

Cable Guide



Documentation

Cable Guide

for cable / connector search and selection for IP67 products

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1 Foreword

1.1 Notes on the documentation

Intended audience

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with the applicable national standards.

It is essential that the documentation and the following notes and explanations are followed when installing and commissioning these components.

It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.

We reserve the right to revise and change the documentation at any time and without prior announcement.

No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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Patent Pending

The EtherCAT Technology is covered, including but not limited to the following patent applications and patents: EP1590927, EP1789857, DE102004044764, DE102007017835 with corresponding applications or registrations in various other countries.

The TwinCAT Technology is covered, including but not limited to the following patent applications and patents: EP0851348, US6167425 with corresponding applications or registrations in various other countries.

The logo for EtherCAT, featuring the word "EtherCAT" in a bold, sans-serif font. A red arrow points from the top of the "A" towards the right, ending above the "T". A registered trademark symbol (®) is located to the right of the "T".

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1.2 Safety instructions

Safety regulations

Please note the following safety instructions and explanations!
Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

Exclusion of liability






All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation and drive engineering who are familiar with the applicable national standards.

Description of symbols

In this documentation the following symbols are used with an accompanying safety instruction or note. The safety instructions must be read carefully and followed without fail!

 DANGER	<p>Serious risk of injury! Failure to follow the safety instructions associated with this symbol directly endangers the life and health of persons.</p>
 WARNING	<p>Risk of injury! Failure to follow the safety instructions associated with this symbol endangers the life and health of persons.</p>
 CAUTION	<p>Personal injuries! Failure to follow the safety instructions associated with this symbol can lead to injuries to persons.</p>
 Attention	<p>Damage to the environment or devices Failure to follow the instructions associated with this symbol can lead to damage to the environment or equipment.</p>
 Note	<p>Tip or pointer This symbol indicates information that contributes to better understanding.</p>

1.3 CableGuide issue status

Version	Changes
2.1.0	<ul style="list-style-type: none">• Added new EP boxes• Added EPP boxes• Added EPI boxes• Added links to the cable data sheets• Added new raw cables, cables and field assembly connectors• Textual adjustments• Picture revision• Foreword added• Mounting tool added
2.0.0	<ul style="list-style-type: none">• Migration• Various EP-Modules added• Various cables added• Revised renderings used• Links to the individual chapters added
1.0.1	<ul style="list-style-type: none">• Sensor cable exchanged ZB9050/51 <=> ZB9041/43
1.0.0	<ul style="list-style-type: none">• First release
0.9.0	<ul style="list-style-type: none">• Advance version

2 How to use the CableGuide

i

Images

The images in the CableGuide are examples!

i

Note

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Suchen
✕

Zurück
Weiter

1.

- press „Strg + f“ to search for a product
- e.g. Enter the name of an EP-Box
- confirm with „Enter“

Fig. 1: Search with "Strg + f" in the document

BECKHOFF Box directory

Description	Page
EP1008-0001 > 10 8-channel-digital-input 24 VDC M8-connector	14
ER1008-0001 > 10 8-channel-digital-input 24 VDC M8-connector	14
EP1018-0001 > 10 8-channel-digital-input 24 VDC M8-connector	14
ER1018-0001 > 10 8-channel-digital-input 24 VDC M8-connector	14
EP1098-0001 > 10 8-channel-digital-input 24 VDC M8-connector	14
ER1098-0001 > 10 8-channel-digital-input 24 VDC M8-connector	14
EP1518-0001 > 10 8-channel-digital-input, 2 up/down counter 24 VDC M8-connector	14
ER1518-0001 > 10 8-channel-digital-input, 2 up/down counter 24 VDC M8-connector	14
EP1258-0001 > 10 8-channel-digital-input, 2 with timestamp 24 VDC M8-connector	14

2.

- click on the name of the Box to get to the overview of the respective Box

Fig. 2: Use the links in the Box directory

i

ER boxes connection technology like EP boxes

The connection technology of the ER boxes in the zinc die-cast housing is identical to the EP boxes. Only the EP variant is shown.

i

Note

Box overview



3.

4 Box overview

EP1008-0001 / EP1018-0001 / EP1098-0001
 EP1518-0001
 EP1258-0001
 EP2008-0001 / EP2028-0001 / EP2038-0001
 EP2308-0001 / EP2318-0001 / EP2328-0001 / EP2338-0001 / EP2338-1001

Ⓢ EtherCAT, M8, socket, 4pole
[▶ 38\]](#)



Ⓢ Sensor, M8, socket, 3pole [▶ 40\]](#)

Ⓢ Power IN, M8, plug, 4pole
[▶ 39\]](#)

Ⓢ Power OUT, M8, socket, 4pole [▶ 39\]](#)

- on top you will find a list of the Boxes with the same housing
- sideways you will find the respective connection descriptions of the Box
- click on one of the connection descriptions to reach the appropriate type of cable assembly

Fig. 3: Rendering of boxes with descriptions of the connections





Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
Ⓢ	ZK2020-3200-0xxxx	M8, socket, 4pole	open end	x				ZB9050
	ZK2020-3200-3xxxx				x			ZB9051
Ⓢ	ZK2020-3132-0xxxx	M8, plug, 4pole	M8, socket, 4pole	x				ZB9050
	ZK2020-3132-3xxxx				x			ZB9051
Ⓢ	ZK2020-3400-0xxxx	M8, socket, 4pole	open end	x				ZB9050
	ZK2020-3400-3xxxx				x			ZB9051
Ⓢ	ZK2020-3334-0xxxx	M8, plug, 4pole	M8, socket, 4pole	x				ZB9050
	ZK2020-3334-3xxxx				x			ZB9051
Ⓢ	ZK2020-3332-0xxxx			x				ZB9050

To the [field-configurable connectors ▶ 49\]](#)

4.






- here you can find a listing of cable assemblies sorted by type
- the appropriate field-configurable connectors can be reached by clicking on the link under each table

Fig. 4: List of cable assemblies by type

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
②	ZS2000-1323	M8, socket, straight		plastic	4	A	0.14-0.34mm ²	IDC	3.5-5.0mm
	ZS2000-2320	M8, socket, straight		plastic	4	A	0.14-0.5mm ²	screw type	3.5-5.0mm
	ZS2000-2321	M8, socket, straight		plastic	4	A	0.14-0.25mm ²	solder type	3.5-5.0mm
	ZS2000-2341	M8, socket, angled		plastic	4	A	0.14-0.25mm ²	solder type	3.5-5.0mm

- 5.
- here you can find a listing of field-configurable connectors sorted by type

Fig. 5: List of field-configurable connectors by type

Overview EtherCAT cables and connectors for field assembly		ZB9010	ZB9020	ZB9030	ZB9032
		EtherCAT, PVC, shielded, 4xAWG22, fixed installation	EtherCAT PUR, shielded, 4xAWG22, drag chain suitable, 3 Mio cycles	EtherCAT, PVC, shielded, 4xAWG26, fixed installation	EtherCAT, PUR, highflex, shielded, 4xAWG26, drag chain suitable, 20 Mio cycles
					
		6.5 mm ±0.2 mm	6.5 mm ±0.2 mm	4.9 mm ±0.2 mm	5.4 mm ±0.2 mm
ZS1090-1006	M8, plug, metal, screw type, straight, male, 4pole, cross section 0.14-0.5 mm ² , cable outlet 5.0-6.5 mm				

- 6.
- finally, the cable sold by meter with the associated field installable connectors are listed in a Matrix

Fig. 6: Cable sold by meter with associated field installable connectors

3 Box directory

EP box directory

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EP1008-0002 > 19 8-channel-digital-input 24 VDC M12-connector	19
EP1008-0022 > 20 8-channel-digital-input 24 VDC M12-connector	20
EP1018-0001 > 17 8-channel-digital-input 24 VDC M8-connector	17
EP1018-0002 > 19 8-channel-digital-input 24 VDC M12-connector	19
EP1098-0001 > 17 8-channel-digital-input 24 VDC M8-connector	17
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EP1518-0002 > 19 8-channel-digital-input, 2 up/down counter 24 VDC M12-connector	19
EP1809-0021 > 18 16-channel-digital-input 24 VDC M8-connector	18
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EP1819-0022 > 20 16-channel-digital-input 24 VDC M12-connector	20
EP1816-0008 > 29 16-channel-digital-input 24 VDC D-Sub-connector	29
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(1) [EtherCAT, M8, socket, 4pin](#)
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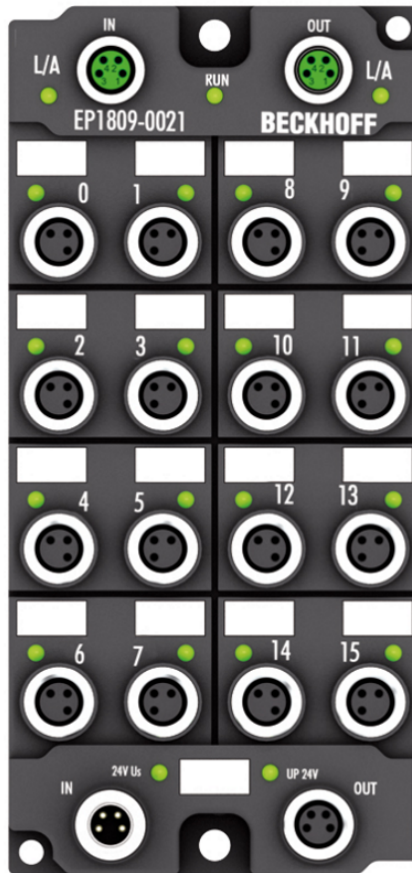
(4) [Sensor, M8, socket, 3pin](#) [▶ 83](#)

(2) [Power IN, M8, plug, 4pin](#)
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(3) [Power OUT, M8, socket, 4pin](#) [▶ 82](#)

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(1) EtherCAT, M8, socket, 4pin
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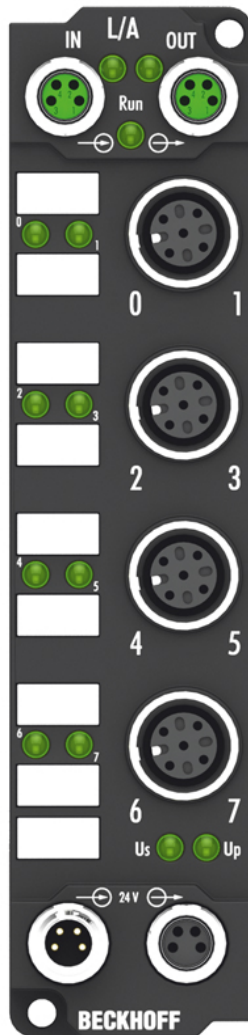
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(1) EtherCAT, M8, socket, 4pin
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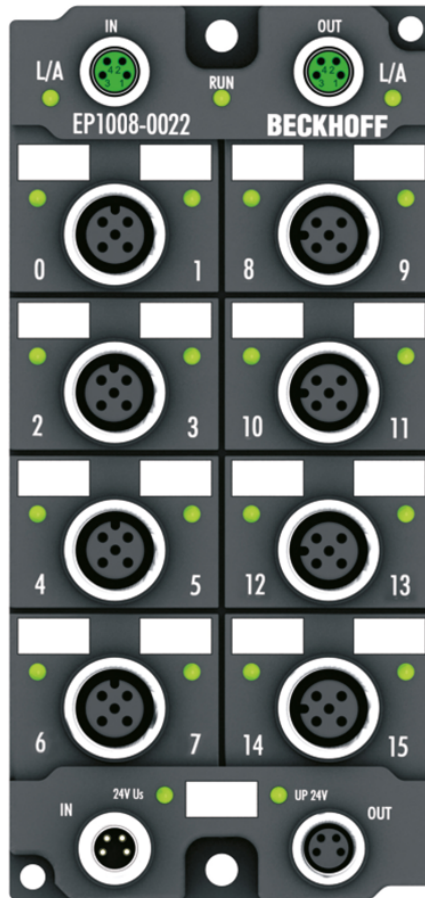
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(1) EtherCAT, M8, socket, 4pin
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(5) Sensor, M12, socket, 4pin
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(5) Sensor, M12, socket, 4pin [▶ 84]

(3) Power OUT, M8, socket, 4pin [▶ 82]

