One Cable Automation (OCA)
Matching connectors for every performance class

BECKHOFF

EtherCAT P

one

Cable Automation

Version 2.3.5

Table of contents

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Matching connectors for every performance class

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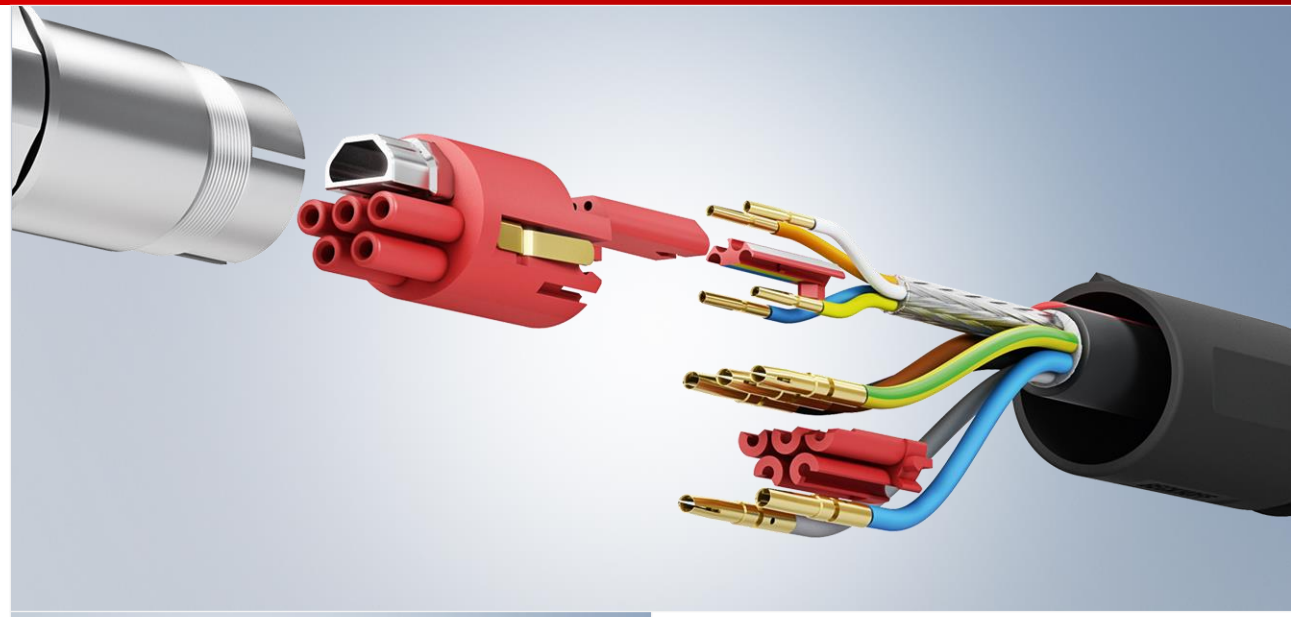
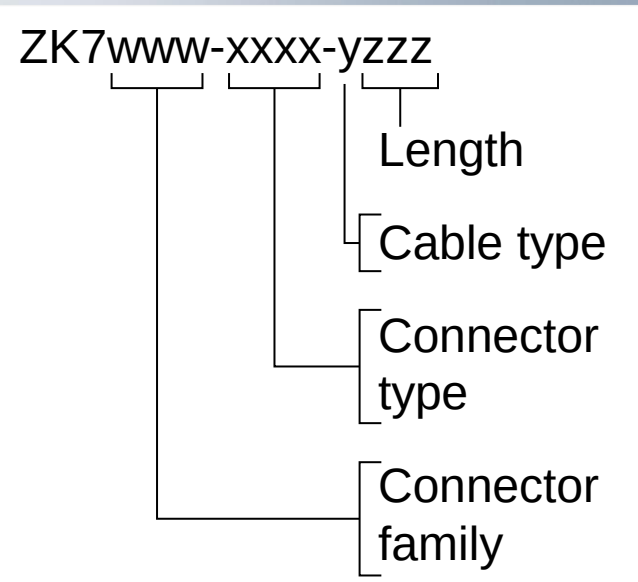
- One Cable Automation (OCA): based on a single EtherCAT P cable, integrates communication and power supply
- the ECP and ENP connector families are scalable from 24 V to 850 V and 72 A
- sizes B12 to B40 with different numbers of power pins (2- to 6-pin); all sizes include a Cat.5-enabled Ethernet
- integrated 360° shielding of Ethernet element
- bayonet fitting ensures fast cabling and installation
- lowered connection costs with outstanding EtherCAT performance





EtherCAT P for field level

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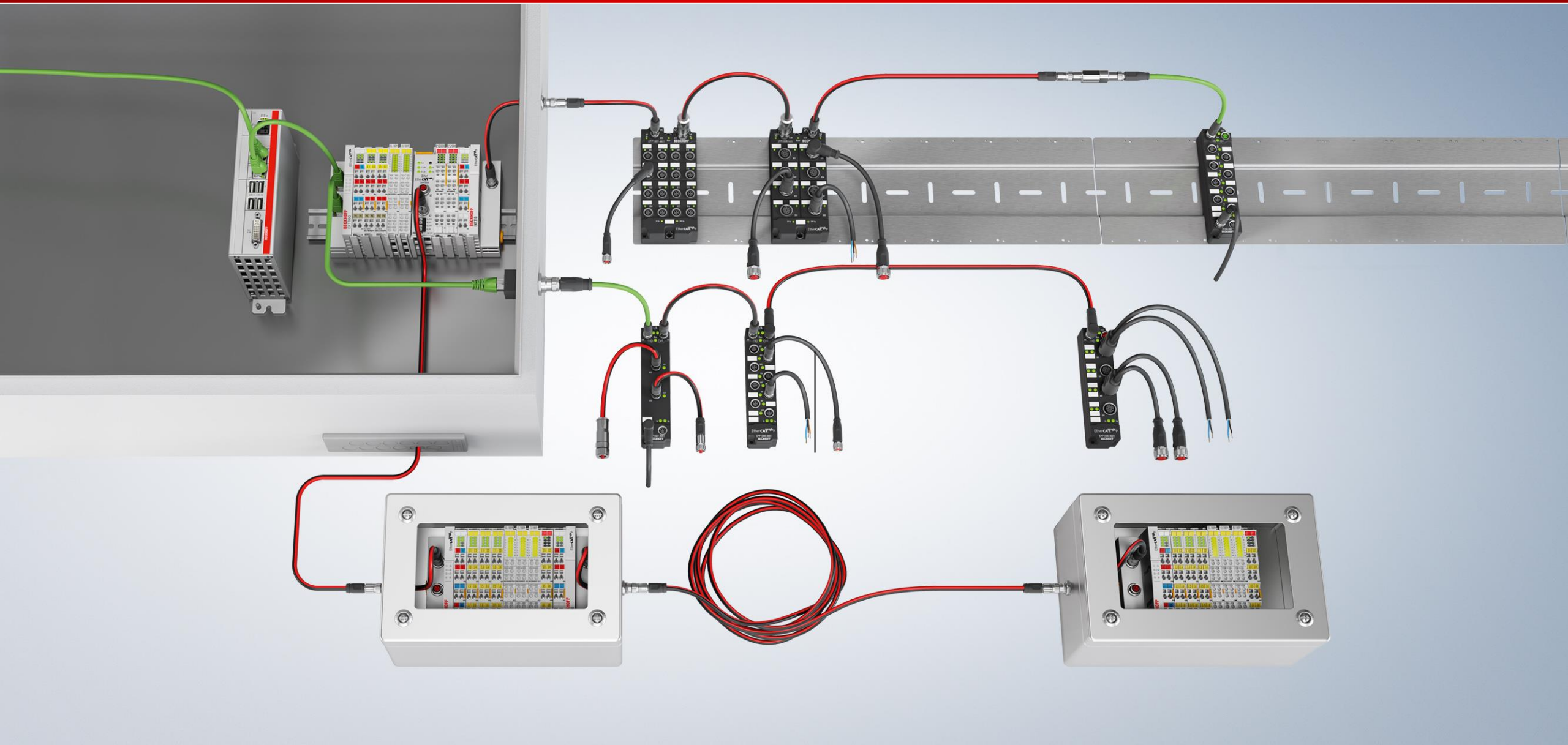

Overview pre-assembled M8 cable variants

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EtherCAT P M8 | Connection cable, straight, male to male

- ZK700**0**-0101-**0**xxx: PUR, 1x4xAWG2**2**, drag-chain suitable[1]
- ZK700**1**-0101-**0**xxx: PUR, 1x4xAWG2**4**, drag-chain suitable[1]
- ZK700**0**-0101-**1**xxx: PUR, 1x4xAWG2**2**, fixed installation
- ZK700**0**-0101-**6**xxx: PUR, 1x4xAWG2**2**, capable of torsion[2]

EtherCAT P M8 | Extension cable, with feed-through, male to female

- ZK700**0**-0303-**0**xxx: PUR, 1x4xAWG2**2**, drag-chain suitable[1]
- ZK700**1**-0303-**0**xxx: PUR, 1x4xAWG2**4**, drag-chain suitable[1]
- ZK700**0**-0303-**1**xxx: PUR, 1x4xAWG2**2**, fixed installation
- ZK700**0**-0303-**6**xxx: PUR, 1x4xAWG2**2**, capable of torsion[2]

xxx = the last three digits of the ordering information stand for the cable length in dm, e.g. ZK7000-0101-0030 correspond to a cable length of 3.0 m
1) 3 million cycles; 5 million cycles
PUR: Polyurethane

Overview pre-assembled M8 cable variants

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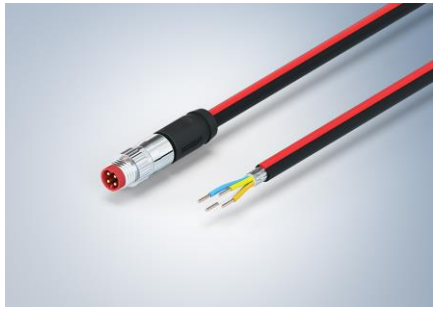
EtherCAT P M8 | Extension cable, with feed-through, male to female

- ZK700**0**-0105-**0**xxx: PUR, 1x4xAWG2**2**, drag-chain suitable[1]
- ZK700**1**-0105-**0**xxx: PUR, 1x4xAWG2**4**, drag-chain suitable[1]
- ZK700**0**-0105-**1**xxx: PUR, 1x4xAWG2**2**, fixed installation
- ZK700**0**-0105-**6**xxx: PUR, 1x4xAWG2**2**, capable of torsion[2]

EtherCAT P M8 | Connection cable, straight, male to flying leads



- ZK700**0**-0100-**0**xxx: PUR, 1x4xAWG2**2**, drag-chain suitable[1]
- ZK700**1**-0100-**0**xxx: PUR, 1x4xAWG2**4**, drag-chain suitable[1]
- ZK700**0**-0100-**1**xxx: PUR, 1x4xAWG2**2**, fixed installation
- ZK700**0**-0100-**6**xxx: PUR, 1x4xAWG2**2**, capable of torsion[2]

xxx = the last three digits of the ordering information stand for the cable length in dm, e.g. ZK7000-0101-0030 correspond to a cable length of 3.0 m
1) 3 million cycles; 5 million cycles
PUR: Polyurethane

Overview pre-assembled M8 cable variants

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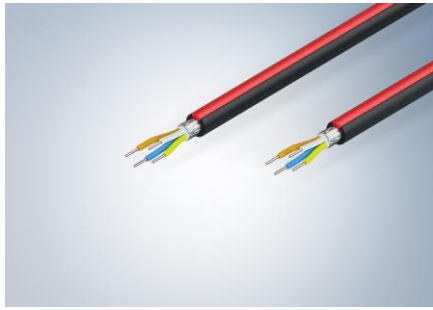
EtherCAT P M8 | Extension cable, straight, male to female

- ZK700**0**-0102-**0**xxx: PUR, 1x4xAWG2**2**, drag-chain suitable[1]
- ZK700**1**-0102-**0**xxx: PUR, 1x4xAWG2**4**, drag-chain suitable[1]
- ZK700**0**-0102-**1**xxx: PUR, 1x4xAWG2**2**, fixed installation
- ZK700**0**-0102-**6**xxx: PUR, 1x4xAWG2**2**, capable of torsion[2]



EtherCAT P M8 | Raw cable

- ZB7000: PUR, 1x4xAWG2**2**, drag-chain suitable[1]
- ZB7001: PUR, 1x4xAWG2**4**, drag-chain suitable[1]
- ZB7003: PUR, 1x4xAWG2**2**, fixed installation
- ZB7004: PUR, 1x4xAWG2**2**, capable of torsion[2]

xxx = the last three digits of the ordering information stand for the cable length in dm, e.g. ZK7000-0101-0030 correspond to a cable length of 3.0 m
1) 3 million cycles; 5 million cycles
PUR: Polyurethane

Overview pre-assembled M8 cable variants

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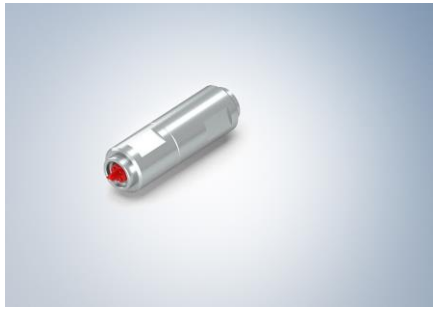
EtherCAT P M8 | Field wireable connectors

- ZS7000-0001: plug, straight, **male**, **crimp** termination
- ZS7000-0002: plug, straight, **male**, **screw** termination
- ZS7000-0004: plug, straight, **female**, **screw** termination

EtherCAT P M8 | EtherCAT P to EtherCAT passive adapter



- ZS7000-0005: cable adapter passive, **EtherCAT P to EtherCAT**, IP 67, straight, M8, EtherCAT-P-coded, 4-pin, **female** to M8, A-coded, 4-pin, **female**

xxx = the last three digits of the ordering information stand for the cable length in dm, e.g. ZK7000-0101-0030 correspond to a cable length of 3.0 m
1) 3 million cycles; 5 million cycles
PUR: Polyurethane

Overview M8 EtherCAT P flanges

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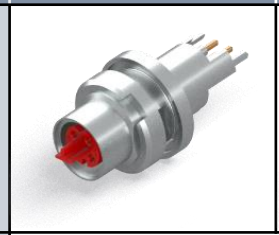
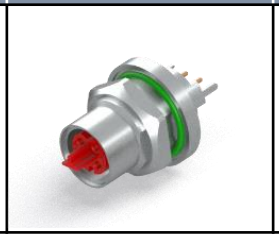
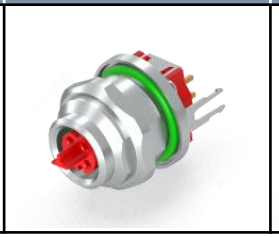
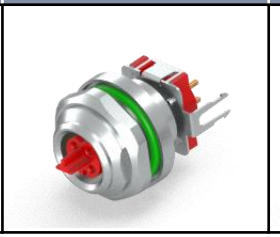
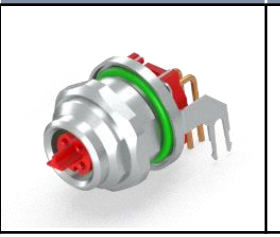
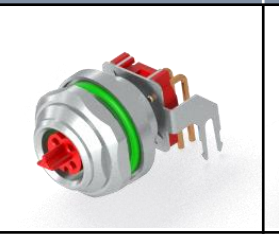
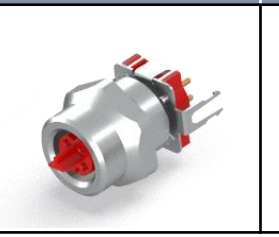
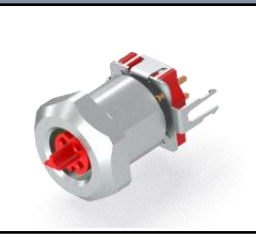
Ordering information	ZS7002-0001	ZS7002-0002	ZS7002-0003	ZS7002-0004	ZS7002-0005	ZS7002-0006	ZS7002-0007	ZS7002-0008
								
