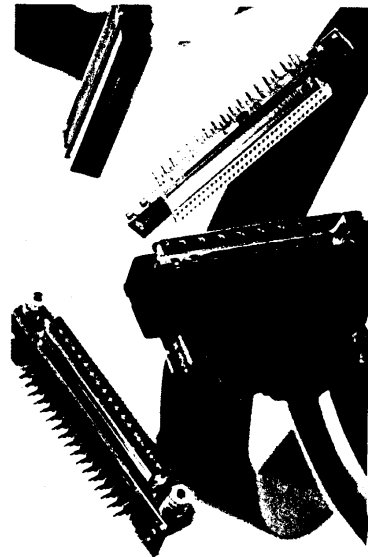


854-281
854-293
854-300
854-311
854-323
854-335
854-001
854-013
854-025
854-037
854-049
854-050
854-372
854-384
854-396
854-406
857-853
857-865



harmik[®]
half pitch connector range



Certified according to DIN EN ISO 9001
in design/development, production,
installation and servicing

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Pin and Socket

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Male and female connectors

Solder pins, straight

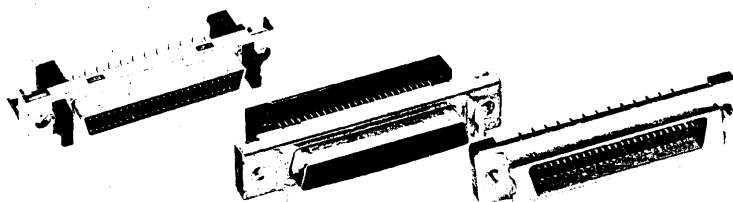
Solder pins, right angled

Press-in straight

IDC flat cable

IDC discrete wire

Solder cup



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Bellows

Technical characteristics

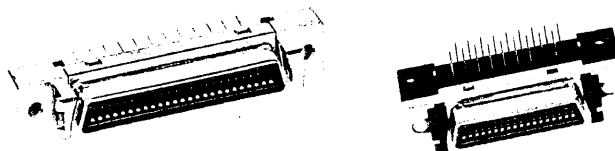
Male and female connectors

Solder pins, straight

Solder pins, right angled

IDC discrete wire

Solder cup

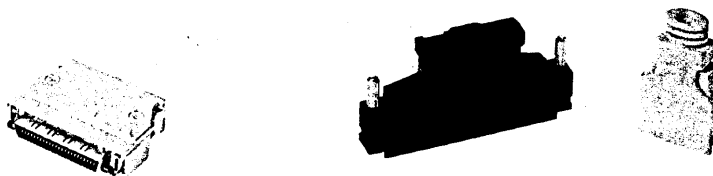


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Technical characteristics

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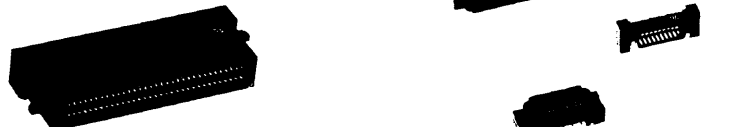
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Solder pins, straight



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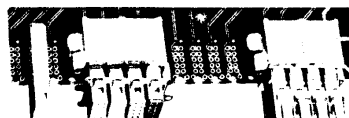
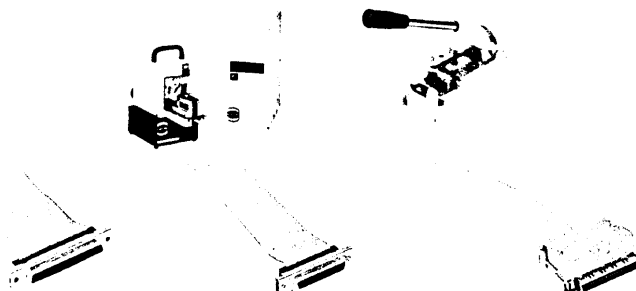
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The best connections world-wide – connect with quality – specify HARTING

HARTING was founded in 1945 and is 100 % privately owned.

Approximately 2,000 people are employed worldwide including 150 engineers and more than 100 sales engineers who provide the daily interface with our customers.

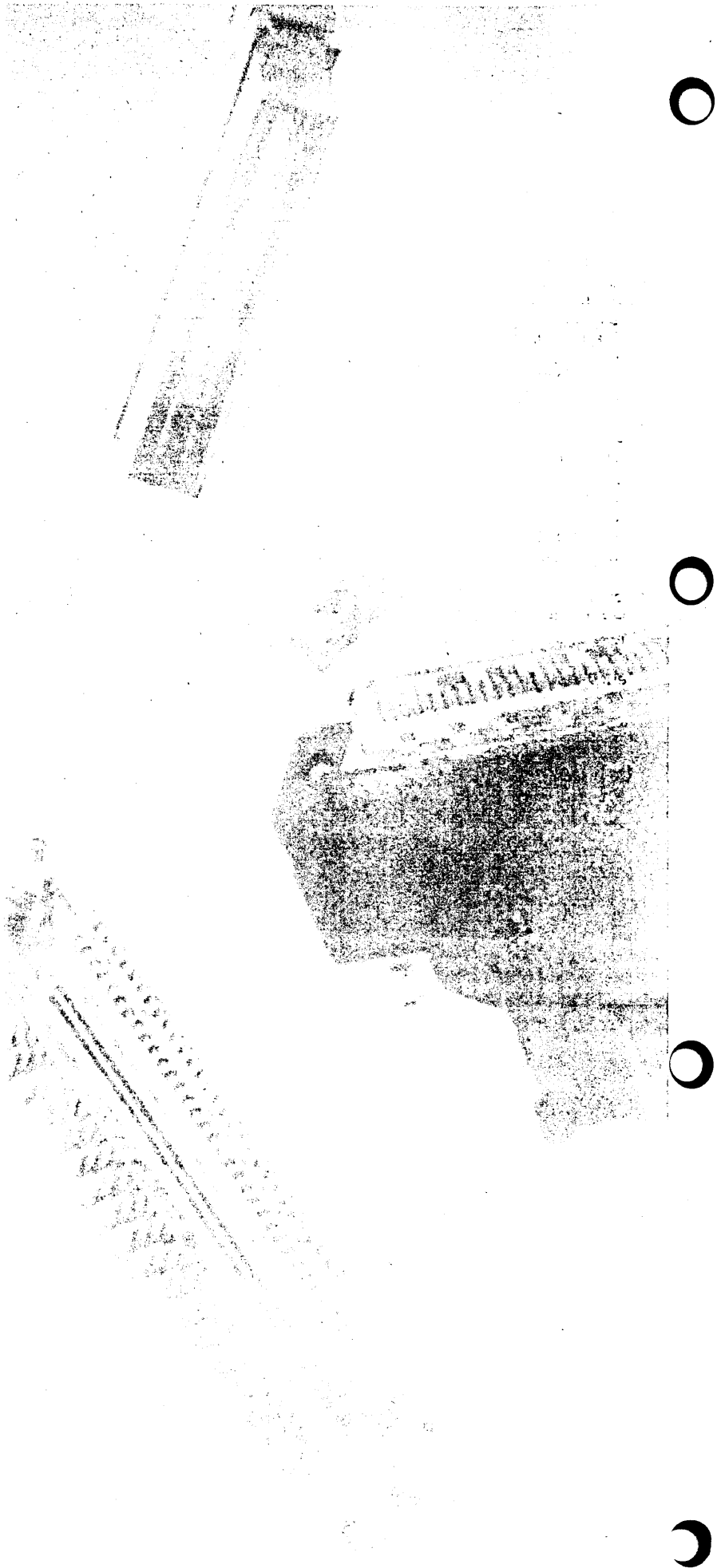
HARTING with its 23 subsidiaries in Europe, America and Asia is today one of the world's leading connector manufacturers.

State of the art CAD-Systems are used both in the R & D department and the tool making department in order to bring new products to the market in the most efficient way.

It is HARTING's philosophy that the target of permanent zero defect production is only achievable by the integration of fully automatic in-line inspection processes. The implementation of the above quality philosophy and associated processes are documented according to DIN EN ISO 9001 in the Quality Assurance Manual. In total approximately 60 quality control personnel are employed. The majority of these engineers and technicians are trained and certified by the German (DCQ) or Swiss (SAQ) quality organisations. The divisions printed circuit board connectors, heavy duty connectors Han® and solenoids are certified according to DIN EN ISO 9001 for design/R & D, production, assembly and customer service.

The dedication to quality and the ability to deliver on a "Just in Time" basis have led to the development of strong relationships with leading original equipment manufacturers on the world market.

HARTING is the market leader in



for economical and reliable connections

A comprehensive range of high density interface connectors based on two mating design concepts:

- Blade and fork contact in the Pin/Socket range.
- Leaf contact in the Bellows range.

Available in a various number of contacts with options for secure locking of mated connectors in accordance with the following international standards:

- Small Computer System Interface
SCSI-2
SCSI-2 wide
SCSI-3
- Intelligent Peripheral Interface
IPI
- High Performance Peripheral Interface
HIPPI
- High Speed Serial Interface
HSSI
- Media Independent Interface
MII
- Bi-directional Parallel Interface
IEEE - 1284-C
- EIA - TIA
232-E
- IEC
1076-3-101

UL recognised

For Customer specific applications we can design and manufacture solutions to match your requirement.

Sales Department
HARTING-Components



Certified according to DIN EN ISO 9001
in design/development, production,
installation and servicing

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.

This catalogue must not be used in any form or manner without our prior approval in writing (Copyright Law, Fair Trading Law, Civil Code).
We are bound by the French version only.

Number of contacts	20, 26, 28, 36, 40, 50, 68, 80, 100
Pitch	1.27 mm
Working current	1 A
Working voltage	240 V ~
Test voltage $U_{r.m.s.}$	750 V
Contact resistance	$\leq 30 \text{ m}\Omega$
Insulation resistance	$\geq 10^9 \text{ M}\Omega$
Temperature range	- 55 °C ... + 105 °C

Terminations

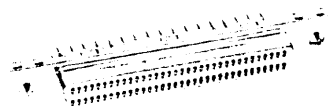
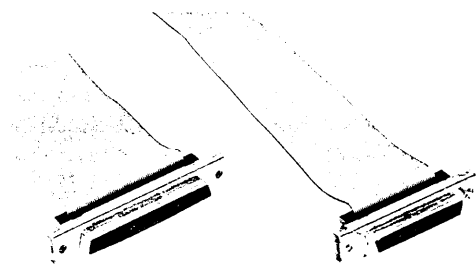
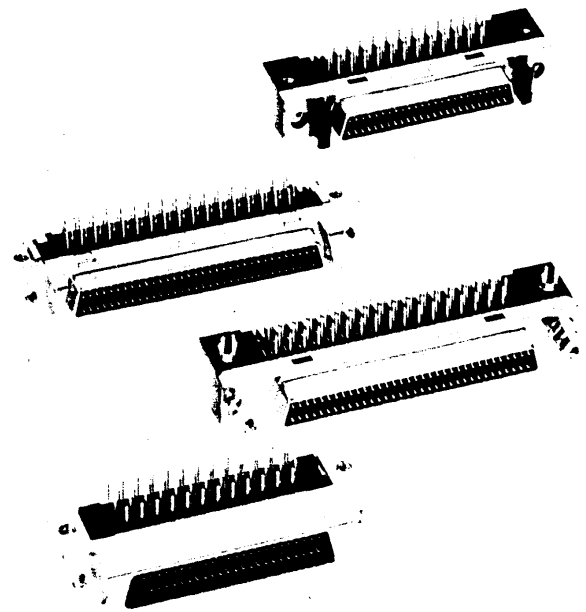
Solder cup	AWG 24 Insulation max. \varnothing 1 mm
Solder pins	Straight for PCB holes min. \varnothing 0.74 mm Angled 90° for PCB holes min. \varnothing 0.74 mm
Insulation displacement	Discret wire AWG 28 to AWG 30 max. section: 0.089 mm ² min. section: 0.050 mm ² Insulation \varnothing min. 0.50 mm \varnothing max. 0.88 mm Flat cable AWG 30 pitch 0.635 mm

Materials

Moulding	Thermoplastic resin glass-fibre filled UL 94-V0 Liquid Cristal Polymer (LCP) for SCSI 3, straight
Contacts	Copper alloy
Contact plating	Selectively gold-plated
Metal shell	Die cast zamac or stamped steel, nickel-plated
Hoods	Die cast zamac, nickel-plated Thermoplastic resin nickel-plated, steel insert

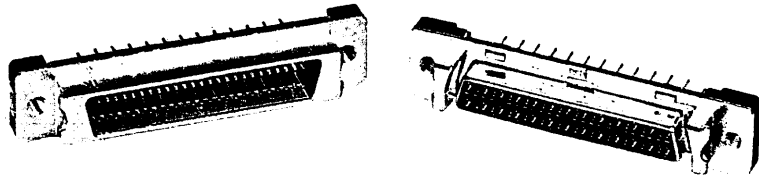
Press-in

Insertion process	Flat rock
Maximum press-in force per contact	100 N
Minimum push out force per contact	15 N
Number of repairs	2
Recommended Board characteristics finished hole	$\varnothing 0.6 \begin{matrix} +0.07 \\ -0.05 \end{matrix} \text{ mm}$
Drilled hole size	$\varnothing 0.7 / 0.74 \text{ mm}$
Cu	30 - 60 μm
Sn	5 - 20 μm
Board thickness	1.6 - 3.2 mm



Number of contacts

20-68

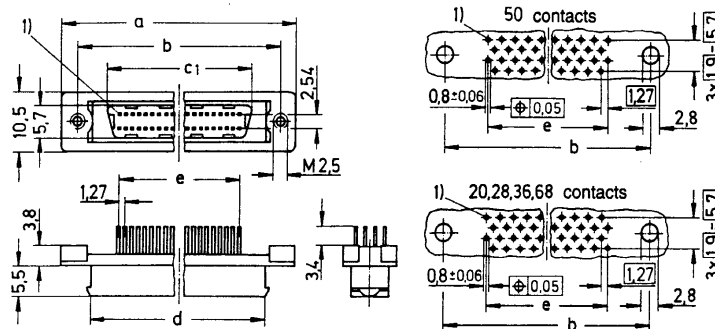


Connector solder pins, straight

Identification	No. of contacts	Part No.	
Male and female connector with straight solder pins		Male connector	
		Female connector	
	20	60 01 020 5202	60 01 020 5102
	26	60 01 026 5202 *	60 01 026 5102
	28	60 01 028 5202	60 01 028 5102
	36	60 01 036 5202	60 01 036 5102 *
	40	60 01 040 5202 *	60 01 040 5102
50	60 01 050 5202	60 01 050 5102	
68	60 01 068 5202	60 01 068 5102	

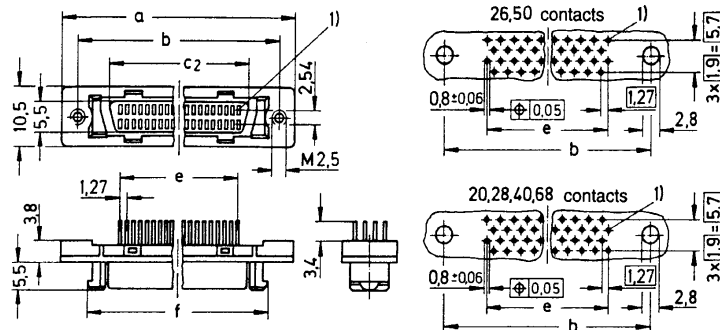
Male connector

Dimensions in mm

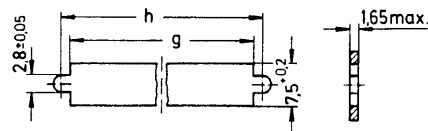


	a	b _{±0.1}	c ₁	c ₂	d	e	f	g	h
20	33.40	27.43	15.80	15.60	21.60	9 x 1.27 = 11.43	23.24	23.70	27.45
26	37.21	31.24	-	19.41	-	12 x 1.27 = 15.24	27.05	27.50	31.25
28	38.48	32.51	20.88	20.68	26.68	13 x 1.27 = 16.51	28.32	28.80	32.50
36	43.56	37.56	25.96	-	31.76	17 x 1.27 = 21.59	-	33.90	37.60
40	46.10	40.13	-	28.30	-	19 x 1.27 = 24.13	35.94	36.40	40.15
50	52.45	46.48	34.85	34.65	40.65	24 x 1.27 = 30.48	42.29	42.80	46.50
68	63.88	57.91	46.28	46.08	52.08	33 x 1.27 = 41.91	53.72	54.20	57.90

