

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 Ø 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 Ø 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 Ø 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

≥ 10¹² 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

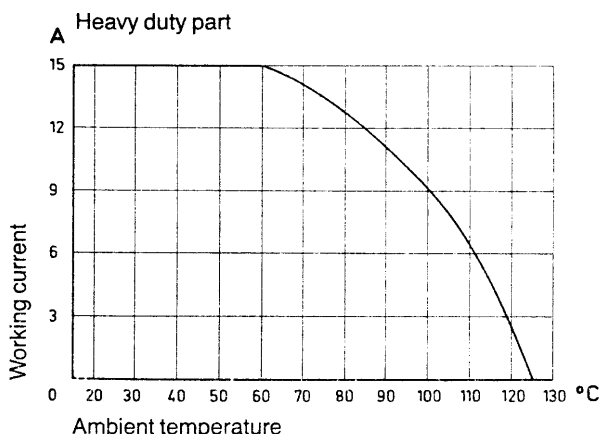
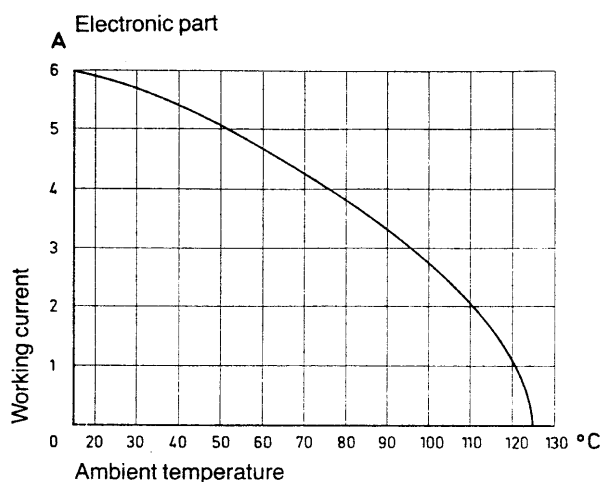
Thermoplastic resin, glass-fibre filled
Copper alloy

Contacts

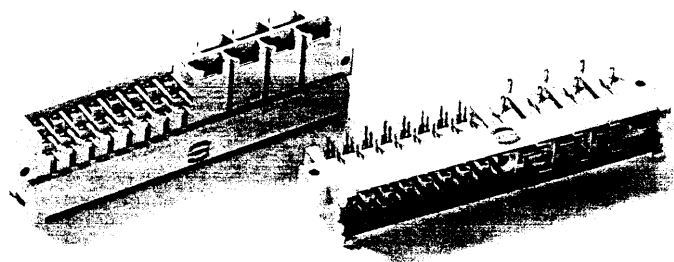
Current carrying capacity

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

$24 + 7$ 

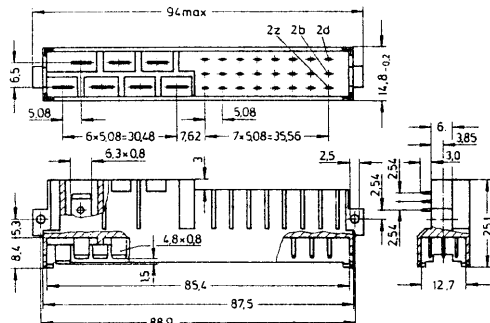
Identification	Number of contacts	Part No.	Performance levels according to DIN 41 612, explanations page 10
		3	2
			1

2 first mating contacts
(position $z_2 + z_{32}$)

