

HARTING RJ Industrial® 4 pair

The HARTING RJ Industrial® Gigalink more than meets the tough requirements of Category 6 according to TIA/EIA 568 B.2-1:2002-06, EN 50173-1:2002 and ISO/IEC 11801:2002-09.

The integrated cable management system with simultaneous wiring radically reduces installation times in comparison with existing systems. The cable manager, which can be colour-coded, supports the simultaneous insertion of the cable strands, so avoiding the time-consuming manual placement of the individual conductors.

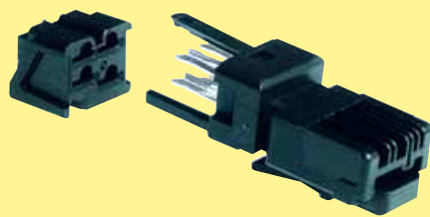
The RJ Industrial includes an integrated cable adjustment system, such that a high quality connection is maintained in tough industrial environments over long periods, even under conditions of heavy vibration. This ensures that the

shielded twisted cores are reliably guided to their contacts within the connector. Without this innovation it would be possible for the shielding braid of the individual conductors to separate, resulting in a long-term deterioration in the crosstalk characteristic of the connector and therefore of the entire transmission line. The HARTING RJ Industrial® also exceeds the clearance and creepage requirements for industrial environments.

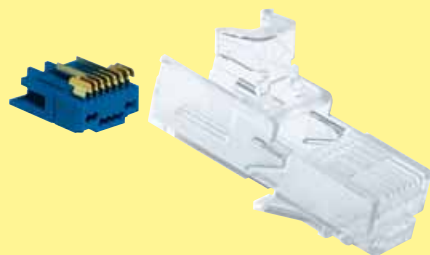
Connector family

Because of the innovative platform strategy implemented in the RJ Industrial Gigalink data module, all the other products in the RJ Industrial product family can also be used for Gigabit Ethernet.

This makes Gigabit Ethernet with Real CAT 6 also possible with IP 67 protection.



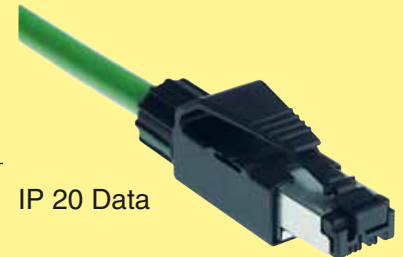
Data module, 2 pairs
AWG 22-24, Category 5
HARAX® IDC terminations