Installation size	M8							
Configuration	straight				angled		straight	
Special features	2-pieces: separate contact carrier and housing, in future reflow suitable (THR)	1-piece: contact carrier glued into housing	2-pieces: separate contact carrier and housing, in future reflow suitable (THR)					
Contact type	female							
Connection	print							
Coding	EtherCAT-P-coded							
Rated voltage	30 V acc. to IEC 61076-2-104							
Rated current	3 A (40 °C) acc. to IEC 61076-2-104							
Mating cycles	≥100 acc. to IEC 60512-9a							
Ambient temperature	-30 °C...+85 °C, -22 °F...+185 °F							
Pollution level	3/2 acc. to IEC 60664-1							
Protection class	IP 65/67, in screwed condition acc.to IEC 60529							
Length flange	12.5 mm	6.0 mm	6.0 mm	10.0 mm	8.2 mm	12.2 mm	9.0 mm	13.0 mm

EtherCAT P
Matching connectors for every performance class

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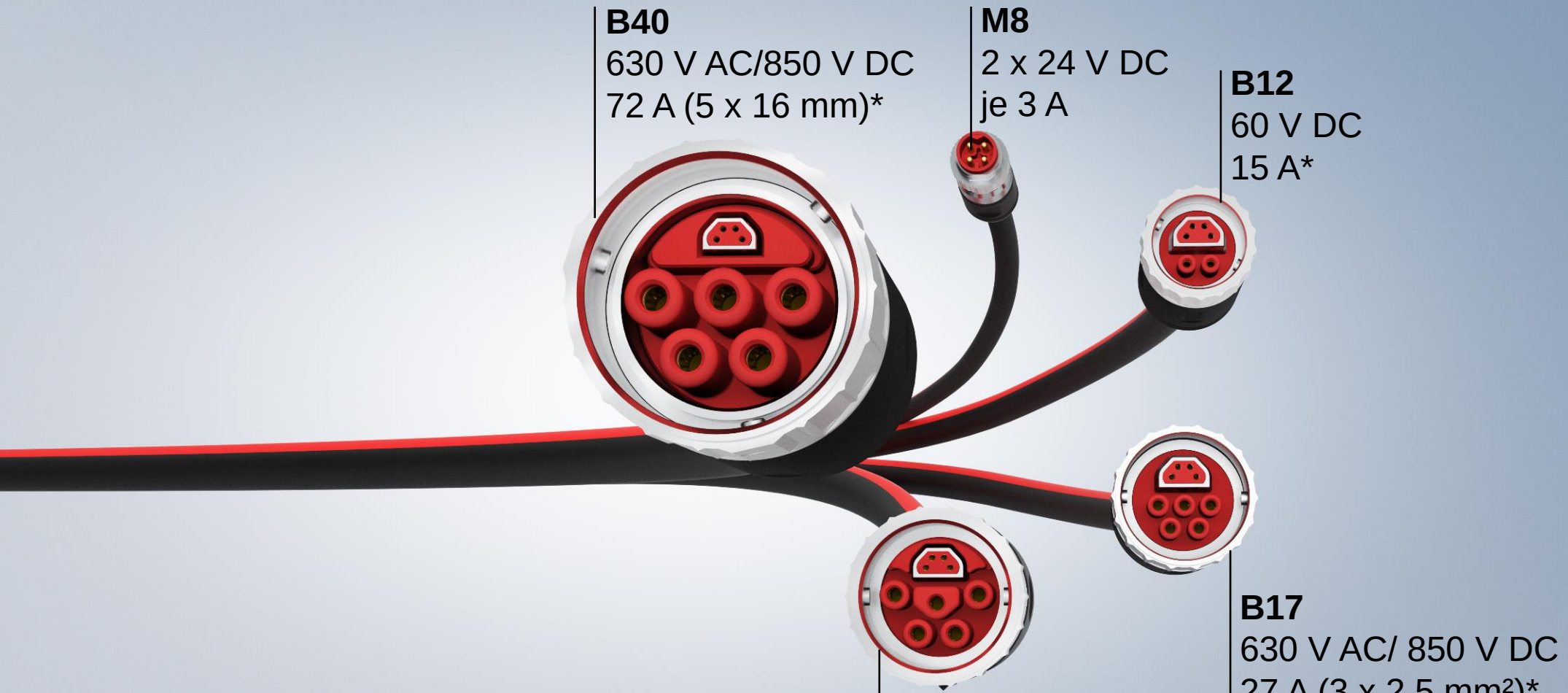

B40
630 V AC/850 V DC
72 A (5 x 16 mm)*

M8
2 x 24 V DC
je 3 A

B12
60 V DC
15 A*

B17
630 V AC/ 850 V DC
27 A (3 x 2.5 mm²)*
16 A (5 x 1.5 mm²)*

B23
630 V AC/850 V DC
29 A (5 x 4 mm²)*
36 A (3 x 6 mm²)*

All connectors are available as ECP and ENP version.

* Maximum values dependent on the cable and ambient temperature.

Info | Technical data M8/B12

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Technical data pins	M8 P-coded	B12 2 + 4 pins	
			
Coding		EtherCAT-P	EtherCAT
Rated voltage	50 V AC/60 V DC	50 V AC/60 V DC	
Rated current at 40 °C*	3 A	15 A	
Number of power pins	–	2	
Number of EtherCAT P pins	4		
Max. connection cross-section power	–	0.75 mm²	
Max. connection cross-section data	0.34 mm² (AWG22)		
Number of mechanical coding	1	2	
Coding specification	1 = U_S 24 V DC/U_P 24 V DC	1 = 24 V DC 2 = user-defined voltage I	
Protection class	IP 65/IP 67		

* Maximum values dependent on the cable, coding and ambient temperature

Info | Technical data B17

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Technical data pins	B17 2 + PE + 4 pins	B17 2 + PE + 4 pins	B17 4 + 4 pins	B17 4 + PE + 4 pins
				
Coding	EtherCAT-P / EtherCAT	EtherCAT-P / EtherCAT	EtherCAT-P / EtherCAT	EtherCAT-P / EtherCAT
Rated voltage	250 V AC/DC	630 V AC/850 V DC	630 V AC/850 V DC	630 V AC/850 V DC
Rated current at 40 °C*	24 A	17 A	16 A	16 A
Number of power pins	2 + PE (3)	2 + PE (3)	4	4 + PE (5)
Number of EtherCAT P pins	4			
Max. connection cross-section power	2.5 mm²	1.5 mm²	1.5 mm²	1.5 mm²
Max. connection cross-section data	0.34 mm² (AWG22)			
Number of mechanical coding	3			
Coding specification	1 = 24 V DC + PE 2 = 230 V AC 3 = user-defined voltage I	1 = 24 V DC + PE 2 = 230 V AC 3 = user-defined voltage I	1 = 2 x 24 V DC 2 = user-defined voltage I	1 = 2 x 24 V DC + PE 2 = 400 V AC 3 = user-defined voltage I
Protection class	IP 65/IP 67			

* Maximum values dependent on the cable, coding and ambient temperature

Info | Technical data B23/B40

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Technical data pins	B23 4 + PE + 4 pins		B23 3 + PE + 2 + 4 pins		B40 4 + PE + 4 pins	
						
Coding	EtherCAT-P	EtherCAT	EtherCAT-P	EtherCAT	EtherCAT-P	EtherCAT
Rated voltage	630 V AC/850 V DC		630 V AC/850 V DC		630 V AC/850 V DC	
Rated current at 40 °C*	29 A		25 A + 22 A		72 A	
Number of power pins	4 + PE (5)		3 + PE + 2 (6)		4 + PE (5)	
Number of EtherCAT P pins	4					
Max. connection cross-section power	4 mm²		4 mm² + 2.5 mm²		16 mm²	
Max. connection cross-section data	0.34 mm² (AWG22)					
Number of mechanical coding	3				6	
Coding specification	1 = 2 x 24 V DC + PE 2 = 400 V AC 3 = user-defined voltage I		1 = user-defined voltage I 2 = user-defined voltage II 3 = user-defined voltage III		1 = 2 x 24 V DC + PE 2 = 400 V AC 3 = user-defined voltage I 4 = user-defined voltage II 5 = user-defined voltage III 6 = user-defined voltage IV	
Protection class	IP 65/IP 67					

* Maximum values dependent on the cable, coding and ambient temperature

Info | Introduction ECP/ENP

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- connector families with uniform design across all sizes – a basis of One Cable Automation (OCA)
- sizes B12 to B40 with different numbers of power pins (2- to 6-pin) for various network and power consumption scenarios
- high current carrying capacity and dielectric strength of power pins
- Cat. 5-enabled Ethernet element in trapezoidal form with seamless shielding

Info | Connector pin assignment communication element

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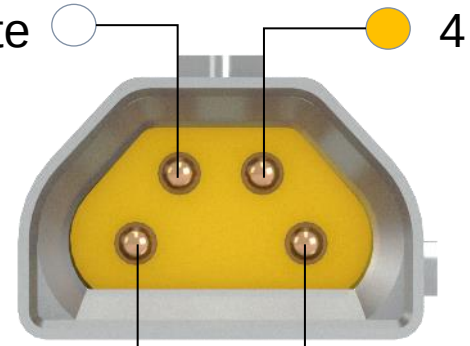
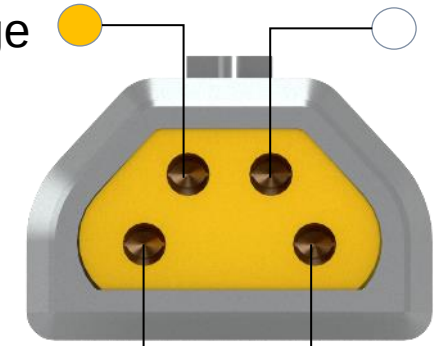
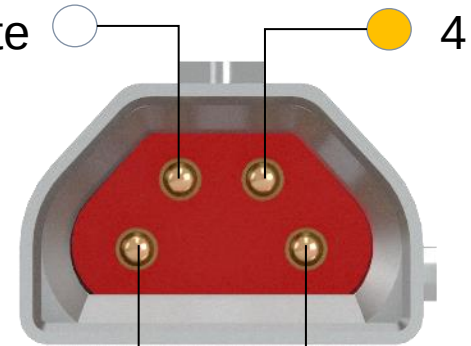
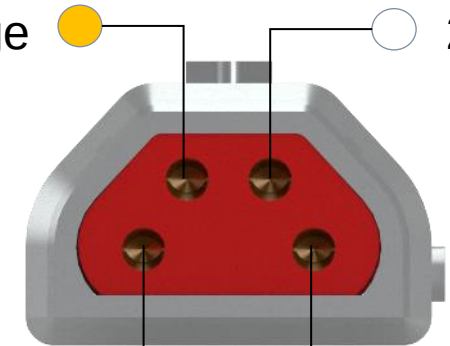
ENP





ECP





male **female**

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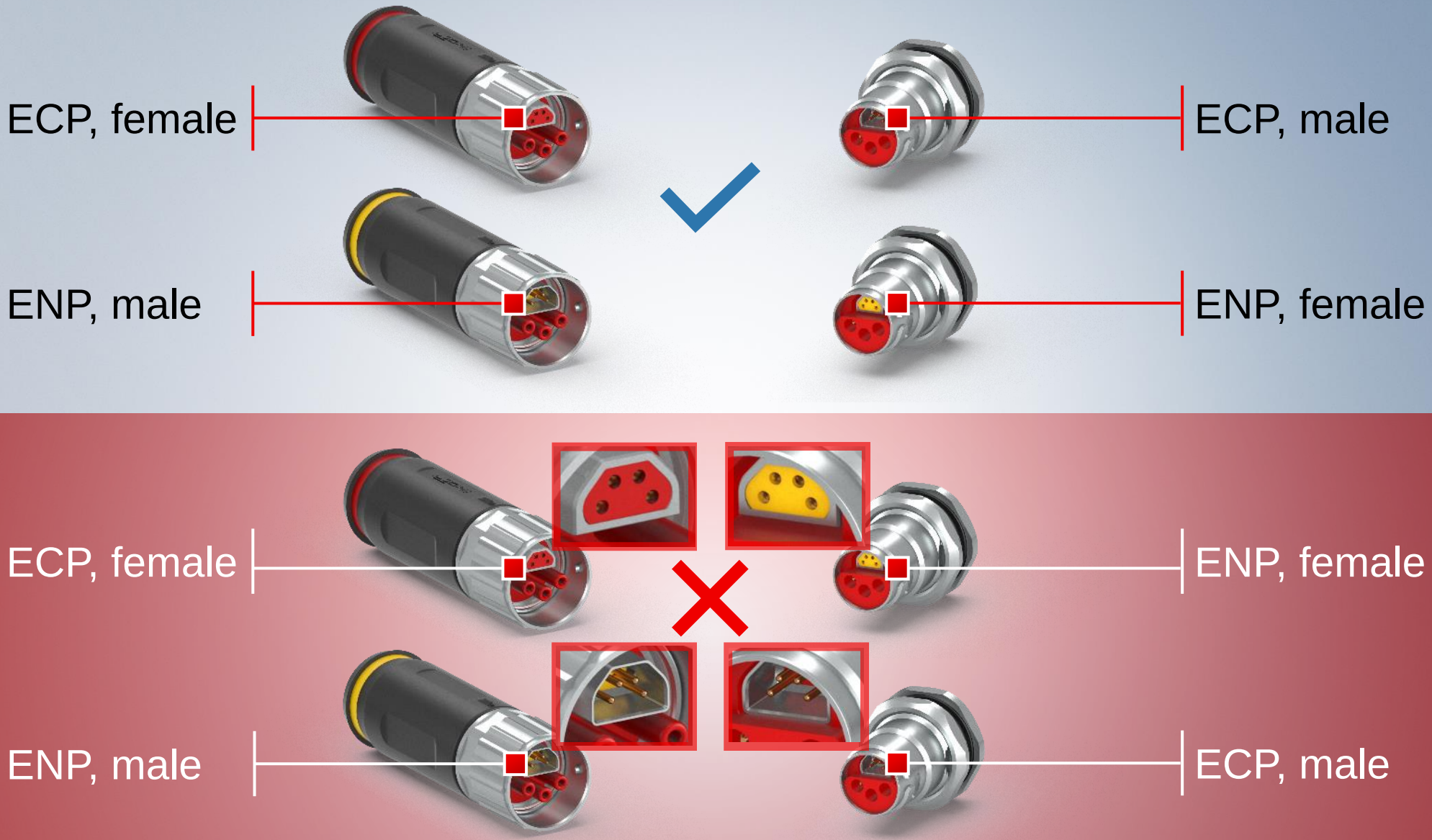
ECP, female
ECP, male
ENP, male
ENP, female
ECP, female
ENP, female
ENP, male
ECP, male

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Mechanical coding B12

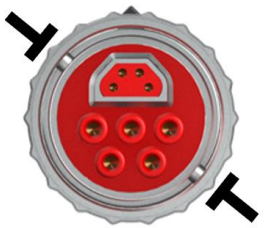
Mechanical coding 1

Mechanical coding 2

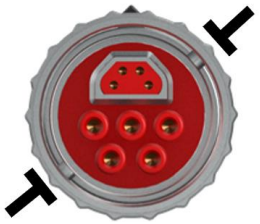
Mechanical coding B17–B23

Mechanical coding 1

Mechanical coding 2



Mechanical coding 3



Default

The mechanical coding is defined by the position of the bayonet pin

Note: Only mechanical coding 1 is shown in these slides. All others on request! Suggested coding is recommended for specified voltage!

