

Controller CECC

FESTO



Characteristics

At a glance

The CECC controllers are modern, compact and versatile and enable programming with CODESYS in accordance with IEC 61131-3.

Basic functions of all CECC controllers:

- 1 Ethernet 10/100 Mbit/s Interface (Modbus® TCP client/server, TCP/IP, network variables, EasyIP, OPC-UA server)
- 1 CAN/CANopen interface (CAN CC, CANopen Master)
- 1 USB interface (data transfer, boot application transfer)
- 14 Digital inputs (2 can be used as fast counters up to 180kHz)
- 8 digital outputs
- IO-Link Master Interface (CECC-LK: 4 / CECC-S: 1)
- 1 IO-Link® device interface
- Programming by CODESYS V3 in accordance with IEC 61131-3
- Programming, communication and visualisation via Ethernet
- Controller configuration using CODESYS V3 pbF for commissioning, programming and diagnosing the system
- CODESYS IIoT libraries (licence already included on the controller) enable numerous libraries to be used to support different communication protocols (such as MQTT, HTTPS...) and tools for encoding and decoding data structures (such as JSON, XML...) as well as modules for direct communication with cloud services of individual providers (AWS, Azure...)
- Web interface for easy diagnostics and configuration

Additional functions CECC-S:

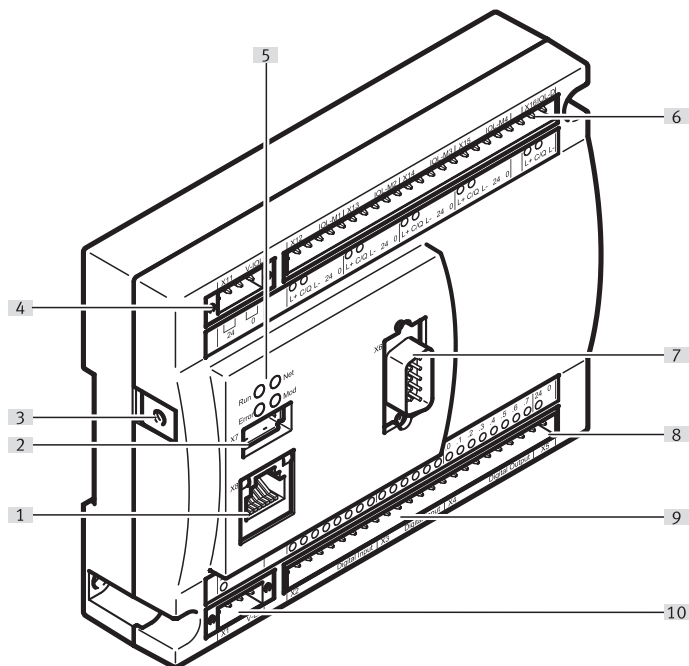
- 2 RS232 interfaces (Modbus® RTU client)
- 1 RS422/RS485 (Modbus® RTU Client), optional encoder interface

The controller can be used as the CODESYS controller for the following applications:

- Controller for pneumatic and electric drives
- Sensing electrical sensor signals
- Simplicity and speed of connecting Festo sensors and valve terminals such as VTUX, VTSA, VTUG, MPA, CPV, VTOC via IO-Link® interfaces
- Connection as an IO-Link® device to any IO-Link® master module and via a combination of CTEU and CAPC to various fieldbuses (EtherCAT®, EtherNet/IP, PROFINET, VARAN, CANopen, CC-Link®, DeviceNet®, PROFIBUS)
- Machine and process visualisation within CODESYS V3 in connection with an operator unit CDPX and the “Designer Studio” software (available separately)
- Using web visualisation via CODESYS

Characteristics

Overview



- [1] Ethernet interface [X8]
- [2] USB interface [X7]
- [3] Functional earth
- [4] Load voltage supply input for IO-Link® (CECC-LK and CECC-S) and power supply for encoder (CECC-S) [X11]
- [5] Status LEDs: [Run], [Error], [Net], [Mod]
- [6] Communication interfaces for IO-Link® (CECC-LK and CECC-S), ENC/RS485/RS422/RS232 (CECC-S) [X12] ... [X16]
- [7] CAN/CANopen fieldbus interface [X6]
- [8] Operating voltage supply input for I/O interfaces [X5]
- [9] I/O interfaces (digital input, digital output) [X2] ... [X4]
- [10] Operating voltage supply of the controller [X1]

