Male and female connectors with snap-in-clips

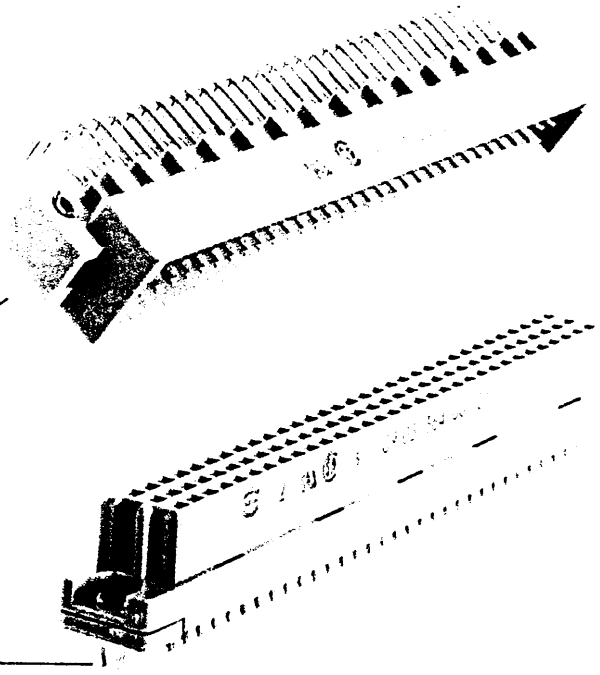
The automatic insertion of components into P.C.B.'s is increasing at a high rate.

To meet this market demand, HARTING has developed connectors according to DIN 41 612 which can in one process be assembled and fixed to the P.C.B.

In the following soldering process, all component terminations including the snap-in-clips are soldered and, therefore, mechanically secured. This provides mechanical protection for the soldered contacts during mating and unmating of the connector.

Mouldings with snap-in-clips offer the following advantages:

- Provide a cost reduction, when compared with screw or rivet assembly method due to the soldering of the tin plated clip along with other components in one process.
- The orientation of the clip after soldering in the plated through fixing holes provides mechanical protection against the tensile forces arising from the mating and unmating of the connector.



Mounting force
40–60 N

Provides transport safety before soldering
15 N

Tin plated snap-in-clip

For P.C.B. thickness
1.6 ± 0.2 mm
Ø = $2.8^{+0.1}$ mm

For P.C.B. thickness
1.6 – 3.2 mm
Ø = $2.8^{+0.1}$ mm

It is possible to supply the majority of solder pin male and female connectors according to DIN 41 612 with snap-in-clips.
To define versions with snap-in-clips please change the fifth digit of the part number as described below.

Standard Connectors	Connectors with snap-in-clips
09 . . 0	09 . . 3 . . . . .
09 . . 1	
09 . . 2	

Technical characteristics

Number of contacts	16–96
Contact spacing (mm)	2.54
Working current see current carrying capacity chart	2 A max. 1 A with insulation displacement 15 A type CH 40 A max. type M
Clearance	≧ 1.2 mm
Creepage	≧ 1.2 mm
High current contacts	
Type CH	
Clearance	≧ 3.0 mm
Creepage	≧ 4.0 mm
Working voltage The working voltage also depends on the clearance and creepage dimensions of the P.C. Board itself, and the associated wiring	according to the safety regulations of the equipment. Explanations page 6
Test voltage $U_{r.m.s.}$	1 kV
Contact resistance	≦ 15 mΩ ≦ 20 mΩ including crimp connection
Insulation resistance	≧ 10^{12} Ω
Temperature range The higher temperature limit includes the local ambient and heating effect of the contacts under load	−65 °C + 125 °C
Degree of protection for crimp terminal according to DIN 40050	IP 20
Electrical termination	
Male connector	Solder pins 0.6 x 0.6 mm for P.C.B. connections Ø 0.8 + 0.3 mm Wrap posts 0.6 x 0.6 mm diagonal 0.79–0.86 mm
Female connector	Wrap posts 0.6 x 0.6 mm diagonal 0.79–0.86 mm Solder pins 0.6 x 0.6 mm for P.C.B. connections Ø 1 ± 0.1 mm according to IEC 326 for P.C.B. connections Ø 0.8 + 0.3 mm on request Solder lugs Crimp terminal 0.14–0.5 mm² Insulation displacement connection AWG 28/7 Connector for faston 6.3 x 2.5
Insertion and withdrawal force	16 way ≦ 15 N 32 way ≦ 30 N 48 way ≦ 45 N 64 way ≦ 60 N 96 way ≦ 90 N
Materials	
Mouldings	Thermoplastic resin, glass-fibre filled
Contacts	Copper alloy
Contact surface	Contact zone: selectively gold-plated according to performance level[1]) Termination zone: tinned Heavy current contacts type CH silver plated Wrap posts selectively gold plated on request