$$24 + 7$$

Performance levels according to DIN 41 612, explanations page 10

09 06 131 6924



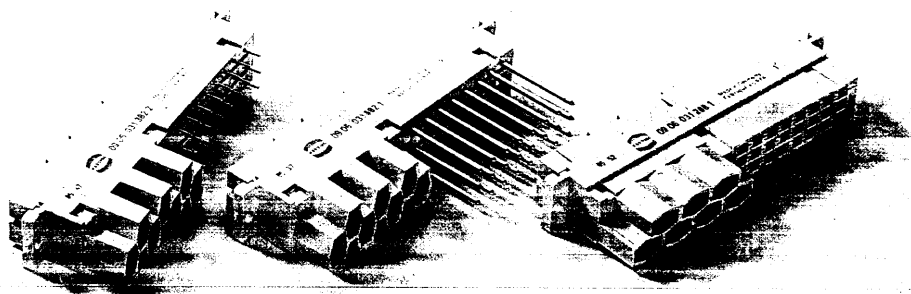
Dimensions in mm

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



Number of contacts

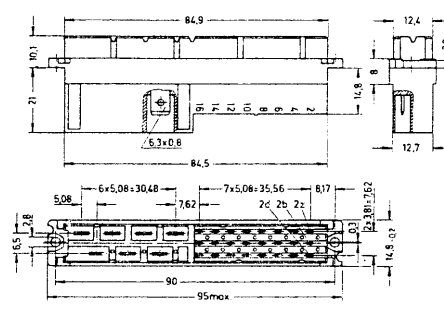
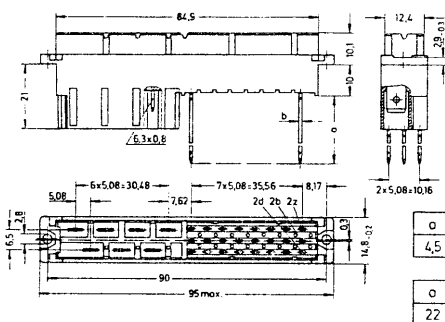
24+7



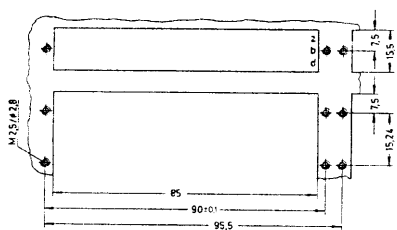
Female connectors

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

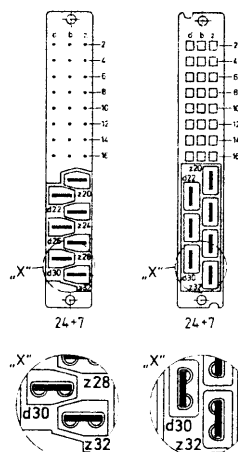


Panel cut out

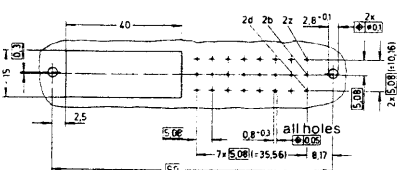


Contact arrangement

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 Ø 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 Ø 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

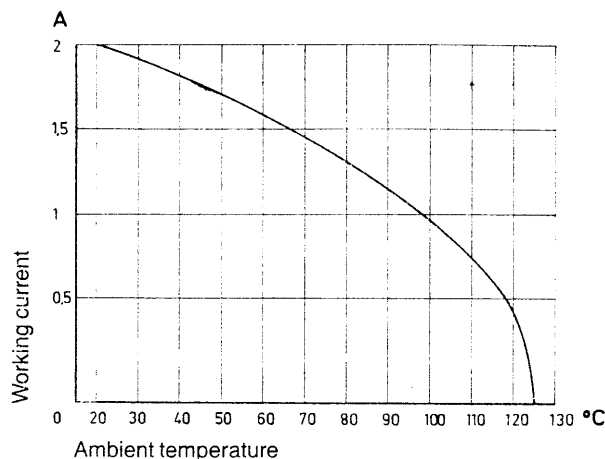
Contact zone: selectively gold plated
according to performance level¹⁾
Termination zone: tinned

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.