Type code

001	Series	
CECC	Control	

002	Function module	
S	Serial interface	
LK	IO-Link®	

Datasheet

General technical data

CPU data	Dual core 500 MHz
Status displays	LED
Electrical connection system I/Os	Socket strip, detent 3.5 mm
Vibration resistance test	As per EN 61131-2
Shock resistance test	As per EN 61131-2
Relative air humidity	95%, Non-condensing
Degree of protection	IP20
Protection class	III
Product weight	270 g
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-B2-L

Operating and environmental conditions

Function module	Serial interface [S]	IO-Link® [LK]
Operating voltage	20.4 - 30 V DC	19.2 - 30 V DC
Nominal operating voltage DC	24 V	
Current consumption	120 mA	
Max. power supply	6 A	
Ambient temperature	0 ... 55°C	
Storage temperature	-25 - 70°C	
CE mark (see declaration of conformity)	To EU EMC Directive	
UKCA marking (see declaration of conformity)	To UK instructions for EMC, To UK RoHS instructions	
Approval	RCM trademark, c UL us listed (OL)	
Certificate issuing authority	UL E239998-D1001	

Digital inputs

Digital input, number	12
Digital inputs, switching logic	Positive logic (PNP)
Digital inputs, input signal delay	Typically 3 ms
Digital inputs, high-speed counter inputs	2, each with max. 200 kHz
Digital inputs, input voltage/current	24 V DC
Digital inputs, nominal value for TRUE	≥ 15 VDC
Digital inputs, nominal value for FALSE	≤ 5 VDC
Digital inputs, electrical isolation	Yes, via optocoupler
Digital inputs, status display	LED
Max. cable length	30 m inputs

Digital outputs

Digital outputs, number	8
Digital outputs, switching logic	Positive logic (PNP)
Digital outputs, contact	Transistor
Digital outputs, output voltage	24 V DC
Digital outputs, output current	500 mA
Digital outputs, electrical isolation	Yes, via optocoupler
Digital outputs, switching frequency	Max. 1 kHz
Digital outputs, short circuit current rating	yes
Digital outputs, status display	LED

Datasheet

Fieldbus interface

Fieldbus interface	CAN bus
Protocol	CAN, CANopen
Field bus interface, connection system	Plugs, Sub-D, 9-pin
Field bus interface, transmission rate	125, 250, 500, 800, 1,000 kbit/s, Can be set using software
Field bus interface, electrical isolation	yes

Ethernet

Ethernet, plug connector	RJ45
Ethernet, number	1
Ethernet, data transmission rate	10/100 Mbit/s
Ethernet, supported protocols	OPC-UA, TCP/IP, EasyIP, Modbus TCP

IO-Link®

Function module	Serial interface [S]	IO-Link® [LK]
IO-Link, Number of ports	Device 1, Master 1	Device 1, Master 4
IO-Link, communication mode	Device 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), Configurable via software	
IO-Link, Port class	Device A, Master B	
IO-Link, Protocol version	Device V 1.0, Master V 1.1	
IO-Link, Process data length OUT	Master parameterisable 2 - 32 bytes	
IO-Link, Process data length IN	Master parameterisable 2 - 32 bytes	
IO-Link, Min. cycle time	Device 3.2 ms, Master 5 ms	
IO-Link, Data storage provided	2 kB/port	
IO-Link, Output current	3.5 A/port	
IO-Link, connection technology	Cage Clamp, Plugs, Master 5-pin, Device, 3-pin	
IO-Link, Device ID	0x550000, 0x550001, 0x550002, 0x550003, 0x550004	
IO-Link, communication	C/Q green LED, C/Q red LED	
IO-Link, ready-to-operate indicator	L+ green LED on, L+ green LED off	

Serial interfaces

Function module	Serial interface [S]	IO-Link® [LK]
USB-interface	USB 1.1	
Serial interface, number	3	–
Type of serial interface	2 x RS232/1 x RS485-A/422-A	–
Serial interface, transmission rate	Can be set using software, 300 ... 375,000 bit/s	–
Serial interface, connection system	Plugs	–

