

Controllers CECC

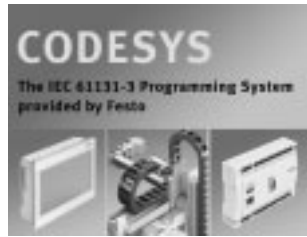


Controllers CECC

Key features



Application Controller



The controllers CECC are modern, compact and versatile controllers that enable programming with CODESYS according to IEC 61131-3.

State-of-the-art programming

CODESYS V3 pbF offers a user-friendly interface with the following new functions:

- Object-oriented programming
- Modern editors for simplified input
- Simplified configuration for fieldbus

• New configurator for IO-Link masters



- Multiple controllers in one project
- Improved troubleshooting function
- Simplified project navigation

Basic functions of the CECC-D

The controllers CECC (CECC-D) offer the following basic functions:

- 12 digital inputs, 8 digital outputs, additionally 2 high-speed counters up to 180 kHz
- Ethernet 10/100 Mbps, Modbus TCP client/server, EasyIP, TCP/IP, OPC Server available

- CANopen master: connection of the electric drives
- USB interface for data transfer
- Can be connected directly with modern HMI devices: CDPX

Additional functions of the CECC-LK

- This variant of the CECC offers four IO-Link masters and one IO-Link device interface
- The integrated IO-Link interface of the CECC-LK enables quick and easy connection of Festo valve terminals and sensors to a controller

- All modern, compact valve terminals from the CTEU series can be connected to IO-Link masters: VTUB, VTUG, MPA, CPV, VTOC and upcoming devices, as well as the input box CTSL

Additional functions CECC-S

- 2 RS232 interfaces
- 1 RS422/RS485 interface, allows freely configurable communication with different devices
- The RS422 interface can optionally be used as an encoder interface. For this operating mode, there are numerous setting options on the encoder type, comparison functions and referencing

- In addition, the CECC offers an IO-Link master and an IO-Link device interface

Fieldbus interfaces

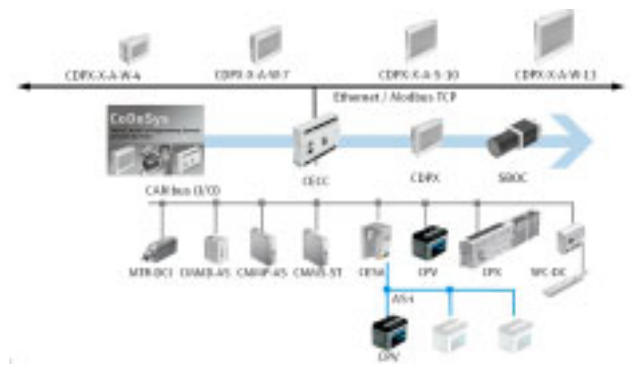
The CECC-LK and CECC-S can be connected to a combination of CTEU nodes and CAPC on various fieldbuses via the IO-Link device interface:

- PROFIBUS
- EtherCAT
- DeviceNet
- CANopen
- AS-interface



System configuration (example)

CECC with CANopen



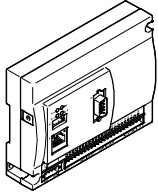
The CECC can communicate with all electric drive controllers from Festo and actuate all valve terminals via CANopen.

The CECC communicates with other controllers and operator units from Festo, such as the modern, new HMI device series CDPX and the camera SBOX-Q for image evaluation, via Ethernet.