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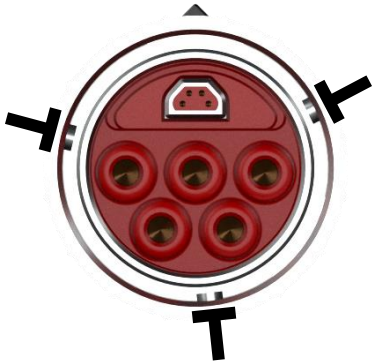
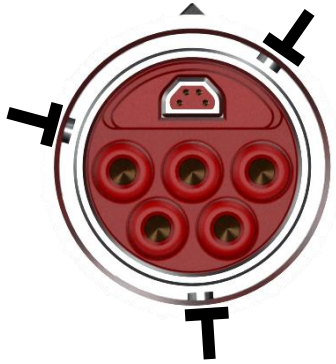
Mechanical coding B40

Mechanical coding 1

Mechanical coding 2

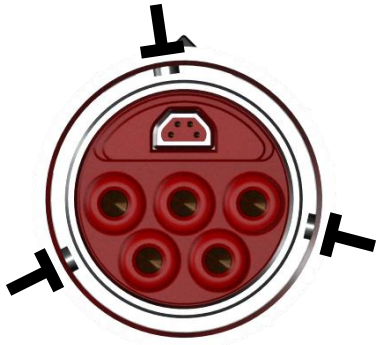


Mechanical coding 3

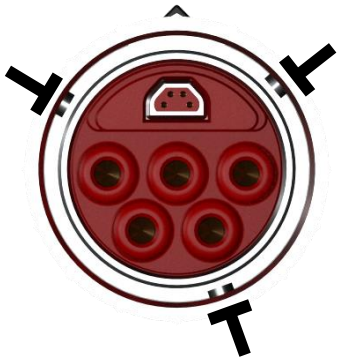


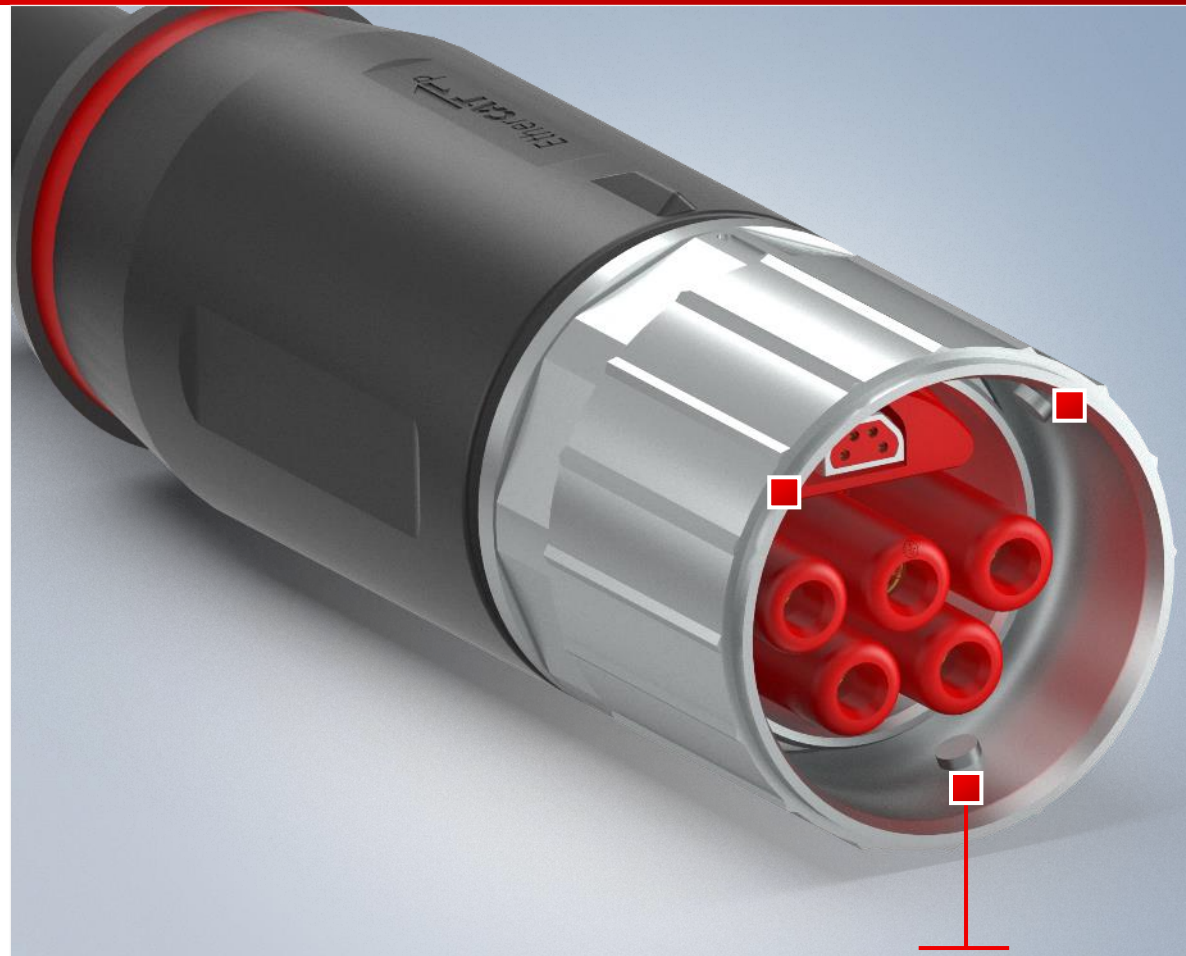
Mechanical coding 4

Mechanical coding 5



Mechanical coding 6





The mechanical coding is defined by the position of the bayonet pin

Mechanical coding overview

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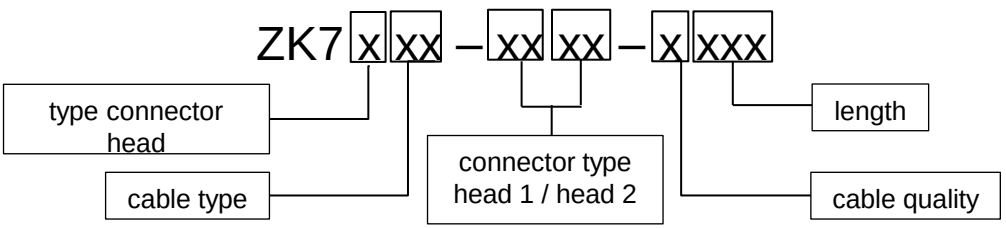
Installation size	Mechnical coding	ZK number	Number of positions						
			2-pin (rated voltage 50 VAC/60 VDC 50 VAC/60 VDC [UL])	**3-pin*** (rated voltage 630 VAC/850 VDC 600 VAC/VDC [UL])	**3-pin High-Power*** (rated voltage 250 VAC/VDC 250 VAC/VDC [UL])	**4-pin*** (rated voltage 630 VAC/850 VDC 600 VAC/VDC [UL])	**5-pin*** (rated voltage 630 VAC/850 VDC 600 VAC/VDC [UL])	**6-pin*** (rated voltage 630 VAC/850 VDC 600 VAC/VDC [UL])	**7-pin*** (rated voltage 630 VAC/850 VDC 600 VAC/VDC [UL])
B12	Key 1	**ZK71**xx-xxxx-xxxx	24 V DC						
	Key 2	**ZK75**xx-xxxx-xxxx	user-defined voltage						
B17	Key 1	**ZK72**xx-xxxx-xxxx		24 V DC + PE	24 V DC + PE	2x 24 V DC	2x 24 V DC + PE	user-defined voltage	
	Key 2	**ZK76**xx-xxxx-xxxx		230 V AC	230 V AC	user-defined voltage	400 V AC	user-defined voltage	
	Key 3	**ZK79**xx-xxxx-xxxx		user-defined voltage	user-defined voltage	user-defined voltage	user-defined voltage	user-defined voltage	
B23	Key 1	**ZK73**xx-xxxx-xxxx		24 V DC + PE			2x 24 V DC + PE	user-defined voltage	user-defined voltage
	Key 2	**ZK77**xx-xxxx-xxxx		230 V AC			400 V AC	user-defined voltage	user-defined voltage
	Key 3	**ZK7A**xx-xxxx-xxxx		user-defined voltage			user-defined voltage	user-defined voltage	user-defined voltage
B40	Key 1	**ZK74**xx-xxxx-xxxx					2x 24 V DC + PE		
	Key 2	**ZK78**xx-xxxx-xxxx					400 V AC		
	Key 3	**ZK7B**xx-xxxx-xxxx					user-defined voltage		
	Key 4	**ZK7C**xx-xxxx-xxxx					user-defined voltage		
	Key 5	**ZK7D**xx-xxxx-xxxx					user-defined voltage		
	Key 6	**ZK7E**xx-xxxx-xxxx					user-defined voltage		



*The PE protective earth connection is pre-leading and complies with standard IEC 61984.

Types of housing

- Cable side (plug and socket)

male with notch

male with nut

female with notch

female with nut

Info | Recommendation for front and rear mounting flanges

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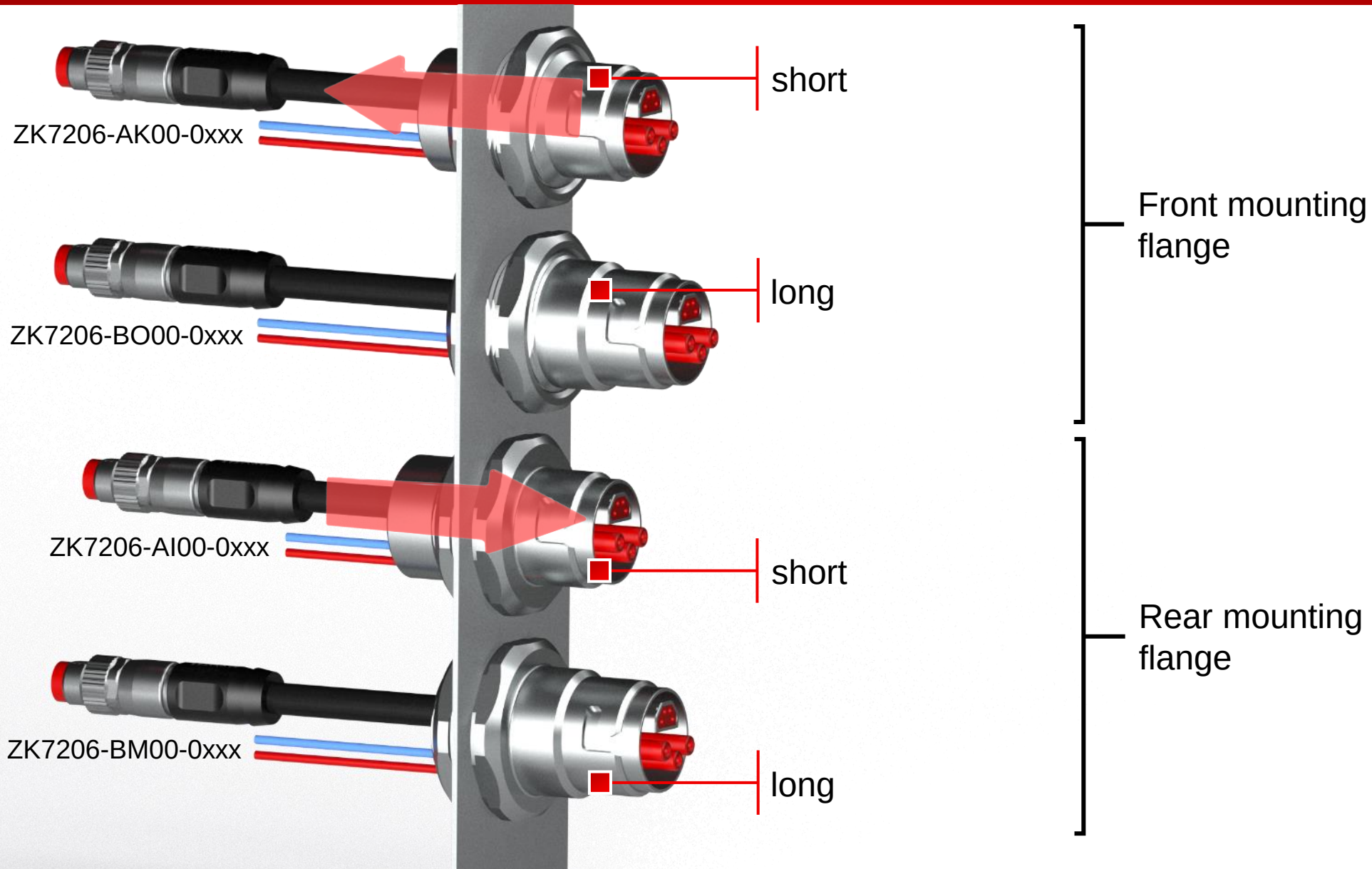

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Sizes and pin outs

- different number of power contacts
  - 2 B12
  - 2 + PE B17
  - 3 + PE B17
  - 4 B17
  - 4 + PE B17…B40
  - 5 + PE B23
- proper connections between the different pin outs

B12

B17
2 + PE

B17
3 + PE

B17
4 + PE

B23
4 + PE

B23
5 + PE

B40
4 + PE

Info | ENP/ECP connector family: Overview housing variants

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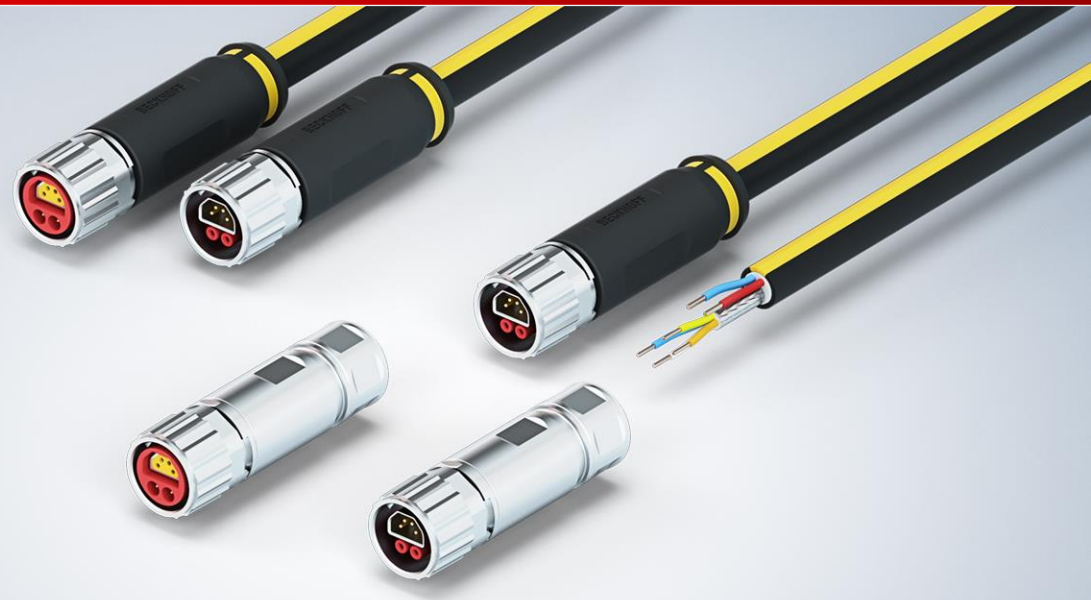
Types

- cable side (plugs and couplings)
  - overmoulded
  - field assembly
- device wise
  - 6 flange variants
    - short and long design
    - square, rear and front wall mounting