Encoder CECC

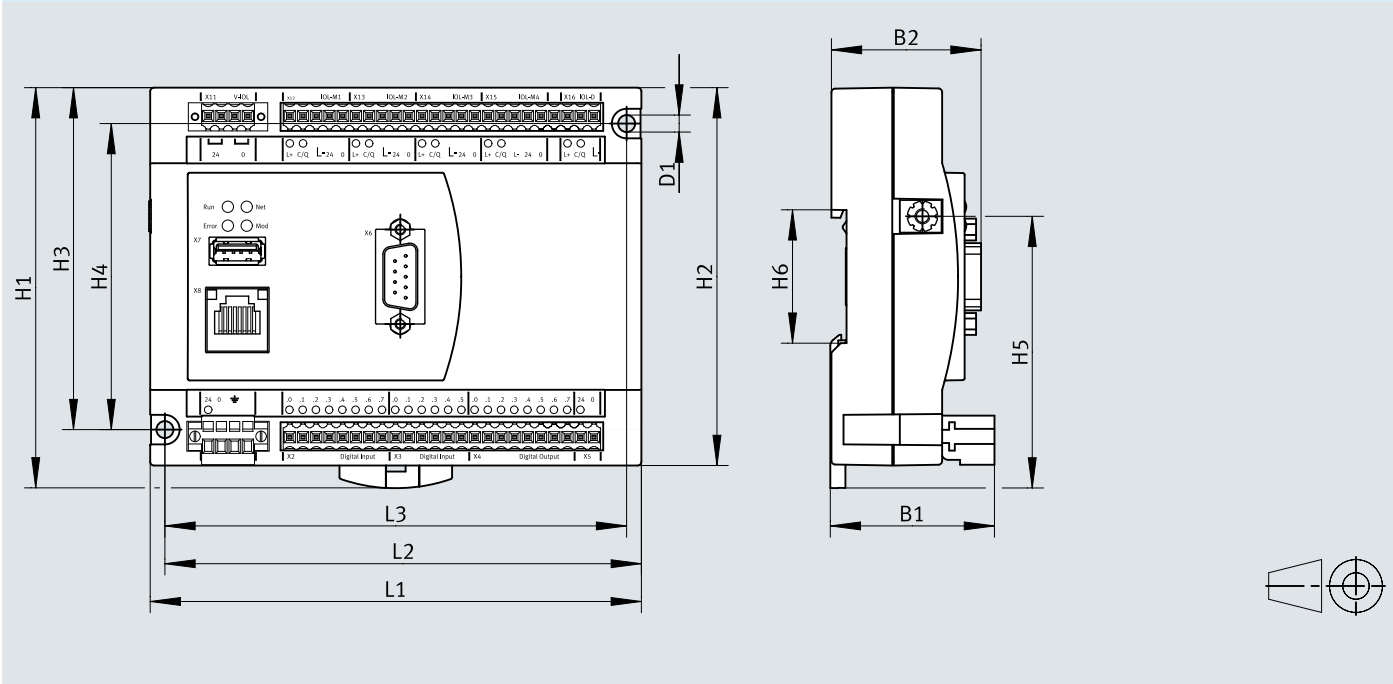
Function module	Serial interface [S]	IO-Link® [LK]
Incremental encoder inputs, number	1	–
Incremental encoder inputs, resolution	32 bit	–
Incremental encoder inputs, signal range	5 V differential (RS422)	–
Incremental encoder inputs, encoder power supply	5 V DC (100 mA)	–
Incremental encoder inputs, max. input frequency	1,000	–

Datasheet

Programming	
Programming software	CODESYS V3
Programming language	To IEC 61131-3, KOP, AWL, ST, FUP, AS

