

readycable® power cable suitable for Beckhoff

ZK1090-3161-0xxx, basic cable, PVC, 12.5 x d

MAT9730303



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Product description

Introducing the readycable® power cable, designed for Beckhoff ZK1090-3161-0xxx applications. This basic cable features a durable PVC outer jacket, making it suitable for medium-duty tasks both indoors and outdoors in temperatures above 5°C. With its oil-resistant and flame-retardant properties, it ensures reliable performance. The cable supports unsupported travel distances and is perfect for energy chain applications, making it an essential choice for various machinery and handling systems.

Connectors

Connector A	Round connector 4-pin angled
Connector B	M12, 4 pole, straight, d-coded

Manufacturer attributes

Manufacturer Part No	ZK1090-3161-0xxx
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General properties

Bus system	Ethernet/CAT5
Number of cores and conductor nominal cross-section	(4x0.25)C
Outer diameter (d) max. mm	6.5 mm
Weight per km	70 kg/km
Copper index kg/km	29 kg/km

Electricity attributes

Nominal voltage	50V
UL Voltage Rating	300 V
Test voltage	500V
Wave resistance approx.	100 Ω

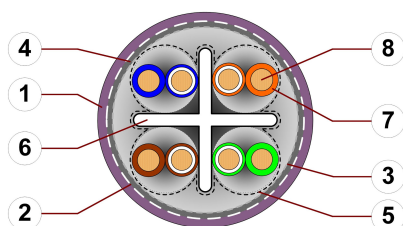


Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (according to DIN EN 50363-4-1), Class 2
Flame-retardant	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2/Horizontal Flame
Silicone-free	Free from silicone which can affect paint adhesion (according to PV 3.10.7 – status 1992)
UL verified	Certificate no. V293650: "igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
UL-Listed	CMX UL 444, 75°C
UL/CSA AWM	Style 1598 and 2571, 30 V, 80 °C
NFPA	According to NFPA 79-2018, chapter 12.9
REACH	In accordance with Regulation (EC) No. 1907/2006 (REACH)
Lead-free	According to 2011/65/EU (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1
CE	According to 2014/35/EU

Cable structure

Conductor	Stranded conductor in an especially bend-resistant version consisting of bare copper wires (according to DIN EN 60228).
Core insulation	According to bus specification.
 Conductor colours	white, green, brown, yellow (star quad stranding)
Core group 1 core structure	4x0.25
Core group 1 colour code	white, green, brown, yellow (star-quad stranding)
Overall shield	Bend-resistant braiding made of tinned copper wires. Coverage approx. 55% linear, approx. 80% optical
Outer jacket	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains® (according to DIN EN 50363-4-1).
Outer jacket colour	Red lilac (comparable to RAL 4001)



1. Outer jacket: pressure extruded, oil-resistant PVC mixture
2. Overall banding: plastic fleece
3. Shield film: aluminium-coated plastic foil
4. Overall shield: bend-resistant braiding of tinned copper wires
5. Banding: plastic foil
6. Separator: flexible TPE cross filler
7. Core insulation: mechanically high-quality TPE mixture (according to bus specification)
8. Conductor: fine-wire strand in especially bending-stable version consisting of bare copper wires



Dynamic properties

	Min. bend radius, e-chain (factor)	12.5 x d
	Min. bend radius, e-chain	81.25 mm
	Min. bend radius, flexible (factor)	10 x d
	Min. bend radius, fixed (factor)	7 x d
	Temperature e-chain®	+5°C up to +70°C
	Temperature, flexible	-5°C to +70°C (according to DIN EN 60811-504)
	Temperature, fixed	-15°C to +70°C (according to DIN EN 50305)
	v max. unsupported (speed)	3 m/s
	v max. gliding (speed)	2 m/s
	a max. (acceleration)	30 m/s ²
	travel length	Class 3
	torsion	No torsion



chainflex®Lifetime

Guaranteed service life for this series according to guarantee conditions

Further information: [chainflex® guarantee](#)

Double strokes*	5 million	7.5 million	10 million
Temperature,	R min.	R min.	R min.
from/to [°C]	[Factor x d]	[Factor x d]	[Factor x d]
+5 / +15	15	16	17
+15 / +60	12.5	13.5	14.5
+60 / +70	15	16	17

* Higher number of double strokes possible - use the service life calculation function on this page.

Technical note on bus cables

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains® applications. Depending on the outer jacket material and the design principle, the bus cables are designed for different mechanical requirements and media resistance. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that great value is placed on a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of permanent movement. However, the overall quality of transmission in a complete bus communication system is not solely dependent on the cable used. Rather, it requires precise co-ordination of all components (electronic components,

connection technology and cable) as well as observing the maximum transmission levels depending on the respective systems in relation to the required data transmission rates. A cable is therefore not solely responsible for the secure transmission of signals.

igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.

Certificates and standards

