SUMMARY PRECISION REGULATORS, FLOW AND PRESSURE SENSOR

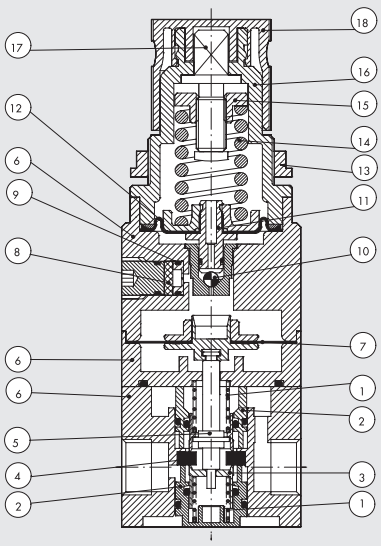
PRECISION PRESSURE REGULATOR WITH HIGH EXAUST FLOW, SERIE GS

GS is a series of precision regulators, designed for rapid relief of overpressure and a high flow rate.
They feature identical and opposing regulation valves on the inlet and outlet sides. This enables the regulator to behave symmetrically – precise regulation with a high rate of flow both in and out.
The pressure setting is virtually insensitive to changes in the upstream pressure (see diagram below), which guarantees accuracy even when the mains pressure fluctuates considerably.
A slight escape of air is required for correct operation of the regulator – it must not be considered a defect.
The regulator can be fixed using the through holes in the body or a bracket accessory.
The body has a 1/8" pressure gauge fitting.
GS regulators are suitable for applications requiring good accuracy in maintaining the pressure and a certain sensitivity in relieving pressure peaks, e.g. to supply low-friction cylinders, reel tensioners and coil winders.
Two sizes of compressed air fitting are available: 1/8" and 1/4".
Three different setting ranges are available: 0 to 2 bar, 0 to 4 bar and 0 to 8 bar.

TECHNICAL DATA		1/8"	1/4"
Threaded port		1/8"	1/4"
Setting range	bar	0 to 2 - 0 to 4 - 0 to 8	
Max. input pressure	bar	10	
Flow rate at 6.3 bar ΔP 0.5 bar	Nl/min	900	1170
Flow rate at 6.3 bar ΔP 1 bar	Nl/min	1200	1380
Fluid		Unlubricated filtered air	
		The air must be at least 10 µm pre-filtered	
Temperature range	°C	From -10 to +50	
Mounting position		In any position	
Pressure gauge port		G 1/8"	
Weight	g	600	
Exaust flow rate at 4 bar (regulated pressure)			
ΔP 0.1 bar	Nl/min	450	810
ΔP 0.5 bar	Nl/min	900	1190
Variation in regulated pressure (2 bar) with changes in upstream pressure (4-10 bar)	mbar	± 20	
Relieving sensitivity	mbar	30	
Air consumption – continuous escape	Nl/min	< 0.1	
Notes		The regulator pressure must always be set upwards.	
		For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value.	
		Do not take air from pressure gauge ports.	

COMPONENTS

① Spring: stainless steel
② Cartridges: nickel-plated brass
③ Poppet: nickel-plated brass
④ Ring: vulcanized NBR
⑤ Control lever: brass
⑥ Bodies: painted aluminium
⑦ Control diaphragm: oil-proof rubber
⑧ Filter: sintered bronze
⑨ Throttle cartridge: brass
⑩ Ball: stainless steel
⑪ Ball valve: brass
⑫ Regulation diaphragm: NBR
⑬ Ring nut: technopolymer
⑭ Adjusting spring: steel
⑮ Scroll: brass
⑯ Bell: technopolymer
⑰ Adjusting screw: brass
⑱ Knob: technopolymer



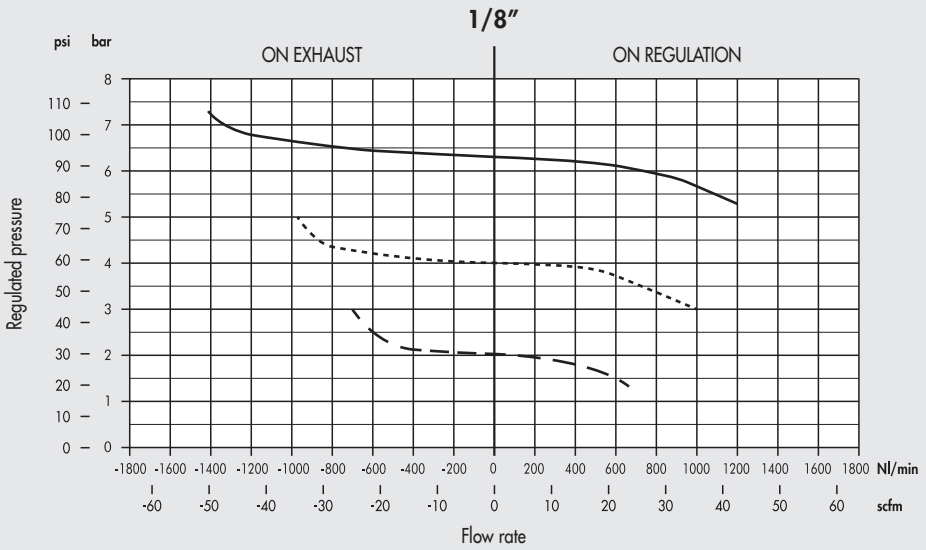
FLOW RATE

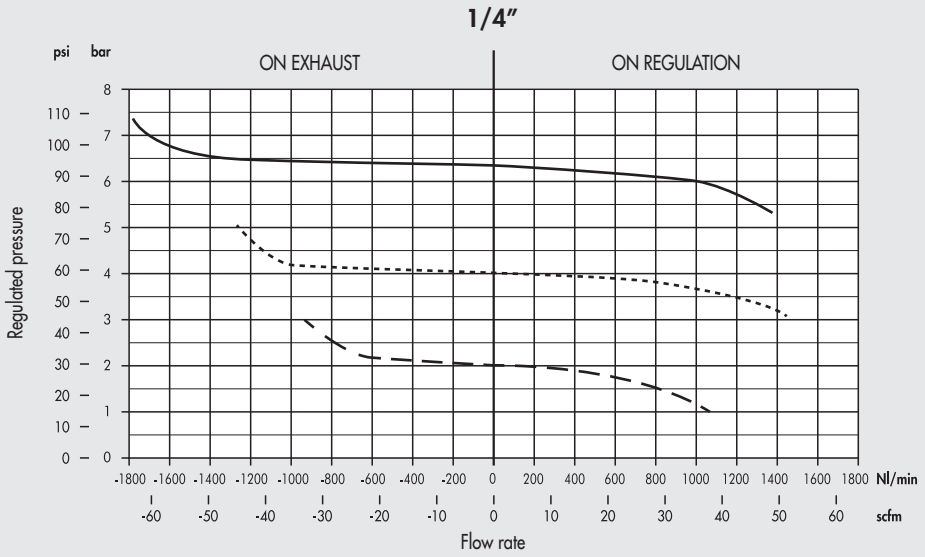
Upstream pressure = 10 bar

P reg = 2 bar

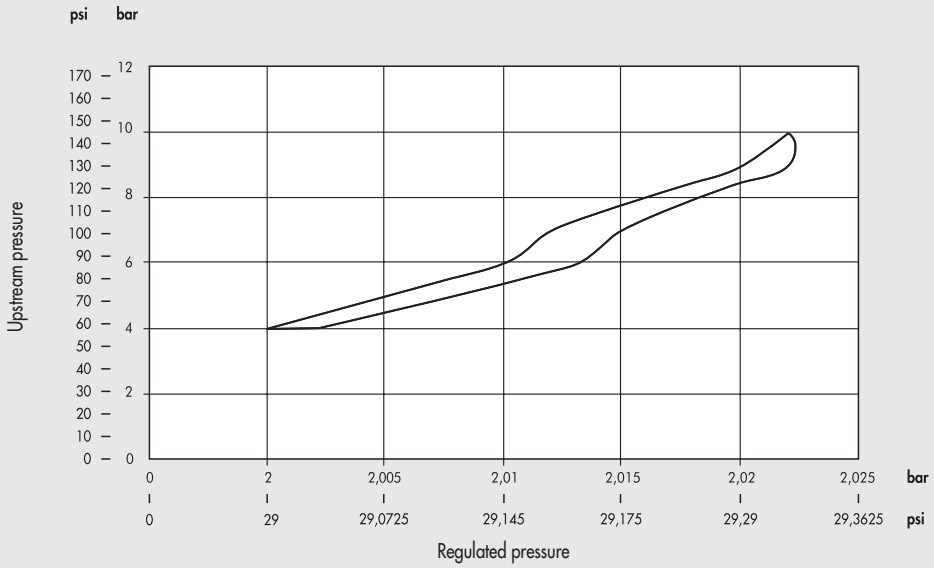
P reg = 6.3 bar

P reg = 4 bar

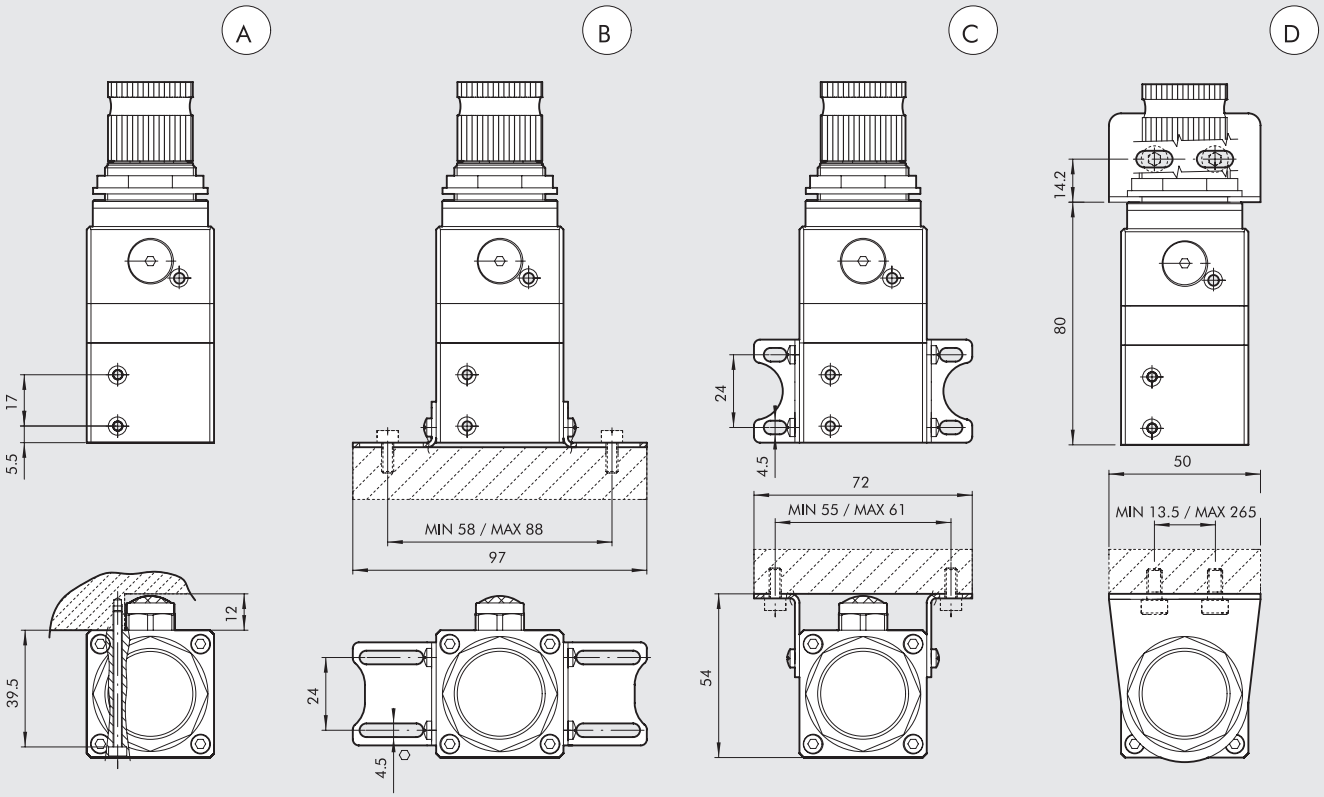




UPSTREAM PRESSURE SENSITIVITY

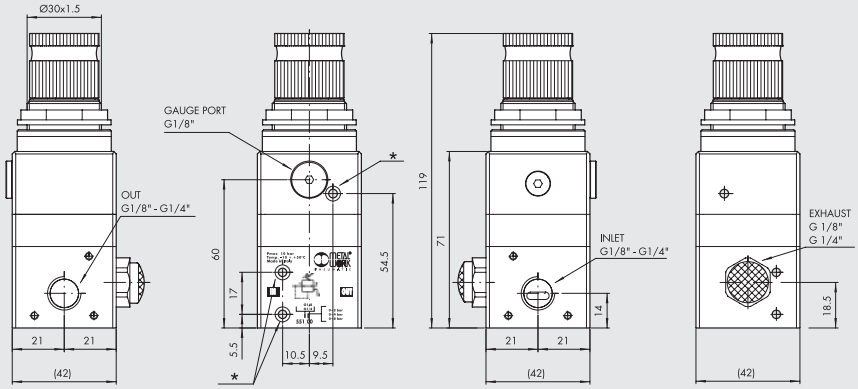


INSTALLATION



Ⓐ On the wall with 2 M3 hex screws
Ⓑ On the base with legs code 9200710
Ⓒ On the wall with legs code 9200710
Ⓓ On the wall with bracket code 9200701

DIMENSIONS



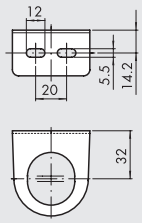
* M3 hole

Code	Description
5511200	REG. GS 1/8 02
5511300	REG. GS 1/8 04
5511400	REG. GS 1/8 08
5512200	REG. GS 1/4 02
5512300	REG. GS 1/4 04
5512400	REG. GS 1/4 08

ACCESSORIES

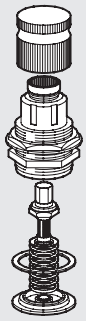
SPARES PARTS

R/FR FIXING BRACKET



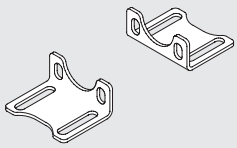
Code	Description
9200701	SF100 - BIT - ND 1/4 - SY1

UPPER COVER FOR REG GS



Code	Description
9250835	SPARES CS REG GS 02
9250836	SPARES CS REG GS 04
9250837	SPARES CS REG GS 08

FIXING BRACKET KIT

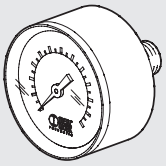


Code	Description
9200710	Fixing bracket kit

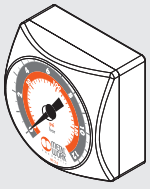
N.B. supplied complete with four M4X6 screws

NOTES

PRESSURE GAUGE



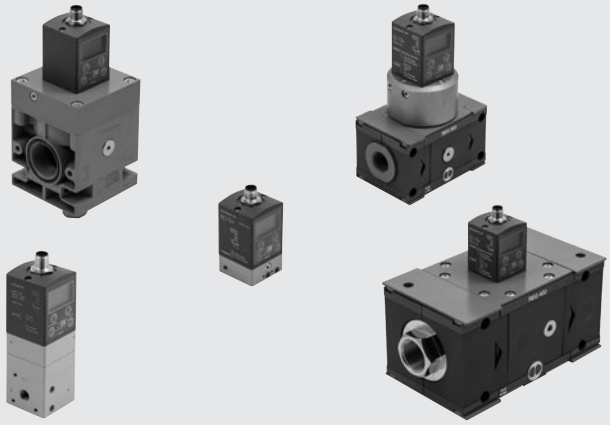
Code	Description
9700102	M 40 1/8 04
9700101	M 40 1/8 012



9700109	M 40x40 1/8 04
9700110	M 40x40 1/8 012

PROPORTIONAL PRECISION PRESSURE REGULATOR REGTRONIC SERIES

Proportional pressure regulators series REGTRONIC have the job of precisely regulating the pressure in a system, the variables depending on the input command. Remote control regulators are controlled by means of an M12x1 cable and connector and can have Volt, mA, RS232 control or via IO-Link. Regulators with a display can be controlled via a cable or directly using the keys below the display. The pressure value and a series of information and diagnostics are visible at all times on the graphic display. The user-display interface, LEDs and buttons are all on one side. The programming and reading software is comprehensive, simple and intuitive. Pressure control takes place in a "closed-loop" with an electronic precision pressure sensor that measures the downstream pressure, a control system that compares it with the desired pressure, and two mini solenoid valves that adjust the pressure to reach the target value. The Wireless versions are able to communicate with Ethernet networks (MQTT communication) and mobile devices, such as smartphones and tablets with Bluetooth® connection through a dedicated APP. With the Metal Work RegUp App, it is possible to set and view the regulated pressure in real time, set all operating parameters and view pressure trend graphs.



