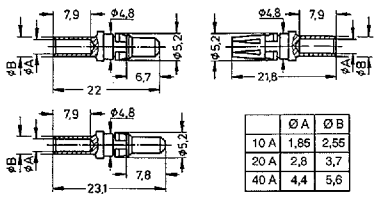
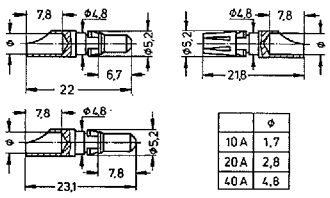
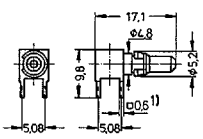
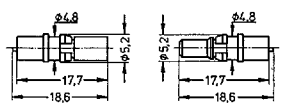
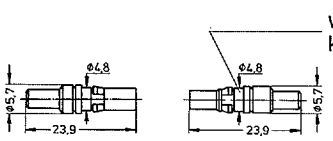
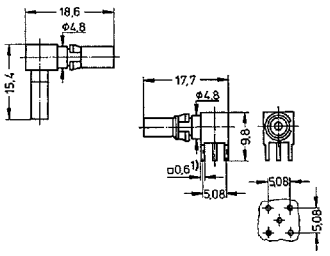
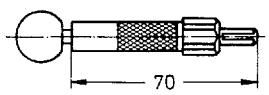
Gds A-M DIN 41612 · VG 95 324 · Type M

Identification		Part No. Male contacts for...	Performance level 2 Female contacts for...	Drawing	Dimensions in mm
		..male connector	..female connector		
High current contacts for straight crimp terminations	10 A	09 03 000 6113	09 03 000 6213		
	20 A	09 03 000 6114	09 03 000 6214		
	40 A	09 03 000 6115	09 03 000 6215		
First mate contact	10 A	09 03 000 6123			
	20 A	09 03 000 6124			
	40 A	09 03 000 6125			
Crimping tool for high current contacts		09 99 000 0196			
		..male connector	..female connector		
High current contacts for straight solder terminations	10 A	09 03 000 6101	09 03 000 6201		
	20 A	09 03 000 6102	09 03 000 6202		
	40 A	09 03 000 6103	09 03 000 6203		
First mate contact	10 A	09 03 000 6111			
	20 A	09 03 000 6122			
	40 A	09 03 000 6133			
		..male connector			
High current contacts for printed circuit terminations	10 A	09 03 000 6104			1) Solder pins for hole Ø 1 ± 0.1 mm
		..male connector	..female connector		
High voltage contacts for straight solder terminations	2.8 kV	09 03 000 6140	09 03 000 6240		Wire gauge max. 0.5 mm²
		..female connector	..male connector		
Coaxial contacts for straight solder and/or crimp terminations		09 03 000 6160	without knurled area 09 03 000 6260 with knurled area 09 03 000 6274		with/without knurled area
Coaxial contacts for angled solder and/or crimp terminations		09 03 000 6161	09 03 000 6261*		
Coaxial contacts for printed circuit terminations		09 03 000 6162*	09 03 000 6262		
Crimping tool for coaxial contacts		09 99 000 0194			1) Solder pins for hole Ø 1 ± 0.1 mm
Removal tool for contacts		09 99 000 0174			

M

Characteristics for contacts and wires

	Coaxial contacts	High current contacts	High voltage contacts
Impedance	50Ω	—	—
Insulation resistance	10^{12}Ω	—	—
Contact resistance		max. 1.5 mΩ	
Internal wire	≦ 10 mΩ	—	≦ 3 mΩ
External wire	≦ 3 mΩ	—	—
Working voltage	250 V ~	—	2.8 kV
Voltage resistance	750 V ~	—	3.8 kV
Max. working current	1.5 A	40 A	1.5 A
Contact finish	perf. level 2	perf. level 2	perf. level 2
Cable group	2	—	—