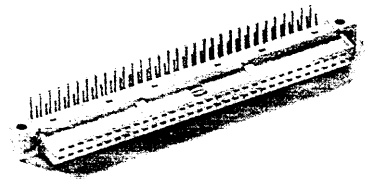


LM-version available on request

Mating conditions page 10
Coding systems page 88

Number of contacts

64, 32

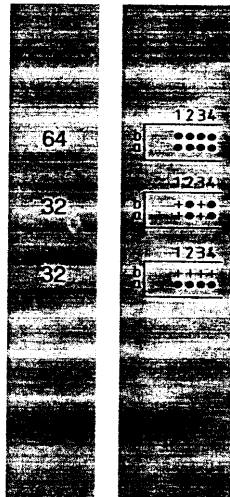


Female connectors

Identification

Female connector
with angled
solder pins

Number
of contacts Contact
arrangement



Part No. Performance levels according to DIN 41 612, explanations page 10
3 2 1

09 72 164 7801

09 72 164 6801

09 72 164 2801*

09 72 132 7801

09 72 132 6801

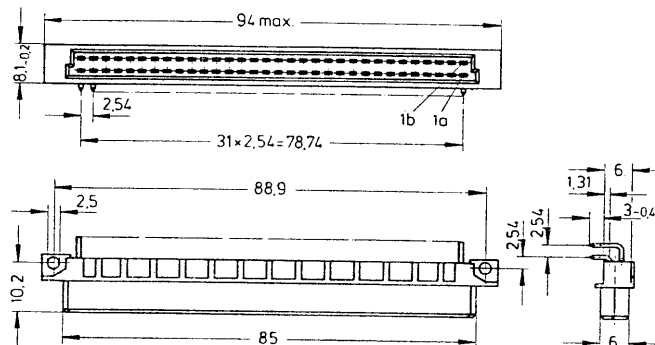
09 72 132 2801*

09 72 132 7811

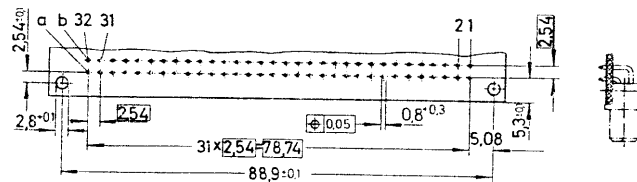
09 72 132 6811

09 72 132 2811*

Dimensions



Board drillings

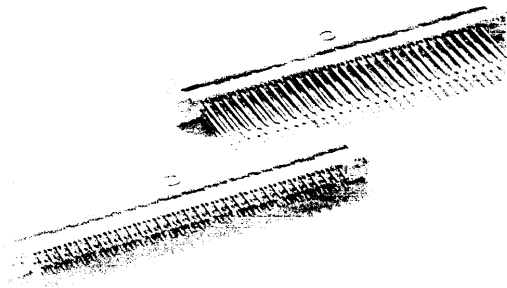


Dimensions in mm

* Not normally kept in stock

Number of contacts

64, 32



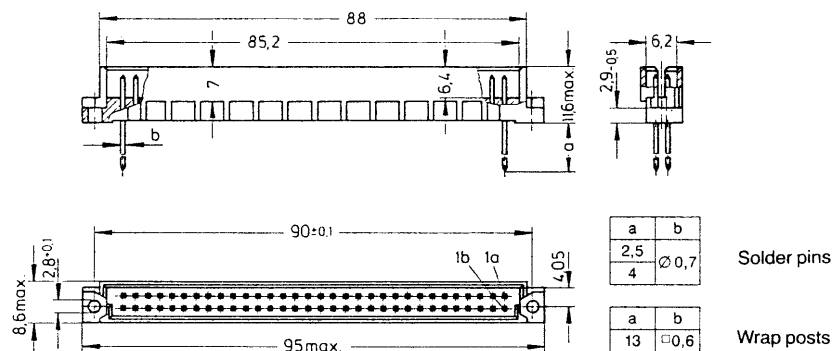
Male connectors

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*	
Male connector with solder pins 4.0 mm	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*	
	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+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*	