Female connector



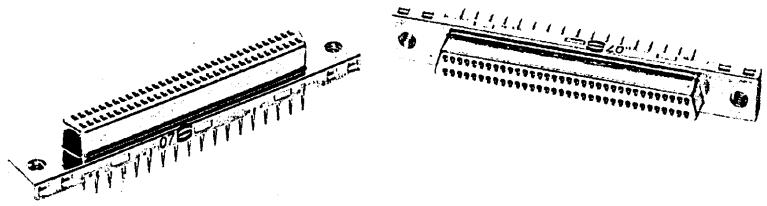
Panel cut out



1) Contact number 1

Number of contacts

68

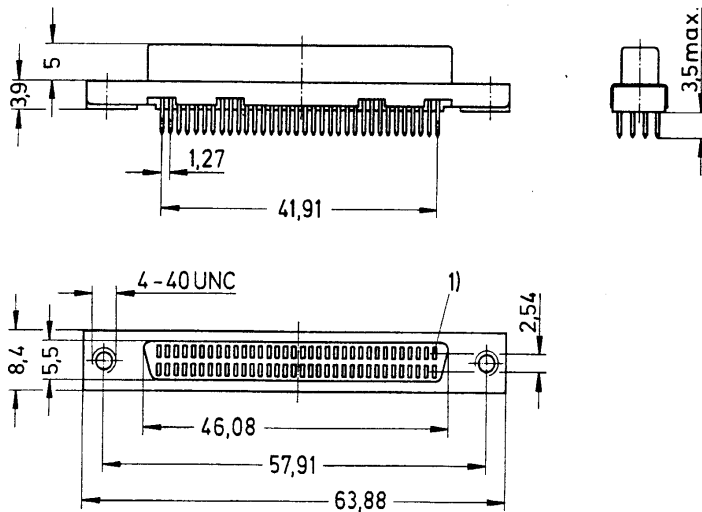


Female connector solder and Press-in pins, straight

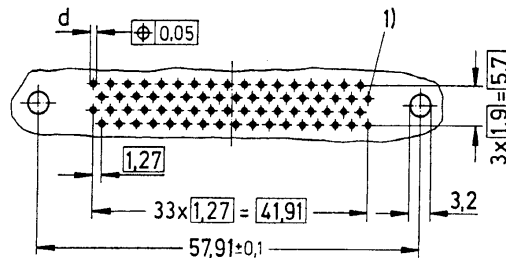
Identification	No. of contacts	Part No.
Female connector with straight pins	68	Solder 60 02 068 5120
		Press-in 60 02 068 5320

Female connector

Dimensions in mm



Board drillings
(Components side)



	d
Solder	0.8 ^{+0.06} _{-0.05}
Press-in	0.6 ^{+0.07} _{-0.05}

1) Contact number 1

Press in recommended characteristics finished hole $\varnothing 0.6 \begin{smallmatrix} +0.07 \\ -0.05 \end{smallmatrix}$ mm

Drilled hole size $\varnothing 0.71 / 0.74$ mm

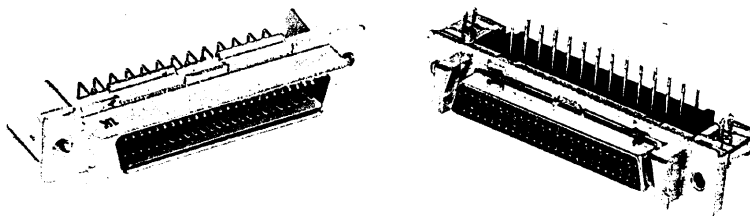
Cu 30-60 μ m

Sn 5-20 μ m

Board thickness 1.6-3.2 mm

Number of contacts

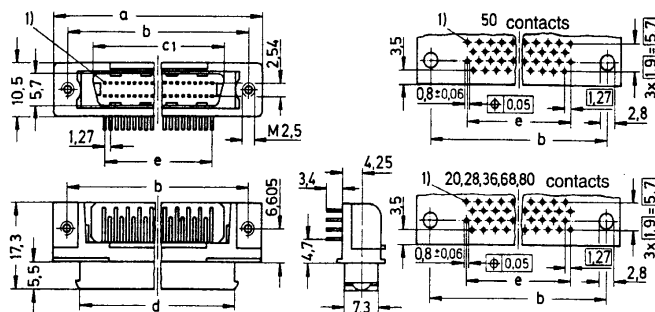
20-80



Connector solder pins, angled

Identification		No. of contacts	Part No.	
Male and female connector with angled solder pins			Male connector	Female connector
		20	60 01 020 5232	60 01 020 51 ..
		26	60 01 026 5232 *	60 01 026 51 ..
		28	60 01 028 5232	60 01 028 51 ..
		36	60 01 036 5232	60 01 036 51 .. *
		40	60 01 040 5232 *	60 01 040 51 ..
		50	60 01 050 5232	60 01 050 51 ..
		68	60 01 068 5232	60 01 068 51 ..
		80	60 01 080 5232	60 01 080 51 .. *
Panel fixing	Board fixing			
M 2.5	M 2.5	32		
UNC 2-56	UNC 2-56	33		
M 2.5	Board lock	40		
UNC 2-56	Board lock	41		

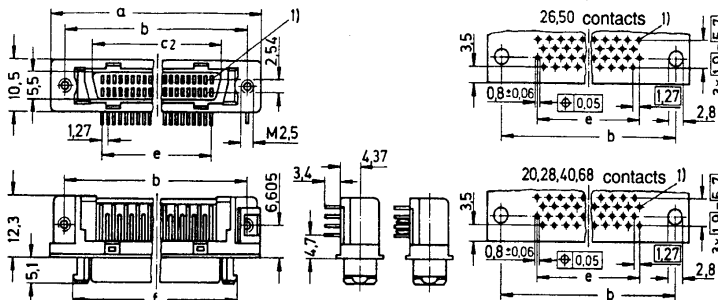
Male connector



Dimensions in mm

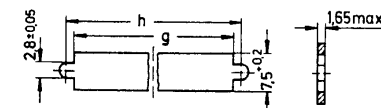
	a	b±0.1	c1	c2	d	e	f	g	h
20	33.40	27.40	15.80	15.60	21.60	9 x 1.27 = 11.43	23.24	23.70	27.45
26	37.21	31.24	-	19.41	-	12 x 1.27 = 15.24	27.05	27.50	31.25
28	38.48	32.48	20.88	20.68	26.68	13 x 1.27 = 16.51	28.32	28.80	32.50
36	43.56	37.56	25.96	-	31.76	17 x 1.27 = 21.59	-	33.90	37.60
40	46.10	40.13	-	28.30	-	19 x 1.27 = 24.13	35.94	36.40	40.15
50	52.45	46.45	34.85	34.65	40.65	24 x 1.27 = 30.48	42.29	42.80	46.50
68	63.88	57.88	46.28	46.08	52.08	33 x 1.27 = 41.91	53.72	54.20	57.90
80	71.50	65.50	53.90	-	59.70	39 x 1.27 = 49.53	-	61.80	65.55

Female connector



without board lock with board lock

Panel cut out



1) Contact number 1

Number of contacts

50

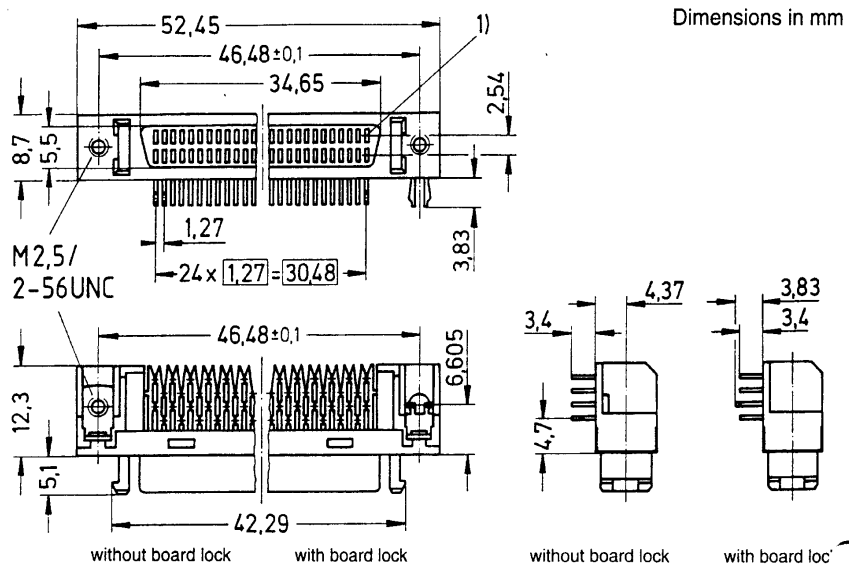
Lightweight version



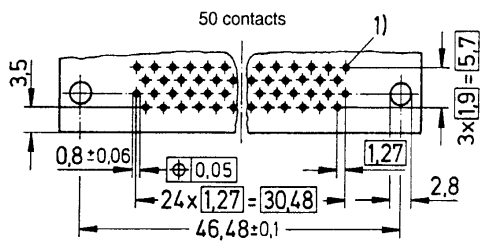
Female connector solder pins, angled

Identification	No. of contacts	Part No.
Female connector with angled solder pins	50	60 01 550 51 ...
Panel fixing	Board fixing	
M 2.5	M 2.5	32
UNC 2-56	UNC 2-56	33
M 2.5	Board lock	40
UNC 2-56	Board lock	41

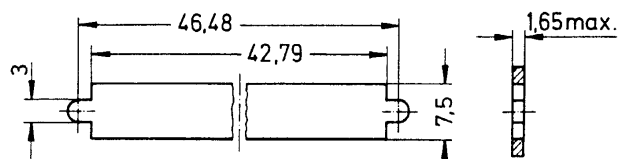
Female connector



Board drillings
(Components side)

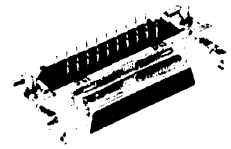


Panel cut out



Number of contacts

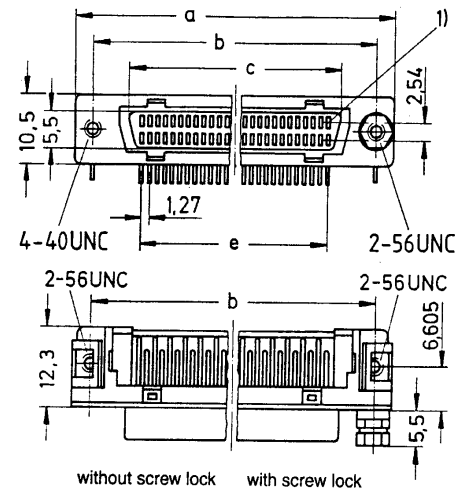
40-68



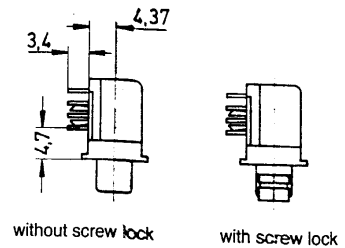
Female connector solder pins, angled

Identification	No. of contacts	Part No.
Female connector with angled solder pins	40	60 02 040 51 ..
With female screw lock	41	60 02 068 51 ..
Without female screw lock	50	

Female connector

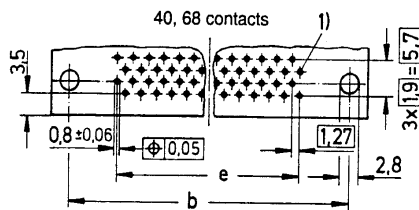


Dimensions in mm

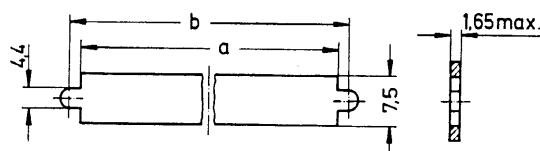


	a	b ± 0.1	c	e
40	46.10	40.13	28.30	19 x 1.27 = 24.13
68	63.88	57.91	46.08	33 x 1.27 = 41.91

Board drillings (Components side)



Panel cut out

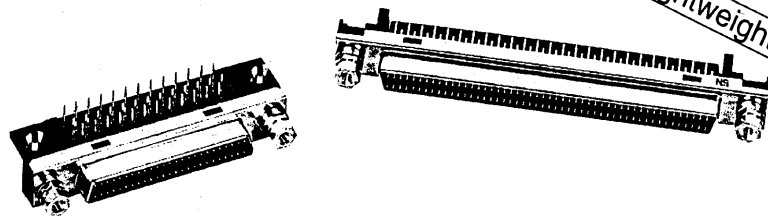


	a	b
40	36.23	40.13
68	52.22	57.91

1) Contact number 1

Number of contacts

50-100

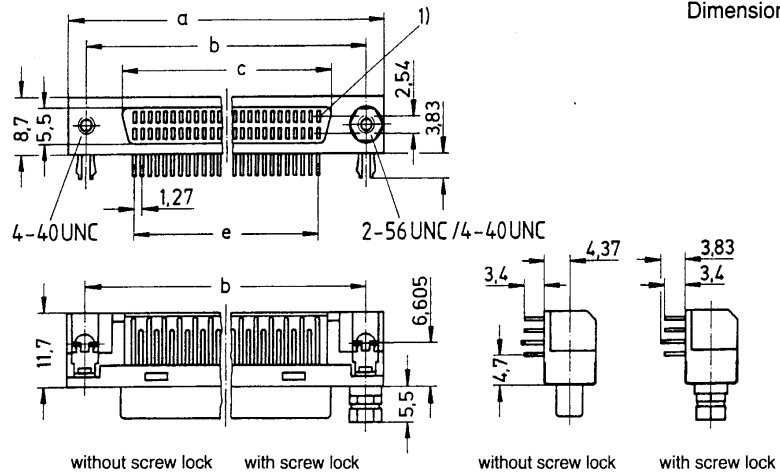


Lightweight version

Female connector solder pins, angled

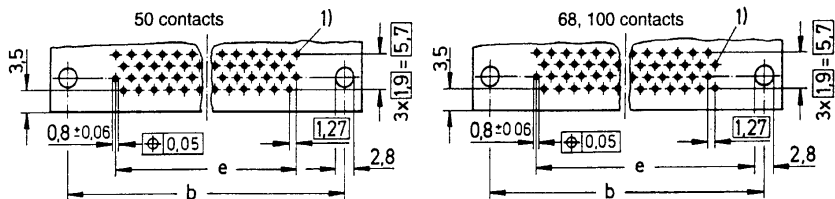
Identification	No. of contacts	Part No.
Female connector with angled solder pins	50	60 02 550 51 ..
	68	60 02 568 51 ..
	100	60 02 100 51 ..
With female screw lock 2-56 UNC	41	
With female screw lock 4-40 UNC	42	
Without female screw lock	50	

Female connector

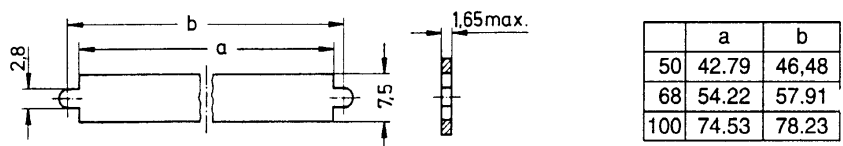


	a	b ± 0.1	c	e
50	52.45	46.48	34.65	24 x 1.27 = 30.48
68	63.88	57.91	46.08	33 x 1.27 = 41.91
100	84.20	78.23	66.40	49 x 1.27 = 62.23

Board drillings
(Components side)



Panel cut out



	a	b
50	42.79	46.48
68	54.22	57.91
100	74.53	78.23

1) Contact number 1

Number of contacts

50



Male connector solder pins, angled

Identification

No. of contacts

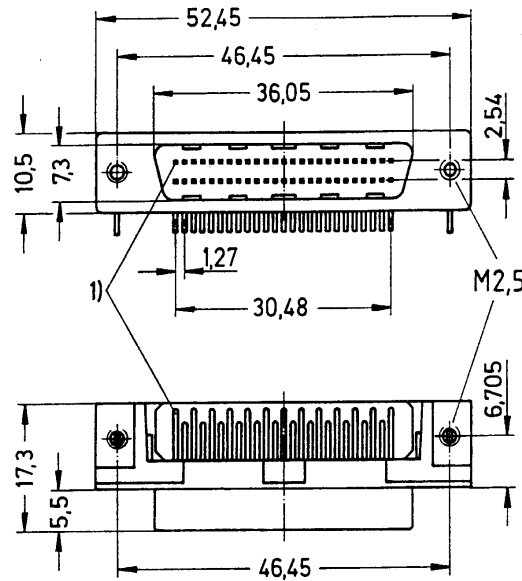
Part No.

