

ELECTRONIC PART

Number of contacts	24
Contact spacing (mm)	
Male connector	2.54 x 5.08
Female connector	5.08
Working current	6 A max.
see current carrying capacity chart	
Clearance	≧ 1.6 mm
Creepage	≧ 3 mm
Working voltage	according to the safety regulations of the equipment. Explanations page 6
The working voltage also depends on the clearance and creepage dimensions of the P.C. Board itself, and the associated wiring	
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 $\varnothing 0.8 + 0.3$ mm
Female connector	Wrap posts 1 x 1 mm diagonal 1.34–1.45 mm Solder pins for P.C.B. connections $\varnothing 0.8 + 0.3$ mm Crimp terminal 0.09–1.5 mm ²
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	15 A max.
see current carrying capacity chart	
Clearance	≧ 4.5 mm
Creepage	≧ 8.0 mm
Working voltage	according to the safety regulations of the equipment. Explanations page 6
The working voltage also depends on the clearance and creepage dimensions of the P.C. Board itself, and the associated wiring	
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 $\varnothing 1.6 + 0.1$ 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	- 65 °C + 125 °C
The higher temperature limit includes the local ambient and heating effect of the contacts under load	
Insertion and withdrawal force	≧ 85 N

Materials

Mouldings	Thermoplastic resin, glass-fibre filled
Contacts	Copper alloy

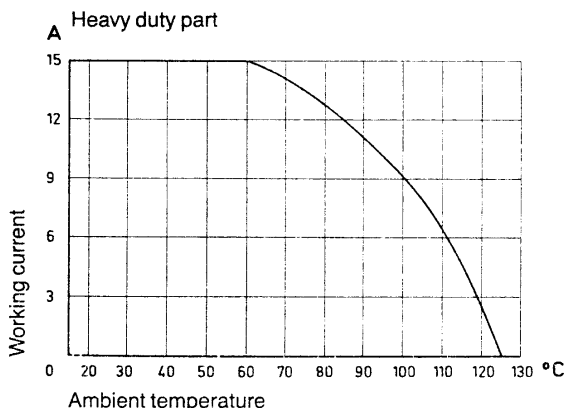
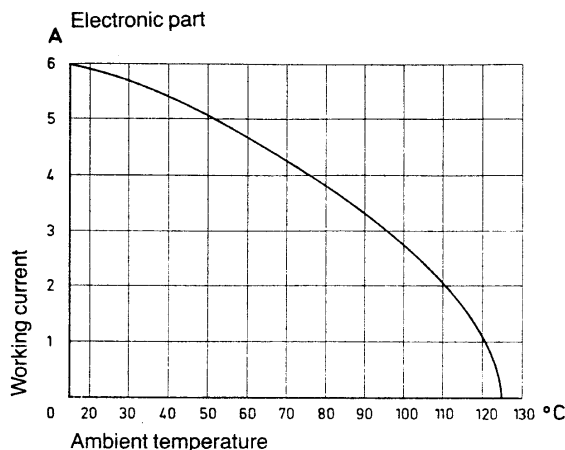
1) Explanations of performance levels page 10

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.

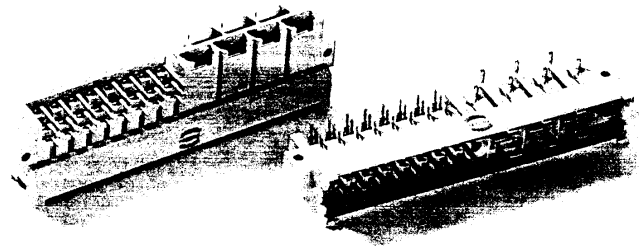


MH



Number of contacts

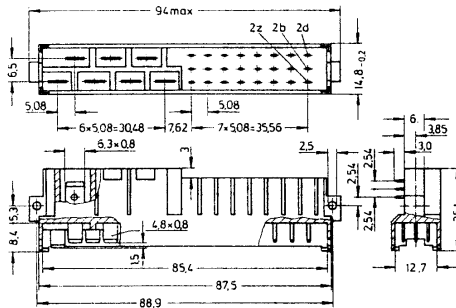
24+7



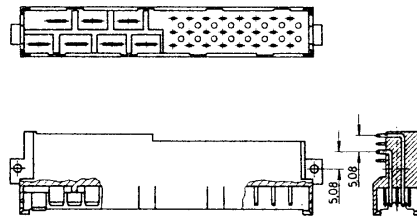
Male connectors

Identification	Number of contacts	Part No.	Performance levels according to DIN 41 612, explanations page 10
		3	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 z2 + z32)	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 z2 + z32)	24 + 7		09 06 131 6924

