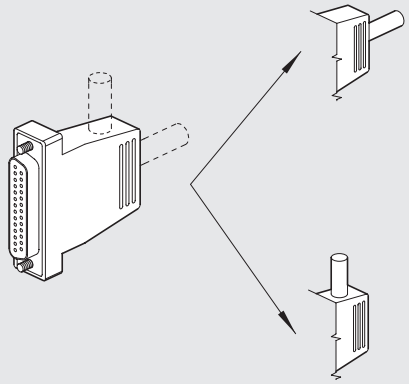
Code	Description	Weight [g]
0226180004	Rear connector base kit, 9 wires	77

⑫ STRAIGHT CONNECTOR KIT, 9 WIRES



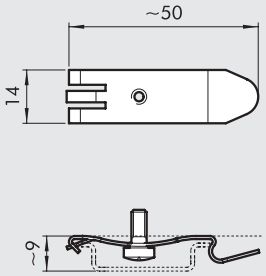
Code	Description	Weight [g]
0226180102	Straight connector kit, 9 wires	20

⑭ STRAIGHT AND 90° CONNECTOR KIT, 25 WIRES



Code	Description	Weight [g]
0226180101	Straight and 90° connector kit, 25 wires	48

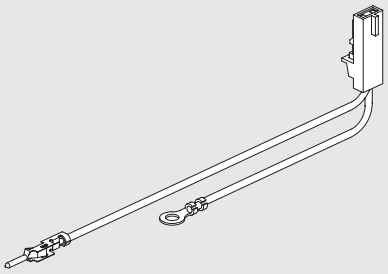
⑯ CONNECTION BRACKETS ON THE BAR OMEGA (DIN EN 50022)



Code	Description	Weight [g]
0227300600	Connection brackets on din bar	8

Individually packed

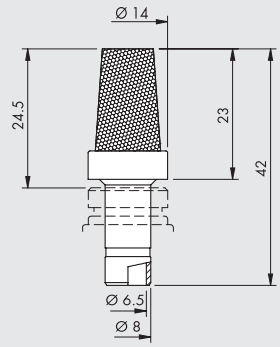
⑰ ⑱ ⑲ CONNECTOR KIT + WIRE



Code	Description	Weight [g]
0226180399	Connector kit + wire 1-6*	3
0226180400	Connector kit + wire 7-12**	4
0226180401	Connector kit + wire13-30***	5

* For valve connection from 1st to 6th position counting from the connector
** For valve connection from 7th to 12th position, counting from the connector
*** For valve connection from 13th to 30th position, counting from the connector

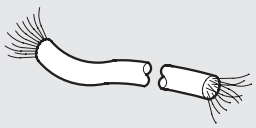
SILENCER FOR FITTING, Ø 8



Code	Description	Flow rate at 6.3 bar [Nl/min]	Weight [g]
W0970530084	Silencer for fitting, Ø 8	2400	15

At the 3/5-exhaust port of the reduced end-plate 1 ref. 4
and of the intermediate through of the exhaust switch ref. 20

CABLES



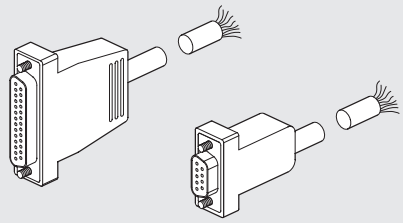
Code	Description	Weight [g/m]
0226107201	10-wire cable	60
0226107101	19-wire cable	122
0226107102	25-wire cable	130

Specify the number of metres desired

NOTES

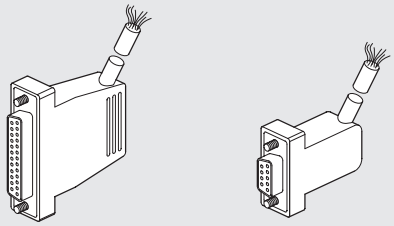
METAL WORK PNEUMATIC

STRAIGHT PRE-WIRED CONNECTOR KIT



Code	Description	Weight [g]
0226900100	Straight D-Sub 9-PIN connector + cable L = 1 m	80
0226900250	Straight D-Sub 9-PIN connector + cable L = 2.5 m	170
0226900500	Straight D-Sub 9-PIN connector + cable L = 5 m	320
0226900750	Straight D-Sub 9-PIN connector + cable L = 7.5 m	470
0226901000	Straight D-Sub 9-PIN connector + cable L = 10 m	620
0226901500	Straight D-Sub 9-PIN connector + cable L = 15 m	920
0226902000	Straight D-Sub 9-PIN connector + cable L = 20 m	1220
0226905000	Straight D-Sub 9-PIN connector + cable L = 50 m	3020
0226920100	Straight D-Sub 25-PIN connector + cable L = 1 m	132
0226920250	Straight D-Sub 25-PIN connector + cable L = 2.5 m	320
0226920500	Straight D-Sub 25-PIN connector + cable L = 5 m	636

PRE-WIRED 90° CONNECTOR

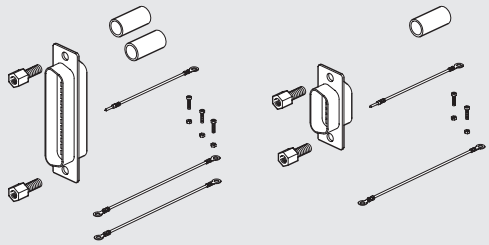


Code	Description	Weight [g]
0226910100	90° D-Sub 9-PIN connector + cable L = 1 m	80
0226910250	90° D-Sub 9-PIN connector + cable L = 2.5 m	170
0226910500	90° D-Sub 9-PIN connector + cable L = 5 m	320
0226910750	90° D-Sub 9-PIN connector + cable L = 7.5 m	470
0226911000	90° D-Sub 9-PIN connector + cable L = 10 m	620
0226911500	90° D-Sub 9-PIN connector + cable L = 15 m	920
0226930100	90° D-Sub 25-PIN connector + cable L = 1 m	132
0226930250	90° D-Sub 25-PIN connector + cable L = 2.5 m	320
0226930500	90° D-Sub 25-PIN connector + cable L = 5 m	636

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS

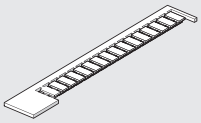
25 PIN						9 PIN	
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	10	brown/white	19	yellow/black	1	green/black
2	red/brown	11	red/orange	20	white	2	white
3	white/black	12	light blue	21	blue/white	3	blue/black
4	red/blue	13	yellow/white	22	brown	4	blue
5	black/orange	14	yellow	23	green/white	5	yellow/black
6	yellow/red	15	red/green	24	red	6	yellow
7	black/brown	16	orange	25	green/black	7	red/black
8	white/red	17	orange/white			8	green
9	red/black	18	green			9	white/black

MALE CONNECTOR KIT + CONTACTS + COMMON TERMINAL



Code	Description
0226180201	Male connector kit - 25 pins
0226180202	Male connector kit - 9 pins