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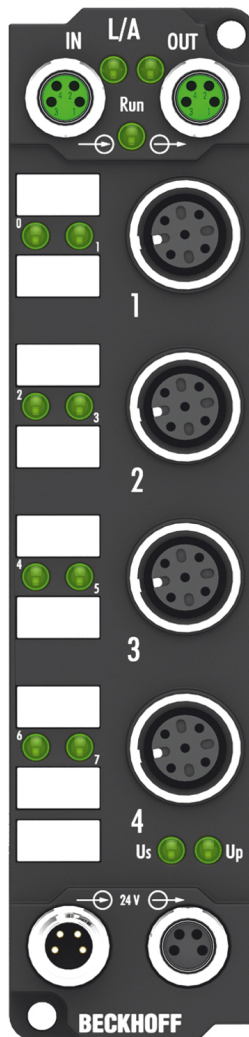
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(1) EtherCAT, M8, socket, 4pin
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(2) Power IN, M8, plug, 4pin
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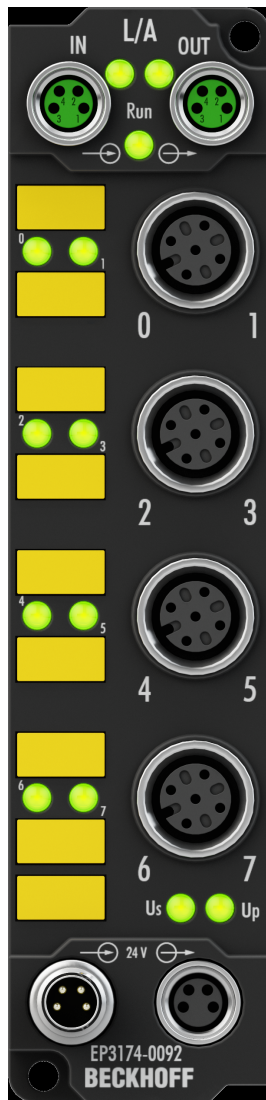
(6) Sensor, M12, socket, 5pin, shielded
 [▶ 85]

(3) Power OUT, M8, socket, 4pin [▶ 82]

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(1) EtherCAT, M8, socket, 4pin
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(6) Sensor, M12, socket, 5pin, shielded
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(3) Power OUT, M8, socket, 4pin [▶ 82]

EP3182-1002

(1) EtherCAT, M8, socket, 4pin
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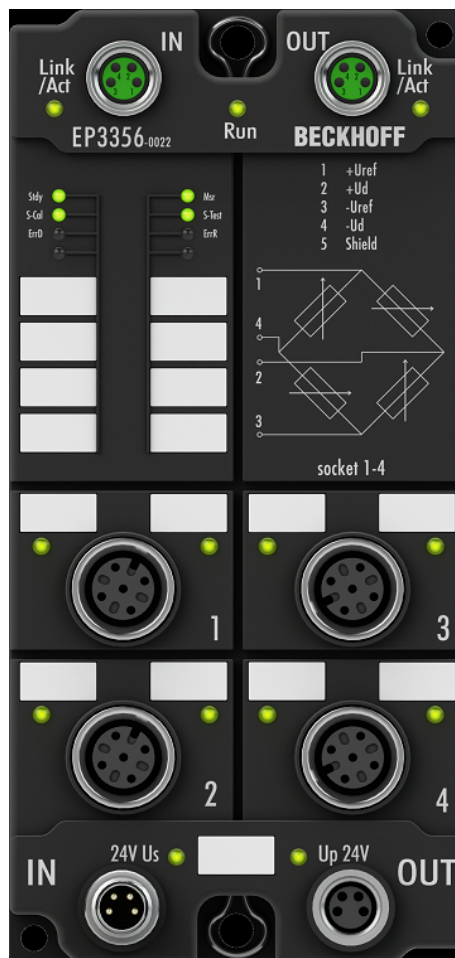
(6) Sensor, M12, socket, 5pin, shielded
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(2) Power IN, M8, plug, 4pin
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EP3356-0022

(1) EtherCAT, M8, socket, 4pin
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(20) Sensor, M12, socket, 5pin
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(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin
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EP3632-0001

(1) EtherCAT, M8, socket, 4pin
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(2) Power, IN, M8, plug, 4pin
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(2) Power IN, M8, plug, 4pin
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(7) Sensor, M8, socket, 4pin [▶ 86]

(3) Power OUT, M8, socket, 4pin [▶ 82]

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EP2816-0008, EP2817-0008
EP2316-0008

(1) EtherCAT, M8, socket, 4pin
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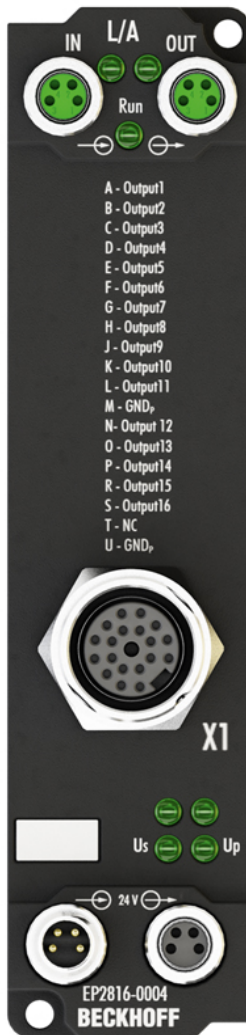
(2) Power IN, M8, plug, 4pin
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(8) Sensor, D-Sub, socket, 25pin [▶ 95]

(3) Power OUT, M8, socket, 4pin [▶ 82]

EP2816-0004

(1) EtherCAT, M8, socket, 4pin
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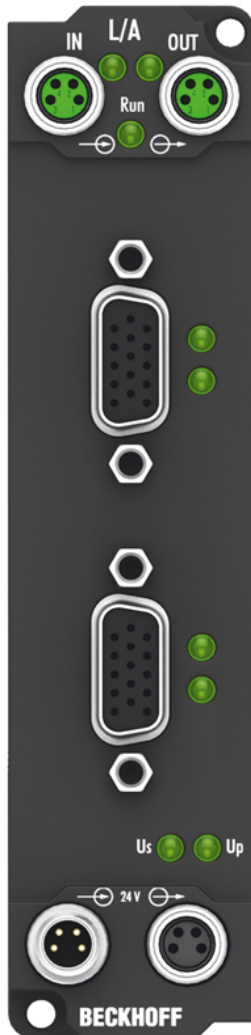
(2) Power IN, M8, plug, 4pin
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(9) Sensor, M16, socket, 19pin

(3) Power OUT, M8, socket, 4pin [▶ 82]

EP2816-0010

(1) EtherCAT, M8, socket, 4pin
[▶ 81]



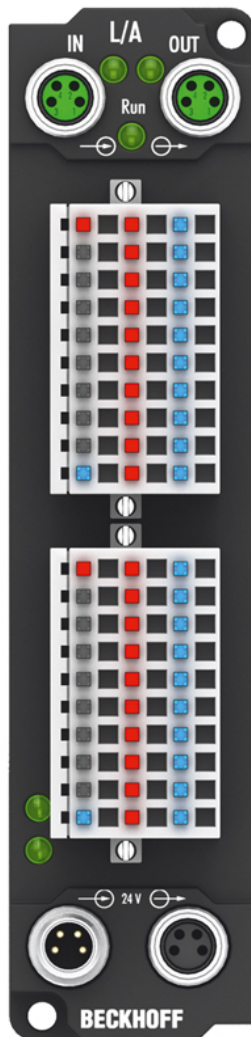
(10) Sensor, D-Sub, HD, socket, 15pin

(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin [▶ 82]

EP2316-0003

(1) EtherCAT, M8, socket, 4pin
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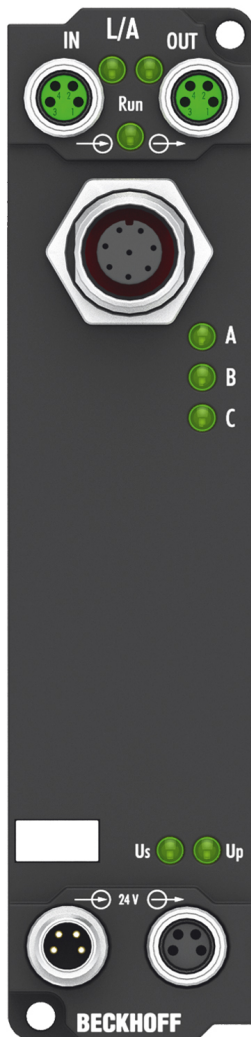
(11) Sensor, connector for KM-module
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(2) Power IN, M8, plug, 4pin
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(1) EtherCAT, M8, socket, 4pin
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(12) Sensor, M12, socket, 8pole, shielded
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(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin [▶ 82]

EP5101-0011, EP5101-2011

(1) EtherCAT, M8, socket, 4pin
▶ [81](#)



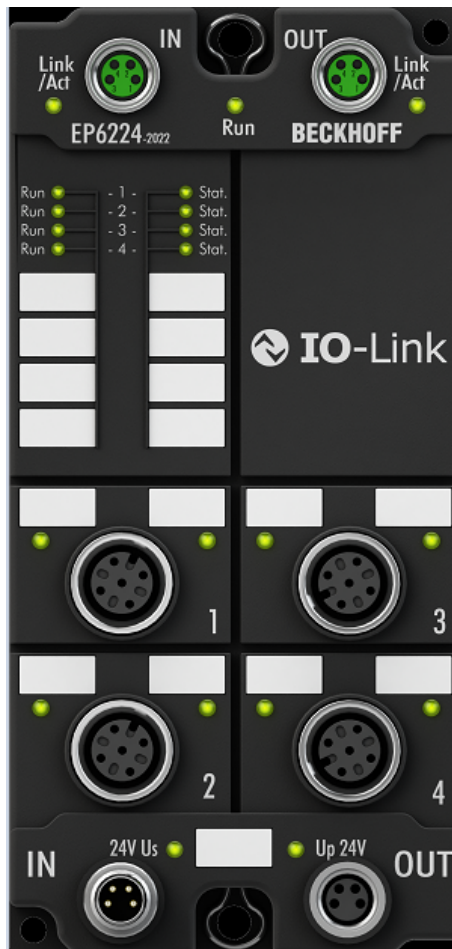
(13) Sensor, D-Sub, socket, 15pin

(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin ▶ [82](#)

EP6224-2022
ER6224-2022

(1) EtherCAT, M8, socket, 4pin
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(20) Sensor, M12, socket, 5pin
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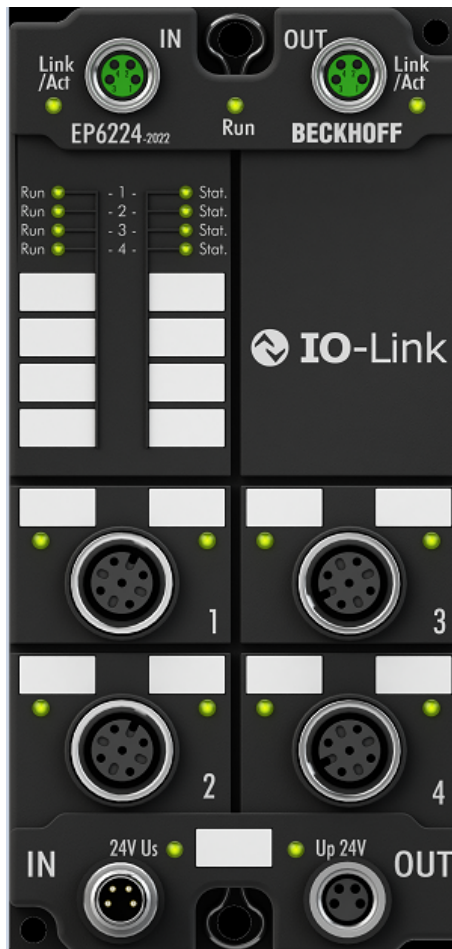
(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin
[▶ 82]

EP6224-3022

ER6224-3022

(1) EtherCAT, M8, socket, 4pin
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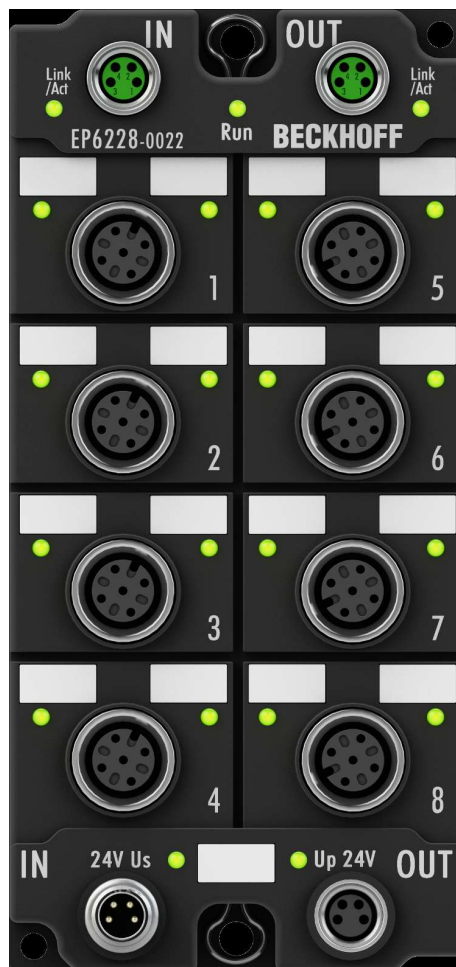
(20) Sensor, M12, socket, 5pin
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(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin
 [▶ 82]

