har-bus® HM female connector

RoHS compliant

General information

Design	IEC 61076-4-101	type: monoblock 47
No. of contacts	max. 220 or 200 with upper shield	
Contact spacing	2,0mm	
Test voltage	750V AC	
Contact resistance	max. 20mOhm	
Insulation resistance	min. 10^{10}Ohm	
Working current	1A at 70°C (see derating diagram)	
Temperature range	-55°C ... +125°C	
Termination technology	press-in	
Clearance & creepage distance	0,6 mm each for free connector	
Insertion and withdrawal force	insertion force per contact:	0,75N max.
	withdrawal force per contact:	0,15N min.
Mating cycles	- PL1 acc. to IEC 61076-4-101 =>	500 mating cycles
	- PL2 acc. to IEC 61076-4-101 =>	250 mating cycles
UL file	E102079	
RoHS - compliant	Yes	
Leadfree	Yes	

Insulator material

Material	LCP (liquid crystalline polymer, glass fiber reinforcement 30%)
Colour	nature
UL classification	UL 94-V0
Material group acc. to IEC 60664-1	IIIa (175 ≤ CTI < 400)

Contact material

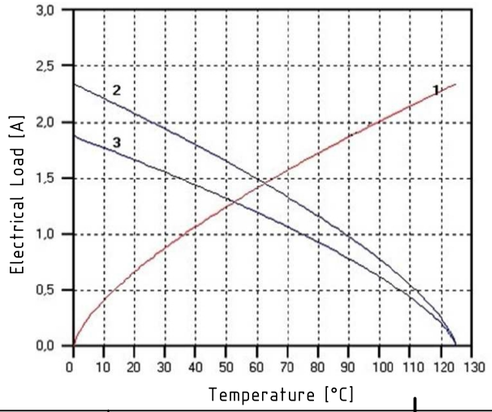
Contact material	Copper alloy	
Treatment contact zone	Bellcore recommended lubricant (PPE)	
Plating press-in zone	Ni	
Plating contact zone	- PL 1 / PL 2	Au over Ni
	- "S4" acc. to HARTING internal PL =>	0,8µm Au over 2,0µm Ni

Derating diagram acc. to IEC 60512-5 (Current carrying capacity)

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals.
The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

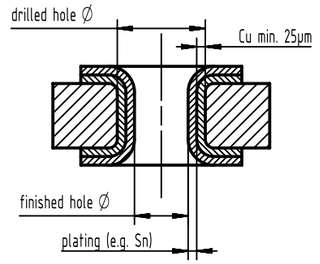
Control and test procedures according to DIN IEC 60512-5

Curve 1 shows raise in temperature
Curve 2 shows nominal derating Date Name
Curve 3 shows reduced values as per IEC512



Recommended configuration of plated through holes for press-in termination

In addition to the hot-air-level (HAL), other PCB surfaces are getting more important. Due to their different properties - such as mechanical strength and coefficient of friction - we recommend the following configuration of PCB through holes.



Tin plated PCB (HAL) acc. to EN 60352-5	Drilled hole Ø	0,7±0,02mm
	Sn	max. 15µm
	plated hole Ø	0,60 - 0,65mm
Chemical tin plated PCB	Drilled hole Ø	0,7±0,02mm
	Sn	min. 0,8µm
	plated hole Ø	0,60 - 0,65mm
Gold /Nickel plated PCB	Drilled hole Ø	0,7±0,02mm
	Ni	3 - 7µm
	Au	0,05 - 0,12µm
	plated hole Ø	0,60 - 0,65mm
Silver plated PCB	Drilled hole Ø	0,7±0,02mm
	Ag	0,1 - 0,3µm
	plated hole Ø	0,60 - 0,65mm
Copper plated PCB (OSP)	Drilled hole Ø	0,7±0,02mm
	plated hole Ø	0,60 - 0,65mm

Assembly instructions

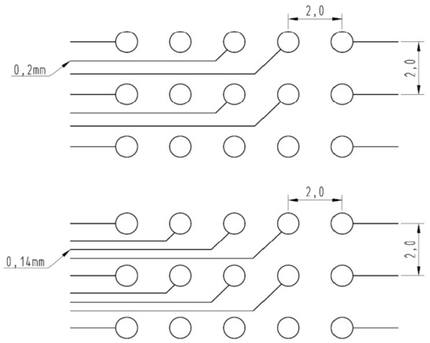
It is highly recommended to use HARTING press-in tools to ensure a reliable press-in process. Please refer to the catalogue for tools, machines and further information about the press-in process.

Circuit density

When using the specified diameter of the finished through hole according to IEC 61 076-4-101 (0.6 ± 0.05mm) with an appropriate annular ring, the remaining distance between the rings is about 1mm.

Under the condition that the width of the track and the space between should be equal, two tracks of 0.2mm width or three tracks of 0.14mm width can be placed between two rings.

Typical designs are shown in the drawing on the right side.



All Dimensions in mm Original Size DIN A3	Scale 1:1	Free size tol.		Ref. Sub. DS 17 00 220 0102 / EC01567 / 22.05.2012	
Department EC PD - DE	Created by TADJE	Inspected by DAHMS	Standardisation HOFFMANN	Date 2016-06-28	State Final Release
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