Technical characteristics Gds A-MH

ELECTRONIC PART

Number of contacts	24
Contact spacing (mm)	
Male connector	2.54 x 5.08
Female connector	5.08
Working current see current carrying capacity chart	6 A max.
Clearance	≧ 1.6 mm
Creepage	≧ 3 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 $U_{r.m.s.}$	1.55 kV
Contact resistance	≦ 15 mΩ ≦ 20 mΩ included crimp connection
Electrical termination	
Male connector	Angled solder pins 0.6 x 0.6 mm for P.C.B. connections ∅ 0.8 + 0.3 mm
Female connector	Wrap posts 1 x 1 mm diagonal 1.34–1.45 mm Solder pins for P.C.B. connections ∅ 0.8 + 0.3 mm Crimp terminal 0.09–1.5 mm²
Contact surface	Contact zone: selectively gold plated according to performance level [1]) Termination zone: tinned

HEAVY DUTY PART

Number of contacts	6 + first mating contact (position z 32)
Working current see current carrying capacity chart	15 A max.
Clearance	≧ 4.5 mm
Creepage	≧ 8.0 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 $U_{r.m.s.}$	3.1 kV
Contact resistance	≦ 8 mΩ
Electrical termination	
Male and female connector	Connector for faston 6.3 x 2.5 (faston width x wire gauge) according to DIN 46 245 and DIN 46 247
Male connector	Angled solder pins 0.8 x 1.2 mm for P.C. Board ∅ 1.6 + 0.1 mm according to DIN 40 801, P. 2
Contact surface	Hard silver plated terminal ends of the female connectors tinned

BOTH PARTS

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
Insertion and withdrawal force	≦ 85 N
Materials	
Mouldings	Thermoplastic resin, glass-fibre filled
Contacts	Copper alloy

[1]) Explanations of performance levels page 10

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 41 640, part 3.

Electronic part

Heavy duty part

MH

Number of contacts

24+7

Male connectors

Identification	Number of contacts	Part No. 3	Performance levels according to DIN 41 612, explanations page 10 2	1
Male connector for faston 6.3 x 2.5				
1 first mating contact (position z 32)	24 + 7		09 06 031 6921	09 06 031 2971*
2 first mating contacts (position z 2 + z 32)	24 + 7		09 06 031 6923	
Male connector with angled solder pins				
1 first mating contact (position z 32)	24 + 7		09 06 131 6922	
2 first mating contacts (position z 2 + z 32)	24 + 7		09 06 131 6924	

Faston terminal

Angled solder pins

MH

Board drillings

Contact arrangement
View from termination side

Mating conditions page 10

Dimensions in mm

* Not normally kept in stock

Gds A-MH DIN 41 612 · complementary to type F and H

Number of contacts

24+7

Female connectors

Identification	Number of contacts	Part No. 3	Performance levels according to DIN 41 612, explanations page 10 2	1
Female connector with solder pins 4.5 mm			09 06 231 6822	09 06 231 2822*
Female connector with wrap posts 1 x 1 mm			09 06 231 6821	09 06 231 2821*
Female connector for crimp contacts Order contacts separately see page 62				09 06 231 2881*

MH

Panel cut out

Contact arrangement
View from termination side

Board drillings

Shell housing for
female connector with crimp contacts page 93

Dimensions in mm

* Not normally kept in stock

Technical characteristics Gds A-Q, Gds A-2Q, Gds A-R, Gds A-2R

Number of contacts

Gds A-Q	64, 32
Gds A-2Q	32, 16
Gds A-R	96, 64, 32
Gds A-2R	48, 32, 16

Contact spacing (mm)
2.54

Working current
see current carrying capacity chart

2 A max.

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

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

Electrical termination

Female connector	Solder pins 0.6 x 0.6 mm for P.C. Board ∅ 0.8 + 0.3 mm
Male 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. Board ∅ 0.8 + 0.3 mm

Insertion and withdrawal force
96 way ≦ 90 N
64 way ≦ 60 N
48 way ≦ 45 N
32 way ≦ 30 N
16 way ≦ 15 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

[1]) Explanations of performance levels page 10

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.

LM-version available on request

Mating conditions page 10
Coding systems page 88

Number of contacts

64, 32

Female connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to DIN 41 612, explanations page 10 3	2	1
Female connector with angled solder pins	64	1234	09 72 164 7801	09 72 164 6801	09 72 164 2801*
	32	1234	09 72 132 7801	09 72 132 6801	09 72 132 2801*
	32	1234	09 72 132 7811	09 72 132 6811	09 72 132 2811*

Dimensions

Board drillings

Q

Dimensions in mm

* Not normally kept in stock

316 726.