EP6228-0022
ER6228-0022

(1) EtherCAT, M8, socket, 4pin
[▶ [81](#)]



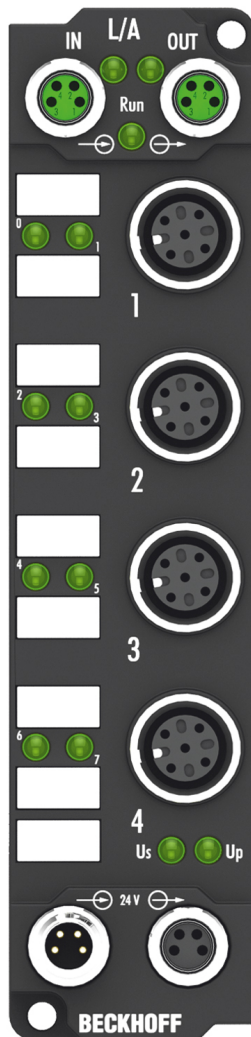
(20) Sensor, M12, socket, 5pin
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(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin
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EP7041-0002, EP7041-1002
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(14) Motor, M12, socket, 4pin [▶ 87]

(14) Motor supply, M12, socket, 4pin
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(5) Sensor, M12, socket, 4pin [▶ 84]

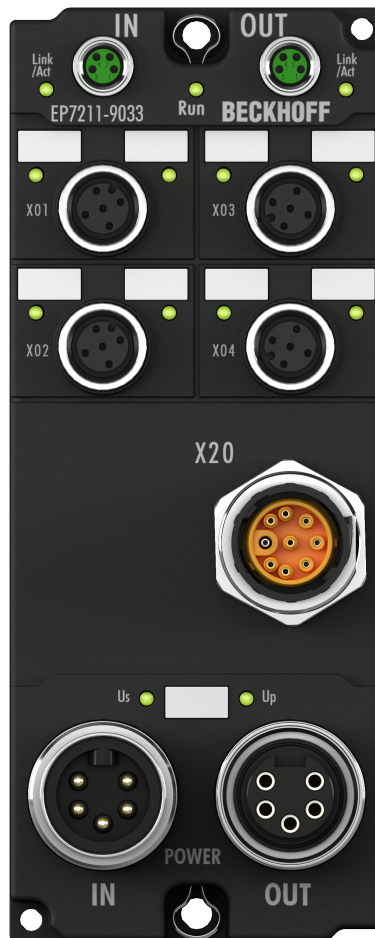
(15) Encoder, M12, socket, 5pin [▶ 87]

(2) Power IN, M8, plug, 4pin
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EP7211-9033

(1) EtherCAT, M8, socket, 4pin
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(5) Sensor, M12, socket, 4pin
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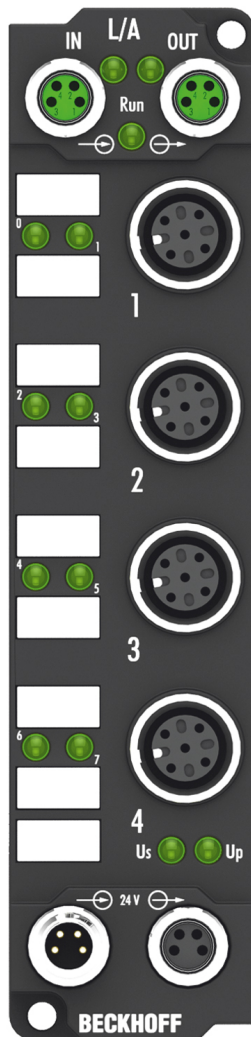
(17) Power, IN, 7/8", plug, 5pin
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(18) Power, OUT, 7/8", socket, 5pin [▶ 89](#)

EP7342-0002

ER7342-0002

(1) EtherCAT, M8, socket, 4pin
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(14) Motor, M12, socket, 4pin [▶ 87]

(14) Motor supply, M12, socket, 4pin
 [▶ 87]

(15) Encoder, M12, socket, 5pin [▶ 87]

(15) Encoder, M12, socket, 5pin [▶ 87]

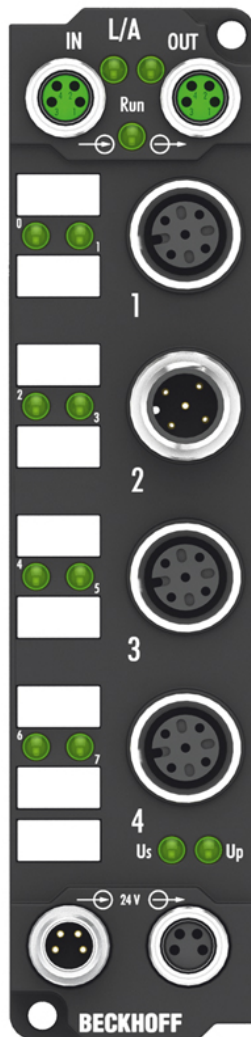
(2) Power IN, M8, male, 4pin
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(3) Power OUT, M8, socket, 4pin [▶ 82]

EP7041-2002, EP7041-3002, EP7041-3102
 ER7041-2002, ER7041-3002

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(2) Power IN, M8, plug, 4pin
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(14) Stepper motor connector, M12, socket, 4pin [▶ 87]

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(5) Sensor, M12, socket, 4pin [▶ 84]

(15) Encoder, M12, socket, 5pin [▶ 87]

(3) Power OUT, M8, socket, 4pin [▶ 82]

EP8309-1022

ER8309-1022

(1) EtherCAT, M8, socket, 4pin
[▶ 81]

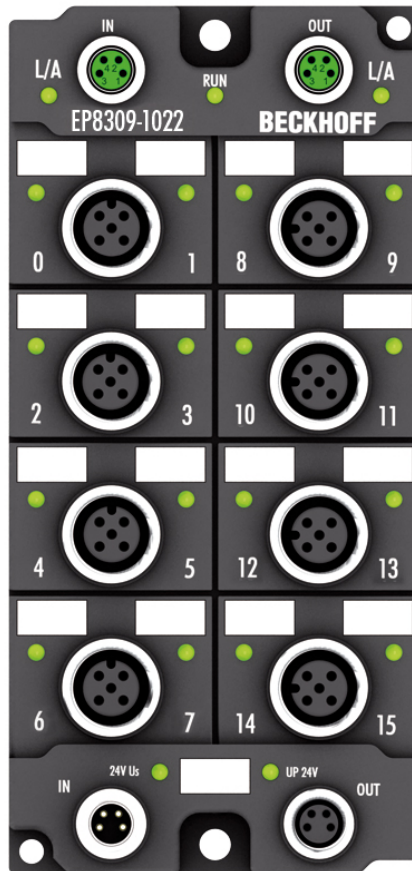
(6) Sensor, M12, socket, 5pin, shielded [▶ 85]

(6) Sensor, M12, socket, 5pin, shielded [▶ 85]

(5) Sensor, M12, socket, 4pin
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(5) Sensor, M12, socket, 4pin
[▶ 84]

(2) Power IN, M8, plug, 4pin
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(5) Sensor, M12, socket, 4pin
[▶ 84]

(5) Sensor, M12, socket, 4pin
[▶ 84]

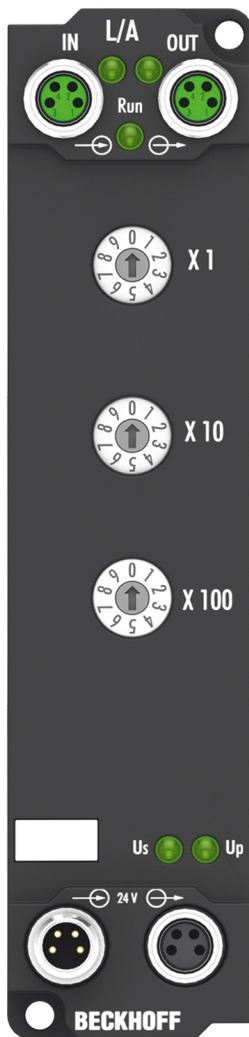
(5) Sensor, M12, socket, 4pin
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(6) Sensor, M12, socket, 5pin, shielded [▶ 85]

(3) Power OUT, M8, socket, 4pin
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EP1111-0000

(1) EtherCAT, M8, socket, 4pin
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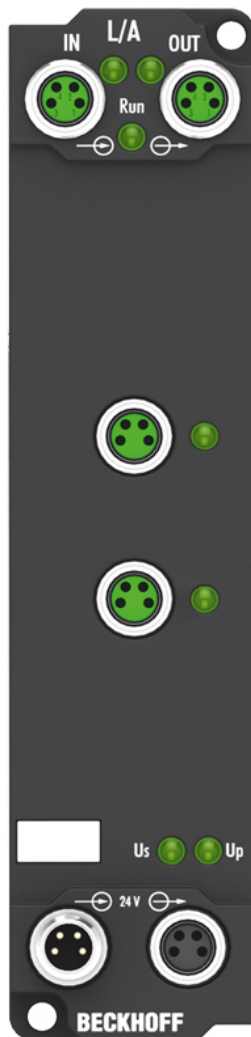


(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin [▶ 82]

EP1122-0001

(1) EtherCAT, M8, socket, 4pin
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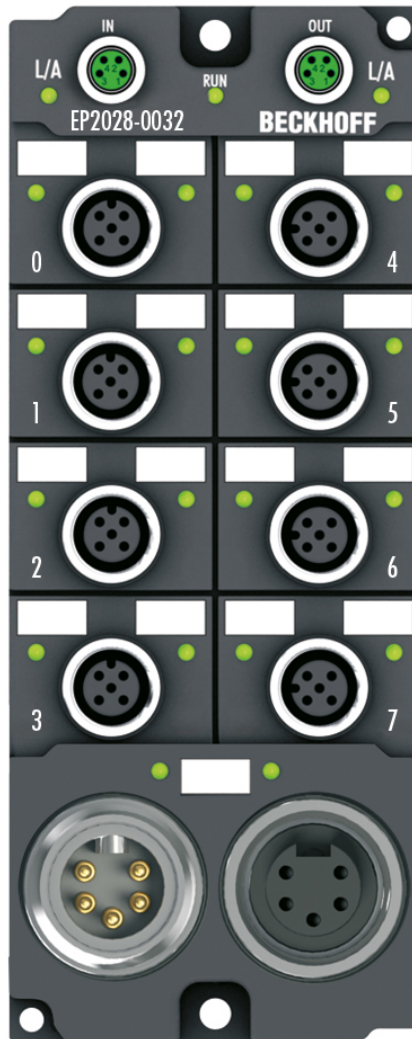


(2) Power IN, M8, plug, 4pin
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(3) Power OUT, M8, socket, 4pin [▶ 82]

EP2028-0032

(1) EtherCAT, M8, socket, 4pin
 [▶ 81]



(5) Sensor, M12, socket, 4pin
 [▶ 84]

(17) Power IN, 7/8", plug, 5pin
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(18) Power OUT, 7/8", socket, 5pin
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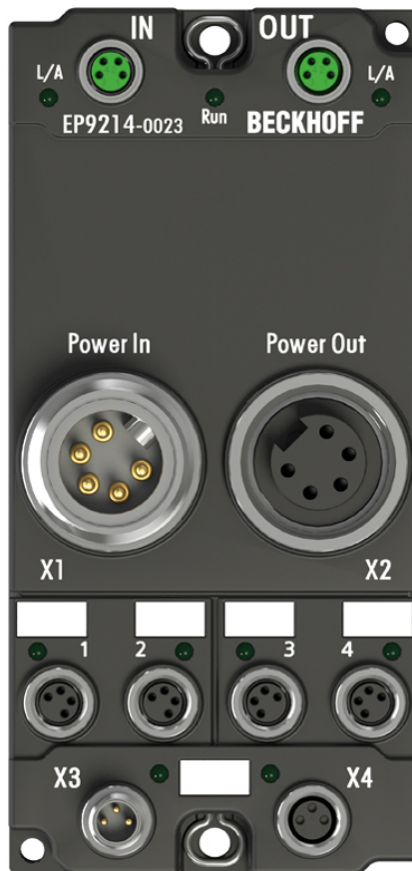
EP9214-0023, EP9224-0023

