

readycable® network cable EtherCAT suitable for
Beckhoff ZK1090-9191-xxxx, basic cable TPE 10xd

MAT9385002



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TPE 10xd

Product description

Introducing the readycable® network cable EtherCAT, designed for Beckhoff ZK1090-9191-xxxx. This robust cable is ideal for heavy-duty applications, featuring a durable TPE outer jacket that is both oil-resistant and flame-retardant. With a bend factor of 10xd, it supports unsupported travels and gliding distances of over 400m. Perfect for indoor and outdoor use (excluding direct sunlight), it ensures reliability in demanding environments like cleanrooms and low-temperature applications. Experience seamless connectivity with this high-performance cable.

Manufacturer attributes

Manufacturer Part No	ZK1090-9191-xxxx
Cable type	Basic cable

Connectors

Connector A	RJ45
Connector B	RJ45

General properties

Bus system	Ethernet/CAT5e/PoE
Number of cores and conductor nominal cross-section	(4x(2x0.15))C
Outer diameter (d) max. mm	8.5 mm
Weight per km	84 kg/km
Copper index kg/km	42 kg/km



Electricity attributes

Nominal voltage	50V
UL Voltage Rating	600 V
Test voltage	500V (according to DIN EN 50289-1-3)
Wave resistance approx.	100 Ω

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (according to DIN EN 60811-404), bio-oil-resistant (according to VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
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: "The igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
UL/CSA AWM	Style 11632 and 21218, 600 V, 80 °C
NFPA	According to NFPA 79-2018, chapter 12.9
CLPA	CC-Link IE Field, Reference no. 130
DNV	Type Approval Certificate TAE00003X7
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 CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1
DESINA	According to VDW, DESINA standardisation
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-blue/blue, white-orange/orange, white-green/green, white-brown/brown

Core group 1 core structure

4x(2x0.15)

Core group 1 colour code

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

Inner jacket

TPE mixture adapted to suit the requirements in e-chains®.

Overall shield

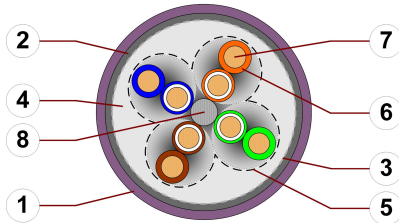
Extremely flexible braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%

Outer jacket

Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®.

Outer jacket colour

Red lilac (comparable to RAL 4001)



1. Outer jacket: pressure extruded, flame-retardant TPE mixture
2. Overall shield: extremely flexible braiding made of tinned copper wires
3. Shield film: aluminium-coated plastic foil
4. Inner jacket: pressure extruded, gusset-filling TPE mixture
5. Banding: plastic fleece
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)	10 x d
	Min. bend radius, e-chain	85 mm
	Min. bend radius, flexible (factor)	8 x d
	Min. bend radius, fixed (factor)	5 x d
	Temperature e-chain®	-35°C up to +70°C
	Temperature, flexible	-45°C to +70°C (according to DIN EN 60811-504)
	Temperature, fixed	-50°C to +70°C (according to DIN EN 50305)
	v max. unsupported (speed)	10 m/s
	v max. gliding (speed)	6 m/s
	a max. (acceleration)	100 m/s ²
	travel length	Class 6
	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,	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070
from/to [°C]	R min. [Factor x d]	R min. [Factor x d]	R min. [Factor x d]	R min. [Factor x d]	R min. [Factor x d]	R min. [Factor x d]
-35 / -25	12.5	15	13.5	16	14.5	17
-25 / +60	10	12.5	11	13.5	12	14.5
+60 / +70	12.5	15	13.5	16	14.5	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®. 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. What is also essential is that all components (electronic parts,

connecting system and cable) are precisely matched to each other and that the maximum transmission rates, which are dependent on the respective system,

are adhered to with regard to the data transmission rates needed. A cable is not solely responsible for the reliable transmission

of signals.

igus® advises you when you are designing your bus system to take all these factors into account, and with extensive tests

ensure the process reliability of your system from the very beginning.



Certificates and standards