Number of contacts

64, 32

Male connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to DIN 41 612, explanations page 10 3	2	1
Male connector with solder pins 2.5 mm	64		09 72 164 7902	09 72 164 6902	09 72 164 2902*
	62+2▲		09 72 164 7952	09 72 164 6952	09 72 164 2952*
	32		09 72 132 7902	09 72 132 6902	09 72 132 2902*
	32		09 72 132 7912	09 72 132 6912	09 72 132 2912*
Male connector with solder pins 4.0 mm	64		09 72 164 7903	09 72 164 6903	09 72 164 2903*
	62+2▲		09 72 164 7953	09 72 164 6953	09 72 164 2953*
	32		09 72 132 7903	09 72 132 6903	09 72 132 2903*
	32		09 72 132 7913	09 72 132 6913	09 72 132 2913*
Male connector with wrap posts 13 mm	64		09 72 164 7907	09 72 164 6907	09 72 164 2907*
	62+2▲		09 72 164 7957	09 72 164 6957	09 72 164 2957*
	32		09 72 132 7907	09 72 132 6907	09 72 132 2907*
	32		09 72 132 7917	09 72 132 6917	09 72 132 2917*

Male connector with press-in terminations — Part Nos. and versions see "har·press" catalogue

Dimensions

a	b	
2,5 / 4	∅0,7	Solder pins

a	b	
13	□0,6	Wrap posts

Panel cut out

Board drillings

Contact arrangement
View from termination side

64 32 32 Dimensions in mm

Mating conditions page 10
Coding information page 88

▲ 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

Gds A-2Q DIN 41 612 · complementary to type Q

Number of contacts

32, 16

Female connectors

Identification	Number of contacts	Contact arrangement	Part No. 3	Performance levels according to DIN 41 612, explanations page 10 2	1
Female connector with angled solder pins			09 27 132 7801	09 27 132 6801	09 27 132 2801*
			09 27 116 7801	09 27 116 6801	09 27 116 2801*
			09 27 116 7811	09 27 116 6811	09 27 116 2811*

Dimensions

2Q

Board drillings

Dimensions in mm

*Not normally kept in stock

Gds A-2Q DIN 41 612 · complementary to type Q

Number of contacts

32, 16

Male connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to DIN 41 612, explanations page 10 3	2	1
Male connector with solder pins 2.5 mm	32		09 27 132 7902	09 27 132 6902	09 27 132 2902*
	30 + 2		09 27 132 7952	09 27 132 6952	09 27 132 2952*
	16		09 27 116 7902	09 27 116 6902	09 27 116 2902*
	16		09 27 116 7912	09 27 116 6912	09 27 116 2912*
Male connector with solder pins 4.0 mm	32		09 27 132 7903	09 27 132 6903	09 27 132 2903*
	30 + 2		09 27 132 7953	09 27 132 6953	09 27 132 2953*
	16		09 27 116 7903	09 27 116 6903	09 27 116 2903*
	16		09 27 116 7913	09 27 116 6913	09 27 116 2913*
Male connector with wrap posts 13 mm	32		09 27 132 7907	09 27 132 6907	09 27 132 2907*
	30 + 2		09 27 132 7957	09 27 132 6957	09 27 132 2957*
	16		09 27 116 7907	09 27 116 6907	09 27 116 2907*
	16		09 27 116 7917	09 27 116 6917	09 27 116 2917*
Male connector with press-in terminations	Part Nos. and versions see "har·press" catalogue				

Dimensions

a	b	
2,5	∅ 0,7	Solder pins
4		

a	b	
13	∅ 0,6	Wrap posts

Panel cut out

Contact arrangement
View from termination side

32 16 16

Board drillings

Mating conditions page 10
Coding information page 88

Dimensions in mm

2Q

▲ Male connectors with 2 first mating contacts [(0.8 mm) pos. a1 and a16]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock

Gds A-R DIN 41 612 · Type R

Number of contacts

96, 64, 32

Female connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to DIN 41 612, explanations page 10 3	2	1
Female connector with angled solder pins	96	234	09 73 196 7801	09 73 196 6801	09 73 196 2801*
	64	234	09 73 164 7801	09 73 164 6801	09 73 164 2801*
	32	234	09 73 132 7801	09 73 132 6801	09 73 132 2801*
	32	234	09 73 132 7811	09 73 132 6811	09 73 132 2811*