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(17) Power IN, 7/8", plug, 5pin
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(3) Power OUT, M8, socket, 4pin
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(19) Sensor, M8, plug, 3pin
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(18) Power OUT, 7/8", socket, 5pin
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(4) Sensor, M8, socket, 3pin [▶ 83](#)

EP9300-0022



(1) [EtherCAT, M8, socket, 4pin](#)
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(2) [Power IN, M8, plug, 4pin](#)
[▶ 82]

(24) [ProfiNet, M12, socket, D-coded, 4pin](#) [▶ 90]

(3) [Power OUT, M8, socket, 4pin](#)
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EP3162-0002

(1) EtherCAT, M8, socket, 4pin
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(2) Power IN, M8, plug, 4pin
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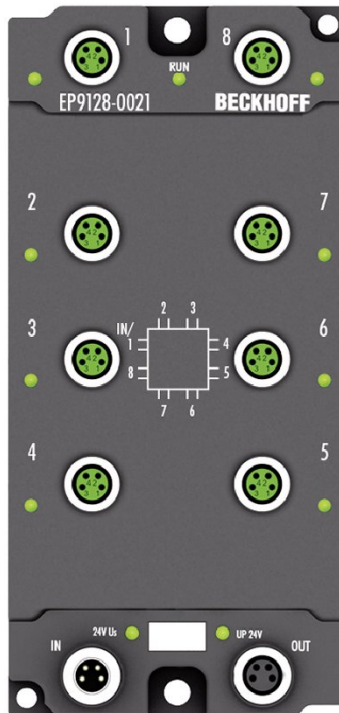
(6) Sensor, M12, socket, 5pin, shielded
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(3) Power OUT, M8, socket, 4pin [▶ 82]



EP9128-0021

(1) EtherCAT, M8, socket, 4pin
[▶ 81]



(1) EtherCAT, M8, socket, 4pin
[▶ 81]

(2) Power, IN, M8, plug, 4pin
[▶ 82]

(3) Power, OUT, B8, socket, 4pin
[▶ 82]

EP9221-0057

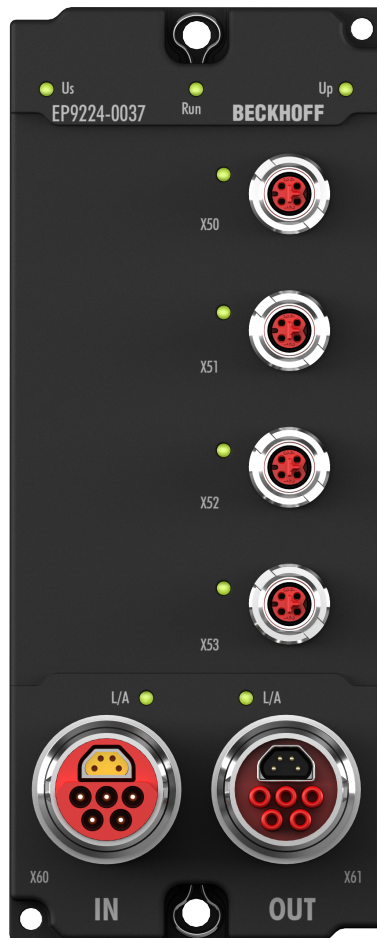


(22) ENP, flange, straight, male + female, pins 5+4, EtherCAT-coded [▶ 93]

(21) EtherCAT P, M8, socket, 4pin [▶ 92]

(23) ENP, flange, straight, female + male, pins 5+4, EtherCAT-coded [▶ 93]

EP9224-0037



(21) EtherCAT P, M8, socket, 4pin [[▶ 92](#)]

(22) ENP, flange, straight, male +female, pins 5+4, EtherCAT-coded [[▶ 93](#)]

(23) ENP, flange, straight, female +male, pins 5+4, EtherCAT-coded [[▶ 93](#)]

5 EtherCAT P box overview

EPP1004-0061

EPP2334-0061

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(4) Sensor, M8, socket, 3pole [[▶ 83](#)]

EPP1008-0001, EPP1018-0001, EPP1258-0001
 EPP2008-0001, EPP2028-0001, EPP2038-0001
 EPP2308-0001, EPP2318-0001, EPP2328-0001, EPP2338-0001, EPP2338-1001

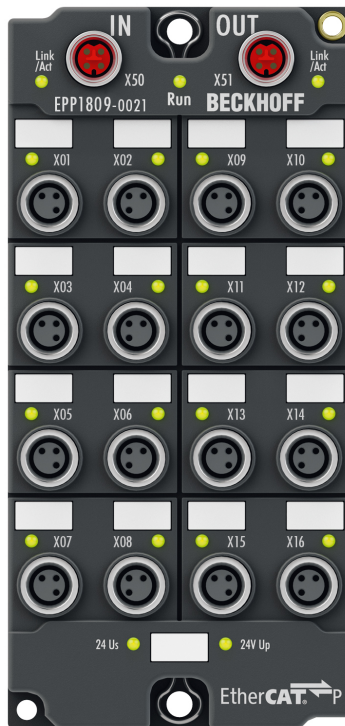
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(4) Sensor, M8, socket, 3pole [[▶ 83](#)]

EPP1809-0021, EPP1819-0021
 EPP2809-0021
 EPP2339-0021, EPP2349-0021

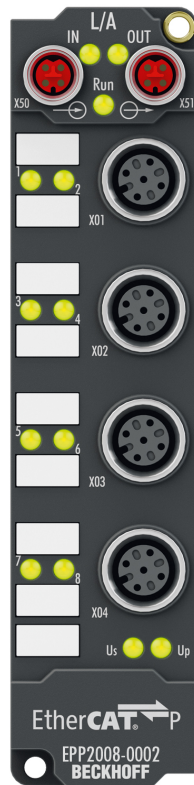
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(4) Sensor, M8, socket, 3pole [[▶ 83](#)]

EPP1008-0002, EPP1018-0002, EPP1258-0002, EPP1518-0002
 EPP2008-0002, EPP2028-0002, EPP2038-0002
 EPP2308-0002, EPP2318-0002, EPP2338-0002, EPP2338-1002, EPP2328-0002
 EPP2624-0002

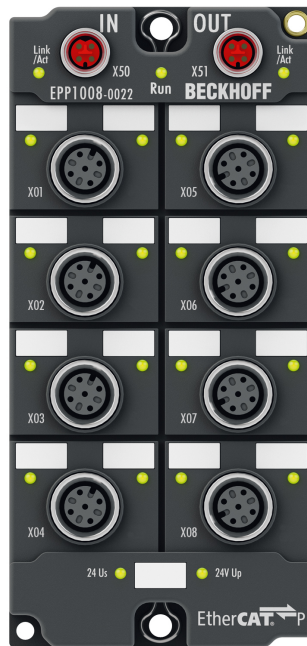
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(5) Sensor, M12, socket, 4pole [[▶ 84](#)]

EPP1008-0022, EPP1809-0022, EPP1819-0022
 EPP2008-0022, EPP2809-0022
 EPP2339-0022, EPP2349-0022

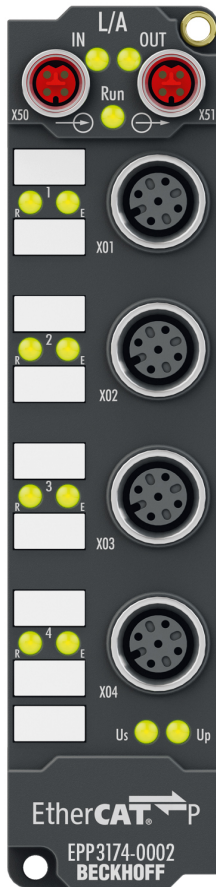
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(5) Sensor, M12, socket, 4pole
 [[▶ 84](#)]

EPP3174-0002, EPP3184-0002, EPP3204-0002, EPP3314-0002
 EPP4174-0002, EPP4374-0002
 EPP6001-0002, EPP6002-0002

(21) EtherCAT P, M8, socket,
 4pole [▶ 92]



(6) Sensor, M12, socket, 5pole, shielded
 [▶ 85]

EPP3744-0041, EPP3744-1041

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(7) [Sensor, M8, socket, 4pole](#) [[▶ 86](#)]

EPP1816-0008, EPP1816-3008
EPP2816-0008, EPP2817-0008
EPP2316-0008

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(8) Sensor, S-Sub, socket, 25pole [[▶ 95](#)]

EPP2816-0004

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(9) Sensor, M16, socket, 19pole

EPP2816-0010

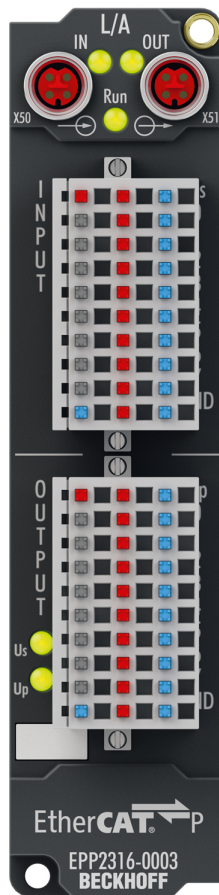
(21) EtherCAT P, M8, socket, 4pole [► 92]



(10) Sensor, D-Sub, HD, socket, 15pole

EPP2316-0003

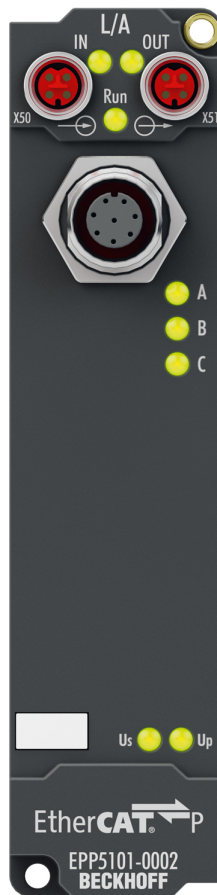
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(11) Sensor, connector for KM-module [[▶ 96](#)]

EPP5101-0002, EPP5101-1002, EPP5151-0002

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(12) Sensor, M12, socket, 8pole, shielded [[▶ 87](#)]

EPP5101-0011

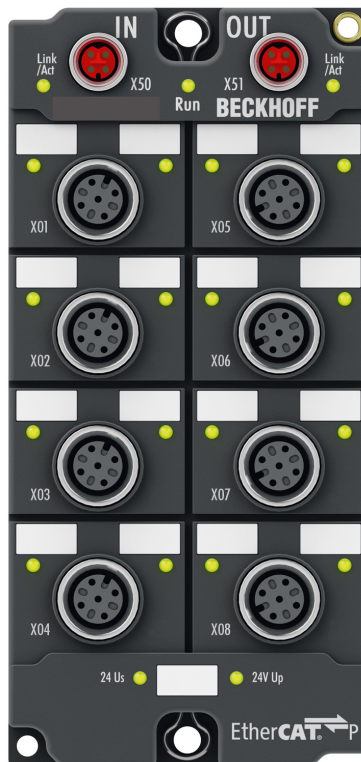
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(13) Sensor, D-Sub, socket, 15pole

EPP6228-0022

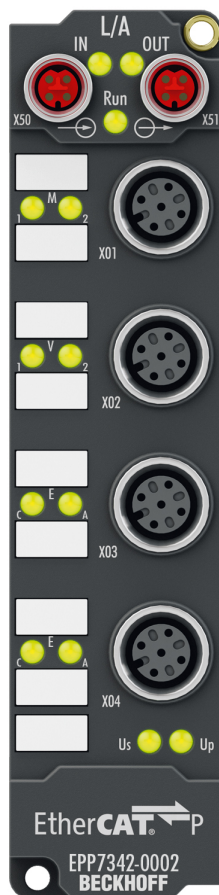
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(20) Sensor, M12, socket, 5pole [[▶ 89](#)]

EPP7041-1002, EPP7342-0002

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(14) Motor, M12, socket, 4pole [[▶ 87](#)]

(14) Motor, M12, socket, 4pole [[▶ 87](#)]

(5) Sensor, M12, socket, 4pole [[▶ 84](#)]

(15) Encoder, M12, socket, 5pole [[▶ 87](#)]

EPP7041-3002

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(14) Stepper motor connector, M12, socket, 4pole [[▶ 87](#)]

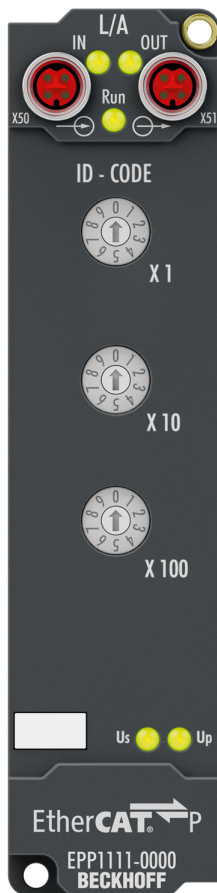
(16) Motor supply, M12, plug, 4pole [[▶ 88](#)]