Cable group 2 flexible wires	Shell Ø	Screening Ø	Dielectric Ø	Internal wire Ø	Hexagonal crimp Spanner width
RG 174 A/U	2.5	2.0	1.5	0.48	3.25
RG 188 A/U	2.6	2.0	1.5	0.54	3.25
RG 316/U	2.5	2.0	1.5	0.54	3.25

Fibre optic contacts on request
* only for Gds A-M invers

Economic and Reliable Connections

The Gds connector system for use in 19" racks to DIN 41494

Gds A series according to

DIN	41612
VG	95324[1)]
IEC	603-2
MIL-C-	55302
BT	222
BS	9525
HE	12
NFC	93-420
UL-gelistet	
CSA	018753
CECC	75100

Developed for economical assembly of electronic plant and equipment

HARTING offer the most comprehensive range of highly versatile connectors complemented by many styles of shell housings making a complete interconnection and interface system.

[1)]Connectors can be manufactured to VG 95 324 the standard of the German Federal Agency for Defence Engineering and Procurement (BWB) also with the VDE electronic symbol of approval.

The division Printed Board Connectors Gds A is certified according to DIN EN ISO 9001

The advantages

- Indirect mating (male/female)
- Automated production techniques
- Continuous quality assurance
- 15-96 contacts
- Complete interconnection system
- Numerous interface connectors
- A wide variety of hoods
- Many termination techniques provide for the lowest installed cost
- Contacts selectively gold-plated
- Tinned terminations for increased solderability

The terminations

- Wrap post for automated wiring
- Straight and angled solder pins for printed circuits
- Solder lugs for discrete wiring
- Press-in technique for back planes
- Crimp contacts for selective loading
- Insulation displacement contacts for mass termination
- Faston blades for higher power discrete wiring
- Cage-clamp contacts provide low cost connection for solid or stranded wires

For "non standard applications" we can manufacture designs to match your requirements.
Please discuss requirements with us.

HARTING printed board connectors incorporate the latest design features and provide the assurance of high quality and reliability with economy.

Sales Department
HARTING-Components

General information

It is the user'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.

Performance level 3 as per DIN 41 612, part 5

50 mating cycles.
Then visual inspection no gas test.
No functional impairment.

Part-number-explanation 09 . . . . . 7 . . .

Performance level 2 as per DIN 41 612, part 5

400 mating cycles.
200 mating cycles 4 days gas test using 10 ppm SO_2.
Measurement of contact resistance.
200 mating cycles then visual inspection. No abrasion of the contact finish through to the base material.
No functional impairment.

Part-number-explanation 09 . . . . . 6 . . .

Performance level 1 as per DIN 41 612, part 5

500 mating cycles.
250 mating cycles 21 days gas test using 10 ppm SO_2.
Measurement of contact resistance.
250 mating cycles then visual inspection. No abrasion of the contact finish through to the base material.
No functional impairment.

Part-number-explanation 09 . . . . . 2 . . .

VG Version as per VG 95 324, part 1

500 mating cycles – then 1 day gas test using 10.000 ppm SO_2 and 1 day gas test using 10.000 ppm H_2S.
Then visual inspection. No abrasion of the contact finish through to the base material. No functional impairment.

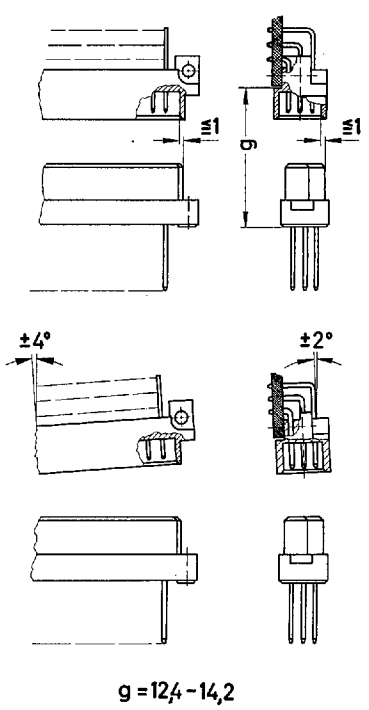
Part-number-explanation 09 . . . . . 4 . . .

