



## ZK7A21-BD00-Axxx | B23, ENP cable, PUR, 4 G 4.0 mm<sup>2</sup> + 2 x 2.5 mm<sup>2</sup> + (1 x 4 x AWG22), drag chain suitable, key 3 (user-defined voltage)

B23, flange front assembly, straight, short, male+female, pins 3+PE+2+4, EtherCAT-coded – RJ45 + 6 x open end, 8-pin

### Plugs

Electrical data	Head A	Head B
Rated voltage (Ethernet)	60 V DC	24 V DC
Rated current (Ethernet)	4 A at 40 °C	1.1 A at 30 °C
Rated voltage (power)	630 V AC / 850 V DC, 600V AC / DC (UL)	-
Rated current (power)	22 A + 25 A at 40 °C	-
Rated current (power)	22 A + 25 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)	≥ 10 GΩ (according to IEC 60512-2)
Mechanical data		
Installation size	B23	RJ45 + 6 x open end
Connector type	flange front assembly	-
Configuration	straight, short	-
Contact type	male+female	-
Number of positions (face)	pins 3+PE+2+4	8-pin
Coding	EtherCAT-coded	-
Mechanical coding	key 3 (user-defined voltage)	-
Wire termination	crimp connection	-
Mating cycles	≥ 100	≥ 750
Way of locking	bayonet	-
Weight per piece	0.200 kg (0.441 lb)	-
Body colour	-	black
Body material	-	PC UL 94 V0

Flange housing material	GD-Zn, Ni	-
Seal	NBR	-
Contact carrier material	PA, UL 94	-
Contact carrier colour (Ethernet)	yellow	-
Contact carrier colour (power)	red	-
Contact plating	Au over Ni	Au over Ni
Contact material	copper alloy	-
<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	-
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+80 °C, -22...+176 °F	-40...+85 °C, -40...+185 °F
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 20
Pollution level	3/2 (according to IEC 60664-1)	-
Approvals	UL 2237: File E484763	-

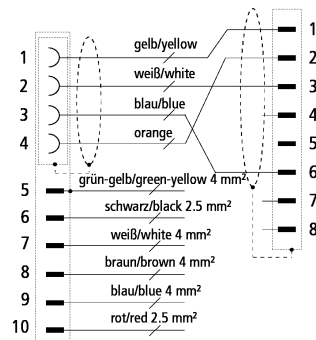
## Cable

<b>Electrical data</b>		
Rated voltage (Ethernet)	max. 300 V (peak value, not for high voltage purposes)	
Rated voltage (power)	600 V	
Attenuation of shielding	≥ 40 dB	
Insulation resistance	≥ 500 MΩ/km	
Unbalanced capacitance to ground	1600 pF/km	
Mutual capacitance	52 nF/km (1 kHz)	
Characteristic impedance (Ethernet)	100 Ω ±15 Ω (100 MHz)	
Loop resistance (Ethernet)	≤ 115 Ω/km	
Differential impedance (Ethernet)	250 Ω/km	
Unbalanced resistance (Ethernet)	2 %	
Dielectric strength wire/wire (Ethernet)	1000 V DC/700 V AC	
Dielectric strength wire/shield (Ethernet)	1000 V DC/700 V AC	
Signal running time (Ethernet)	5.3 ns/m	
Electrical parameters (Ethernet)	based on CAT 5	
Test voltage	≥ 2000 V	
<b>Mechanical data</b>		
Cable structure (Ethernet)	star quad	
Conductor construction (power)	19 x 0.30 mm	
Conductor construction (Ethernet)	7 x 0.25 mm	
Cross section (power)	4 x 4.0 mm <sup>2</sup> (approx. AWG12) + 2 x 2.5 mm <sup>2</sup> (approx. AWG14)	
Cross section (Ethernet)	1 x 4 x 0.34 mm <sup>2</sup> (AWG 22)	
Min. bending radius, moved	7.5 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	
Optical covering factor of shielding (Ethernet)	≥ 85 %	
Use	drag-chain suitable	
Max. acceleration	4 m/s <sup>2</sup>	
Max. speed	4 m/s	
Max. number of cycles	3 million	
Wall thickness of wire insulation (Ethernet)	0.375 mm	
Jacket colour	green	
Material jacket	PUR (polyurethane)	
Wire colour code	yellow, orange, white, blue (Ethernet), black, red (2.5 mm <sup>2</sup> ), white, green/yellow, brown, blue (4.0 mm <sup>2</sup> )	
Wire insulation material	PP polypropylene (Ethernet), PPE polyphenyl ether (Power)	