(5) Sensor, M12, socket, 4pole [[▶ 84](#)]

(15) Encoder, M12, socket, 5pole [[▶ 87](#)]

EPP1111-0000

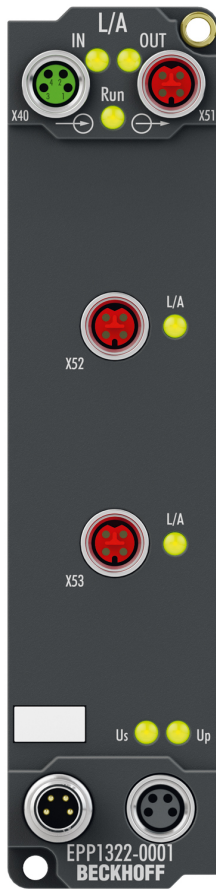
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



EPP1322-0001

(1) EtherCAT, M8, socket, 4pole
[▶ 81]

(21) EtherCAT P, M8, socket, 4pole [▶ 92]

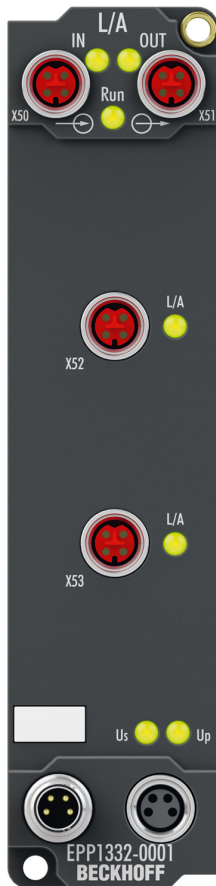


(2) Power IN, M8, plug, 4pole
[▶ 82]

(3) Power, OUT, M8, socket, 4pole [▶ 82]

EPP1332-0001

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]

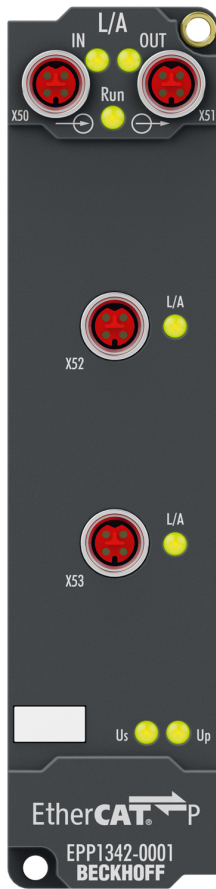
(2) Power IN, M8, plug, 4pole [[▶ 82](#)]

(3) Power OUT, M8, socket, 4pole [[▶ 82](#)]

EPP1342-0001

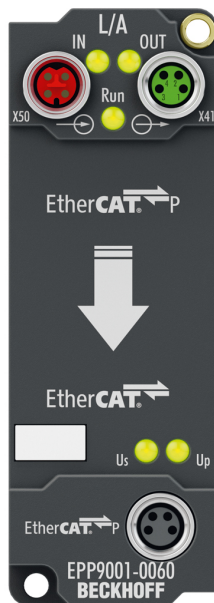
(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



EPP9001-0060

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(1) EtherCAT, M8, socket, 4pole [[▶ 81](#)]

(3) Power OUT, M8, socket, 4pole [[▶ 82](#)]

EPP9022-0060

(21) EtherCAT P, M8, socket, 4pole [[▶ 92](#)]



(3) Power OUT, M8, socket, 4pole [[▶ 82](#)]

EPP3632-0001

(21) EtherCAT P, M8, socket, 4pin [[▶ 92](#)]



(7) Sensor, M8, socket, 4pin [[▶ 86](#)]

6 IO-Link devices box overview

- EPI1008-0001
- EPI2008-0001
- EPI2338-0001
- ERI1008-0001
- ERI2008-0001
- ERI2338-0001

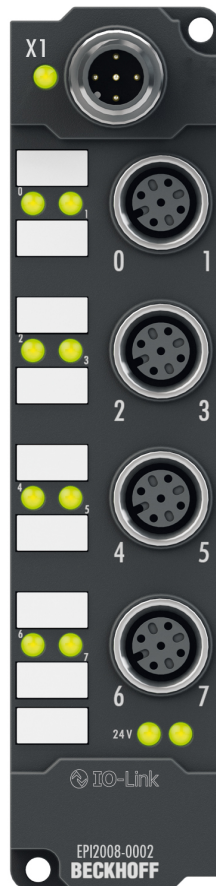
(20) Sensor, M12, plug, 5pin
[▶ 89](#)



(4) Sensor, M8, socket, 3pin [▶ 83](#)

EPI1008-0002
EPI2008-0002
EPI2338-0002
ERI1008-0002
ERI2008-0002
ERI2338-0002

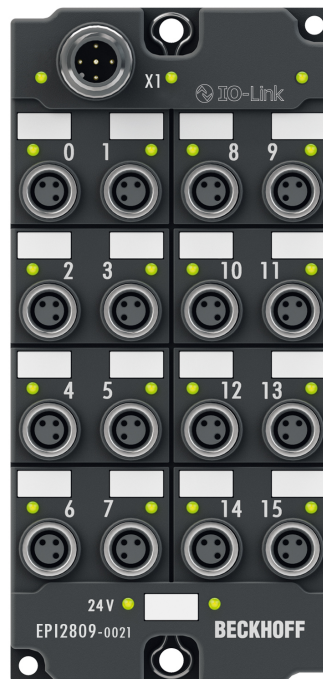
(20) Sensor, M12, plug, 5pin
[▶ 89](#)



(5) Sensor, M12, socket, 4pin [▶ 84](#)

- EPI1809-0021
- EPI2339-0021
- EPI2809-0021
- ERI1809-0021
- ERI2339-0021
- ERI2809-0021

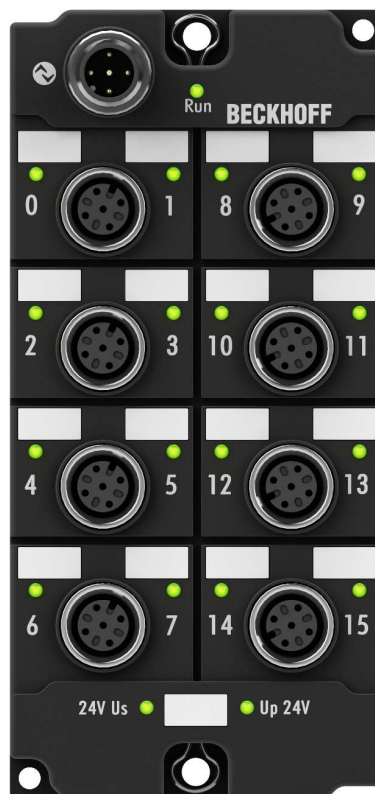
(20) Sensor, M12, plug, 5pin
[▶ 89](#)



(4) Sensor, M8, socket, 3pin
[▶ 83](#)

EPI1809-0022
EPI2339-0022
EPI2809-0022
ERI1809-0022
ERI2339-0022
EPI2809-0022

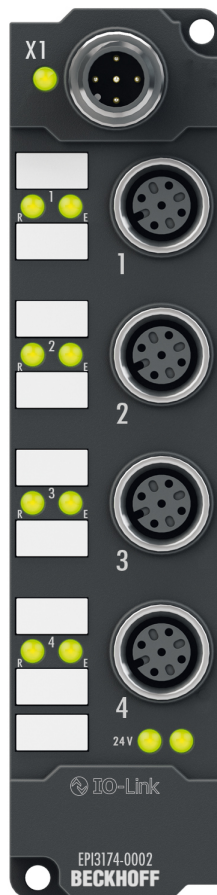
(20) Sensor, M12, plug, 5pin
[▶ 89]



(5) Sensor, M12, socket, 4pin
[▶ 84]

EPI3174-0002
 EPI4374-0002
 ERI3174-0002
 ERI4374-0002

(20) Sensor, M12, plug, 5pin
[▶ 89](#)



(6) Sensor, M12, socket, 5pin, shielded
[▶ 85](#)

7 Cable assemblies overview part 1

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type	
(1)	ZK1090-3100-0xxx	M8, plug, 4pin, straight	open end	x		26		ZB9032	
	ZK1090-3100-1xxx			x		22		ZB9020	
	ZK1090-3100-3xxx				x	26		ZB9030	
	ZK1090-3131-0xxx		M8, plug, 4 pin, straight	x		26			ZB9032
	ZK1090-3131-1xxx			x		22			ZB9020
	ZK1090-3131-3xxx				x	26			ZB9030
	ZK1090-3131-6xxx			x		22			ZB9021 (tor-sion)
	ZK1090-3132-0xxx		M8, socket, 4 pin, straight	x		26			ZB9032
	ZK1090-3132-1xxx			x		22			ZB9020
	ZK1090-3132-3xxx				x	26			ZB9030
	ZK1090-3134-0xxx		M8, socket, 4pin, angled	x		26			ZB9032
	ZK1090-3161-0xxx	M12, plug, D-coded, 4pin, straight	x		26		ZB9032		
	ZK1090-3161-1xxx		x		22		ZB9020		
	ZK1090-3161-3xxx			x	26		ZB9030		
	ZK1090-3161-6xxx		x		22		ZB9021 (tor-sion)		
	ZK1090-3163-0xxx	M12, plug, D-coded, 4pin, angled	x		26		ZB9032		
	ZK1090-3166-0xxx	M12, flange, D-coded, socket, 4pin, straight	x		26		ZB9032		
	ZK1090-3166-1xxx		x		22		ZB9020		
	ZK1090-3166-3xxx			x	26		ZB9030		
	ZK1090-3191-0xxx	RJ45, plug, IP20, straight	x		26		ZB9032		
	ZK1090-3191-1xxx		x		22		ZB9020		
	ZK1090-3191-3xxx			x	26		ZB9030		
	ZK1090-3300-0xxx	M8, plug, 4pin, angled	open end	x		26		ZB9032	
	ZK1090-3300-1xxx			x		22		ZB9020	
	ZK1090-3300-3xxx				x	26		ZB9030	
	ZK1090-3332-0xxx		M8, socket, 4 pin, straight	x		26			ZB9032
	ZK1090-3333-0xxx		M8, plug, 4pin, angled	x		26			ZB9032
	ZK1090-3333-1xxx			x		22			ZB9020
	ZK1090-3333-3xxx				x	26			ZB9030
	ZK1090-3361-0xxx		M12, plug, D-coded, 4pin, straight	x		26			ZB9032
	ZK1090-3361-1xxx			x		22			ZB9020
	ZK1090-3361-3xxx				x	26			ZB9030
	ZK1090-3363-0xxx		M12, plug, D-coded, 4pin, angled	x		26			ZB9032
	ZK1090-3366-0xxx	M12, flange, D-coded, socket, 4pin, straight	x		26		ZB9032		
	ZK1090-3366-1xxx		x		22		ZB9020		
	ZK1090-3366-3xxx			x	26		ZB9030		
	ZK1090-3391-0xxx	RJ45, plug, IP20, straight	x		26		ZB9032		
	ZK1090-3391-1xxx		x		22		ZB9020		
ZK1090-3391-3xxx			x	26	ZB9030				

To the [field assembly connectors](#) [► 94]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(2)	ZK2020-3200-0xxx	M8, socket, 4pin, straight	open end	x				ZB9050
	ZK2020-3200-3xxx				x			ZB9051
	ZK2020-3200-6xxx			x				ZB9052 (tor-sion)
	ZK2020-3200-7xxx							hygienic
	ZK2020-3132-0xxx	M8, plug, 4pin, straight	M8, socket, 4pin, straight	x				ZB9050
	ZK2020-3132-3xxx				x			ZB9051
	ZK2020-3132-6xxx			x				ZB9052 (tor-sion)
	ZK2020-3132-7xxx							hygienic
	ZK2020-3400-0xxx	M8, socket, 4pin, angled	open end	x				ZB9050
	ZK2020-3400-3xxx				x			ZB9051
	ZK2020-3334-0xxx	M8, plug, 4pin, angled	M8, socket, 4pin, angled	x				ZB9050
	ZK2020-3334-3xxx				x			ZB9051
	ZK2020-3332-0xxx		M8, socket, 4pin, straight	x				ZB9050
	ZK2020-6132-0xxx	M12, plug, 4pin, straight	M8, socket, 4pin, straight	x				ZB9050
	ZK2020-6132-4xxx							