Gigalink data module,
4 pairs, AWG 24-26, Category 6
Crimp terminations



Same
shielding



IP 20 Data



IP 67
Push Pull



IP 67 Data 3A



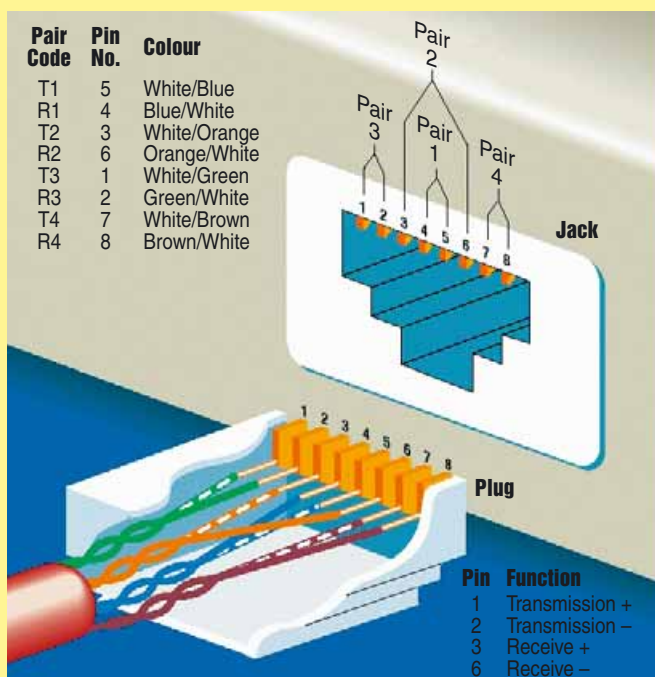
IP 67 Hybrid

The used CAT 6 data module adapter fits into the shielding plates of the 4 core data module with quick-connection technology. For this reason an existing 100 Mbit Fast Ethernet transmission line with HARTING RJ Industrial® connectors can easily be converted into a 1000 Mbit Gigabit Ethernet transmission line, without having to modify the connector's interface. This makes the HARTING RJ Industrial® connector family as future-proof as possible.

Minimising cross-connection through cable management

There is no difference under Gigabit Ethernet between uplink and downlink ports. Every network device automatically recognises whether the device to which it is connected is a network card or a switch. There is therefore no need for cross-connected and through-connected cables found under 100 Mbit Fast Ethernet, where this functionality is not available.

The symmetrical structure of a 1:1 through-wired patch cable results in cross-connection of core pairs 2 and 4 in the cable. This cross-connection has a negative effect on the near-end crosstalk of the transmission route. For performance reasons, symmetrically crossing the core pairs in the cable must be carried out as near as possible to the connector. This demand is implemented through the colour-coded cable manager, which leads the conductor pairs in a defined way to the connection points on the RJ 45 jack. This implements the cross-connection in the cable manager instead of in the cable itself, so contributing to the high performance of the transmission route.

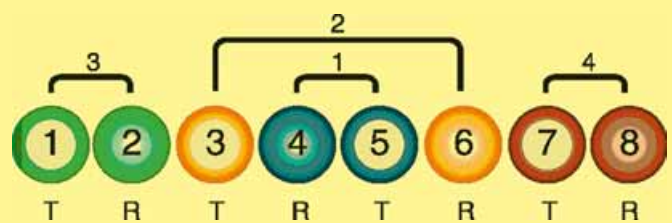


Connection of core pairs

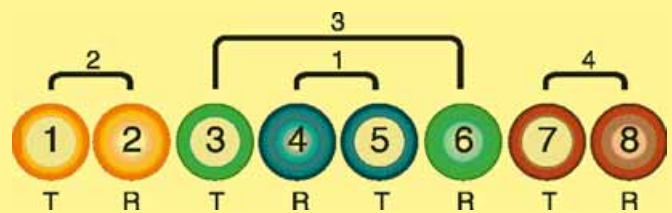
Wiring the data module

For historical reasons, TIA/EIA 568:2002 has two ways to connect the conductors at the connector. These describe which individual colour-coded conductors are to be brought to which contact in the connector.

- TIA/EIA 568:2002 A is the most common connection variant. This configuration is also described in ISO IEC 11801.
- The TIA/EIA 568:2002 B connection variant is primarily used for the connection of ISDN networks (AT&T configuration).



Connection in acc. with TIA/EIA 568A (preferred configuration)



Connection in acc. with TIA/EIA 568B (AT&T configuration)

The RJ 45 jack must be connected according to the appropriate scheme, depending on the application. For Gigabit Ethernet the connection is only to be made at the RJ 45 jack, not at the plug, since the conductor pairs in the patch leads are symmetrically routed due to the 1:1 auto-crossing.



IP 20 Data connectors, 4 pairs

Identification	Part No.	Drawing	Dimensions in mm
----------------	----------	---------	------------------

Connector set

incl. housing, cable gland and instruction manual

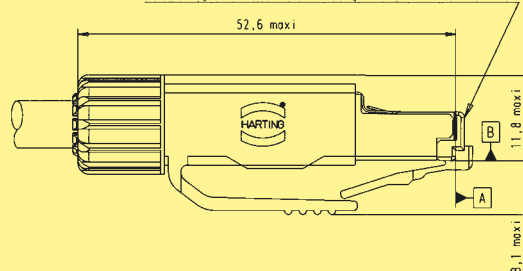
cable manager white

09 45 151 1500

cable manager blue

09 45 151 1510

mating face according to IEC 60 603-7



contact no. 8

contact no. 1

Technical characteristics

Transmission properties in accordance with Category 6 ISO/IEC 11 801:2002 and EN 50173-1

