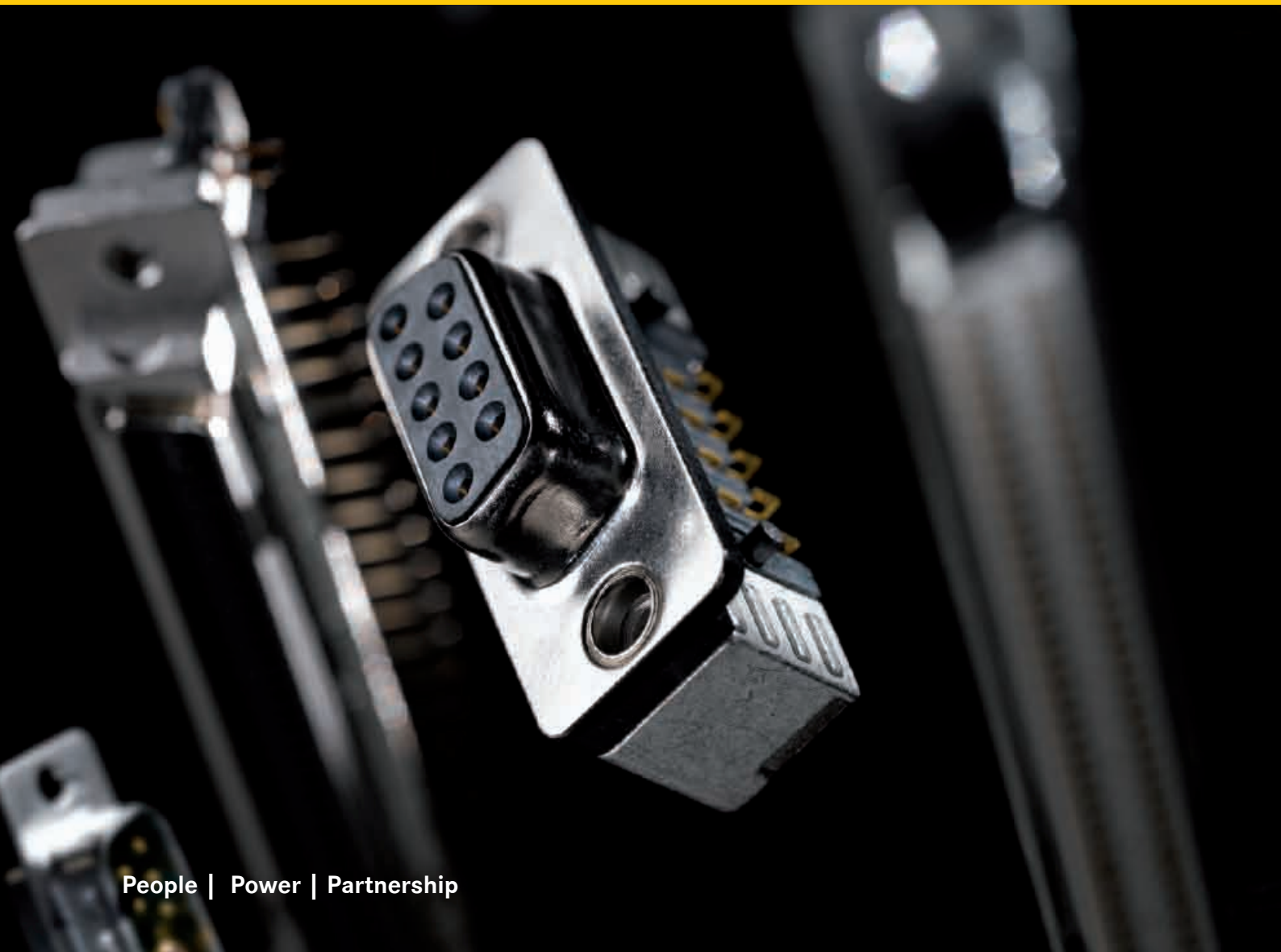




Pushing Performance

# HARTING Interface Connectors



## Quality Connections Worldwide

HARTING was founded in 1945 by the family that still owns the company. Its headquarters are situated in Espelkamp, in Eastern Westphalia.