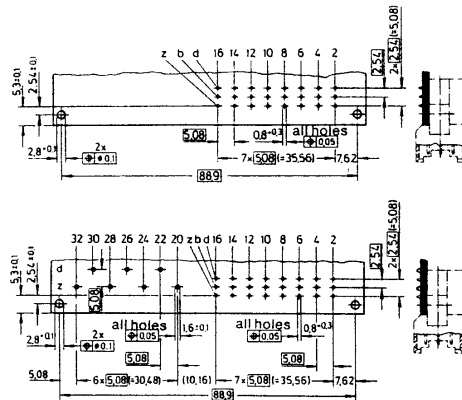
Faston terminal



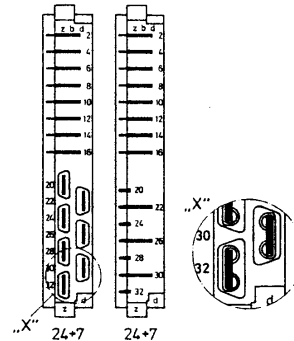
Angled solder pins



Board drillings



Contact arrangement View from termination side



Mating conditions page 10

Dimensions in mm

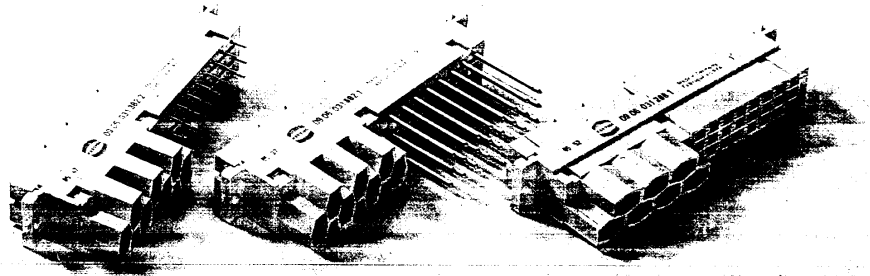
* Not normally kept in stock

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






Number of contacts

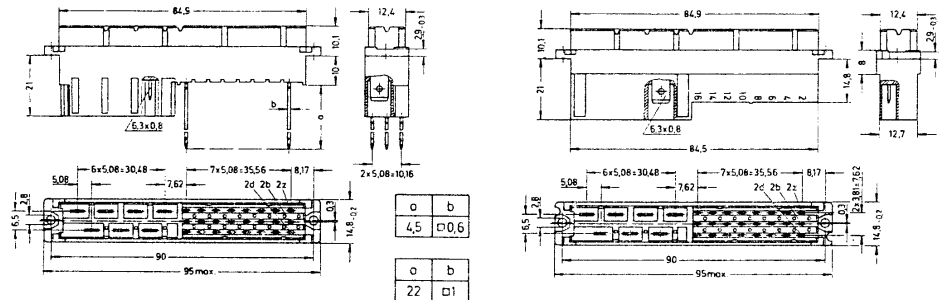
24+7



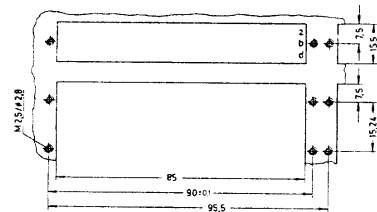
Female connectors

Identification	Number of contacts	Part No.	Performance levels according to DIN 41 612, explanations page 10	
		3	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

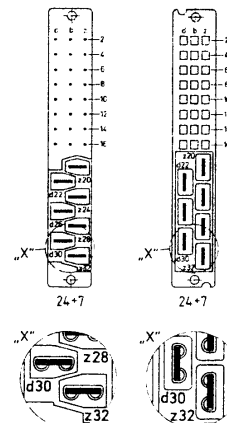


Panel cut out

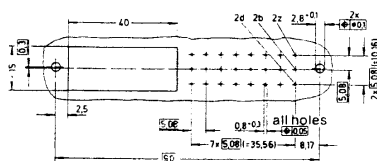


Contact arrangement

View from termination side



Board drillings



Shell housing for female connector with crimp contacts page 93

Dimensions in mm



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 \varnothing 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 \varnothing 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 level¹⁾