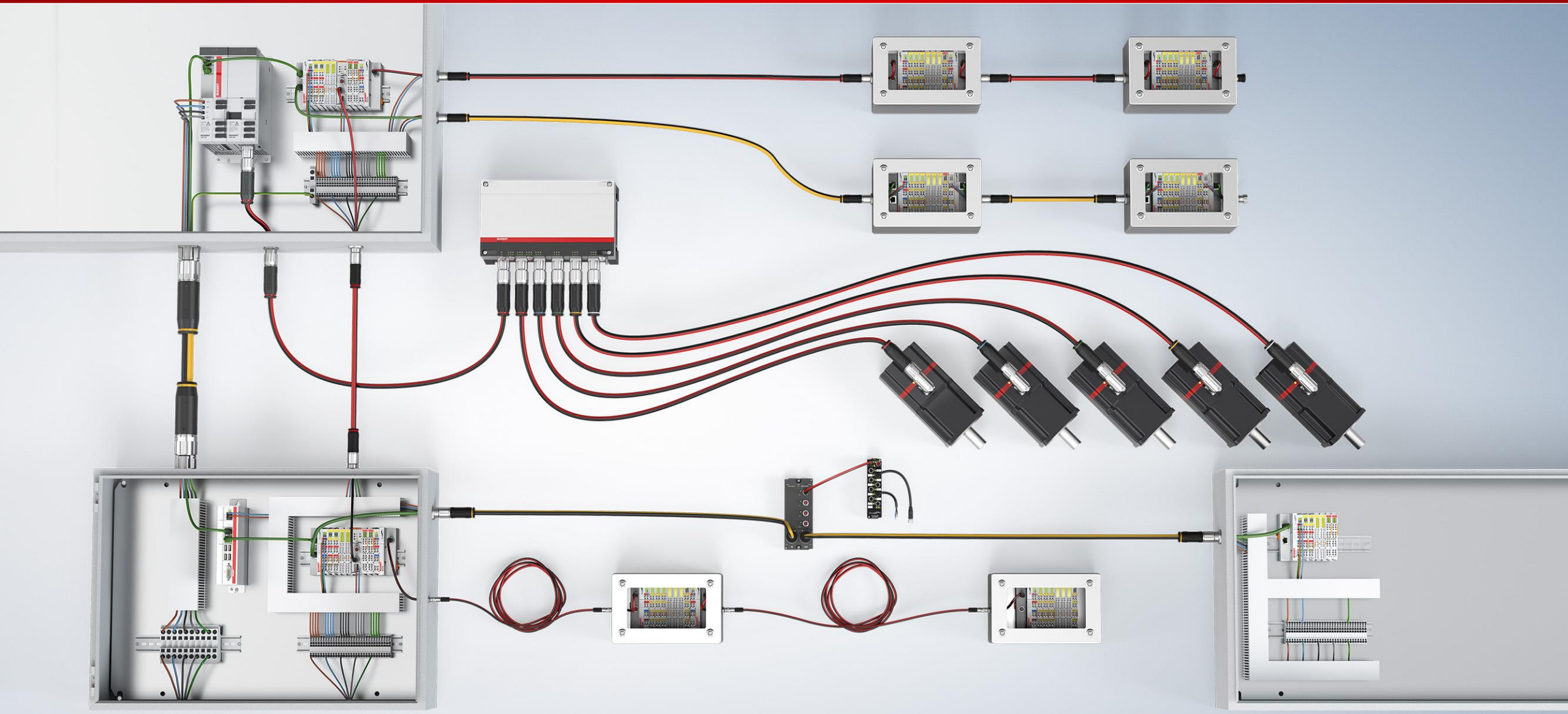
ENP,
B12



ECP,
B17

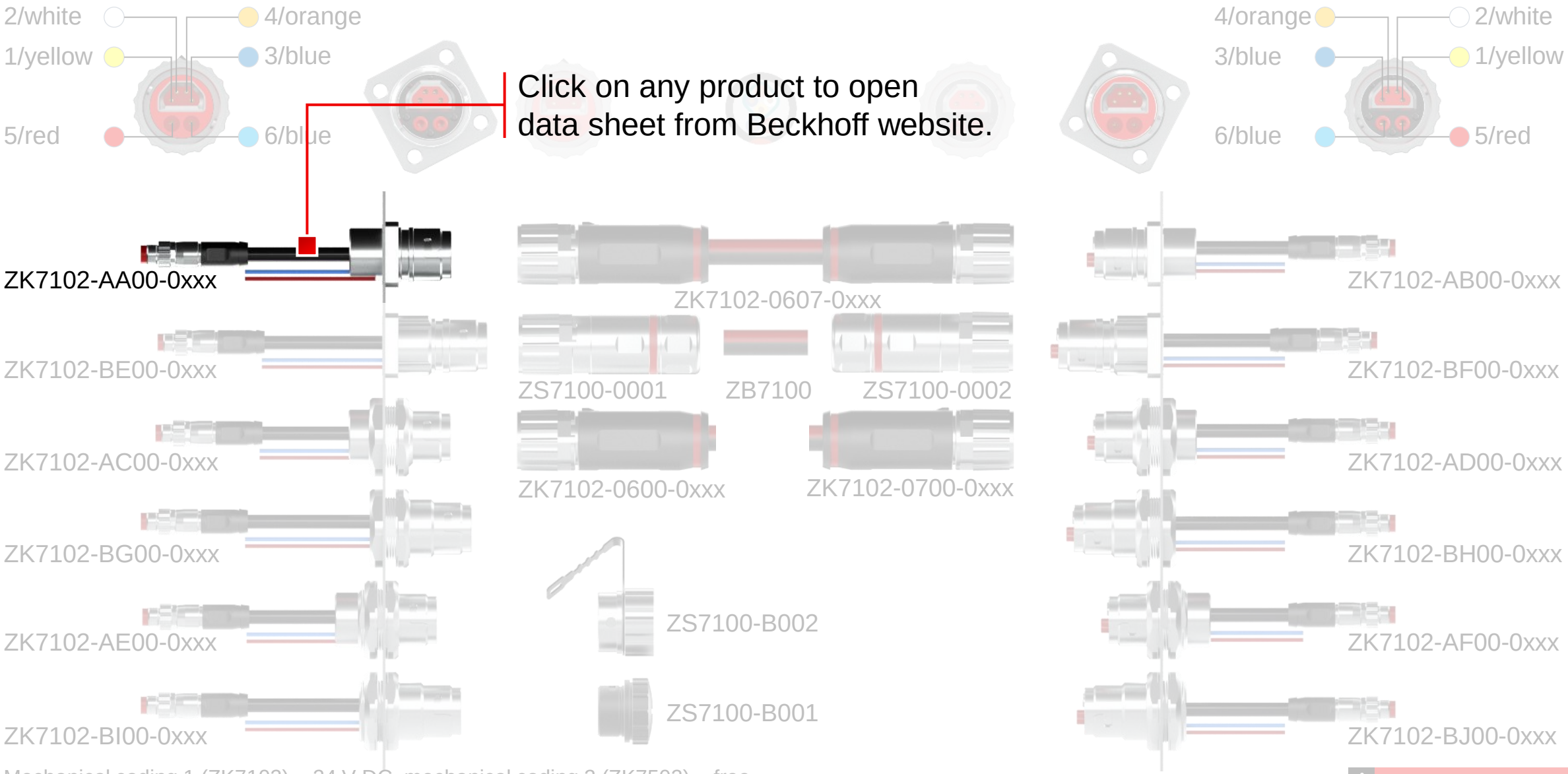
Cabling with OCA

BECKHOFF



Usage of cabling overview slides

BECKHOFF

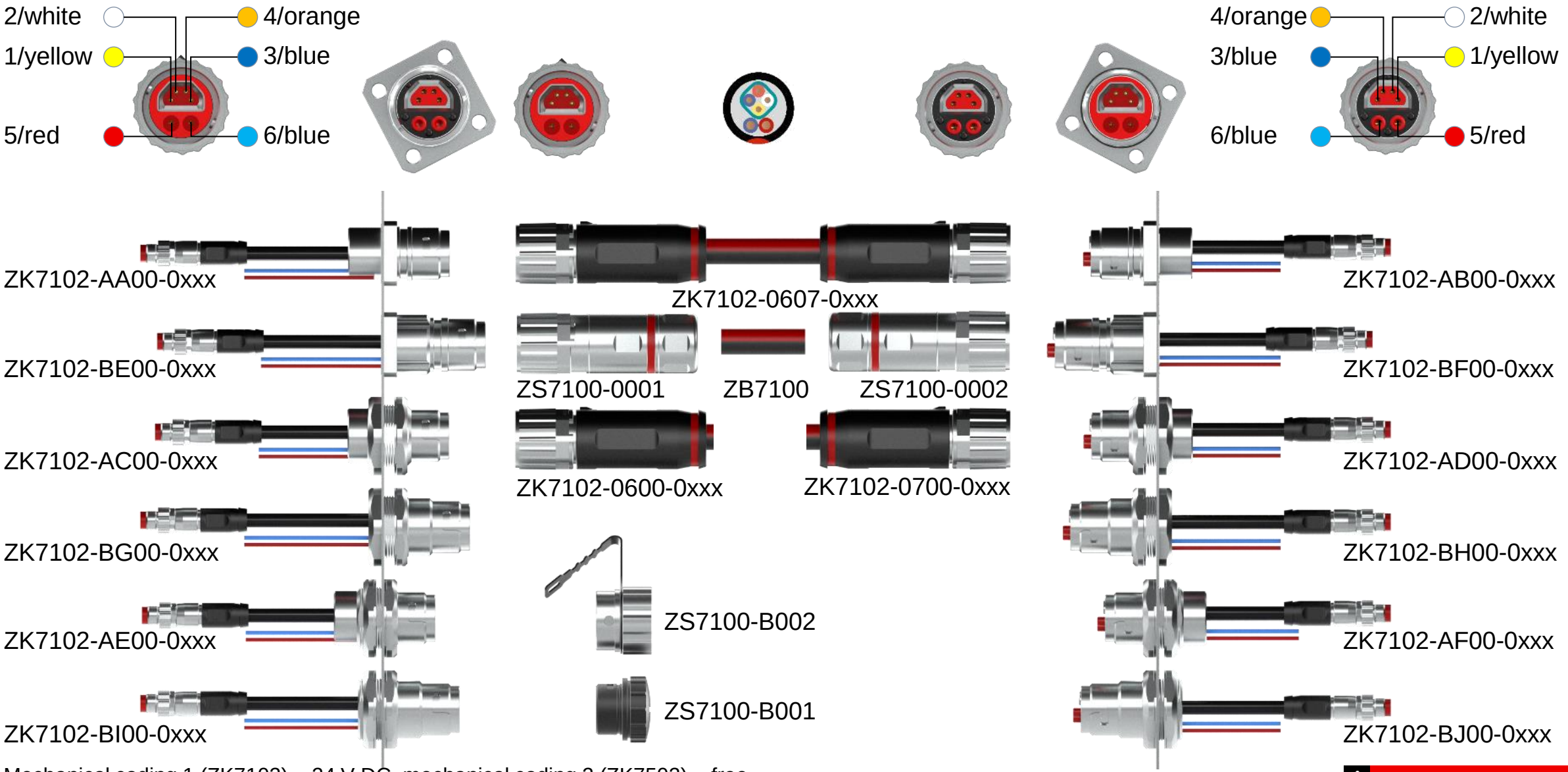


Mechanical coding 1 (ZK7102) = 24 V DC, mechanical coding 2 (ZK7502) = free

3D files can be found here.

ECP B12 2-pin 0.75 mm² overview

BECKHOFF

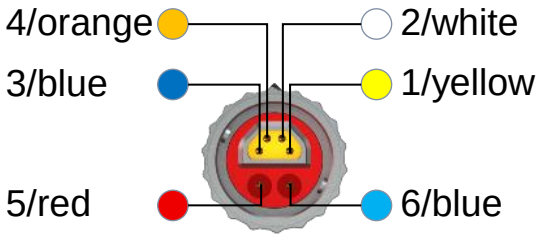


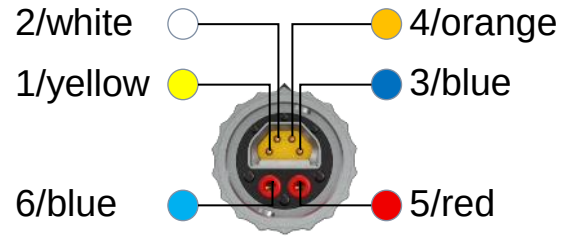
Mechanical coding 1 (ZK7102) = 24 V DC, mechanical coding 2 (ZK7502) = free

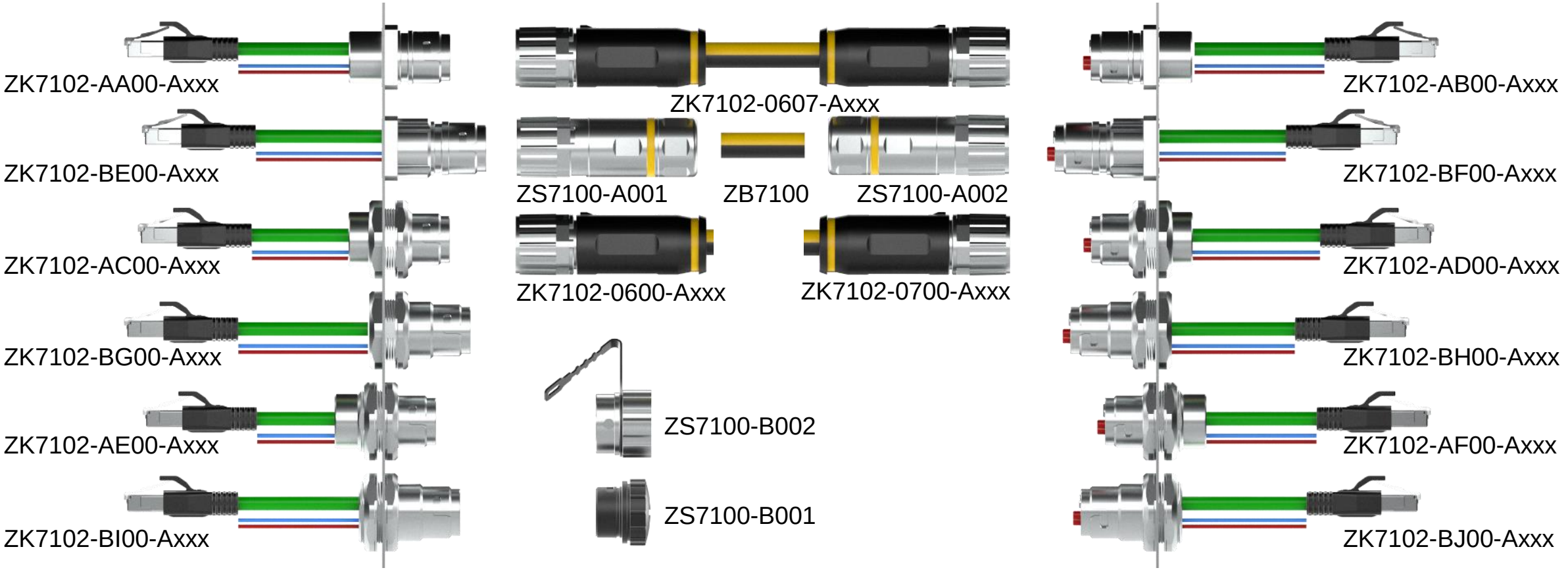
3D files can be found here.

ENP B12 2-pin 0.75 mm² overview

BECKHOFF







Mechanical coding 1 (ZK7102) = 24 V DC, mechanical coding 2 (ZK7502) = free

3D files can be found here.

B12 | Connectors for field assembly with crimp contacts

BECKHOFF

	ZS7000-C001 AWG22/0.34 mm² male	ZS7000-C002 AWG22/0.34 mm² female	ZS7000-C003 AWG18/0.75 mm² male	ZS7000-C004 AWG18/0.75 mm² female
				
ZS7100-0001 B12, ECP, 2+4-pin, male	✓		✓	
ZS7100-0002 B12, ECP, 2+4-pin, female		✓		✓
ZS7100-A001 B12, ENP, 2+4-pin, female + male		✓	✓	
ZS7100-A002 B12, ENP, 2+4-pin, male + female	✓			✓

Mounting instructions can be found here.