Today, HARTING employs more than 2,400 people worldwide, including 300 engineers and scientists. Over 500 technical specialists are available to implement customer requirements.

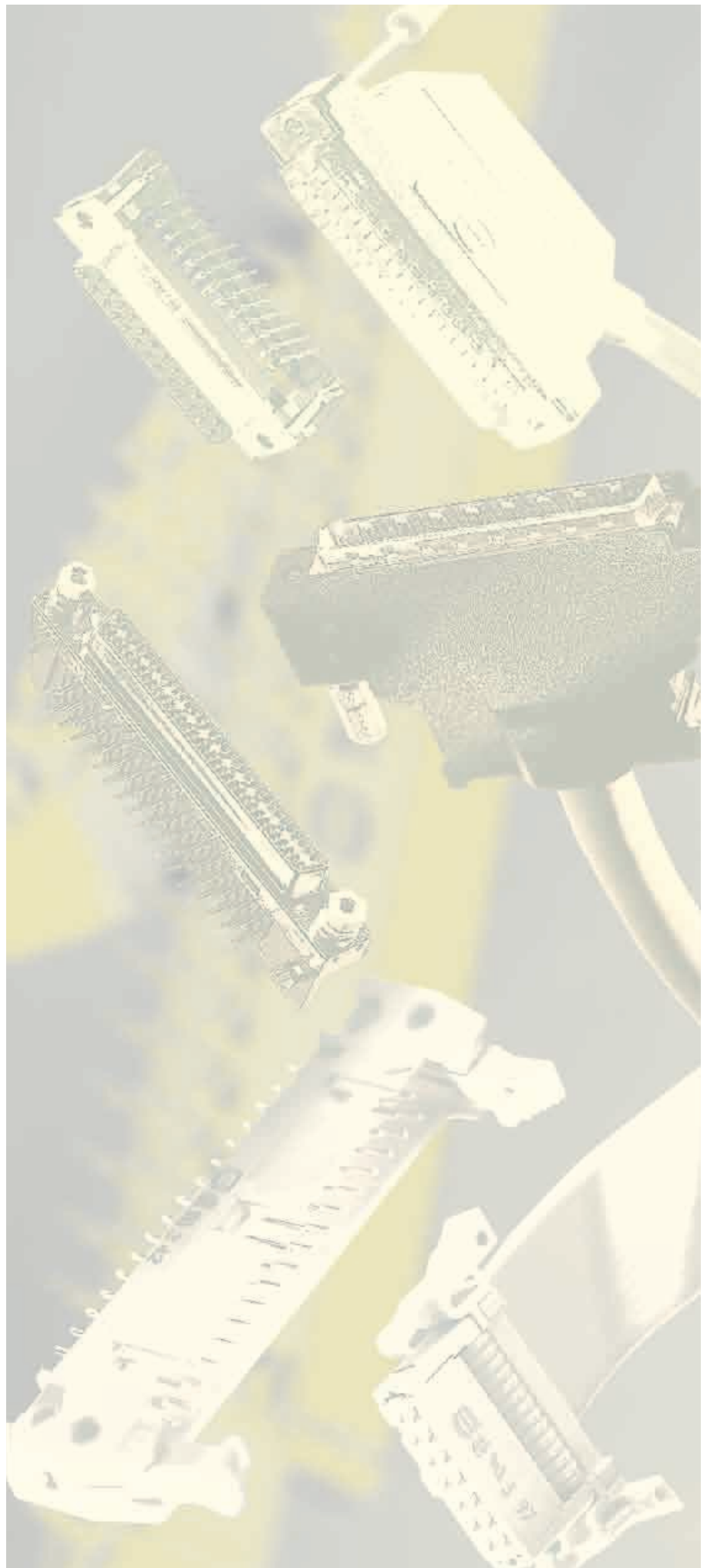
With subsidiaries in 25 countries and ten production plants, the company is one of the leading manufacturers of electrical and electronic connectors. The global HARTING network means that the company is always in close touch with the market and ideally placed to work together with its customers.

As the market leader HARTING offers the benefits of just-in-time service and maintains close business relations with all of its key customers in the global marketplace. In more than one of its product areas, HARTING leads the field.

HARTING products are manufactured using advanced, automated techniques, with CAD systems employed both in research and development and in tool-making.