Dimensions

Dimensions – CECC-LK Download CAD data www.festo.com

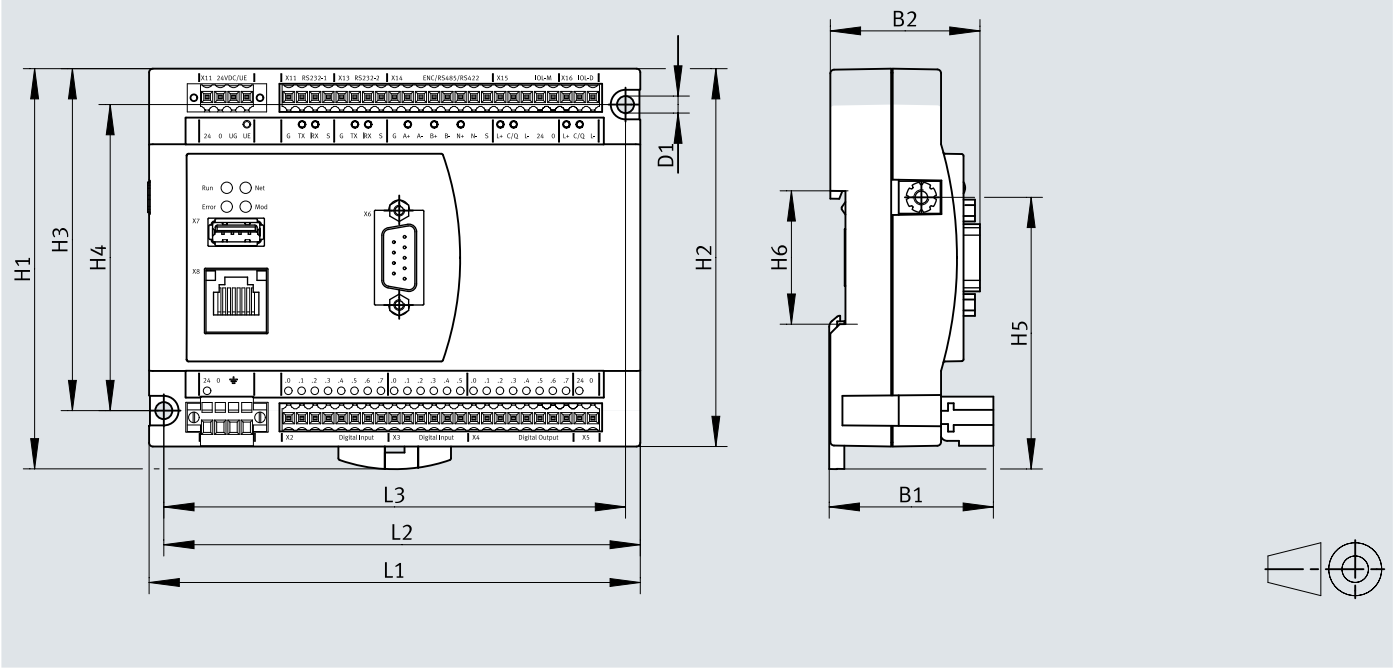


	B1	B2	D1 Ø	H1	H2	H3	H4	H5	H6	L1	L2	L3
CECC-LK	43,5	39,6	4,5	106	100	90,5	81	72	35,2	130	126,1	122,2

Dimensions

Dimensions – CECC-S

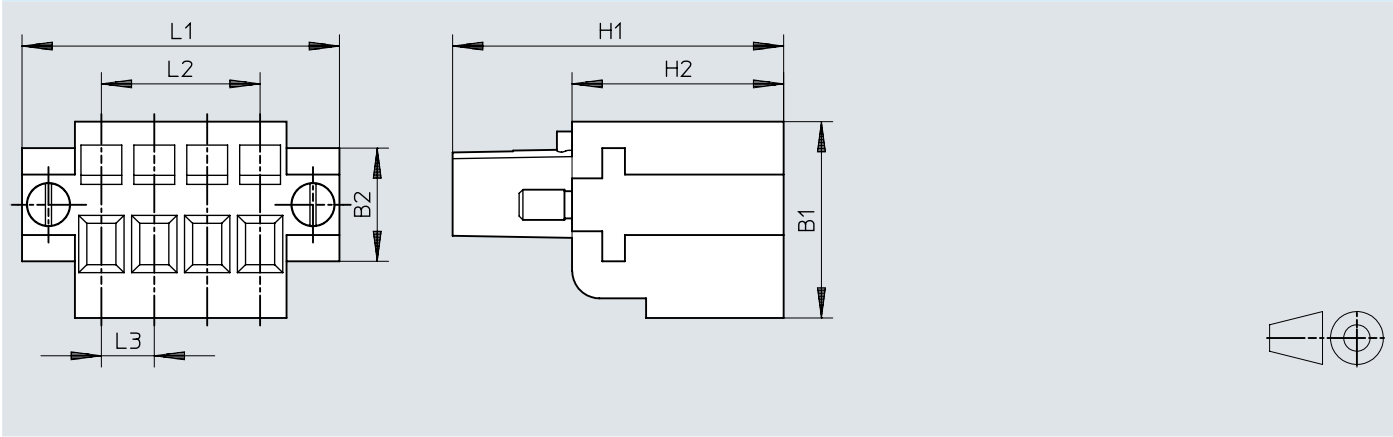
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	B1	B2	D1 Ø	H1	H2	H3	H4	H5	H6	L1	L2	L3
CECC-S	43,5	39,6	4,5	106	100	90,5	81	72	35,2	130	126,1	122,2