Dimensions

Board drillings

Dimensions in mm

*Not normally kept in stock

Number of contacts

96, 64, 32

Male connectors

Identification	Number of contacts	Contact arrangement	Part No. 3	2	1
Male connector with solder pins 2.5 mm	96		09 73 196 7902	09 73 196 6902	09 73 196 2902*
	94 + 2▲		09 73 196 7952	09 73 196 6952	09 73 196 2952*
	64		09 73 164 7902	09 73 164 6902	09 73 164 2902*
	32		09 73 132 7902	09 73 132 6902	09 73 132 2902*
	32		09 73 132 7912	09 73 132 6912	09 73 132 2912*
Male connector with solder pins 4.0 mm	96		09 73 196 7903	09 73 196 6903	09 73 196 2903*
	94 + 2▲		09 73 196 7953	09 73 196 6953	09 73 196 2953*
	64		09 73 164 7903	09 73 164 6903	09 73 164 2903*
	32		09 73 132 7903	09 73 132 6903	09 73 132 2903*
	32		09 73 132 7913	09 73 132 6913	09 73 132 2913*
Male connector with wrap posts 13 mm	96		09 73 196 7907	09 73 196 6907	09 73 196 2907*
	94 + 2▲		09 73 196 7957	09 73 196 6957	09 73 196 2957*
	64		09 73 164 7907	09 73 164 6907	09 73 164 2907*
	32		09 73 132 7907	09 73 132 6907	09 73 132 2907*
	32		09 73 132 7917	09 73 132 6917	09 73 132 2917*

Male connector with press-in terminations — Part Nos. and versions see "har·press" catalogue

R

Dimensions

a	b
2,5	∅0,7
4	

Solder pins

a	b
13	□0,6

Wrap posts

Panel cut out

Board drillings

Contact arrangement
View from termination side

Mating conditions page 10
Coding information page 88

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

Gds A-2R DIN 41 612 · complementary to type R

Number of contacts

48, 32, 16

Female connectors

Identification	Number of contacts	Contact arrangement	Part No. 3	2	1
Female connector with angled solder pins	48		09 28 148 7801	09 28 148 6801	09 28 148 2801*
	32		09 28 132 7801	09 28 132 6801	09 28 132 2801*
	16		09 28 116 7801	09 28 116 6801	09 28 116 2801*
	16		09 28 116 7811	09 28 116 6811	09 28 116 2811*

Performance levels according to DIN 41 612, explanations page 10

Dimensions

Board drillings

2R

Dimensions in mm

* Not normally kept in stock

Gds A-2R DIN 41 612 · complementary to type R

Number of contacts

48, 32, 16

Male connectors

Identification	Number of contacts	Contact arrangement	Part No. Performance levels according to DIN 41 612, explanations page 10 3	2	1
Male connector with solder pins 2.5 mm	48		09 28 148 7902	09 28 148 6902	09 28 148 2902*
	46 + 2▲		09 28 148 7952	09 28 148 6952	09 28 148 2952*
	32		09 28 132 7902	09 28 132 6902	09 28 132 2902*
	16		09 28 116 7902	09 28 116 6902	09 28 116 2902*
	16		09 28 116 7912	09 28 116 6912	09 28 116 2912*
Male connector with solder pins 4.0 mm	48		09 28 148 7903	09 28 148 6903	09 28 148 2903*
	46 + 2▲		09 28 148 7953	09 28 148 6953	09 28 148 2953*
	32		09 28 132 7903	09 28 132 6903	09 28 132 2903*
	16		09 28 116 7903	09 28 116 6903	09 28 116 2903*
	16		09 28 116 7913	09 28 116 6913	09 28 116 2913*
Male connector with wrap posts 13 mm	48		09 28 148 7907	09 28 148 6907	09 28 148 2907*
	46 + 2▲		09 28 148 7957	09 28 148 6957	09 28 148 2957*
	32		09 28 132 7907	09 28 132 6907	09 28 132 2907*
	16		09 28 116 7907	09 28 116 6907	09 28 116 2907*
	16		09 28 116 7917	09 28 116 6917	09 28 116 2917*
Male connector with press-in terminations	Part Nos. and versions see "har·press" catalogue				

Dimensions

a	b
2,5	∅ 0,7
4	

Solder pins

a	b
13	□0,6

Wrap posts

Panel cut out

Contact arrangement
View from termination side

Board drillings

Mating conditions page 10
Coding information page 88

Dimensions in mm

▲ Male connectors with 2 first mating contacts [(0.8 mm) pos. a1 and a16]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock

Identification	Part No.	Drawing	Dimensions in mm

Coding system with loss of contact

Code pin
Gds A-B, A-2 B,
Gds A-C, A-2 C,
Gds A-CH, A-M,
Gds A-Q, A-2 Q,
Gds A-R, A-2 R
09 02 000 9901

To avoid accidental incorrect mating of adjacent connectors a coding system is required. Coding is effected-by means of a code pin to be inserted into the selected chamber of the female connector (contact cavity must be filled!). The opposite male contact must be removed by means of a specially designed tool.