In matters of quality, HARTING is convinced that zero-defect production can only be achieved through fully automated processes. Our quality assurance organization and procedures are documented in accordance with EN ISO 9001 in a quality assurance manual. In 2006 HARTING became the first company worldwide to receive the new IRIS quality certificate (the International Railway Industry Standard).

HARTING employs around 60 staff in quality assurance alone. The majority of these engineers and technicians are trained and qualified to standards laid down by the DGQ (German Association of Quality) or SAQ (Swiss Association of Quality).



Interface connectors		Chapter
<b>harlink</b> ® Modular metric high speed connectors IEC 61 076-4-107, 2.0 mm [0.079"] pitch		00
<b>harmik</b> ® Miniature D connectors, IEC 61 076-3-100, IEC 61 076-3-101, 1.27 mm [0.050"] pitch		01
<b>D-Sub – Standard</b> subminiature D connectors IEC 60 807		02
<b>D-Sub – High Density</b> subminiature D connectors		03
<b>D-Sub – Mixed</b> subminiature D connectors DIN 41 652 T1		04
<b>D-Sub – Filter</b> subminiature D connectors IEC 1000, 2.54 mm [0.100"] pitch		05
<b>D-Sub – Waterproof</b> subminiature D IP 67 connectors IP 67 housings		06
<b>D-Sub – Housing</b> range for subminiature D connectors Comprehensive shielded and unshielded range		07
<b>D-Sub – Accessories</b> for subminiature D connectors		08
<b>SEK</b> Insulation Displacement Connector system (IDC) IEC 60 603-13, 2.54 mm [0.100"] pitch		09
Press-in technology Press-in board connectors		20
Surface Mount Technology (SMT) board connectors	<b>New</b>	21
Surface Mount Compatible (SMC) board connectors		22
Tooling for press-in technology		30
Tooling for crimp technology		31
Tooling for IDC technology		32
Cables		40
List of part numbers		80
Company addresses		90



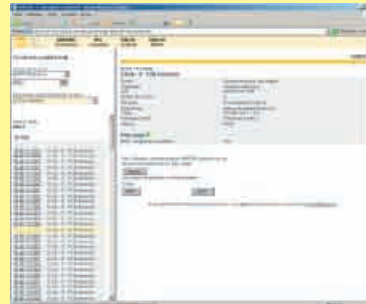
**HARKIS®** is the abbreviation for **HARTING-Katalog-Informationen-System** (HARTING catalogue information system).

**HARKIS®** is an electronic catalogue with part configuration and 3D components library. Here you can choose a connector according to your demands. Afterwards you are able to send your inquiry created with the listed parts. The drawings to every single part are available in PDF-format. The parts are downloadable in 2D-format (DXF) and 3D-format (IGES, STEP). The 3D-models can be viewed with a VRML-viewer.

You can find **HARKIS®** our homepage [www.HARTING.com](http://www.HARTING.com). It is also available on CD-Rom and DVD.



Part configuration



CAD library

## Identification

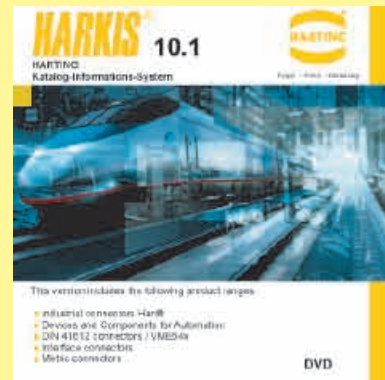
## Part number

**HARKIS® CD-Rom**  
Basic product catalogue

98 40 000 0401

**HARKIS® DVD**  
Basic product catalogue  
2D and 3D CAD files inclusive

98 40 000 0405



## General approvals:



Interface connectors  
are in conformity with the  
**Directive 2002/95/EG**  
EC Directive on the Restriction and Use  
of Certain Hazardous Substances in  
Electrical and Electronic Devices  
**RoHS**

## General information

It is the customer's responsibility to check whether the components illustrated in this catalogue comply with different regulations from those stated in special fields of application which we are unable to foresee.

We reserve the right to modify designs in order to improve quality, keep pace with technological advancement or meet particular requirements in production.