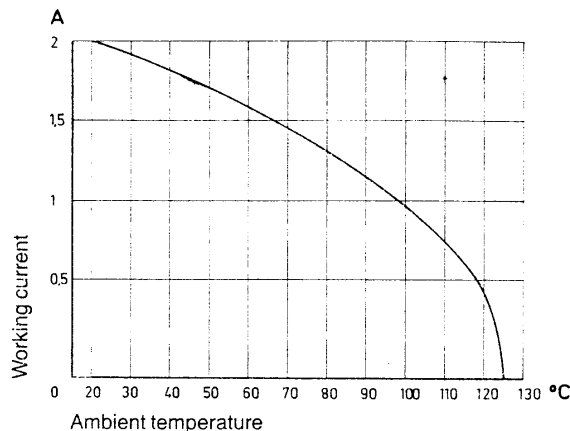
Termination zone: tinned

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.

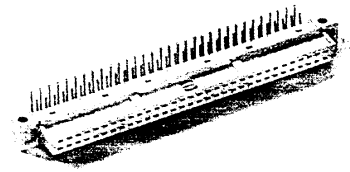


LM-version available on request

Mating conditions page 10
Coding systems page 88

Number of contacts

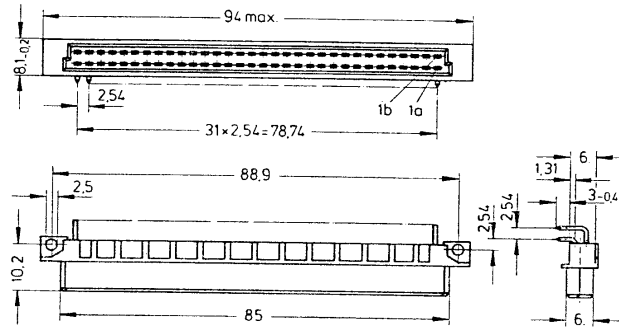
64, 32



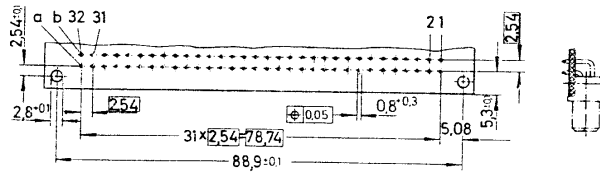
Female connectors

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		09 72 164 7801	09 72 164 6801	09 72 164 2801*
	32		09 72 132 7801	09 72 132 6801	09 72 132 2801*
	32		09 72 132 7811	09 72 132 6811	09 72 132 2811*

Dimensions



Board drillings

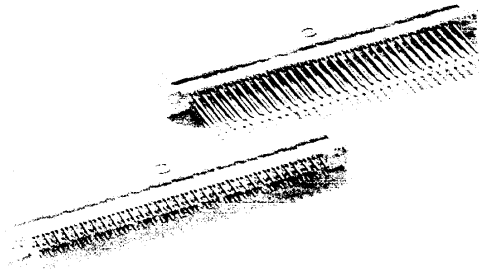


Q



Number of contacts

64, 32



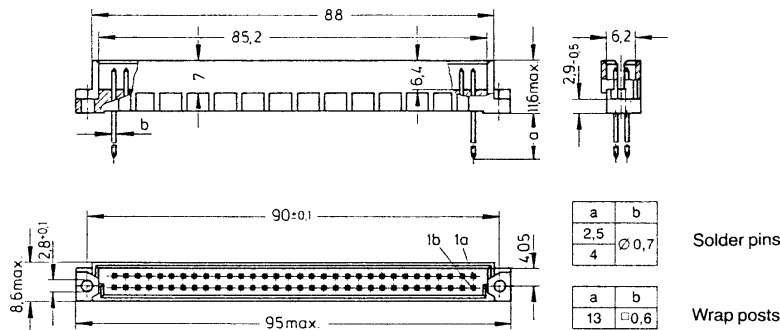
Male connectors

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+2A		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*
	64		09 72 164 7903	09 72 164 6903	09 72 164 2903*
	62+2A		09 72 164 7953	09 72 164 6953	09 72 164 2953*
Male connector with solder pins 4.0 mm	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*
	64		09 72 164 7907	09 72 164 6907	09 72 164 2907*
	62+2A		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*

