



## ZK7A14-BY00-0xxx | B23, ECP cable, PUR, 5 G 4.0 mm<sup>2</sup> + (1 x 4 x AWG22), drag chain suitable, key 3 (user-defined voltage)

B23, flange rear assembly, straight, long, female+ female, pins 4+PE+4, P-coded – M8 EtherCAT-P-coded + 5 x open end, plug, straight, male, 4-pin, P-coded

### Plugs

Electrical data	Head A	Head B
Rated voltage (Ethernet)	24 V DC	24 V DC
Rated current (Ethernet)	3 A at 40 °C	3 A at 40 °C
Rated voltage (power)	630 V AC / 850 V DC, 600V AC / DC (UL)	-
Rated current (power)	28 A at 40 °C	-
Rated current (power)	28 A	-
Rated impulse voltage (power)	6.0 kV	-
Rated impulse voltage (Ethernet)	1.0 kV	-
Voltage proof (contact/contact)	1.5 kV (power - Ethernet), 3.31 kV AC (power), 1.0 kV AC (Ethernet)	-
Shielding (Ethernet)	yes	yes
Contact resistance	< 10 mΩ (signal), < 5 mΩ (power)	-
Insulation resistance	≥ 100 MΩ (according to IEC 60512)	≥ 100 GΩ (according to IEC 60512)
Mechanical data		
Installation size	B23	M8 EtherCAT-P-coded + 5 x open end
Connector type	flange rear assembly	plug
Configuration	straight, long	straight
Contact type	female+ female	male
Number of positions (face)	pins 4+PE+4	4-pin
Coding	P-coded	P-coded
Mechanical coding	key 3 (user-defined voltage)	-
Wire termination	crimp connection	crimp connection
Recommended torque, nut	-	0.4 Nm
Mating cycles	≥ 100	≥ 100
Way of locking	bayonet	screw
Weight per piece	0.200 kg (0.441 lb)	-
Body colour	-	black

Body material	-	TPU, UL 94
Flange housing material	GD-Zn, Ni	-
Coupling nut material	-	CuZn, Ni
Seal	NBR, FPM	FPM
Contact carrier colour	-	red
Contact carrier material	PA 6, UL 94 V0	PA, UL 94
Contact carrier colour (Ethernet)	red	-
Contact carrier colour (power)	red	-
Contact plating	Au over Ni	Ni, Au gal.
Contact material	copper alloy	CuZn
<b>Environmental data</b>		
Shock resistance	50 g (490 m/s <sup>2</sup> ) conforms to IEC 60512-6c, 11 ms; 18 shocks per direction, 3 axes	-
Vibration resistance	5 g (50 m /s <sup>2</sup> ) conforms to IEC 60512-6d, 10 Hz. ... 500 Hz.; 10 cycles per axis; 6 h full duration	-
UV resistance	-	yes
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+80 °C, -22...+176 °F	-30...+70 °C, -22...+158 °F
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 67 in screwed condition (according to IEC 60529)
Pollution level	3/2 (according to IEC 60664-1)	3/2 (according to IEC 60664-1)
Approvals	UL 2237: File E484763	-

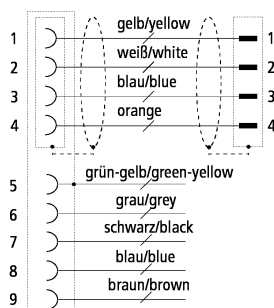
## Cable

<b>Electrical data</b>		
Rated voltage (Ethernet)	max. 300 V (peak value, not for high voltage purposes)	
Rated voltage (power)	600 V	
Operating voltage	≤ 125 V (peak value, not for high voltage purposes)	
Attenuation of shielding	≥ 65 dB (30...100 MHz)	
Insulation resistance	≥ 5GΩ * km	
Unbalanced capacitance to ground	≤ 2000 pF/km	
Mutual capacitance	48 nF/km	
Characteristic impedance (Ethernet)	100 Ω ±15 Ω	
Loop resistance	≤ 110.8 Ω/km	
Signal running time (Ethernet)	5.3 ns/m	
Electrical parameters (Ethernet)	CAT 5e, according to EN 50288-2-2	
Test voltage	1000 V, 50 Hz, 1 min. (wire/wire and wire/screen)	
<b>Mechanical data</b>		
Cable structure (Ethernet)	star quad	
Conductor construction (power)	19 x 0.30 mm	
Cross section (power)	5 x 4.0 mm <sup>2</sup> (approx. AWG12)	
Cross section (Ethernet)	1 x 4 x 0.34 mm <sup>2</sup> (AWG 22)	
Min. bending radius, moved	8 x outer cable diameter	
Min. bending radius, fixed installation	5 x outer cable diameter	
Outer cable diameter	6.5 mm ± 0.2 mm (0.2559" ± 0.0079")	
Conductor material (Ethernet)	copper, tinned	
Shielding	aluminium-clad foil, braiding of tinned copper wires, coupling	
Optical covering factor of shielding (Ethernet)	≥ 85 %	
Use	drag-chain suitable	
Max. acceleration	3 m/s <sup>2</sup>	
Max. speed	3 m/s	
Max. travel distance	4.5 m	
Max. number of cycles	3 million	
Jacket colour	black (similar to RAL 9005) with red stripe (similar to RAL 3020)	
Material jacket	PUR (polyurethane)	
Wire colour code	yellow, orange, white, blue (Ethernet) grey, green/yellow, black, blue, brown (Power)	
Wire insulation material	PP polypropylene (Ethernet), PPE polyphenyl ether (Power)	
Printing on the jacket	Beckhoff Automation GmbH & Co. KG - Germany - EtherCATp Cat5e AWG22/7 E170315 AWM 21198 AWM I/II A/B 80°C 300 V	
Printing colour	white	
<b>Environmental data</b>		