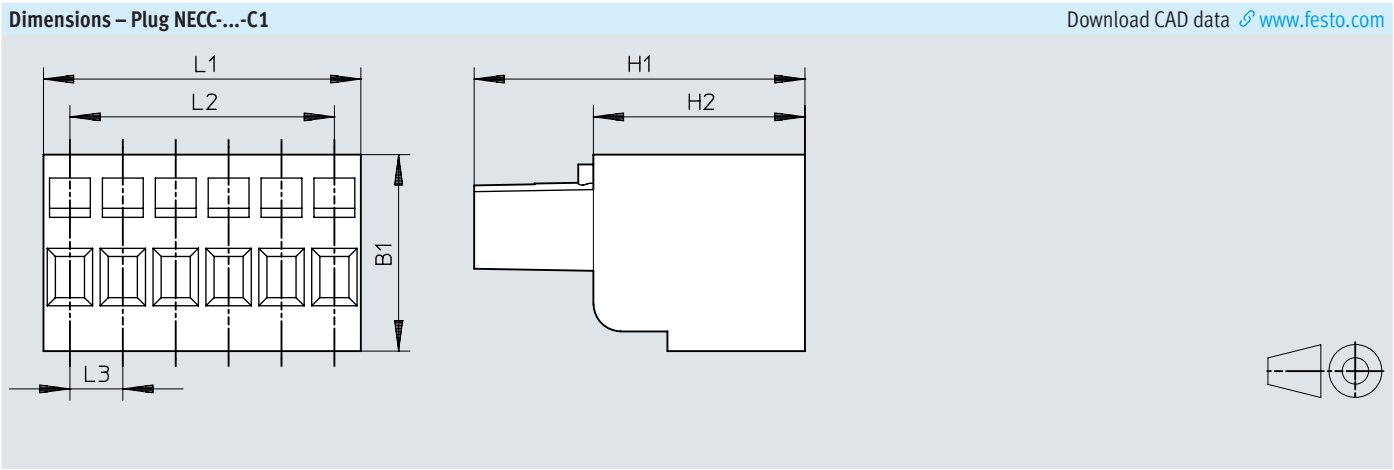
Dimensions

Dimensions – Plug NECC-L2G4-C1-M Download CAD data www.festo.com



	B1	B2	H1	H2	L1	L2	L3
NECC-L2G4-C1-M	13	7,5	21,9	14	21	10,5	3,5

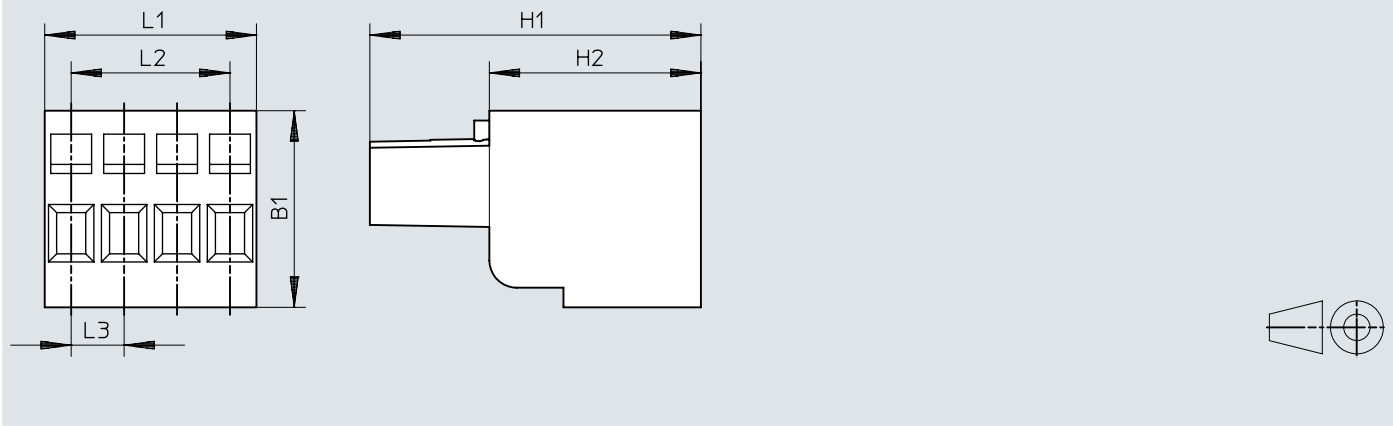
Dimensions