Male connector *
with angled solder pins

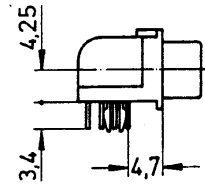
50

60 02 050 5252

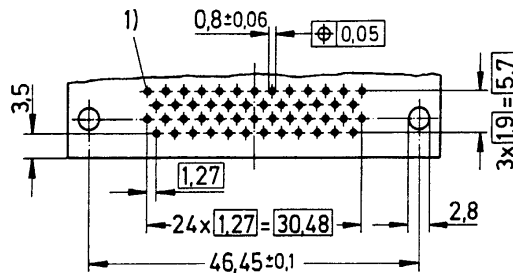
Male connector



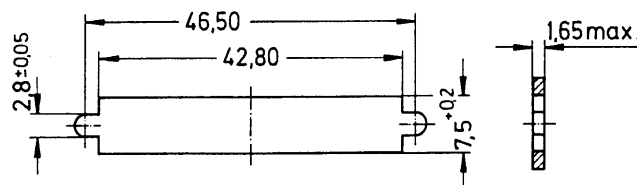
Dimensions in mm



Board drillings
(Components side)



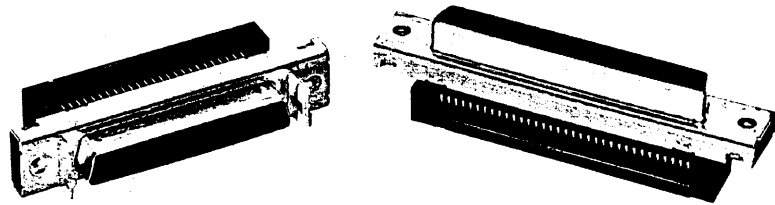
Panel cut out



1) Contact number 1

Number of contacts

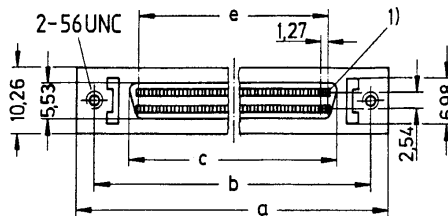
50-68



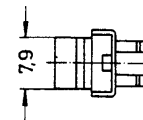
Female connector for flat cable

Identification	No. of contacts	Part No.	
		with latch system	with screw lock system
Female panel connector with insulation displacement termination for flat cable pitch 0.635 mm AWG 30	50	60 04 050 5343	60 04 050 5344
	68	60 04 068 5343	60 04 068 5344

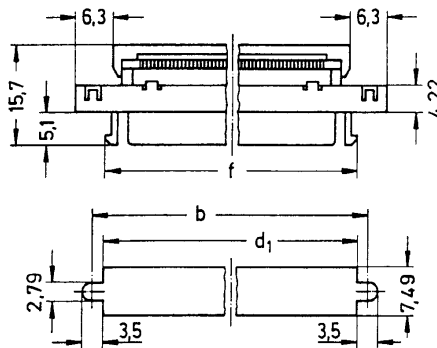
Female connector with latch system



Dimensions in mm.

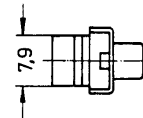
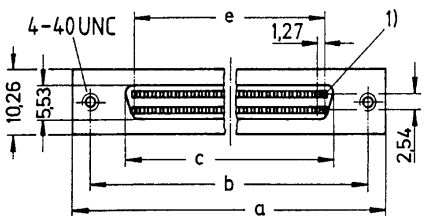


Panel cut out

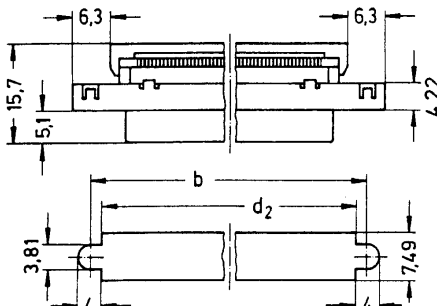


	a	b	c	d ₁	d ₂	e	f
50	52.45	46.48	34.70	42.80	42.30	30.48	42.30
68	63.88	57.91	46.13	54.23	53.72	41.91	53.72

Female connector with screw lock system



Panel cut out

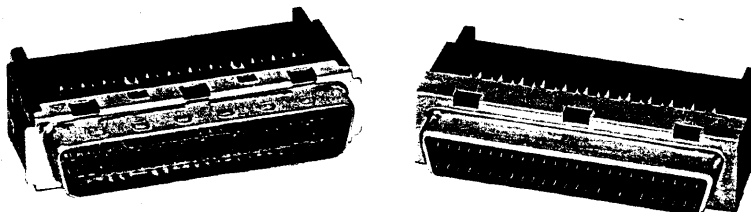


1) Contact number 1

Tools see page 40

Number of contacts

20-100



Connector for discrete wire

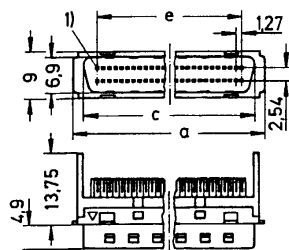
Identification	No. of contacts	Part No.	
Male and female connector with insulation displacement termination for discrete wire AWG 28/30		Male connector	
		Female connector	
	20	60 03 020 52 ..	60 03 020 51 ..
	26	60 03 026 52 ..	60 03 026 51 ..*
	28	60 03 028 52 ..	60 03 028 51 ..
	36	60 03 036 52 ..*	60 03 036 51 ..
	40	60 03 040 52 ..	60 03 040 51 ..*
	50	60 03 050 52 ..	60 03 050 51 ..
	68	60 03 068 52 ..	60 03 068 51 ..
	80	60 03 080 52 ..*	60 03 080 51 ..
100	60 03 100 52 ..	60 03 100 51 ..*	
Insulation Diameter (mm)			
Ø = 0.50-0.65	00		
Ø = 0.65-0.80	10		
Ø = 0.80-0.88	20		

Available sizes

	Part No.	Ø	20	26	28	36	40	50	68	80	100
M	60 03 ... 5200	0.50-0.65	●	●	●			●	●		
	60 03 ... 5210	0.65-0.80	●				●	●	●		●
	60 03 ... 5220	0.80-0.88	●	●	●		●	●	●		●
F	60 03 ... 5100	0.50-0.65	●		●	●		●	●	●	
	60 03 ... 5110	0.65-0.80	●					●	●		
	60 03 ... 5120	0.80-0.88	●		●	●		●	●		

● = Available sizes
F = Female
M = Male

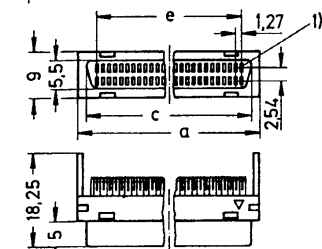
Male connector



Dimensions in mm

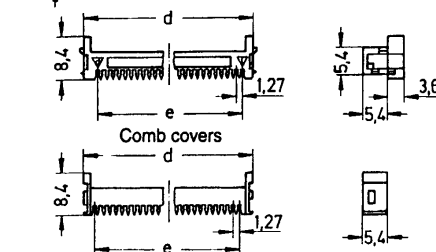
	a	c	d	e
20	21.25	17.00	16.75	11.43
26	25.06	20.81	20.56	15.24
28	26.33	22.08	21.83	16.51
40	33.95	29.70	29.45	24.13
50	40.30	36.05	35.80	30.48
68	51.73	47.48	47.23	41.91
100	72.05	67.80	67.55	62.23

Female connector



	a	c	d	e
20	19.25	15.60	16.75	11.43
28	24.33	20.68	21.83	16.51
36	29.41	25.76	26.91	21.59
50	38.30	34.65	35.80	30.48
68	49.73	46.08	47.23	41.91
80	57.35	53.70	54.85	49.53

Comb cover (delivered with connectors)

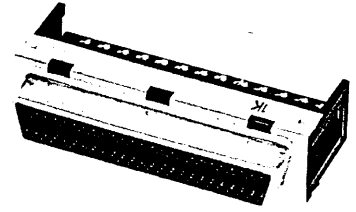
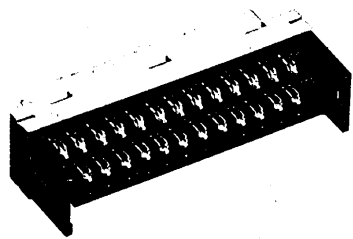


1) Contact number 1

Hoods see page 22, 23
Tools see page 37, 38, 39

Number of contacts

20-68

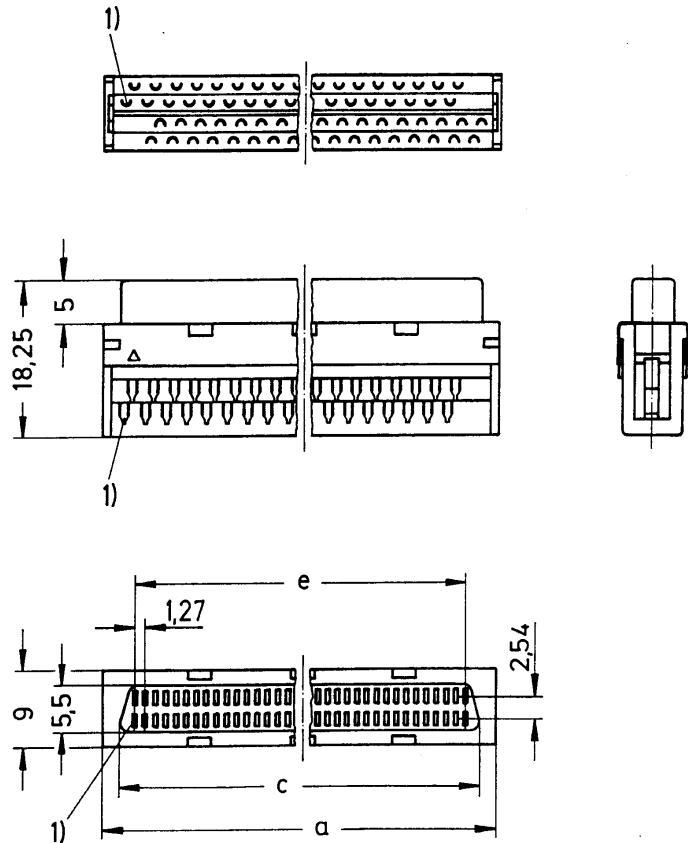


Female connector solder cup

Identification	No. of contacts	Part No.
Female connector with solder cup	20	60 03 020 5180
AWG 24	28	60 03 028 5180
	36	60 03 036 5180
	50	60 03 050 5180
	68	60 03 068 5180

Female connector

Dimensions in mm.



1) Contact number 1

	a	c	e
20	19.25	15.60	11.43
28	24.33	20.68	16.51
36	29.41	25.76	21.59
50	38.30	34.65	30.48
68	49.73	46.08	41.91

Number of contacts 20, 26, 28, 36, 50, 68, 80, 96

Pitch 1.27 mm

Working current 1 A

Working voltage 240 V ~

Test voltage $U_{r.m.s.}$ 750 V

Contact resistance $\leq 40 \text{ m}\Omega$

Insulation resistance $\geq 10^9 \text{ M}\Omega$

Temperature range $-55 \text{ }^\circ\text{C} \dots +105 \text{ }^\circ\text{C}$

Terminations

Solder cup AWG 24
Insulation max. $\varnothing 1 \text{ mm}$

Solder pins Straight for PCB holes
min. $\varnothing 0.74 \text{ mm}$
Angled 90° for PCB holes
min. $\varnothing 0.74 \text{ mm}$

Insulation displacement AWG 28 to AWG 30
max. section: 0.089 mm^2
min. section: 0.050 mm^2
Insulation \varnothing min. 0.50 mm
 \varnothing max. 0.65 mm

Materials

Moulding Thermoplastic resin
glass-fibre filled UL 94-V0

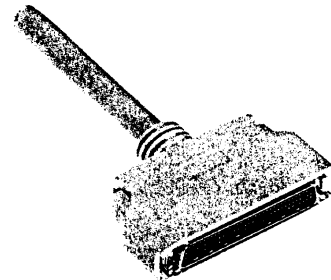
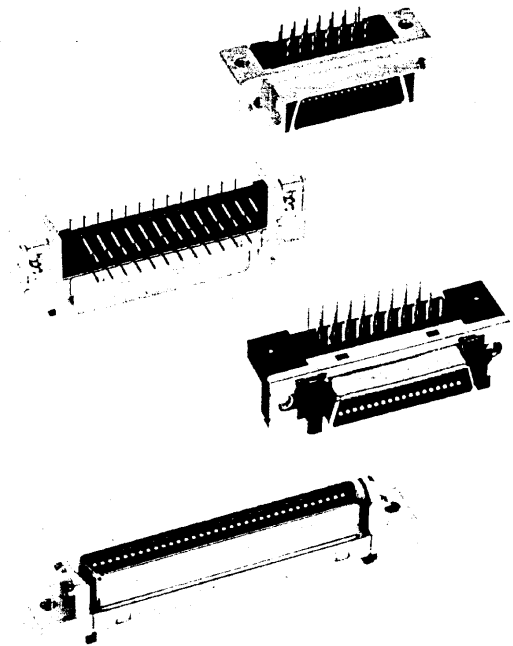
Contacts Copper alloy

Contact plating Selectively gold-plated

Metal shell Die cast zamac or stamped
steel, nickel-plated

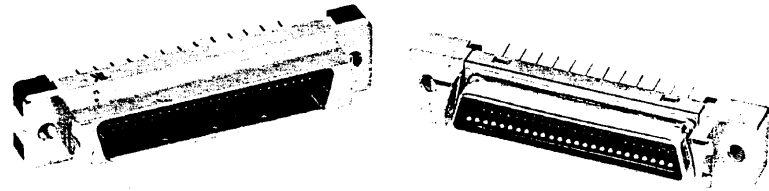
Hoods Die cast zamac, nickel-plated

Thermoplastic resin
nickel-plated, steel insert



Number of contacts

20-80

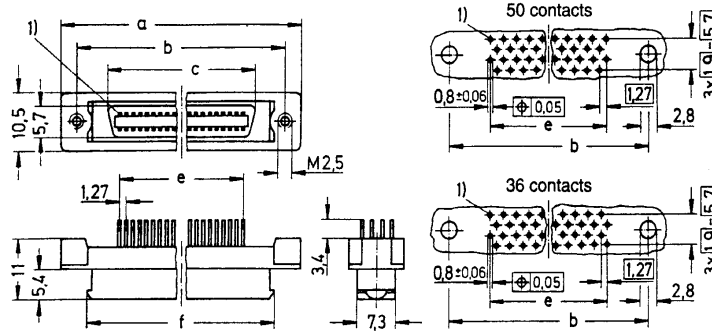


Connector solder pins, straight

Identification	No. of contacts	Part No.	
		Male connector	Female connector
Male and female connector with straight solder pins	20	60 11 020 5202 *	60 11 020 5102
	26	60 11 026 5202 *	60 11 026 5102
	36	60 11 036 5202	60 11 036 5102
	50	60 11 050 5202	60 11 050 5102
	68	60 11 068 5202 *	60 11 068 5102
	80	60 11 080 5202 *	60 11 080 5102

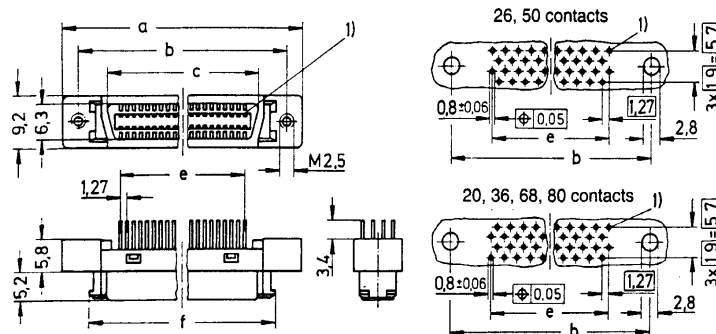
Male connector

Dimensions in mm

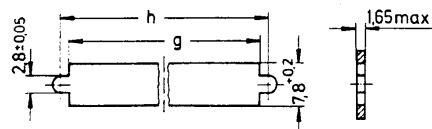


	a	b ± 0.1	c	e	f	g	h
20	33.35	27.45	16.45	9 x 1.27 = 11.43	23.30	23.70	27.45
26	37.16	31.26	20.26	12 x 1.27 = 15.24	27.11	27.50	31.25
36	43.51	37.61	26.61	17 x 1.27 = 21.59	33.46	33.90	37.60
50	52.40	46.50	35.50	24 x 1.27 = 30.48	42.35	42.80	46.50
68	63.83	57.93	46.93	33 x 1.27 = 41.91	53.78	54.20	57.90
80	71.45	65.55	54.55	39 x 1.27 = 49.53	61.40	61.80	65.55

Female connector

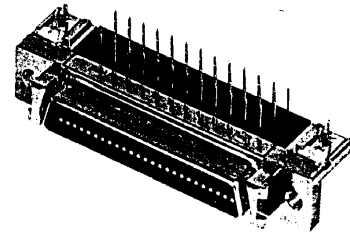
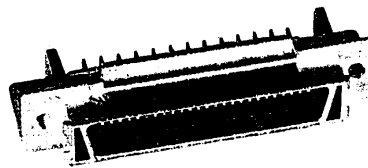