B12 | Accessories for ENP/ECP connector family

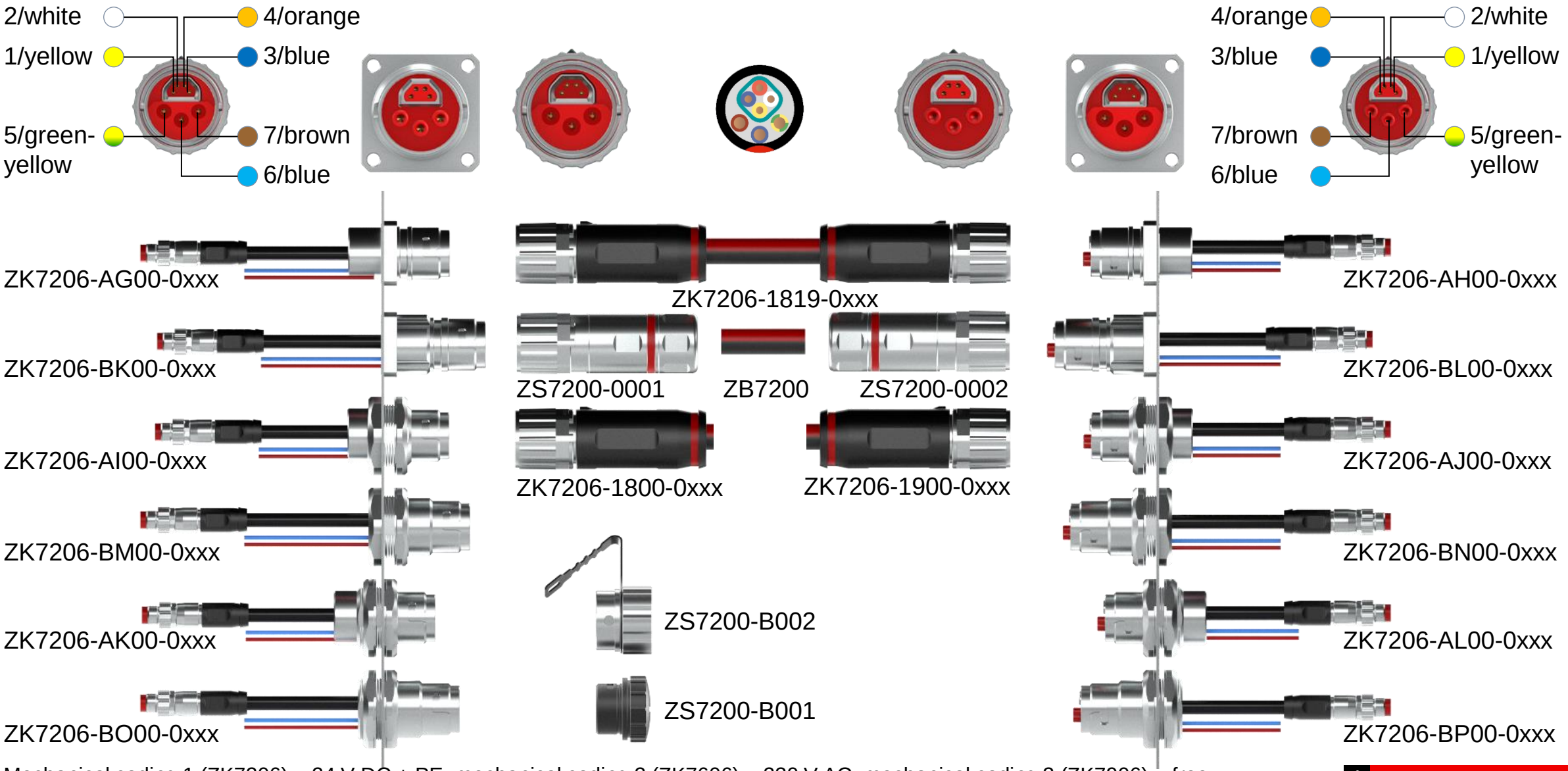
BECKHOFF

Tools and inserts	Crimp contacts for Ethernet element	Crimp contacts for power pins	Protection caps IP 67	Color coding for connectors	Color coding for connectors
					
Crimping tool for Ethernet element	**AWG22/0.34 mm²**	**0.75 mm²**	**Socket/flange**	**Color coding connector/ square flange**	**Color coding flange for front/rear assembly**
ZB8810-0000 M8, B12, B17, B23 contacts	ZS7000-C001 male ZS7000-C002 female	ZS7000-C003 male ZS7000-C004 female	ZS7100-B001 plastic ZS7100-B002 metal	ZS7100-B005 red ZS7100-B006 yellow ZS7100-B007 blue ZS7100-B008 green ZS7100-B015 orange ZS7100-B016 gray	ZS7100-B009 red ZS7100-B010 yellow ZS7100-B011 blue ZS7100-B012 green ZS7100-B013 orange ZS7100-B014 gray
Crimping insert and locator for Ethernet element			**Plug**		
ZB8810-0001 M8, B12, B17 contacts			ZS7100-B003 plastic ZS7100-B004 metal		
Assembly tool					
ZB8802-0001 for B12 connector, AF17					

i Further crimp contacts can be found here.

B17 | ECP 3-pin 1.5 mm² overview

BECKHOFF

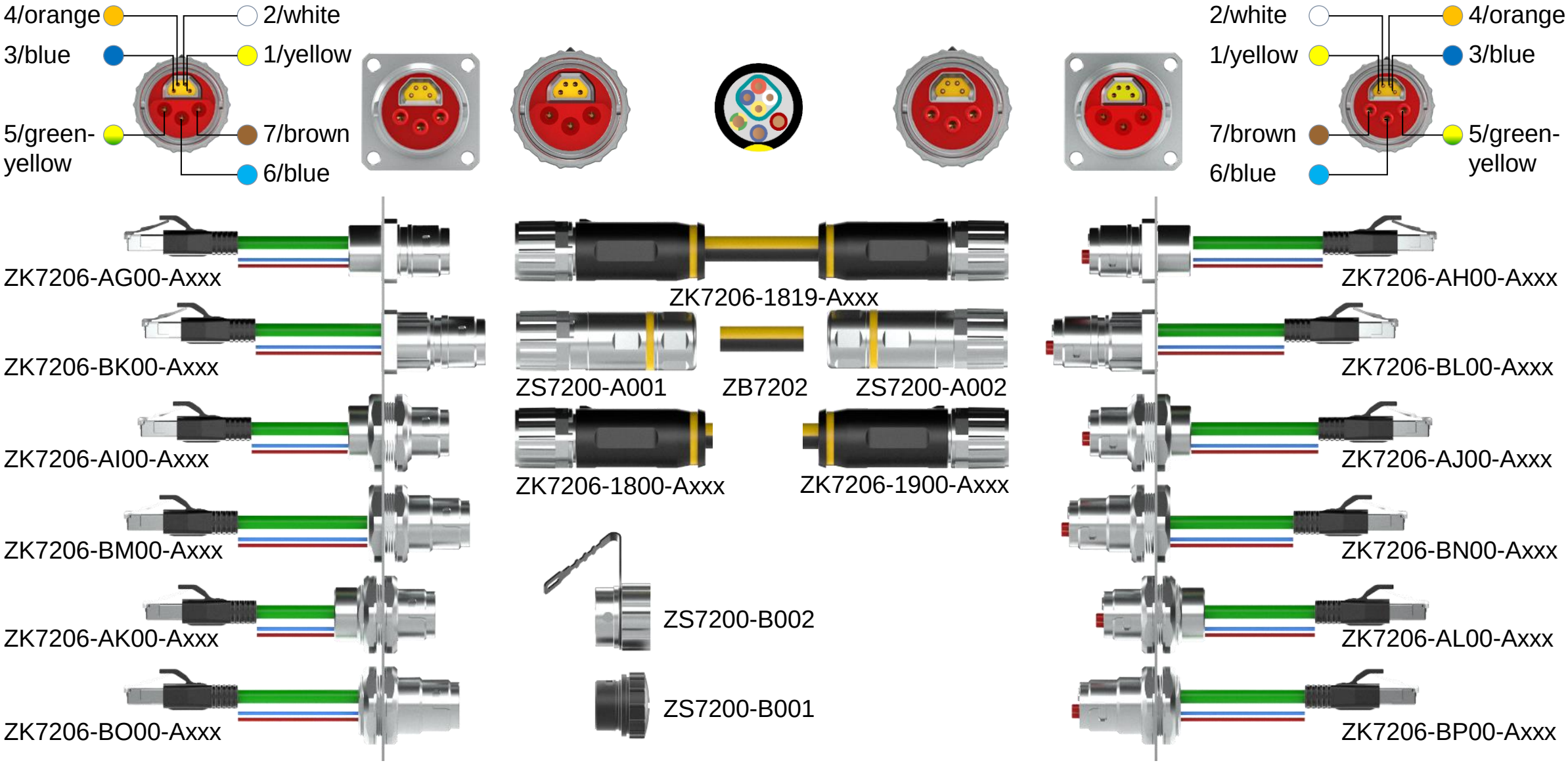


Mechanical coding 1 (ZK7206) = 24 V DC + PE, mechanical coding 2 (ZK7606) = 230 V AC, mechanical coding 3 (ZK7906) = free

3D files can be found here.

B17 | ENP 3-pin 1.5 mm² overview

BECKHOFF

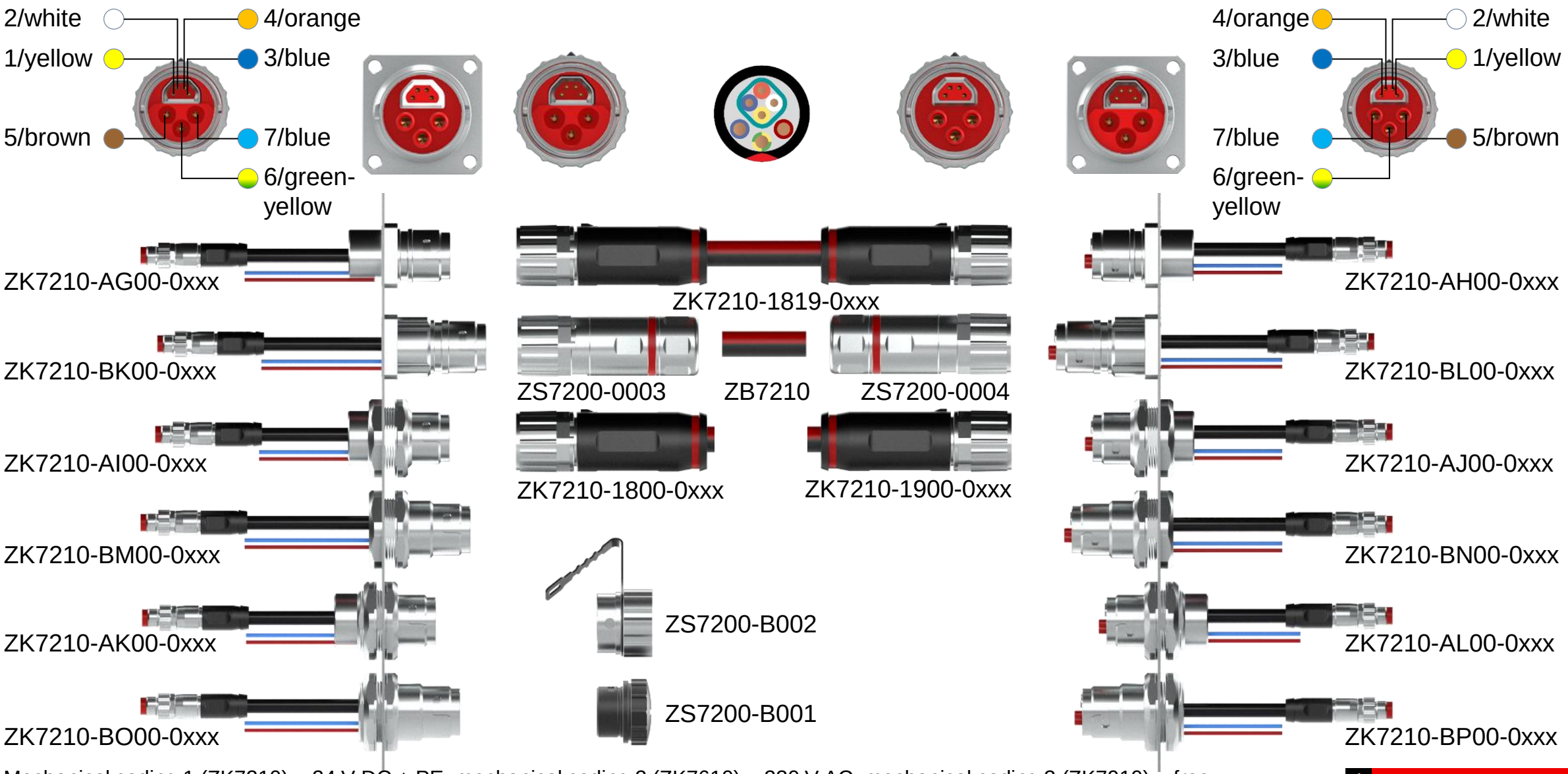


Mechanical coding 1 (ZK7206) = 24 V DC + PE, mechanical coding 2 (ZK7606) = 230 V AC, mechanical coding 3 (ZK7906) = free

3D files can be found here.

B17 | ECP 3-pin 2.5 mm² overview

BECKHOFF

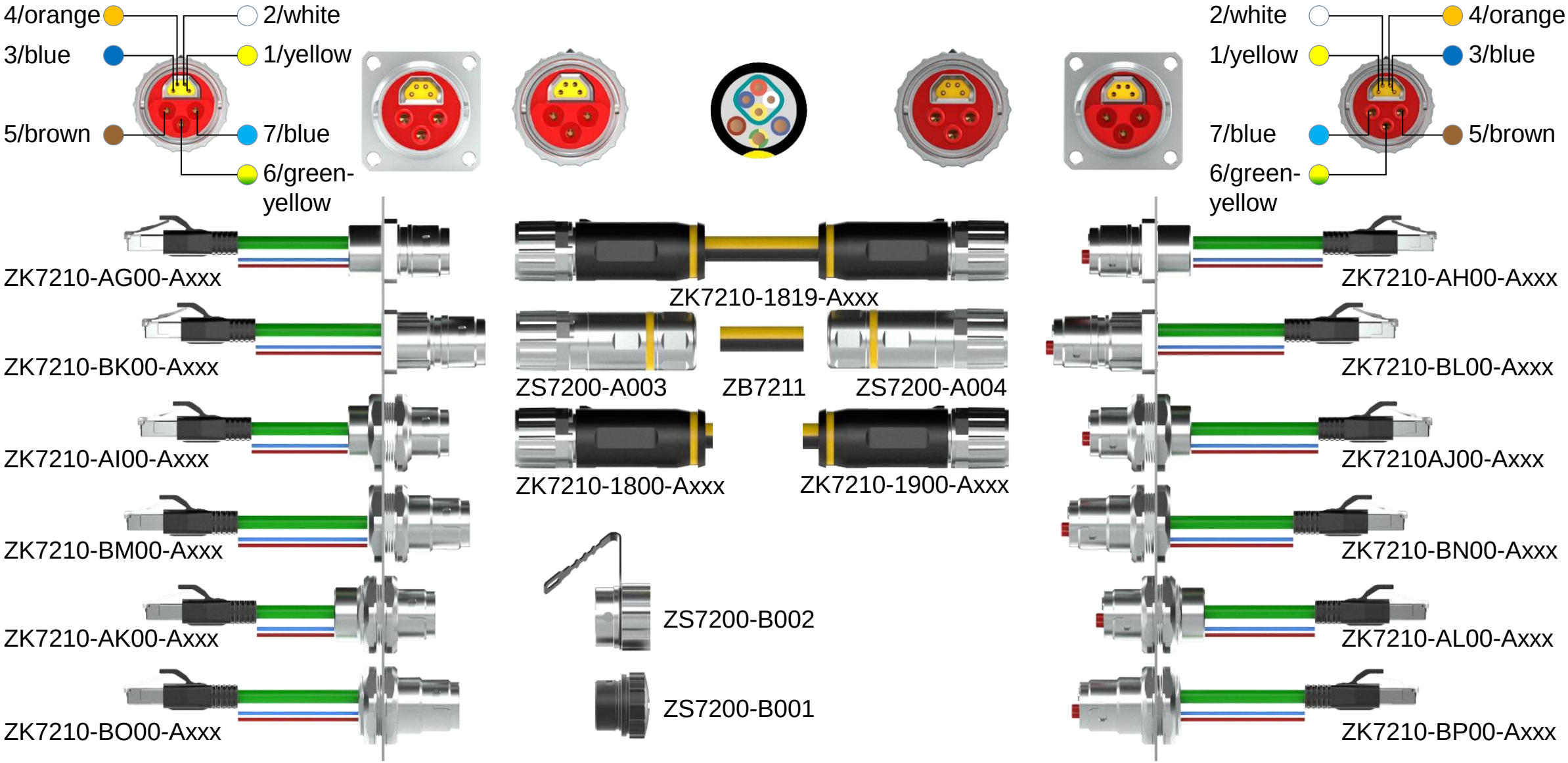


Mechanical coding 1 (ZK7210) = 24 V DC + PE, mechanical coding 2 (ZK7610) = 230 V AC, mechanical coding 3 (ZK7910) = free

3D files can be found here.