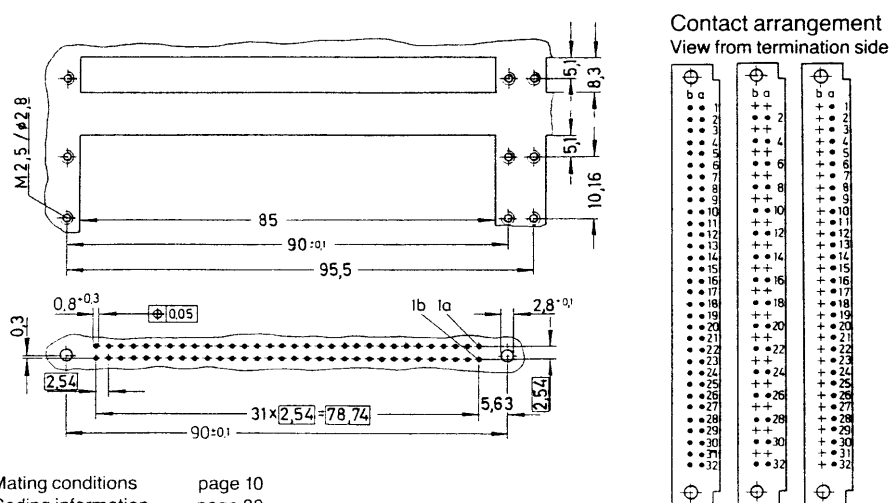
Male connector with press-in terminations

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

Dimensions



Panel cut out



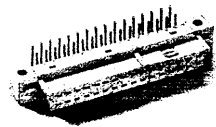
Board drillings

Mating conditions page 10
Coding information page 88

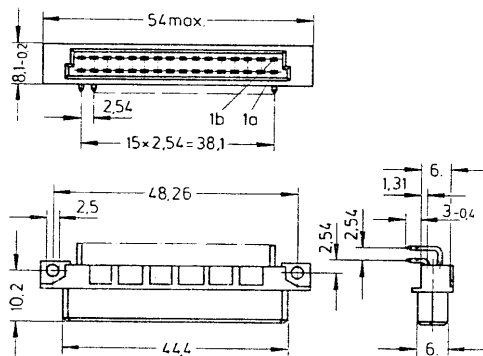
▲ Male connectors with 2 first mating contacts [(0.8 mm) pos. a 1 and a 32]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock

32, 16



Dimensions



Technical drawing of a shaft with dimensions and labels. The shaft has a total length of 48.26 ± 0.1. It features a central section with a diameter of 25.4 and a length of 15 × 25.4 ± 38.1. The shaft is supported by bearings, with a bearing housing diameter of 31 and a bearing inner diameter of 32. The shaft has a keyway with a width of 10.05 and a depth of 0.8 ± 0.3. The shaft is labeled with 'a', 'b', '31', '32', '2', '1', and '2.54'. The shaft is shown in a cross-section view with a keyway and a key. The shaft is also shown in a side view with a keyway and a key.

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



Number of contacts

32, 16



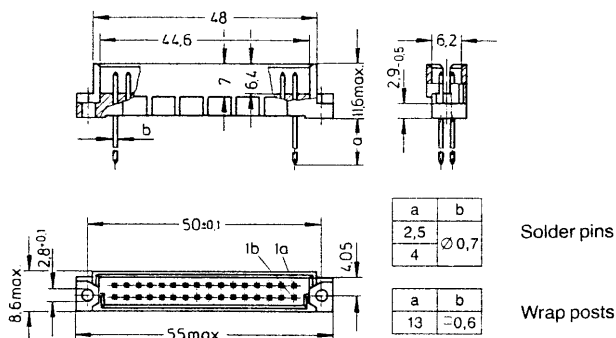
Male connectors

Identification	Number of contacts	Contact arrangement	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*
			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*
			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*
			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*
			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*
			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*
			09 27 116 7917	09 27 116 6917	09 27 116 2917*

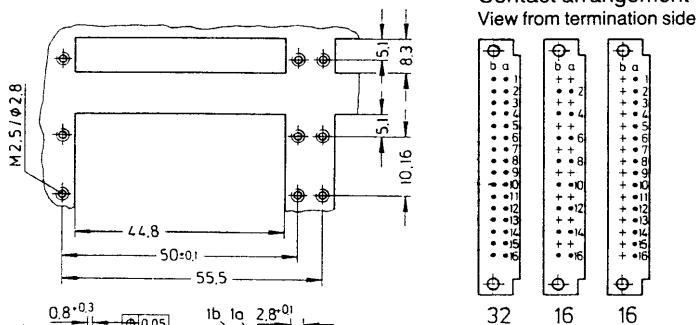
Male connector with press-in terminations