Panel cut out



Number of contacts

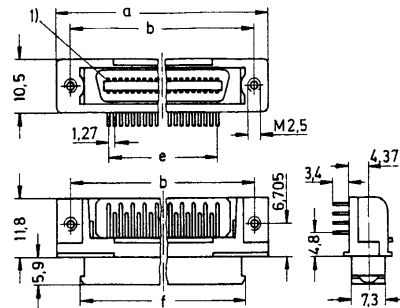
20-96



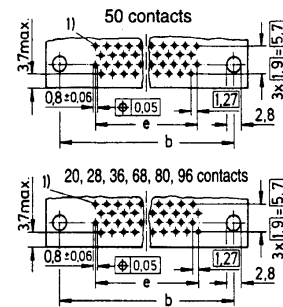
Connector solder pins, angled

Identification	No. of contacts	Male connector	Female connector
Male and female connector with angled solder pins	20	60 11 020 5232	60 11 020 51 ..
	26	60 11 026 5232 *	60 11 026 51 ..
	28	60 11 028 5232	60 11 028 51 .. *
	36	60 11 036 5232	60 11 036 51 ..
	50	60 11 050 5232	60 11 050 51 ..
	68	60 11 068 5232	60 11 068 51 ..
	80	60 11 080 5232	60 11 080 51 ..
	96	60 11 096 5232	60 11 096 51 .. *
Without board lock	32		
With board lock	40		

Male connector

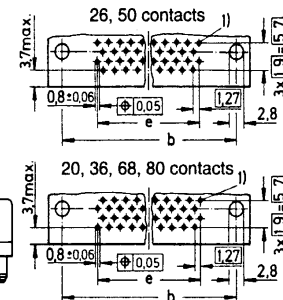
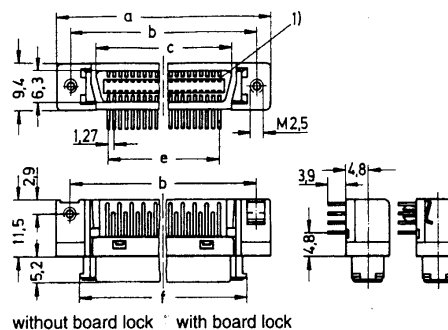


Dimensions in mm

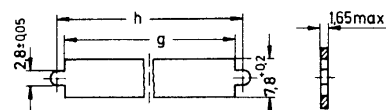


	a	b±0.1	c	e	f	g	h
20	33.40	27.40	16.45	9 x 1.27 = 11.43	23.30	23.70	27.45
26	37.16	31.26	20.26	12 x 1.27 = 15.24	27.11	27.50	31.25
28	38.48	32.48	-	13 x 1.27 = 16.51	28.38	28.80	32.50
36	43.56	37.56	26.61	17 x 1.27 = 21.59	33.46	33.90	37.60
50	52.45	46.45	35.50	24 x 1.27 = 30.48	42.35	42.80	46.50
68	63.88	57.88	46.93	33 x 1.27 = 41.91	53.78	54.20	57.90
80	71.50	65.50	54.55	39 x 1.27 = 49.53	61.40	61.80	65.55
96	81.66	75.66	-	47 x 1.27 = 59.69	71.56	72.00	75.65

Female connector



Panel cut out

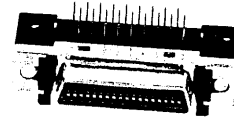
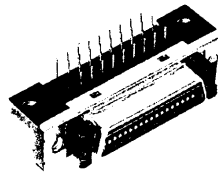


1) Contact number 1

Number of contacts

36-50

Lightweight version

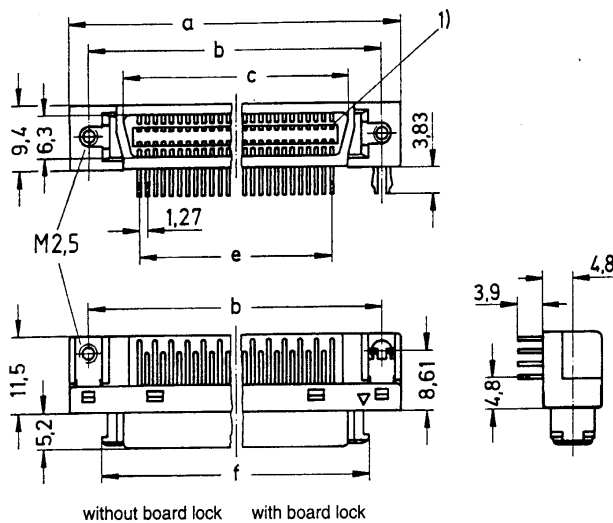


Female connector solder pins, angled

Identification	No. of contacts	Part No.
Female connector with angled solder pins	36	60 11 536 51 ..
	50	60 11 550 51 ..
Without board lock	32	
With board lock	40	

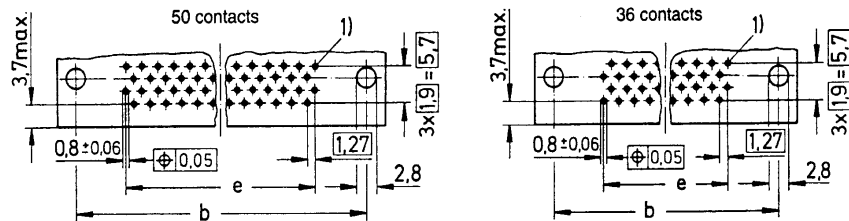
Female connector

Dimensions in mm

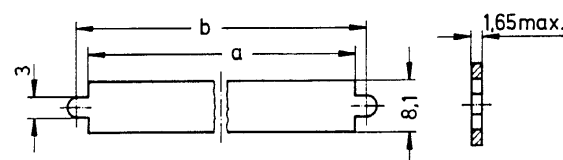


	a	b _{±0.1}	c	e	f
36	43.51	37.61	26.61	17 x 1.27 = 21.59	33.46
50	52.40	46.50	35.50	24 x 1.27 = 30.48	42.35

Board drillings
(Components side)



Panel cut out

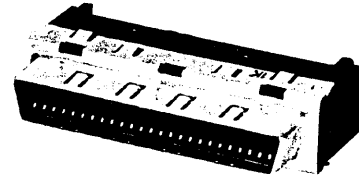
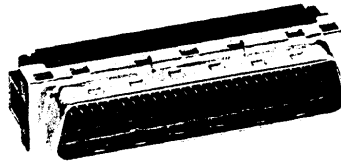


	a	b
36	33.96	37.61
50	42.85	46.48

1) Contact number 1

Number of contacts

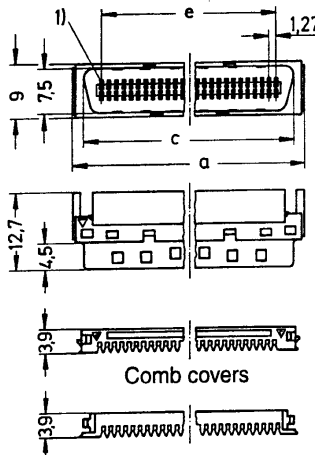
20-96



Connector for discrete wire

Identification	No. of contacts	Part No.	
Male and female connector with insulation displacement termination for discrete wire AWG 28/30 Insulation Diameter (mm) Ø = 0.50-0.65		Male connector	
		Female connector	
	20	60 13 020 5200	60 13 020 5100
	26	60 13 026 5200	60 13 026 5100*
	28	60 13 028 5200*	60 13 028 5100
	36	60 13 036 5200	60 13 036 5100
	50	60 13 050 5200	60 13 050 5100
	68	60 13 068 5200	60 13 068 5100
	80	60 13 080 5200	60 13 080 5100
	96	60 13 096 5200*	60 13 096 5100

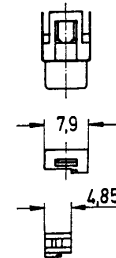
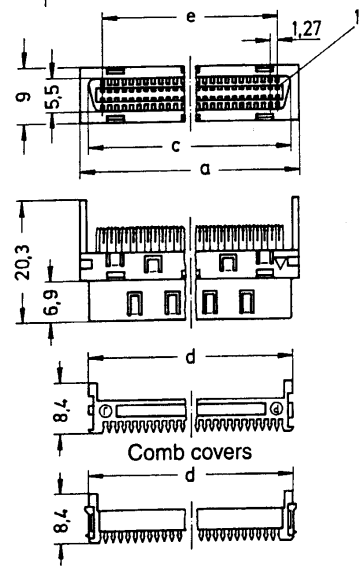
Male connector



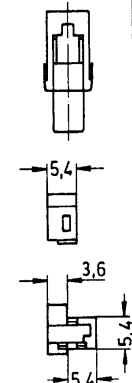
Dimensions in mm

	a	c	e
20	21.24	17.55	11.43
26	25.05	21.36	15.24
36	31.40	27.71	21.59
50	40.29	36.60	30.48
68	51.72	48.03	41.91
80	59.34	55.65	49.53

Female connector

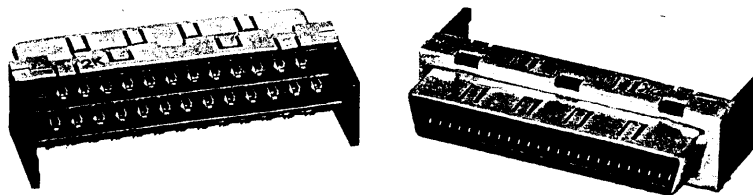


	a	c	d	e
20	19.25	16.25	16.75	11.43
28	24.33	21.33	21.83	16.51
36	29.41	26.41	26.91	21.59
50	38.30	35.30	35.80	30.48
68	49.73	46.73	47.23	41.91
80	57.35	54.35	54.85	49.53
96	67.51	64.51	65.01	59.69



Number of contacts

20-50

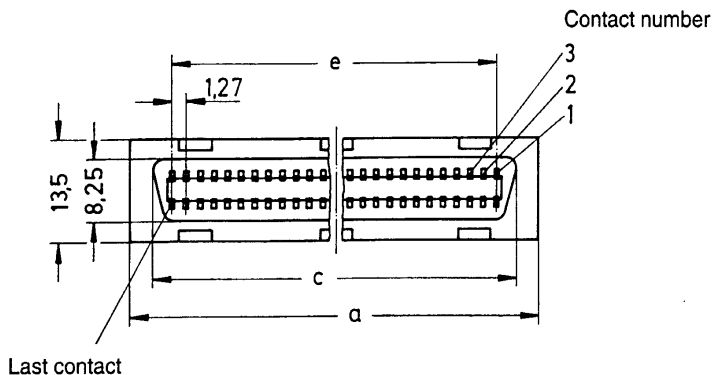
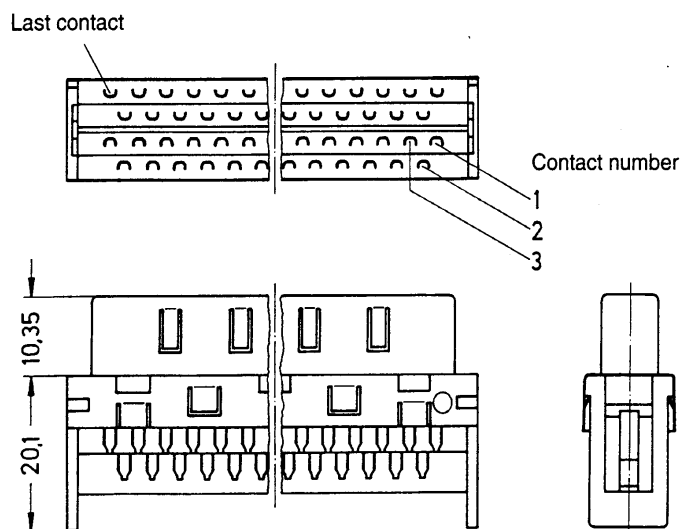


Female connector solder cup

Identification	No. of contacts	Part No.
Female connector with solder cup	20	60 13 020 5180
AWG 24	28	60 13 028 5180
	36	60 13 036 5180
	50	60 13 050 5180

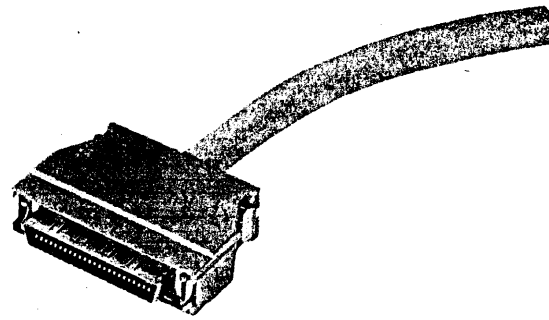
Female connector

Dimensions in mm



	a	c	e
20	19.25	16.25	11.43
28	24.33	21.33	16.51
36	29.41	26.41	21.59
50	38.30	35.30	30.48

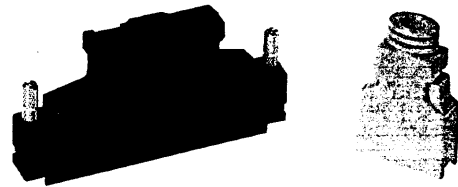
Hoods see page 22, 23



Metal hoods for male and female pin and socket and for female bellows connector

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																																				
Metal hood																																								
Standard cable entry																																								
	20	60 03 020 0155		<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>28.95</td> <td>21.15</td> <td>6.50 x 4.50</td> </tr> <tr> <td>28</td> <td>34.03</td> <td>26.23</td> <td>6.50 x 6.00</td> </tr> <tr> <td>36</td> <td>39.11</td> <td>31.31</td> <td>9.50 x 8.00</td> </tr> <tr> <td>50</td> <td>48.00</td> <td>40.20</td> <td>8.50 x 7.00</td> </tr> <tr> <td>68</td> <td>59.43</td> <td>51.63</td> <td>9.00 x 8.00</td> </tr> </tbody> </table>		a	b	c	20	28.95	21.15	6.50 x 4.50	28	34.03	26.23	6.50 x 6.00	36	39.11	31.31	9.50 x 8.00	50	48.00	40.20	8.50 x 7.00	68	59.43	51.63	9.00 x 8.00												
	a	b		c																																				
20	28.95	21.15		6.50 x 4.50																																				
28	34.03	26.23		6.50 x 6.00																																				
36	39.11	31.31		9.50 x 8.00																																				
50	48.00	40.20	8.50 x 7.00																																					
68	59.43	51.63	9.00 x 8.00																																					
	28	60 03 028 0155																																						
	36	60 03 036 0155																																						
	50	60 03 050 0155																																						
	68	60 03 068 0155																																						
Metal hood																																								
Large cable entry																																								
	20	60 03 020 0255		<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>28.95</td> <td>21.15</td> <td>8.00 x 8.50</td> </tr> <tr> <td>26</td> <td>32.76</td> <td>24.96</td> <td>8.00 x 6.75</td> </tr> <tr> <td>28</td> <td>34.03</td> <td>26.23</td> <td>8.50 x 7.20</td> </tr> <tr> <td>36</td> <td>39.11</td> <td>31.31</td> <td>9.00 x 10.00</td> </tr> <tr> <td>40</td> <td>41.65</td> <td>33.85</td> <td>9.00 x 10.00</td> </tr> <tr> <td>50</td> <td>48.00</td> <td>40.20</td> <td>9.00 x 10.00</td> </tr> <tr> <td>68</td> <td>59.43</td> <td>51.63</td> <td>9.00 x 10.00</td> </tr> <tr> <td>96</td> <td>77.21</td> <td>69.41</td> <td>10.00 x 11.00</td> </tr> </tbody> </table>		a	b	c	20	28.95	21.15	8.00 x 8.50	26	32.76	24.96	8.00 x 6.75	28	34.03	26.23	8.50 x 7.20	36	39.11	31.31	9.00 x 10.00	40	41.65	33.85	9.00 x 10.00	50	48.00	40.20	9.00 x 10.00	68	59.43	51.63	9.00 x 10.00	96	77.21	69.41	10.00 x 11.00
	a	b		c																																				
20	28.95	21.15		8.00 x 8.50																																				
26	32.76	24.96		8.00 x 6.75																																				
28	34.03	26.23		8.50 x 7.20																																				
36	39.11	31.31		9.00 x 10.00																																				
40	41.65	33.85		9.00 x 10.00																																				
50	48.00	40.20		9.00 x 10.00																																				
68	59.43	51.63	9.00 x 10.00																																					
96	77.21	69.41	10.00 x 11.00																																					
	26	60 03 026 0255																																						
	28	60 03 028 0255																																						
	36	60 03 036 0255																																						
	40	60 03 040 0255																																						
	50	60 03 050 0255																																						
	68	60 03 068 0255																																						
Metal hood with polarization																																								
Large cable entry																																								
	80	60 03 080 0455		<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>67.05</td> <td>59.25</td> <td>9.00 x 10.00</td> </tr> </tbody> </table>	A	B	C	67.05	59.25	9.00 x 10.00																														
A	B	C																																						
67.05	59.25	9.00 x 10.00																																						
Metal hood																																								
Right angled cable entry																																								
	40	60 03 040 0555		<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>41.65</td> <td>33.8</td> <td>10.60</td> <td>6.34</td> </tr> <tr> <td>50</td> <td>48.00</td> <td>35.5</td> <td>11.38</td> <td>6.70</td> </tr> </tbody> </table>		a	b	c	d	40	41.65	33.8	10.60	6.34	50	48.00	35.5	11.38	6.70																					
	a	b		c	d																																			
40	41.65	33.8	10.60	6.34																																				
50	48.00	35.5	11.38	6.70																																				
	50	60 03 050 0555																																						

For other size, please consult us.