B17 | ENP 3-pin 2.5 mm² overview

BECKHOFF

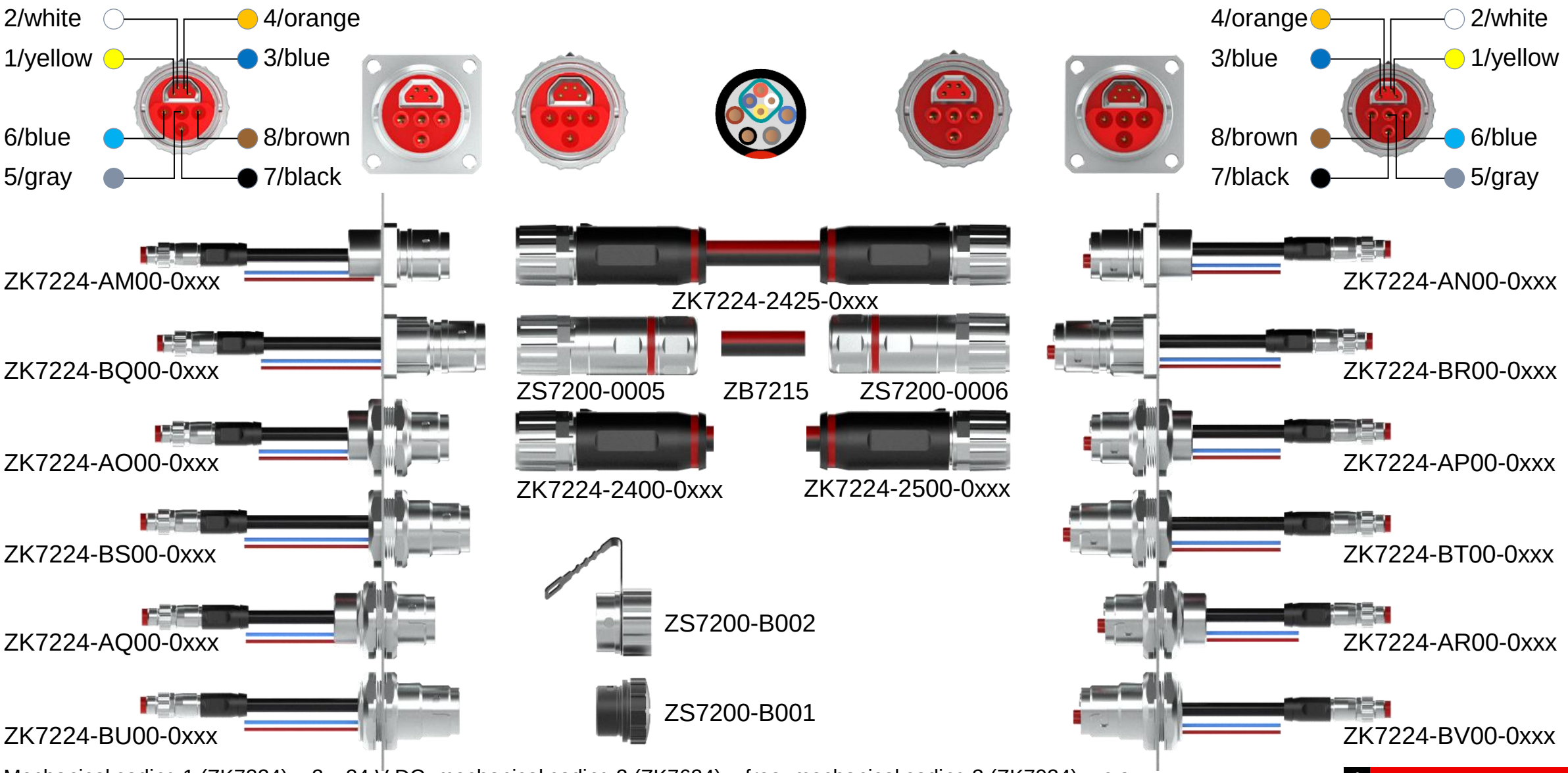


Mechanical coding 1 (ZK7210) = 24 V DC + PE, mechanical coding 2 (ZK7610) = 230 V AC, mechanical coding 3 (ZK7910) = free

3D files can be found here.

B17 | ECP 4-pin 1.5 mm² overview

BECKHOFF

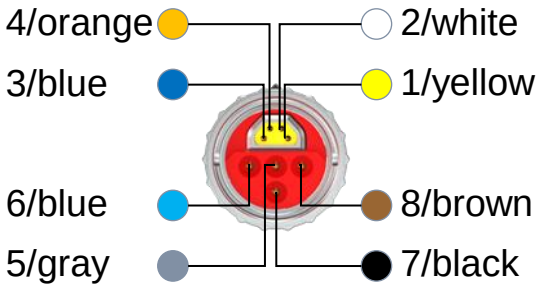


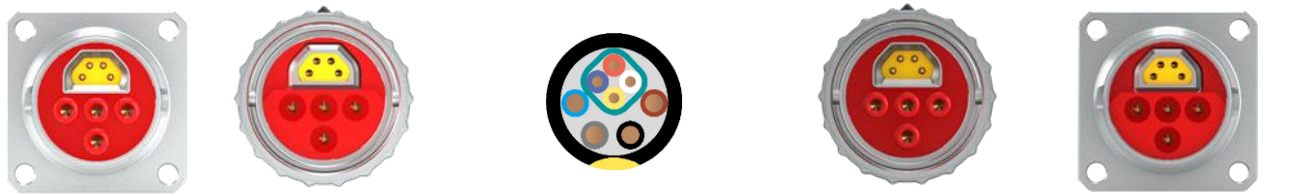
Mechanical coding 1 (ZK7224) = 2 x 24 V DC, mechanical coding 2 (ZK7624) = free, mechanical coding 3 (ZK7924) = n.a.

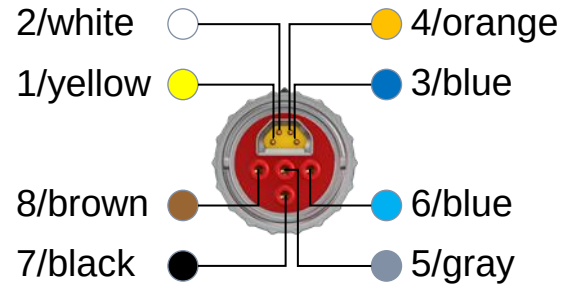
3D files can be found here.

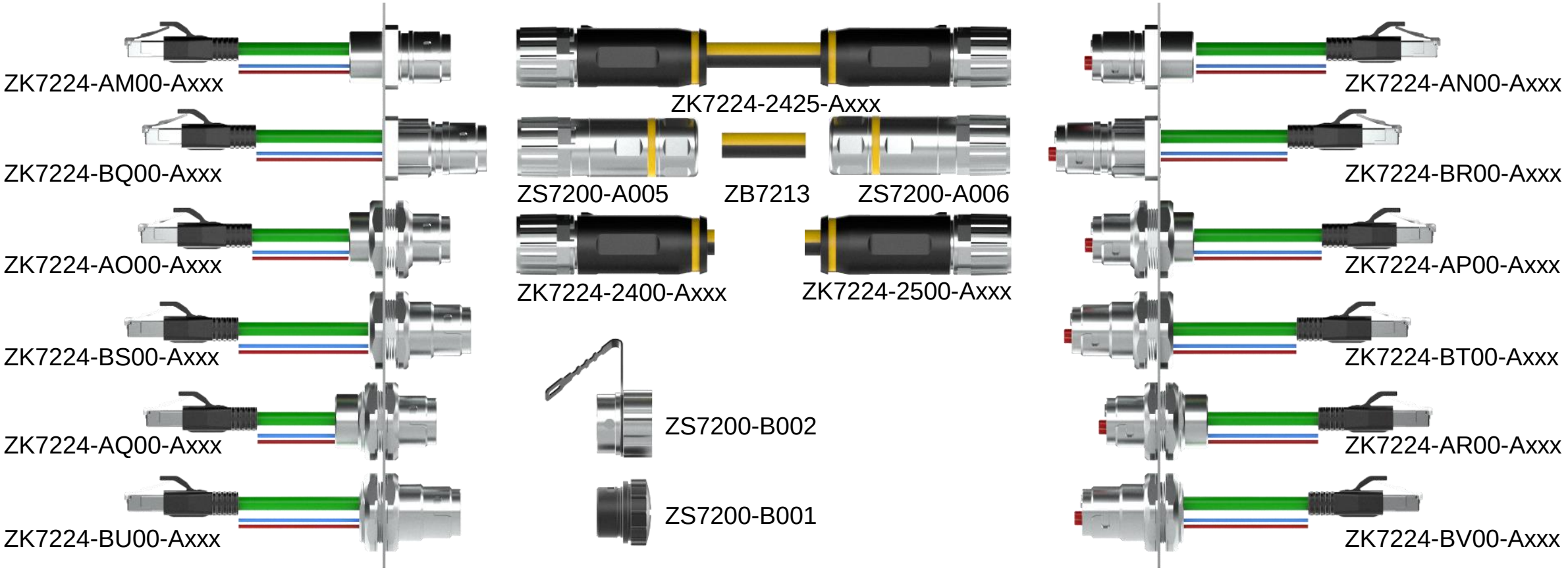
B17 | ENP 4-pin 1.5 mm² overview

BECKHOFF







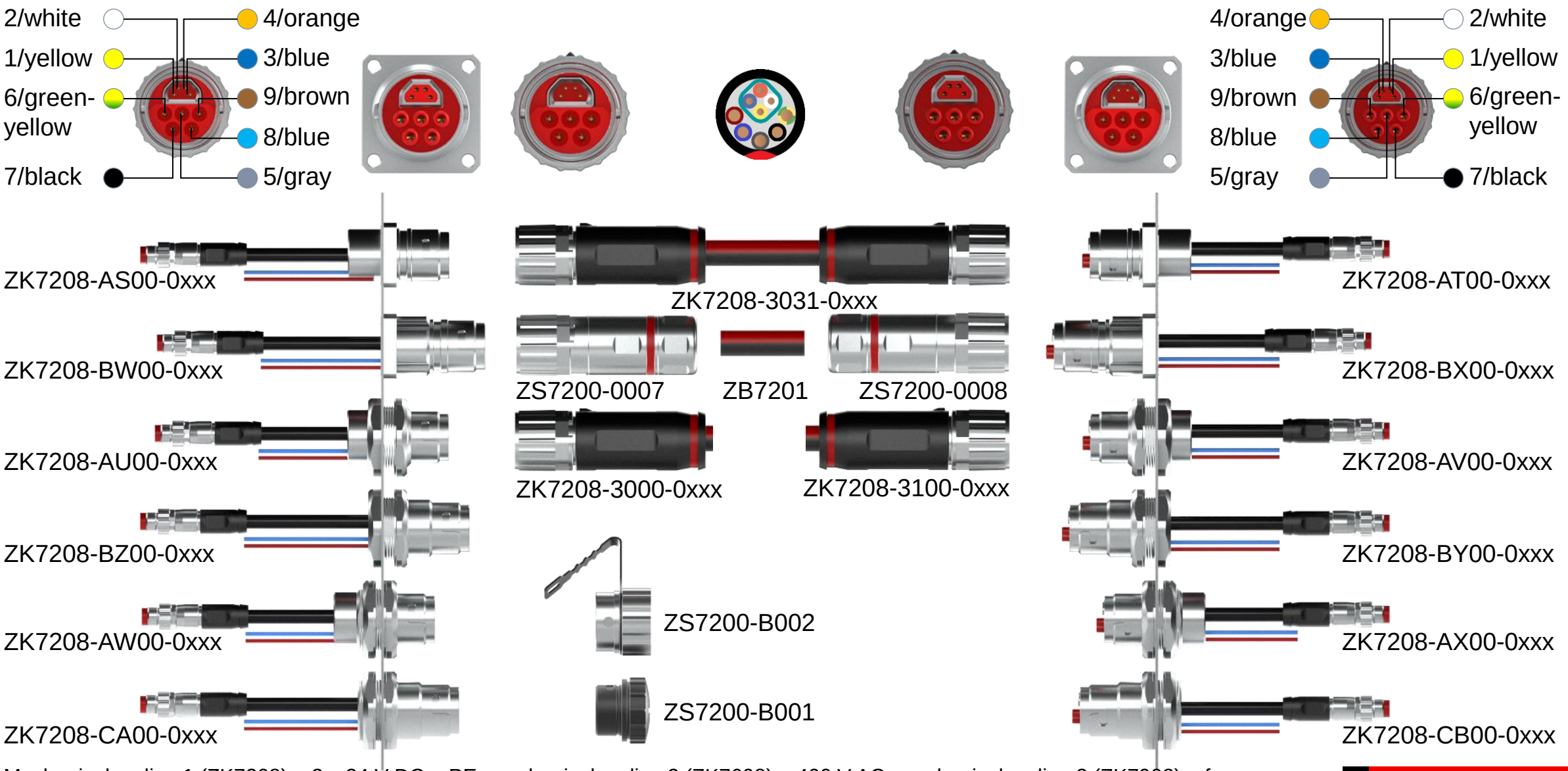


Mechanical coding 1 (ZK7224) = 2 x 24 V DC, mechanical coding 2 (ZK7624) = free, mechanical coding 3 (ZK7924) = n.a.

3D files can be found here.