TECHNICAL DATA		REGTRONIC			REGTRONIC NEW DEAL		REGTRONIC 300			REGTRONIC 400			
Threaded port		M5	1/8"	1/4"	3/4"	1"	1/2"	3/4"	1"	1"	1 ¼"	1 ½"	2"
Fluid		Filtered, unlubricated air.											
		The air must be filtered at least 10 µm and without condensation.											
MIN inlet pressure	bar	Regulation pressure + 1 bar											
MAX inlet pressure	bar	11											
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	10	1300	1500	10000		4500			18000			20000
Flow rate at 6.3 bar ΔP 1	Nl/min	10	1450	1700	13000		7000			-			-
Exhaust flow rate at 6.3 bar with 0.1 bar overpressure	Nl/min	2	600	1300	1800		250			400			400
Exhaust flow rate at 6.3 bar with 0.5 bar overpressure	Nl/min	9	1000	1500	2000		500			850			850
Response time with ΔP =1 bar	Volume [cc]	100	100	1000	100	1000	1000			1000			1000
from 6 to 7 bar	s	0.5	0.1	0.15	0.1	0.15	0.27			0.25			0.2
from 7 to 6 bar	s	0.55	0.1	0.15	0.1	0.15	0.27			0.33			0.35
Weight	kg	0.2	0.38		0.38		1.3			1.5			5
Class of protection		IP 65											5.8
Supply voltage range IO-Link version	VDC	from 18 to 30											
Current absorption		Max 150 mA at 18VDC											
Supply voltage range analog version	VDC	12 -10% 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 signal	Analog version voltage	0 to 10 VDC (1 VDC = 1 bar) - 1 mA max											
	Analog version current	4 to 20 mA (4 mA = 0 bar, 20 mA = 10 bar)											
	Digital	PNP open collector output: max 24VDC 60 mA											
		NPN open collector output: max 24VDC 60 mA											
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											
Analog output accuracy		± 0.1% of the reading											
Temperature characteristics		max 2 mbar / °C											
Installation position		In any position											
Notes		The features shown refer to the static condition only. With air consumption on the output side, 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.**											

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

REMOTE-CONTROL VERSION

DISPLAY VERSION

PROGRAMMABLE AND FLEXIBLE

Setting options:

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

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

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

PRECISION

Linearity
± 0.5 % (full scale)

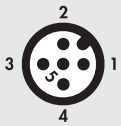
Hysteresis
± 0.2 % (full scale)

Repeatability
± 0.2 % (full scale)

Sensitivity
range 10 to 300 mbar

IO-Link CONNECTOR 5-PIN M12x1

IO-Link



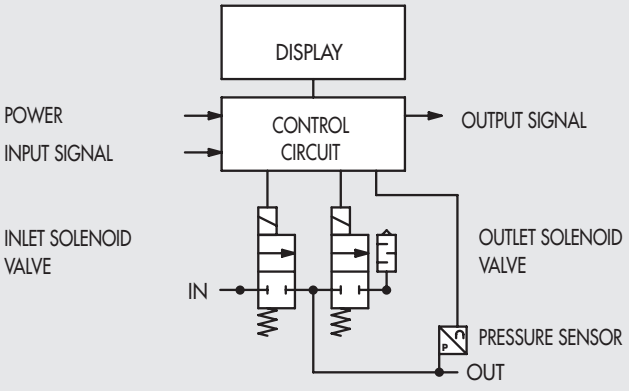
Pin	Signal	Description of Class A Port	Lead colour
1	L+	+24 VDC power supply	Brown
2	NC	/	White
3	L -	0 VDC power supply	Blue
4	C/Q	IO-Link communication	Black
5	NC	/	Gray

ANALOG CONNECTOR 8-PIN M12x1

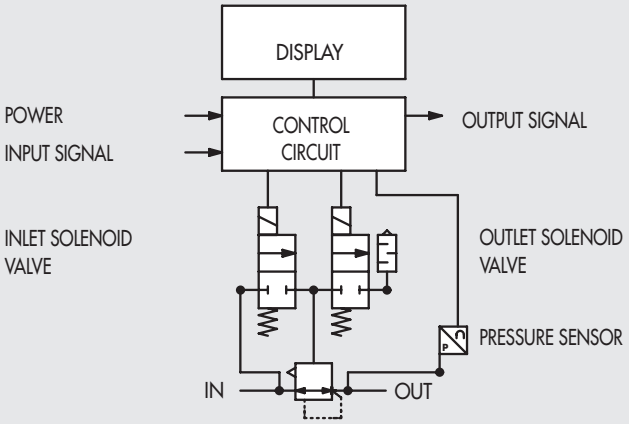
Pin	Signal	Description	Lead colour
1	TX	RS232	White
2	RX	RS232	Brown
3	Pressure set	0 to 10 VDC / 0 to 5 VDC / 4 to 20 mA	Green
4	Digital out	NPN	Yellow
5	Analog out	Voltage version 0 to10 VDC	Gray
		Current version 4 to 20 mA	
6	Digital out	PNP	Pink
7	0 VDC	Power supply	Blue
8	+ VDC	Power supply	Red

FUNCTION DIAGRAM

REGTRONIC M5



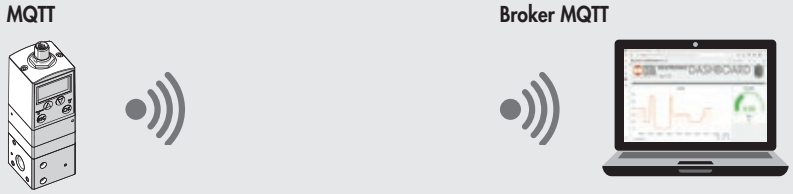
REGTRONIC 1/8" - 1/4" - SK300 - SK400 - NEW DEAL



WIRELESS CONNECTION

With the Wireless version of Regtronic, you can establish a connection to a Wi-Fi network via an access point or gateway to monitor and collect all the measured gas values.

Connection to a MQTT Broker via an Access point



Gathering data from the field makes it possible to:
- carry out a predictive diagnosis of the system;
- monitor the operating parameters at all times and optimize the operation of the machines and the pneumatic system.

The software can be implemented with analysis functions that provide:
- machine efficiency monitoring;
- to check the pressure trends and long-term forecasting (plant improvement evaluation).

The Metal Work RegUp App can be used for connection via Bluetooth to Metal Work proportional pressure regulators in the REGTRONIC series with a wireless interface, from Android smartphone and iOS.

With the Metal Work RegUp App, it is possible to set and view the regulated pressure in real time, set all operating parameters and view pressure trend graphs.

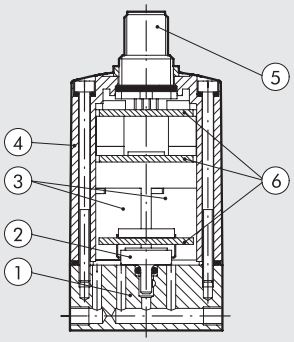
METAL WORK PNEUMATIC

NOTES

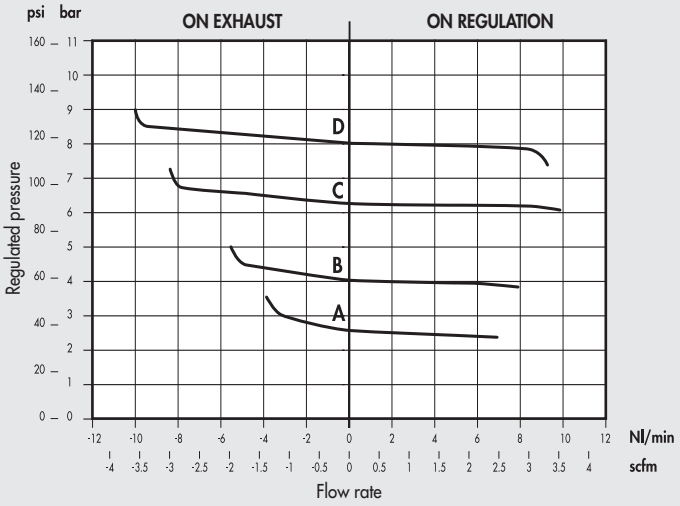
REGTRONIC M5

COMPONENTS

① BODY: painted aluminium
② PRESSURE SENSOR
③ SOLENOID VALVE: 10 mm series PLT-10
④ SHELL: technopolymer
⑤ CONNECTOR M12
⑥ ELECTRONIC BOARDS

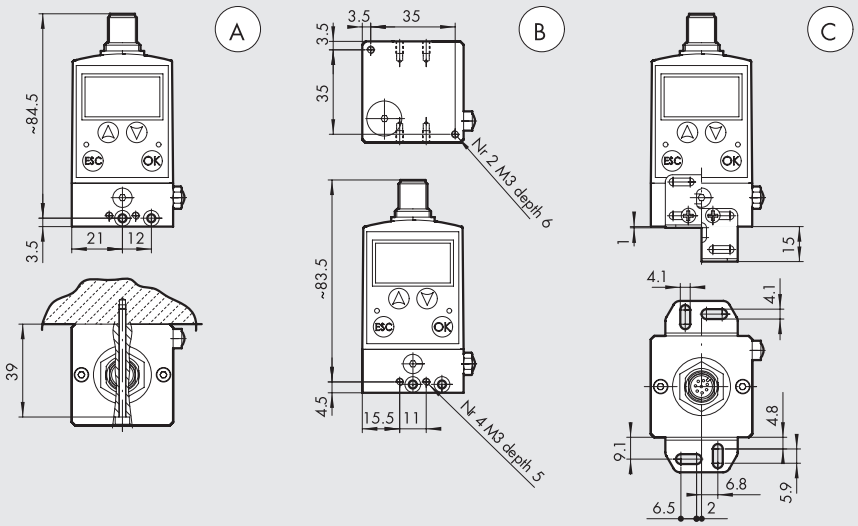


FLOW CHARTS



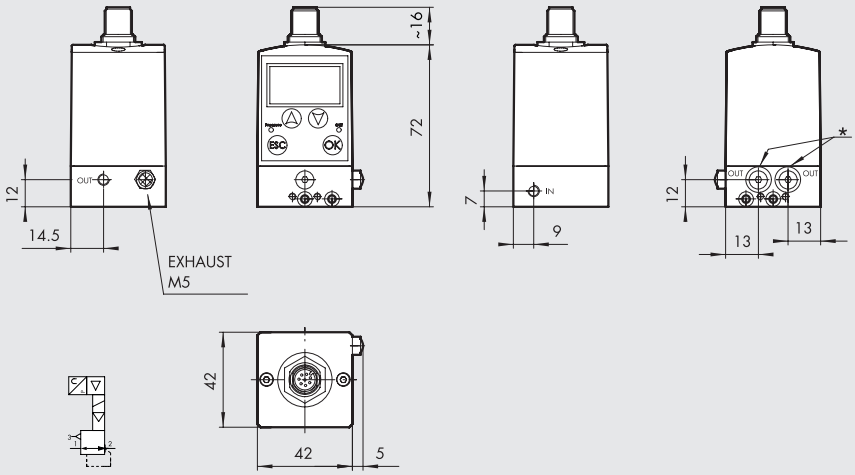
A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
Pm = 10 bar

FIXING OPTIONS



Ⓐ On the wall with 2 M3 screws, with through holes
Ⓑ On the wall using the M3 threaded holes on the front, rear and underside
Ⓒ On the wall with legs code 9200711

DIMENSIONS AND ORDERING CODES

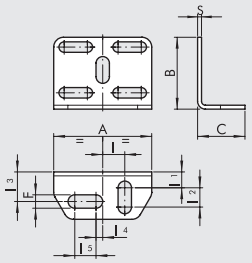


Code	Description
5520500	REGTRONIC M5 with dispaly OUT 0-10 V
5520502	REGTRONIC M5 remote control OUT 0-10 V
5540500	REGTRONIC M5 with dispaly OUT 4-20 mA
5540502	REGTRONIC M5 remote control OUT 4-20 mA
5530500	REGTRONIC IO-Link M5 with display
5530502	REGTRONIC IO-Link M5 remote control

* alternative outputs, removing the M5 cap

ACCESSORIES

FIXING BRACKET KIT



Code	Description
9200711	Regtronic M5 Fixing bracket kit

A	B	C	F	I	I1	I2	I3	I4	I5	S
30	22	14.5	4.2	6.8	4.8	5.9	9.1	2	6.5	1.2

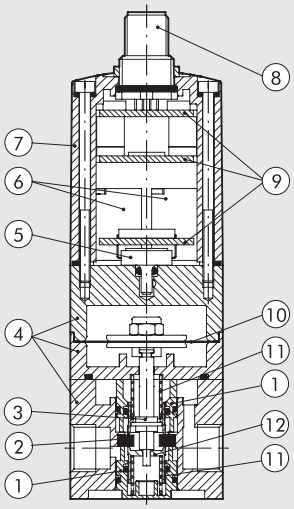
Note: supplied complete with four M3x6 screws

NOTES

REGTRONIC 1/8”; 1/4”

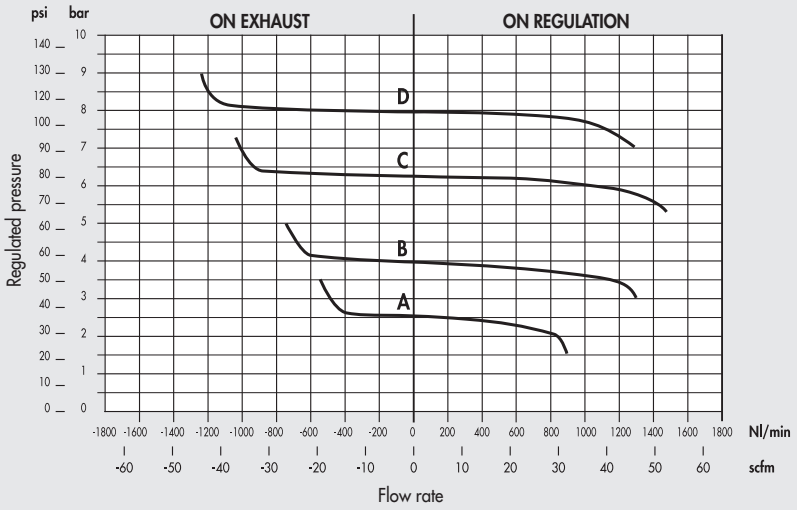
COMPONENTS

① CARTRIDGES: nickel-plated brass
② RING: vulcanized NBR
③ ROD: steel
④ BODIES: painted aluminium
⑤ PRESSURE SENSOR
⑥ SOLENOID VALVE: 10 mm series PLT-10
⑦ SHELL: technopolymer
⑧ CONNECTOR M12
⑨ ELECTRONIC BOARDS
⑩ CONTROL DIAPHRAGM: anti-oil rubber
⑪ SPRING: stainless steel
⑫ POPPET: nickel-plated brass