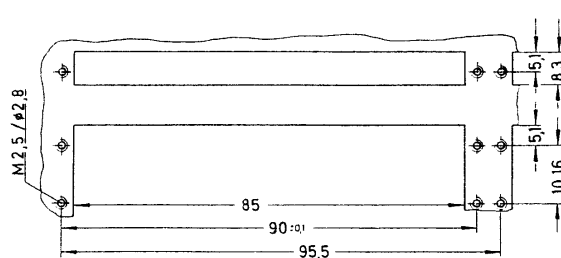
Male connector with press-in terminations

Part Nos. and versions see "har·press" catalogue

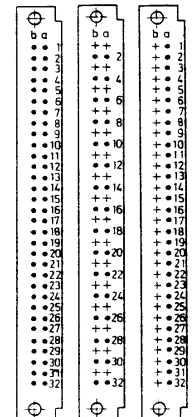
Dimensions



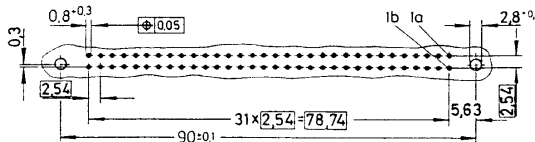
Panel cut out



Contact arrangement View from termination side



Board drillings



Mating conditions page 10
Coding information page 88

64 32 32 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

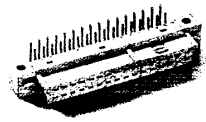
* Not normally kept in stock

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



Number of contacts

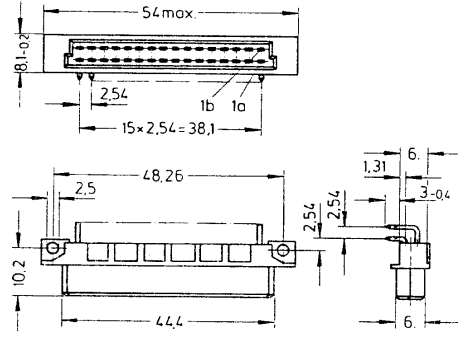
32, 16



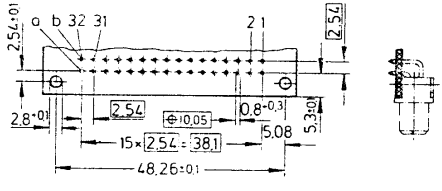
Female connectors

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	32		09 27 132 7801	09 27 132 6801	09 27 132 2801*
	16		09 27 116 7801	09 27 116 6801	09 27 116 2801*
	16		09 27 116 7811	09 27 116 6811	09 27 116 2811*

Dimensions



Board drillings



20

82

Dimensions in mm

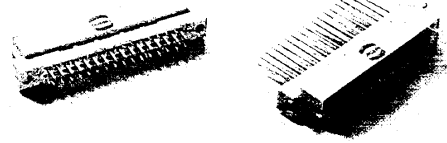
* Not normally kept in stock

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



Number of contacts

32, 16



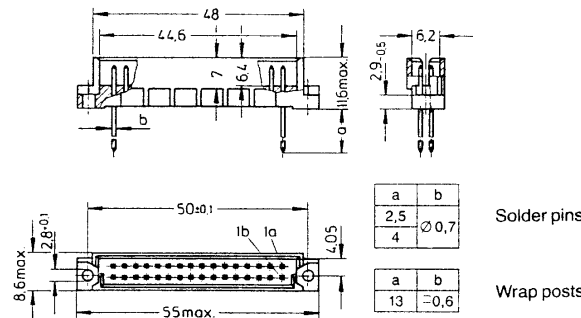
Male connectors

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*

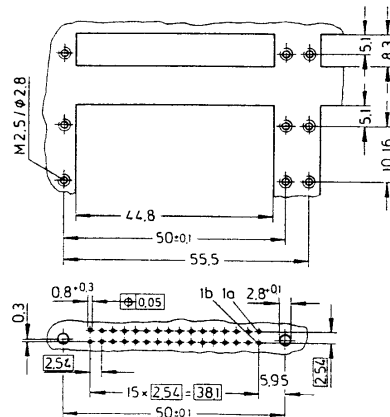
Male connector with press-in terminations