	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	

Dimensions

Dimensions – Plug NECC-L2G4-C1 [Download CAD data](#) www.festo.com



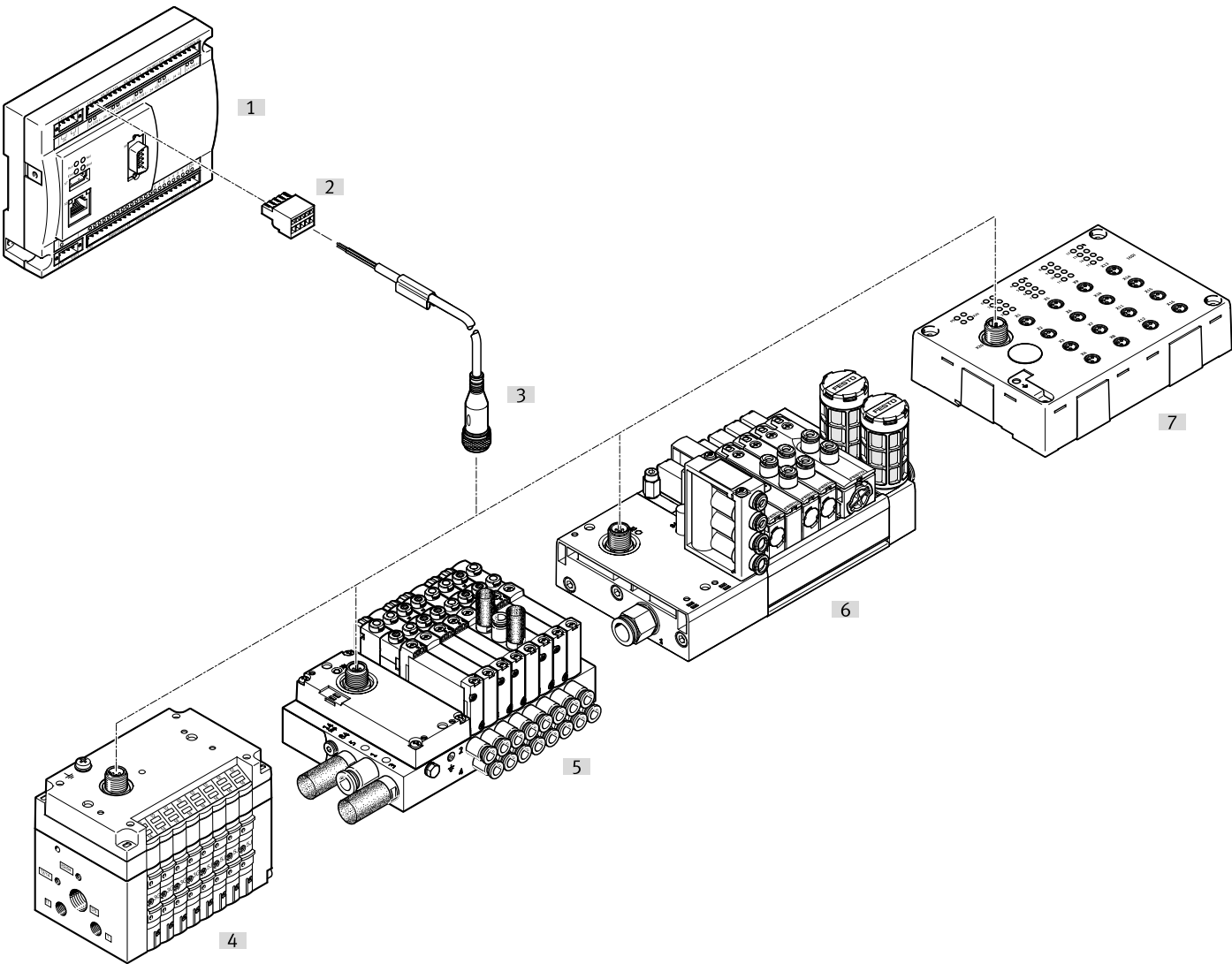
	B1	H1	H2	L1	L2	L3
NECC-L2G4-C1	13	21,9	14	14	10,5	3,5