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

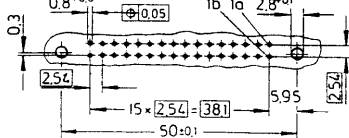
Dimensions



Panel cut out



Board drillings



Mating conditions
Coding information

page 10
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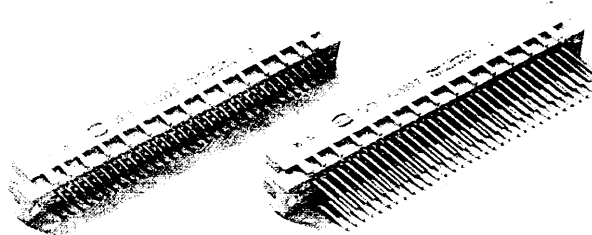
Dimensions in mm

▲ 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



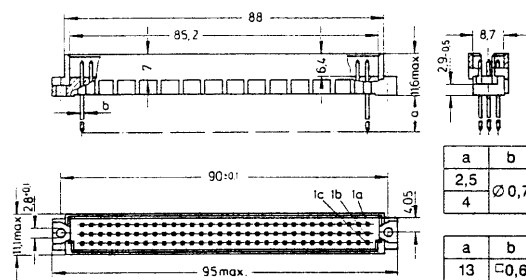
Male connectors

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 [▲]		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	<u>09 73 196 6903</u>	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	<u>09 73 132 6903</u>	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

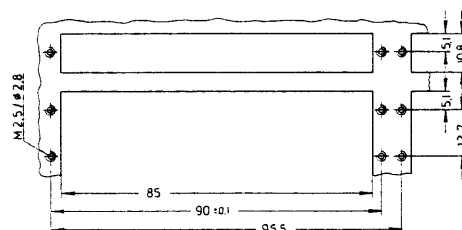
Dimensions



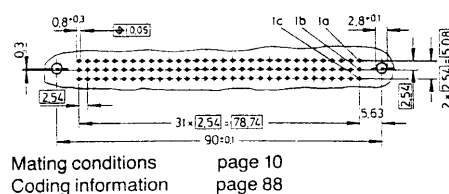
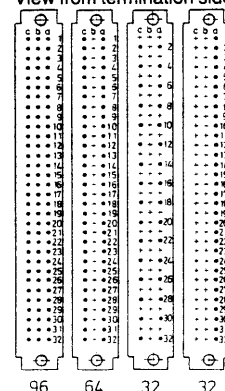
Solder pins

Wrap posts

Panel cut out



Board drillings

Contact arrangement
View from termination side

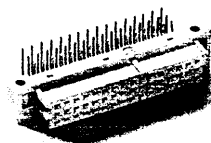
Dimensions in mm

▲ Male connectors with 2 first mating contacts [(0.8 mm) pos. a 1 and a 32]*
Male connectors with contacts in other positions/other rows on request

* Not normally kept in stock

Number of contacts

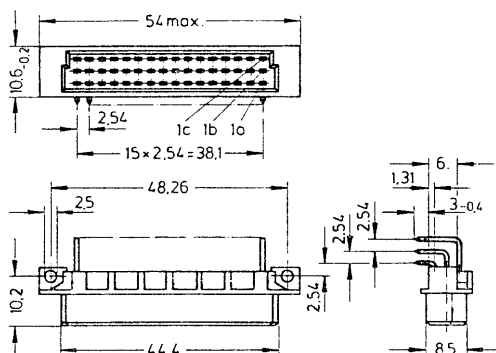
48, 32, 16



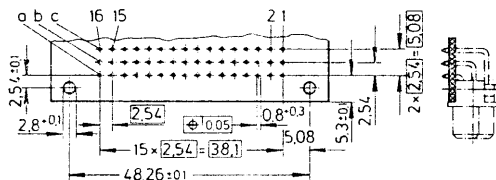
Female connectors

Identification	Number of contacts	Contact arrangement	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