To the [field assembly connectors](#) [► 94]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(3)	ZK2020-3100-0xxx	M8, plug, 4pin, straight	open end	x				ZB9050
	ZK2020-3100-3xxx				x			ZB9051
	ZK2020-3132-0xxx		M8, socket, 4pin, straight	x				ZB9050
	ZK2020-3132-3xxx				x			ZB9051
	ZK2020-3132-6xxx			x				ZB9052 (tor-sion)
	ZK2020-3132-7xxx							hygienic
	ZK2020-3162-0xxx		M12, socket, 4pin, straight	x				ZB9050
	ZK2020-3162-6xxx			x				ZB9052 (tor-sion)
	ZK2020-3300-0xxx	M8, plug, 4pin, angled	open end	x				ZB9050
	ZK2020-3300-3xxx				x			ZB9051
	ZK2020-3334-0xxx		M8, socket, 4pin, angled	x				ZB9050
	ZK2020-3334-3xxx				x			ZB9051





To the [field assembly connectors](#) [► 94]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type				
(4)	ZK2000-2100-0xxx	M8, plug, 3pin, straight	open end	x				ZB9040				
	ZK2000-2100-3xxx				x			ZB9042				
	ZK2000-2100-6xxx			x					ZB9044 (tor-sion)			
	ZK2000-2122-0xxx			M8, socket, 3pin, straight	x					ZB9040		
	ZK2000-2122-3xxx					x				ZB9042		
	ZK2000-2122-6xxx				x					ZB9044 (tor-sion)		
	ZK2000-2124-0xxx		M8, socket, 3pin, angled	x				ZB9040				
	ZK2000-2124-3xxx					x			ZB9042			
	ZK2000-2132-0xxx		M8, socket, 4pin, straight	x				ZB9040				
	ZK2000-2132-3xxx					x			ZB9042			
	ZK2000-2162-0xxx		M12, socket, 4pin, straight	x				ZB9040				
	ZK2000-2162-3xxx					x			ZB9042			
	ZK2000-2164-0xxx	M12, socket, 4pin, angled	x				ZB9040					
	ZK2000-2164-3xxx				x			ZB9042				
	ZK2000-2300-0xxx	M8, plug, 3pin, angled	open end	x				ZB9040				
	ZK2000-2300-3xxx					x			ZB9042			
	ZK2000-2322-0xxx			M8, socket, 3pin, straight	x					ZB9040		
	ZK2000-2322-3xxx									x		ZB9042
	ZK2000-2324-0xxx					M8, socket, 3pin, angled		x				
	ZK2000-2324-3xxx								x		ZB9042	
	ZK2000-2362-0xxx		M8, plug, 3pin, angled	M12, socket, 4pin, straight	x				ZB9040			
	ZK2000-2362-3xxx								x		ZB9042	
	ZK2000-2364-0xxx					M12, socket, 4pin, angled	x					ZB9040
	ZK2000-2364-3xxx							x		ZB9042		



To the [field assembly connectors](#) [► 94]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type	
(5)	ZK2000-6100-0xxx	M12, plug, 4pin, straight	open end	x				ZB9050	
	ZK2000-6100-3xxx				x			ZB9051	
	ZK2000-6100-6xxx			x				ZB9045 (tor-sion)	
	ZK2000-6100-7xxx							hygienic	
	ZK2000-6132-0xxx			M8, socket, 4-pin, straight	x				ZB9050
	ZK2000-6134-0xxx			M8, socket, 4-pin, angled	x				ZB9050
	ZK2000-6162-0xxx			M12, socket, 4pin, straight	x				ZB9050
	ZK2000-6162-3xxx					x			ZB9051
	ZK2000-6162-6xxx				x				ZB9045 (tor-sion)
	ZK2000-6162-7xxx								hygienic
	ZK2000-6164-0xxx			M12, socket, 4pin, angled	x				ZB9050
	ZK2000-6164-3xxx					x			ZB9051
	ZK2000-6300-0xxx	M12, plug, 4pin, angled	open end	x				ZB9050	
	ZK2000-6300-3xxx					x			ZB9051
	ZK2000-6362-0xxx		M12, socket, 4pin, straight	x				ZB9050	
	ZK2000-6362-3xxx					x			ZB9051
	ZK2000-6364-0xxx	M12, socket, 4pin, angled	x				ZB9050		
	ZK2000-6364-3xxx				x			ZB9051	
	ZK2000-6500-0xxx	M12, splitter, plug, 4pin, straight	open end	x				ZB9041	
	ZK2000-6522-0xxx	M8, socket, 3pin, straight	x					ZB9041	
ZK2000-6522-3xxx					x				
ZK2000-6524-0xxx	M12, splitter, plug, 4pin, straight	M8, socket, 4pin, angled	x				ZB9041		
ZK2000-6562-0xxx		M12, socket, 4pin, straight	x				ZB9041		
ZK2000-6564-0xxx		M12, socket, 4pin, angled	x				ZB9041		





To the [field assembly connectors](#) [► 95]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(6)	<u>ZK2000-7100-0xxx</u>	M12, plug, 5pin, shielded, straight	open end	x				
	<u>ZK2000-7122-0xxx</u>	M8, socket, 3pin, straight, shielded		x				
	<u>ZK2000-7171-0xxx</u>	M12, plug, 5pin, straight, shielded		x				
<u>ZK2000-7172-0xxx</u>	M12, socket, 5pin, straight, shielded		x					



To the [field assembly connectors](#) [► 95]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type	
(7)	ZK2000-3100-0xxx	M8, plug, 4pin, straight	open end	x				ZB9041	
	ZK2000-3100-3xxx				x			ZB9043	
	ZK2000-3132-0xxx	M8, socket, 4pin, straight	M8, socket, 4pin, straight	x				ZB9041	
	ZK2000-3132-3xxx				x			ZB9043	
	ZK2000-3162-9xxx	M8, plug, 4pin, straight	M12, socket, 4pin, straight	x		22		ZB9050	
	ZK2000-3164-0xxx								ZB9050
	ZK2000-3164-0xxx	M8, plug, 4pin, straight	M12, socket, 4pin, angled	x		22		ZB9050	
	ZK2000-3300-0xxx								ZB9041
	ZK2000-3300-3xxx	M8, plug, 4pin, angled	open end	x				ZB9043	
	ZK2000-3334-0xxx								ZB9041
	ZK2000-3334-3xxx	M8, socket, 4pin, angled	M8, socket, 4pin, angled	x				ZB9043	
	ZK2000-3500-0xxx								ZB9040
	ZK2000-3522-0xxx	M8, splitter, plug, 4pin, straight	open end	x				ZB9040	
	ZK2000-3524-0xxx								ZB9040
ZK2000-3532-0xxx									ZB9041
ZK2000-3532-0xxx									ZB9041



To the [field assembly connectors](#) [► 95]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(14)	ZK4000-6100-2xxx	M8, plug, 4pin, straight	open end	x				
	ZK4000-6261-0xxx		M12, socket, 4pin, straight	x				
	ZK4000-6800-2xxx	M12, plug, 4pin, straight, shielded	open end	x				
	ZK4000-6768-0xxx		M12, socket, 4pin, straight, shielded	x				

To the [field assembly connectors](#) [► 96]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(15)	ZK4000-5100-2xxx	M12, plug, 5pin, straight, shielded	open end	x				
	ZK4000-5151-0xxx		M12, plug, 5pin, straight, shielded	x				

To the [field assembly connectors](#) [► 96]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(12)	ZK2000-8100-0xxx	M12, plug, 8pin, straight	open	x				
	ZK2000-8100-3xxx	M12, plug, 8pin, straight, shielded	open		x			
	ZK2000-8181-3xxx	M12, plug, 8pin, straight, shielded	M12, plug, 8pin, straight, shielded		x			
ZK2000-8182-0xxx	M12, plug, 8pin, straight	M12, socket, 8pin, straight	x					
ZK2000-8172-0xxx	M12, plug, 8pin, straight, shielded	M12, socket, 5pin, straight, shielded	x					





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8 Cable assemblies overview part 2






Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(16)	<u>ZK4000-6200-2xxx</u>	M12, socket, 4pin, straight	open end	x				
	<u>ZK4000-6261-0xxx</u>		M12, plug, 4pin, straight	x				
	<u>ZK4000-6700-2xxx</u>	M12, socket, 4pin, straight, shielded	open end	x				
	<u>ZK4000-6768-0xxx</u>		M12, plug, 4pin, straight, shielded	x				

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(17)	<u>ZK2030-1112-0xxx</u>	7/8", plug, 5pin, 1.5 mm ² , straight	7/8", socket, 5pin, 1.5 mm ² , straight	x				ZB9050-0007
	<u>ZK2030-1314-0xxx</u>	7/8", plug, 5pin, 1.5 mm ² , angled	7/8", socket, 5pin, 1.5 mm ² , angled	x				ZB9050-0007
	<u>ZK2030-1200-0xxx</u>	7/8", socket, 5pin, 1.5 mm ² , straight	open end	x				ZB9050-0007
	<u>ZK2030-1400-0xxx</u>	7/8", socket, 5pin, 1.5 mm ² , angled	open end	x				ZB9050-0007
	<u>ZK2031-1200-0xxx</u>	7/8", socket, 5pin, 2.5 mm ² , straight	open end	x				
	<u>ZK2031-1400-0xxx</u>	7/8", socket, 5pin, 1.5 mm ² , angled	open end	x				

To the [field assembly connectors](#) [► 96]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(18)	<u>ZK2030-1112-0xxx</u>	7/8", plug, 5pin, 1.5 mm ² , straight	7/8", socket, 5pin, 1.5 mm ² , straight	x				ZB9050-0007
	<u>ZK2030-1314-0xxx</u>	7/8", plug, 5pin, 1.5 mm ² , angled	7/8", socket, 5pin, 1.5 mm ² , an- gled	x				ZB9050-0007
<u>ZK2031-1112-0xxx</u>	7/8", plug, 5pin, 2.5 mm ² , straight	7/8", socket, 5pin, 2.5 mm ² , straight	x					
<u>ZK2031-1314-0xxx</u>	7/8", plug, 5pin, 2.5 mm ² , angled	7/8", socket, 5pin, 2.5 mm ² , an- gled	x					

To the [field assembly connectors](#) [► 96]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(20)	<u>ZK2000-5152-0xxx</u>	M12, plug, 5pin, straight	M12, socket, 5pin, straight	x				
	<u>ZK2000-5100-0xxx</u>	M12, plug, 5pin, straight	open	x				
	<u>ZK2000-5354-0xxx</u>	M12, plug, 5pin, straight, angled	M12, socket, 5pin, angled	x				
<u>ZK2000-5200-0xxx</u>	M12, socket, 5pin, straight	open end	x					
<u>ZK2000-5400-0xxx</u>	M12, socket, 5pin, an- gled	open end	x					

To the [field assembly connectors](#) [► 97]







Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type	
	ZK1090-3200-0xxx	M8, socket, 4pin, straight	open end	x		26		ZB9032	
	ZK1090-3200-1xxx			x		22		ZB9020	
	ZK1090-3200-3xxx				x	26		ZB9030	
	ZK1090-3232-0xxx			M8, socket, 4pin, straight	x		26		ZB9032
	ZK1090-3261-0xxx			M12, pin, D-coded, 4pole, straight	x		26		ZB9032
	ZK1090-3291-0xxx			RJ45, plug, IP20, straight	x		26		ZB9032
	ZK1090-3291-1xxx		x			22	ZB9020		
	ZK1090-3291-3xxx				x	26	ZB9030		
	ZK1090-3891-0xxx		M8, flange, straight, female, 4pin	RJ45, plug, IP20, straight	x		26		ZB9032
To the field assembly connectors [▶ 99]									
(24)	ZK1090-6100-0xxx	M12, pin, D-coded, 4pole, straight	open end	x		22		ZB9020	
	ZK1090-6100-4xxx			x		26		ZB9032	
	ZK1090-6161-0xxx		M12, plug, D-coded, 4pin, straight	x		22		ZB9020	
	ZK1090-6161-4xxx			x		26		ZB9032	
	ZK1090-6162-0xxx		M12, socket, D-coded, 4pin, straight	x		22		ZB9020	
	ZK1090-6163-0xxx		M12, socket, D-coded, 4pin, angled	x		22		ZB9020	
	ZK1090-6166-0xxx			x		26		ZB9032	
	ZK1090-6166-4xxx		M12, flange, D-coded, socket, 4pin, straight	x		22		ZB9020	
	ZK1090-6191-0xxx		RJ45, plug, IP20, straight	x		22		ZB9020	
	ZK1090-6191-4xxx	x			26	ZB9032			
	ZK1090-6191-3xxx			x	22	ZB9010			
	To the field assembly connectors [▶ 99]								