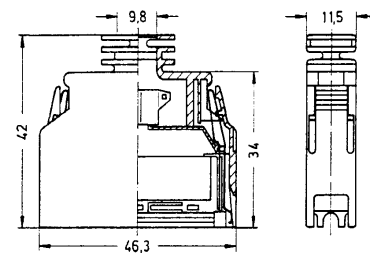


Plastic hood with internal metal screen

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
Plastic hood with internal screen				
for male and female pin and socket range and	50	60 03 050 01 ..		
for female bellows range	68	60 03 068 01 ..		
	100	60 03 100 01 ..		
With male jack screw 2-56 UNC	43			
With male jack screw 4-40 UNC	46			

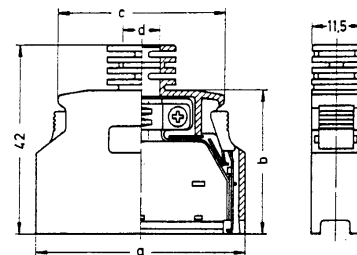
	a	b	c	d	e
50	54.00	46.48	35.00	10.50	15.00
68	65.41	57.91	38.40	14.00	16.00
100	85.73	78.23	42.00	13.00	17.00

Plastic hood with internal screen				
for male and female pin and socket range and	50	60 03 050 0153		
for female bellows range				



Hand crimp tool for internal screen see page 39

Plastic hood with internal screen				
for male bellows range	20	60 13 020 0153		
	26	60 13 026 0153		
	36	60 13 036 0153		
	50	60 13 050 0153		
	68	60 13 068 0153		
	80	60 13 080 0153		



	a	b	c	d
20	29.65	34.50	19.95	6.80
26	33.46	38.31	23.76	7.10
36	39.81	32.00	30.11	8.20
50	48.70	32.00	39.00	8.70
68	60.13	32.00	50.43	9.10
80	67.75	32.00	58.05	9.70

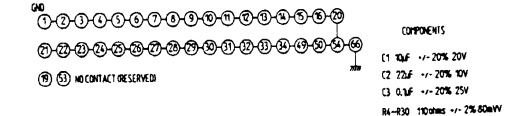
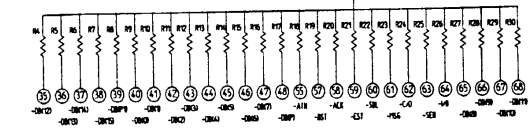
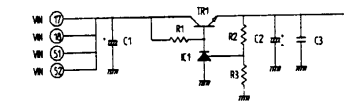
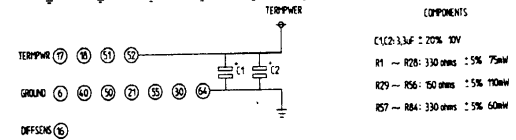
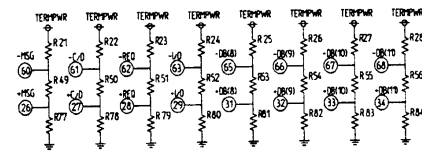
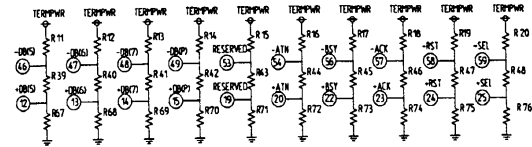
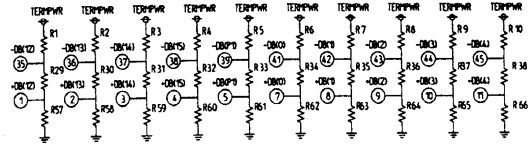
Identification
Differential

No. of contacts
68

Part No.
60 03 068 1004

Drawing

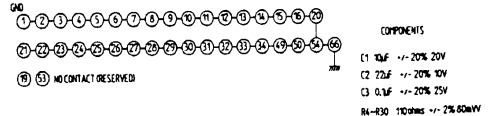
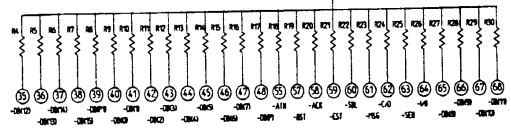
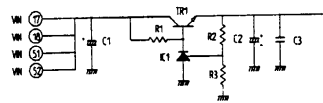
Dimensions in mm



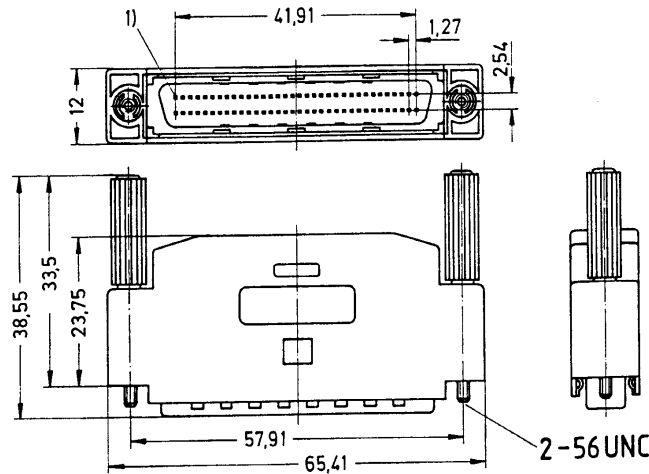
Single-end
alternative 2

68

60 03 068 1005



Dimensions



1) Contact number 1



Female screw lock

Identification	Part No.	Drawing	Dimensions in mm
<p>Screw lock Thread: M 2.5 / 2-56 UNC Height: 2.9 mm</p>	60 01 000 9013		
<p>Screw lock Thread: 4.40 UNC / 4.40 UNC Height: 3.99 mm</p>	60 01 000 9018		
<p>Screw lock Thread: 4.40 UNC / 2-56 UNC Height: 3.99 mm</p>	60 01 000 9019		
<p>Screw lock Thread: 4.40 UNC / 2-56 UNC Height: 5.5 mm</p>	60 01 000 9020		
<p>Screw lock Thread: 4.40 UNC / 4.40 UNC Height: 5.5 mm</p>	60 01 000 9021		

for economical and reliable connections

A comprehensive range of high density Intra-Cabinet connectors based on two mating design concepts:

- Blade and fork contact in the Pin/Socket range.
- Leaf contact in the Bellows range.

Available in a various number of contacts according to the following international standards and applications:

- Small Computer System Interface
SCSI-2
SCSI-2 wide
SCSI-3

- S Bus
IEEE 1496

- Mezzanine/parallel stacking boards spaced at distances between 8 mm and 14 mm in 1 mm incremental steps.

- Internal Bus extension through "Daisy chain" inter-linking via 0.635 mm pitch flat cable. The 4-point design of the IDC contact provides accurate and reliable termination even with Teflon cable.

UL recognised

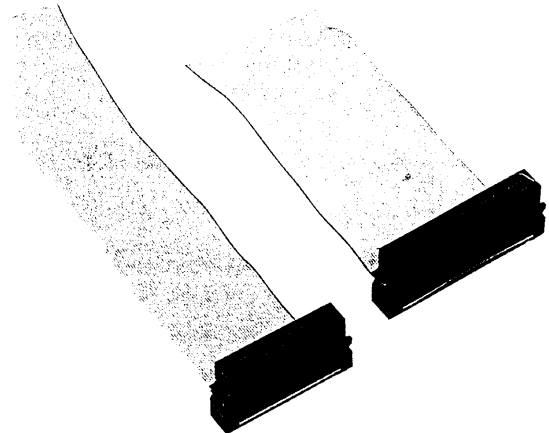
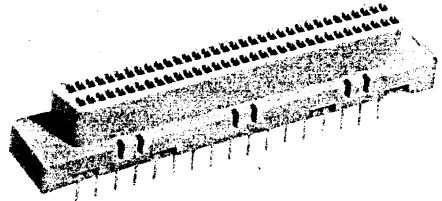
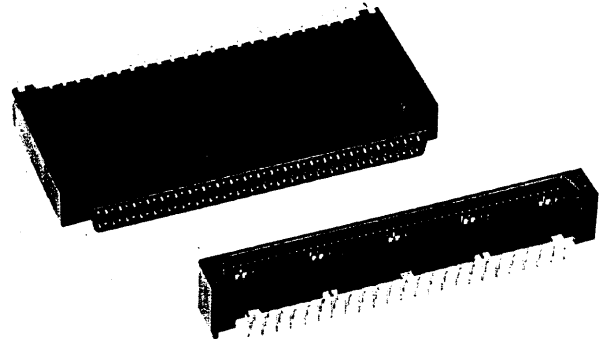
For Customer specific applications we can design and manufacture solutions to match your requirement.

Sales Department
HARTING-Components



Certified according to DIN EN ISO 9001
in design/development, production,
installation and servicing

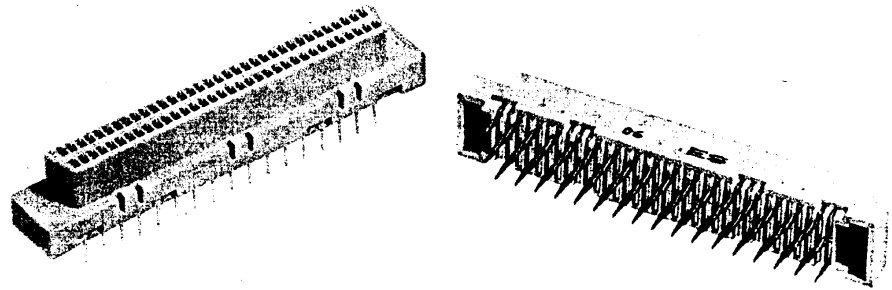
Pitch	1.27 mm
Working current	
P.C.B. Connector	1 A
Flat cable connector	0,5 A
Working voltage	
P.C.B. Connector	240 V ~
Flat cable connector	100 V ~
Test voltage $U_{r.m.s.}$	
P.C.B. Connector	750 V
Flat cable connector	500 V
Contact resistance	$\leq 25 \text{ m}\Omega$
Insulation resistance	$\geq 10^3 \text{ M}\Omega$
Temperature range	$-55 \text{ }^\circ\text{C} \dots +105 \text{ }^\circ\text{C}$
Terminations	
Solder pins	Straight for PCB holes min. $\varnothing 0.74 \text{ mm}$ Angled 90° for PCB holes min. $\varnothing 0.74 \text{ mm}$
Insulation displacement	Flat cable AWG 30 pitch 0.635 mm
Materials	
Moulding	Thermoplastic resin glass-fibre filled UL 94-V0
Contacts	
P.C.B. Connector	Copper alloy
Flat cable connector	Beryllium copper
Contact plating	Selectively gold-plated



Press-in	
Insertion process	Flat rock
Maximum press-in force per contact	100 N
Minimum push out force per contact	15 N
Number of repairs	2
Recommended Board characteristics finished hole	$\varnothing 0.6 \begin{smallmatrix} +0.07 \\ -0.05 \end{smallmatrix} \text{ mm}$
Drilled hole size	$\varnothing 0.7 / 0.74 \text{ mm}$
Cu	30 – 60 μm
Sn	5 – 20 μm
Board thickness	1.6 – 3.2 mm

Number of contacts

68

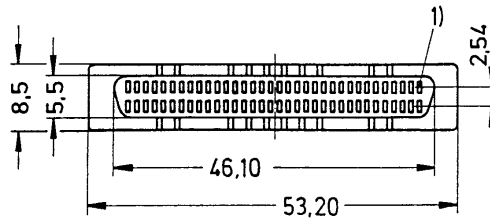
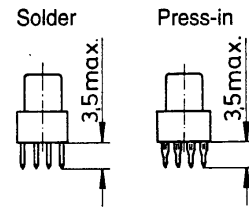
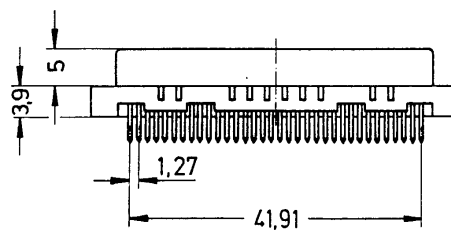


Female connector solder and Press-in pins, straight

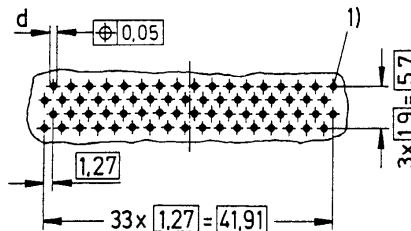
Identification	No. of contacts	Part No.
Female connector with straight pins	68	
		Solder
		60 05 068 5100
		Press-in
		60 05 068 5300

Female connector

Dimensions in mm



Board drillings
(Components side)



	d
Solder	0.8±0.06
Press-in	0.6 ^{+0.07} / _{-0.05}

1) Contact number 1

Press-in recommended characteristics finished hole

Drilled hole size

Cu
Sn

Board thickness

Ø 0.6 ^{+0.07}/_{-0.05} mm

Ø 0.71 / 0.74 mm

30-60 µm
5-20 µm

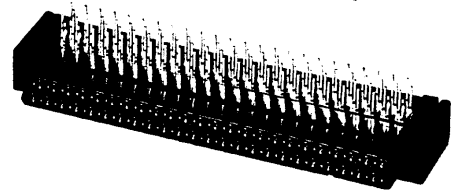
1.6-3.2 mm

Note: Moulding material LCP allowing reflow for SMC process

Tools see page 40

Number of contacts

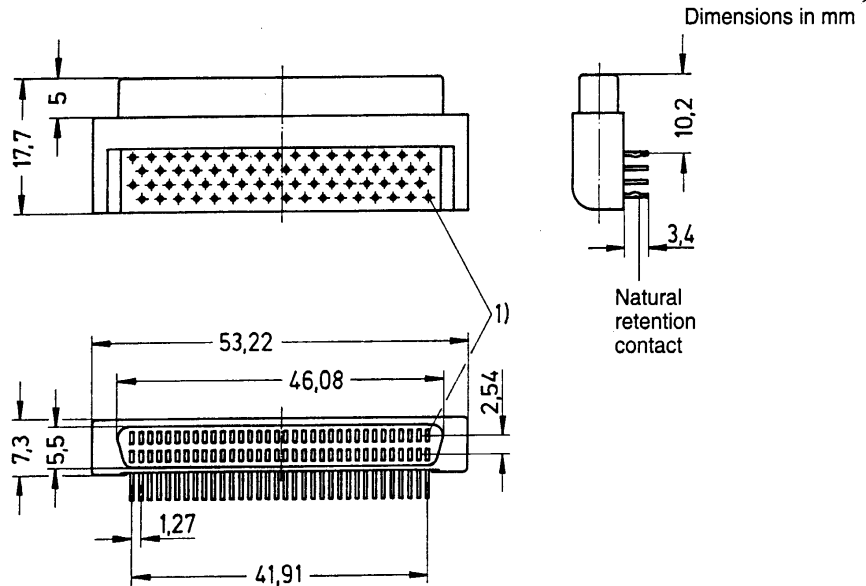
68



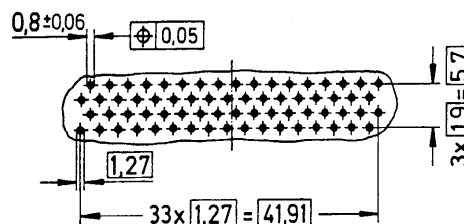
Female connector solder pins, angled

Identification	No. of contacts	Part No.
Female connector angled with natural retention solder pins	68	60 05 068 5143