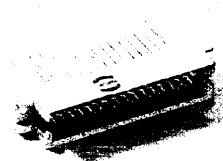
* Not normally kept in stock

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



Number of contacts

48, 32, 16



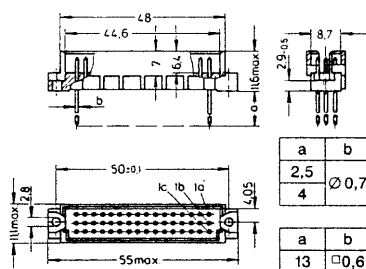
Male connectors

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 + 2A		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 + 2A		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 + 2A		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

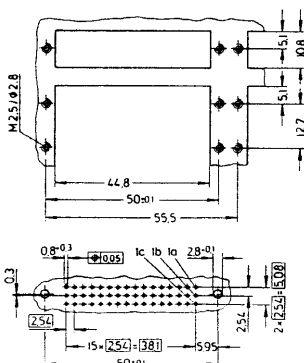
Dimensions



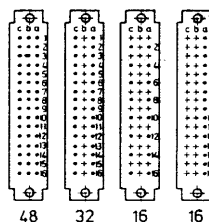
Solder pins

Wrap posts

Panel cut out



Contact arrangement View from termination side



Board drillings

Mating conditions Coding information

page 10 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

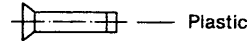
* Not normally kept in stock

Identification	Part No.	Drawing	Dimensions in mm
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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

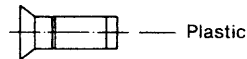
To avoid accidental incorrect mating of adjacent connectors a coding system is required. Coding is effected by means of a code pin to be inserted into the selected chamber of the female connector (contact cavity must be filled!). The opposite male contact must be removed by means of a specially designed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

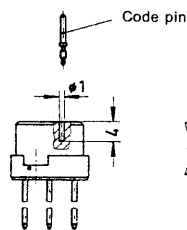


Insertion tool
09 99 000 0103

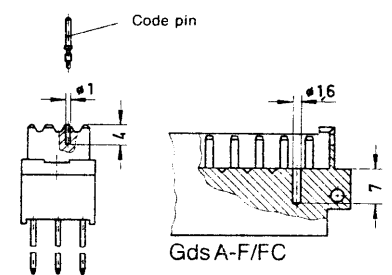
At the position desired a hole has to be drilled at one of the marked points between the contacts-rows of the male connector (see also drawing). The code pin can then be inserted into the opposing bore of the female connector by means of an insertion-tool.

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



Gds A-D, Gds A-E



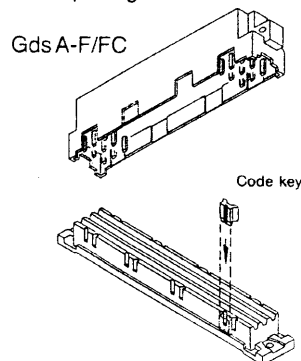
Gds A-F/FC

shroud coding

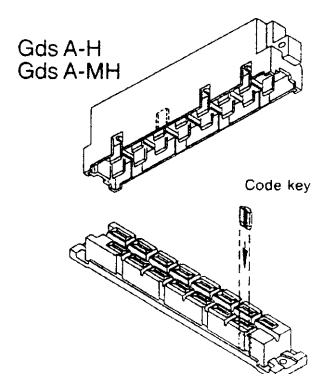
Gds A-F/FC
Gds A-H, MH

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.



Gds A-F/FC



Gds A-H
Gds A-MH

Identification

Part No.

Drawing

Dimensions in mm

Coding system
without loss of
contact

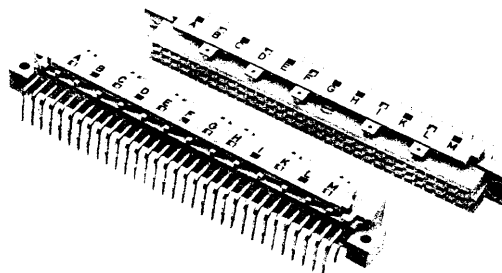
To avoid accidental incorrect mating of adjacent connectors a coding system is required. The coding facility is an integral part of the connectors. The 12 coding pins, which are supplied under a separate part number, allow over 900 coding variations. These pins are locked into the male- and female connector.