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
	ZK1090-6300-0xxx	M12, plug, D-coded, 4pin, angled	open end	x		22		ZB9020
	ZK1090-6300-4xxx			x		26		ZB9032
	ZK1090-6332-0xxx		M8, socket, 4pin, straight	x		22		ZB9020
	ZK1090-6363-0xxx		M12, plug, D-coded, 4pin, angled	x		22		ZB9020
	ZK1090-6363-4xxx			x		26		ZB9032
	ZK1090-6366-0xxx		M12, flange, D-coded, 4pin, straight	x		22		ZB9020
	ZK1090-6391-0xxx		RJ45, plug, IP20, straight	x		22		ZB9020
	ZK1090-6600-0xxx	M12, flange, D-coded, 4pin, straight	open end	x		22		ZB9020
	ZK1090-6600-4xxx			x		26		ZB9032
	ZK1090-6292-0xxx		RJ45, plug, IP20, straight	x		22		ZB9020
	ZK1090-6292-4xxx			x		26		ZB9032
	ZK1090-6800-4xxx	M12, plug, D-coded, 4pin, angled	open end	x		26		ZB9032

To the field assembly connectors [[▶ 99](#)]


Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(19)	ZK2000-2200-0xxx	M8, socket, 3pin, straight	open end	x				ZB9040
	ZK2000-2200-3xxx				x			ZB9042
	ZK2000-2400-0xxx	M8, socket, 3pin, angled	open end	x				ZB9040
	ZK2000-2400-3xxx					x		
	ZK2000-6200-0xxx	M12, socket, 4pin, straight	open end	x				ZB9050
	ZK2000-6200-3xxx					x		
	ZK2000-6400-0xxx	M12, socket, 4pin, angled	open end	x				ZB9050
	ZK2000-6400-3xxx					x		

To the field assembly connectors [[▶ 99](#)]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type		
(21)	ZK7000-0100-0xxx	M8, plug, 4pin, straight, EtherCATP-coded	open	x		22		ZB7000		
	ZK7001-0100-0xxx			x		24		ZB7001		
	ZK7000-0101-0xxx			x		22			ZB7000	
	ZK7001-0101-0xxx			x		24			ZB7001	
	ZK7000-0102-0xxx			M8, socket, 4pin, straight, EtherCATP-coded	x			22		ZB7000
	ZK7001-0102-0xxx				x			24		ZB7001
	ZK7000-0105-0xxx	M8, flange, 4pin, straight, female, EtherCATP-coded	x		22		ZB7000			
	ZK7001-0105-0xxx		x		24		ZB7001			
	ZK7000-0300-0xxx	M8, plug, 4pin, angled, EtherCATP-coded	open	x		22		ZB7000		
	ZK7001-0300-0xxx			x		24		ZB7001		
	ZK7000-0303-0xxx	M8, plug, 4pin, angled, EtherCATP-coded	M8, plug, 4pin, angled, EtherCATP-coded	x		22		ZB7000		
	ZK7001-0303-0xxx			x		24		ZB7001		


To the [field assembly connectors](#) [► 100]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
	ZK2000-7200-0xxx	M12, socket, 5pin, straight	open	x				



Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
	ZK2020-3800-0xxx	M8, flange, 4pin, socket, straight	open	x				ZB9050

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(26)	ZK4701-0421-2xxx	iTec, plug, straight	iTec, socket, straight	x				

9 Cable assemblies overview part 3


Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type
(22)	ZK7208-3000-Axxx	B17, plug, straight, male + female, 5 + 4 pin, EtherCAT-coded	open	x				ZB7302
	ZK7208-3031-Axxx	B17, plug, straight, female + male, 5 + 4 pin, EtherCAT-coded	x			ZB7302		

To the [field assembly connectors](#) [► 100]

Type	Article	Head 1	Head 2	PUR	PVC	AWG	Illustration	Cable type	
(23)	ZK7208-3100-Axxx	B17, plug, straight, female + male, 5 + 4 pin, EtherCAT-coded	open	x				ZB7302	
	ZK7208-3031-Axxx	B17, plug, straight, male + female, 5 + 4 pin, EtherCAT-coded	B17, plug, straight, female + male, 5 + 4 pin, EtherCAT-coded	x					ZB7302

To the [field assembly connectors](#) [► 100]

10 Field-configurable connectors part 1


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(1)	ZS1090-1006	M8, plug, straight		metal, shielded	4	A	0.14-0.5 mm ²	screw type	4.9-6.5 mm

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(2)	ZS2000-1323	M8, socket, straight		plastic	4	A	0.14-0.34 mm ²	IDC	3.5-5.1 mm
	ZS2000-2320	M8, socket, straight		plastic	4	A	0.14-0.5 mm ²	screw type	3.5-5.5 mm
	ZS2000-2321	M8, socket, straight		plastic	4	A	0.14-0.25 mm ²	solder type	3.5-5.5 mm
	ZS2000-2341	M8, socket, angled		plastic	4	A	0.14-0.25 mm ²	solder type	3.5-5.5 mm


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(3)	ZS2000-1313	M8, plug, straight		plastic	4	A	0.14-0.34 mm ²	IDC	3.5-5.0 mm
	ZS2000-2310	M8, plug, straight		plastic	4	A	0.14-0.5 mm ²	screw type	3.5-5.0 mm
	ZS2000-2311	M8, plug, straight		plastic	4	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm
	ZS2000-2331	M8, plug, angled		plastic	4	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(4)	ZS2000-1213	M8, plug, straight		plastic	3	A	0.14-0.34 mm ²	IDC	3.5-5.0 mm
	ZS2000-2210	M8, plug, straight		plastic	3	A	0.14-0.5 mm ²	screw type	3.5-5.0 mm
	ZS2000-2231	M8, plug, angled		plastic	3	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(5)	ZS2000-1613	M12, plug, straight		plastic	4	A	0.14-0.34 mm ²	IDC	2.9-5.1 mm
	ZS2000-2610	M12, plug, straight		plastic	4	A	0.25-0.75 mm ²	screw type	4.0-6.0 mm
	ZS2000-2630	M12, plug, angled		plastic	4	A	0.25-0.75 mm ²	screw type	3.5-5.0 mm
	ZS2000-2710	M12, plug, straight		plastic	4/5	A	0.25-0.75 mm ²	screw type	3.5-5.0 mm
	ZS2000-2730	M12, plug, angled		plastic	4/5	A	0.25-0.75 mm ²	screw type	4.0-6.0 mm
	ZS2000-3711	M12, plug, straight		plastic	4/5	A	0.25-0.75 mm ²	screw type	3.0-6.5 mm
	ZS2000-6710	M12, plug, straight		metal, shielded	4/5	A	0.25-1.5 mm ²	screw type	4.0-8.0 mm

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(6)	ZS2000-6710	M12, plug, straight		metal, shielded	4/5	A	0.25-1.5 mm ²	screw type	4.0-8.0 mm

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(7)	ZS2000-1313	M8, plug, straight		plastic	4	A	0.14-0.34 mm ²	IDC	3.5-5.0 mm
	ZS2000-2310	M8, plug, straight		plastic	4	A	0.14-0.5 mm ²	screw type	3.5-5.0 mm
	ZS2000-2311	M8, plug, straight		plastic	4	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm
	ZS2000-2331	M8, plug, angled		plastic	4	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm





Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(8)	ZS2002-0111	D-Sub, plug, straight		plastic	25		0.14-0.5 mm ²	solder type	

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(11)	ZS2001-0001	Connector for KM/EM-Module, without LED		plastic	10		0.34-1.5 mm ²	push in	
	ZS2001-0002	Connector for KM/EM-Module, with LED		plastic	10		0.34-1.5 mm ²	push in	
	ZS2001-0004	Connector for KM/EM-Module, with LED		plastic	30		0.34-1.5 mm ²	push in	
	ZS2001-0005	Connector for KM/EM-Module, without LED		plastic	10		0.34-1.5 mm ²	push in	


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(12)	ZS2000-6713	M12, plug, straight		metal	8	A	0.25-0.5 mm ²	screw type	4.0-8.0 mm

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(15)	ZS2000-2710	M12, plug, straight		plastic	4/5	A	0.25-0.75 mm ²	screw type	3.5-5.0 mm
	ZS2000-2730	M12, plug, angled		plastic	4/5	A	0.25-0.75 mm ²	screw type	4.0-6.0 mm
	ZS2000-3711	M12, plug, straight		plastic	4/5	A	0.25-0.75 mm ²	screw type	3.0-6.5 mm
	ZS2000-6710	M12, plug, straight		metal, shielded	4/5	A	0.25-1.5 mm ²	screw type	4.0-8.0 mm

Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(17)	ZS2020-2820	7/8", socket, straight		plastic	5	A	0.5-1.5 mm ²	screw type	6.0-12.0 mm
	ZS2020-2840	7/8", socket, angled		plastic	5	A	0.5-1.5 mm ²	screw type	6.0-8.0 mm
(18)	ZS2020-2810	7/8", plug, straight		plastic	5	A	0.5-1.5 mm ²	screw type	6.0-12.0 mm
	ZS2020-2830	7/8", plug, angled		plastic	5	A	0.5-1.5 mm ²	screw type	6.0-8.0 mm




Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(19)	ZS2000-1313	M8, socket, straight		plastic	3	A	0.14-0.34 mm ²	IDC	3.5-5.0 mm
	ZS2000-2310	M8, socket, straight		plastic	3	A	0.14-0.5 mm ²	screw type	3.5-5.0 mm
	ZS2000-2311	M8, socket, straight		plastic	3	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm
	ZS2000-2331	M8, socket, angled		plastic	3	A	0.14-0.25 mm ²	solder type	3.5-5.0 mm


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(20)	ZS2000-2710	M12, plug, straight		plastic	4/5	A	0.25-0.75 mm ²	screw type	3.5-5.0 mm
	ZS2000-2730	M12, plug, angled		plastic	4/5	A	0.25-0.75 mm ²	screw type	4.0-6.0 mm
	ZS2000-3711	M12, plug, straight		plastic	4/5	A	0.25-0.75 mm ²	screw type	3.0-6.5 mm
	ZS2000-6710	M12, plug, straight		metal, shielded	4/5	A	0.25-1.5 mm ²	screw type	4.0-8.0 mm


Type	Article	Description	Illustration	Housing-material	No. of poles	Coding	Cross section	Termination	Cable outlet
(12)	ZS2000-6723	M12, plug, straight		Metal, shielded	8	A	max. 0.5 mm ²	screw type	4.0-8.0 mm


11 Field-configurable connectors part 2

Type	Article	Description	Illustration	Housing material	No. of poles	Coding	Cross section	Termination	Cable outlet
	ZS1090-1007	M8, socket, straight		metal, shielded	4	A	0.14-0.5mm ²	screw type	5.0-6.5mm
	ZS2000-2310	M12, socket, straight		plastic	4	A	0.14-0.34mm ²	IDC	2.9-5.1mm
	ZS2000-2610	M12, socket, straight		plastic	4	A	0.25-0.75mm ²	screw type	4.0-6.0mm
	ZS2000-2640	M12, socket, angled		plastic	4	A	0.25-0.75mm ²	screw type	3.5-5.0mm
	ZS2000-2720	M12, socket, straight		plastic	4/5	A	0.25-0.75mm ²	screw type	3.5-5.0mm
	ZS2000-2740	M12, socket, angled		plastic	4/5	A	0.25-0.75mm ²	screw type	4.0-6.0mm
	ZS2000-6720	M12, socket, straight		metal, shielded	4/5	A	0.25-1.5mm ²	screw type	4.0-8.0mm
	ZS2000-1313	M8, socket, straight		plastic	3	A	0.14-0.34mm ²	IDC	3.5-5.0mm
	ZS2000-2310	M8, socket, straight		plastic	3	A	0.14-0.5mm ²	screw type	3.5-5.0mm
	ZS2000-2311	M8, socket, straight		plastic	3	A	0.14-0.25mm ²	solder type	3.5-5.0mm
	ZS2000-2331	M8, socket, angled		plastic	3	A	0.14-0.25mm ²	solder type	3.5-5.0mm
	ZS1090-0003	RJ45, plug, straight		plastic	4		0.25 – 0.34 mm ²	IDC	6.5 – 6.9 mm
	ZS1090-0005	RJ45, plug, straight		metal	8		0.14 – 0.34 mm ²	IDC	5.5 – 8.5 mm
	ZS1090-0004	M12, plug, straight		metal	4	D	0.14 – 0.75 mm ²	screw type	5.0 – 8.0 mm
	ZS1090-0010	M12, socket, straight		metal	4	D	0.14 – 0.75 mm ²	screw type	5.0 – 8.0 mm

Type	Article	Description	Illustration	Housing material	No. of poles	Coding	Cross section	Termination	Cable outlet
(21)	ZS7000-0001	M8, plug, straight		metal	4	Ether-CAT P	0.34 mm ²	crimp	5.0 – 6.5 mm ²
	ZS7000-0002	M8, plug, straight		metal	4	Ether-CAT P	0.25 - 0.34 mm ²	screw	5.0 – 6.5 mm ²
	ZS7000-0004	M8, socket, straight		metal	4	Ether-CAT P	0.25 - 0.34 mm ²	screw	5.0 – 6.5 mm ²

Type	Article	Description	Illustration	Housing material	No. of poles	Coding	Cross section	Termination	Cable outlet
(22)	ZS7200-A007	B17, plug, straight, male + female		metal	5+4	Ether-CAT		crimp	11.0 mm

Type	Article	Description	Illustration	Housing material	No. of poles	Coding	Cross section	Termination	Cable outlet
(23)	ZS7200-A008	B17, plug, straight, female + male		metal	5+4	Ether-CAT		crimp	11.0 mm

Type	Article	Description	Illustration	Housing material	No. of poles	Coding	Cross section	Termination	Cable outlet
(25)	ZS2000-6723	M12, socket, straight		metal	8	A	max. 0.5 mm ²	screw	4.0 – 8.0 mm

12 Field-configurable cables and connectors overview


















Note

Compatibility cable delivered by the metre to field-configurable connectors


The points in the following tables indicate which cable is compatible with which field-configurable connector.