Controllers CECC

Key features

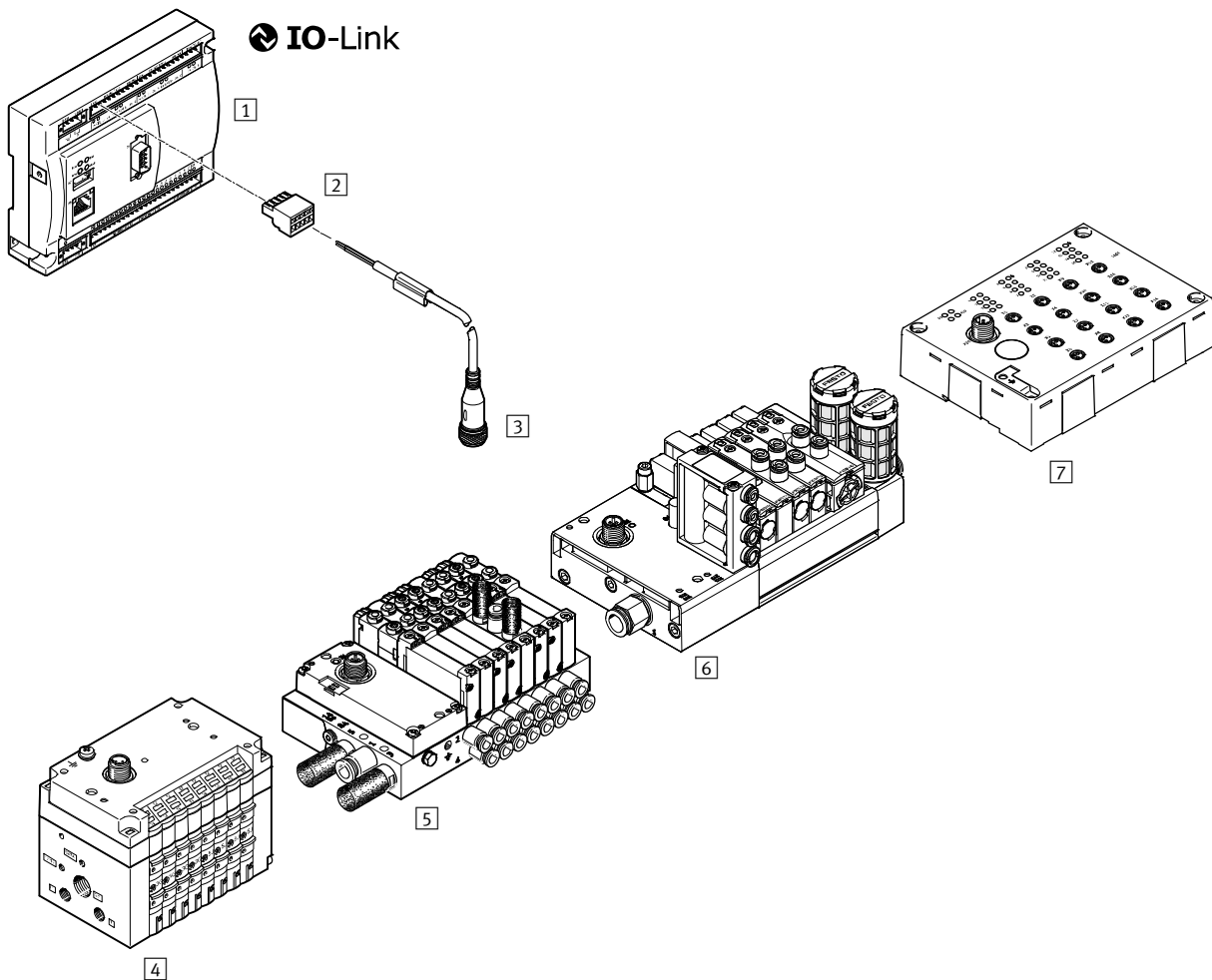
Pin allocation – Balancer controller CECC-D-BA



Pin	Connection	Function
X2.0	Inputs	Operation enable
X2.1		Handle active
X2.2		Speed monitor fault input
X2.3		Reference sensor
X2.4		Reset fault
X2.5		Change operating mode
X2.6		Speed monitor signal input
X2.7		Not assigned
X3.0		System enable (emergency off)
X3.1 ... X3.5		User-configured inputs
X4.0	Outputs	Operation enabled
X4.1		Activate speed monitor
X4.2		Shut-off valve 1
X4.3		Shut-off valve 2
X4.4		Errors
X4.5		Load-controlled mode active
X4.6		Balancer mode active
X4.7		System active and ready

Controllers CECC



Peripherals overview



Mounting attachments and accessories			
	Description	→ Page/Internet	
1	Controllers CECC	The integrated IO-Link interface of the CECC enables quick and easy connection of Festo valve terminals and sensors to a controller	5
2	Plug NECC	Plugs for self-assembly with 2, 5, 6, 8 or 24 pins	10
3	Connecting cables NEBU	Universal connecting cables for 3, 4, 5 or 8 pins	11
4	Valve terminal CPV	Compact universal valve terminal, suitable for decentralised applications, integrated diagnostic function, optional vacuum generation, up to 8 valve positions possible	cpv
5	Valve terminal VTUG	Universal valve terminal, for fieldbus node CTEU or IO-Link interface, up to 24 valve positions possible	vtug
6	Valve terminal VTUB	Lightweight, corrosion-resistant valve terminal, suitable for low nominal flow rates, up to 35 valve positions possible	vtub
7	Input module CTSL	Digital input modules facilitate the connection of proximity sensors or other 24 V DC sensors (inductive, capacitive, etc.)	ctsl