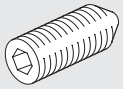
IDENTIFICATION PLATE KIT



Code	Description
0226107000	Identification plate kit

Comes in 16-pc. packs

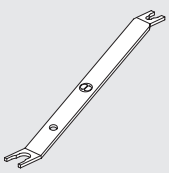
GRUB SCREW



Code	Description
0227300800	Grub screw for Multimach

Comes in 10-pc. pack

R17 - PIPE RELEASE SPANNER

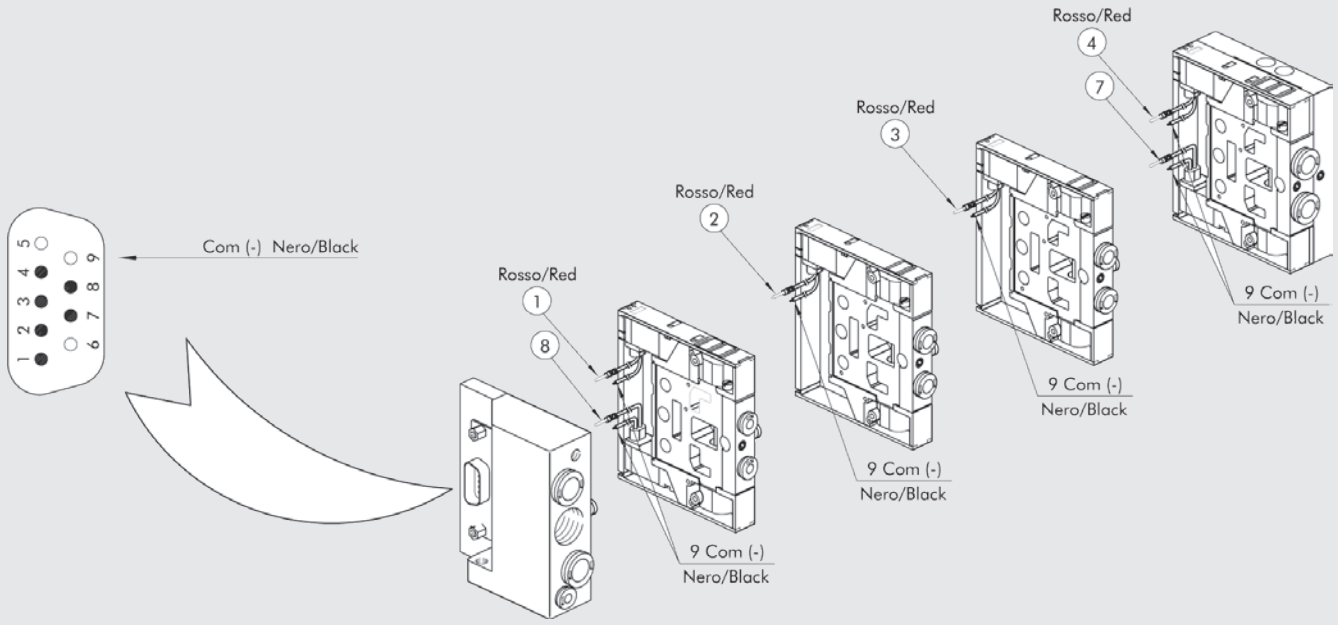


Lenght = 140 mm

Code	Description	Ø Tube
2L17001	RL17	from Ø 3 to Ø 10

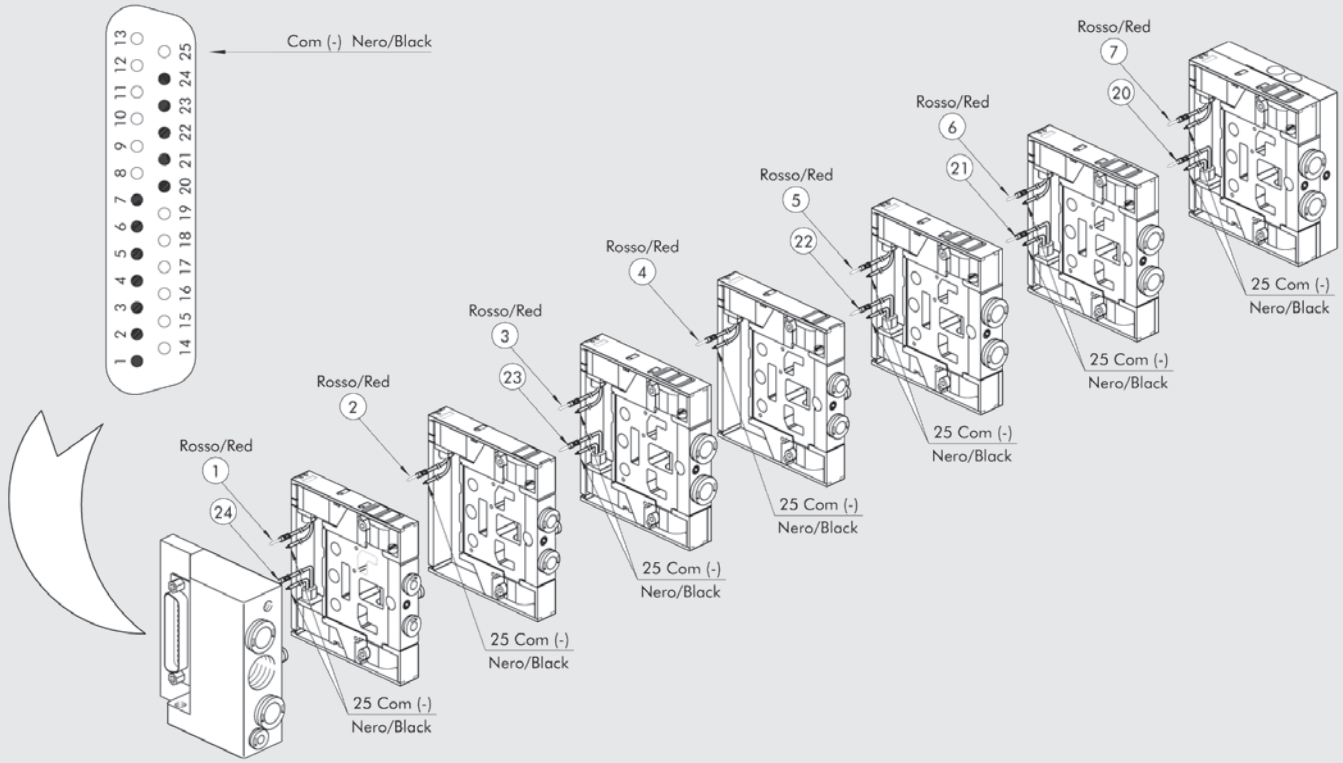
WIRING DIAGRAM OF THE 9-PIN CONNECTOR

Note: available with positive common wire on request.



WIRING DIAGRAM OF THE 25-PIN CONNECTOR

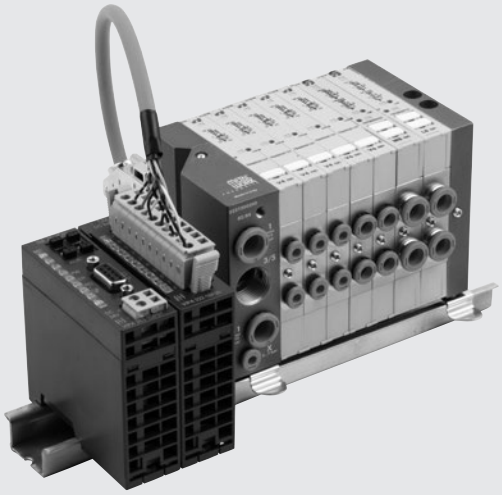
Note: available with positive common wire on request.