No part of this catalogue may be reproduced in any form (print, photocopy, microfilm or any other process) or processed, duplicated or distributed by means of electronic systems without the written permission of HARTING Electronics GmbH & Co. KG, Espelkamp. We are bound by the German version only.

**har-link®** Modular metric high speed connectors, 2.0 mm pitch

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har-link



The **harlink**® connector system of HARTING complies with the requirements of IEC 61076-4-107 and is a compact and robust pcb-to-cable interface with excellent data transmission properties for high-speed networking and telecommunications.

All dimensions of the **harlink**® connector are in accordance with IEC 917 and IEEE P 1301 requirements, which allows for easy implementation into both metric and inch-based systems. In addition, **harlink**® supports hot plugging as required by modern bus systems such as CompactPCI, S-bus and VME.

**harlink**® allows data transmission up to 2 Gbit/s per pair and is therefore perfectly suited for modern transmission protocols such as Low Voltage Differential Signals (see Fig. 1). The design of the **harlink**® connector allows differential pairs to be placed horizontally (parallel to the pcb), thus reducing the skew at high frequencies and considering high signal integrity.

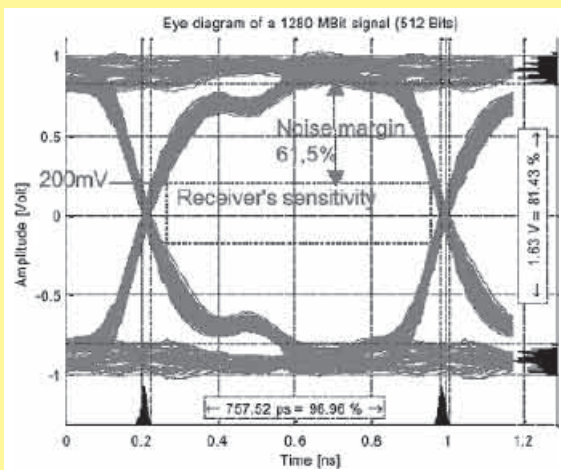


Fig. 1: Eye diagram of a 1280 MBit signal (512 Bits)

The metal shells of the **harlink**® connector are a guarantee for its superior performance in the EMI-polluted environment (see Fig. 2).

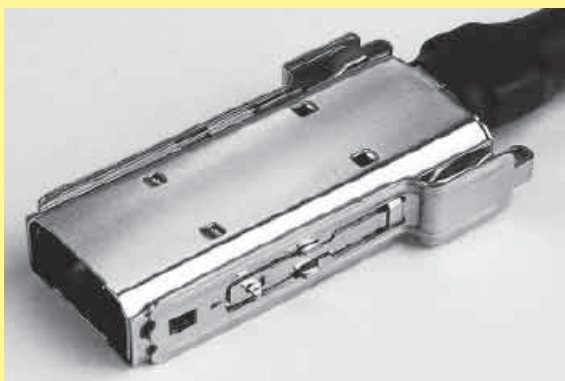


Fig. 2: 360° screened-can construction with locking levers

To reach a screening attenuation of more than 50 dB up to 1 GHz, HARTING offers brackets covering each connector in conjunction with a gasket, which is compressed between the bracket and the front panel (see Fig. 3).

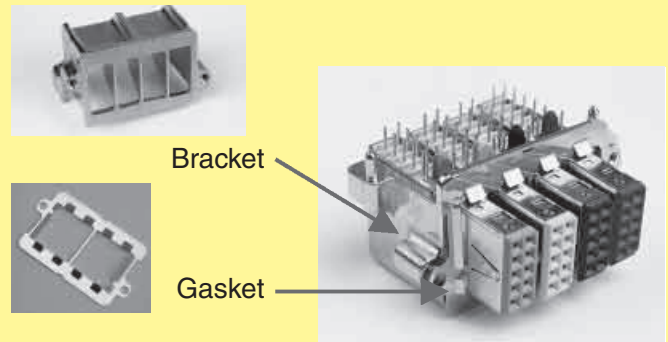


Fig. 3: 4 cavities bracket and gasket

Once plugged, the mated pair shows excellent mating safety. Due to the locking levers on both sides of the male connector, the connection withstands a pulling force of up to 80 N (see Fig. 2).

