har:link® Modular metric high speed connectors

The har:link® connector system of HARTING complies with the requirements of IEC 61 076-4-107 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 har:link® 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, har:link® supports hot plugging as required by modern bus systems such as CompactPCI, S-bus and VME.

har:link® 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 har:link® connector allows differential pairs to be placed horizontally (parallel to the pcb), thus reducing the skew at high frequencies and considering high signal integrity.

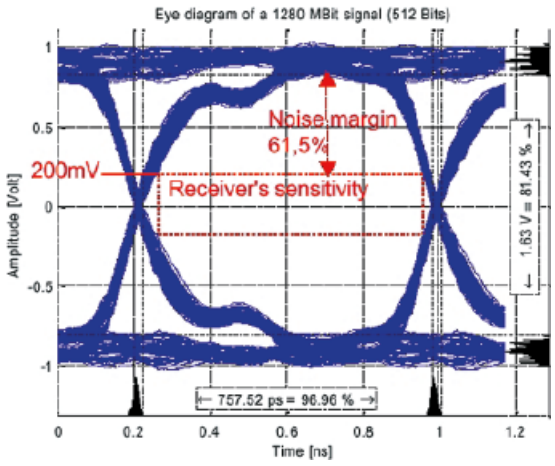


Fig. 1: Eye diagram of a 1280 MBit signal (512 Bits)

The metal shells of the har:link® 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).

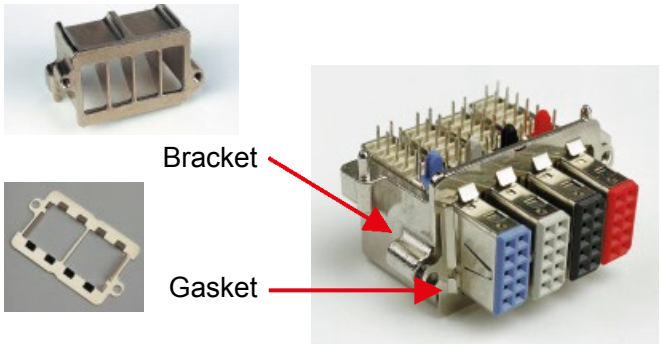


Fig. 3: 4 cavities bracket and gasket

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 har:link® female connector body supports the safe reflow soldering process. For easy identification of female modules, six different colours are available (see Fig. 4).

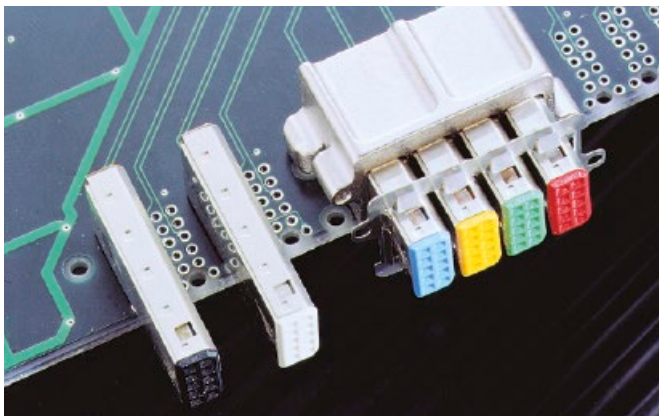
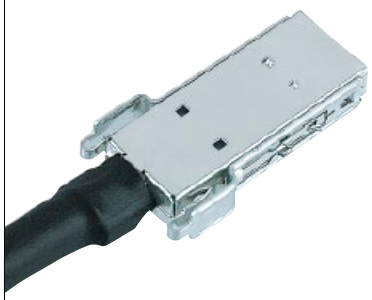


Fig. 4: Female modules

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 har:link® connectors is available.

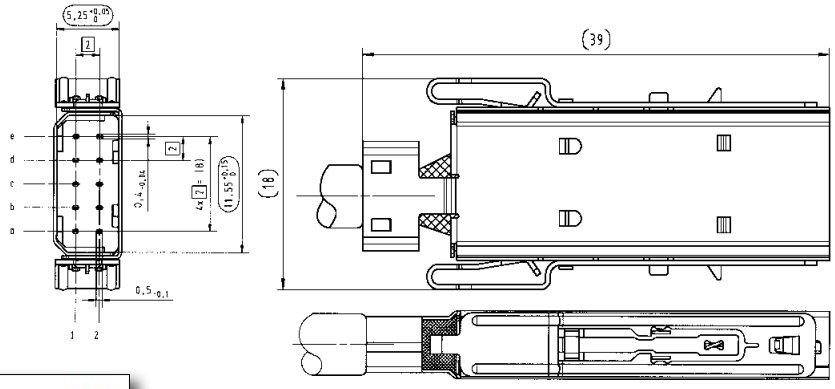
Number of contacts	10
Approvals	IEC 61 076-4-107 UL recognized: E102079
Contact pitch Connector pitch	2 mm 6 mm
Working current	1.5 A at 70 °C
Test voltage $U_{r.m.s.}$	750 V
Contact resistance Insulation resistance	≤ 35 mΩ ≥ 10^{10} Ω
Temperature range during reflow soldering	-55 °C … +125 °C female: max. + 260 °C for 60 s
Mating cycles	250, performance level 2
Terminations	Solder buckets (male), AWG 24-30, outer insulation Ø 5.33 ± 0.25 mm Solder pins for ø 0.6 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 plated according to performance level