PROFIBUS-DP FOR MULTIMACH AND BASES FOR PLT-10 MULTIPLE CONNECTION

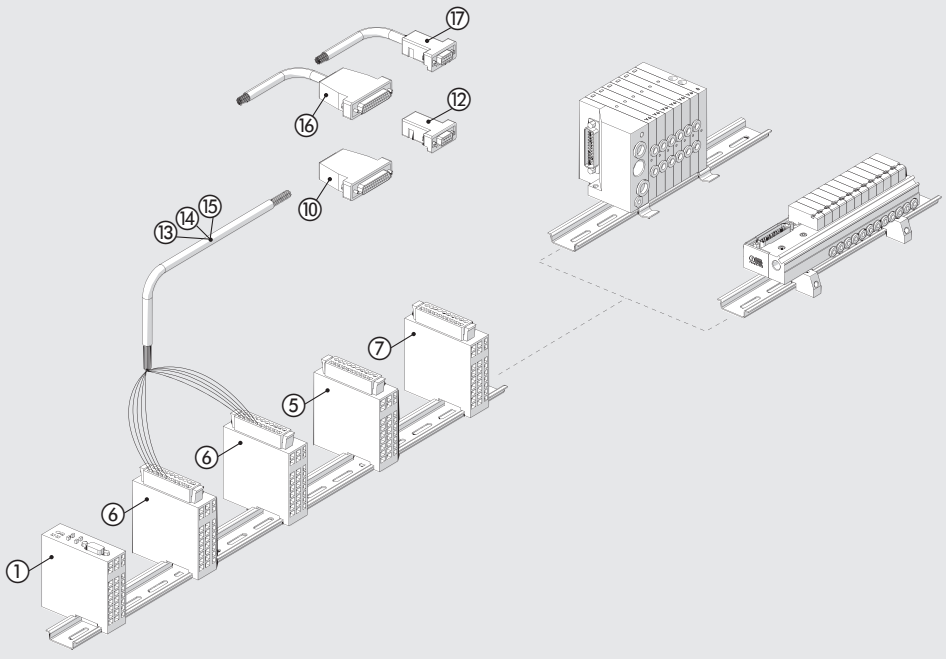
The expandable modular slaves for Multimach and bases for PLT-10 multiple connection follow the same application philosophy of total modularity common to the Multimach system. With full freedom, the slave can be configured by fitting the various modules offered:

- The slave is mounted on a 35 mm DIN bar, next to the Multimach unit.
- The slave is connected to the island via the multiple spring connector of the digital 8-output modules with the 9-pin or 25-pin valve island plug connector, using multi-pin cables.
- Using 1, 2 or 3 digital 8-output modules, it is possible to manage 8, 16 or 24 controls of either one or different valve islands
- Up to 32 additional modules can be fitted alongside the digital 8-output modules to manage other inputs and outputs.
  These modules are electrically connected together, using a small plate-connector (housed under the modules, inside the DIN bar).
- There are 4 other types of modules available: for 8 digital inputs; for 8 digital outputs; for 4 analogue inputs and for 4 analogue outputs.
- With this system, a maximum of total 256 Inputs/Outputs can be managed with just one slave!



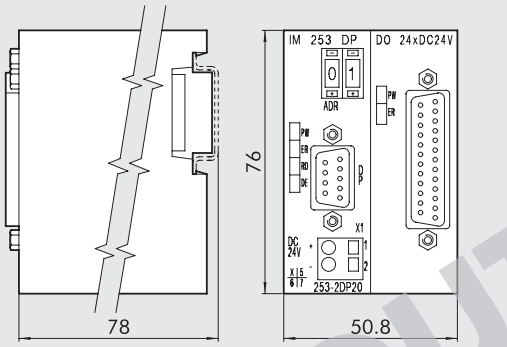
TECHNICAL DATA		
Supply voltage		24 VDC + 20% - 15%
EMC and ESD test		in compliance with IEC 801-2/IEC 801/4 (up to level 3: 8kV/2kV)
Resistance to vibration and impacts test		according to IEC68-2-6/IEC 68-2-27 (1g/12g)
Operating temperature range	°C	0 to 60
Storage temperature	°C	-40 to + 85
Admitted relative humidity		95%
Assembly		On Omega bar (DIN EN 50022) size 35 x 7 or 35 x 15

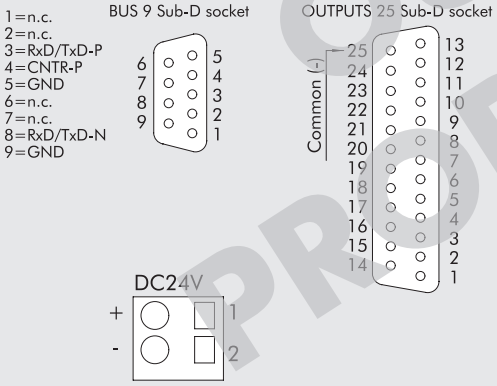
THE MULTIMACH WORLD: SLAVES, INPUTS AND OUTPUTS



For the connection of the solenoid valve island to the Profibus ① system, the cables ⑬, ⑭, ⑮ must be electrically connected to the digital 8-output modules ⑥. If the number of valve controls is less than or equal to 8, use the 10-pin cable and one module ⑥. If it is less than or equal to 16, use the 19-pin cable and two modules ⑥. With up to 24 valve controls, use 25-pin plug connectors ⑪, the 9-pin plug connector ⑫ or pre-wired connectors ⑯ or ⑰.
You can connect each DIGITAL 8-OUTPUT module ⑥ to a solenoid valve island.

① SLAVE PROFIBUS-DP 24 OUTPUT

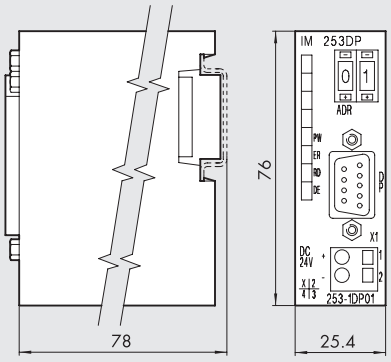


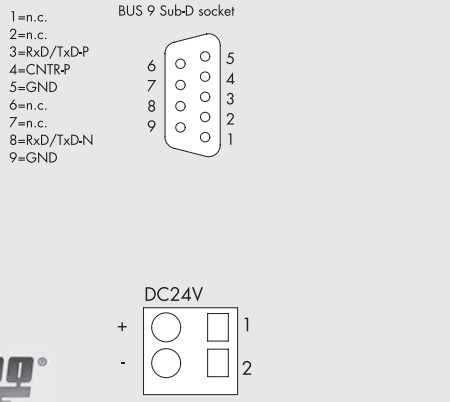


Code	Slave kit
0240004002	Slave PROFIBUS+DO24xDC24V

Technical data	
PROFIBUS-Interface	RS485: 9 pins D-Sub
Transmission speed	9.6 kBaud up to 12 Mbaud
Max number of modules which can be connected	31 (depending on the maximun corrent)
Output interface	25 pins D-Sub
Number of outputs	24
Output data	4 Byte (3used +1)
Nominal supply voltage	24 VDC
Maximum current for each output	1A, max total 4A
Absorption 24V (out excluded)	800 mA