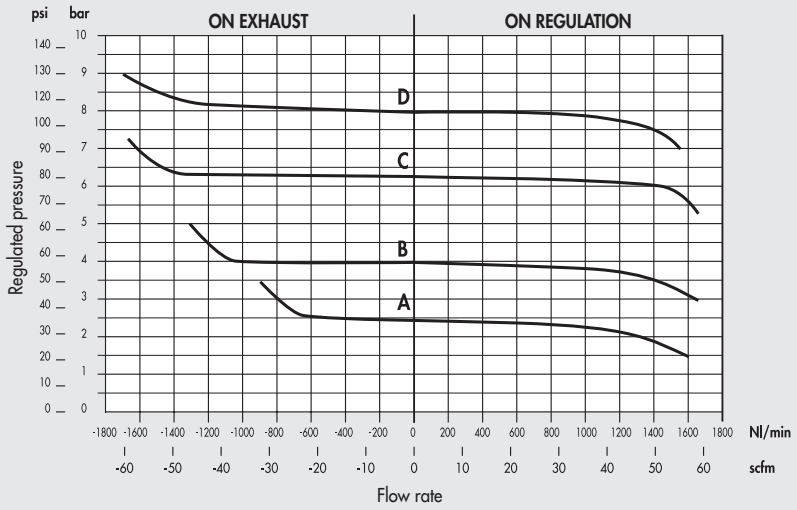
FLOW CHARTS

REGTRONIC 1/8”



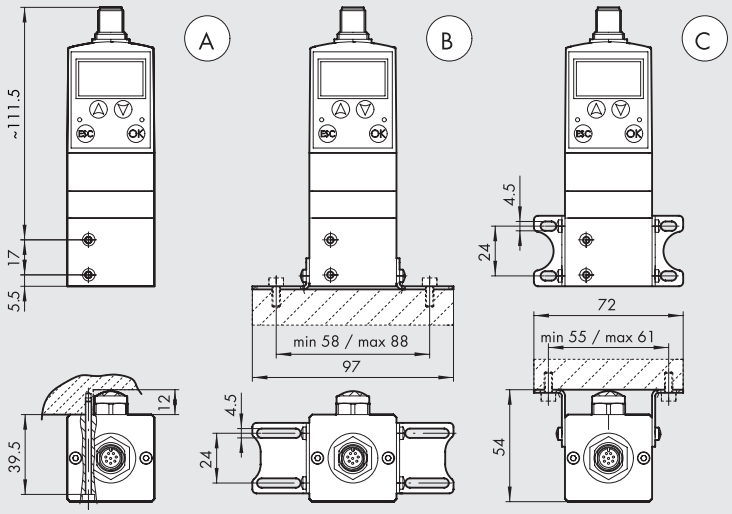
A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
Pm = 10 bar

REGTRONIC 1/4”



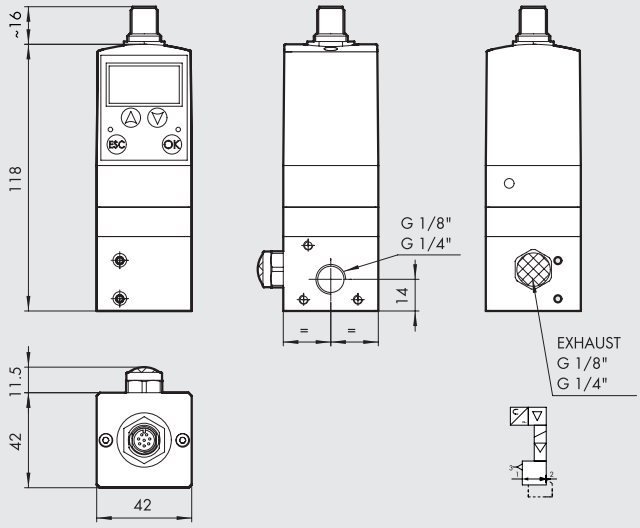
A = 2.5 bar
B = 4 bar
C = 6.3 bar
D = 8 bar
Pm = 10 bar

FIXING OPTIONS



Ⓐ On the wall with 2 M3 screws
Ⓑ On the base with legs code 9200710
Ⓒ On the wall with legs code 9200710

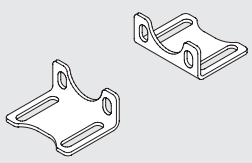
DIMENSIONS AND ORDERING CODES



Code	Description
5521500	REGTRONIC 1/8 with display OUT 0-10 V
5521502	REGTRONIC 1/8 remote control OUT 0-10 V
5522500	REGTRONIC 1/4 with display OUT 0-10 V
5522502	REGTRONIC 1/4 remote control OUT 0-10 V
5541500	REGTRONIC 1/8 with display OUT 4-20 mA
5541502	REGTRONIC 1/8 remote control OUT 4-20 mA
5542500	REGTRONIC 1/4 with display OUT 4-20 mA
5542502	REGTRONIC 1/4 remote control OUT 4-20 mA
5531500	REGTRONIC IO-Link 1/8 with display
5531502	REGTRONIC IO-Link 1/8 remote control
5531510	REGTRONIC IO-Link 1/8 with display and Wi-Fi
5532500	REGTRONIC IO-Link 1/4 with display
5532502	REGTRONIC IO-Link 1/4 remote control
5532510	REGTRONIC IO-Link 1/4 with display and Wi-Fi

ACCESSORIES

FIXING BRACKET KIT



Code	Description
9200710	Fixing bracket kit

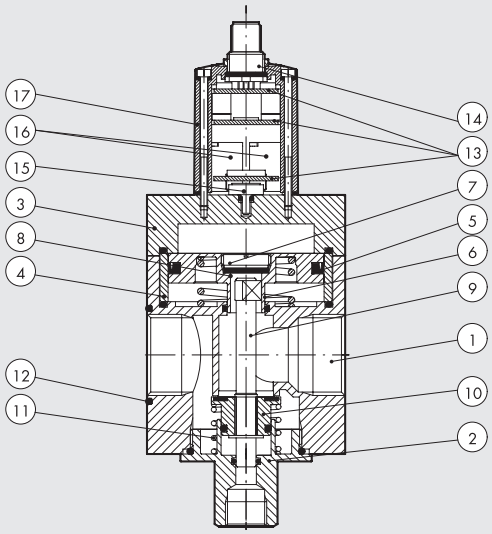
Note: supplied complete with four M4x6 screws

NOTES

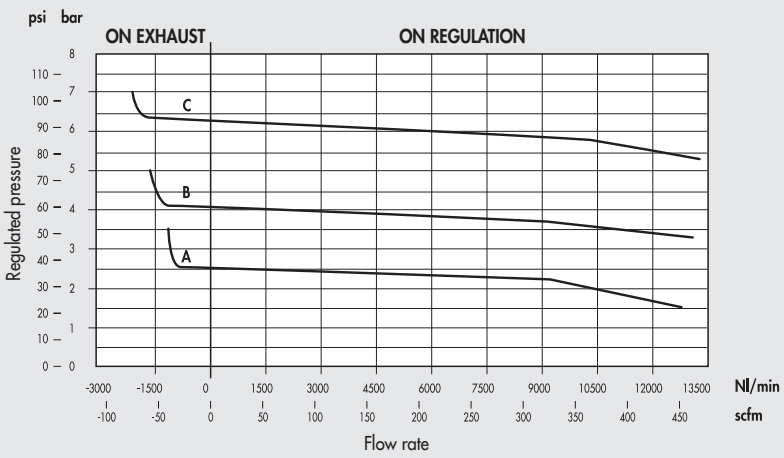
REGTRONIC Newdeal

COMPONENTS

① REGULATOR BODY: aluminium
② LOWER CAP: aluminium
③ UPPER PLATE: aluminium
④ SPACER: aluminium
⑤ GASKET: NBR
⑥ PISTON ROD: aluminium
⑦ CAP FOR PLAIN GASKET: OT58 brass
⑧ PLAIN GASKET: NBR
⑨ ROD: OT58 brass
⑩ VALVE: OT58 brass
⑪ VALVE SPRING: steel
⑫ GASKETS: NBR
⑬ ELECTRONIC BOARDS
⑭ CONNECTOR M12
⑮ PRESSURE SENSOR
⑯ SOLENOID VALVE: 10 mm series PLT-10
⑰ SHELL: tecnopolymer

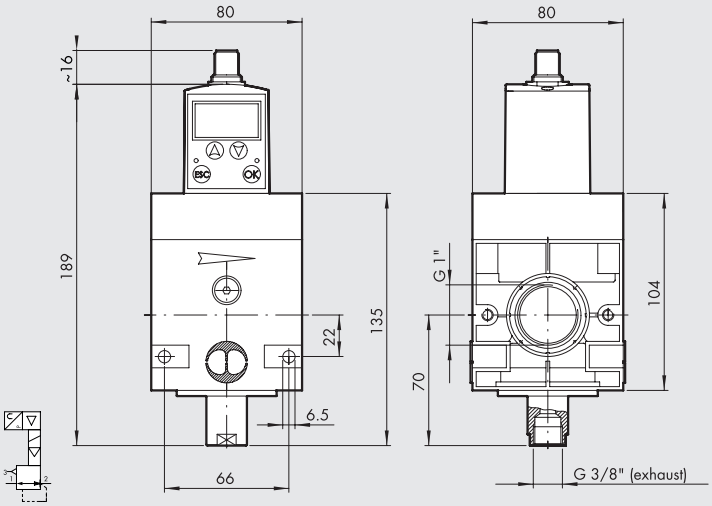


FLOW CHARTS



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

DIMENSIONS AND ORDERING CODES

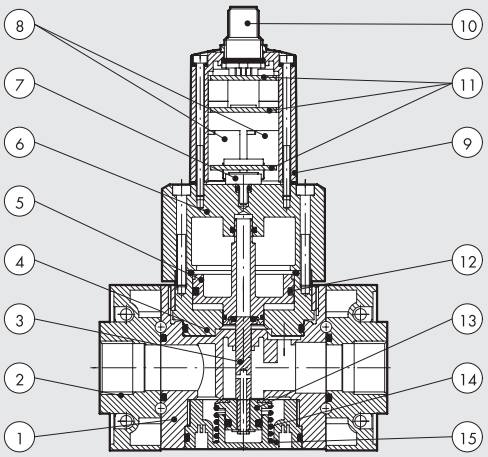


Code	Description
1520003	REGTRONIC New Deal 3/4 with display OUT 0-10 V
1520004	REGTRONIC New Deal 3/4 remote control OUT 0-10 V
1620003	REGTRONIC New Deal 1 with display OUT 0-10 V
1620004	REGTRONIC New Deal 1 remote control OUT 0-10 V
1520043	REGTRONIC New Deal 3/4 with display OUT 4-20 mA
1520044	REGTRONIC New Deal 3/4 remote control OUT 4-20 mA
1620043	REGTRONIC New Deal 1 with display OUT 4-20 mA
1620044	REGTRONIC New Deal 1 remote control OUT 4-20 mA
1520033	REGTRONIC IO-Link New Deal 3/4 with display
1520034	REGTRONIC IO-Link New Deal 3/4 remote control
1620033	REGTRONIC IO-Link New Deal 1 with display
1620034	REGTRONIC IO-Link New Deal 1 remote control

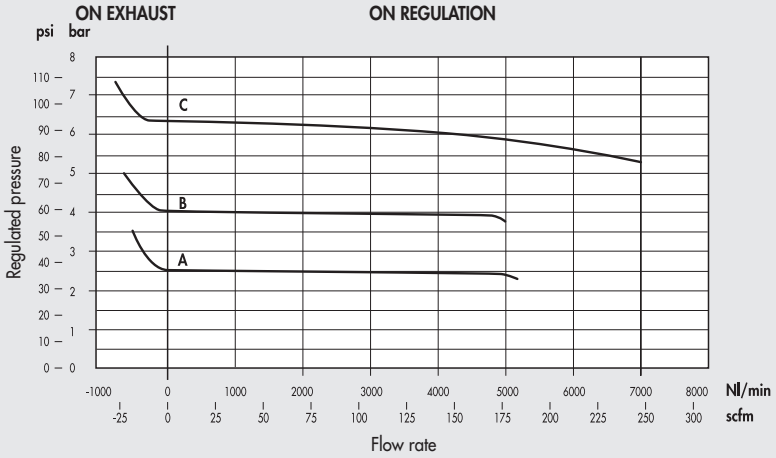
REGTRONIC 300

COMPONENTS

① BODY: tecnopolymer
② END PLATE: zamak
③ STEM: OT58 brass
④ UPPER CUP: aluminium
⑤ PISTON: OT58 brass
⑥ CUP: aluminium
⑦ PRESSURE SENSOR
⑧ SOLENOID VALVE: 10 mm series PLT-10
⑨ SHELL: tecnopolymer
⑩ CONNECTOR M12
⑪ ELECTRONIC BOARDS
⑫ GASKET: NBR
⑬ VALVE WITH NBR VULCANIZED GASKET
⑭ VALVE SPRING: stainless steel
⑮ LOWER CUP: tecnopolymer

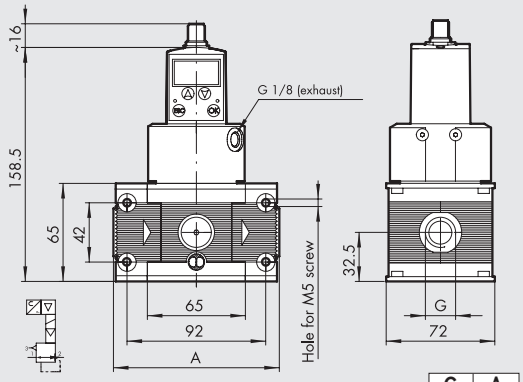


FLOW CHARTS



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

DIMENSIONS



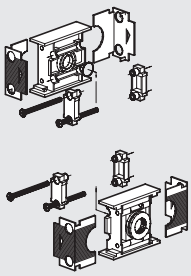
G	A
1/2"	110
3/4"	110
1"	112

ORDERING CODES

Code	Description
4402012A	REGTRONIC 300 with display without end plates OUT 0-10 V
4402013A	REGTRONIC 300 remote control without end plates OUT 0-10 V
4402012	REGTRONIC 300 1/2 with display OUT 0-10 V
4402013	REGTRONIC 300 1/2 remote control OUT 0-10 V
4502012	REGTRONIC 300 3/4 with display OUT 0-10 V
4502013	REGTRONIC 300 3/4 remote control OUT 0-10 V
4602012	REGTRONIC 300 1 with display OUT 0-10 V
4602013	REGTRONIC 300 1 remote control OUT 0-10 V
4402412A	REGTRONIC 300 with display without end plates OUT 4-20 mA
4402413A	REGTRONIC 300 remote control without end plates OUT 4-20 mA
4402412	REGTRONIC 300 1/2 with display OUT 4-20 mA
4402413	REGTRONIC 300 1/2 remote control OUT 4-20 mA
4502412	REGTRONIC 300 3/4 with display OUT 4-20 mA
4502413	REGTRONIC 300 3/4 remote control OUT 4-20 mA
4602412	REGTRONIC 300 1 with display OUT 4-20 mA
4602413	REGTRONIC 300 1 remote control OUT 4-20 mA
4402312A	REGTRONIC IO-Link 300 with display without end plates
4402313A	REGTRONIC IO-Link 300 remote control without end plates
4402312	REGTRONIC IO-Link 300 1/2 with display
4402313	REGTRONIC IO-Link 300 1/2 remote control
4502312	REGTRONIC IO-Link 300 3/4 with display
4502313	REGTRONIC IO-Link 300 3/4 remote control
4602312	REGTRONIC IO-Link 300 1 with display
4602313	REGTRONIC IO-Link 300 1 remote control

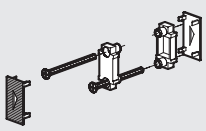
ACCESSORIES

INPUT/OUTPUT END PLATE KIT FOR SKILLAIR



Code	Description
9430701	IN/OUT end plates kit 300 1/2
9530901	IN/OUT end plates kit 300 3/4
9531001	IN/OUT end plates kit 300 1

CONNECTOR KIT FOR SKILLAIR CODE A

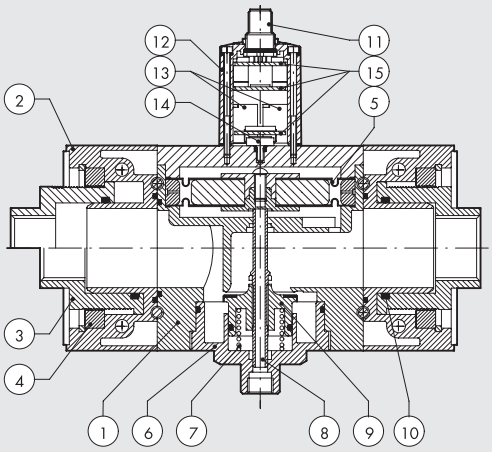


Code	Description
9430301	Connector kit 300

REGTRONIC 400

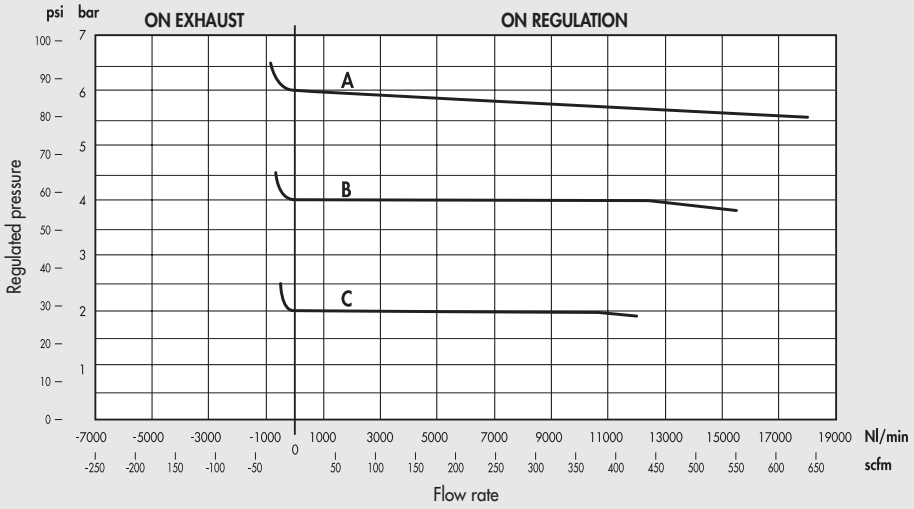
COMPONENTS

① BODY: Aluminium
② END PLATE: Aluminium
③ THREADED BUSH, AXIAL ADJUSTMENT: anodized aluminium
④ RETAINING RING: OT58 brass
⑤ ROLLING DIAPHRAGM
⑥ BRASS PLUG: anodized aluminium
⑦ VALVE SPRING: Stainless steel
⑧ STEM: OT58 brass with air relief hole
⑨ VALVE WITH NBR VULCANIZED GASKET
⑩ GASKETS: NBR
⑪ CONNECTOR M12
⑫ SHELL: technopolymer
⑬ SOLENOID VALVE: 10 mm series PLT-10
⑭ PRESSURE SENSOR
⑮ ELECTRONIC BOARDS



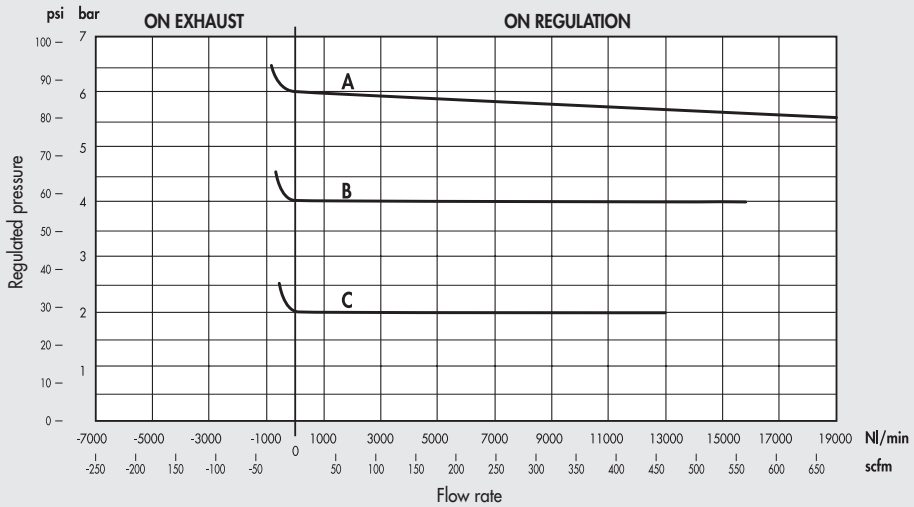
FLOW CHARTS

REGTRONIC 400 1" to 1 ½"



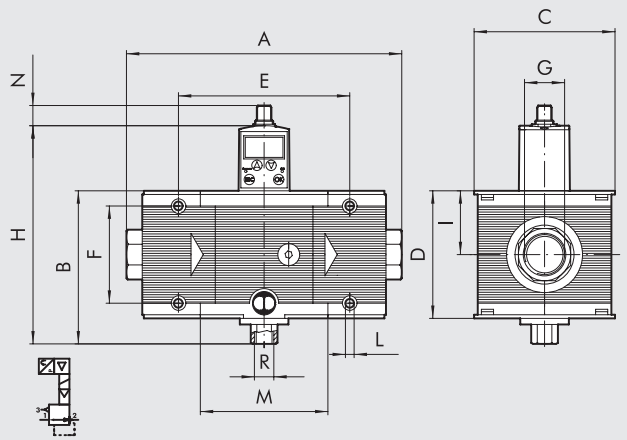
A = 6 bar
B = 4 bar
C = 2 bar
Pm = 7 bar

REGTRONIC 400 2"



A = 6 bar
B = 4 bar
C = 2 bar
Pm = 7 bar

DIMENSIONS



	REGTRONIC 400			
Threaded port G	1″	1 1/4″	1 1/2″	2″
A	225 to 255			283 to 313
B	127			
C	116			
D	105			
E	141.4			
F	80			
G	1″	1 1/4″	1 1/2″	2″
H	182			
I	52.5			
L	Hole for M6 screws			
M	105.4			
N	~16			
R (exhaust)	1/4″			

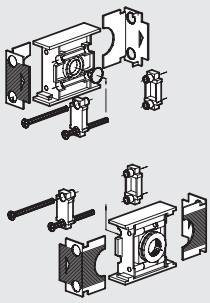
ORDERING CODES

Code	Description
6102012A	REGTRONIC 400 with display without end plates OUT 0-10 V
6102013A	REGTRONIC 400 control remote without end plates OUT 0-10 V
6102012	REGTRONIC 400 1 with display OUT 0-10 V
6102013	REGTRONIC 400 1 control remote OUT 0-10 V
6202012	REGTRONIC 400 1 1/4 with display OUT 0-10 V
6202013	REGTRONIC 400 1 1/4 control remote OUT 0-10 V
6302012	REGTRONIC 400 1 1/2 with display OUT 0-10 V
6302013	REGTRONIC 400 1 1/2 control remote OUT 0-10 V
6402012	REGTRONIC 400 2 with display OUT 0-10 V
6402013	REGTRONIC 400 2 control remote OUT 0-10 V
6102412A	REGTRONIC 400 with display without end plates OUT 4-20 mA
6102413A	REGTRONIC 400 control remote without end plates OUT 4-20 mA
6102412	REGTRONIC 400 1 with display OUT 4-20 mA
6102413	REGTRONIC 400 1 control remote OUT 4-20 mA
6202412	REGTRONIC 400 1 1/4 with display OUT 4-20 mA
6202413	REGTRONIC 400 1 1/4 control remote OUT 4-20 mA
6302412	REGTRONIC 400 1 1/2 with display OUT 4-20 mA
6302413	REGTRONIC 400 1 1/2 control remote OUT 4-20 mA
6402412	REGTRONIC 400 2 with display OUT 4-20 mA
6402413	REGTRONIC 400 2 control remote OUT 4-20 mA

Code	Description
6102312A	REGTRONIC IO-Link 400 with display without end plates
6102313A	REGTRONIC IO-Link 400 remote control without end plates
6102312	REGTRONIC IO-Link 400 1 with display
6102313	REGTRONIC IO-Link 400 1 remote control
6202312	REGTRONIC IO-Link 400 1 1/4 with display
6202313	REGTRONIC IO-Link 400 1 1/4 remote control
6302312	REGTRONIC IO-Link 400 1 1/2 with display
6302313	REGTRONIC IO-Link 400 1 1/2 remote control
6402312	REGTRONIC IO-Link 400 2 with display
6402313	REGTRONIC IO-Link 400 2 remote control

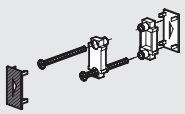
ACCESSORIES

INPUT/OUTPUT END PLATE KIT FOR SKILLAIR



Code	Description
9631001	IN/OUT end plates kit 400 1
9631101	IN/OUT end plates kit 400 1 1/4
9631201	IN/OUT end plates kit 400 1 1/2
9631301	IN/OUT end plates kit 400 2

CONNECTOR KIT FOR SKILLAIR CODE A

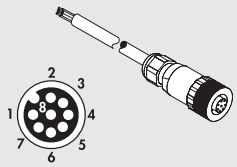


Code	Description
9630301	Connector kit 400

ACCESSORIES REGTRONIC

ANALOG VERSION

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

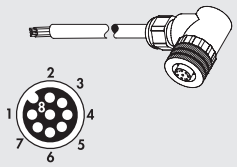


Code	Description
W0970513010	Connector M12x1, 8-pin, A-coded, female, straight, with cable L = 5 m

Note: can only be used for analog version

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

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

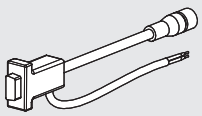


Code	Description
W0970513011	Connector M12x1, 8-pin, A-coded, female, 90°, with cable L = 5 m

Note: can only be used for analog version

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

CONFIGURATION CABLE



Code	Description
W0970513019	Configuration cable Regtronic

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

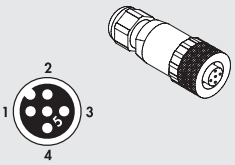
The package also includes a RS232-USB adapter

Note: can only be used for analog version

NOTES

IO-Link VERSION

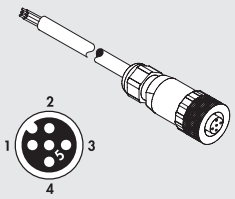
CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, STRAIGHT



Code	Description
W0970513001	Connector M12x1, 5-pin, A-coded, female, straight

Note: can only be used for version IO-Link

CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, STRAIGHT

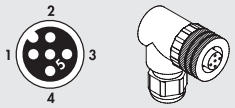


Code	Description
W0970513002	Connector M12x1, 5-pin, A-coded, female, straight, with cable L = 5 m

Note: can only be used for version IO-Link

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

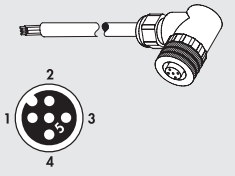
CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, 90°



Code	Description
W0970513003	Connector M12x1, 5-pin, A-coded, female, 90°

Note: can only be used for version IO-Link

CONNECTOR M12x1, 5-PIN, A-CODED, FEMALE, 90°, WITH CABLE



Code	Description
W0970513004	Connector M12x1, 5-pin, A-coded, female, 90°, with cable L = 5 m

Note: can only be used for version IO-Link

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

PRESSURE SWITCHES

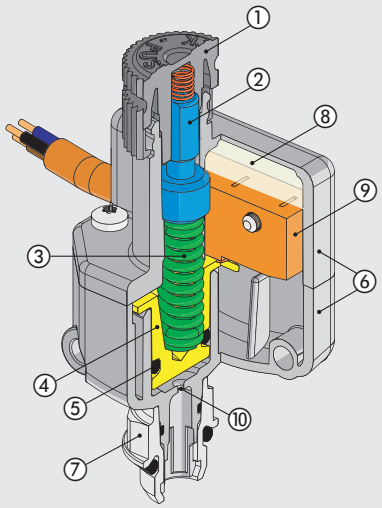
This type of pressure switch features a high degree of miniaturisation and a modern attractive design.
It can be installed in any position and also mounted onto a wall by means of two transversal holes.
In order to reduce wiring times, it is supplied ready assembled with a 2-metre electric cable or an M8 connector with a 300-mm cable.
The contact is the switching type, which means it can be normally open or normally closed.
A knurled push-lock handle is provided for regulation

TECHNICAL DATA

Adjustable pressure interval	bar	0.5 to 10
Hysteresis (not adjustable)	bar	from 0.4 to 0.8 (See diagram)
Maximum pressure	bar	15
	MPa	1.5
	psi	217
Operating temperature range at: 1 MPa; 10 bar; 145 psi	°C	50
	°F	122
Lower threaded port		G 1/8" - G 1/4"
Maximum current	A	2
Maximum voltage	V	250
Outside diameter of cable	mm	4.9
Number of wires and cross section		3 x 0.5 mm^2
Contacts		Normally-Open (NO) and Normally-Closed (NC)
Protection		IP65
Number of switchings		5 x 10^6
Fluid		Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous
Mounting position		In any position.
Weight	g	With cable 2 m: 12
		With M8 connector: 35

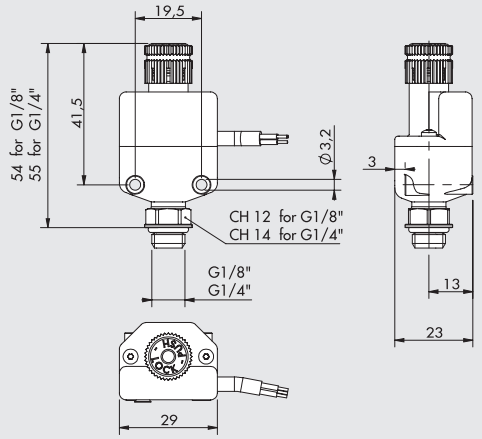
COMPONENTS

① Technopolymer adjusting push-lock handle
② Brass adjusting screw
③ Steel piston spring
④ Brass piston
⑤ NBR gaskets
⑥ Technopolymer bodies
⑦ Rotary connection in nickel-plated brass
⑧ Resin finish for IP65
⑨ Electrical contact
⑩ Choke to reduce peaks in pressure



ACCESSORIES

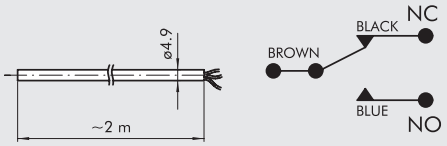
DIMENSIONS AND ORDERING CODES



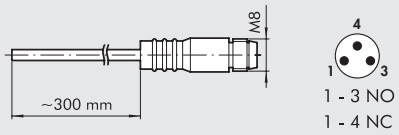
Code	Description
9000401	1/8 2A NO/NC pressure switch, 2-metre cable
9000402	1/8 2A NO/NC pressure switch, M8 connector
9000405	1/4 2A NO/NC pressure switch, 2-metre cable
9000406	1/4 2A NO/NC pressure switch, M8 connector

WIRING DIAGRAM

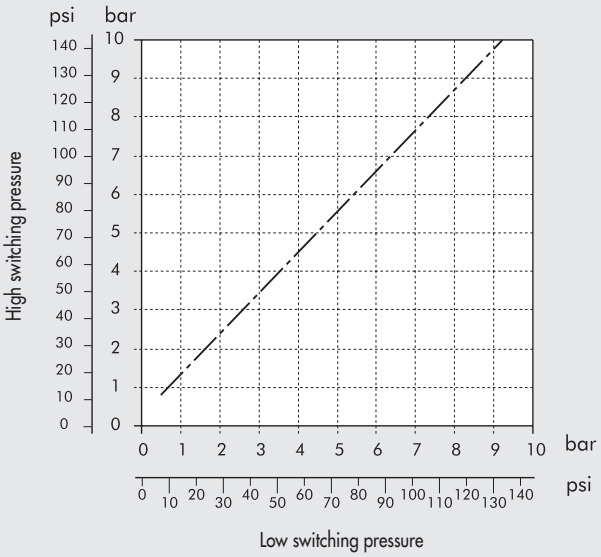
VERSION WITH CABLE



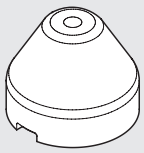
VERSION WITH M8 CONNECTOR



HYSTERESIS GRAPH



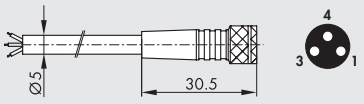
SECURITY KNOB



Code	Description
9200703	Security knob APR / pressure switch

Note: Pull outwards to remove the knob from the pressure switch on the unit.
Insert the security knob and regulate the pressure switch.
Then press the handle firmly to lock it in position. If the pressure switch needs to be reset, remove the security knob by forcing it laterally with a screwdriver.

M8 STRAIGHT CONNECTOR WITH CABLE

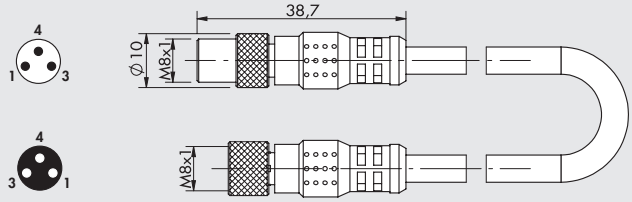


Pin	Cable color
1	Brown
3	Blue
4	Black

Code	Description
02400A0100	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 1 m
02400A0250	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 2.5 m
02400A0500	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 5 m
02400A1000	M8 female 3 PIN HIGH FLEX CL6 connector with cable L = 10 m

Very flexible cables, class 6 according to IEC 60228

M8 ADAPTER CABLE FOR CONNECTION TO THE EB 80 E CM DIGITAL INPUTS MODULE



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

Note: Can be used to connect the pressure switch to the module of digital INPUT **S01** of the EB 80 valves, to the additional M8 INPUT module of the CM valves and to the Profibus-DP IP67 M8 input. Contact type NO (Normally open)

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

NOTES

DIGITAL PRESSURE SWITCH

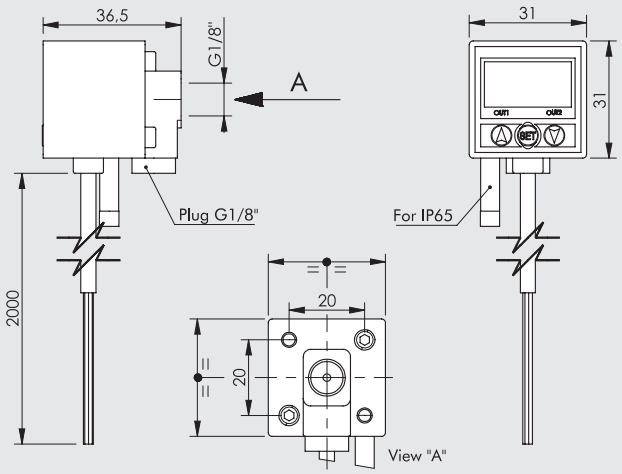
The digital pressure switch allows both the transmission of electrical pressure signals and the instant display of pressure. Two digital outputs, which can be set according to the two pressure values reached, are available. An analogue output of a voltage proportional to the pressure reading is also available. The values are clearly displayed on a LED video and different parameters can be entered from the keypad. Hysteresis can be adjusted and the unit of measurement for pressure can be modified. Two models are available:
Series **600**, characterised by G1/8" female pneumatic ports, one at the bottom and one at the back (pressure switch supplied with bottom port covered with a removable plug); one-colour LED; pre-wired cable.
Series **640**, characterised by R1/8" male pneumatic ports (taper thread) and M5 female thread inside on the rear side; two-colour LED displays that can be programmed depending on the pressure signal; cable with connector. It is available in analog and IO-Link versions.
A kit of accessories is provided for fixing to the top or wall, or to a panel.

TECHNICAL DATA		SERIES 600	SERIES 640	SERIES 640 IO-Link
Fieldbus		-		IO-Link version 1.1
Working pressure range		-1 to 10 bar / -0.1 to 1 MPa		
Maximum admissible pressure		15 bar / 1.5 MPa		
Readable resolution		0.01 bar / 0.001 MPa / 0.01 kg/cm² / 0.1 psi		
Power supply	VDC	12 to 24 ± 10%, max ripple 10%		24, Ripple (P-P) ≤10%
Current consumption	mA	≤ 55	≤ 40	≤35 (no load)
Outputs		-	-	**OUT 1**: IO-Link (C/Q Line) or PNP or NPN configurable
				OUT 2: Analogue or PNP or NPN configurable
Digital outputs		**PNP**: Number of outputs: 2 Max current: 80 mA Max voltage: 24 VDC Residual voltage: ≤ 1V (at 80 mA)	**PNP**: Number of outputs: 2 Max current: 125 mA Max voltage: 24 VDC Residual voltage: ≤ 1.5V (at 125 mA)	**PNP**: Open collector output Max current: 150 mA Max voltage: 24 VDC Residual voltage: ≤ 1V
				NPN: Open collector output Max current: 150 mA Max voltage: 30 VDC Residual voltage: ≤ 1V
Analogue output		1/5V ± 2.5% (0 bar - 1V; 10 bar - 5V; it doesn't read the vacum) Linearity ≤ 1% full scale Output impedance: about 1 kΩ		1/5V, 0/10V, 4/20 mA configurable Linearity ± 1.5% full scale 1/5V - 0/10V (impedance 1 kΩ), 4/20 mA (impedance 500 Ω)
Digital output repeatability		≤ ± 0.2% full scale ± 1 digits		
Hysteresis		Adjustable or fixed at 3 digits for operation within a pressure range		
Actuation response time	ms	≤ 2.5		
Interference suppression selectable at	ms	24, 192, 768	25, 100, 250, 500, 1000, 1500	
Short-circuit protection at the outputs		Yes		
LED 7 segment display		3 ½ digit display		
Display colours		red	red/green	
Display accuracy		±2% full scale ±1 digit, ambient temperature 25° ±3°C		
Indicators		green LED (output 1), red LED (output 2)	orange LED (output 1 and output 2)	Green or Red LED configurable
Thermal characteristic		≤ ±2% full scale of the calibration pressure (at 25°C), in the temperature range 0 - 50°C		
Compressed air ports		2 G1/8" female thread	1 R1/8" male taper thread (M5 female inside)	
Power cable		2 m, with five 0.15 mm² wires, oil-resistant		
		pre-wired cable, not removable	removable connector	
Communication speed	Kbps	-		38.4 (COM2)
Vendor ID / Device ID		-		1046 (hex 0x0416) / 72 (hex 0x000048)
Minimum cycle time	ms	-		3
Process data length		-		2 byte di Input (2 bit BCD;14 bit PDV)
Weight	g	105, including 2 m cable	86, including 2 m cable	
AMBIENT CONDITIONS				
Fluid		Filtered and unlubricated air, inert non-corrosive and non-explosive gas		
Degree of protection		IP 40 - IP65 (with accessory protection assembled)		IP 40
Temperature range	°C	0 to 50		
Storage temperature	°C	-20 to +60, but without condensate or ice	-10 to +60, but without condensate or ice	
Ambient humidity		35 to 85% relative humidity; no condensate		
Insulation voltage		1000 VAC for one minute between casing and cable		
Resistance of Insulation		Min. 50 MΩ minimo (at 500 VDC between casing and cable)		
Vibration admitted		1.5 mm amplitude or 10G with scanning every minute from 10 to 55 Hz at 10 Hz, for 2 hours in each direction x, y and z		
Impact		980 m/s² (100 g), 3 times in each direction x, y and z	100 m/s² (10 g), 3 times in each direction x, y and z	

METAL WORK PNEUMATIC

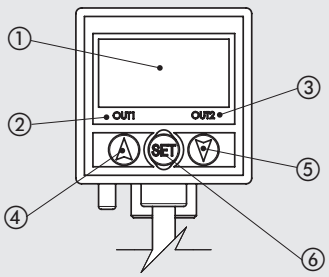
SERIES 600

DIMENSIONS AND ORDERING CODES



Code	Description
9000600	Digital pressure switch series 600

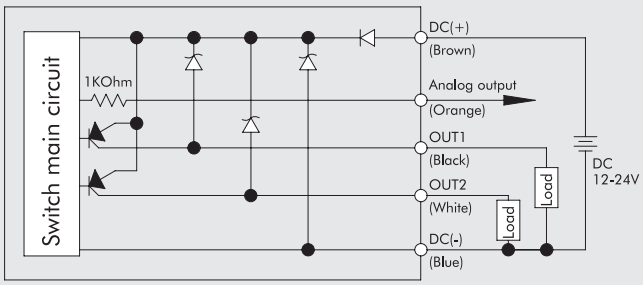
USER INTERFACE



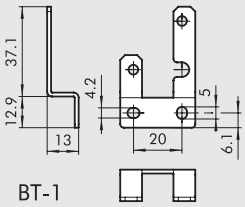
① 3 ½ digit display, red: showing the pressure reading, all setting information, and the error code
② Digital output 1: green LED
③ Digital output 2: red LED
④ Button: modifies the value of the selected parameter
⑤ Button: modifies the value of the selected parameter
⑥ Setting button: selects the parameter to modify

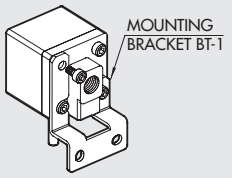
WIRING DIAGRAM

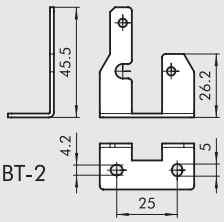
PNP output

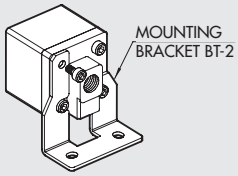


FIXING BRACKET KIT





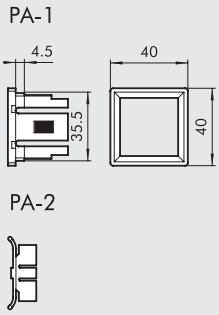


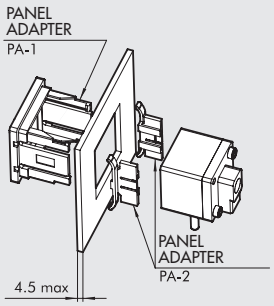


Code	Description
9000601	Kit of fixing brackets for digital pressure switches series 600

N.B.: Each kit contains a bracket for fixing on the back and one for fixing at the bottom.

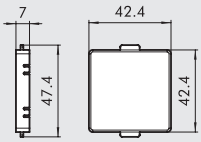
PANEL FIXING KIT

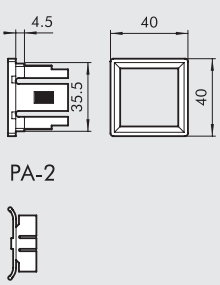


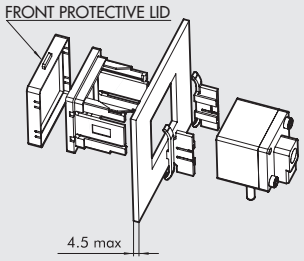


Code	Description
9000602	Kit for panel fixing for the digital pressure switch series 600

PANEL FIXING KIT WITH PROTECTION



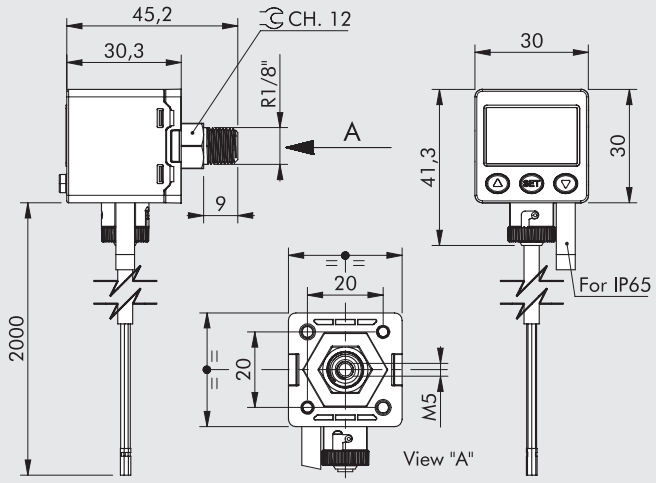




Code	Description
9000603	Kit for panel fixing with protection for the digital pressure switch series 600

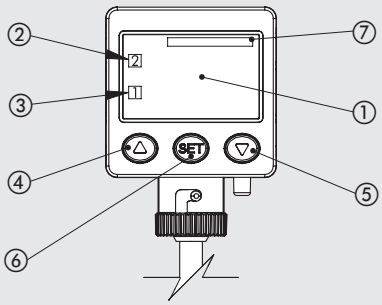
SERIES 640

DIMENSIONS AND ORDERING CODES



Code	Description
9000640	Digital pressure switch series 640

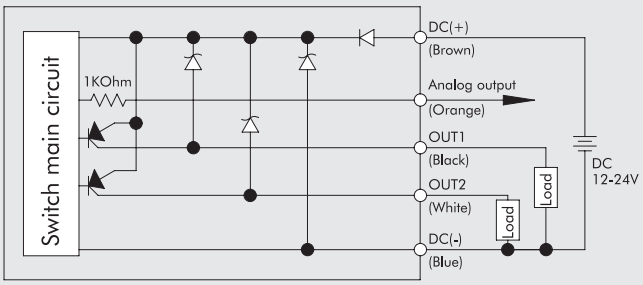
USER INTERFACE



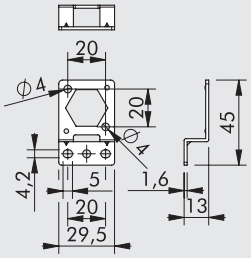
① 3 ½ digit display, green and red: it displays the unit of measurement, the pressure value read, all setting information, the error code.
② Digital output 1: orange LED
③ Digital output 2: orange LED
④ Button: modifies the value of the selected parameter
⑤ Button: modifies the value of the selected parameter
⑥ Setting button: selects the parameter to modify
⑦ Unit of measurement selected

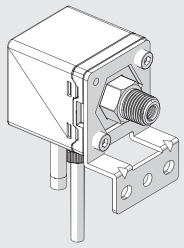
WIRING DIAGRAM

PNP output



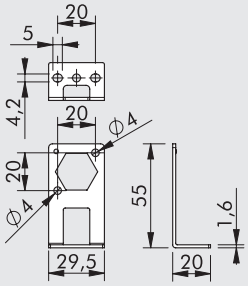
PARALLEL FIXING BRACKET KIT

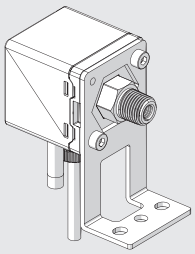




Code	Description
9000641	Parallel fixing bracket kit for digital pressure switch series 640

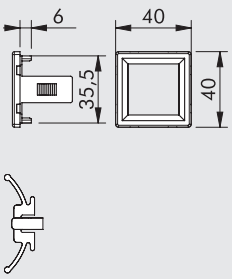
90° FIXING BRACKET KIT

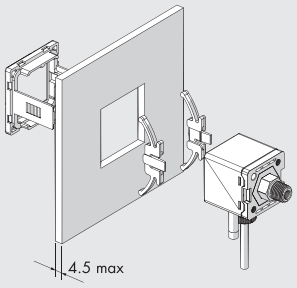




Code	Description
9000644	90° fixing bracket kit for digital pressure switch series 640

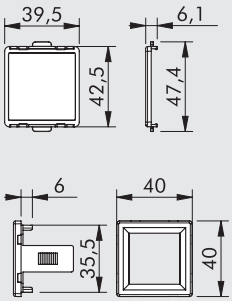
PANEL FIXING KIT

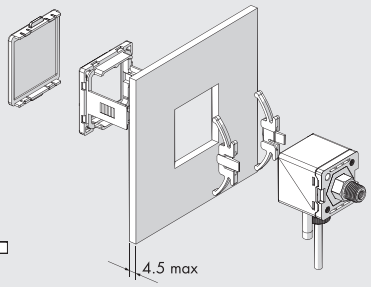




Code	Description
9000642	Kit for panel fixing for the digital pressure switch series 640

PANEL FIXING KIT WITH PROTECTION

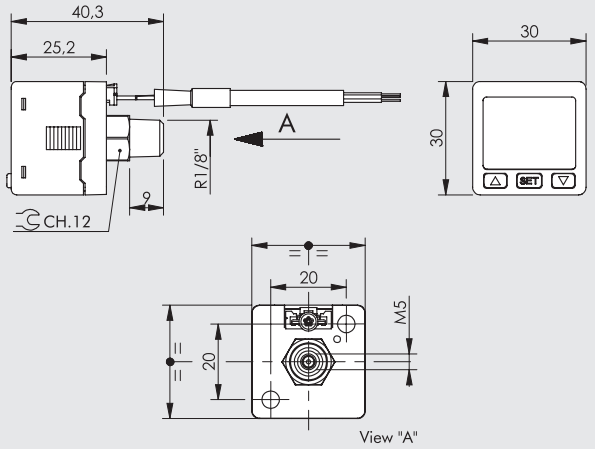




Code	Description
9000643	Kit for panel fixing with protection for the digital pressure switch series 640

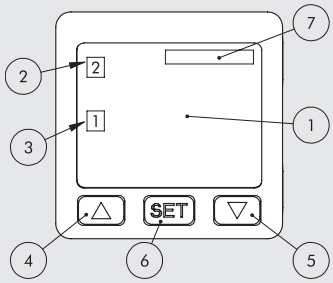
SERIES 640 IO-Link

DIMENSIONS AND ORDERING CODES



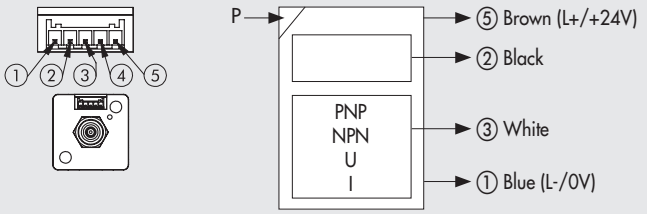
Code	Description
9000640L	Digital pressure switch series 640 IO-Link

USER INTERFACE



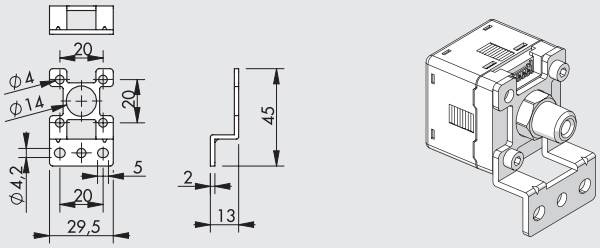
① 3 ½ digit display, green and red: it displays the unit of measurement, the pressure value read, all setting information, the error code.
② Digital output 1: orange LED
③ Digital output 2: orange LED
④ Button: modifies the value of the selected parameter
⑤ Button: modifies the value of the selected parameter
⑥ Setting button: selects the parameter to modify
⑦ Unit of measurement selected

WIRING DIAGRAM



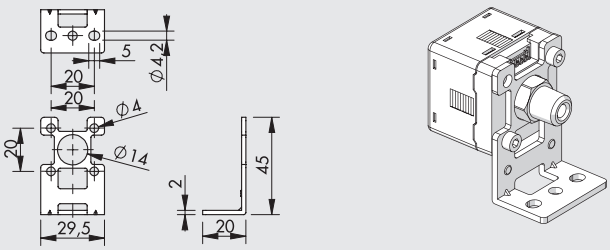
PIN	Color	Function
1	Blue	0V power supply
2	Black	Digital output OUT 1 or IO-Link (C/Q Line)
3	White	Digital output OUT 2 or analog output (1 to 5V, 0 to 10V, 4 to 20 mA)
4	Orange	Disconnect
5	Brown	+24VDC power supply

PARALLEL FIXING BRACKET KIT



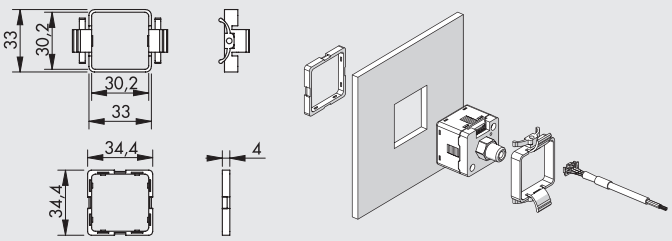
Code	Description
9000641L	Parallel fixing bracket kit for digital pressure switch series 640 IO-Link

90° FIXING BRACKET KIT



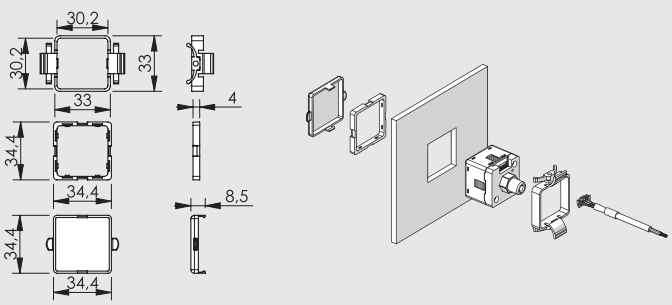
Code	Description
9000644L	90° fixing bracket kit for digital pressure switch series 640 IO-Link

PANEL FIXING KIT



Code	Description
9000642L	Kit for panel fixing for the digital pressure switch series 640 IO-Link

PANEL FIXING KIT WITH PROTECTION



Code	Description
9000643L	Kit for panel fixing with protection for the digital pressure switch series 640 IO-Link

FLOWMETER SERIES FLUX 0

The flowmeters FLUX 0 series are miniaturized devices used to measure air flow rate. They come complete with push-in pipe fittings.
Numerous functions can be viewed and set on a three-colour display.
They have 2 digital and one analogue outputs, each of which can be freely set to measure the instantaneous flow rate, the accumulated flow rate or the pressure, therefore they can perform the function of flowmeter, flow switch, pressure gauge or pressure switch.
They feature reduced dimensions, with a width of only 17 mm.
The FLUX 0 flowmeters comes in two models: one for flow rates up to 50 Nl/min, the other up to 200 Nl/min, and are can be powered at 12 and 24 VDC.

TECHNICAL DATA		FLUX 0 50 L	FLUX 0 200 L
Measured flow range	Nl/min	0 - 50	0 - 200
Direction of flow		Unidirectional	
Working pressure range	bar	-0.9 to 8	
	MPa	-0.09 to 0.8	
	psi	-13 to 116	
Maximum admissible pressure	bar	10	
Pipe diameter for push-in fitting	mm	8	
Connecting cable	VDC	12 to 24 ± 10%, ripple max 10%	
Current consumption	mA	≤ 50	
Power cable		Cable Ø 4 length 2 m, oil resistant, 26 AGW (6 x 0.15 mm²)	
Weight	g	100 (including cable)	
DISPLAY			
Instant flow rate			
Display range	Nl/min	0 - 50	0 - 200
Minimum setting scale	Nl/min	0.1	1
	ft³/min	1	1
Cumulative flow rate			
Display range		9999999.9	99999999
Minimum setting scale	Nl	0.1	1
	ft³	1	1
Pressure			
Display range	kPa	-100 to 1000	
Minimum setting scale	kPa	1	
	bar	0.01	
	psi	0.1	
PRECISION			
Flow rate			
Guaranteed measuring range		2 to 100 % FS	
Display accuracy		± 3 % FS ± 1 digit ▲	
Analogue output accuracy		± 5 % FS ▲	
Repeatability		± 1 % FS ± 1 digit ■	
Linearity		± 3 % FS ■	
Temperature characteristic		± 2 % FS for a temperature range of 15-35°C; ± 5 % FS for a temperature range of 0-15°C or 35-50°C ■	
Pressure characteristic		± 5 % FS ± 1 digit ✱	
Pressure			
Guaranteed measuring range		0 to 100 % FS	
Display accuracy		± 2 % FS ± 1 digit ●	
Analogue output accuracy		± 2.5 % FS ●	
Repeatability		± 0.2 % FS ± 1 digit ●	
Linearity		± 1 % FS ●	
Temperature characteristic		± 2 % FS ●	

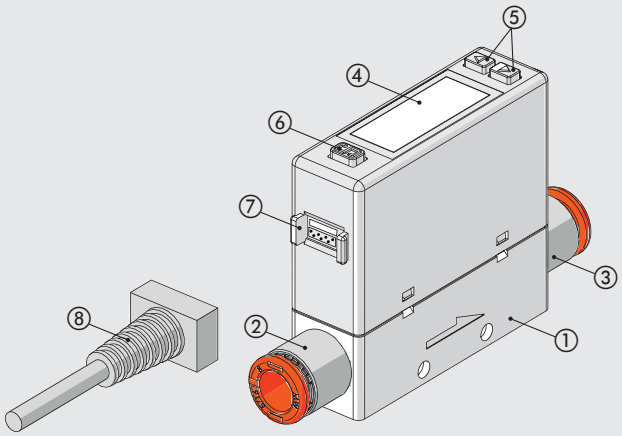
▲ Data valid under these conditions: input pressure 3 bar, output pressure 1 bar, temperature 25°C
■ Data valid under these conditions: output pressure 1 bar, temperature 25°C
✱ Data valid under these conditions: -90 to 800 kPa, output pressure 1 bar, temperature 25°C
● Data valid under these conditions: flow rate 0 Nl/min, temperature 25°C

METAL WORK PNEUMATIC

TECHNICAL DATA		FLUX 0 50 L	FLUX 0 200 L
DIGITAL OUTPUTS			
N ° outputs		2 PNP	
Max current	mA	125	
Max voltage	VDC	24	
Residual voltage	V	≤ 1.5 V	
Response time, with flow rate setting	ms	50, 80, 120, 200, 400, 800, 1500 (default 800)	
Response time, with pressure setting	ms	2.5, 25, 100, 250, 500, 1000, 1500 (default 2.5)	
Response mode, with flow rate setting		Hysteresis mode, window comparison mode, cumulative mode, cumulative pulse mode ◆	
		Normally open or normally closed	
Response mode, with pressure mode setting		One-point setting mode, hysteresis mode, window comparison mode. Normally open or normally closed ◆	
Hysteresis		Adjustable	
Short-circuit protection at output		Yes	
Cumulative pulse output	Nl/impulse	0.5	2
	ft^3/impulse	2	7
ANALOGUE OUTPUT			
Version with voltage	V	1 to 5, 1 kΩ impedance	
Version with current	mA	4 to 20, with ≤ 300 Ω impedance	
Response time, with flow rate setting	ms	≤ 100	
Response time, with pressure setting	ms	≤ 50	
AMBIENT CONDITIONS			
Fluid		Filtered, dried and unlubricated air, inert non-corrosive and non-explosive gas.	
		A 5 µm filter and a 0.01 µm oil purifier are recommended	
Degree of protection		IP 40	
Temperature range	°C	0 to 50	
Storage temperature	°C	0 to 60 , but without condensate or ice	
Ambient humidity		35 to 85% relative humidity; no condensate	
Insulation voltage		1000 VAC for one minute between casing and cable	
Resistance of Insulation		Min. 50 MΩ (at 500VDC between casing and cable)	
Vibration admitted		1.5 mm amplitude or 10 g with scanning every minute from 10 to 55 Hz at 10 Hz, for 2 hours in each direction x, y and z	
Impact		100 m/s^2 (10 g), 3 times in each direction x, y and z	
Electromagnetic compatibility (EMC)		IEC 61000-6-2, IEC 61000-6-4	

◆ Refer to the user manual for further details

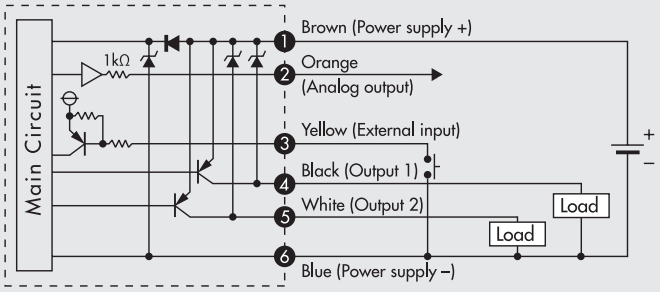
COMPONENTS



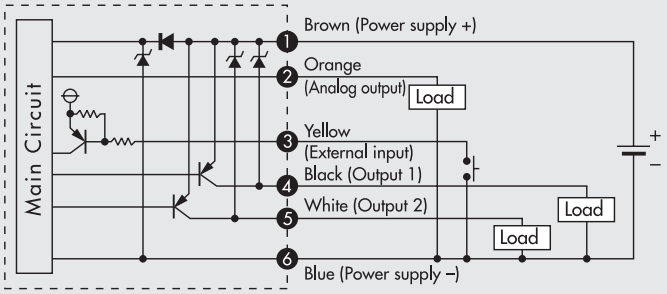
① BODY: technopolymer
② INPUT AUTOMATIC FITTING: nickel-plated brass and technopolymer
③ OUTPUT AUTOMATIC FITTING: nickel-plated brass and technopolymer
④ DISPLAY LCD
⑤ BUTTON: silicone.
Used to select the operating mode, ON/FF switching and value setting
⑥ BUTTON: silicone.
Used to select the operating mode and confirm the set values
⑦ CONNECTOR
⑧ CONNECTOR WITH CABLE: length 2 meters

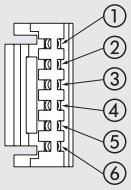
WIRING DIAGRAMS

Analog voltage output /external input



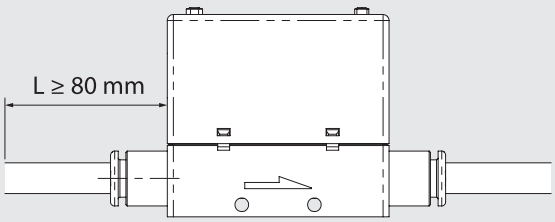
Analog current output /external input





PIN	Cable color	Function
1	Brown	Power supply (12 to 24 VDC)
2	Orange	Analog voltage output: 1 to 5 V Analog current output: 4 to 20 mA
3	Yellow	External input
4	Black	Output 1 (Max. load current: 125 mA)
5	White	Output 2 (Max. load current: 125 mA)
6	Blue	0V (GND)

PNEUMATIC CONNECTION

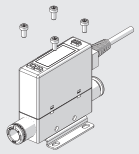


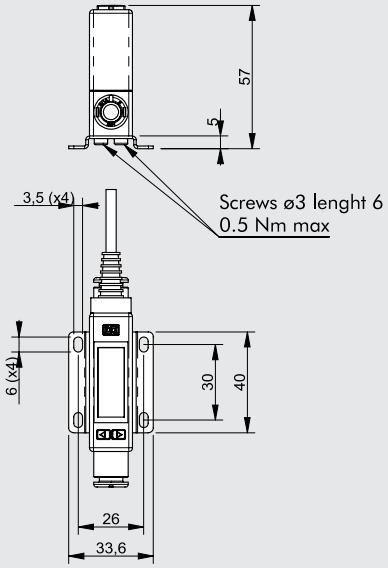
The input pipe must have a straight section of at least 80 mm in length or more, otherwise the measurement will be inaccurate.