The high temperature resistant material of the **harlink**® female connector body supports the safe reflow soldering process. For easy identification of female modules, six different colours are available (see Fig. 4).

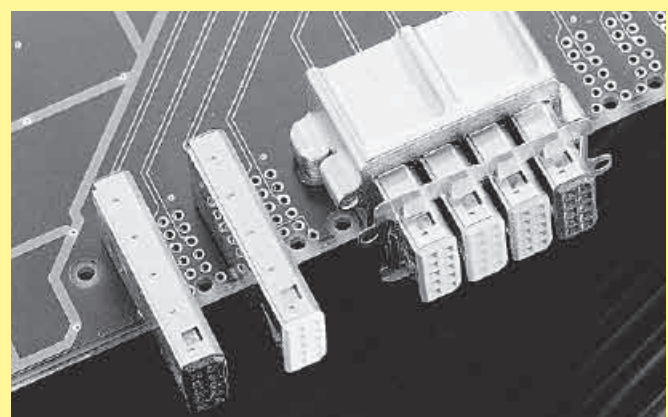


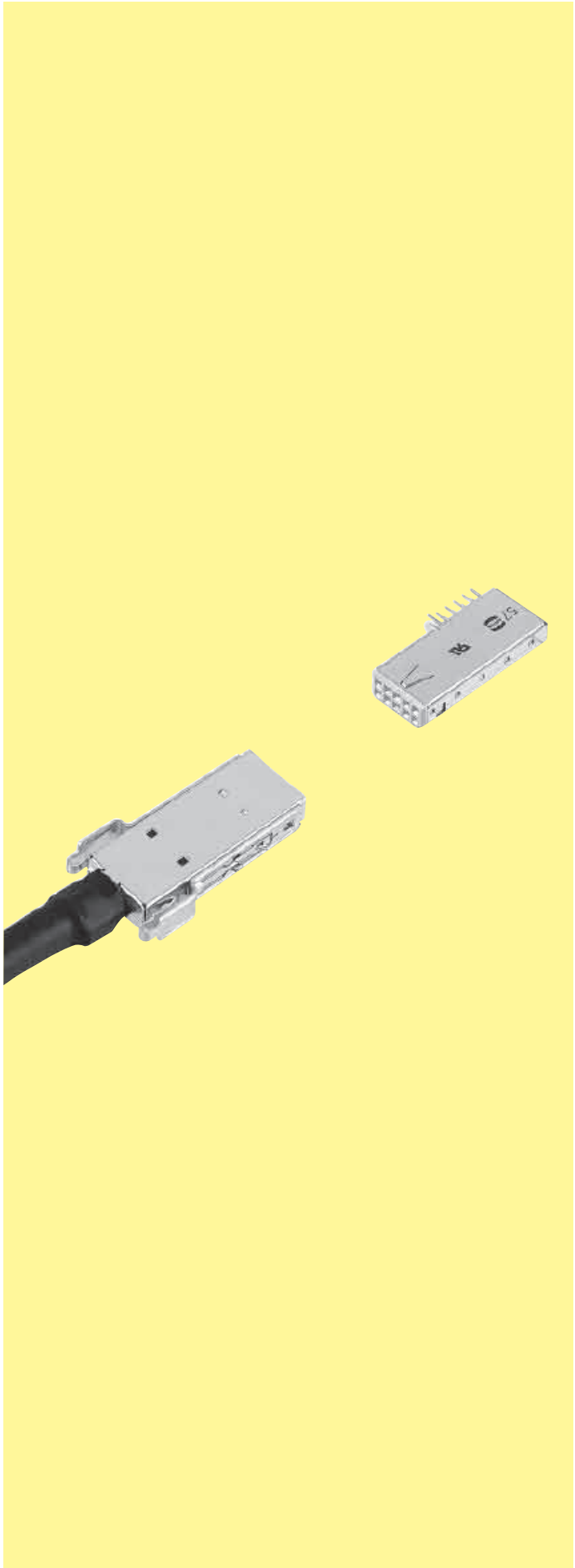
Fig. 4: Female modules

In addition to single connectors, HARTING provides cable assemblies with unshielded twisted pairs or with shielded twisted pairs for high speed applications such as IEEE 1355. A crimping tool range for terminating the male **harlink**® connectors is available.