Protection level: IP 20

Mating interface: RJ 45 in accordance with IEC 60603-7

Wire gauge data¹⁾: AWG 26 stranded

Temperature range: -40 °C ... +70 °C

Cable sheath diameter: 6.5 mm - 6.9 mm

Mating cycles: min. 750

Housing material: Thermoplastic, black UL 94-V0

General information

The IP 20 data connector is an industrial type of RJ 45 connector for 4 pair and Gigabit Ethernet applications, to which flexible cables with AWG 26 may be connected.

The connector is optionally provided with a white or blue cable manager, so that optional Gigabit Ethernet crossover patch cables can be assembled.

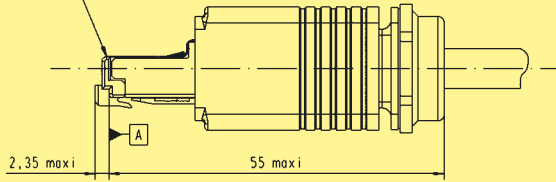
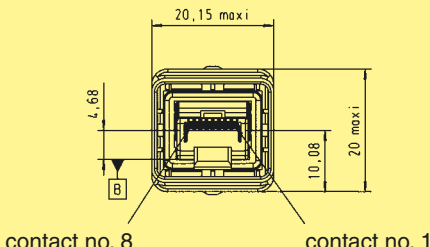
With a standard pitch of only 14 mm, maximum packing density in application is guaranteed.

This connector can be assembled on site, permitting industrial Ethernet installation cables to be connected directly to IP 20 devices located inside a control cabinet. A special panel opening to provide the transition between protection class IP 67 and IP 20 is therefore not necessary. This reduces the installation work required from the customer, while the reduced number of contact points increases reliability.

¹⁾ Details see technical data sheet
RJ Industrial Gigalink Assembly Tool see chapter 04



IP 67 Push Pull connectors, 4 pairs

Identification	Part No.	Drawing	Dimensions in mm
Connector set incl. housing, cable gland and instruction manual cable manager white cable manager blue	09 45 145 1500 09 45 145 1510	mating face according to IEC 60 603-7 	
Protection cover for connectors with cord, IP 67/65	09 45 845 0001		

Technical characteristics

Transmission properties in accordance with Category 6 ISO/IEC 11 801:2002 and EN 50173-1

Protection level:	IP 67/65
Mating interface:	RJ 45 in accordance with IEC 60603-7
Wire gauge data ¹⁾ :	AWG 26 stranded
Temperature range:	-40 °C ... +70 °C
Cable sheath diameter:	6.5 mm - 7.2 mm
Mating cycles:	min. 750
Housing material:	Thermoplastic, black UL 94-V0

General information

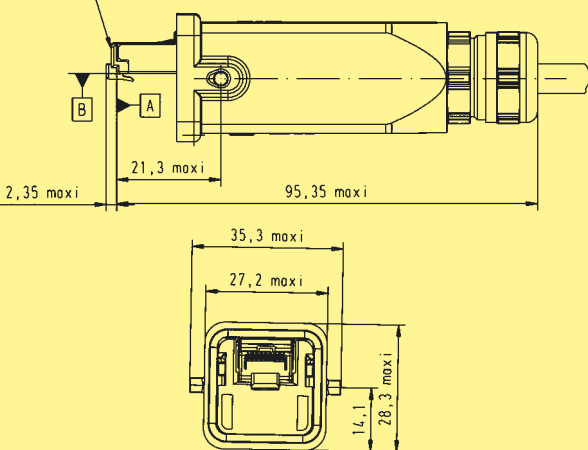
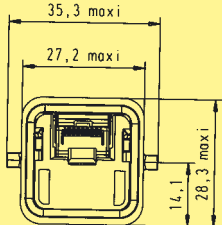
The IP 67 data version in push pull housing is fitted with innovative housing locking technology. The housing of the connector is locked tightly to the coupling by means of a surrounding locking sleeve. The connector can be locked and unlocked using one hand and only a little force. In spite of its high degree of protection, the housing is very compact, and is ideally suited for compact industrial applications.

The HARTING RJ Industrial® Push Pull Category 6 is ideally suited to compact industrial applications that require 4 pair or Gigabit Ethernet wiring.

¹⁾ Details see technical data sheet
RJ Industrial Gigalink Assembly Tool see chapter 04



IP 67 Data 3A connectors, 4 pairs

Identification	Part No.	Drawing	Dimensions in mm
Connector set incl. housing, cable gland and instruction manual Plastic version cable manager white 09 45 125 1500 cable manager blue 09 45 125 1510 Metal version cable manager white 09 45 115 1500 cable manager blue 09 45 115 1510 Coding pin set 09 45 820 0000		mating face according to IEC 60 603-7 	
Protection cover for connectors with cord, IP 67/65 Plastic version 09 20 003 5442 Metal version 09 20 003 5422			

Dimensions valid for metal version

Technical characteristics

Transmission properties in accordance with
Category 6 ISO/IEC 11 801:2002 and EN 50173-1

Protection level:	IP 67/65
Mating interface:	RJ 45 in accordance with IEC 60603-7
Wire gauge data ¹⁾ :	AWG 26 stranded
Temperature range:	-40 °C ... +70 °C
Cable sheath diameter:	6.5 mm - 6.9 mm
Mating cycles:	min. 500
Housing material:	Thermoplastic, black UL 94-V0 Zinc die cast, grey

General information

The IP 67 Data version of the RJ Industrial is based on the RJ 45 Category 6 Data module, integrated into a standard Han® 3A industry housing that can be used in any industrial application. The housing is practically available in plastic or metal, and offers protection class IP 67/65.

Implementing a uniform connector pattern for all the connectors based on the 3A contour for data and hybrid solutions means that all versions are plug-compatible for data signals. Use of optional coding prevents up to four connectors being incorrectly mated.

The HARTING RJ Industrial® Data 3A Category 6 is ideally suited to harsh industrial applications that require 4 pair or Gigabit Ethernet wiring.

¹⁾ Details see technical data sheet
RJ Industrial Gigalink Assembly Tool see chapter 04



IP 67 Hybrid connectors, 4 pairs

Identification	Part No.	Drawing	Dimensions in mm
Connector set incl. housing, cable gland and instruction manual cable manager white cable manager blue	09 45 125 1700 09 45 125 1710		
Protection cover for connectors with cord, IP 67/65	09 20 003 5442		

Technical characteristics

Transmission properties in accordance with Category 6 ISO/IEC 11 801:2002 and EN 50173-1

Protection level:	IP 67/65
Mating interface:	RJ 45 in accordance with IEC 60603-7 plus 4 x power supply
Wire gauge data:	AWG 26 stranded
Wire gauge power supply:	1.5 mm ² stranded
Working voltage power supply:	48 V
Working current power supply:	see derating curve
Temperature range:	-40 °C ... +70 °C
Cable sheath diameter:	10 mm - 11 mm
Mating cycles:	min. 500
Housing material:	Thermoplastic, black UL 94-V0

General information

The RJ Industrial Hybrid connector, which HARTING has developed an interface solution that integrates the data lines and the power supply into one cable for hybrid Ethernet networks.

Industrial-quality flexible conductors with AWG 26 and IDC technology can be connected for data. The four contacts of the hybrid module are implemented with fast connection technology, permitting the connection of flexible cables having a cross-section of up to 1.5 mm².

The HARTING RJ Industrial® Hybrid Category 6 is ideally suited to harsh industrial applications that require 4 pair or Gigabit Ethernet wiring plus power.

Derating curve "Power contacts"