Female connector



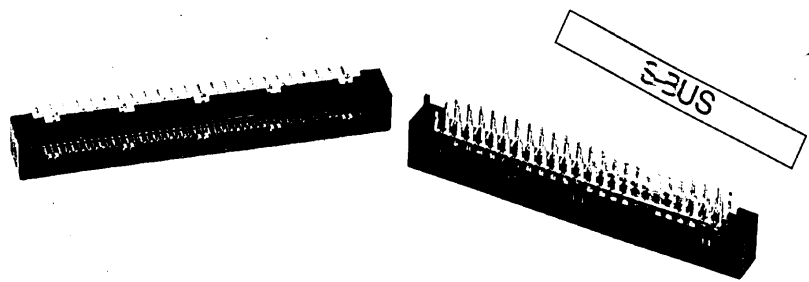
Board drillings
(Components side)



1) Contact number 1

Number of contacts

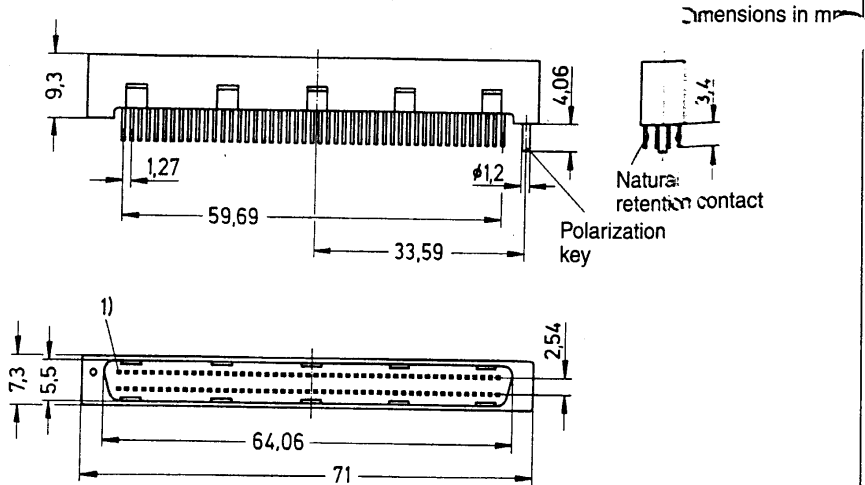
96



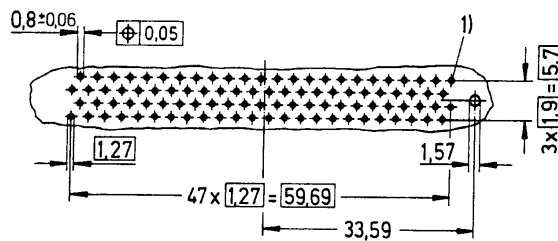
Male connector natural retention solder pins

Identification	No. of contacts	Part No.
Male connector straight with natural retention solder pins	96	60 05 096 5218

Male connector



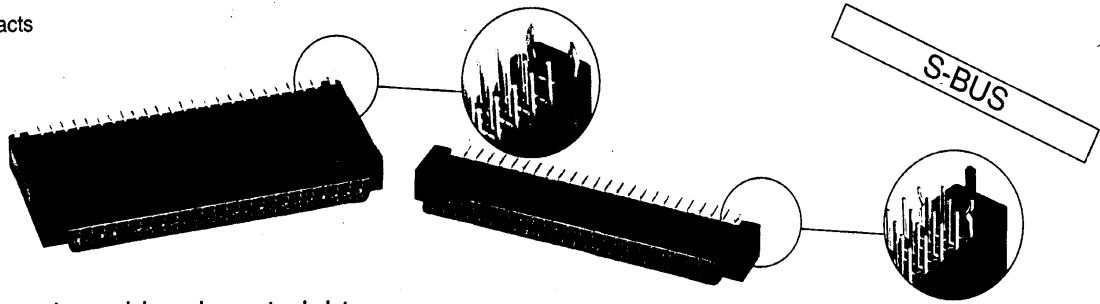
Board drillings
(Components side)



1) Contact number 1

Number of contacts

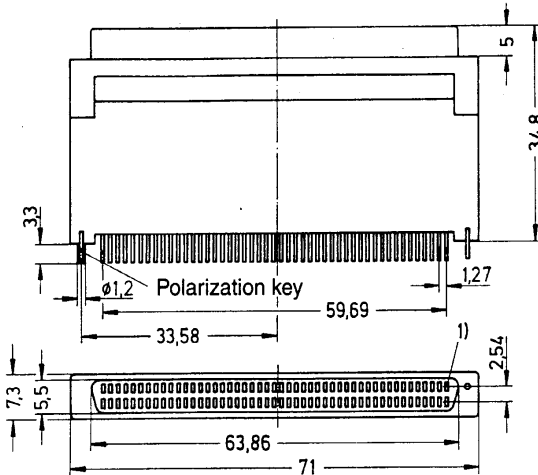
96



Female connector solder pins, straight

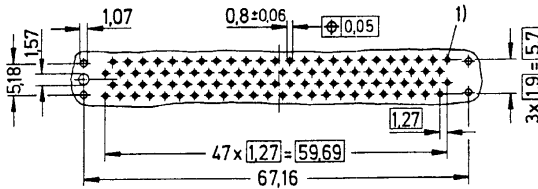
Identification	No. of contacts	Part No.
Female connector with straight solder pins	96	34.80 mm high version 60 05 096 5121
		14.45 mm high version 60 05 096 5118

Female connector
34.80 mm high version
with board lock



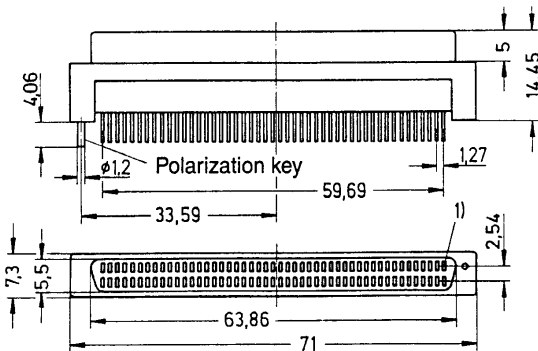
Dimensions in mm

Board drillings
(Components side)

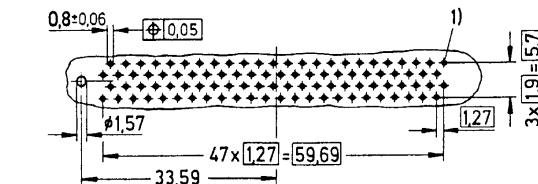


1) Contact number 1

14.45 mm high version
with natural retention pins



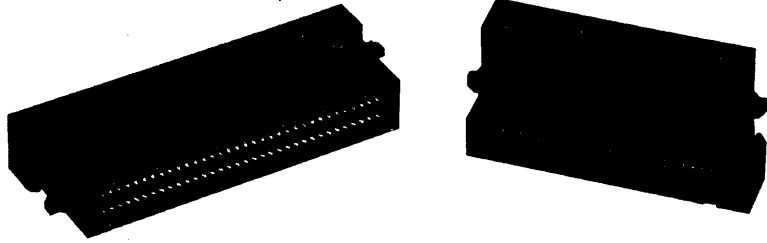
Board drillings
(Components side)



1) Contact number 1

Number of contacts

50-68



Male connector for flat cable

Identification

Male connector with insulation displacement termination
for flat cable pitch 0.635 mm
AWG 30
Strain relief order separately

No. of contacts

50
68

Male connector

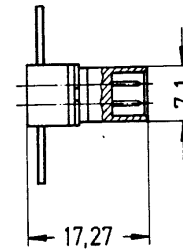
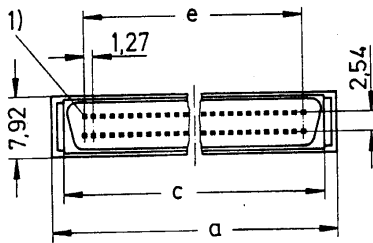
60 06 050 5440
60 06 068 5440

Part No.

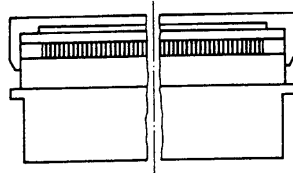
Strain relief

60 06 050 9001
60 06 068 9001

Male connector

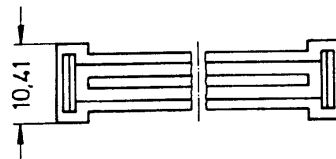
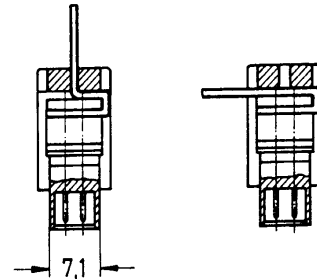
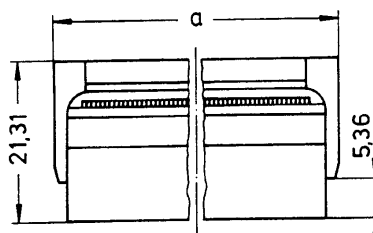


Dimensions in mm



	a	c	e
50	39.75	36.19	30.48
68	51.18	47.62	41.91

Strain relief



	a
50	39.83
68	53.44

1) Contact number 1

Tools see page 40

Number of contacts 20, 30, 40, 50, 60, 70, 80, 90, 100, 120

Distance between boards

Pitch 1.27 mm

Working current 1 A

Working voltage 240 V ~

Test voltage $U_{r.m.s.}$ 750 V

Contact resistance $\leq 35 \text{ m}\Omega$

Insulation resistance $\geq 10^3 \text{ M}\Omega$

Temperature range $-55 \text{ }^\circ\text{C} \dots +105 \text{ }^\circ\text{C}$

Terminations

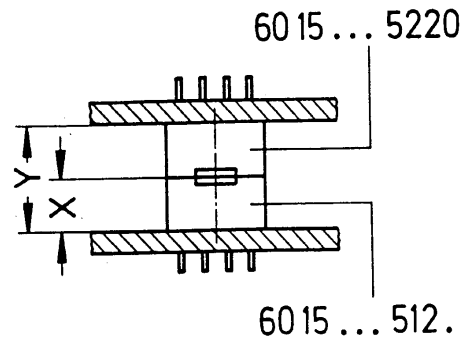
Solder pins Straight for PCB holes
min. $\varnothing 0.74 \text{ mm}$

Materials

Moulding Thermoplastic resin
glass-fibre filled UL 94-V0

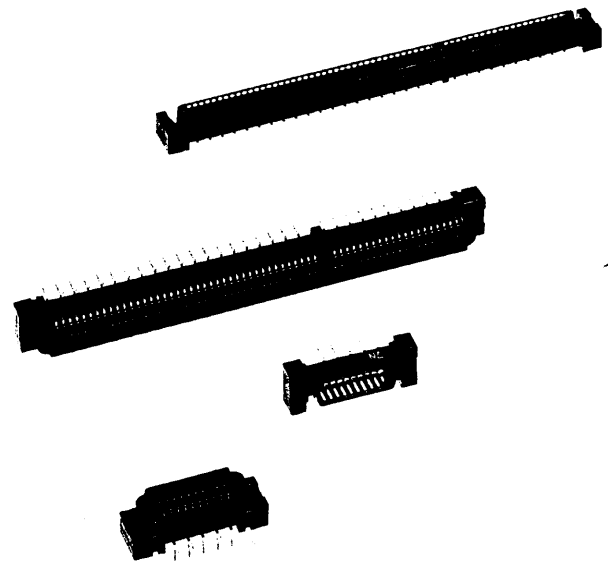
Contacts Copper alloy

Plating Selectively gold-plated



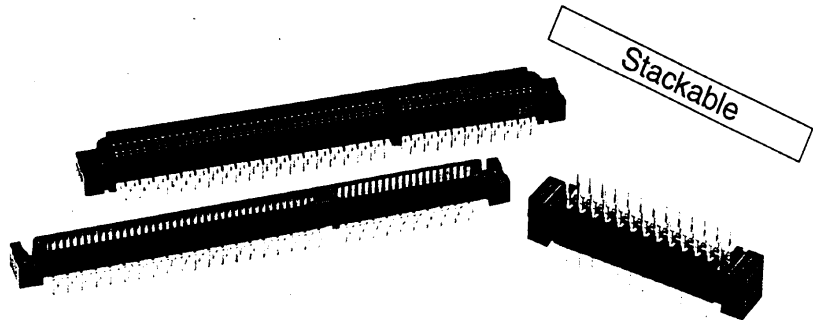
Type	X	Y
60 15 ... 5122	4.10	8
60 15 ... 5123*	5.10	9
60 15 ... 5124	6.10	10
60 15 ... 5125*	7.10	11
60 15 ... 5126	8.10	12
60 15 ... 5127*	9.10	13
60 15 ... 5128	10.10	14

* Not kept in stock



Number of contacts

20-120



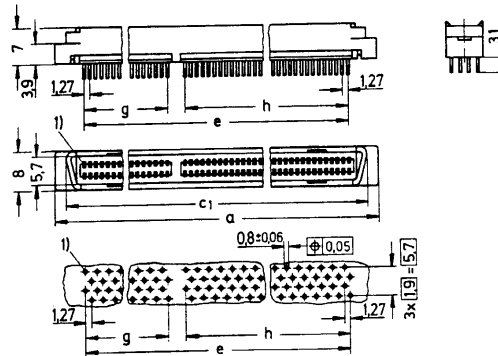
Connector solder pins, straight

Identification	No. of contacts	Part No.	
		Male connector	Female connector
Male and female connector with solder pins, straight	20	60 15 020 5220	60 15 020 512 .
	30	60 15 030 5220 *	60 15 030 512 . *
	40	60 15 040 5220	60 15 040 512 .
	50	60 15 050 5220	60 15 050 512 .
	60	60 15 060 5220	60 15 060 512 .
	70	60 15 070 5220 *	60 15 070 512 . *
	80	60 15 080 5220	60 15 080 512 .
	90	60 15 090 5220 *	60 15 090 512 . *
	100	60 15 100 5220	60 15 100 512 .
	120	60 15 120 5220	60 15 120 512 .

Distance between boards = Y
see page 34

8 mm	2
9 mm	3 *
10 mm	4
11 mm	5 *
12 mm	6
13 mm	7 *
14 mm	8

Male connector

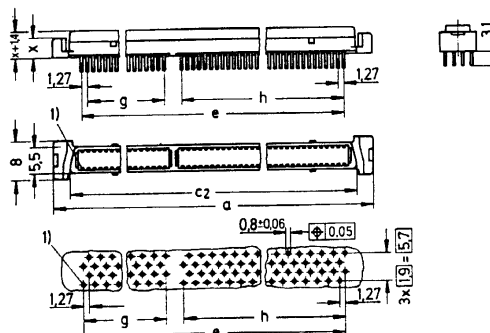


Dimensions in mm

Board drillings
(Components side)

	a	c ₁	c ₂	e	g	h
20	24.05	19.27	16.77	9 x 1.27 = 11.43	-	-
30	30.40	25.62	23.12	14 x 1.27 = 17.78	-	-
40	36.75	31.97	29.47	19 x 1.27 = 24.13	-	-
50	43.10	38.32	35.82	24 x 1.27 = 30.48	-	-
60	49.45	44.67	42.17	29 x 1.27 = 36.83	-	-
70	55.80	51.02	48.52	34 x 1.27 = 43.18	-	-
80	62.15	57.37	54.87	39 x 1.27 = 49.53	-	-
90	68.50	63.92	61.22	44 x 1.27 = 55.88	-	-
100	74.85	70.07	67.57	49 x 1.27 = 62.23	-	-
120	90.09	85.31	82.81	61 x 1.27 = 77.47	19 x 1.27 = 24.13	39 x 1.27 = 49.53

Female connector



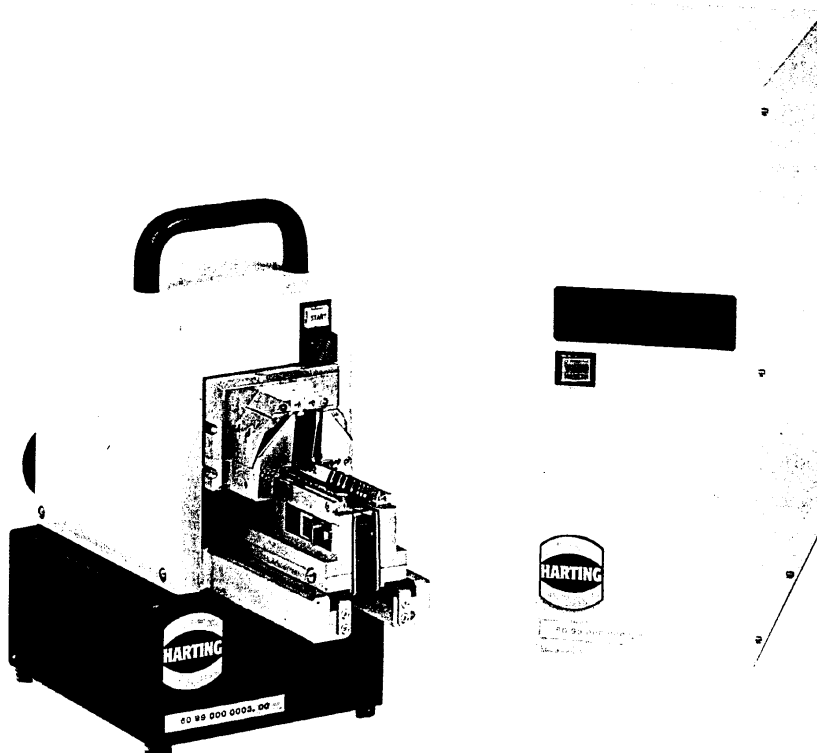
X	Type
4.10	60 15 ... 5122
5.10	60 15 ... 5123*
6.10	60 15 ... 5124
7.10	60 15 ... 5125*
8.10	60 15 ... 5126
9.10	60 15 ... 5127*
10.10	60 15 ... 5128

Board drillings
(Components side)

¹⁾ Contact number 1

TOOLS

- A comprehensive range of high density Input/Output and Intra-Cabinet connectors is only useful if supported by adequate and efficient termination tooling.
- HARTING has therefore designed a range of tools to offer the most efficient processing solution to satisfy a Customer's manufacturing demand:
 - Small to medium size production volume.
Managed with hand tool or semi-automatic tool.
 - Medium to large size production volume managed with highly efficient automatic machines.