① SLAVE PROFIBUS-DP



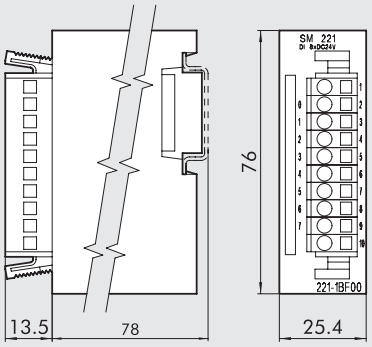


Code	Description
0240004003	Slave PROFIBUS-DP

Technical data	
PROFIBUS-DP Interface	RS485: 9 pins D-Sub
Transmission speed	9.6 kBaud up to 12 Mbaud
Max number of modules which can be connected	32 (depending on the maximun corrent)
Nominal supply voltage	24 VDC
Absorption 24V	70 mA

METAL WORK PNEUMATIC

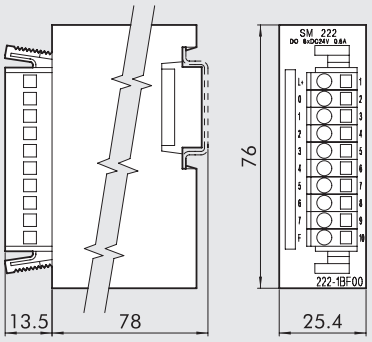
⑤ 8-DIGITAL INPUT MODULE



Code	Description
0240004053	DI 8XDC24V unit

Technical data	
Nominal input voltage	24 VDC
Number of inputs	8
Input data	1 Byte
Input voltage at "1"	15...28.8V
Output voltage at "0"	0...5V
Response time	3 ms
Internal Bus voltage	5V
Absorption 5V BUS	20 mA

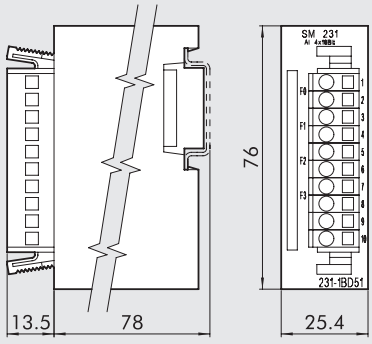
⑥ 8-DIGITAL OUTPUT MODULE



Code	Description
0240004051	DO 8XDC24V 0.5A unit

Technical data	
Nominal voltage	24 VDC
Number of outputs	8
Output data	1 Byte
Absorption for each channel	1A (max 8A)
Internal Bus voltage	5V
Absorption 5V BUS	70 mA

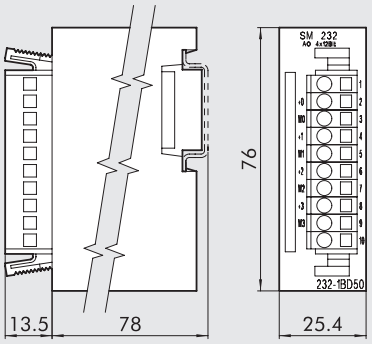
⑦ 4-ANALOG INPUT MODULE



Code	Description
0240004054	AL 4X16 BIT unit

Technical data	
Number of Inputs	4
Input data	8 Byte
Input range	Voltage 0 to 50 mV, 0...10V, ± 4 mV, ± 4V, ± 10V, Current 0/4...20 mA, +/-20 mA Temperature Pt100, Pt1000, Ni100, Ni1000 Resistance 60 Ω, 600 Ω, 3000 Ω, 16000 Ω Thermoelements J, K, N, R, T, S
Resolution	12/16 Bit
Input resistance	20M Ω voltage, 85 Ω current
Time	5...70 ms
Internal Bus voltage	5 V
Absorption 5V BUS	280 mA

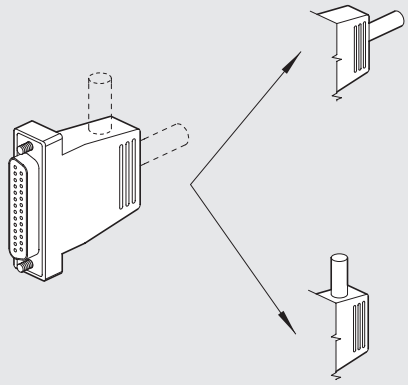
⑧ 4-ANALOG OUTPUT MODULE



Code	Description
0240004055	AO 4X12 BIT unit

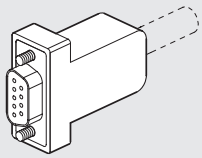
Technical data	
Number of outputs	4
Output data	8 Byte
Output range	Voltage 0…10V, ±10V, 1…5V
	Current 0…20 mA, 4…20 mA, ±20 mA
Resolution	12 BIT
Output resistance	Minimum voltage 1 kΩ, Maximum current 500 Ω
Conversion time	0.45 ms
Internal Bus voltage	5 V
Absorption 5V BUS	75 mA

⑪ 25-PIN PLUG CONNECTOR KIT



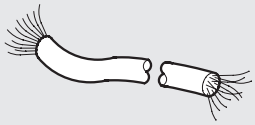
Code	Description	Weight [g]
0226180101	25-pin plug connector	48

⑫ 9-PIN PLUG CONNECTOR, STRAIGHT



Code	Description	Weight [g]
0226180102	9-pin plug connector	20

⑬ ⑭ ⑮ CABLES

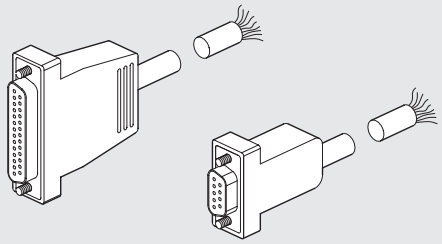


Code	Description	Weight [g/m]
0226107201	10-wire cable	60
0226107101	19-wire cable	122
0226107102	25-wire cable	130

Indicate the desired length in metres

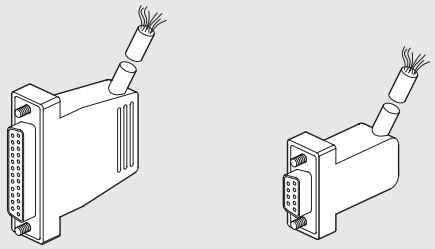
NOTES

⑯ ⑰ STRAIGHT PRE-WIRED CONNECTOR KIT



Code	Description	Weight [g]
0226900100	Straight D-Sub 9-PIN connector + cable L = 1 m	80
0226900250	Straight D-Sub 9-PIN connector + cable L = 2.5 m	170
0226900500	Straight D-Sub 9-PIN connector + cable L = 5 m	320
0226900750	Straight D-Sub 9-PIN connector + cable L = 7.5 m	470
0226901000	Straight D-Sub 9-PIN connector + cable L = 10 m	620
0226901500	Straight D-Sub 9-PIN connector + cable L = 15 m	920
0226902000	Straight D-Sub 9-PIN connector + cable L = 20 m	1220
0226905000	Straight D-Sub 9-PIN connector + cable L = 50 m	3020
0226920100	Straight D-Sub 25-PIN connector + cable L = 1 m	132
0226920250	Straight D-Sub 25-PIN connector + cable L = 2.5 m	320
0226920500	Straight D-Sub 25-PIN connector + cable L = 5 m	636

⑯ ⑰ PRE-WIRED 90° CONNECTOR



Code	Description	Weight [g]
0226910100	90° D-Sub 9-PIN connector + cable L = 1 m	80
0226910250	90° D-Sub 9-PIN connector + cable L = 2.5 m	170
0226910500	90° D-Sub 9-PIN connector + cable L = 5 m	320
0226910750	90° D-Sub 9-PIN connector + cable L = 7.5 m	470
0226911000	90° D-Sub 9-PIN connector + cable L = 10 m	620
0226911500	90° D-Sub 9-PIN connector + cable L = 15 m	920
0226930100	90° D-Sub 25-PIN connector + cable L = 1 m	132
0226930250	90° D-Sub 25-PIN connector + cable L = 2.5 m	320
0226930500	90° D-Sub 25-PIN connector + cable L = 5 m	636

WIRING DIAGRAM FOR PRE-WIRED PLUG CONNECTORS

25 PIN						9 PIN	
Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire	Position of electrical contact	Colour of the corresponding wire
1	blue/black	10	brown/white	19	yellow/black	1	green/black
2	red/brown	11	red/orange	20	white	2	white
3	white/black	12	light blue	21	blue/white	3	blue/black
4	red/blue	13	yellow/white	22	brown	4	blue
5	black/orange	14	yellow	23	green/white	5	yellow/black
6	yellow/red	15	red/green	24	red	6	yellow
7	black/brown	16	orange	25	green/black	7	red/black
8	white/red	17	orange/white			8	green
9	red/black	18	green			9	white/black

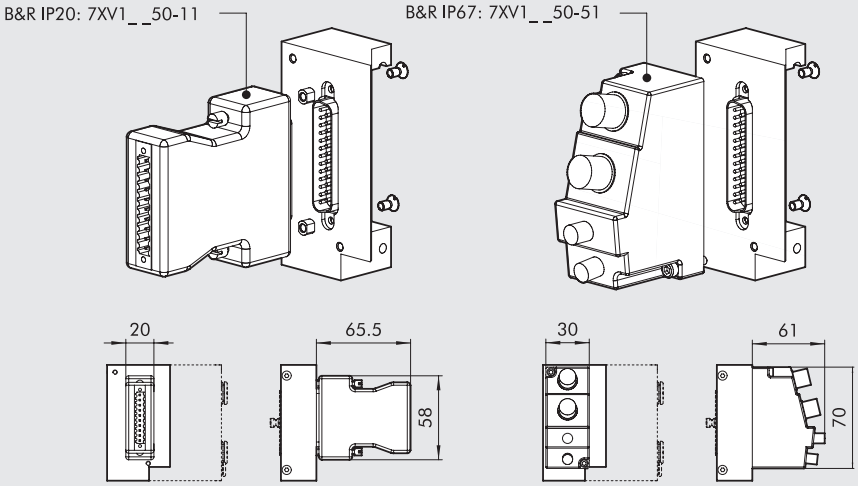
NOTES

MULTIMACH + B&R

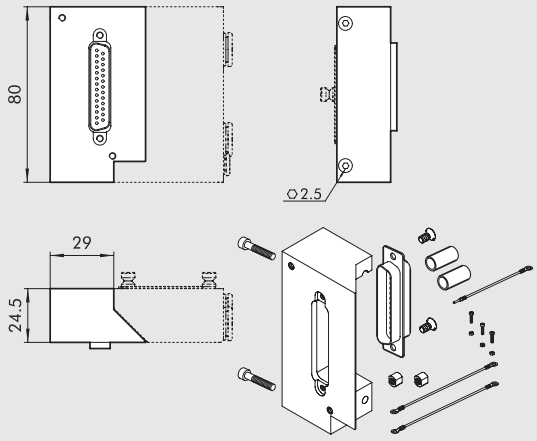
An advanced field bus system interfacing with the Multimach world.
B&R has developed a new standard for automation, called FORMULA X.
For further details about features, functions and qualities of this system, reference must be made to the B&R documentation, also available on the web site www.br-automation.com
Refer to page **B2**.133 for details of IP20 and IP67 intelligent connectors and X67 modules.
B&R smart connectors can be connected to Multimach islands using the Multimach connector support for B&R presented below.

APPLICATIONS OF B&R MODULES TO THE MULTIMACH CONNECTOR SUPPORT

Refer to page **B2**.173 for valves, intermediates elements and common accessories.



MULTIMACH CONNECTOR SUPPORT FOR B&R



Code	Description	Weight [g]
0226180005	25-pin connector support kit for B&R	140

INPUT/OUTPUT PROFIBUS-DP IP 67 M12

The Profibus-DP IP 67 is a robust metallic slave that can be connected flexibly sing M12 connectors to outputs and solenoid valves and/or inputs.
Each connector can be used freely for:
- 1 Output + 1 diagnostic Input
- 2 Outputs
- 1 Output + 1 Input
- 2 Inputs
- 1 Input + 1 diagnostic Input

Each slave can handle a total of 16 signals, each according to one of the above combinations.
Diagnostics provides information on the type and location of the error of each channel with:
- de-activation of the coupling point "involved" and not the complete module;
- signal to the controller;
- display with local LEDs.

One single slave or an island of solenoid valves complete with slave and connectors can be ordered. The catalogue shows the 1/8" and 1/4" valve islands in the 70 series and the ISO5599 valve islands, size 1 and size 2.

TECHNICAL DATA

Application		8 inputs or outputs + 8 inputs or outputs or diagnostic
Supply voltage		24 VDC (18V.....30,2V), according to EN 61131-2
Degree of protection		IP67
Temperature		0 to 55°C (32 to 131° F)
Field Bus Data	Transmission protocol	Profibus-DP EN 50170
	Transmission mode	synchronous or Freeze-Mode
	Transmission speed	12MBit/s
	Addresses	rotating switches BCD, 0.....99
Inputs Output Technical Data	Type	pnp proximnity sensors or EN 61131-2 compatable mechanical limit switch
	Supply	24 VDC (18-30.2V) to EN 61131-2; ≥ 200 mA for M12 coupling point.
	Indicator	One LED for each
Output Technical Data	Voltage	24 VDC (18-30.2V) output, to EN 61131-2; cumulative I ≥ 9A
	Maximum current for each actuator	1.6 A, system protected by fuse in case of short-circuit
	Maximum current contemporary	10W
	Maximum signal exchange frequency	20 Hz Ohm, 20 Hz induction
	Indicator LED	One LED for each output
Autotest	Field bus	RUN-LED
	Insufficient voltage signal	LED + alarm signal to master
	Short-circuit sensor INPUT or OUTPUTS	Red LED for channel on M12 coupling point
Autotest	Desina® (pin 2)	PIN 2 diagnostic with red LED for M12 coupling point and signal to master
		N.B.: for the disposition of the contact, please look at the connectors at the following pages