Part Nos. and versions see "har·press" catalogue

Dimensions

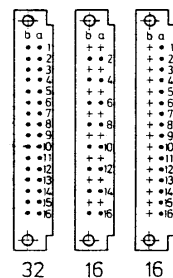


Panel cut out



Contact arrangement

View from termination side



Board drillings

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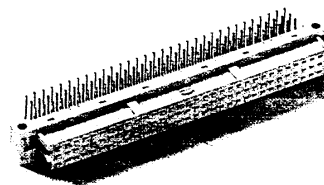
Dimensions in mm

* Male connectors with 2 first mating contacts [(0.8 mm) pos. a 1 and a 16]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock

Number of contacts

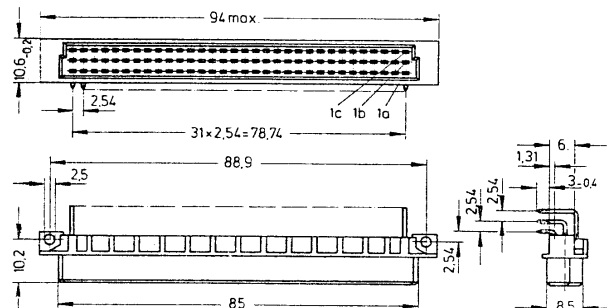
96, 64, 32



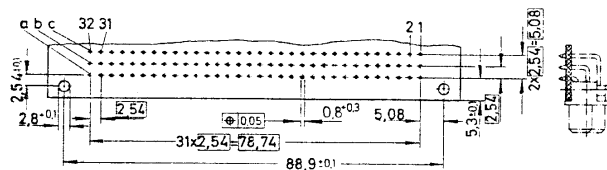
Female connectors

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		09 73 196 7801	09 73 196 6801	09 73 196 2801*
	64		09 73 164 7801	09 73 164 6801	09 73 164 2801*
	32		09 73 132 7801	09 73 132 6801	09 73 132 2801*
			09 73 132 7811	09 73 132 6811	09 73 132 2811*

Dimensions



Board drillings



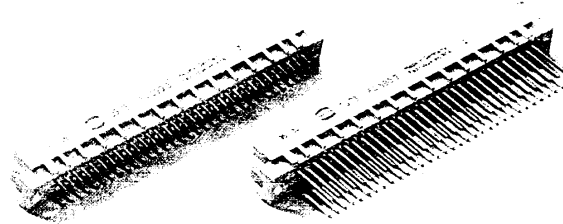
R

Gds A-R DIN 41 612 · Type R



Number of contacts

96, 64, 32



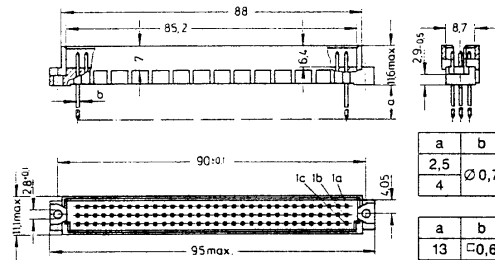
Male connectors

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	96		09 73 196 7902	09 73 196 6902	09 73 196 2902*
	94 + 2 ^A		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*
	32		09 73 132 7913	09 73 132 6913	09 73 132 2913*
Male connector with solder pins 4.0 mm	96		09 73 196 7903	09 73 196 6903	09 73 196 2903*
	94 + 2 ^A		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*
	32		09 73 132 7917	09 73 132 6917	09 73 132 2917*
Male connector with wrap posts 13 mm	96		09 73 196 7907	09 73 196 6907	09 73 196 2907*
	94 + 2 ^A		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*
	32		09 73 132 7917	09 73 132 6917	09 73 132 2917*

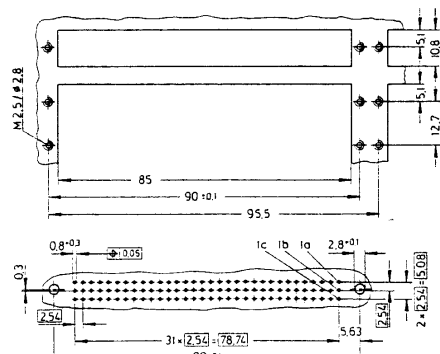
Male connector with press-in terminations

Part Nos. and versions see "har · press" catalogue

Dimensions



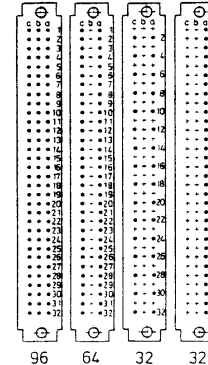
Panel cut out



Board drillings

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Contact arrangement View from termination side