[1]) Explanations of performance levels page 10

You will find angled female connectors for

Series Gds A-B	on page 80	type Q
Series Gds A-2B	on page 82	type 2Q
Series Gds A-C	on page 84	type R
Series Gds A-2C	on page 86	type 2R

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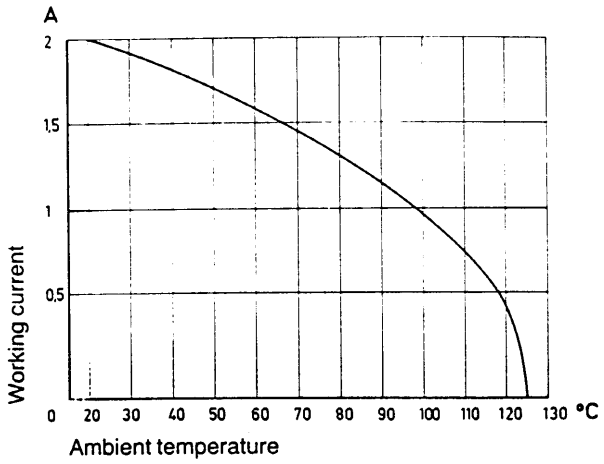
Current carrying capacity

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, not 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 41 640, part 3.

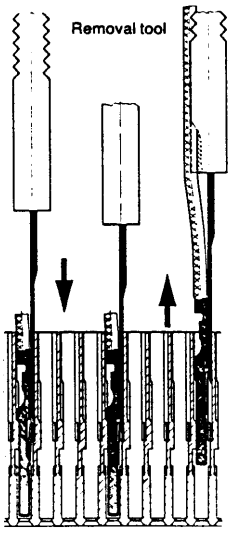


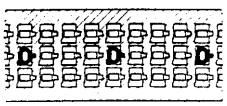
Fitting the crimp contacts

After crimping the wires onto the contacts the crimp contacts are correctly orientated and inserted into cavities in the connector body in the required configuration. They snap into position and are firmly held in place. A light pull on the wire will check that they are correctly located. When using stranded wire having a gauge below 0.37 mm², an insertion tool is required.

Removing the crimp contacts

The removal tool is inserted into a slot on the side of the respective crimp cavity. This action compresses the contact retaining spring and the contact can then be easily withdrawn using a light pull on the wire. This action will cause no damage to the contact/wire which can be repositioned/refitted as necessary. The diagram demonstrates the crimp removal procedure.