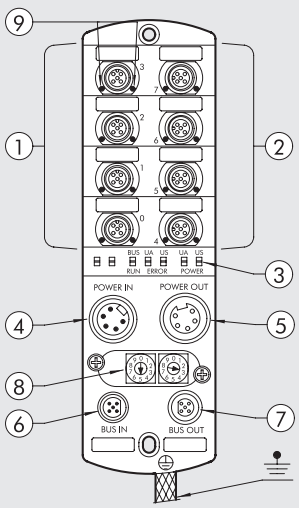
COMPONENTS

① ② IN-OUT diagnostic connectors
③ Led Power, Error, Run
④ IN feeding connector
⑤ OUT feeding connector
⑥ IN BUS connector
⑦ OUT BUS connector
⑧ Rotaring switches for addressing
⑨ Diagnostic LED for single channel

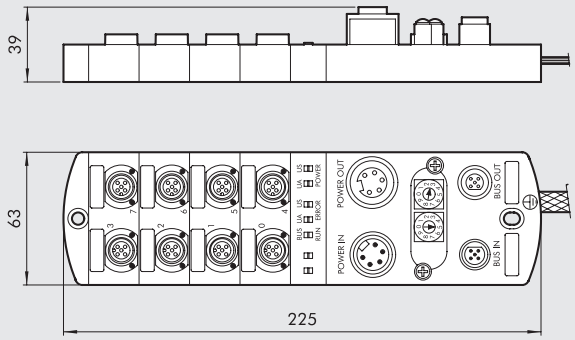
BUS IN/OUT
1 = VP
2 = A (green)
3 = DGN
4 = B (red)
5 = Sch
Thread, Sch

POWER-SUPPLY IN/OUT
1 = GND
2 = GND
3 = PE
4 = Sensor feeding
5 = Actuator feeding

IN/OUT CONNECTORS
1 = +24 VDC
2 = Diagnostic input
Digital input → Closure contact
Opening contact
Digital output
3 = O VDC
4 = Digital input → Closure contact
Opening contact
Digital output
5 = PE

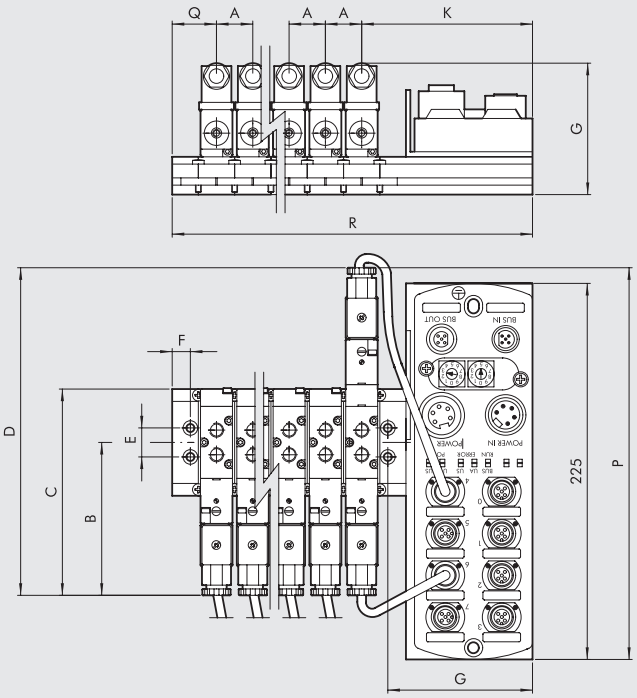


SLAVE IP67



Code	Description
0240008001	8 I/O + 8 I/O/autotest Profibus

IP67 SLAVE, COMPLETE WITH SERIES 70 VALVES



A	B	C	D	E	F	G	K	P	Q	R
1/8" Manifold										
25	105	142	225	20	12.5	85.8	103.5	230	305	Q + K + (A x *n°-1)
1/8" Multiple										
25	105	142	225	20	7	98	115	230	24	Q + K + (A x *n°-1)
1/4" Manifold										
27	112	156	239	25	10	85.5	104.5	237	31.5	Q + K + (A x *n°-1)
1/4" Multiple										
27	112	156	239	25	7	98	118	237	27	Q + K + (A x *n°-1)

***n** = number of mounted valves

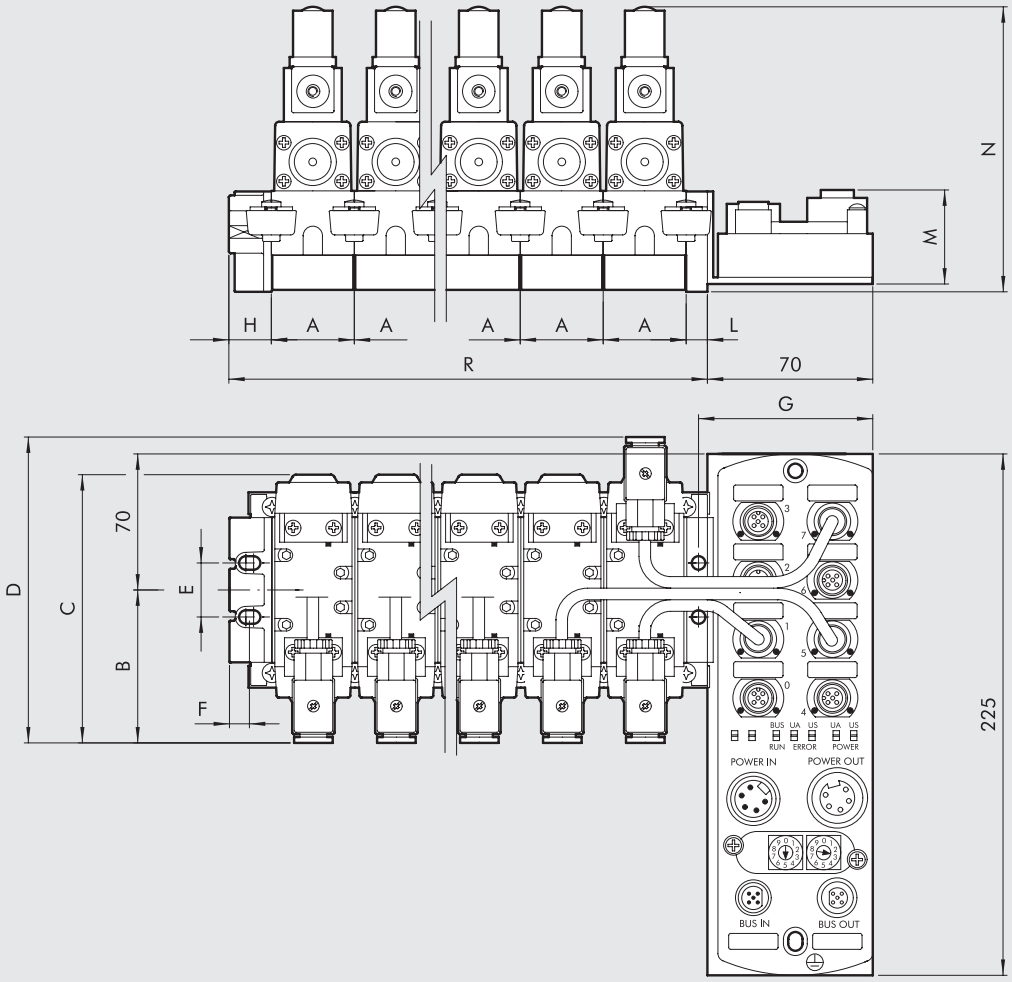
N.B.: the unit is supplied complete with cables for valves