Ordering data

Ordering data				
Short type code	IO-Link, Number of ports	Type of serial interface	Part no.	Type
CECC	Device 1, Master 1	2 x RS232/1 x RS485-A/422-A	8201112	CECC-S
	Device 1, Master 4		8201111	CECC-LK

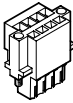
Peripherals

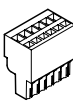
Peripherals overview

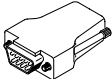


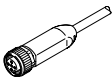
Accessories		→ Link
Type/order code	Description	
[1] Controllers CECC	The integrated IO-Link® interface of the CECC facilitates the quick and easy connection of Festo valve terminals and sensors to a controller	cecc
[2] Plug	Plug connectors for self-assembly 2, 4, 5, 6, 8 or 24-pin	15
[3] Connecting cables	Universal connecting cables 3, 4, 5 or 8-pin	15
[4] Valve terminal CPV	Compact universal valve terminal, suitable for decentralised applications, integrated diagnostic function; vacuum generation possible, up to 8 valve positions possible	cpv
[5] Valve terminal VTUG	Universal valve terminal, for bus node interface CTEU or IO-Link®, 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 switches or other 24 V DC sensors (inductive, capacitive etc.)	ctsl

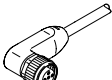
Accessories

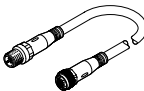
Plug NECC-L2G4-C1-M					
	LABS (PWIS) conformity	Note on materials	Part no.	Type	
	VDMA24364-B2-L	RoHS-compliant	575303	NECC-L2G4-C1-M	

Plug NECC-L2G ...					
	LABS (PWIS) conformity	Note on materials	Part no.	Type	
	VDMA24364-B2-L	RoHS-compliant	575307	NECC-L2G24-C1	
			575305	NECC-L2G6-C1	
			575304	NECC-L2G5-C1	
			575302	NECC-L2G2-C1	
			575306	NECC-L2G8-C1	

Plug NECC-S1G9-C2-M					
	LABS (PWIS) conformity	Note on materials	Electrical connection	Part no.	Type
	VDMA24364-B2-L	RoHS-compliant	9-pin/9-pin, Sub-D/ screw terminal	576031	NECC-S1G9-C2-M

Connecting cables NEBA, straight socket					
	Electrical connection 1, connector system	Electrical connection 1, number of connections/ cores	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	5	2.5 m	★ 8078242	NEBA-M12G5-U-2.5-N-LE5

Connecting cables NEBA, angled socket					
	Electrical connection 1, connector system	Electrical connection 1, number of connections/ cores	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	5	2.5 m	8078251	NEBA-M12W5-U-2.5-N-LE5

Connecting cables NEBU					
	Electrical connection 1, connector system	Electrical connection 1, number of connections/ cores	Cable length	Part no.	Type
	M12x1, A-coded to EN 61076-2-101	5	5 m	574321	NEBU-M12G5-E-5-Q8N-M12G5
			7.5 m	574322	NEBU-M12G5-E-7.5-Q8N-M12G5
			10 m	574323	NEBU-M12G5-E-10-Q8N-M12G5