Controllers CECC

Technical data

-  Voltage
19.2 ... 30 V DC
-  Temperature range
0 ... +50 °C



General technical data				
Type	CECC-LK	CECC-D	CECC-D-BA	CECC-S
CPU data	400 MHz processor			
Status displays	LED			
Electrical connection technology for I/O	Socket strip, grid 3.5 mm			
Resistance to vibration	As per EN 61131-2			
Resistance to shock	As per EN 61131-2			
Relative air humidity [%]	95, non-condensing			
Protection class	IP20			
Electrical protection class	III			
Product weight [g]	200			
Note on materials	RoHS-compliant			

Operating and environmental conditions				
	CECC-LK	CECC-D	CECC-D-BA	CECC-S
Operating voltage [V DC]	19.2 ... 30			20.4 ... 30
Nominal operating voltage DC [V]	24			
Current consumption at 24 V DC [mA]	100			
Max. power supply [A]	6	4.3	4.3	6
Ambient temperature [°C]	0 ... 55			
Storage temperature [°C]	-25 ... +70			
CE marking	To EU EMC Directive			
Approval	RCM trademark c UL us - Listed (OL)			
Certificate issuing authority	UL E239998-D1001			

Encoder inputs				
Type	CECC-LK	CECC-D	CECC-D-BA	CECC-S
Number	-	-	-	1
Resolution [bit]	-	-	-	32
Signal range [V]	-	-	-	5, differential (RS 422)
Max. input frequency [kHz]	-	-	-	1000
Encoder supply voltage	-	-	-	5 V DC (100 mA)

Controllers CECC

Technical data

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Digital inputs		CECC-LK	CECC-D	CECC-D-BA	CECC-S
Number		12			
Switching logic		Positive logic (PNP)			
Fast clock pulse inputs		2, each with max. 200 kHz			
Input signal delay		Typically 3 ms			
Input voltage	[V DC]	24			
Nominal value for TRUE	[V DC]	≥ 15			
Nominal value for FALSE	[V DC]	≤ 5			
Electrical isolation		Yes, via optocoupler			
Status display		LED			
Permissible connecting cable length	[m]	30			

Digital outputs		CECC-LK	CECC-D	CECC-D-BA	CECC-S
Number		8			
Switching logic		Positive logic (PNP)			
Contact		Transistor			
Output voltage	[V DC]	24			
Output current	[mA]	500			
Electrical isolation		Yes, via optocoupler			
Status display		LED			
Switching frequency	[kHz]	Max. 1			
Protection against short circuit		Yes			

Serial interfaces		CECC-LK	CECC-D	CECC-D-BA	CECC-S
USB interface		USB 1.1			
Fieldbus interface type		CAN bus			
Number		–	–	–	3
Type		–	–	–	2x RS 232 / 1x RS 485-A/422-A
Connection technology		–	–	–	Plug
Baud rate	[bit/s]	–	–	–	300 ... 375,000
Fieldbus interface					
Connection technology		Sub-D plug, 9-pin			
Transmission rate	[kbps]	125; 250; 500; 800; 1,000			
		Adjustable via software			
Galvanic isolation		Yes			

Ethernet		CECC-LK	CECC-D	CECC-D-BA	CECC-S
Number		1			
Connector plug		RJ45			
Supported protocols		TCP/IP, EasyIP, Modbus TCP			
Transmission speed	[Mbps]	10/100			
Protocol		CANopen	CANopen	–	CANopen
		IO-Link	–	–	IO-Link
		I-Port	–	–	I-Port
		Modbus TCP	Modbus TCP	–	Modbus TCP

Controllers CECC

Technical data



Programming				
	CECC-LK	CECC-D	CECC-D-BA	CECC-S
Programming software	CODESYS provided by Festo			
Programming language according to IEC 61131-3	SFC			
	IL			
	FCH			
	LDR			
	ST			