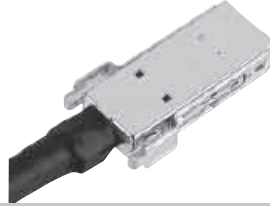


har-link

Number of contacts	10
Approvals	IEC 61076-4-107 UL recognized: E102079
Contact pitch Connector pitch	2 mm 6 mm
Working current	1.5 A at 70 °C
Test voltage $U_{r.m.s.}$	750 V
Contact resistance Insulation resistance	$\leq 30 \text{ m}\Omega$ $\geq 10^{10} \Omega$
Temperature range during reflow soldering	-55 °C ... + 125 °C female: max. + 260 °C for 60 s
Mating cycles	250, performance level 2
Terminations	Insulation displacement (male), AWG 28/7 - 30/7, AWG 30 solid Solder pins for $\varnothing 0.6 \text{ mm}$ min. (female)
Insertion force Withdrawal force	10 N max. / module 2 N min. / module (without locking levers)
Latching system	Locking levers
Materials	
Mouldings	Male connector: Polyester, UL 94-V0 Female connector: High temperature plastic material, UL 94-V0
Contacts	Copper alloy
Shells	Male connector: Stainless steel Female connector: Silver nickel
Contact surface Contact zone	Selectively gold-plated



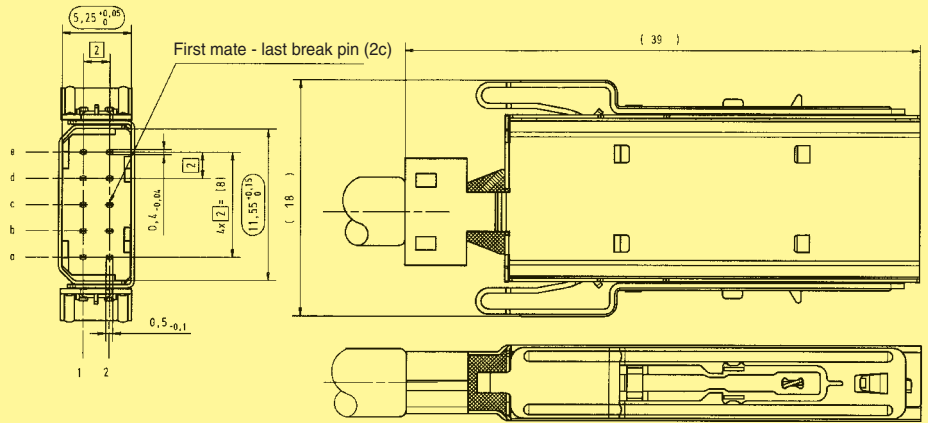




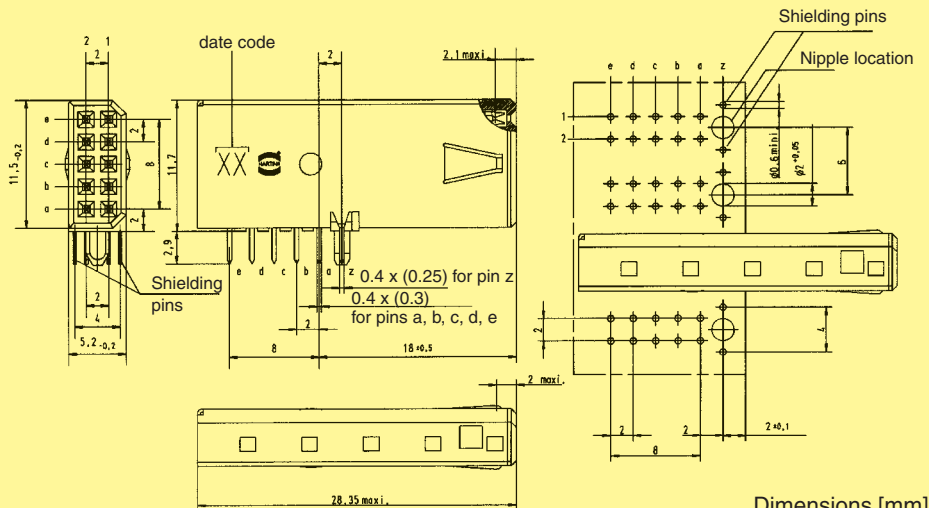
Male connectors, straight  
Female connectors, angled