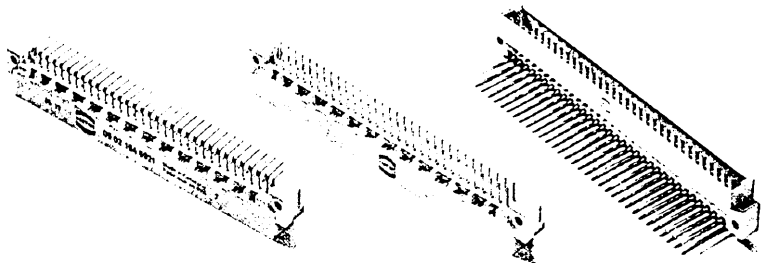




Gds A-B DIN 41 612 · VG 95 324 · Type B

Number of contacts

64, 32

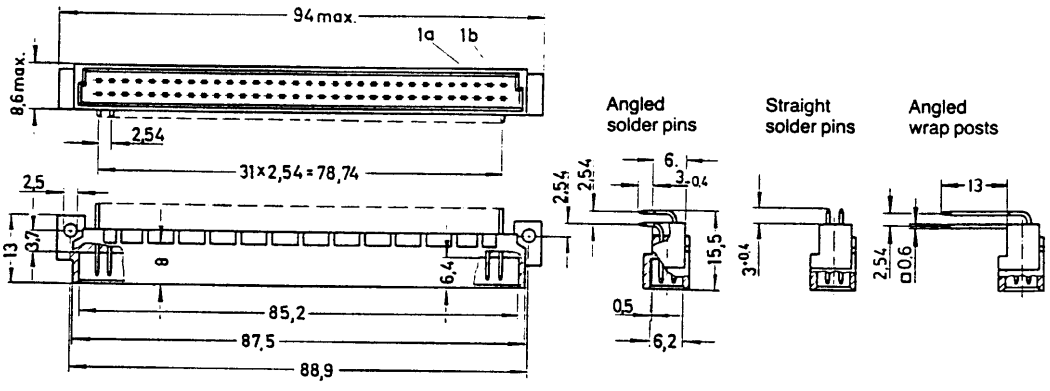


Male connectors

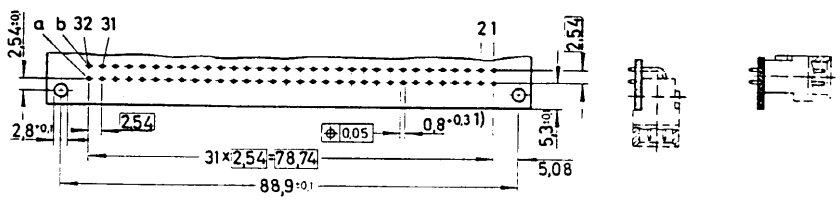
Identification	Number of contacts	Contact arrangement	Part No. 3	Performance levels according to DIN 41 612, explanations page 10 2	1	VG
Male connector with angled solder pins	64	1234 a b	09 02 164 7921	09 02 164 6921	09 02 164 2921*	09 02 164 4921*
	32	1234 a b	09 02 132 7921	09 02 132 6921	09 02 132 2921*	09 02 132 4921*
	32	1234 a b c	09 02 132 7931	09 02 132 6931	09 02 132 2931*	
	62 + 2▲	1234 a b	09 02 164 7951	09 02 164 6951	09 02 164 2951*	
Male connector with straight solder pins	64	1234 a b	09 02 164 7922	09 02 164 6922	09 02 164 2922*	
	32	1234 a b	09 02 132 7922	09 02 132 6922	09 02 132 2922*	
	32	1234 a b c	09 02 132 7932	09 02 132 6932	09 02 132 2932*	
	62 + 2▲	1234 a b	09 02 164 7952	09 02 164 6952	09 02 164 2952*	
Male connector with angled wrap posts	64	1234 a b	09 02 164 7928	09 02 164 6928	09 02 164 2928*	
	32	1234 a b	09 02 132 7928	09 02 132 6928	09 02 132 2928*	
	32	1234 a b c	09 02 132 7938	09 02 132 6938	09 02 132 2938*	
Male connector with angled press-in terminations	Part Nos. and versions see "har · press" catalogue					

B

Dimensions



Board drillings



1) When angled wrap posts are used ∅ 1 ± 0.1 mm

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Dimensions in mm

▲ Male connectors with 2 first mating contacts [(0.8 mm) pos. a1 and a32]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock