

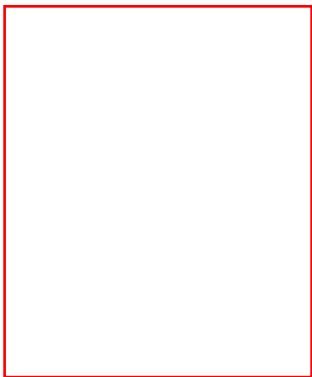
## General information

### **HARTING RJ Industrial® Ethernet connector family**

The modular HARTING RJ Industrial® family of connectors is based on the standard RJ 45 connector pattern, and is specifically developed for use in harsh industrial environments. It points the way forward in connecting Ethernet devices in industrial applications. In many circumstances it is necessary for connectors to be assembled on site, regardless of whether they are being used for power or communication. HARTING are making consistent use of their HARAX® rapid termination technology, which has been proven in many industrial applications. With HARAX® the user can terminate the cable at the connectors without the need for special tools. The design of the HARTING RJ Industrial® family of connectors allows for quick and easy termination and connection to Ethernet devices in either data only or hybrid networks.

HARTING RJ Industrial® is the only RJ 45 connector in the world that allows robust Ethernet cables with a solid and stranded AWG 22 cross section to be connected using IDC technology. The heart of each of these connectors is the RJ 45 data module with fast termination technology. This functions without needing to strip insulation from the cores and without special tools, creating a gas-tight connection, secure against vibration. The data module has four HARAX® fast termination contacts. These make reliable contact with stranded, industry-standard Category 5 cables with dimensions from AWG 22 to 24, and solid cables with conductor cross-sections from AWG 22 to 23.

HARTING have developed a complete family of connectors around this innovative data module, meeting all the needs of industrial environments. Solutions for IP 20 and IP 67 protection levels, standard, push pull and latching clip-locks are available.



For the RJ Industrial product family data and hybrid cables can be used. The user can fit stranded cores with a cross section of 1.5 mm<sup>2</sup> for the IDC power contacts on the Hybrid version, and these can be loaded with up to 16 A.

At the device end, panel feed throughs or couplings integrated directly into the device can be accommodated. Consistent application of SMD components for both data and power at the device end keeps manufacturing costs low, and permits high packing density within the assembly.

### **Field assembly of Industrial Ethernet connectors**

The facility of on-site assembly was given high priority in the development of the new HARTING RJ Industrial® family of connectors. As a result, the connector is not just quicker to terminate, but is also easier to handle due to the reduced number of individual parts.

All of the HARTING RJ Industrial® range can be reterminated up to ten times. An electrician can carry out assembly of the IP 20 Data version on site in less than one minute, while the IP 67 Hybrid version requires less than three minutes. Dismantling is just as quick. New operatives can also learn the individual steps involved very quickly and carry them out reliably.

Another advantage of the quick-connection technology is provided by the industrial-quality screening of the data module in the connector. Termination of the screen which in the past has been achieved by crimping is no longer necessary. In the RJ Industrial connection technology, a pair of screening plates are simply pushed over the data module, and pressed together with an audible "click". With this, complete, 360 degree connection of the screen and the sheath is achieved.



Various special tools for handling the RJ 45 data module and the power leads are unnecessary. HARTING supplies all the components in a complete set.

### **Specified for PROFINet®**



From the very beginning, HARTING saw it as their task to set a broad standard for Ethernet in industrial environments through a uniform connector solution. Through its involvement in the PNO (PROFIBUS Nutzerorganisation e.V.), the IAONA (Industrial Automation Open Networking Alliance e.V.), the DKE (Deutsche Kommission Elektrotechnik Elektronik Informationstechnik) and also with the IEC (International Electrotechnical Committee), HARTING contributed to advancing the specification of industry-standard Ethernet connectors. At the beginning of 2003, the PNO decided to use the HARTING solution of the RJ Industrial family as the general concept for PROFINet®.

In addition to this an international standardisation process was initiated, because the HARTING approach is not a proprietary system, but an open solution for Industrial Ethernet interfaces.

Mating compatibility of the HARTING RJ Industrial® family

## **Assembly operations**

### **HARTING RJ Industrial® IP 20 Data**

Only a few steps are necessary to quickly and reliably connect an Industrial Ethernet cable to a HARTING RJ Industrial® connector with IDC connection technology.

- (1) Push the housing complete with cable gland over the cable outer insulation
- (2) Strip the correct length of outer insulation and screening braid
- (3) Prepare the cores to match the splicing piece in accordance with the colour code
- (4) Insert the cores into the splicing piece to the required depth
- (5) Place the splicing piece on the RJ 45 data module and engage it
- (6) Place the data module and the splicing piece into the supplied IDC assembly tool
- (7) Press the data module and the IDC assembly tool together, to make the insulation displacement contact
- (8) Remove the assembled data module from the IDC assembly tool
- (9) Put on the upper screen plate, and push it over the cable screen
- (10) Put the lower screen plate in place, and latch it to the upper screen plate with an audible click
- (11) Push the housing over the assembled data module, latching it into place with an audible click
- (12) Tighten the cable gland