Identification	No. of contacts	Colour	Part No.
Male connector for insulation displacement	10	Black	27 11 161 8001
Female connector with solder pins	10	Beige (standard)	27 21 121 8000
	10	Red	27 21 121 8002
	10	Yellow	27 21 121 8004
	10	Green	27 21 121 8005
	10	Blue	27 21 121 8006
	10	Black	27 21 121 8010

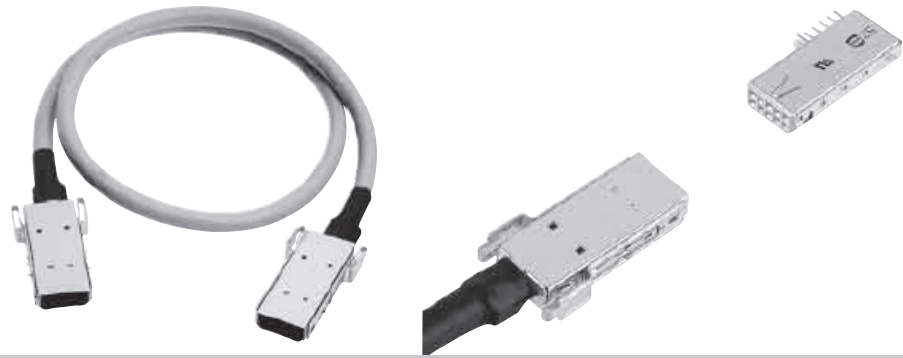
Male connector



Female connector



Dimensions [mm]

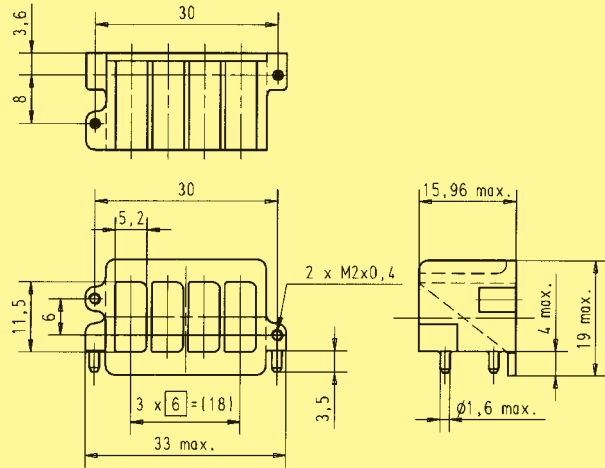


Accessories and cable assemblies

Identification	Part No.	Drawing	Dimensions [mm]
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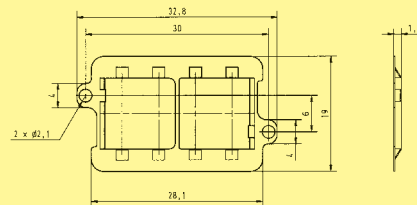
Bracket  
with four cavities

27 71 040 0001



Gasket  
with four cavities

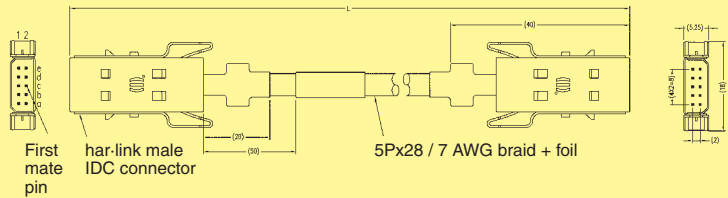
27 71 040 0002



Standard cable assembly  
with **single** shielding  
and 1:1 wiring

Length: L = 0.5 m  
L = 1.0 m  
L = 2.0 m

33 27 243 0500 001  
33 27 243 1000 002  
33 27 243 2000 003



High end cable assembly  
with **double** shielding  
and 1:1 wiring  
suitable for HF applications

Length: L = 0.5 m  
L = 1.0 m  
L = 2.0 m

33 27 243 0500 006  
33 27 243 1000 007  
33 27 243 2000 008