SYNOPTIC, SIZES AND VERSIONS

B U S	P	V	B	O	0 2	D D
	P Profibus	**V** IP67	**B** 70 1/8" **C** 70 1/4"	**O** Multiple base	**02** 2 positions **04** 4 positions **06** 6 positions **08** 8 positions **10** 10 positions **12** 12 positions **14** 14 positions **16** 16 positions	**D** SOV 23 SOS NO - SOV 33 SOS NO **H** SOV 23 SOS NC - SOV 33 SOS NC **Z** SOV 23 SOB 00 - SOV 33 SOB 00 **M** SOV 25 SOS 0 - SOV 35 SOS 00 **J** SOV 25 SOB 00 - SOV 35 SOB 00 **G** SOV 26 SOS CC - SOV 36 SOS CC **E** SOV 26 SOS OC - SOV 36 SOS OC **B** SOV 26 SOS PC - SOV 36 SOS PC **A** Blanking plate

METAL WORK PNEUMATIC

IP67 SLAVE, COMPLETE WITH ISO VALVES



	A	B	C	D	E	F	G	H	L	M	N	P	R
ISO1	43	80	140	158	28	10.5	76.4	22	11	47	150	230	H + L + (A x *n°)
ISO2	56	90	165	180	35	12.5	77.5	26	14	61	178	240	H + L + (A x *n°)

***n** = number of mounted valves

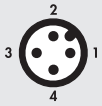
N.B.: the unit is supplied complete with cables for valves

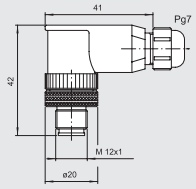
SYNOPTIC, SIZES AND VERSIONS

B U S	P	V	D	1	0 2	M M
	P Profibus	**V** IP67	**D** ISO1 **E** ISO2	**1** Manifold base side	**02** 2 positions **04** 4 positions **06** 6 positions **08** 8 positions **10** 10 positions **12** 12 positions **14** 14 positions **16** 16 positions	**M** ISV 55 SOS 00 - ISV 65 SOS 00 **J** ISV 55 SOB 00 - ISV 65 SOB 00 **G** ISV 56 SOS CC - ISV 66 SOS CC **E** ISV 56 SOS OC - ISV 66 SOS OC **B** ISV 56 SOS PC - ISV 66 SOS PC **A** Blanking plate

ACCESSORIES

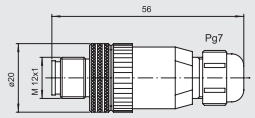
90° ELBOW WITHOUT CABLE





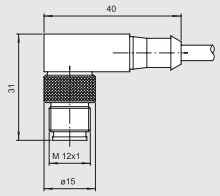
Code	Description
0240009001	90° Elbow without cable

STRAIGHT FITTING WITHOUT CABLE



Code	Description
0240009021	Straight fitting without cable

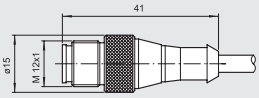
90° ELBOW WITH CABLE



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

Code	Description
0240009022	90° curve with cable 1.5 m
0240009023	90° curve with cable 5 m

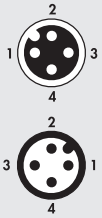
STRAIGHT FITTING WITH CABLE

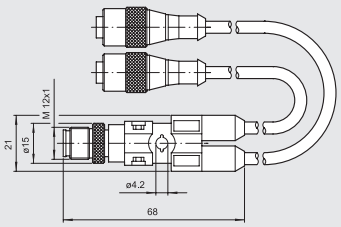


Pin	Cable color
1	Brown
2	White
3	Blue
4	Black

Code	Description
0240009002	Straight, with 1.5 m cable
0240009003	Straight, with 5 m cable

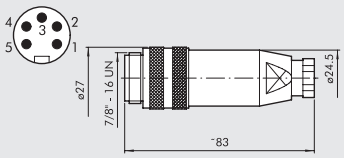
Y-DISTRIBUTOR WITH CABLE AND M12 STRAIGHT CONNECTORS





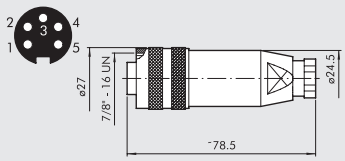
Code	Description
0240009031	Y-Distributor cable 0.6 m
0240009032	Y-Distributor cable 1.5 m

MALE CONNECTOR FOR FEEDING "IN"



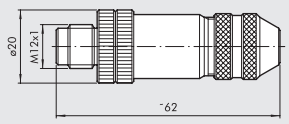
Code	Description
0240009033	Male connector "IN" feeding

FEMALE CONNECTOR FOR FEEDING "OUT"



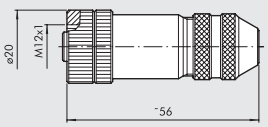
Code	Description
0240009034	Female connector "OUT" feeding

M12 MALE CONNECTOR OUT-BUS



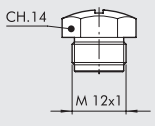
Code	Description
0240009035	M12 male connector B coding

M12 FEMALE CONNECTOR IN-BUS



Code	Description
0240009036	M12 female connector B coding

PLUG M12



Code	Description
0240009040	M12 plug

INPUT PROFIBUS-DP IP67 M8

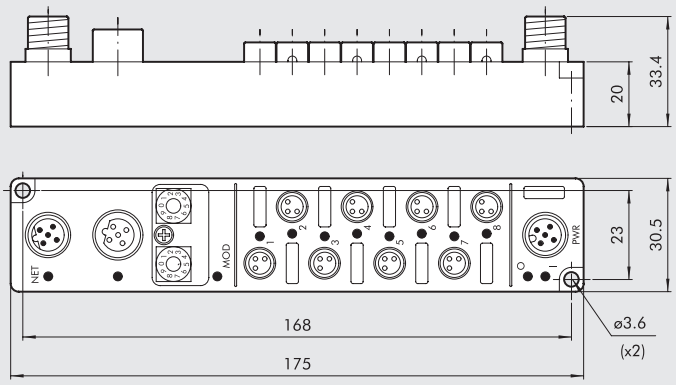
The Profibus-DP "COMPACT" input module is a sturdy and compact IP67 slave that can be used for connecting up to 8 inputs. A series of diagnostic functions provides information on the state of operation through lights and signals to the controller.