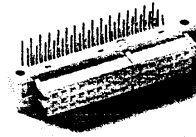
Dimensions in mm

* Male connectors with 2 first mating contacts [(0.8 mm) pos. a 1 and a32]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock

Number of contacts

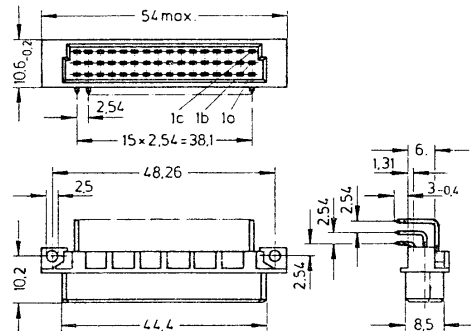
48, 32, 16



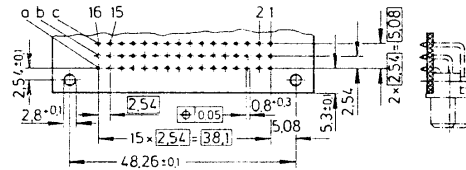
Female connectors

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	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*

Dimensions



Board drillings



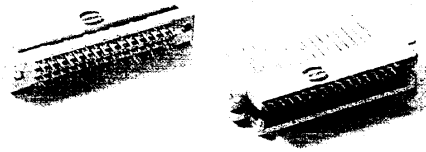
Dimensions in mm

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



Number of contacts

48, 32, 16



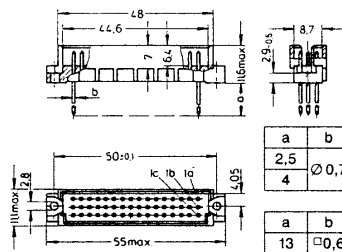
Male connectors

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*
	16		09 28 116 7913	09 28 116 6913	09 28 116 2913*
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*
	16		09 28 116 7917	09 28 116 6917	09 28 116 2917*
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*
	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

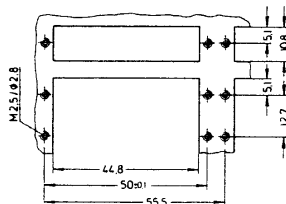
Dimensions



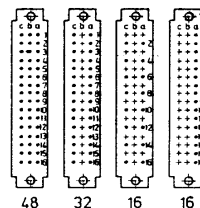
Solder pins

Wrap posts

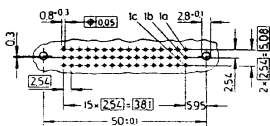
Panel cut out



Contact arrangement View from termination side



Board drillings



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Coding information page 88

Dimensions in mm

▲ Male connectors with 2 first mating contacts [(0.8 mm) pos. a 1 and a 16]*
Male connectors with contacts in other positions/other rows on request

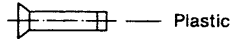
* Not normally kept in stock

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

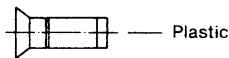
To avoid accidental incorrect mating of adjacent connectors a coding system is required. Coding is effected by means of a code pin to be inserted into the selected chamber of the female connector (contact cavity must be filled!). The opposite male contact must be removed by means of a specially designed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



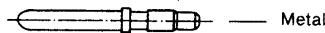
Removal-tool for male contacts
09 99 000 0038