Other plating finishes available on request.

Mating conditions

To ensure reliable connections and prevent unnecessary damage, please refer to the application data diagrams.

These recommendations are set out in DIN 41 612 P. 1.
The connectors shall not be coupled and decoupled under electrical load.



g = 12,4 - 14,2

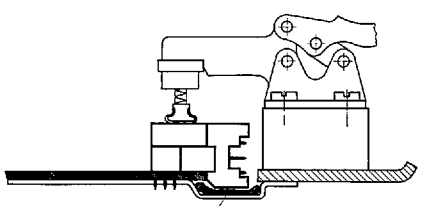
Soldering the male connectors into P.C. Boards

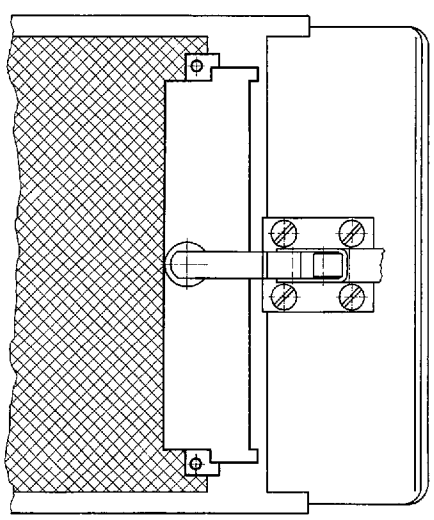
The male connectors of the Gds A series should be protected when soldering using dip, flow or film soldering baths, against contamination as a result of soldering operations or deformation of the connector bodies as a result of overheating.

① For prototypes and short runs cover the connectors with an industrial adhesive tape, e.g. Tesaband 4657 grey. Tape the underside of the connector moulding and adjacent parts of the P.C. Board and tape up the open end of the connector. This will prevent heat and gases from the soldering apparatus damaging the connector. About 140 + 5 mm of tape should be sufficient.

② For large run production a jig is recommended. This has a protective cover with a fast action mechanical locking device that shields the connector from the gas and heat generated by the soldering apparatus. For additional protection a foil can be used covering parts not to be soldered.

①





②

Technical characteristics Gds A-B, Gds A-2B, Gds A-C, Gds A-2C, Gds A-M

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 40 A max. type M
Clearance	≧ 1.2 mm
Creepage	≧ 1.2 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 0.09–0.5 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 Wrap posts selectively gold plated on request

[1]) Explanations of performance levels page 10

You will find angled female connectors for

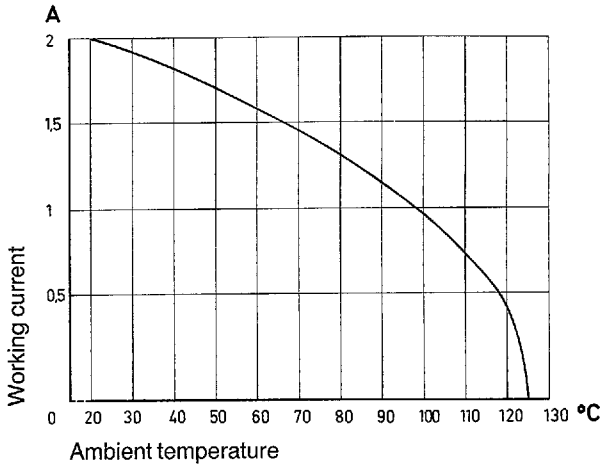
Series Gds A-B	on page 80	type Q
Series Gds A-2B	on page 82	type 2Q
Series Gds A-C	on page 84	type R
Series Gds A-2C	on page 86	type 2R

Mating conditions page 10
Coding systems page 88

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 41640, 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 (max. 5 x).