NOTES

FIXING OPTIONS

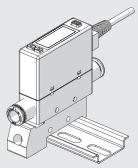
Ⓐ

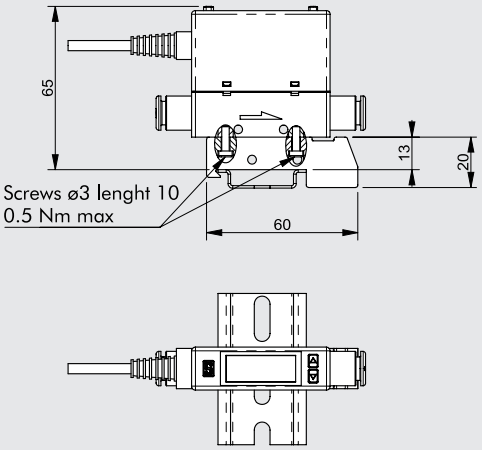




Fixing with bracket code 90009A001 using the included Ø3 self-tapping screws and M3 screws

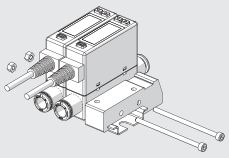
Ⓑ

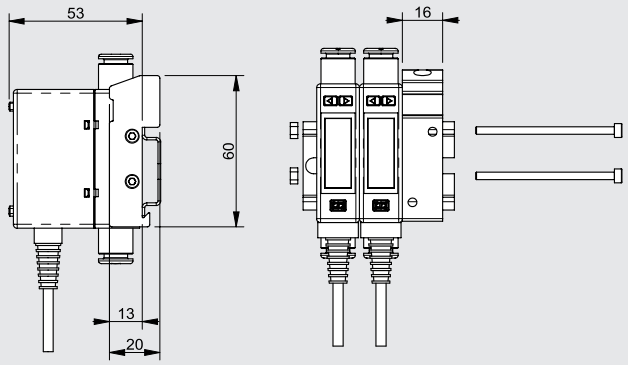




Single fixing on DIN bar with code bracket 90009A002 using the included Ø3 self-tapping screws

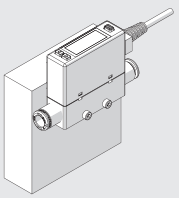
Ⓒ

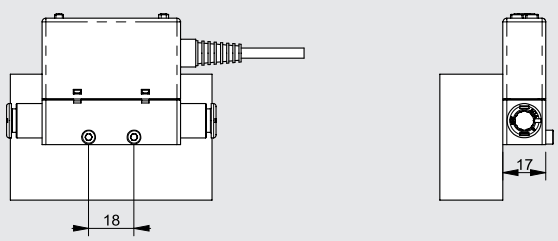




Multiple fixing on DIN bar with code bracket 90009A002 using the lateral holes Ø3.4 with M3 screws and nuts

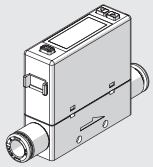
Ⓓ

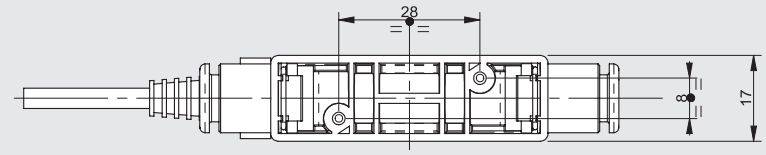


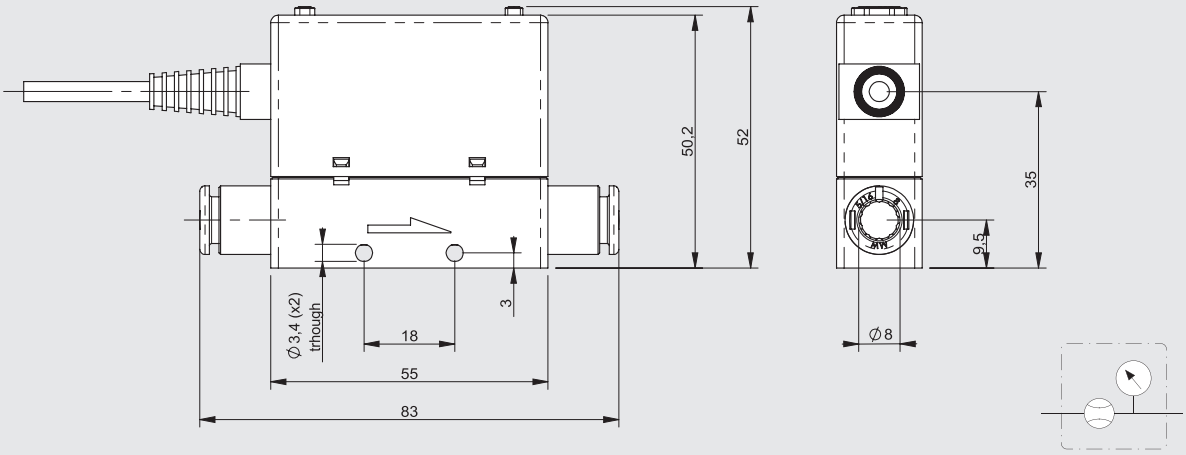


Side fixing using M3 screws, minimum length 23 mm

DIMENSIONS AND ORDERING CODES



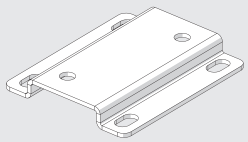




Code	Description
9000958A2	Flowmeter FLUX 0 50L Ø8 PNP 4-20 mA 2 m
9000958V2	Flowmeter FLUX 0 50L Ø8 PNP 1-5V 2 m
9000978A2	Flowmeter FLUX 0 200L Ø8 PNP 4-20 mA 2 m
9000978V2	Flowmeter FLUX 0 200L Ø8 PNP 1-5V 2 m

ACCESSORIES

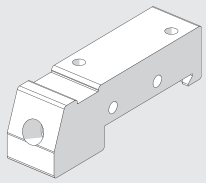
FIXING BRACKET



Code	Description
90009A001	Fixing bracket FLUX 0

Note: Comes complete with two 3x6 screws for plastic (max. torque 0.5 Nm)

CONNECTION BRACKETS ON BAR OMEGA (DIN EN 50022)



Code	Description
90009A002	Connection brackets on DIN bar FLUX 0

Note: Comes complete with two 3x10 screws for plastic (max. torque 0.5 Nm)

METAL WORK PNEUMATIC

NOTES

FLOWMETER SERIES FLUX 1 - 2

FLUX 1 and FLUX 2 flowmeters are devices used to measure the flow rate of compressed air in various areas of a pneumatic system.
The FLUX 1 comes with an anodized aluminium body and ½" threaded inlets and outlets for flow rates of up to 2,000 Nl/min, while the FLUX 2 has an anodized aluminium body and 1" threaded inlets and oulets for flow rates of up to 4,000 Nl/min. They are both available in the versions with or without display, with an M12 connector for power supply and signal control. The versions with display also feature a pressure and temperature transducer that minimises measurement error within the operating temperature range thanks to the algorithm implemented in the device software.
Flow rate, pressure and temperature values as well as graphs of instantaneous and cumulative values are displayed.
The electrical power used to produce the measured flow is also calculated and displayed.
A digital output (configurable for flow rate, pressure or total consumption) and an analogue output (configurable for voltage or current) are available for both sizes. Versions with IO-Link interface with similar characteristics are also available.
The Wireless versions are able to communicate with Ethernet networks (MQTT communication) and mobile devices, such as smartphones and tablets with Bluetooth® connection through a dedicated APP.
Through the APP, in addition to viewing the measured quantities, it is possible to change all the settings of the flowmeters and view the measured values in real time.
All FLUX flowmeters can be supplied with voltage ranging from 12VDC and 24VDC and perform the functions of a flowmeter and flow switch; all versions with a display can also be used as a pressure gauge or pressure switch.
The inner air ducts of the flowmeters are designed to ensure precise flow readings at all times without creating pressure drops between instrument inlet and outlet.

TECHNICAL DATA		FLUX 1	FLUX 2
Measured flow range	Nl/min	0 to 2000	0 to 4000
Fluid		Compressed air free of any lubricants and inert gases	
Fluid temperature	°C	0 to 50	
Direction of flow		Unidirectional	
Measuring method		Thermal	
Working pressure range	bar	0 to 10	
	MPa	0 to 1	
	psi	0 to 145	
Pressure drop		None	
Temperature range	°C	0 to 50	
Threaded ports		1/2"	1"
Degree of protection		IP65	
Weight	g	585	705
IO-Link supply voltage range	VDC	15 - 27 (with IO-Link Master)	
Current consumption	mA	80 mA (at 24VDC)	
Power supply voltage range in the analogue version	VDC	12 -10% 24 +30%	
Maximum admissible voltage	VDC	32 ▲	
Current absorption	mA	min 50 - max 120	
DISPLAY			
Instant flow rate	Nl/min	0 to 2200	0 to 4400
Cumulative flow rate	Nl	999.999.999	
	Nm^3	999.999	
	Nft^3	35.320.000	
Pressure ■	bar	0 to 10	
Resolution	bar	0.01	

▲ IMPORTANT! Voltage greater than 32VDC will damage the system irreparably.
■ In versions with pressure transducer.

TECHNICAL DATA		FLUX 1	FLUX 2
PRECISION ●			
Flow rate			
Measuring range		0 to 100% of the full scale	
Single unit display accuracy		from 0 to 20% of the FS - better than ±1% of the FS	
		from 20% to 100% of the FS - better than ±3% of the FS	
Display accuracy of unit installed in an SY unit ▲		from 0 to 20% of the FS - better than ±2% of the FS	
		from 20% to 100% of the FS - better than ±6% of the FS	
Repeatability		±1% of the FS	
Temperature characteristic			
Version with pressure transducer		Automatic compensation of fluid temperature from 0 to 50°	
		Between 0 and 15°C and between 35 and 50°C ±0.6% of the FS every °C	
Version without pressure transducer		Without compensation, between 0 and 15°C and between 35 and 50°C ±1.2 % of the FS every °C	
Pressure			
Measuring range	bar	0 to 10	
Display accuracy		±2% of the FS	
Analogue output			
Output signal			
Analogue output powered		0 to 10 VDC or 0 to 5 VDC (I max 20 mA)	
		Output impedance about 1 kΩ	
Analogue output current		4 to 20 mA	
		Max. load impedance 500 Ω	
Analogue output accuracy		±0.1% of the value read	
DIGITAL OUTPUT		n° 1 open collector output NC / NO - PNP / NPN	
Maximum current	mA	100 mA	
Residual voltage	VDC	20 mV (with load)	
Operating mode, if set on flow rate		Level switch, Band switch, Value switch, Cyclic pulse	
Min. accumulated volume by pulse (pulse width 100 msec)	Nl	10	20
	Nm^3	1	
	Nft^3	1	
Response mode, with pressure mode setting		Level switch, Band switch	
Hysteresis		Adjustable	
Short-circuit protection at output		Yes	
DIGITAL INPUT ◆		n° 1 input for the reset of the consumption counters NO – PNP/NPN	
Type of input		Voltage12 -10% 24 +30%	
Activation time		min 1 sec	

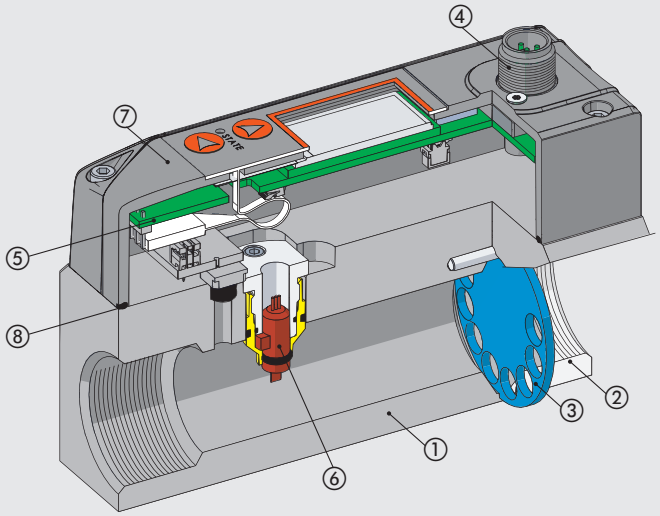
● Accuracy referred to compressed air gas, at a pressure of 5 bar and a fluid temperature of 25°C ±10°C.

▲ In order to guarantee the stated measurement accuracy and to prevent lubricant residues from damaging the measurement sensor, **a filter has to be mounted at the FLUX inlet. If the device is fitted with a Syntesi® filter, the SYN filter parameter must be enabled in the system menu to guarantee the stated accuracy (function available only for the version with display).**

◆ Version without display: the digital input selects the type of analogue output from 0 to 10 V and 4 to 20 mA.

COMPONENTS

① BODY: anodized aluminium
② INLET BUSHING: anodized aluminium
③ FLOW RECTIFIER DISC: passivated aluminium
④ CONNECTOR M12: technopolymer
⑤ ELECTRONIC BOARD
⑥ FLOW SENSOR
⑦ COVER: technopolymer
⑧ GASKETS: NBR



WIRING DIAGRAMS

Wiring diagram, analogue version

M12 male connector, A encoding

Pin	Function description	Lead colour
1	+24VDC power supply	Brown
2	Digital output	White
3	0VDC power supply	Blue
4	Digital input	Black
5	Analogue output	Gray

Wiring diagram, IO-Link version

M12 male connector, A encoding

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

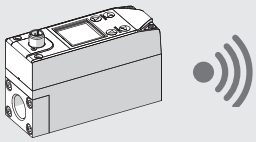
Pin	Signal	Description of Port Class A	Lead colour
1	L+	+24VDC power supply	Brown
2	NC	/	White
3	L -	0VDC power supply	Blue
4	C/Q	IO-Link communication	Black
5	NC	/	Gray

WIRELESS CONNECTION

With the Wireless versions of FLUX 1 and 2, you can establish a connection to at Wi-Fi® network via an access point or gateway to monitor and collect all the measured gas values.

Connection to a MQTT broker via an access point

MQTT



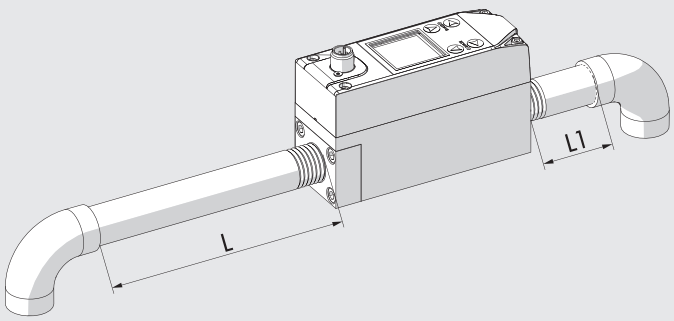
Broker MQTT

The Metal Work FluxUp App can be used for connection via Bluetooth® to Metal Work flow meters in the FLUX 1 and 2 series with a wireless interface, from Android® smartphone and iOS®.
With the Metal Work FluxUp App, you can view all data recorded by the FLUX and set all operating parameters in real time.

PNEUMATIC CONNECTION

To connect the inlet side, use a straight pipe* at least 150 mm-long for FLUX 1 and at least 200 mm-long for FLUX 2. If straight piping is not installed, the accuracy may vary from what is stated.

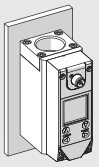
* **Straight pipe**: the pipe must be straight with a constant cross-section.