TECHNICAL DATA

Application		8 PNP inputs
Power supply		24 VDC (13-28 V)
Index of protection		IP67
Temperature range		-20 to +70°C RH 5-95% - no condensate
Field Bus technical data	Transmission protocol	DP-VO Profibus to EN 50170
	Transmission mode	Synchronous or Freeze-Mode
	Transfer rate	Up to 12 MBit/s
	Addresses	Rotary switches, 1...99
Input technical data	Type	PNP proximity sensors or IEE 1131-2 compact mechanical stop
	Power supply	24 VDC (18 to 28 V)
	Signal	One green LED for each input
	Input 0 signal voltage	2...5 V
	Input 1 signal voltage	10...30 V
Diagnosis	Field bus	"NET" LED+alarm signal to master
	INPUT short-circuit sensor	Red LED for each channel at M8 connection point M8 (600 mA)

SLAVE IP67

Code	Description
0240008002	IP67 M8 PROFIBUS INPUT

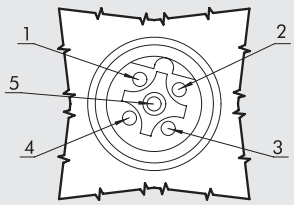


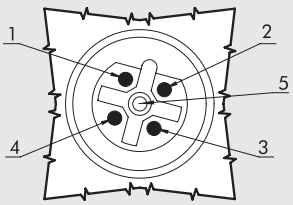
PIN ASSIGNMENT

PROFIBUS CONNECTORS

BUS OUT
M12 female connector
B coding for profibus

1 - 5 VDC power
2 - Bus A
3 - GND
4 - Bus B
5 - Shield





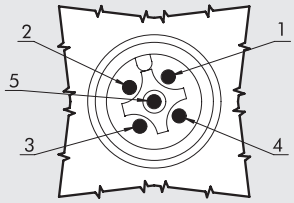
BUS IN
M12 male connector
B coding for profibus

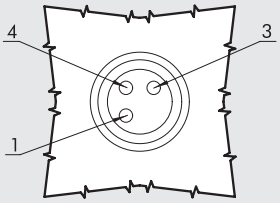
1 - 5 VDC power
2 - Bus A
3 - GND
4 - Bus B
5 - Shield

POWER CONNECTOR

M12 male connector
A coding

1 - Power supply module and input
2 - NC
3 - GND
4 - GND
5 - Grounding



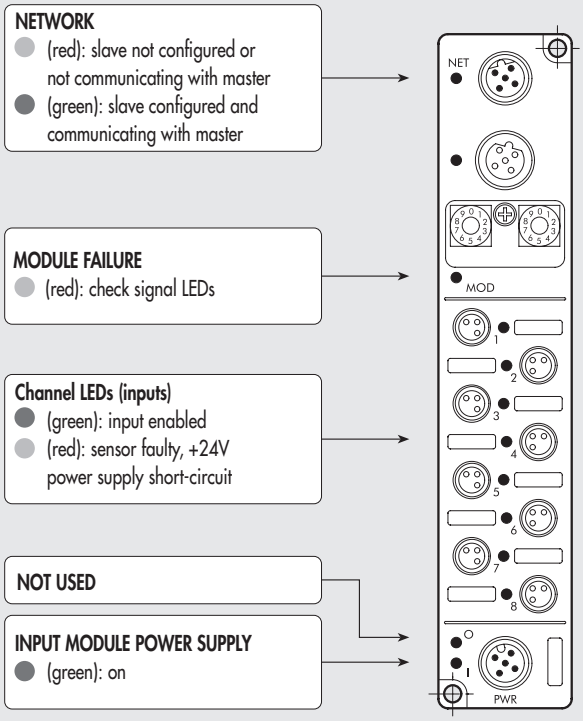


INPUT CONNECTORS

M8 three-pole female connector
A coding

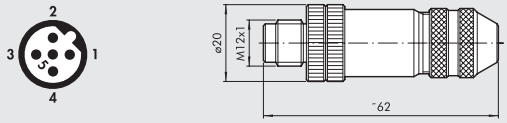
1 - 24VDC
3 - GND
4 - INPUT

LED ASSIGNMENT



METAL WORK PNEUMATIC

M12 BUS-OUT MALE CONNECTOR

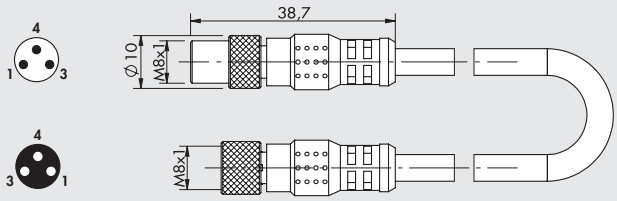


Code	Description
0240009035	M12 male connector, B coding

M8-M12 PLUG

Code	Description
0240009039	M8 plug
0240009040	M12 plug

M8 ADAPTER CABLE FOR CONNECTION OF THE PRESSURE SWITCH

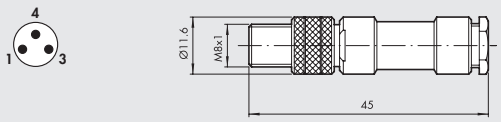


Code	Description
0240010501	M8-M, M8-F 3-pole adapter with cable L = 0.3 m

Note: Can be used for connecting **1/8-1/4**, **Syntesi®**, **Skillair®**, **PRS L** pressure switches.
Contact type NO (Normally open).

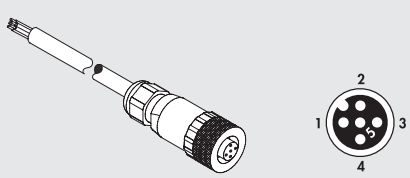
M8F	M8M	Function
pin 1	pin 1	Power supply +
pin 3	pin 2	Signal NO
pin 4	disconnect	

M8 INPUT CONNECTOR



Code	Description
0240009010	M8 3-pin straight connector

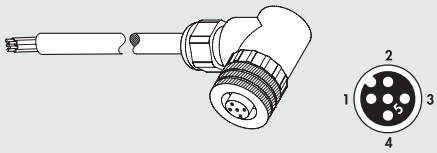
M12 STRAIGHT SUPPLY CONNECTOR WITH CABLE



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Grey

Code	Description
W0970513002	5-pin M12x1 straight connector with 5 m cable

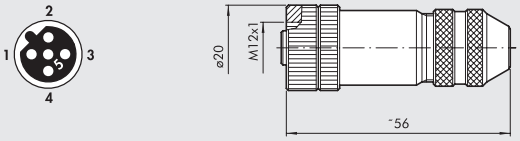
M12 90° SUPPLY CONNECTOR WITH CABLE



Pin	Cable color
1	Brown
2	White
3	Blue
4	Black
5	Grey

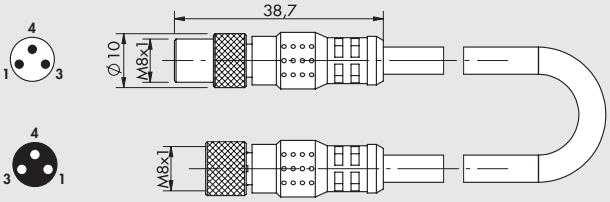
Code	Description
W0970513004	M12x1 5-pin 90° connector with 5 m cable

M12 BUS-IN FEMALE CONNECTOR



Code	Description
0240009036	M12 female connector, B coding

M8 INPUT CONNECTOR WITH CABLE

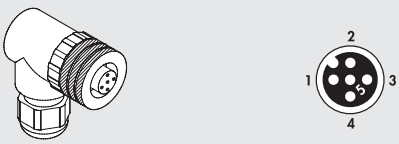


Code	Description
0240009009	M8-M8 straight connector with 3 m cable

M12 STRAIGHT SUPPLY CONNECTOR

Code	Description
W0970513001	5-pin M12x1 straight connector

M12 90° SUPPLY CONNECTOR



Code	Description
W0970513003	M12x1 5-pin 90°connector