



ZK1090-3391-6xxx | EtherCAT cable, PUR, 1x4xAWG22, capable of torsion

M8, plug, angled, male, 4-pin, A-coded – RJ45, plug, straight, male, 4-pin

Plugs

Electrical data	Head A	Head B
Rated voltage	30 V (according to IEC 61076-2-104)	150 V
Rated current	4 A at 40 °C (according to IEC 61076-2-104)	1.5 A
Shielding	yes	yes
Insulation resistance	≥ 100 GΩ (according to IEC 60512)	≥ 10 GΩ (according to IEC 60512-2)
Mechanical data		
Installation size	M8	RJ45
Connector type	plug	plug
Configuration	angled	straight
Contact type	male	male
Number of positions (face)	4-pin	4-pin
Coding	A-coded	-
Recommended torque, nut	0.4 Nm	-
Mating cycles	≥ 100	≥ 750
Way of locking	screw	-
Weight per piece	0.028 kg (0.0617 lb)	-
Body colour	black	black
Body material	TPU, UL94	TPU, UL 94 HB
Coupling nut material	GD-Zn, Ni	-
Seal	FPM	-
Contact carrier colour	green	-
Contact carrier material	PA, UL 94	PC UL 94 V-0
Contact plating	Ni, Au gal.	Ni, Au gal.
Contact material	CuZn	CuZn
Environmental data		
Special features	halogen-free, flame-resistant as per IEC 60332-1-2, oil-resistant as per DIN EN 60811-2-1	-
RoHS compliant	yes	yes
Ambient temperature (operation)	-30...+70 °C, -22...+158 °F	-40...+70 °C, -40...+158 °F

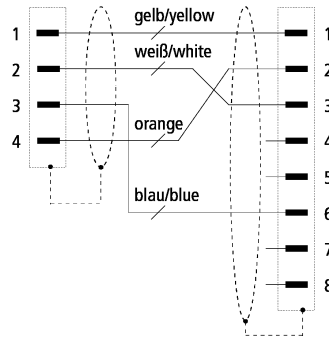
Protection class	IP 65/67 in screwed condition (according to IEC 60529)	IP 20
Pollution level	3/2 (according to IEC 60664-1)	-

Cable

Electrical data	
Rated voltage	30 V
Insulation resistance	≥ 5GΩ * km
Mutual capacitance	48 nF/km
Characteristic impedance (Ethernet)	100 Ω ±15 Ω
Loop resistance (Ethernet)	≤ 115 Ω/km
Signal running time (Ethernet)	5.3 ns/m
Electrical parameters (Ethernet)	based on CAT 5
Test voltage	1500 V, 50 Hz, 1 min.
Mechanical data	
Cable structure (Ethernet)	star quad
Conductor construction (Ethernet)	19-strand
Cross section (Ethernet)	1 x 4 x 0.34 mm ² (AWG 22)
Min. bending radius, moved	8 x outer cable diameter
Min. bending radius, moved in drag chain	8 x outer cable diameter
Outer cable diameter	6.3 mm ± 0.2 mm (0.248" ± 0.0079")
Conductor material (Ethernet)	copper, tinned
Shielding	Two layers of conductive wrapping and braiding of special wires
Optical covering factor of shielding (Ethernet)	≥ 85 %
Use	suitable for torsion/robotic application
Jacket colour	green
Material jacket	PUR (polyurethane)
Material jacket, further characteristics of	halogen-free, flame-retardant, matt and low adhesion
Wire colour code	yellow, orange, white, blue
Wire insulation material	PO (Polyolefine)
Printing on the jacket	XXXX Beckhoff Automation GmbH & Co. KG-Germany-ZB9021 EtherCAT Cat5e Torsion AWG22/19 E170315 AWM20963 AWM I/II A/B 80°C 30V
Printing colour	black
Torsion angle in °/m	max. ± 180°/m
Torsion speed	36 cycle/min.
Number of torsion cycles	5 million
Load weight	20 N
Claimed torsion length	1 m
Environmental data	
Operation temperature range, moved	-30...+70 °C, -22...+158 °F
Oil resistance	according to DIN EN 60811-404 (7x24 h/90 °C)
Flame-retardant	VW-1 Flame Test UL 1581 section 1080 and IEC 60332-1-2
Halogen-free	according to IEC 60754 respectively DIN VDE 0472 part 815
Approvals	c(UL)us AWM Style 20963

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

Contact assembly



Dimensions



A1	29.80 mm
A2	26.30 mm
B1	43.80 mm

Notes

- Depending on the cable length (L), the following length tolerances apply:
 $0\text{ m} \dots < 0.2\text{ m}: \pm 10\text{ mm}$ | $0.2 \dots 4.0\text{ m}: + 40\text{ mm}$ | $\geq 4.0\text{ m}: + 1\%$
- Illustrations similar
- 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

Ordering information	Length
ZK1090-3391-6xxx	on request

Accessories	
ZB8801-0000	torque wrench for hexagonal plugs, adjustable

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