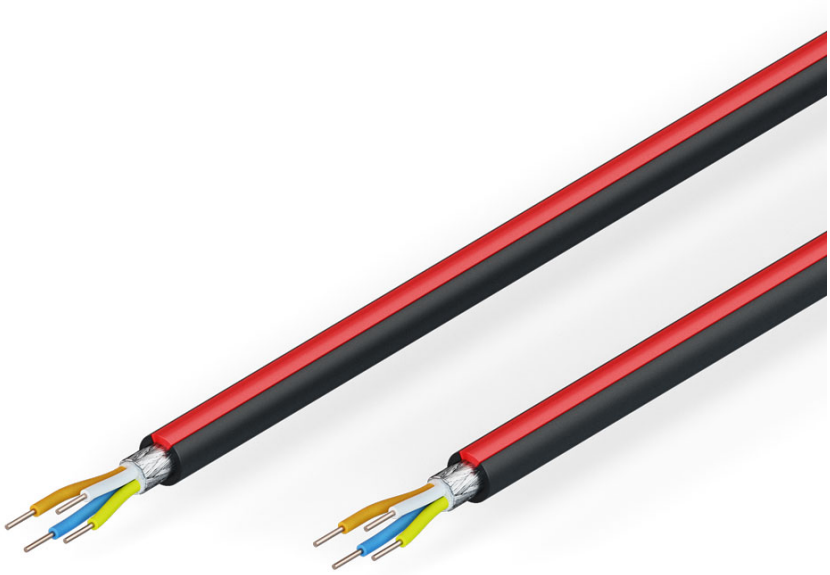
ZB7005 | EtherCAT P cable, shielded, PUR, drag-chain suitable, (1 x 4 x AWG24), black with red stripe, OD = 5.7 mm (±0.3 mm), bending radius (R) = 40 mm



Electrical data	
Rated voltage	30 V
Operating voltage	≤ 300 V
Insulation resistance	≥ 5GΩ * km
Unbalanced capacitance to ground	≤ 2000 pF/km
Mutual capacitance	nom. 50 nF/km
Characteristic impedance (Ethernet)	100 Ω ±15 Ω
Dielectric strength wire/wire (Ethernet)	1.5 kV (50 Hz, 1 min)
Dielectric strength wire/shield (Ethernet)	1.5 kV (50 Hz, 1 min)
Signal running time	< 520 ns/100 m
Electrical parameters (Ethernet)	based on Cat.5
Test voltage	2000 V, 50 Hz, 1 min.
Mechanical data	
Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	19-strand
Cross-section (Ethernet)	1 x 4 x 0.25 mm² (AWG 24)

Outer cable diameter	5.7 mm ± 0.3 mm (0.2244" ± 0.0118")
Min. bending radius, moved	10 x outer cable diameter
Min. bending radius, moved in drag-chain	7 x cable outher diameter (2 million cycles) 10 x cable outher diameter (5 million cycles) 15 x cable outher diameter(10 million cycles)
Min. bending radius, fixed installation	4 x outer cable diameter
Conductor material (Ethernet)	copper, tinned
Shielding	aluminum-clad foil, braiding of tinned copper wires, coupling
Optical covering factor of shielding (Ethernet)	≥ 85 %
Use	drag-chain suitable
Max. number of cycles	10 million with R = 90 mm, 5 million with R = 60 mm, 2 million with R = 40 mm
Jacket color	black (similar to RAL 9005) with red stripe (similar to RAL 3020)
Material jacket	PUR (polyurethane)
Material jacket, further characteristics of	halogen-free, flame-retardant, matt and low adhesion
Wire color code	yellow, orange, white, blue
Wire insulation material	PO (Polyolefine)
Printing on the jacket	XXXX m Beckhoff Automation GmbH & Co. KG – Germany – EtherCAT P ZB7005 Cat5e 4xAWG25/C E63216 AWM 22203 AWM I A/B 80°C 600V FT2 RoHS MM/YY
Printing color	white
Environmental data	
Operation temperature range, moved	-20...+80 °C, -4...+176 °F
Operation temperature range, fixed installation	-40...+80 °C, -40...+176 °F
LABS-free	yes
Flame-retardant	VW-1 Flame Test UL 1581 section 1080 and IEC 60332-1-2
Halogen-free	according to IEC 60754 or DIN VDE 0472 part 815
UL	yes, UL E-file number: E63216
Approvals	c(UL)us AWM Style 22203
Application Note	This cable is suitable for use in highly dynamic drag chain applications including very a tight bending radius of 40 mm. The use of EtherCAT-P technology and the flexible properties of the ZB7005 reduce the space requirements of drag chains by up to 50 %. In addition, the cable's fire behavior meets all required conditions according to UL VW-1 and has a 600 V approval according to AWM Style 22203.

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	62.5	26.4

[db/100 ft]	-	1.5	2.4	3	3.4	4.3	19.1	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

Notes

- The following length tolerances apply: 2-3 %
- Illustrations similar

Ordering information	Length
ZB7005	sold by the meter

Products marked with a crossed-out wheeled bin shall not be discarded with the normal waste stream. The device is considered as waste electrical and electronic equipment. The national regulations for the disposal of waste electrical and electronic equipment must be observed.