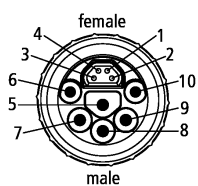
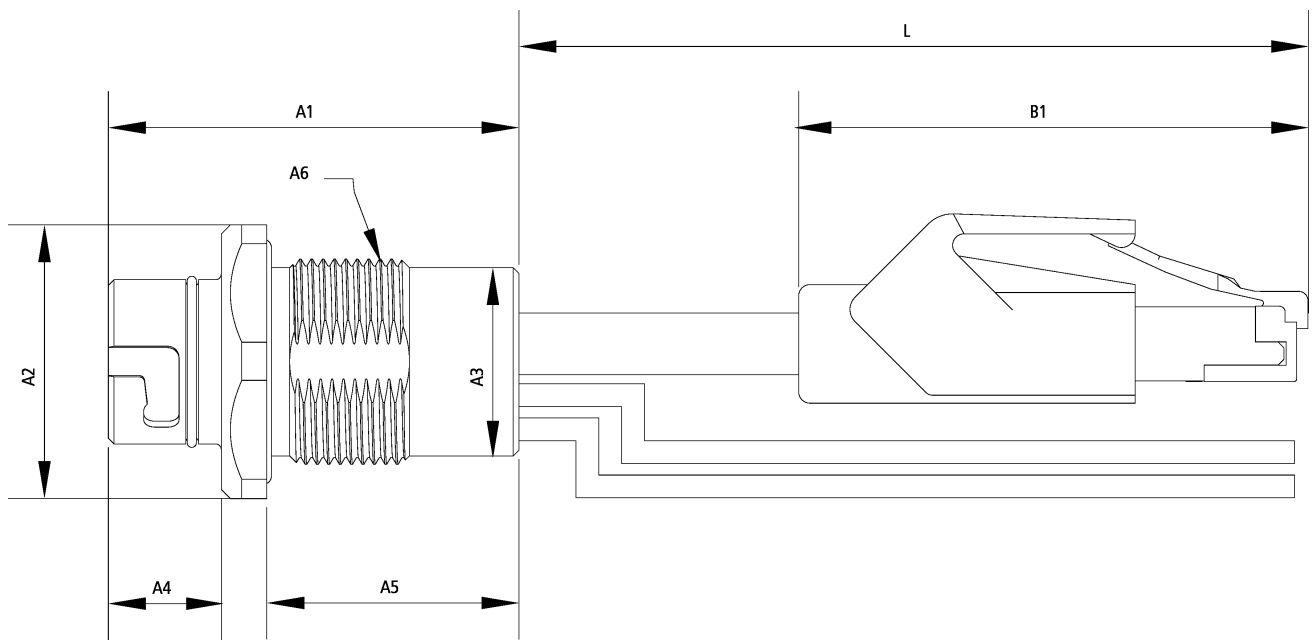
Printing on the jacket	BECKHOFF ZB9020 Industrial Ethernet / EtherCAT Trailing Cable * CAT5PLUS * 22AWG (SHIELDED) (UL) E119100 CMX 75°C VERIFIED (UL) CAT 5E PATCH CABLE FRNC * "length in meters"
Printing colour	black
<b>Environmental data</b>	
Operation temperature range, moved	-40...+70 °C, -40...+158 °F
Operation temperature range, fixed installation	-20...+60 °C, -4...+140 °F
UV resistance	yes
Oil resistance	according to DIN EN 60811-2-1
Acid, lye and solvent resistance	depends on medium, concentration, temperature and duration
LABS-free	yes
Flame-retardant	yes
CFC-free	yes
Halogen-free	yes
Silicone-free	yes
Approvals	UL-Style AWM 20963

<b>Attenuation</b>	
Max. insertion loss	
Frequency [MHz]	1      4      10      16      20      31.25      62.5      100
[db/100 m]	2.1      4.0      6.3      8.0      9.0      11.4      16.5      21.3
[db/100 ft]	0.6      1.2      1.9      2.4      2.7      3.5      5      6.5
Min. near-end crosstalk attenuation	
Frequency [MHz]	1      4      10      16      20      31.25      62.5      100
[db/100 m]	80      76.0      70.0      65.0      63.0      60.0      55.0      50.0
[db/100 ft]	24.4      23.2      21.3      19.8      19.2      18.3      16.8      15.2

**Contact assembly**



**Dimensions**

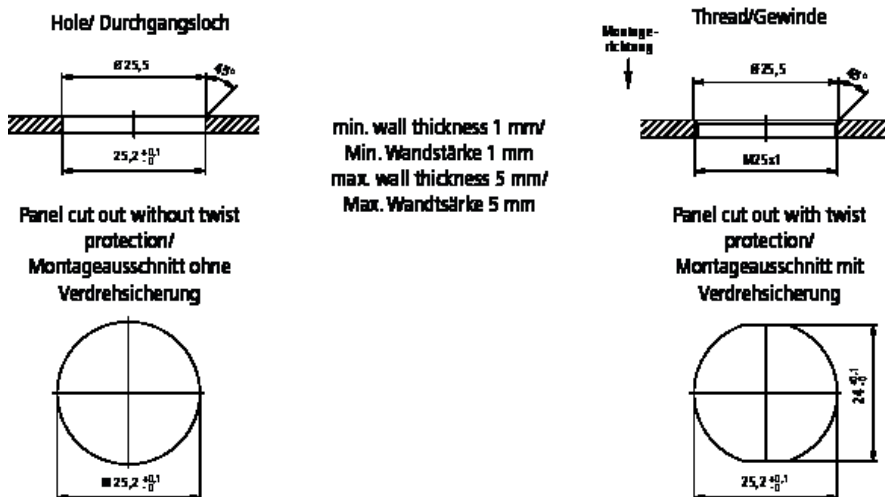


A1	47.50 mm
A2	30.00 mm
A3	23.80 mm
A4	25.40 mm
A5	17.10 mm
A6	M25
B1	43.80 mm

## 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
ZK7A21-BD00-Axxx	–

Accessories	
<b>ZS7300-B003</b>	B23 protection cap, plug, plastic, IP 67, packaging unit = 10 pieces
<b>ZS7300-B004</b>	B23 protection cap, plug, metal, IP 67, packaging unit = 5 pieces
<b>ZS7300-B009</b>	B23 colour coding flange for front/rear assembly, red, packaging unit = 10 pieces
<b>ZS7300-B010</b>	B23 colour coding flange for front/rear assembly, yellow, packaging unit = 10 pieces
<b>ZS7300-B011</b>	B23 colour coding flange for front/rear assembly, blue, packaging unit = 10 pieces
<b>ZS7300-B012</b>	B23 colour coding flange for front/rear assembly, green, packaging unit = 10 pieces
<b>ZS7300-B013</b>	B23 colour coding flange for front/rear assembly, orange, packaging unit = 10 pieces
<b>ZS7300-B014</b>	B23 colour coding flange for front/rear assembly, grey, packaging unit = 10 pieces

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