Removal-tool
for male
contacts
09 99 000 0133

Code pin
Gds A-D, A-E,
Gds A-F/FC
Gds A-FM,
Gds A-2F/FC,
Gds A-MH
09 04 000 9908

Removal-tool
for male
contacts
09 99 000 0038

Coding system without loss of contact

with code pin

Code pin
09 06 000 9950

Insertion tool
09 99 000 0103

At the position desired a hole has to be drilled at one of the marked points between the contacts-rows of the male connector (see also drawing). The code pin can then be inserted into the opposing bore of the female connector by means of an insertion-tool.

This coding system is at present only applicable for Gds A-D, Gds A-E, Gds A-F/FC and interface connectors I Gds A-F/FC.

Mounting example

shroud coding

Gds A-F/FC
Gds A-H, MH

Code key
09 06 001 9919
09 06 001 9918

Insert the code key into one of the keyways in the female connector. Break out the corresponding area of the male shroud. Connectors utilising this coding method can only be used at a minimum rack spacing of 20.32 mm.

Identification	Part No.	Drawing	Dimensions in mm

Coding system without loss of contact

To avoid accidental incorrect mating of adjacent connectors a coding system is required. The coding facility is an integral part of the connectors. The 12 coding pins, which are supplied under a separate part number, allow over 900 coding variations. These pins are locked into the male- and female connector.

Male and female connectors

Gds A-B, A-C, Gds A-D, A-E, Gds A-F/FC, Gds A-Q, A-R

These connectors with coding facility are supplied for types B, C, D, E, F/FC, Q and R to DIN 41612 and are available for all versions and variants. Please contact us.

on request

Code pins

12 on comb

09 02 000 9928

Mounting example

Identification	Part No.	Drawing	Dimensions in mm
HARTING crimping tool for individual contacts	09 99 000 0075	Wire gauge 0.14 – 0.25[1] mm² 0.25 – 0.5[2] mm²	

[1]Wire sizes 0.14–0.25 mm² can be terminated in crimp position designated 0.09–0.14 mm²
[2]Wire sizes 0.25–0.5 mm² can be terminated in crimp position designated 0.14–0.25 mm²

HARTING crimping tool for bandoliered contacts (500 pieces)	09 99 000 0248	Wire gauge 0.09 – 0.5 mm²	

HARTING semi-automatic crimping device			
Main drive, foot-operated 220 V/50 Hz	09 99 000 0246		
Crimping head for bandoliered contacts	09 99 000 0252	Wire gauge 0.09 – 0.5 mm²	
Reel holder for 5000 contacts	09 99 000 0158		
Locator	09 99 000 0099		

Automatic BK crimping machine			
Electric press	09 98 000 2000		
Crimp tool for female contacts	09 98 000 2004	Wire gauge 0.09 – 0.5 mm²	

Insertion tool	09 99 000 0100		
Removal tool	09 99 000 0101		

Insertion and removal see page 21

Tools Gds A-D, Gds A-E, Gds A-F/FC, Gds A-FM, Gds A-2F/FC, Gds A-MH

Identification	Part No.	Drawing
HARTING crimping tool for individual contacts		
	09 99 000 0075	Wire gauge 0.09 – 0.25 mm²
	09 99 000 0076	0.14 – 0.56 mm²
	09 99 000 0077	0.5 – 1.5 mm²
Crimping tool for individual contacts (Service tool)	09 99 000 0191	Wire gauge 0.14 – 1.5 mm²
HARTING crimping tool for bandoliered contacts (300 pieces)	09 99 000 0247	Wire gauge 0.09 – 0.25 mm²
	09 99 000 0119	0.14 – 0.56 mm²
	09 99 000 0120	0.5 – 1.5 mm²
HARTING semi-automatic crimping device		
Main drive, foot-operated 220 V/50 Hz	09 99 000 0246	
Crimping head for bandoliered contacts	09 99 000 0249	Wire gauge 0.09 – 0.25 mm²
	09 99 000 0250	0.14 – 0.56 mm²
	09 99 000 0251	0.5 – 1.5 mm²
Reel holder for 2500 contacts	09 99 000 0158	
Locator	09 99 000 0086	
Automatic BK crimping machine		
Electric press	09 98 000 2000	
Crimp tool for female contacts	09 98 000 2001	Wire gauge 0.09 – 0.25 mm²
	09 98 000 2002	0.14 – 0.56 mm²
	09 98 000 2003	0.5 – 1.5 mm²
Crimp tool for male contacts	09 98 000 2005	0.09 – 0.25 mm²
	09 98 000 2006	0.14 – 0.56 mm²
	09 98 000 2007	0.5 – 1.5 mm²
Insertion tool	09 99 000 0088	
Removal tool	09 99 000 0087	

Dimensions in mm

Locator is supplied with the tool

Insertion and removal see page 53