IO-Link				
	CECC-LK	CECC-D	CECC-D-BA	CECC-S
Number of ports	Master 4	-	-	Master 1
	Device 1			Device 1
Port class	Device A			Device A
	Master B			Master B
Protocol	Device V 1.0			Device V 1.0
	Master V 1.1			Master V 1.1
Connection technology	Plug			Plug
	Cage clamp			Cage clamp
	Device, 3-pin			Device, 3-pin
	Master, 5-pin			Master, 5-pin
Communication mode	Configurable via software			Configurable via software
	Device COM1 (4.8 kB), COM2 (38.4 kB), COM3 (230 kB)			Device COM1 (4.8 kB), COM2 (38.4 kB), COM3 (230 kB)
	Master SIO, COM1 (4.8 kB), COM2 (38.4 kB), COM3 (230.4 kB)			Master SIO, COM1 (4.8 kB), COM2 (38.4 kB), COM3 (230.4 kB)
Master, output current [A]	3.5/port			3.5/port
Communication	C/Q green LED	C/Q green LED		
	C/Q red LED	C/Q red LED		
Ready status display	L+ green LED on	L+ green LED on		
	L+ green LED off	L+ green LED off		
Process data width OUT	Master parameterisable 2 - 32 bytes	Master parameterisable 2 - 32 bytes		
Process data width IN	Master parameterisable 2 - 32 bytes	Master parameterisable 2 - 32 bytes		
Memory card	2 kB per port	2 kB per port		
Minimum cycle time	Device 3.2 ms	Device 3.2 ms		
	Master 5 ms	Master 5 ms		