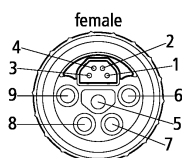
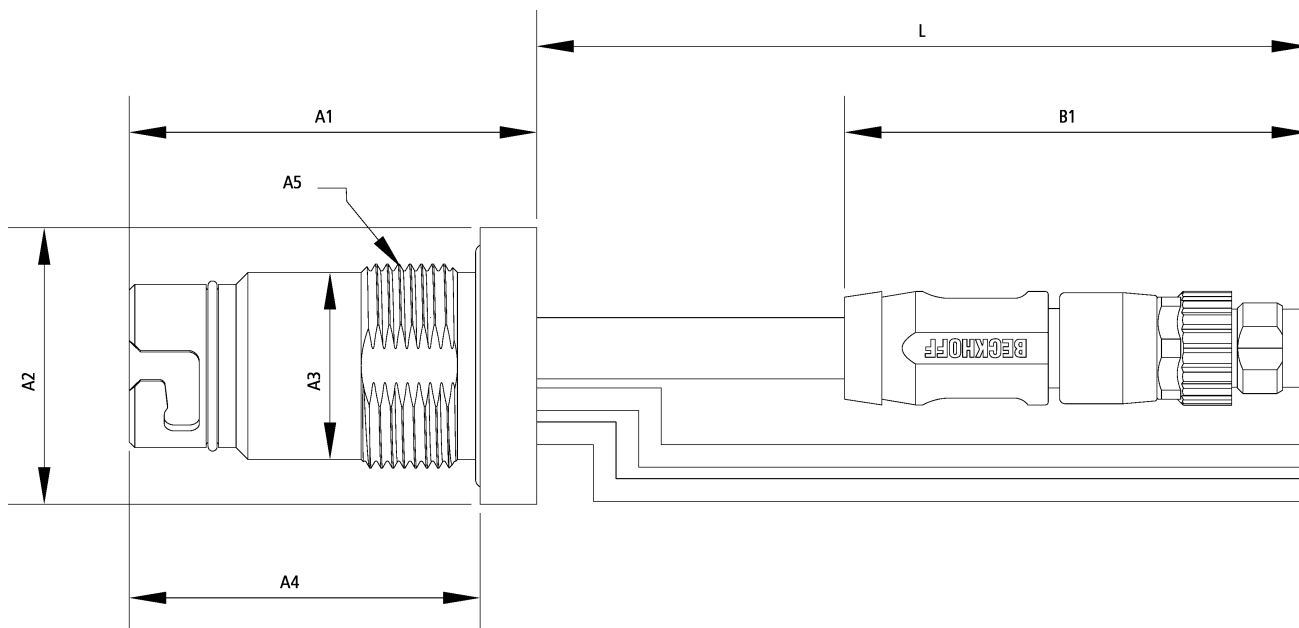
Operation temperature range, moved	-30...+70 °C, -22...+158 °F
Operation temperature range, fixed installation	-40...+80 °C, -40...+176 °F
UV resistance	good
Oil resistance	according to IEC 60811-2-1 respectively according to DIN VDE 0282 part 10
Flame-retardant	Horizontal flame test according to UL 1581 part 1090
Halogen-free	according to IEC 60754 respectively DIN VDE 0472 part 815

Attenuation								
Max. insertion loss								
Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	-	4.9	7.8	9.9	11.1	14.1	20.4	26.4
[db/100 ft]	-	1.5	2.4	3	3.4	4.3	6.2	8
Min. near-end crosstalk attenuation								
Frequency [MHz]	1	4	10	16	20	31.25	62.5	100
[db/100 m]	-	56.3	50.3	47.2	45.8	42.9	38.4	35.3
[db/100 ft]	-	17.2	15.3	14.4	14	13.1	11.7	10.8

### Contact assembly



### Dimensions



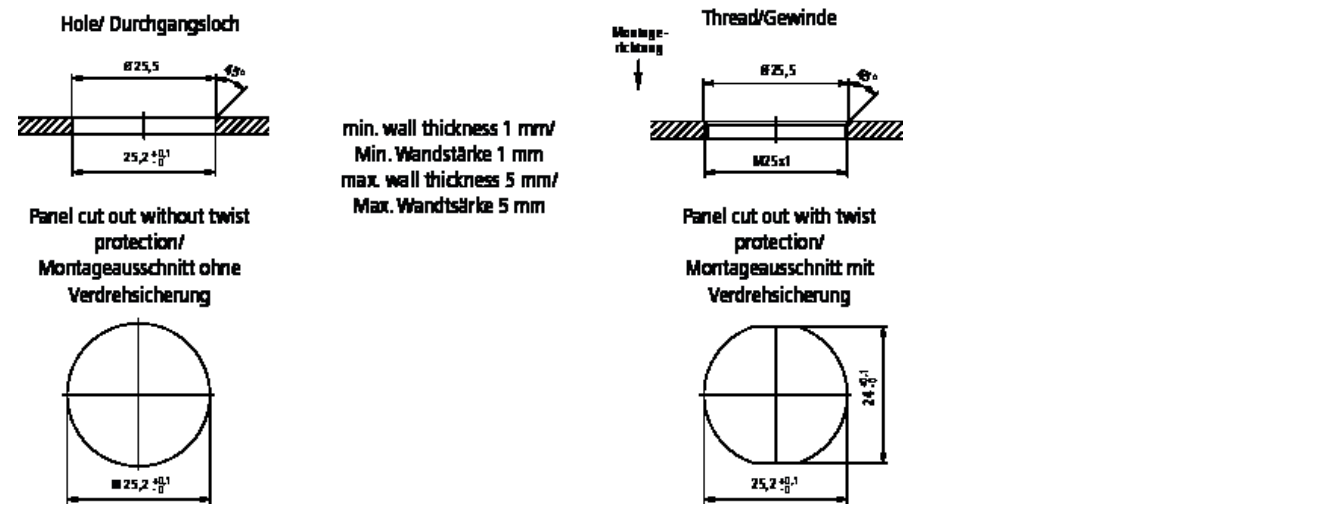
A1	42.50 mm
A2	30.00 mm

A3	23.80 mm
A4	37.50 mm
A5	M25
B1	41.00 mm

## Notes

- Depending on the cable length (L), the following length tolerances apply:  
0 m...3.0 m: + 100 mm | 3.0...10.0 m: ± 100 mm | ≥ 10.0 m: ± 2 %
- Illustrations similar
- Delivery with counter nut
- Further cable length on request. The last three digits of the ordering information is the cable length in decimeters, e.g. ZKxxxx-xxxx-x020 = cable length 2.00 m

### Installation dimensions



Ordering information	Length
ZK7A14-BY00-0xxx	–

Accessories	
ZS7300-B001	B23 protection cap, socket/flange, plastic, IP 67, packaging unit = 10 pieces
ZS7300-B002	B23 protection cap, socket/flange, metal, IP 67, packaging unit = 5 pieces
ZS7300-B009	B23 colour coding flange for front/rear assembly, red, packaging unit = 10 pieces
ZS7300-B010	B23 colour coding flange for front/rear assembly, yellow, packaging unit = 10 pieces
ZS7300-B011	B23 colour coding flange for front/rear assembly, blue, packaging unit = 10 pieces
ZS7300-B012	B23 colour coding flange for front/rear assembly, green, packaging unit = 10 pieces
ZS7300-B013	B23 colour coding flange for front/rear assembly, orange, packaging unit = 10 pieces
ZS7300-B014	B23 colour coding flange for front/rear assembly, grey, packaging unit = 10 pieces

Beckhoff®, TwinCAT®, EtherCAT®, EtherCAT G®, EtherCAT G10®, EtherCAT P®, Safety over EtherCAT®, TwinSAFE®, XFC®, XTS® and XPlanar® are registered trademarks of and licensed by Beckhoff Automation GmbH. Other designations used in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owners.

© Beckhoff Automation GmbH & Co. KG 03/2021

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual application do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.