B17 | ECP 5-pin 1.5 mm² overview

BECKHOFF

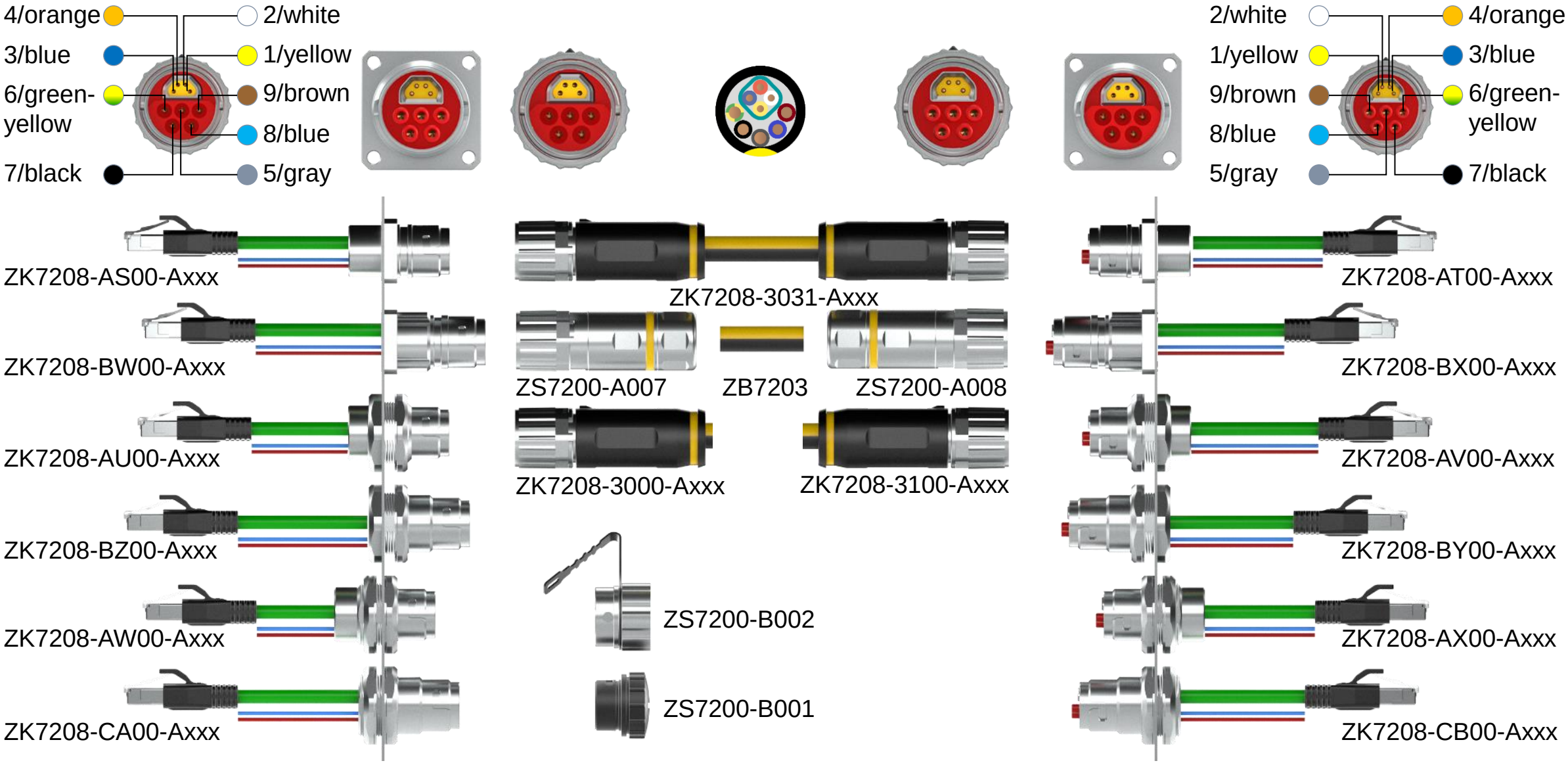


Mechanical coding 1 (ZK7208) = 2 x 24 V DC + PE, mechanical coding 2 (ZK7608) = 400 V AC, mechanical coding 3 (ZK7908) = free

3D files can be found here.

B17 | ENP 5-pin 1.5 mm² overview

BECKHOFF



Mechanical coding 1 (ZK7208) = 2 x 24 V DC + PE, mechanical coding 2 (ZK7608) = 400 V AC, mechanical coding 3 (ZK7908) = free

3D files can be found here.

B17 | Connectors for field assembly with crimp contacts

BECKHOFF

	ZS7000-C001 AWG22/ 0.34 mm² male	ZS7000-C002 AWG22/ 0.34 mm² female	ZS7000-C005 AWG16/ 1.5 mm² male	ZS7000-C006 AWG16/ 1.5 mm² female	ZS7000-C007 AWG14/ 2.5 mm² male	ZS7000-C008 AWG14/ 2.5 mm² female
ZS7200-0001 B17, ECP, 3+4-pin, male	✓		✓			
ZS7200-0002 B17, ECP, 3+4-pin, female		✓		✓		
ZS7200-A001 B17, ENP, 3+4-pin, male + female		✓	✓			
ZS7200-A002 B17, ENP, 3+4-pin, female + male	✓			✓		
ZS7200-0003 B17, ECP, 3+4-pin, male	✓				✓	
ZS7200-0004 B17, ECP, 3+4-pin, female		✓				✓
ZS7200-A003 B17, ENP, 3+4-pin, female + male		✓			✓	
ZS7200-A004 B17, ENP, 3+4-pin, male + female	✓					✓
ZS7200-0005 B17, ECP, 4+4-pin, male	✓		✓			
ZS7200-0006 B17, ECP, 4+4-pin, female		✓		✓		
ZS7200-A005 B17, ENP, 4+4-pin, female + male		✓	✓			
ZS7200-A006 B17, ENP, 4+4-pin, male + female	✓			✓		
ZS7200-0007 B17, ECP, 5+4-pin, male	✓		✓			
ZS7200-0008 B17, ECP, 5+4-pin, female		✓		✓		
ZS7200-A007 B17, ENP, 5+4-pin, female + male		✓	✓			
ZS7200-A008 B17, ENP, 5+4-pin, male + female	✓			✓		

i Mounting instructions can be found here.

B17 | Accessories for ENP/ECP connector family

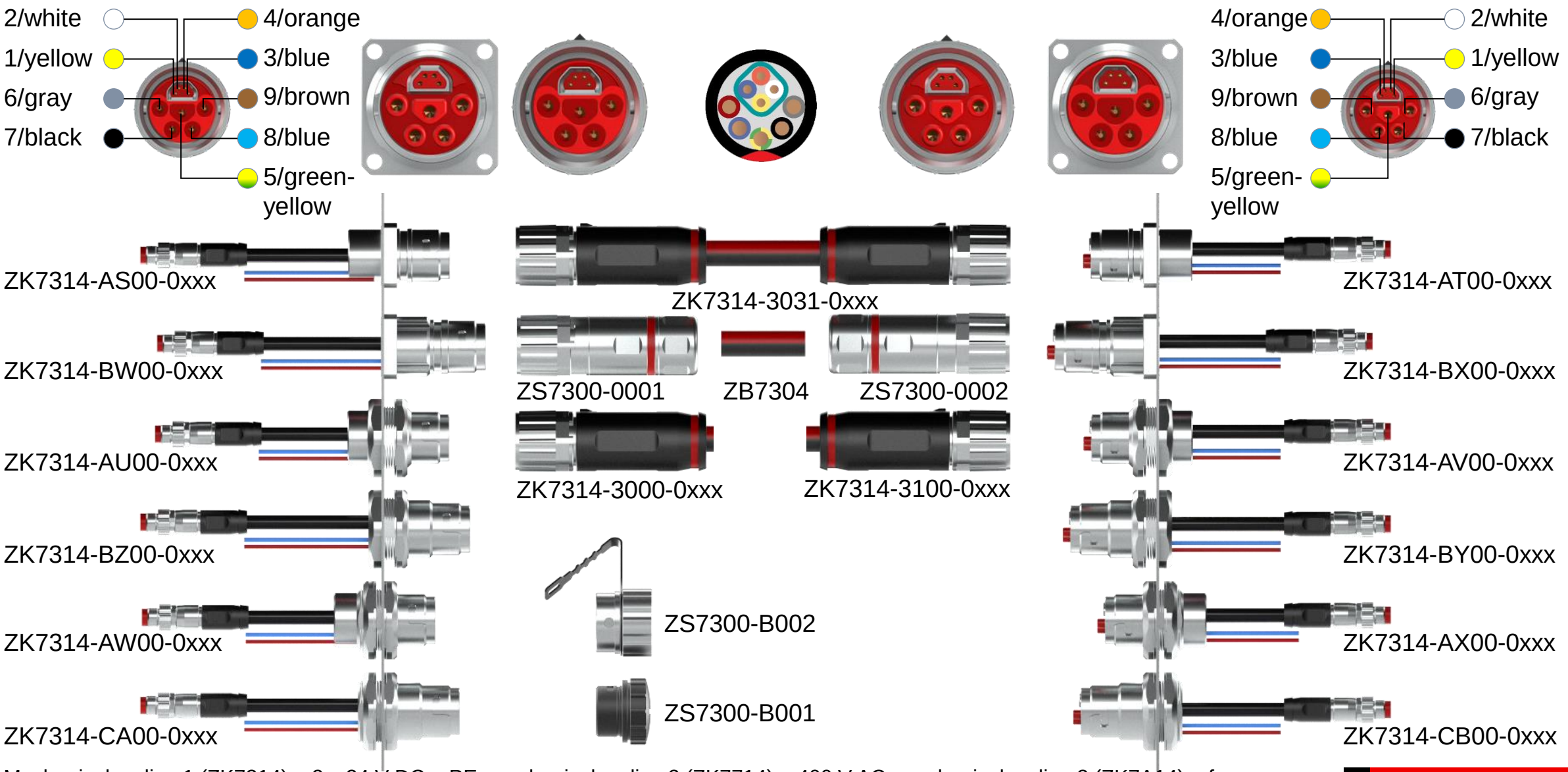
BECKHOFF

Tools and inserts	Crimp contacts for Ethernet element	Crimp contacts for power pins	Protection caps IP 67	Color coding for connectors	Color coding for connectors
					
Crimping tool for Ethernet element	**AWG22/0.34 mm²**	**1.5 mm²**	**Socket/flange**	**Color coding connector/ square flange**	**Color coding flange for front/rear assembly**
ZB8810-0000 M8, B12, B17, B23 contacts	ZS7000-C001 male ZS7000-C002 female	ZS7000-C005 male ZS7000-C006 female	ZS7200-B001 plastic ZS7200-B002 metal	ZS7200-B005 red ZS7200-B006 yellow ZS7200-B007 blue ZS7200-B008 green ZS7200-B015 orange ZS7200-B016 gray	ZS7200-B009 red ZS7200-B010 yellow ZS7200-B011 blue ZS7200-B012 green ZS7200-B013 orange ZS7200-B014 gray
Crimping insert and locator for Ethernet element		**2.5 mm²**	**Plug**		
ZB8810-0001 M8, B12, B17 contacts		ZS7000-C007 male ZS7000-C008 female	ZS7200-B003 plastic ZS7200-B004 metal		
Assembly tool					
ZB8802-0002 assembly tool for B17 connector, AF22					

i Further crimp contacts can be found here.

B23 | ECP 5-pin 4.0 mm² overview

BECKHOFF

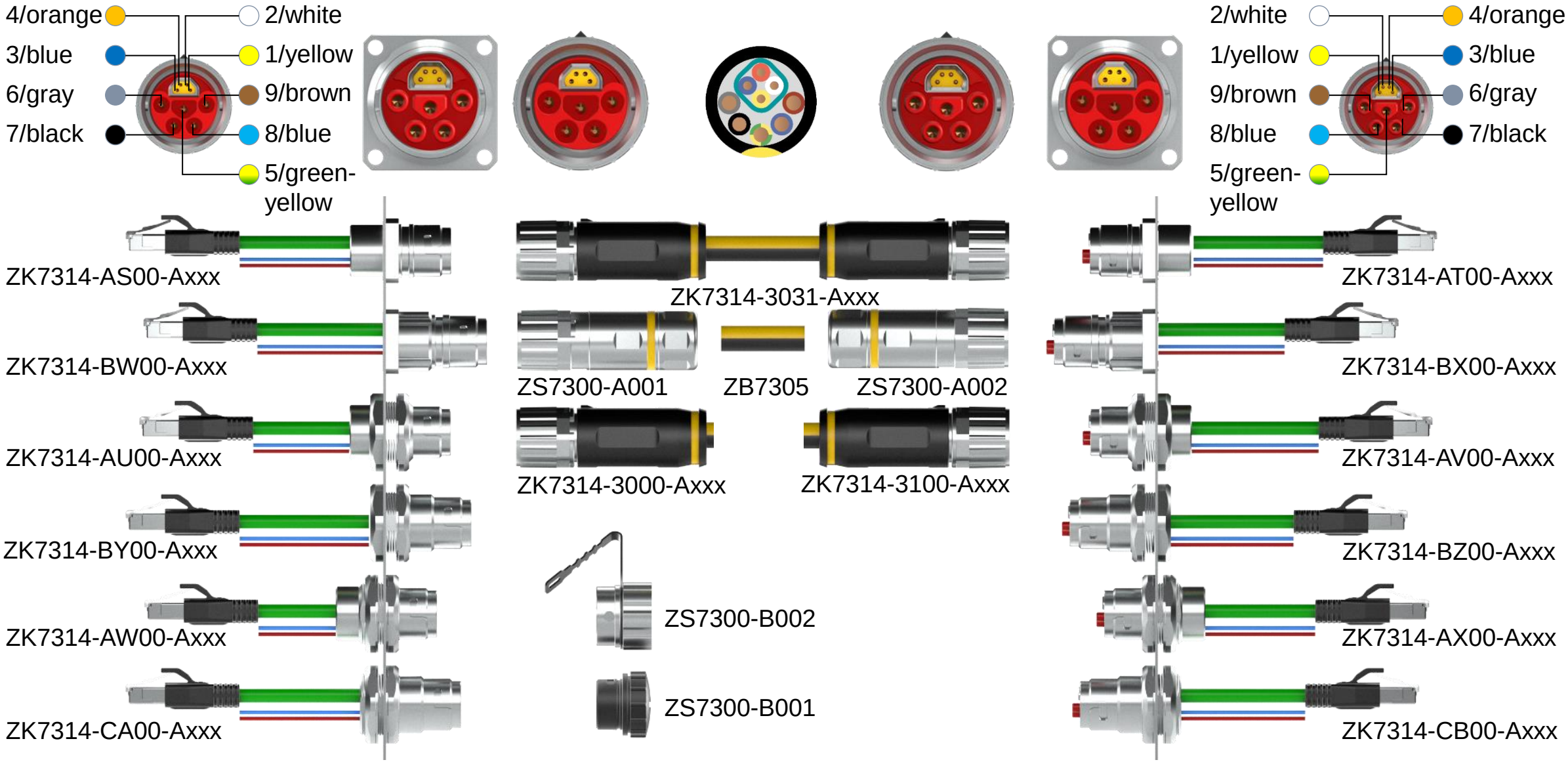


Mechanical coding 1 (ZK7314) = 2 x 24 V DC + PE, mechanical coding 2 (ZK7714) = 400 V AC, mechanical coding 3 (ZK7A14) = free

3D files can be found here.

B23 | ENP 5-pin 4.0 mm² overview

BECKHOFF

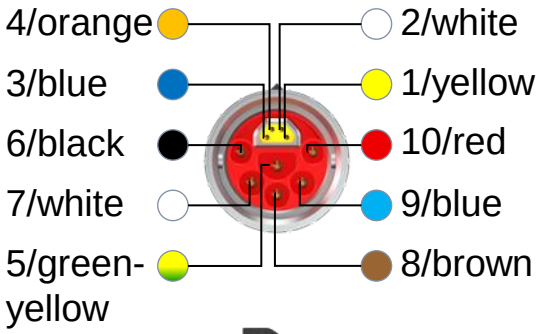


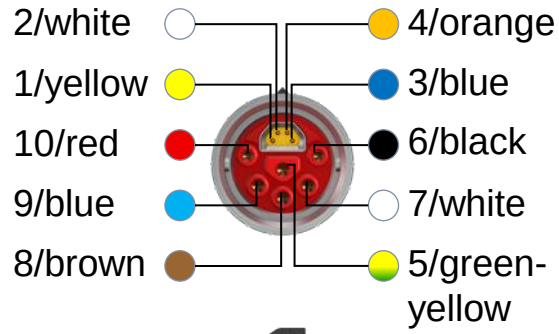
Mechanical coding 1 (ZK7314) = 2 x 24 V DC + PE, mechanical coding 2 (ZK7714) = 400 V AC, mechanical coding 3 (ZK7A14) = free

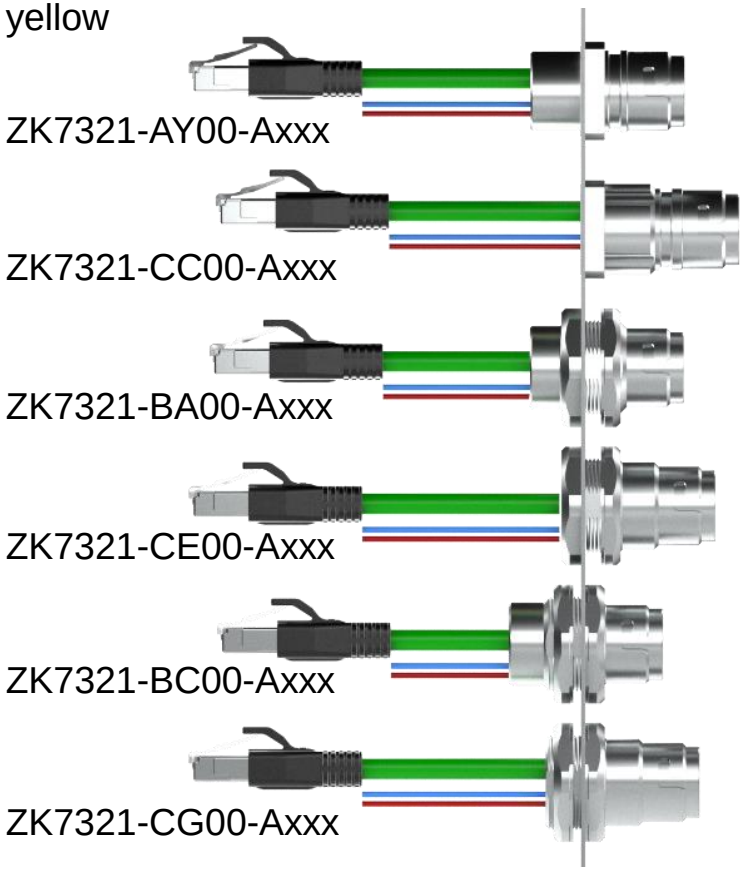
3D files can be found here.