Controllers CECC

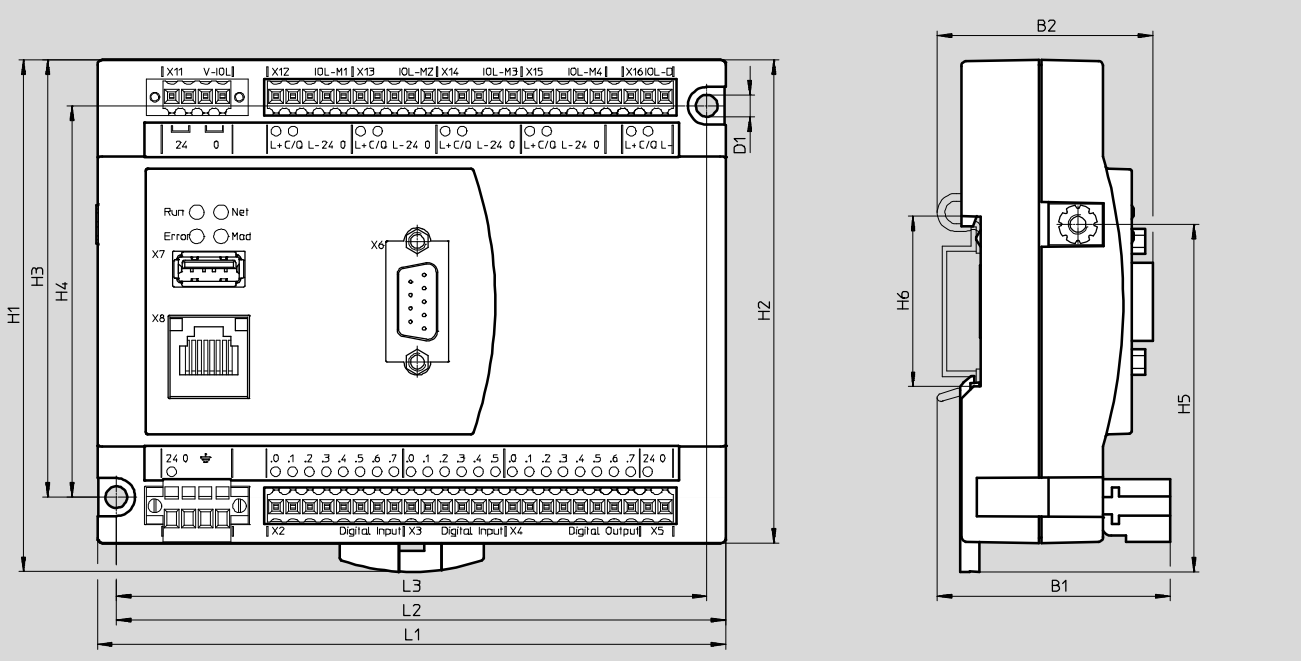
Technical data



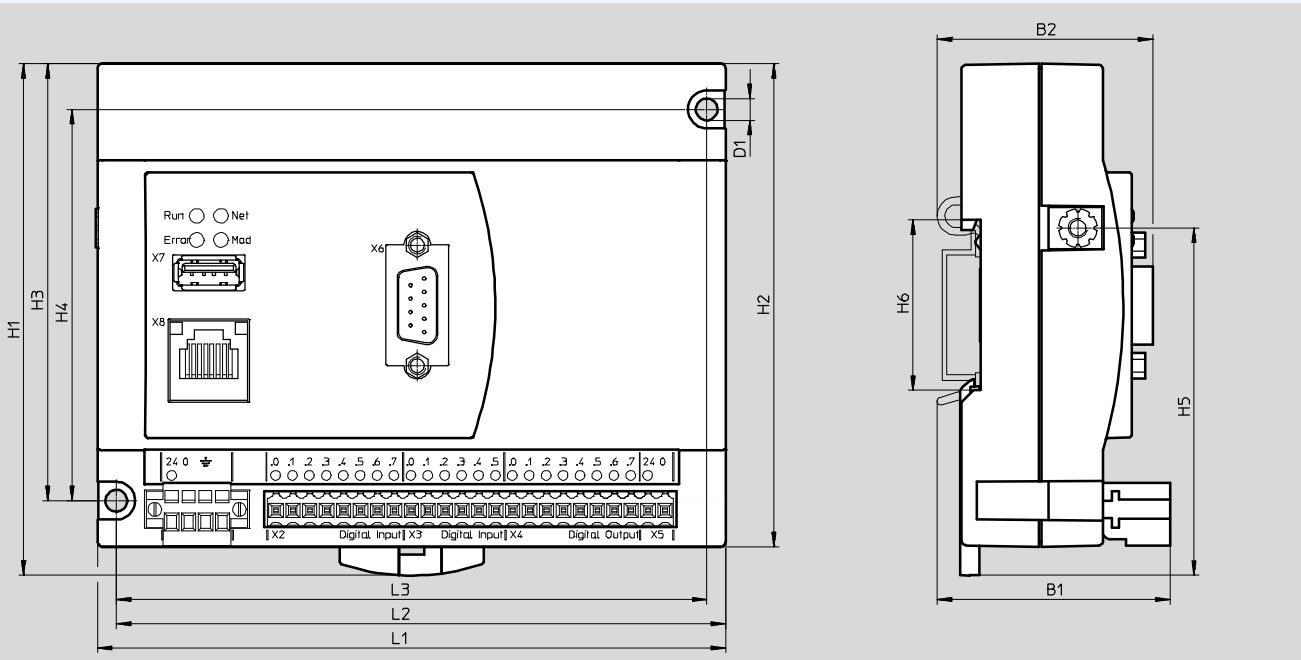
Dimensions

Download CAD data → www.festo.com

CECC-LK



CECC-D, CECC-D-BA



Type	B1	B2	D1 Ø	H1	H2	H3	H4	H5	H6	L1	L2	L3
CECC-LK												
CECC-D	48.2	44.6	4.5	106	100	90.5	81	72	35.2	130	126.1	122.2
CECC-D-BA												