Semi-automatic machine CAT 60

Tools for insulation displacement termination
for Pin and socket and Bellows range

Selection chart for semi-automatic assembly machine CAT 60

for Connector	Semi automatic machine	Support plates	Adaptator	Head and table	Hand press
Female Pin and socket 60 03 ... 5100 60 03 ... 5110 60 03 ... 5120	60 99 000 0003	60 99 000 0004	60 99 ... 0006	60 99 000 0008	60 99 000 0007
Male Pin and socket 60 03 ... 5200 60 03 ... 5210 60 03 ... 5220			60 99 ... 0005	60 99 000 0010	
Female Bellows 60 13 ... 5100			60 99 ... 0014	60 99 000 0015	
Male Bellows 60 13 ... 5200			60 99 000 0012	60 99 ... 0013	

Number of contacts

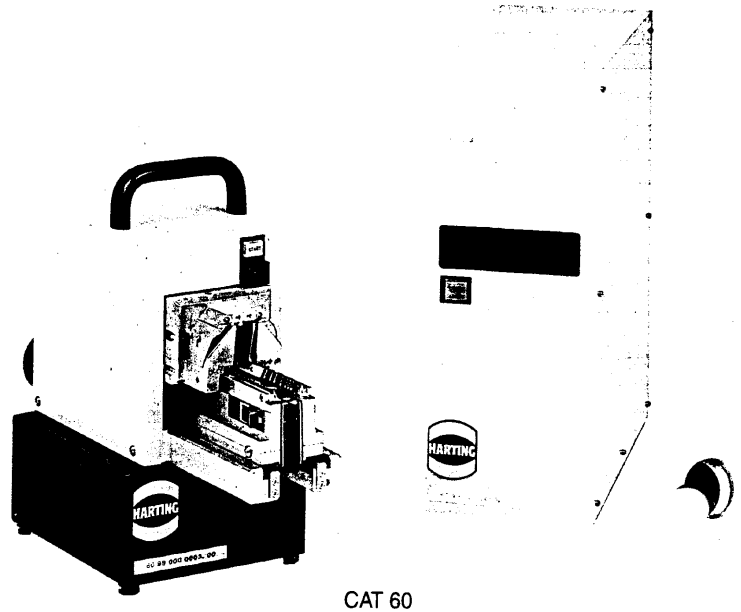
Tools for insulation displacement termination
for Pin and socket and Bellows range

Selection chart for hand assembly

for Connector	Hand cable aligner	Head and table	Hand press
Female Pin and socket 60 03 ... 5100 60 03 ... 5110 60 03 ... 5120	60 99 000 0011	60 99 000 0008	60 99 000 0007
Male Pin and socket 60 03 ... 5200 60 03 ... 5210 60 03 ... 5220		60 99 000 0010	
Female Bellows 60 13 ... 5100		60 99 000 0015	
Male Bellows 60 13 ... 5200	60 99 000 0017	60 99 000 0016	

Number of contacts

Identification	Part No
Semi-automatic machine CAT 60	60 99 000 0003



CAT 60

Support plates for Pin and socket and female Bellows connector	60 99 000 0004
--	----------------

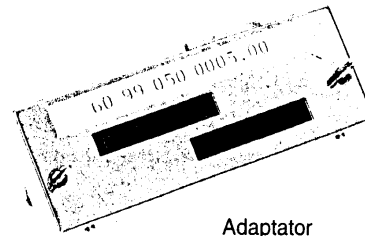
Support plates for male Bellows connector	60 99 000 0012
--	----------------



Support plates

Adaptor for female Pin and socket connector, page 14	60 99 ... 0006
--	----------------

Adaptor for male Pin and socket connector, page 14	60 99 ... 0005
--	----------------



Adaptor

Adaptor for female Bellows connector; page 20	60 99 ... 0014
---	----------------

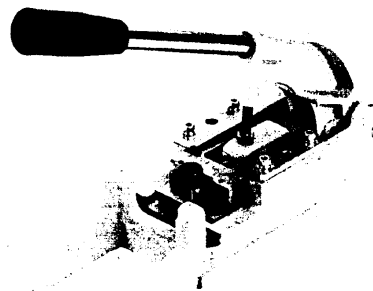
Adaptor for male Bellows connector, page 20	60 99 ... 0013
---	----------------

Identification

Part No

Hand press

60 99 000 0007



Hand press

Head and table
for female Pin and socket
connector

60 99 000 0008

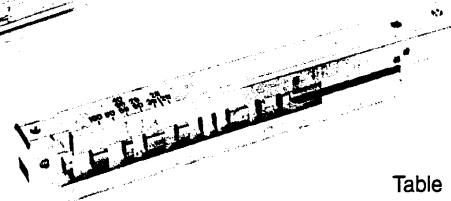
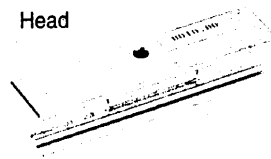
Head and table
for male Pin and socket connector

60 99 000 0010

Head and table
for female Bellows connector

60 99 000 0015

Head



Table

Head and table
for male Bellows connector

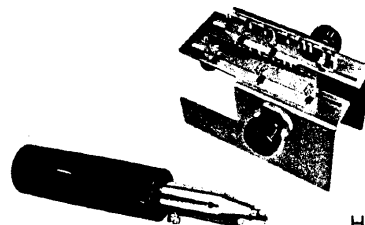
60 99 000 0016

Hand cable aligner
for Pin and socket and
female Bellows connector

60 99 000 0011

Hand cable aligner
for male Bellows connector

60 99 000 0017



Hand cable aligner

Hand crimp tool
for 60 03 050 0153

60 99 000 0029



Hand crimp tool

Identification

Part No

Hand press
for Press-in connector

09 99 000 0201

Bottom tool
for Press-in connector

60 99 000 0031

Top tool
for Press-in connector

09 99 000 0197

Base plate
for Press-in connector

09 99 000 0255

Press-out tool
for Press-in connector

60 99 000 0032

Component Press-in Machine
CPM 2000

on request

Microprocessor controlled automatic Press-in machine
for technical detail please consult us

Bench press
for IDC flat cable
Pitch 0.635 mm

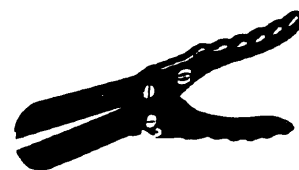
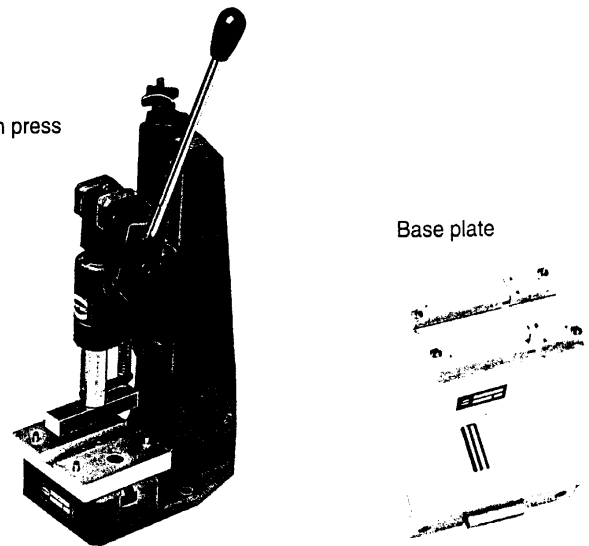
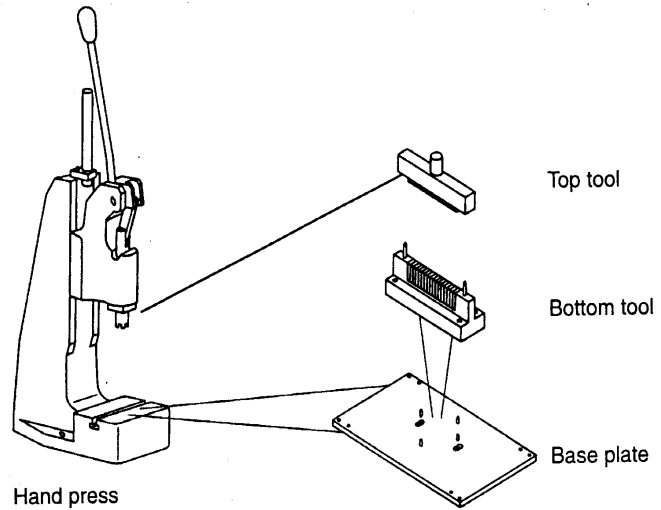
09 99 000 0114

Base plate
for IDC flat cable
Pitch 0.635 mm

60 99 000 0034

Cable cutter
for IDC flat cable

09 99 000 0116



CABLES

- A 0.635 mm flat cable range in PVC material for general requirements and in FEP material for high impedance matched SCSI-2/3 applications, both being compatible with Harting's 4-point insulation displacement contact design. UL recognised.
- An ultra flexible twisted pair shielded cable suitable for use with our *har-mik®* IDC discrete wire cable connector range. UL recognised.

Cable assemblies

- HARTING can supply cable assemblies to customer specifications.
- A wide range of connector types available with various contact arrangements constitute the ideal solution to your wiring problems.
- A range of compatible cables are available in economic reel lengths.

Quality

- Cables professionally assembled on HARTING harnessing machines ensure reliable termination.
- Finished harnesses are subject to 100% quality checks: eg.
- Insulation test
- Contact resistance test.

Economy

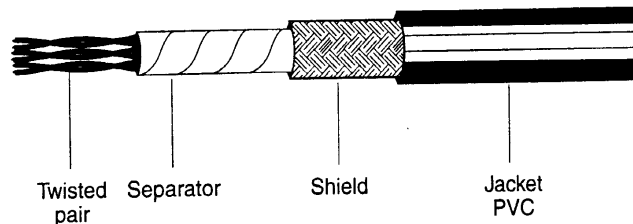
- The tested assembly of connectors and cables from one manufacturer ensures high product reliability at the best possible price.
- Investment for harnessing machines and finished assembly test equipment is not required.
- Stocks of piece parts are not required.

Identification	No. of pairs	Part No.
Twisted pair cable with braid shield AWG 28 Length per reel: 100 m	10	60 90 010 6003
	13	60 90 013 6003
	14	60 90 014 6003
	18	60 90 018 6003
	20	60 90 020 6003
	25	60 90 025 6003
	34	60 90 034 6003
	40	60 90 040 6003
	48	60 90 048 6003
	50	60 90 050 6003

Drawing

No. of pairs	Outside diameter	
	Nominal	Max
10	6.2	6.5
13	6.5	6.8
14	6.5	6.8
18	7.4	7.7
20	7.7	8.2
25	8.2	8.5
34	8.7	9.0
40	9.9	10.4
48	10.1	10.6
50	10.6	11.1

Dimensions in mm



Technical characteristics

Number of pairs	10, 13, 14, 18, 20, 25, 34, 40, 48, 50	Propagation velocity	60 %
Voltage rating	30 V (UL 2789)	Temperature range	- 20 °C ... + 105 °C
Maximum conductor resistance (20 °C)	233 Ω/km	Materials pairs	
Minimum insulation resistance (20 °C)	1 MΩ/km	Conductor	7 x 0.13 mm stranded tinned copper
Nominal differential impedance (TDR)	85 Ω	Insulation (except 50 pairs)	PVC Ø 0.62 mm
Nominal differential capacitance (1 kHz)	110 pF/m	Shield	Tinned copper braid, covering ≥ 80 %
		Jacket	PVC

Identification

Flat cable
for IDC connector
Pitch 0.635 mm
AWG 30
Length per reel: 100 ft
30.48 m

No. of wires

50
68

Part No.

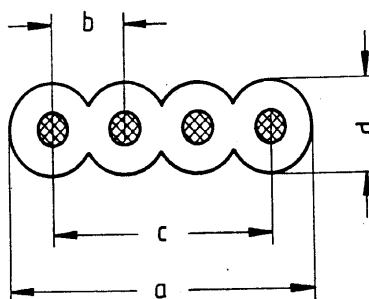
PVC

FEP

60 90 050 6008
60 90 068 6008

60 90 050 6007*
60 90 068 6007*

Drawing



Dimensions in mm

	a ± 0.25	b ± 0.05	c ± 0.2	d ± 0.05
50	31.75	0.635	31.12	0.68
68	43.20	0.635	42.55	0.68

The tolerance B is not cumulative

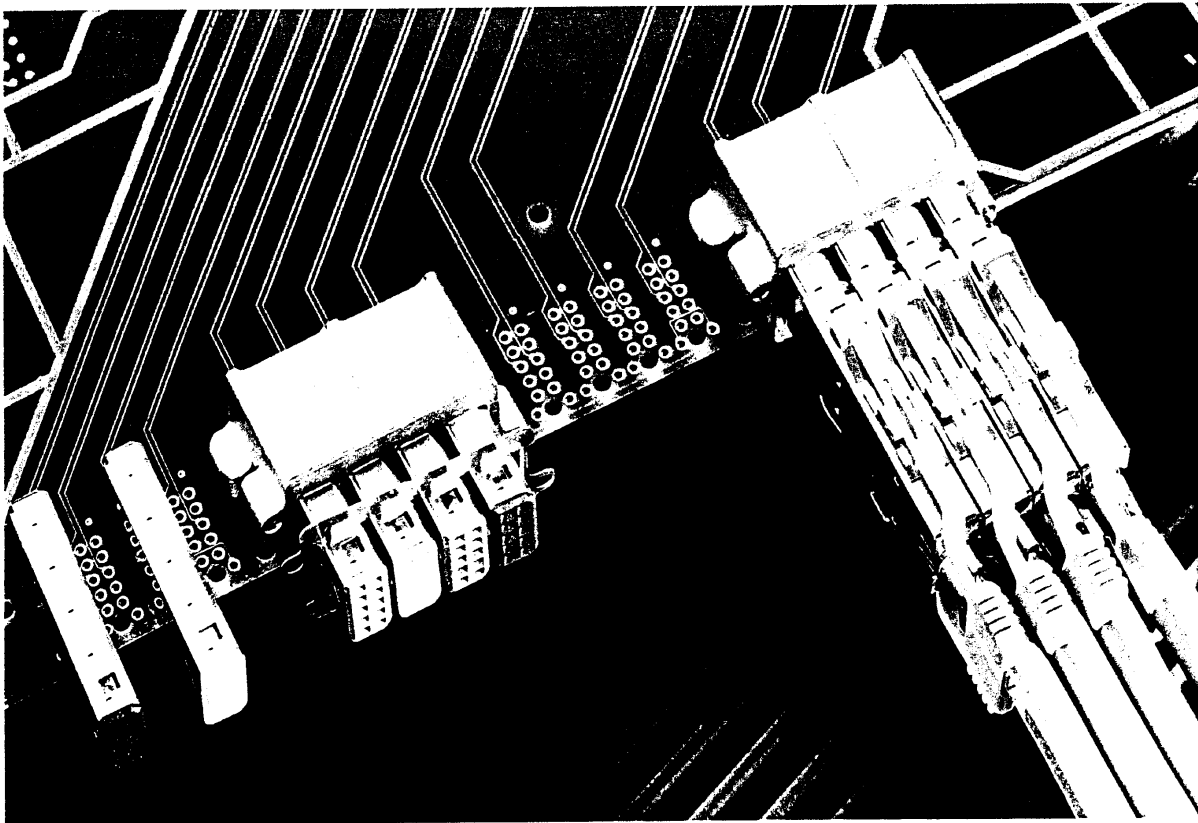
Technical characteristics

	PVC	FEP
Number of wires	50, 68	50, 68
Voltage rating	150 V	150 V
Impedance	75 Ω	90 Ω (single end) 130 Ω (differential)
Nominal differential capacitance (1 kHz)	27.5 pF/ft	14.7 pF/ft
Pitch	0.635 mm	0.635 mm
UL approval	2962	20726
Temperature range	- 30 °C ... + 105 °C	- 30 °C ... + 105 °C
Materials pairs		
Conductor	7 x 0.102 mm regular tinning or Z-bonding AWG 30	Silver plated copper AWG 30 Solid bare copper
Insulation	PVC	FEP

System presentation according to IEEE P1355 · IEC 1076-4-107 (Draft)

har-link® MODULAR METRIC I/O CONNECTOR SYSTEM

har-link supports the trend towards miniaturisation due to its space saving design. *har-link* offers more than twice the density of many other connector systems. *har-link* was designed to meet the requirements of high contact density, integrated board fixing, quick efficient locking devices, shielding with ground continuity and reliable wiring techniques. Also to provide a low installed cost. *har-link* is compatible with basic metric packaging systems acc. to IEC 917 / IEEE P 1301 as well as with major inch based adaptor board standards. To fulfil the demand throughout the entire electronics industry of having resistant systems against EMC emission or susceptibility *har-link* connectors are fully shielded. "Hot swapping", a further requirement of today's electronic systems, has also been taken into account by the inclusion of sequenced mating levels. Mechanical robustness is also guaranteed by the innovative design. *har-link* features a unique, reliable positive latch system. The easily operated "push pull" mechanism prevents free cable connectors from vibrating loose or being inadvertently unplugged. A simple but reliable polarisation system prevents the mating of connectors in the wrong orientation.