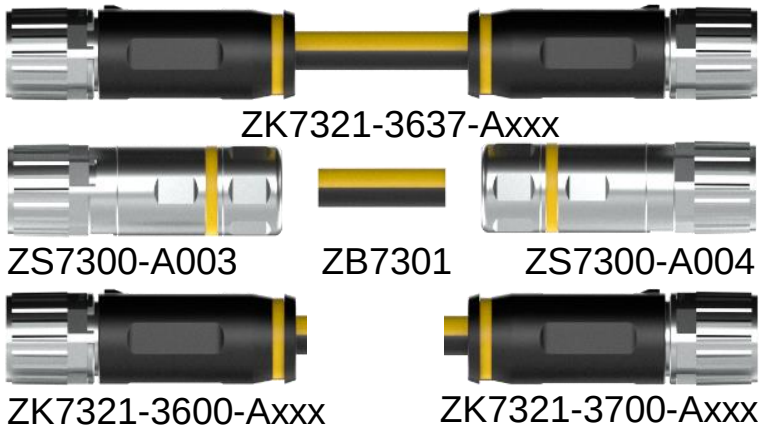
B23 | ENP 6-pin 4.0 mm² and 2.5 mm² overview

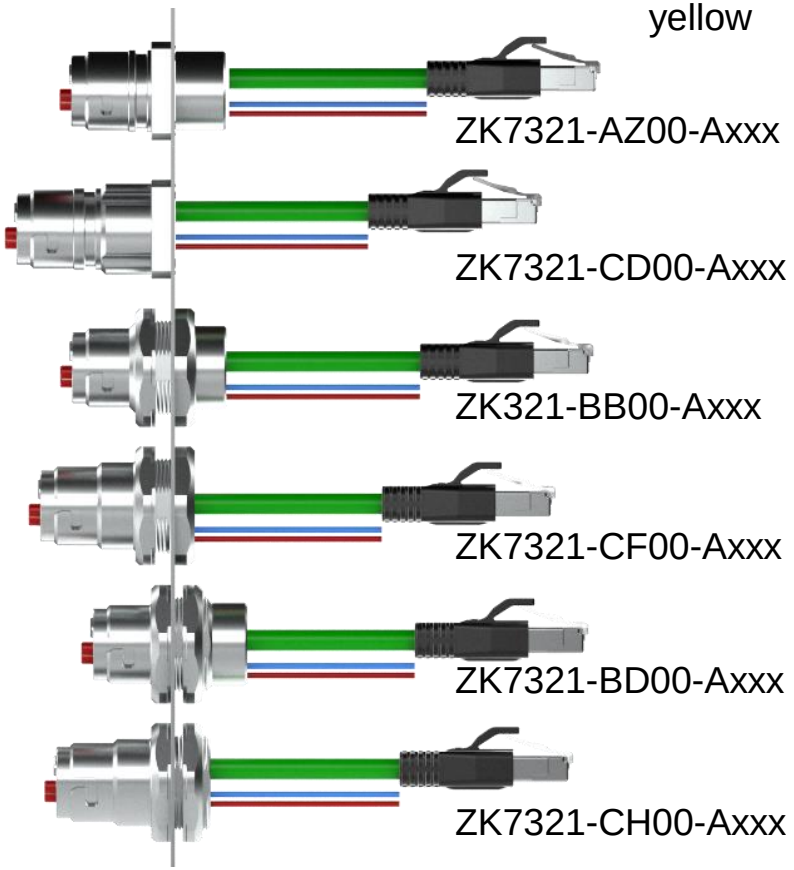
BECKHOFF











Mechanical coding 1 (ZK7321) = free, mechanical coding 2 (ZK7721) = free, mechanical coding 3 (ZK7A21) = free

3D files can be found here.

B23 | Connectors for field assembly with crimp contacts

BECKHOFF

	ZS7000-C001 AWG22/ 0.34 mm² male	ZS7000-C002 AWG22/ 0.34 mm² female	ZS7000-C009 AWG12/ 4.0 mm² male	ZS7000-C010 AWG12/ 4.0 mm² female	ZS7000-C013 AWG14/ 2.5 mm² Ø 1.8 female	ZS7000-C014 AWG14/ 2.5 mm² Ø 1.8 male	ZS7000-C015 AWG16/ 1.5 mm² male	ZS7000-C016 AWG16/ 1.5 mm² female	ZS7000-C017 AWG14/ 2.5 mm² Ø 2.25 male	ZS7000-C018 AWG14/ 2.5 mm² Ø 2.25 female
ZS7300-0001 B23, ECP, 5+4-pin, male	✓		✓							
ZS7300-0002 B23, ECP, 5+4-pin, female		✓		✓						
ZS7300-A001 B23, ENP, 5+4-pin, female + male		✓	✓							
ZS7300-A002 B23, ENP, 5+4-pin, male + female	✓			✓						
ZS7300-0003 B23, ECP, 4+2+4-pin, male	✓		✓			✓				
ZS7300-0004 B23, ECP, 4+2+4-pin, female		✓		✓	✓					
ZS7300-A003 B23, ENP, 4+2+4-pin, female + male		✓	✓			✓				
ZS7300-A004 B23, ENP, 4+2+4-pin, male + female	✓			✓	✓					
ZS7300-0005 B23, Power, 5+4-pin, male			✓							
ZS7300-0006 B23, Power, 5+4-pin, female				✓						

i Mounting instructions can be found here.

B23 | Accessories for ENP/ECP connector family

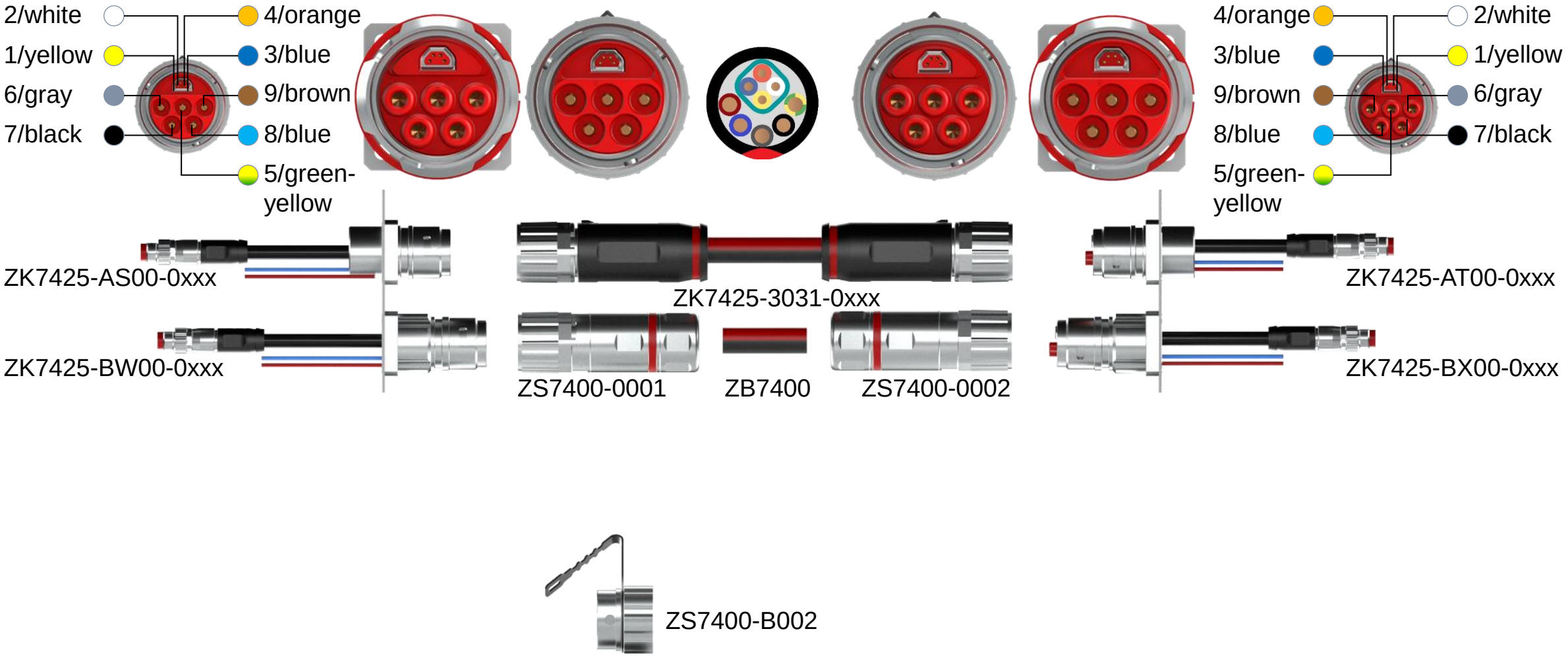
BECKHOFF

Tools and inserts	Crimp contacts for Ethernet element	Crimp contacts for power pins	Protection caps IP 67	Color coding for connectors	Color coding for connectors	Color coding for connectors
						
Crimping tool for Ethernet element	**AWG22/0.34 mm²**	**4 mm²**	**Socket/flange**	**Color coding connector/square flange**	**Color coding flange for front/rear assembly**	**Color coding for connector for field assembly**
ZB8810-0000 M8, B12, B17, B23 contacts	ZS7000-C001 male ZS7000-C002 female	ZS7000-C009 male ZS7000-C010 female	ZS7300-B001 plastic ZS7300-B002 metal	ZS7300-B005 red ZS7300-B006 yellow ZS7300-B007 blue ZS7300-B008 green ZS7300-B015 orange ZS7300-B016 gray	ZS7300-B009 red ZS7300-B010 yellow ZS7300-B011 blue ZS7300-B012 green ZS7300-B013 orange ZS7300-B014 gray	ZS7300-B017 red ZS7300-B018 yellow ZS7300-B019 blue ZS7300-B020 green ZS7300-B021 orange ZS7300-B022 gray
Crimping insert and locator for Ethernet element			**Plug**			
ZB8810-0001 M8, B12, B17 contacts			ZS7300-B003 plastic ZS7300-B004 metal			
Assembly tool						
ZB8802-0003 assembly tool for B23 connector, AF22						

i Further crimp contacts can be found here.

B40 | ECP 5-pin 16 mm² overview

BECKHOFF



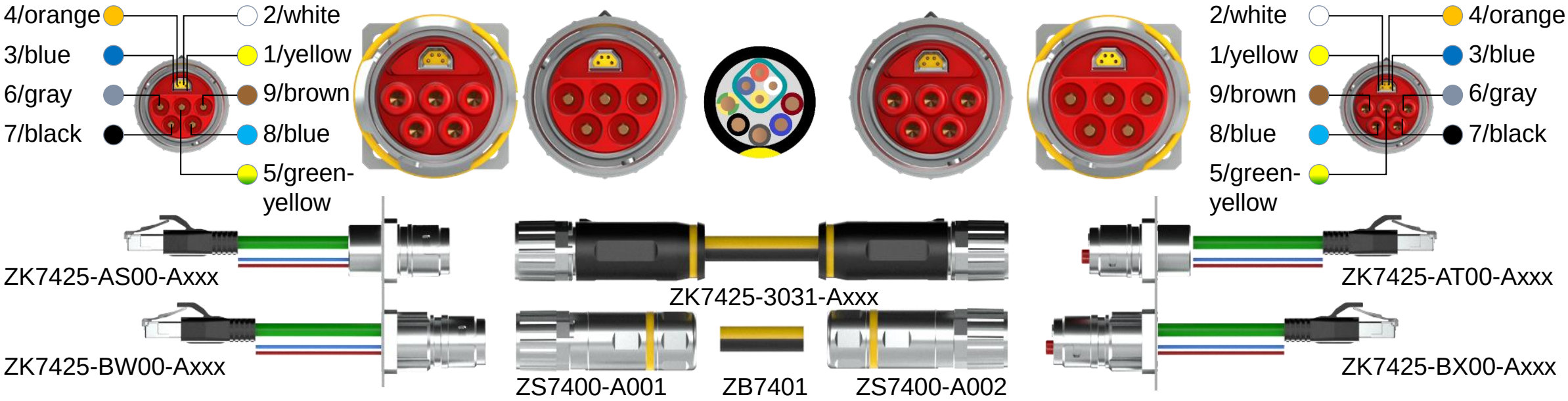
ZS7400-B002

Mechanical coding 1 (ZK7425) = 2 x 24 V DC + PE, mechanical coding 2 (ZK7825) = 400 V AC, mechanical coding 3 (ZK7B25) = free, mechanical coding 4 (ZK7x25) = 2 x 24 V DC + PE, mechanical coding 5 (ZK7x25) = 400 V AC, mechanical coding 6 (ZK7x25) = free

3D files can be found here.

B40 | ENP 5-pin 16 mm² overview

BECKHOFF



ZS7400-B002

Mechanical coding 1 (ZK7425) = 2 x 24 V DC + PE, mechanical coding 2 (ZK7825) = 400 V AC, mechanical coding 3 (ZK7B25) = free, mechanical coding 4 (ZK7x25) = 2 x 24 V DC + PE, mechanical coding 5 (ZK7x25) = 400 V AC, mechanical coding 6 (ZK7x25) = free

3D files can be found here.

B40 | Connectors for field assembly with crimp contacts

BECKHOFF

	ZS7000-C001 AWG22/0.34 mm² male	ZS7000-C002 AWG22/0.34 mm² female	ZS7000-C023 16 mm² male	ZS7000-C024 16 mm² female
				
ZS7400-0001 B40, ECP, 5+4-pin, male	✓		✓	
ZS7400-0002 B40, ECP, 5+4-pin, female		✓		✓
ZS7400-A001 B40, ENP, 5+4-pin, female + male		✓	✓	
ZS7400-A002 B40, ENP, 5+4-pin, male + female	✓			✓

Mounting instructions can be found here.

B40 | Accessories for ENP/ECP connector family

BECKHOFF

Crimp contacts for Ethernet element	Protection caps IP 67	Color coding for connectors	Color coding for connectors	Color coding for connectors
				
AWG22/0.34 mm²	**Socket/flange**	**Color coding connector/ square flange**	**Color coding flange for front/rear assembly**	**Color coding for connector for field assembly**
[ZS7000-C001](#) male [ZS7000-C002](#) female	[ZS7400-B002](#) metal	[ZS7400-B005](#) red [ZS7400-B006](#) yellow [ZS7400-B007](#) blue [ZS7400-B008](#) green [ZS7400-B015](#) orange [ZS7400-B016](#) gray	[ZS7400-B009](#) red [ZS7400-B010](#) yellow [ZS7400-B011](#) blue [ZS7400-B012](#) green [ZS7400-B013](#) orange [ZS7400-B014](#) gray	[ZS7400-B017](#) red [ZS7400-B018](#) yellow [ZS7400-B019](#) blue [ZS7400-B020](#) green [ZS7400-B021](#) orange [ZS7400-B022](#) gray
	Plug			
	[ZS7400-B004](#) metal			

i **Further crimp contacts can be found here.**

High performance directly in the field

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