Male and
female
connectors

These connectors with coding facility are supplied for types B, C, D, E, F/FC, Q and R to DIN 41 612 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

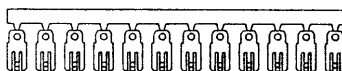
on request



Code pins

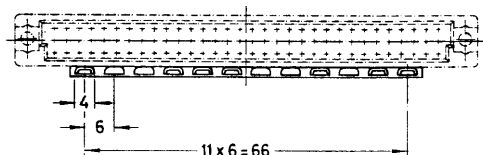
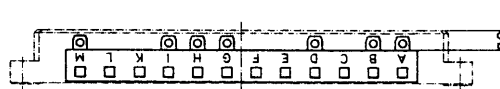
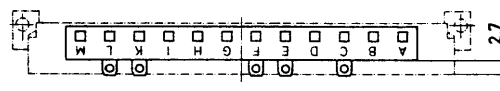
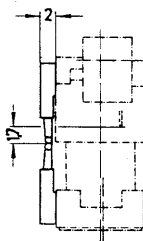
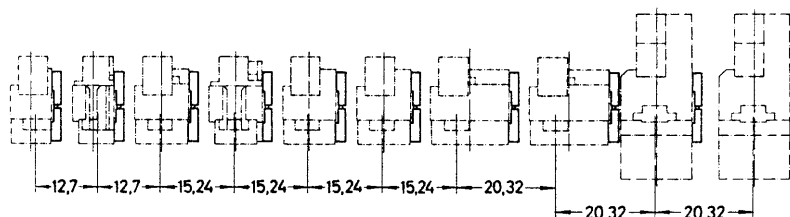
12 on
comb

09 02 000 9928



Mounting example

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

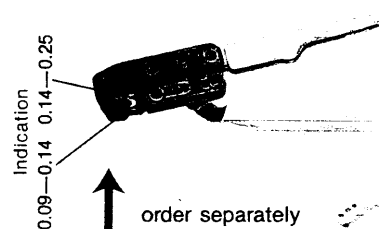


Identification	Part No.	Drawing	Dimensions in mm
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HARTING
crimping tool
for individual contacts

09 99 000 0075

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

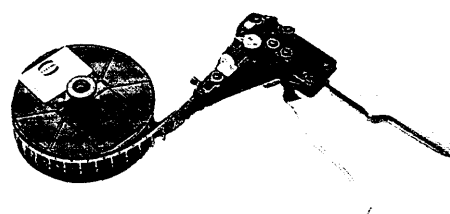


¹⁾Wire sizes 0.14–0.25 mm² can be terminated in crimp position designated 0.09–0.14 mm²
²⁾Wire sizes 0.25–0.5 mm² can be terminated in crimp position designated 0.14–0.25 mm²