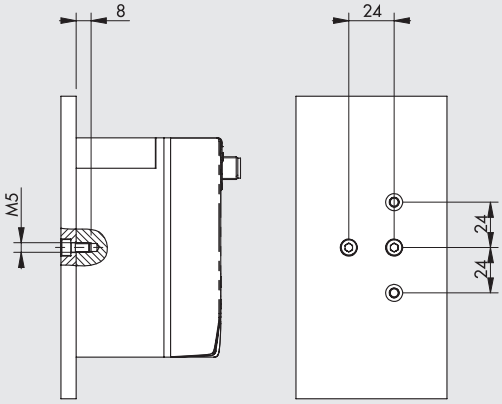


FLUX 1	L ≥150 mm	L1≥50 mm
FLUX 2	L ≥200 mm	L1≥50 mm

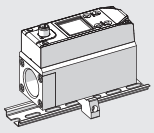
FIXING OPTIONS

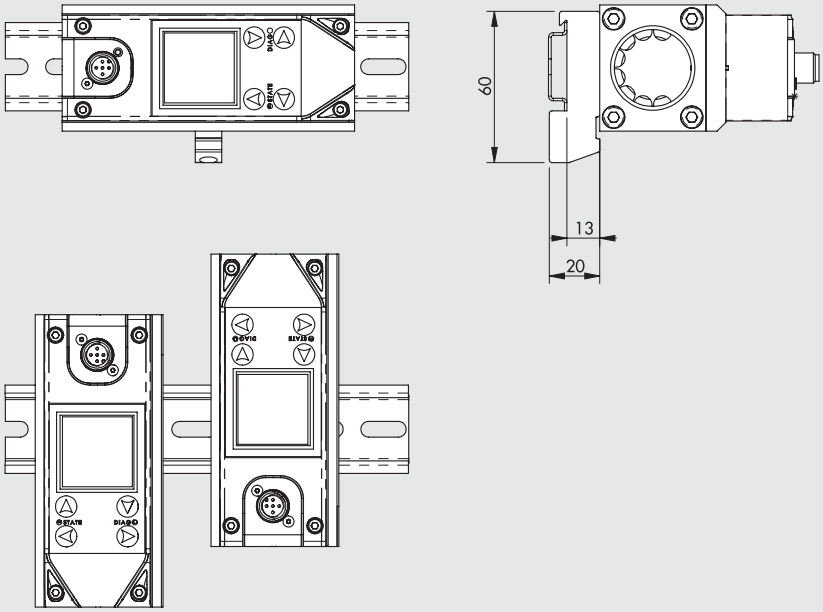
Wall mounting by means M5 screws.





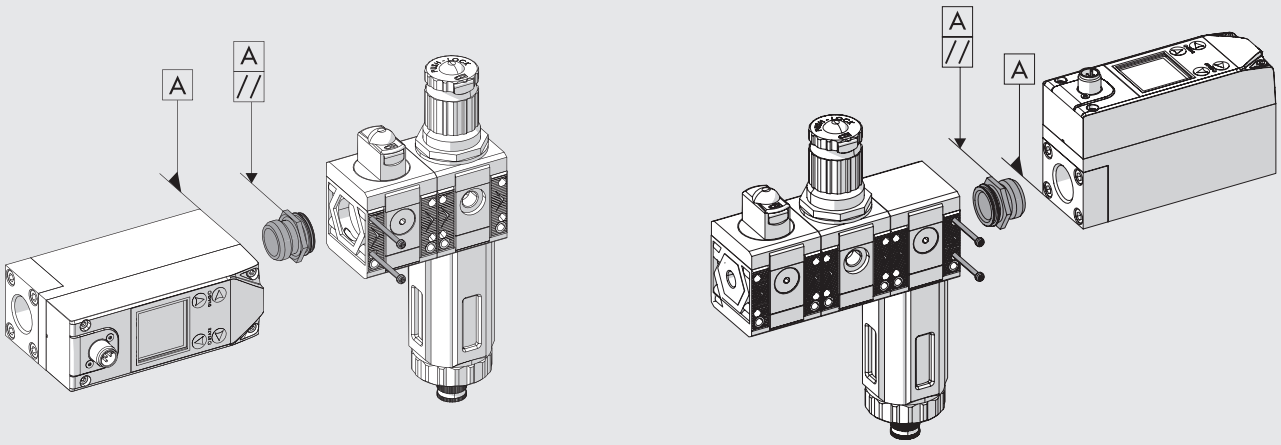
DIN rail mounting with bracket code 900099A001, using the M5x14 screws provided.





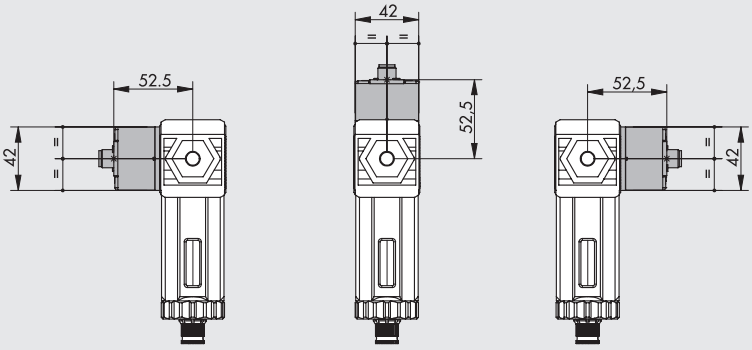
NOTES

ASSEMBLY DIAGRAM WITH SYNTESI®

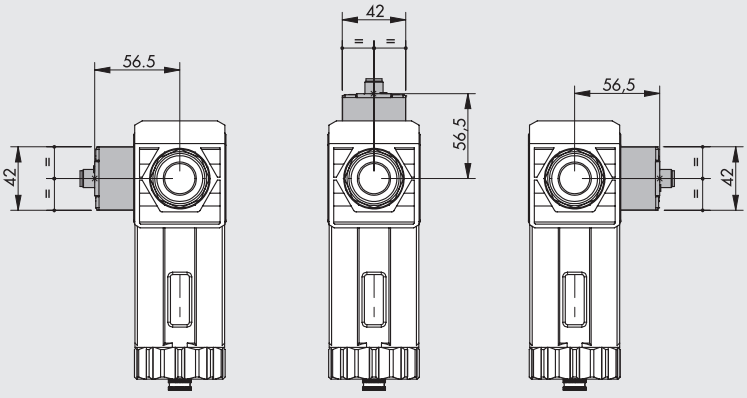


1) Tighten the connection bushing on the flowmeter until it is flush (it is advisable to use sealant on the male thread of the bushing to ensure a perfect seal).
2) Unscrew the bushing slightly until two surfaces of the hexagon are parallel to the body of FLUX.
3) Insert the bushing into the Syntesi® unit.
4) Tighten the two self-tapping screws in the Syntesi® unit to a torque of 0.4 Nm for size 1 and torque 2.5 Nm for size 2.

FLUX 1 + SYNTESI® 1



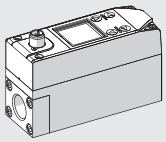
FLUX 2 + SYNTESI® 2

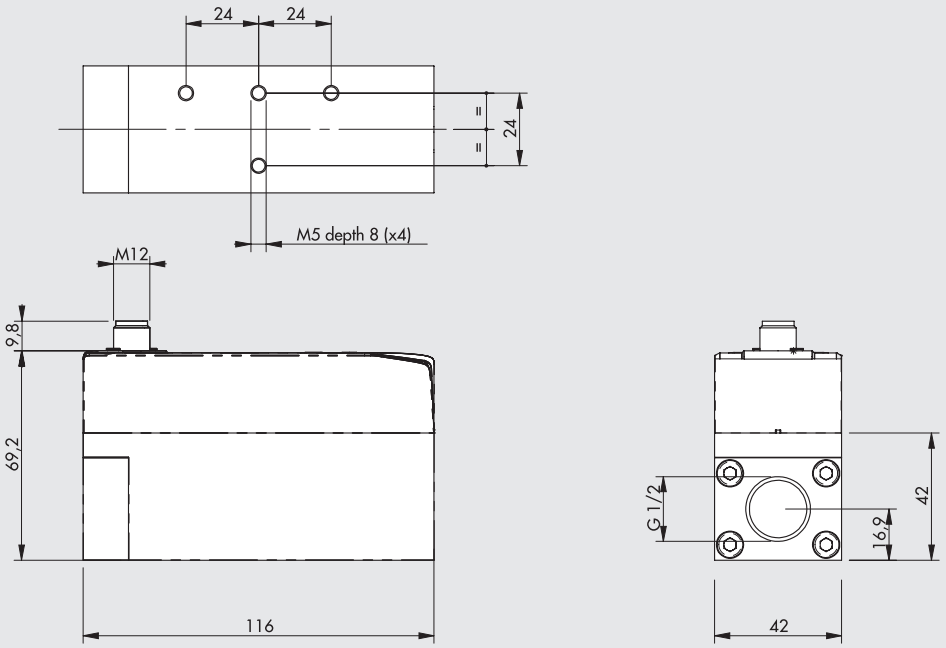


N.B.: If the FLUX is used downstream a Syntesi® filter, fit it in one of the three positions shown in the figure.

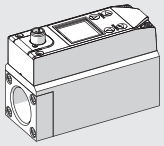
DIMENSIONS AND ORDERING CODES

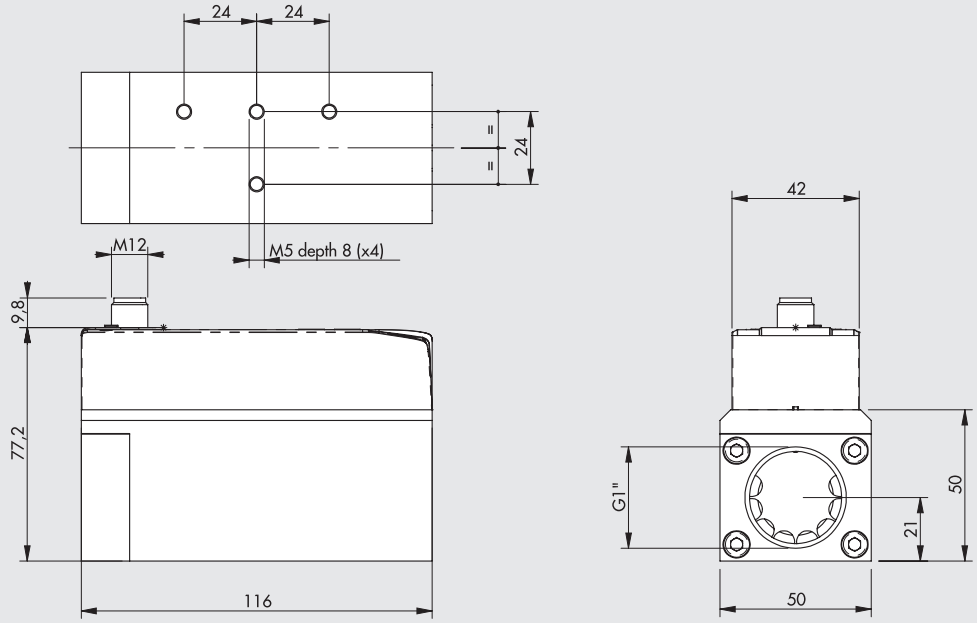
FLUX 1





FLUX 2

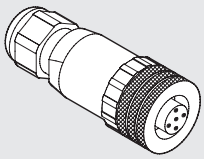




Symbol	Code	Description
	9000991000	Flowmeter FLUX 1, coupling 1/2", analog output 0-10V 4-20 mA
	9000991200	Flowmeter FLUX 1, coupling 1/2", IO-Link
	9000992000	Flowmeter FLUX 2, coupling 1", analog output 0-10V 4-20 mA
	9000992200	Flowmeter FLUX 2, coupling 1", IO-Link
	9000991510	Flowmeter FLUX 1, coupling 1/2", digital output PNP 0-10V 4-20 mA, with display and pressure sensor
	9000991511	Flowmeter FLUX 1, coupling 1/2", digital output PNP 0-10V 4-20 mA, with display, pressure sensor and Wi-Fi®
	9000991610	Flowmeter FLUX 1, coupling 1/2", IO-Link with display and pressure sensor
	9000991611	Flowmeter FLUX 1, coupling 1/2", IO-Link with display, pressure sensor and Wi-Fi®
	9000992510	Flowmeter FLUX 2, coupling 1", digital output PNP 0-10V 4-20 mA, with display and pressure sensor
	9000992511	Flowmeter FLUX 2, coupling 1", digital output PNP 0-10V 4-20 mA, with display, pressure sensor and Wi-Fi®
	9000992610	Flowmeter FLUX 2, coupling 1", IO-Link with display and pressure sensor
	9000992611	Flowmeter FLUX 2, coupling 1", IO-Link with display, pressure sensor and Wi-Fi®

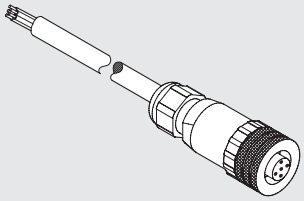
ACCESSORIES

STRAIGHT CONNECTOR



Code	Description
W0970513001	5-PIN M12x1 straight connector

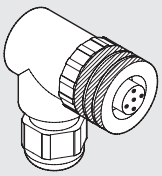
STRAIGHT CONNECTOR WITH WIRE



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

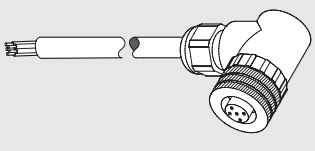
Code	Description
W0970513002	5-PIN M12x1 straight connector with wire L = 5 m

90° CONNECTOR



Code	Description
W0970513003	M12x1 5-PIN 90° connector

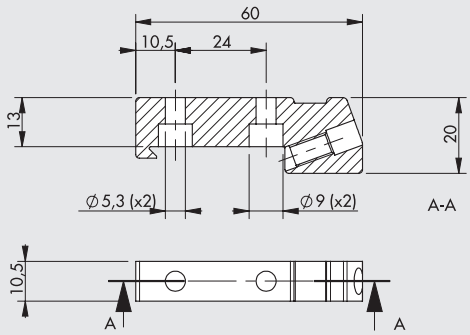
90° CONNECTOR WITH WIRE



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

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

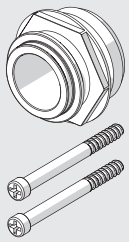
CONNECTION BRACKETS ON THE BAR (DIN EN50022)



Code	Description
900099A001	Connection brackets on DIN bar, FLUX 1 - 2

Note: complete with 2 M5x14 screws and 1 M6 grub screw

SY1 - SY2 KIT FOR CONNECTION



Code	Description
900099A002	Adapter FLUX 1 - SY1
900099A003	Adapter FLUX 2 - SY2

Max torque for screw, 0.4 Nm for SY1
Max torque for screw, 2.5 Nm for SY2

NOTES

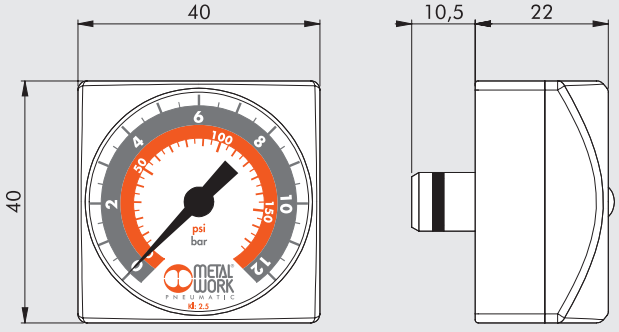
SQUARE DIAL PRESSURE GAUGE

A compact pressure gauge with a square dial to go with air treatment units.
A PTFE ring seal mounted on the 1/8" thread of the fitting ensures a perfect pneumatic seal. To mount it, screw the gauge in as far as it will go, then loosen enough to align the dial. A sealant is not required. The pressure gauge has a neck to dampen pressure vibration and absorb water hammer. This improves overall reliability and guarantees longer life.

TECHNICAL DATA

Fitting thread		G 1/8"
Pressure range	bar	0-4 / 0-12
	psi	0-60 / 0-175
Precision class	EN 837	2.5
Pneumatic seal		PTFE ring seal
Vibration damping		Yes

DIMENSIONS



ORDERING CODES

Code	Description
9700109	M 40x40 1/8 04
9700110	M 40x40 1/8 012