

readycable® power cable suitable for Beckhoff

ZK1090-3161-1xxx, basic cable, PVC, 12.5xd

MAT9730302



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- Profinet
- Star quad structure
- For energy chain applications
- PVC outer jacket
- Outer jacket colour yellow-green
- Bend factor 12.5xd
- Overall shield
- oil-resistant & flame-retardant
- 10 million double strokes guaranteed
- Guarantee up to 4 years

Product description

Introducing the readycable® power cable, designed specifically for Beckhoff ZK1090-3161-1xxx applications. This durable basic cable features a yellow-green PVC outer jacket, ensuring it withstands light oil influence and is suitable for indoor and outdoor use above 5°C. With its bend factor of 12.5xd and oil-resistant, flame-retardant properties, this cable guarantees up to 10 million double strokes, making it ideal for medium duty applications like machining and handling units.

Connectors

Connector A	M12, 4 pole, straight, d-coded
Connector B	val_284

Manufacturer attributes

Manufacturer Part No	ZK1090-3161-1xxx
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General properties

Bus system	Profinet
Number of cores and conductor nominal cross-section	(4x0.38)C
Outer diameter (d) max. mm	7 mm
Weight per km	67 kg/km
Copper index kg/km	33 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, orange, blue, yellow (star quad stranding)

Core group 1 core structure

4x0.38

Core group 1 colour code

white, orange, blue, yellow (star-quad stranding)

Overall shield

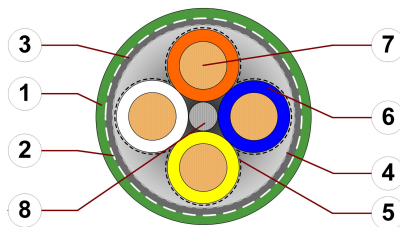
Bend-resistant braiding made of tinned copper wires. Coverage approx. 55% linear, approx. 80% optical

Outer jacket

Low-adhesion PVC mixture, adapted to suit the requirements in e-chains® (according to DIN EN 50363-4-1).

Outer jacket colour

Yellow-green (comparable to RAL 6018)



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



Dynamic properties

	Min. bend radius, e-chain (factor)	12.5 x d
	Min. bend radius, e-chain	87.5 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