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

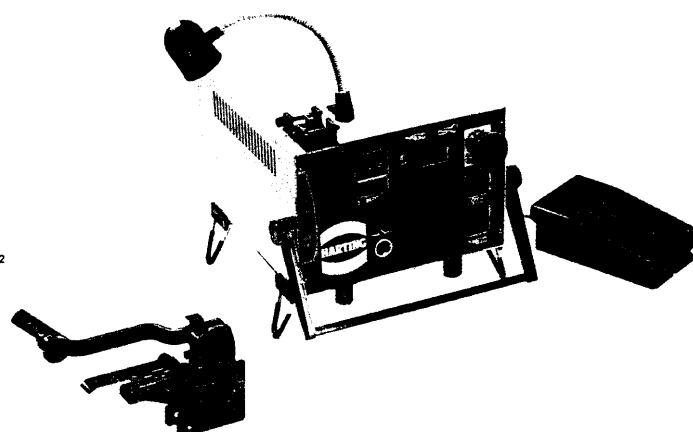
Crimping head for
banded contacts

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

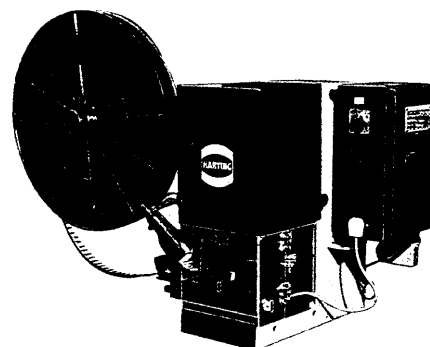
Electric press

09 98 000 2000

Crimp tool
for female contacts

09 98 000 2004

Wire gauge
0.09 – 0.5 mm²



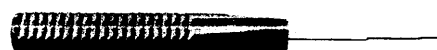
Insertion tool

09 99 000 0100



Removal tool

09 99 000 0101



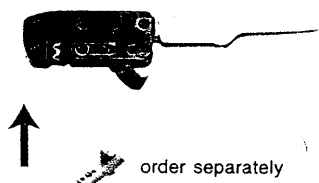
Insertion and removal see page 21

Identification Part No. Drawing Dimensions in mm

HARTING crimping tool

for individual contacts

09 99 000 0075	Wire gauge
09 99 000 0076	0.09 – 0.25 mm ²
09 99 000 0077	0.14 – 0.56 mm ²
	0.5 – 1.5 mm ²



Crimping tool

for individual contacts
(Service tool)

09 99 000 0191	Wire gauge
	0.14 – 1.5 mm ²

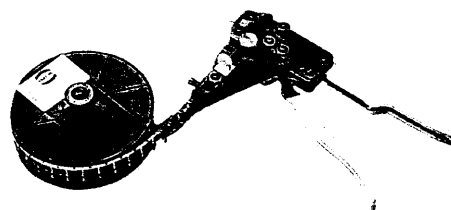


Locator is supplied with the tool

HARTING crimping tool

for bandoliered
contacts (300 pieces)

09 99 000 0247	Wire gauge
09 99 000 0119	0.09 – 0.25 mm ²
09 99 000 0120	0.14 – 0.56 mm ²
	0.5 – 1.5 mm ²



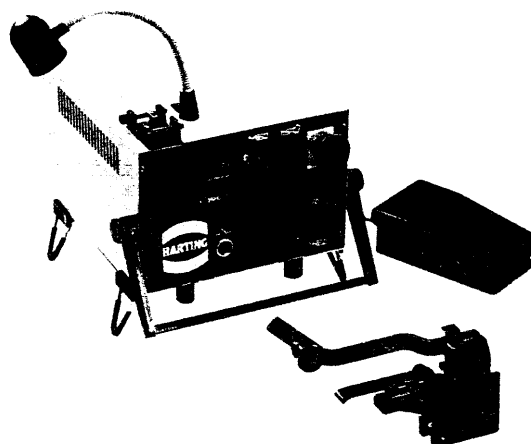
HARTING semi-automatic crimping device

Main drive,
foot-operated
220 V/50 Hz

09 99 000 0246

Crimping head for
bandoliered contacts

09 99 000 0249	Wire gauge
09 99 000 0250	0.09 – 0.25 mm ²
09 99 000 0251	0.14 – 0.56 mm ²
	0.5 – 1.5 mm ²



Reel holder
for 2500
contacts

09 99 000 0158

Locator

09 99 000 0086



Automatic BK crimping machine Electric press

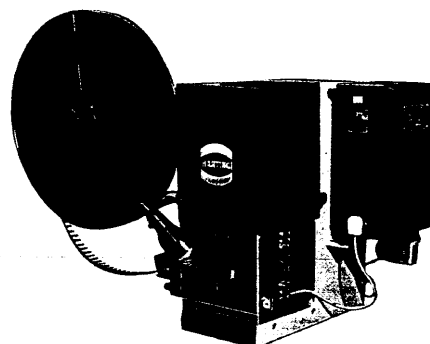
09 98 000 2000

Crimp tool
for female contacts

09 98 000 2001	Wire gauge
09 98 000 2002	0.09 – 0.25 mm ²
09 98 000 2003	0.14 – 0.56 mm ²
	0.5 – 1.5 mm ²

Crimp tool
for male contacts

09 98 000 2005	0.09 – 0.25 mm ²
09 98 000 2006	0.14 – 0.56 mm ²
09 98 000 2007	0.5 – 1.5 mm ²



Insertion tool

09 99 000 0088



Removal tool

09 99 000 0087



Insertion and removal see page 53