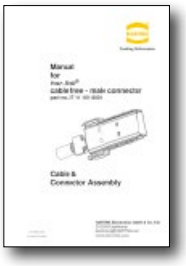


Male connectors, straight
Female connectors, angled

Identification	No. of contacts	Colour	Part number
Male connector			
with solder buckets	10	Black	27 11 122 2001
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

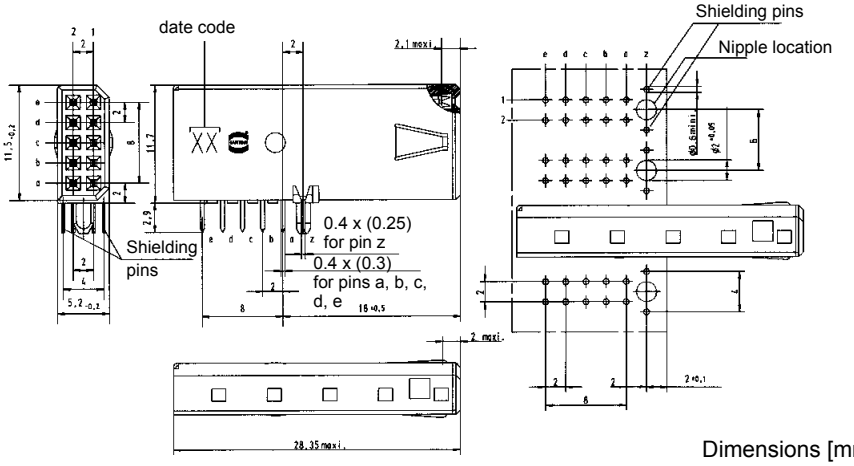
Male connector
(delivered in piece parts)





Manuals for the *har-link*® cable free connector assemblies are available in our online catalogue *HARKIS*® or on demand at your local HARTING representative.

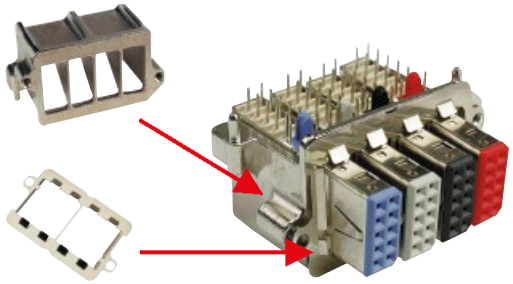
Female connector

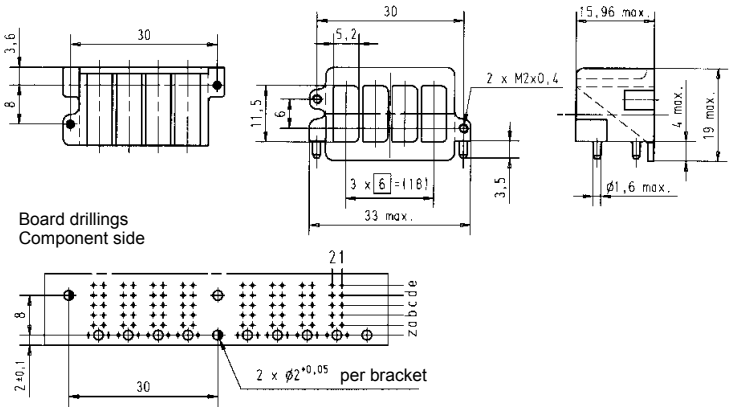
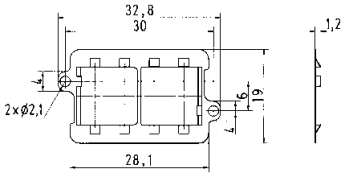
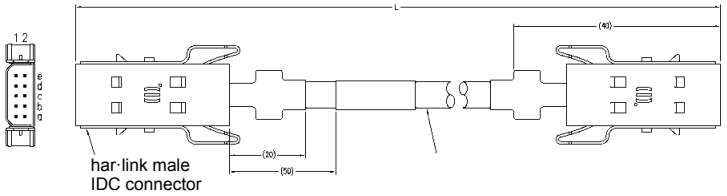


Dimensions [mm]

Tooling see chapter 20

Accessories and cable assemblies



Identification	Part number	Drawing	Dimensions in mm
Bracket with four cavities	27 71 040 0001		
Gasket with four cavities	27 71 040 0002		
Standard *har-link*® cable assembly Cable: 5 twisted pairs, AWG 28, shielded, PVC Wiring: 1:1			
Length: L = 0.5 m	33 27 243 0500 001		
L = 1.0 m	33 27 243 1000 002		
L = 2.0 m	33 27 243 2000 003		
High end *har-link*® cable assembly Cable: 5 twisted pairs, AWG 30, double shielded, PVC Wiring: 1:1			
Length: L = 0.5 m	33 27 243 0500 006		
L = 1.0 m	33 27 243 1000 007		
L = 2.0 m	33 27 243 2000 008		
Cable: 5 twisted pairs, AWG 30, double shielded, PVC Wiring: acc. to IEEE 1355		IEEE 1355 wiring	
Length: L = 0.5 m	33 27 243 0500 015		
L = 1.0 m	33 27 243 1000 016		
L = 2.0 m	33 27 243 2000 017		

Connector 1	Connector 2
2-e	1-a
1-e	2-a
2-d	1-b
1-d	2-b
2-c	2-c

Connector 1	Connector 2
1-c	1-c
2-b	1-d
1-b	2-d
2-a	1-e
1-a	2-e

Notes