Coding system without loss of contact

with code pin

Code pin
09 06 000 9950



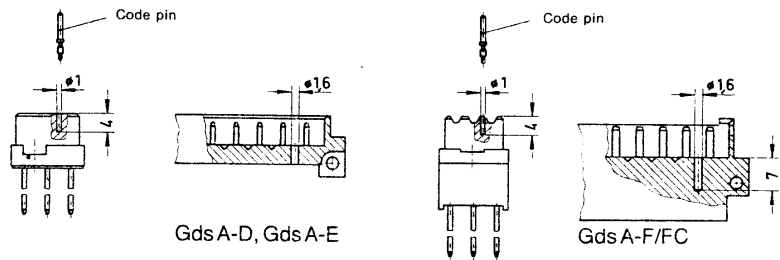
Insertion tool
09 99 000 0103



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

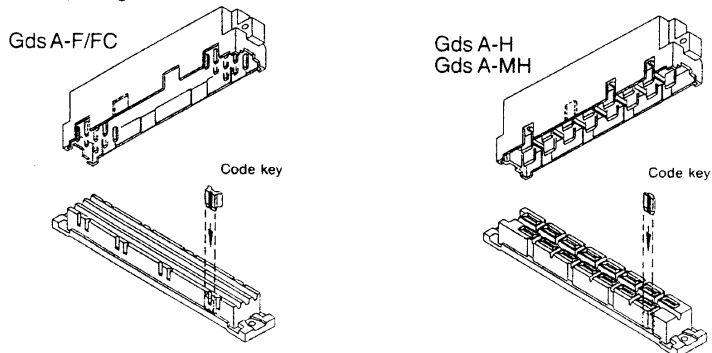


shroud coding

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

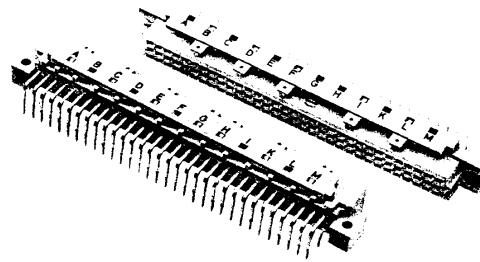
To avoid accidental incorrect mating of adjacent connectors a coding system is required. The coding facility is an integral part of the connectors. The 12 coding pins, which are supplied under a separate part number, allow over 900 coding variations. These pins are locked into the male- and female connector.

Male and
female
connectors

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.

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

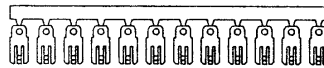
on request



Code pins

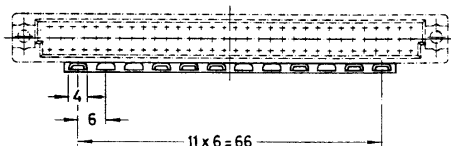
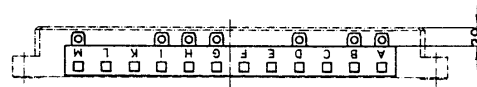
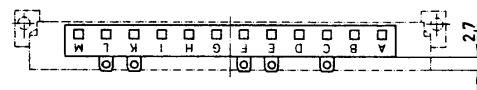
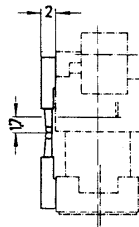
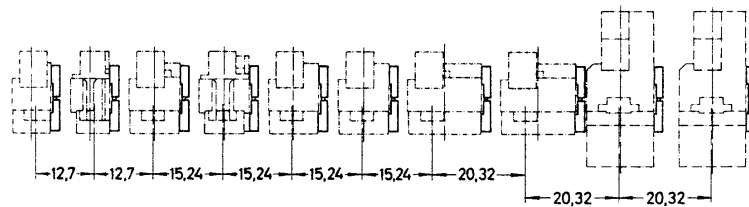
12 on
comb

09 02 000 9928



Mounting example

B Q C R D D E E F/FC F/FC

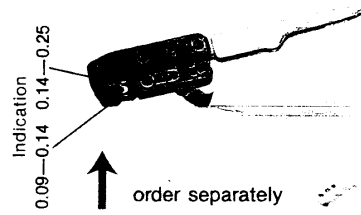


Identification Part No. Drawing Dimensions in mm

HARTING
crimping tool
for individual contacts

09 99 000 0075

Wire gauge
0.14 – 0.25¹⁾ mm²
0.25 – 0.5²⁾ mm²

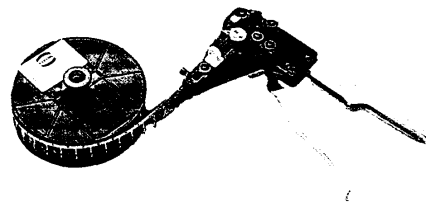


¹⁾Wire sizes 0.14–0.25 mm² can be terminated in crimp position designated 0.09–0.14 mm²
²⁾Wire sizes 0.25–0.5 mm² can be terminated in crimp position designated 0.14–0.25 mm²

HARTING
crimping tool
for banded 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