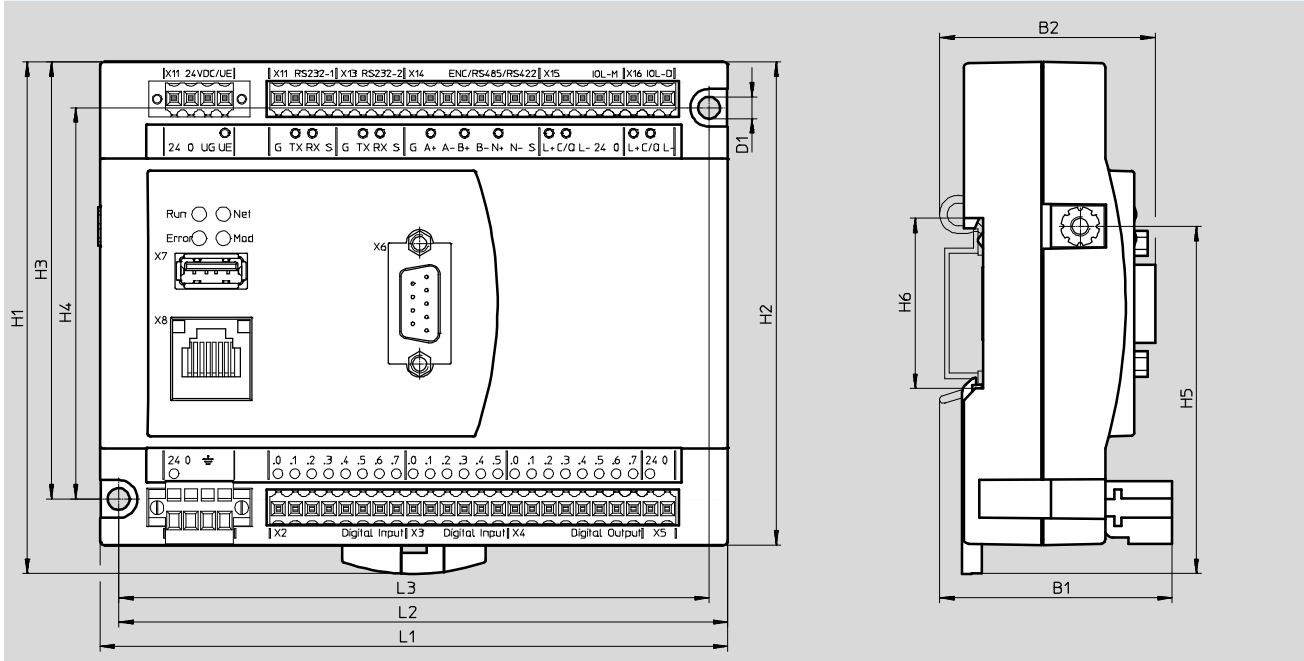
Controllers CECC

Technical data

Dimensions

Download CAD data → www.festo.com

CECC-S



Type	B1	B2	D1	H1	H2	H3	H4	H5	H6	L1	L2	L3
CECC-S	47.2	43.6	4.5	106	100	90.5	81	72	35.2	130	126.1	122.2

Ordering data

Controllers	Brief description	Part No.	Type
CECC-LK	With 12 digital inputs and 8 digital outputs, Ethernet, USB, CANopen, 4 IO-Link masters, 1 IO-Link device	574418	CECC-LK
CECC-D	With 12 digital inputs and 8 digital outputs, Ethernet, USB, CANopen	574415	CECC-D
CECC-D-BA	With 12 digital inputs and 8 digital outputs. Includes application software for balancer kit YHBP (browser-based web visualisation for commissioning and diagnostics)	8072995	CECC-D-BA
CECC-S	With 12 digital inputs and 8 digital outputs, Ethernet, USB, CANopen, 2 RS232, 1 RS485/RS422/Encoder, 1 IO-Link masters, 1 IO-Link device	574416	CECC-S

Controllers CECC

Accessories

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Dimensions Download CAD data → www.festo.com

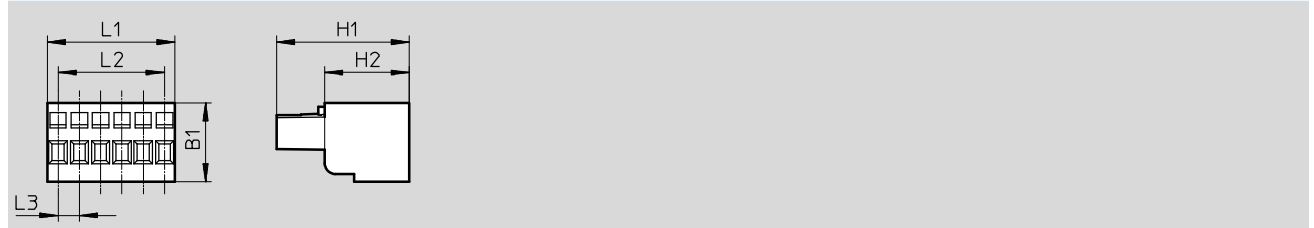
Plug



Type	B1	B2	H1	H2	L1	L2	L3
NECC-L2G4-C1-M	13	7.5	21.9	14	21	10.5	3.5

Dimensions Download CAD data → www.festo.com

Plug



Type	B1	H1	H2	L1	L2	L3
NECC-L2G2-C1	13	21.9	14	7	3.5	3.5
NECC-L2G5-C1				17.5	14	
NECC-L2G6-C1				21	17.5	
NECC-L2G8-C1				28	24.5	
NECC-L2G24-C1				84	80.5	