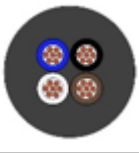
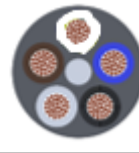








Overview EtherCAT cables and connectors for field assembly		ZB9010	ZB9020	ZB9021
		EtherCAT, PVC, shielded, 4xAWG22, fixed installation	EtherCAT PUR, shielded, 4xAWG22, drag chain suitable, 3 Mio cycles	EtherCAT, PUR, shielded, 4xAWG22, torsion suitable
		6.5 mm ±0.2 mm	6.5 mm ±0.2 mm	6.3 mm ±0.2 mm
ZS1090-1006	M8, plug, metal, screw type, straight, male, 4pole, cross section 0.14-0.5 mm ² , cable outlet 5.0-6.5 mm		✓	✓
ZS1090-1007	M8, socket, metal, screw type, straight, female, 4pole, cross section 0.14-0.5 mm ² , cable outlet 5.0-6.5 mm		✓	✓
ZS1090-0003	RJ45, plug, straight, 4pin, cross section 0.25 – 0.34 mm ² , cable outlet 6.1 – 6.9 mm ²		✓	✓
ZS1090-0005	RJ45, plug, straight, 8pin, cross section 0.14 – 0.34 mm ² , cable outlet 5.5 – 8.5 mm ²		✓	✓
ZS1090-0004	M12, plug, metal, screw, straight, male, 4pin, cross section 0.14 – 0.75 mm ² , cable outlet 5.0 – 8.0 mm ²		✓	✓
ZS1090-0010	M12, socket, metal, screw, straight, female, 4pin, cross section 0.14 – 0.75 mm ² , cable outlet 5.0 – 8.0 mm ²		✓	✓

Overview EtherCAT cables and connectors for field assembly			ZB9030	ZB9032
			EtherCAT, PVC, shielded, 4xAWG26, fixed installation	EtherCAT, PUR, highflex, shielded, 4xAWG26, drag chain suitable, 20 Mio cycles
				
			4.9 mm ±0.2 mm	5.4 mm ±0.2 mm
ZS1090-1006	M8, plug, metal, screw type, straight, male, 4pole, cross section 0.14-0.5 mm ² , cable outlet 5.0-6.5 mm		✓	✓
ZS1090-1007	M8, socket, metal, screw type, straight, female, 4pole, cross section 0.14-0.5 mm ² , cable outlet 5.0-6.5 mm		✓	✓
ZS1090-0005	RJ45, plug, straight, 8pin, cross section 0.14 – 0.34 mm ² , cable outlet 5.5 – 8.5 mm ²		✓	✓
ZS1090-0004	M12, plug, metal, screw, straight, male, 4pin, cross section 0.14 – 0.75 mm ² , cable outlet 5.0 – 8.0 mm ²		✓	✓
ZS1090-0010	M12, socket, metal, screw, straight, female, 4pin, cross section 0.14 – 0.75 mm ² , cable outlet 5.0 – 8.0 mm ²		✓	✓

Overview sensor cables and connectors for field assembly		ZB9040	ZB9042
		Sensor cable, PUR, not shielded, 3x0.25mm ² , drag chain suitable, 4 Mio cycles	Sensor cable, PVC, not shielded, 3x0.25mm ² , fixed installation
			
		4.4 mm ±0.15 mm	4.4 mm ±0.15 mm
<u>ZS2000-1213</u>	M8, plug, metal, IDC, straight, male, 3pole, cross section 0.14-0.34 mm ² , cable outlet 3.5-5.0 mm		✓
<u>ZS2000-1223</u>	M8, socket, metal, IDC, straight, female, cross section 0.14-0.34 mm ² , 3pole, cable outlet 3.5-5.0 mm		✓
<u>ZS2000-2210</u>	M8, plug, plastic, screw type, straight, male, 3pole, cross section 0.14-0.5 mm ² , cable outlet 3.5-5.0 mm		✓
<u>ZS2000-2220</u>	M8, socket, plastic, screw type, straight, female, cross section 0.14-0.5 mm ² , 3pole, cable outlet 3.5-5.0 mm		✓
<u>ZS2000-2221</u>	M8, socket, plastic, solder type, straight, female, 3pole, cross section 0.14-0.25 mm ² , cable outlet 3.5-5.0 mm		✓
<u>ZS2000-2241</u>	M8, socket, plastic, solder type, angled, female, 3pole, cross section 0.14-0.25 mm ² , cable outlet 3.5-5.0 mm		✓


Overview power cables and connectors for field assembly			ZB9050	ZB9051	ZB9050-0007
			Power cable, PUR, not shielded, 4x0.34 mm ² , drag chain suitable, 4 Mio cycles	Power cable, PVC, not shielded, 4x0.34 mm ² , fixed installation	Power cable, PUR, not shielded, 5x1.5 mm ² , drag chain suitable, 2 Mio cycles
					
			4.7 mm ±0.15 mm	4.7 mm ±0.15 mm	7.8 mm ±0.2 mm
ZS2000-1613	M12, plug, metal, IDC, straight, male, 4pole, cross section 0.14-0.34 mm ² , cable outlet 2.9-5.1 mm		✓	✓	
ZS2000-1623	M12, plug, metal, IDC, straight, male, 4pole, cross section 0.14-0.34 mm ² , cable outlet 2.9-5.1 mm		✓	✓	
ZS2000-2610	M12, socket, metal, IDC, straight, female, 4pole, cross section 0.14-0.34 mm ² , cable outlet 2.9-5.1 mm		✓	✓	
ZS2000-2620	M12, plug, plastic, screw type, straight, plug, 4pole, cross section 0.25-1.5 mm ² , cable outlet 4.0-8.0 mm		✓	✓	
ZS2000-2630	M12, socket, plastic, screw type, straight, female, 4pole, cross section 0.25-1.5 mm ² , cable outlet 4.0-8.0 mm		✓	✓	
ZS2000-2640	M12, plug, plastic, screw type, angled, male, 4pole, cross section 0.25-0.75 mm ² , cable outlet 3.5-5.0 mm		✓	✓	
ZS2000-2710	M12, plug, plastic, screw type, straight, male, 5pole, cross section 0.25-0.75 mm ² , cable outlet 4.0-6.0 mm		✓	✓	
ZS2000-2720	M12, socket, plastic, screw type, straight, female, 5pole, cross section 0.25-0.75mm ² , cable outlet 4.0-6.0mm		✓	✓	
ZS2000-2730	M12, plug, plastic, screw type, angled, male, 5pole, cross section 0.25-0.75 mm ² , cable outlet 4.0-6.0 mm		✓	✓	
ZS2000-2740	M12, socket, plastic, screw type, angled, female, 5pole, cross section 0.25-0.75 mm ² , cable outlet 4.0-6.0 mm		✓	✓	

Overview power cables and connectors for field assembly		ZB9050	ZB9051	ZB9050-0007
		Power cable, PUR, not shielded, 4x0.34 mm ² , drag chain suitable, 4 Mio cycles	Power cable, PVC, not shielded, 4x0.34 mm ² , fixed installation	Power cable, PUR, not shielded, 5x1.5 mm ² , drag chain suitable, 2 Mio cycles
				
		4.7 mm ±0.15 mm	4.7 mm ±0.15 mm	7.8 mm ±0.2 mm
ZS2000-3711	M12, plug, plastic, screw type, straight, male, 5pole, cross section 0.25-0.75 mm ² , cable outlet 3.0-6.5 mm		✓	✓
ZS2000-6710	M12, plug, metal, screw type, straight, male, 5pole, cross section 0.25-1.5 mm ² , cable outlet 4.0-8.0 mm		✓	✓
ZS2000-6720	M12, socket, metal, screw type, straight, socket, 5pole, cross section 0.25-1.5 mm ² , cable outlet 4.0-8.0 mm		✓	✓
ZS2000-1313	M8, plug, plastic, IDC, straight, male, 4pole, cross section 0.14-0.34 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-1323	M8, socket, plastic, IDC, straight, socket, 4pole, cross section 0.14-0.34 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-2310	M8, plug, plastic, screw type, straight, male, 4pole, cross section 0.14-0.5 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-2320	M8, socket, plastic, screw type, straight, female, 4pole, cross section 0.14-0.5 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-2311	M8, plug, plastic, solder type, straight, male, 4pole, cross section 0.14-0.25 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-2321	M8, socket, plastic, solder type, straight, female, 4pole, cross section 0.14-0.25 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-2331	M8, plug, plastic, solder, angled, male, 4pole, cross section 0.14-0.25 mm ² , cable outlet 3.5-5.0 mm		✓	✓
ZS2000-2341	M8, socket, plastic, solder type, angled, female, 4pole, cross section 0.14-0.25 mm ² , cable outlet 3.5-5.0 mm		✓	✓

Overview power cables and connectors for field assembly		<u>ZB9050</u>	<u>ZB9051</u>	<u>ZB9050-0007</u>
		Power cable, PUR, not shielded, 4x0.34 mm ² , drag chain suitable, 4 Mio cycles	Power cable, PVC, not shielded, 4x0.34 mm ² , fixed installation	Power cable, PUR, not shielded, 5x1.5 mm ² , drag chain suitable, 2 Mio cycles
				
		4.7 mm ±0.15 mm	4.7 mm ±0.15 mm	7.8 mm ±0.2 mm
<u>ZS2020-2820</u>	7/8", socket, plastic, screw type, straight, female, 5pole, cross section 0.5-1.5mm ² , cable outlet 6.0-12.0 mm			
<u>ZS2020-2840</u>	7/8", socket, plastic, screw type, angled, female, 5pole, cross section 0.5-1.5 mm ² , cable outlet 6.0-8.0 mm			
<u>ZS2020-2810</u>	7/8", plug, plastic, screw type, straight, male, 5pole, cross section 0.5-1.5 mm ² , cable outlet 6.0-12.0 mm			
<u>ZS2020-2830</u>	7/8", plug, plastic, screw type, angled, male, 5pole, cross section 0.5-1.5 mm ² , cable outlet 6.0-8.0 mm			

13 Mounting tool

Beckhoff supplies mounting tools to tighten the connectors with the recommended torque.

 Note	<p>Tools for knurled and hexagonal screw</p> <p>The hexagonkey can be used on all EtherCAT, EtherCAT P, power and sensor cordsets with integrated hexagon nut. For cordsets with knurled screw the tool ZB8800 is recommended!</p>
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ZB8800

Torque wrench (adjustable 0.5...1.7 Nm) for M8 cables with knurl, incl. ratchet



Fig. 7: ZB8800

ZB8800-0001
M12 ratchet for ZB8800

ZB8800-0002
M8 ratchet (field assembly) for ZB8800



ZB8801-0000

Torque wrench for hexagonal plugs (adjustable 0.4...1.0 Nm)



Fig. 8: ZB8801-0000

ZB8801-0001

Torque cable key, M8/wrench size 9, for ZB8801-0000



Fig. 9: ZB8801-0001

ZB8801-0002

Torque cable key, M8/wrench size 9, for ZB8801-0000



Fig. 10: ZB8801-0002

ZB8801-0003

Torque cable key, M12F/wrench size 18, for ZB8801-0000



Fig. 11: ZB8801-0003