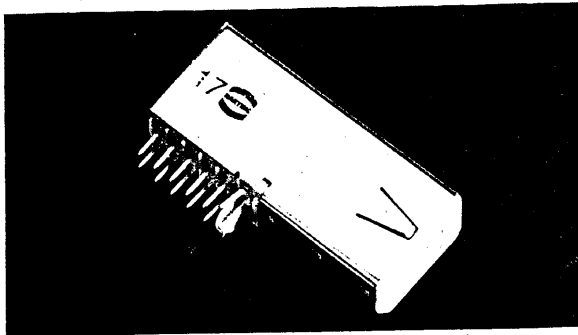


har-link® in inch-based systems

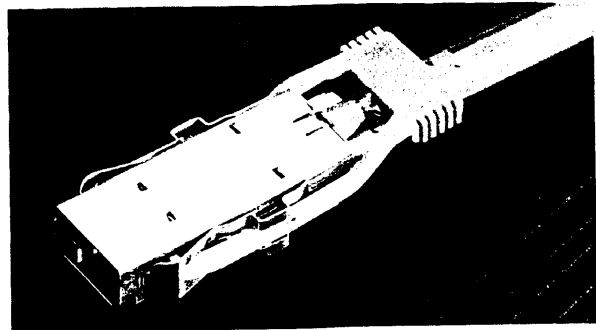
Initially *har-link* was developed especially for requirements in transputer based computer systems but the advantages of modern technology featured in the *har-link* product makes it suitable for use in the varied fields of computer communications as well as in all other fields of professional electronics and telecommunications. Even if the connector dimensions are "hard metric" (acc. to IEC 917 / IEEE P 1301) *har-link* connectors are also well suited for use in "inch based" packaging systems. The outside and co-ordination dimensions are matched to well known adaptor boards e.g. PC/PS2, SBus, VME. This allows the easy and uncomplicated replacement of existing I/O connector systems in the case that high contact density or small, space efficient connector modules are requested.

har-link® is compatible with metric systems

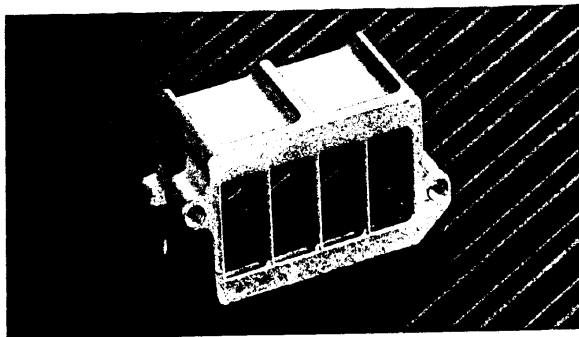
har-link supports the trend towards metrification but may also be used in conventional inch based systems. Especially for use in telecommunication and professional electronic applications. *har-link* design was aligned very closely to the metric connector standards IEC 1076-4-101 / IEEE P 1301.2 and therefore also to metric packaging standards IEC 917 / IEEE P 1301. Due to this reason it is possible to use *har-link* e.g. as an I/O connector in Futurebus + applications.



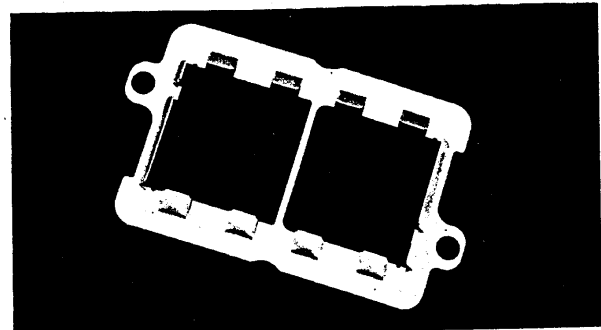
Female connector Part No.: 27 21 121 8000
 - 360 degree EMC shielded right angle board mounting connector.
 - 10 way high density solution, 6 mm width x 11.5 mm height.
 - 2 mm grid pitch compatible with "hard metric" IEC 917 / IEEE P 1301 packaging standards.
 - suitable for fixing in 1.6 mm thickness PCB, through a 0.6 mm minimum diameter through hole.
 The connector shell housing has a positive polarised mating design and metal grounding pins that ensure continuity to the PCB. Each lateral face also has a grounding bump to ensure contact continuity between modules mounted on a 6 mm pitch, through a metal fixing bracket.



Male connector Part No.: 27 11 161 8001
 360 degree EMC shielded cable connector with one pre-leading contact providing "hot-swapping" capability. Designed for use with AWG 28/7 twisted pair cable through discrete wire termination for a maximum outer cable diameter of 5.7 mm. A push-pull latching system ensures positive mating.



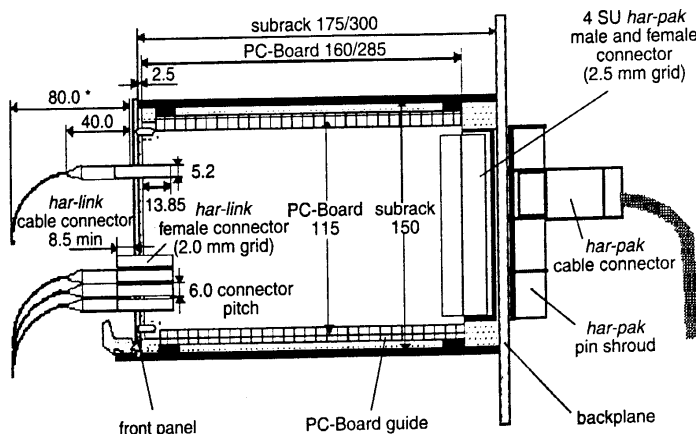
Bracket Part No.: 27 71 040 0001
 In order to maximise the EMC shielding efficiency of an array of multiple connectors, a 4 way nickel plated Zammac bracket is available. It has been designed for high density series panel fixing on a 30 mm grid, in addition 1 to 3 way sized brackets are under development.



EMC Gasket Part No.: 27 71 040 0002
 EMC shielding is completed through a panel via a 4 way matching gasket with grounding fingers, in addition 1 to 3 way sized gaskets are under development.

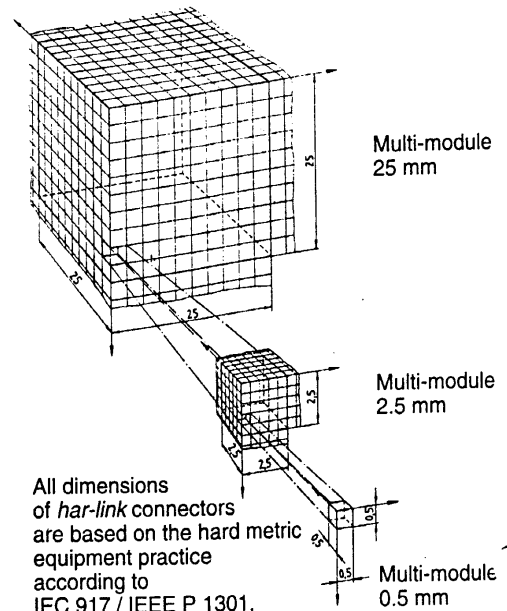
TWIN MINICOAXIAL MODUL UNDER DEVELOPMENT PROCESS
DUPLEX OPTICAL FIBER MODUL

Possible combination in metric systems



* acc. to Madison cable No. 2791

2.0 mm har-link I/O connector system in combination with 2.5 mm har-pak backpanel connectors integrated in metric packaging system acc. to IEC 917 / IEEE P 1301.



List of part numbers



Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
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09 99 000 0116	40	60 01 040 5132	8	60 02 550 5142	11	60 03 040 0555	22
09 99 000 0197	40	60 01 040 5133	8	60 02 550 5150	11	60 03 040 5100	14
09 99 000 0201	40	60 01 040 5140	8			60 03 040 5110	14
09 99 000 0255	40	60 01 040 5141	8			60 03 040 5120	14
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27 21 121 8000	45	60 01 050 5102	6				
27 71 040 0001	45	60 01 050 5132	8				
27 71 040 0002	45	60 01 050 5133	8	60 03 020 0155	22	60 03 050 0143	23
		60 01 050 5140	8	60 03 020 0255	22	60 03 050 0146	23
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60 01 000 9018	26	60 01 050 5232	8	60 03 020 5120	14	60 03 050 0255	22
60 01 000 9019	26			60 03 020 5180	15	60 03 050 0555	22
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List of part numbers



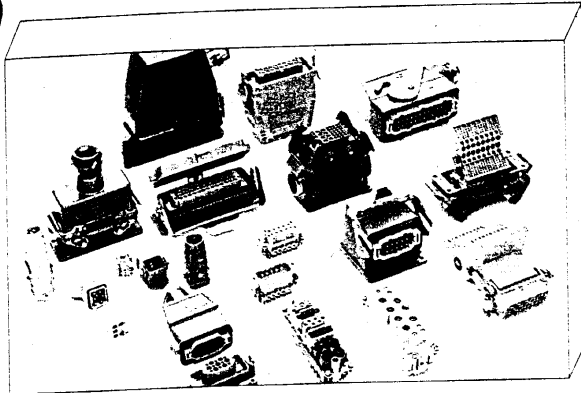
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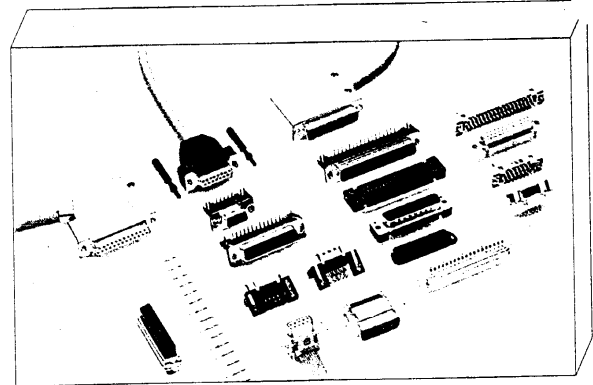
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60 15 100 5128	35	60 99 000 0004	38				
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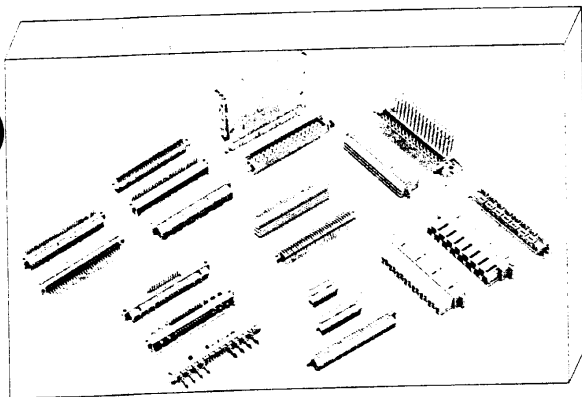
Some of the components from the HARTING range



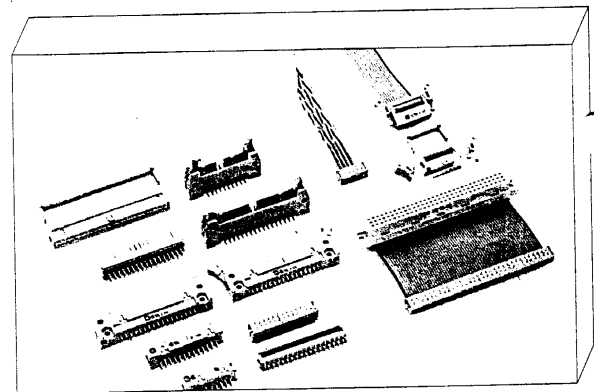
Heavy Duty Connectors
for industrial engineering



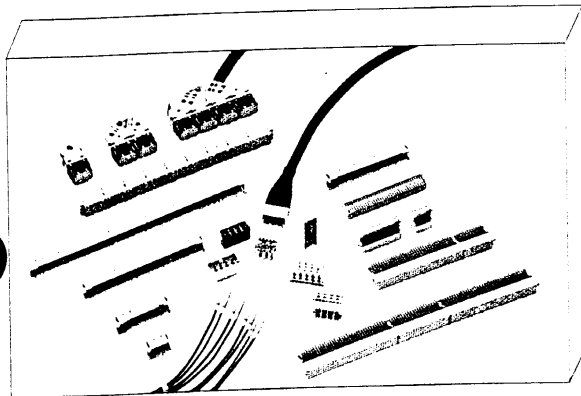
Subminiature D-Connectors
DIN 41 652



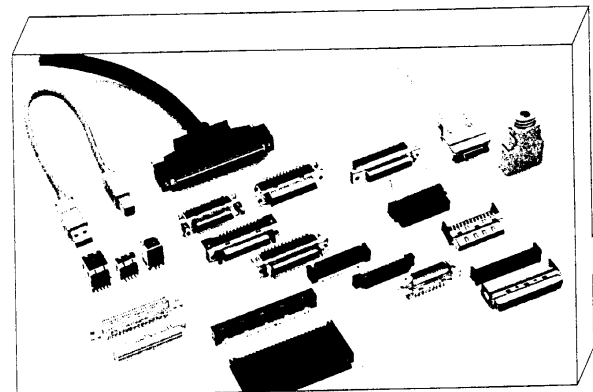
Printed Board Connectors
DIN 41 612 · DIN 41 617



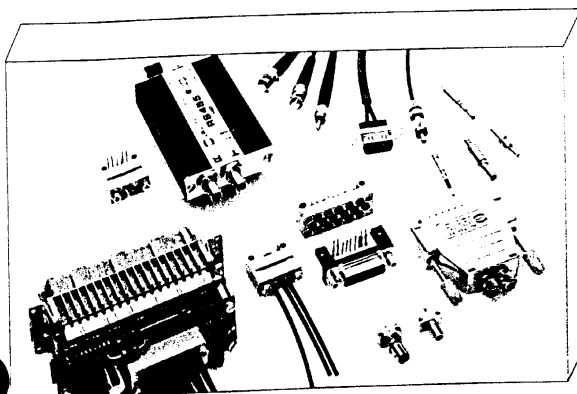
Flat Cable Connector System
DIN 41 651



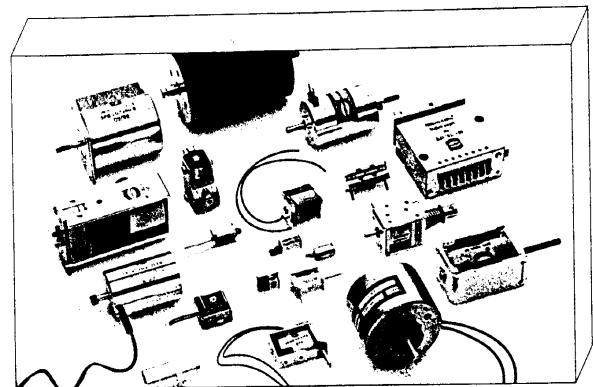
High density, metric printed
board connectors 2.5 mm · DIN 41 642



Micro-Electronic-Connectors
Contact spacing 1.27 mm



Fibre Optic
Data Link Systems components distributor



Solenoids