

# BECKHOFF ZS1090-0003

**EtherCAT/Ethernet connector**  
**RJ 45, IP 20, four-pole, for field assembly**

ENGLISH

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## Description

The **ZS 1090-0003** is a RJ 45 **EtherCAT/Ethernet** connector to which AWG 22 wires can be attached by the way of IDC technology. The connector is designed with a standard grid dimension of only 14 mm, which guarantees optimum component density in all applications. The connector gives the user the option of connecting an **EtherCAT/Ethernet** installation cable directly to an OP 20 device inside the control cabinet. This is achieved by feeding the cable through a suitable OP rated gland at the cabinet wall, terminating the connector inside the cabinet and finally plugging it into the IP 20 switch. This translates into significantly lower installation costs by the elimination of the need for a feed through connector at the boundary of the IP 67 / IP 20 areas. Higher reliability is also a benefit due to the reduced number of contact and connection points.

## Recommended cable type

The **Beckhoff ZS1090-0003 EtherCAT/Ethernet** connector is optimised to be assembled with the **Beckhoff ZB9010 EtherCAT/Ethernet** cable (shielded, twisted pair, AWG 22 solid), according Category 5 cabling standard (ISO/IEC 11801:2002).

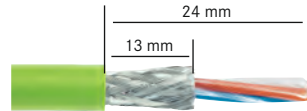
## Assembly instruction

Only a few steps are necessary in order to quickly and reliably attach an **EtherCAT/Ethernet** cable to a **Beckhoff ZS1090-0003** connector using IDC technology.

1. Push the cable gland and housing over the cable sheath.



2. Strip the sheath to a length of 24 mm and the shielding screen to a length of 13 mm.



3. Prepare the individual wires for insertion into the splicing element according to the colour code.



4. Insert the wires into the splicing element up to the end of the wire chambers. If necessary cut the single wires protruding of the splicing element.



5. Push the splicing element to the RJ 45 data module and engage.



6. Put the splicing element and the RJ 45 data module into the IDC assembly tool.



7. Press data module and element together with the aid of the IDC assembly tool.



8. Remove the terminated data module from the assembly tool.



9. Put on the upper shielding shell and press it over the cable screen.



10. Put on lower shielding shell and lock it with the upper shell with an audible "click".



11. Push housing over the installed data module and lock it with an audible "click".



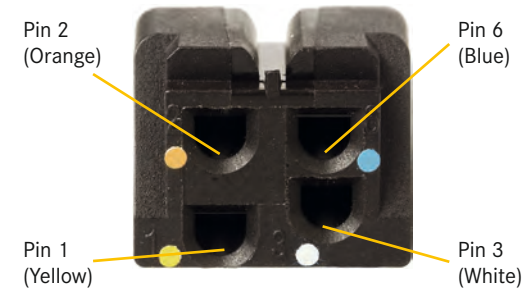
12. Tighten cable gland by hand.



Note: Avoid cable torsion during the tightening of the cable gland.

## Pin assignment

Function/ Signal	Wire colour			Pin No.
	EtherCAT	EIA/TIA 568 A	EIA/TIA 568 B	
Transmission Data+/TD+	YE	WH GN	WH OG	1
Transmission Data-/TD-	OG	GN	OG	2
Receiver Data/RD+	WH	WH OG	WH GN	3
Receiver Data/RD-	BU	OG	GN	6



## Technical data

Transmission characteristics according Category 5 ISO/IEC 11 801:2002 and EN 50173-1  
 Protection level: IP 20  
 Mating face: RJ 45 according IEC 60603-7  
 Wire gauge data<sup>1)</sup>: AWG 22 - 24 stranded  
 AWG 22 - 23 solid  
 Wire insulation: max. 1.6 mm Ø  
 Temperature range: -40 °C ... +70 °C  
 Cable diameter: 6.1 - 6.9 mm  
 Mating cycles: min. 750  
 Housing material: Thermoplastic, black  
<sup>1)</sup> Please refer to technical data sheet

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 Errors and technical changes excepted.