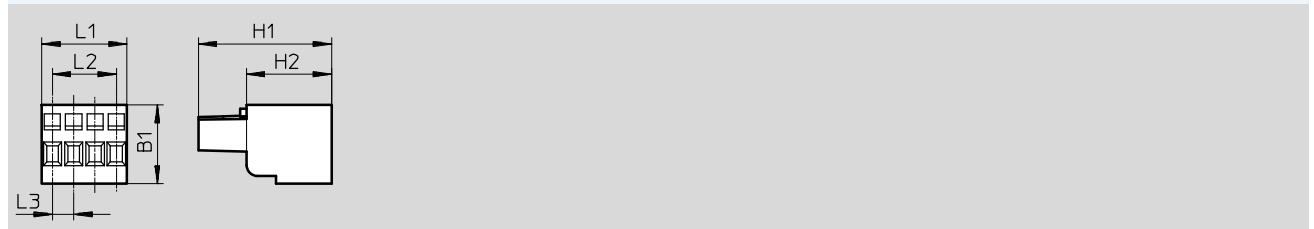
Materials

Corrosion resistance class CRC ¹⁾	1
Note on materials	RoHS-compliant

1) Corrosion resistance class CRC 1 to Festo standard FN 940070
 Low corrosion stress. For dry indoor applications or transport and storage protection. Also applies to parts behind covers, in the non-visible interior area, and parts which are covered in the application (e.g. drive trunnions).

Dimensions Download CAD data → www.festo.com

Plug



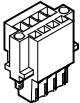
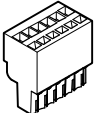

Type	B1	H1	H2	L1	L2	L3
NECC-L2G4-C1	13	21.9	14	14	10.5	3.5

Controllers CECC


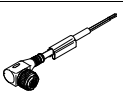
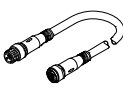
Accessories

FESTO

Number of plug connectors to be additionally ordered for fully connecting the controller							Part No.	Type
CECC-LK			CECC-D		CECC-S			
Variant A	Variant B	Variant C	Variant A	Variant B	Variant A	Variant B		
–	–	1	–	1	–	3	575302	NECC-L2G2-C1
–	1	1	–	–	–	2	8024782	NECC-L2G4-C1
1	1	1	–	–	1	–	575303	NECC-L2G4-C1-M
–	4	4	–	–	–	–	575304	NECC-L2G5-C1
–	–	1	–	1	–	1	575305	NECC-L2G6-C1
–	–	2	–	2	–	4	575306	NECC-L2G8-C1
2	1	–	1	–	2	–	575307	NECC-L2G24-C1

Ordering data				
	Description	PU ¹⁾	Part No.	Type
Plug				
	Plug connector for self-assembly	1	575303	NECC-L2G4-C1-M
	Plug connector for self-assembly, 2-pin	1	575302	NECC-L2G2-C1
	Plug connector for self-assembly, 4-pin	1	8024782	NECC-L2G4-C1
	Plug connector for self-assembly, 5-pin	1	575304	NECC-L2G5-C1
	Plug connector for self-assembly, 6-pin	1	575305	NECC-L2G6-C1
	Plug connector for self-assembly, 8-pin	1	575306	NECC-L2G8-C1
	Plug connector for self-assembly, 24-pin	1	575307	NECC-L2G24-C1
	Sub-D plug, 9-pin with screw terminal, protection class IP40	1	576031	NECC-S1G9-C2-M

1) Packaging unit

Ordering data				
	Description	Part No.	Type	
Connecting cables				
	Straight socket, 5-pin, M12 – open cable end Cable length 2.5 m	541330	NEBU-M12G5-K-2.5-LE5	
	Angled socket, 5-pin, M12 – open cable end Cable length 2.5 m	567843	NEBU-M12W5-K-2.5-LE5	
	Up to 20 m long ²⁾	574321	NEBU-M12G5-E-5-Q8-M12G5	
		574322	NEBU-M12G5-E-7.5-Q8-M12G5	
		574323	NEBU-M12G5-E-10-Q8-M12G5	

2) Modular product, more information → Internet:nebu