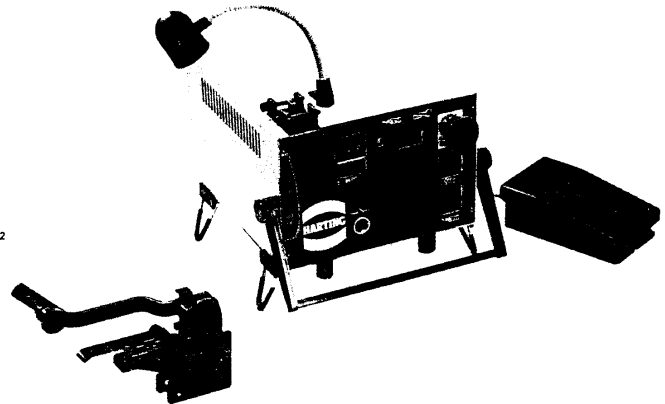
Crimping head for
banded contacts

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

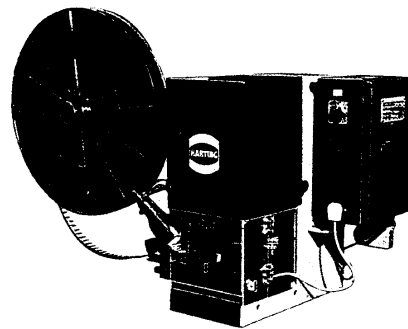
Electric press

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



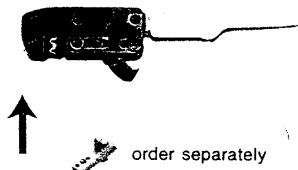
Insertion and removal see page 21

Identification Part No. Drawing Dimensions in mm

HARTING
crimping tool
for individual contacts

09 99 000 0075
09 99 000 0076
09 99 000 0077

Wire gauge
0.09 – 0.25 mm²
0.14 – 0.56 mm²
0.5 – 1.5 mm²



Crimping tool
for individual contacts
(Service tool)

09 99 000 0191

Wire gauge
0.14 – 1.5 mm²

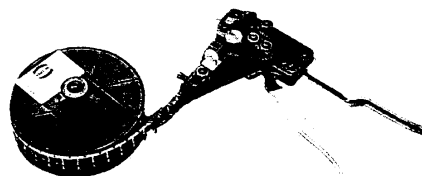


Locator is supplied with the tool

HARTING
crimping tool
for bandoliered
contacts (300 pieces)

09 99 000 0247
09 99 000 0119
09 99 000 0120

Wire gauge
0.09 – 0.25 mm²
0.14 – 0.56 mm²
0.5 – 1.5 mm²



HARTING
semi-automatic
crimping device

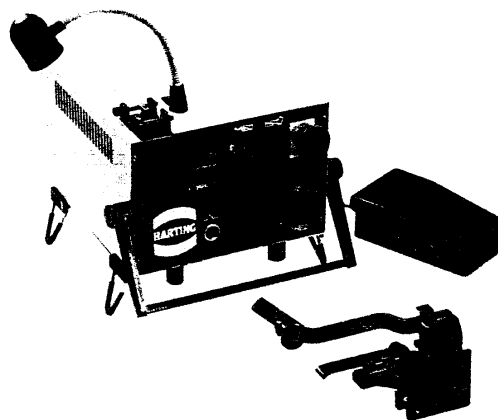
Main drive,
foot-operated
220 V/50 Hz

09 99 000 0246

Crimping head for
bandoliered contacts

09 99 000 0249
09 99 000 0250
09 99 000 0251

Wire gauge
0.09 – 0.25 mm²
0.14 – 0.56 mm²
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

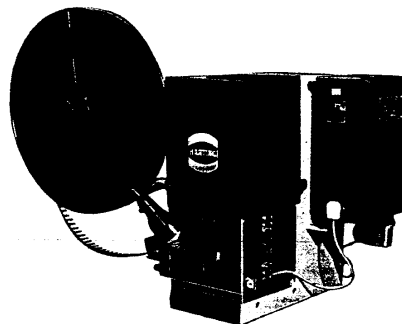
09 98 000 2001
09 98 000 2002
09 98 000 2003

Wire gauge
0.09 – 0.25 mm²
0.14 – 0.56 mm²
0.5 – 1.5 mm²

Crimp tool
for male contacts

09 98 000 2005
09 98 000 2006
09 98 000 2007

0.09 – 0.25 mm²
0.14 – 0.56 mm²
0.5 – 1.5 mm²



Insertion tool

09 99 000 0088



Removal tool

09 99 000 0087



Insertion and removal see page 53