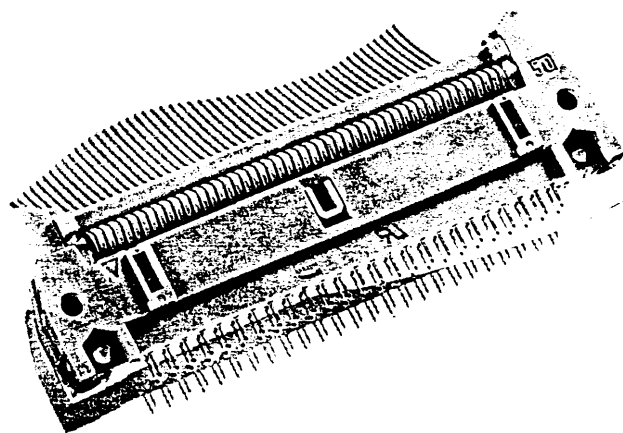


Flat Cable Connector System



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

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

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

Approximately 1,600 people are employed worldwide including 150 engineers and more than 100 sales engineers who provide the daily interface with our customers.

HARTING with its 15 subsidiaries in Europe, North America and Asia is today one of the world's leading connector manufacturers.

All the company's manufacturing plants, with the exception of Plant 1 in Espelkamp, have been built within the last ten years.

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 ISO 9001 in the Quality Assurance Manual.

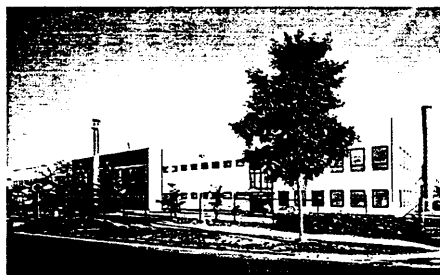
In total approximately 60 quality control personnel are employed. The majority of these engineers and technicians are trained and certified by the German (DCQ) or Swiss (SAQ) quality organisations. The divisions electronic connectors, heavy duty connectors Han® and solenoids are certified according to DIN 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 several of its product ranges.



Germany - Plant 1 Espelkamp



Germany - Plant 2 Espelkamp



Germany - Plant 3 Espelkamp



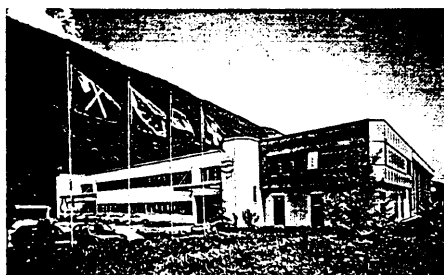
France - Sales and marketing



Espelkamp - Staff Cafeteria



United Kingdom - Production, sales and marketing



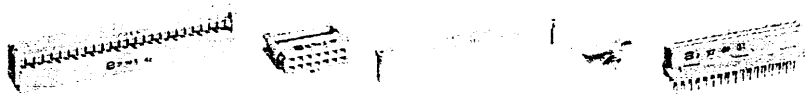
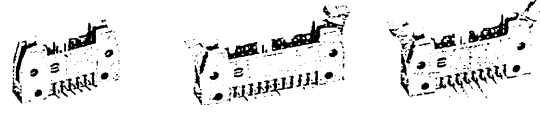
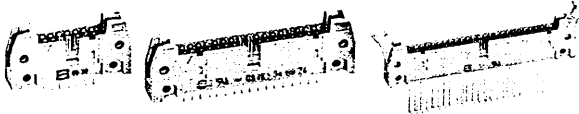
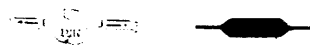
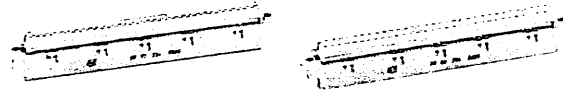
Switzerland - Production plant



Hong Kong - Production, sales and marketing



Italy - Sales and marketing

Series	Number of contacts		Page
Technical characteristics		Flat cable connector systems with insulation displacement	5
SEK 18/24			6
Male and female connectors to IEC	6		8
DIN 41 651	10		
MIL-C 83 503	14		
D 2632, BT 224	16		
HE 10, NFC 93-428	20		
	26		10
UL/CSA-approved	34		
	40		12
	50		
	60		13
	64		
Press-in tools / Accessories			14
Card edge connectors for P.C.B. 1.6 mm	10		16
	14		
	16		
	20		
	26		
	34		
SEK 18 solder transition connectors, 2 rows	6		
	10		
	14		
	16		
	20		
	26		17
	34		
SEK 17 DIP connectors	14		18
	20		
	24		
SEK 19 solder transition connectors, 4 rows	10		
	16		
	20		
	26		19
	34		
Gds A-B · Gds A-C	64		20
Female connectors to DIN 41 612			
D-Sub	9		
Subminiature connectors to DIN 41 652	15		21
	25		
	37		
Flat cable/ Tools for termination of flat cables			22
List of part numbers			25
Some of the components from the HARTING range			26
Addresses			27

The HARTING Insulation Displacement Technique



Economic and Reliable Connections

The flat cable and connector can be preassembled and used as a component with predetermined functional characteristics.

The HARTING insulation displacement contacts pierce the insulation on the flat cable to provide a durable gastight connection with the wire.

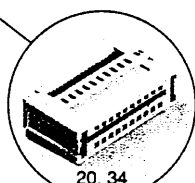
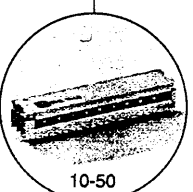
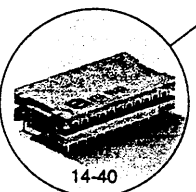
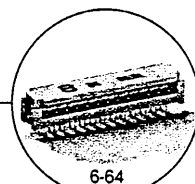
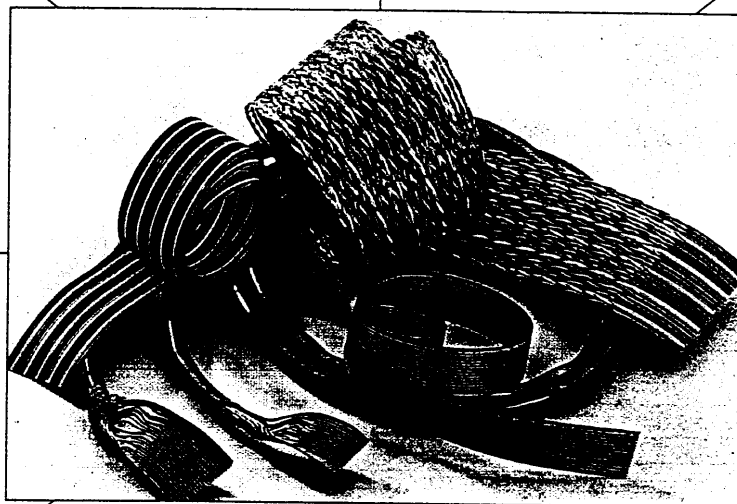
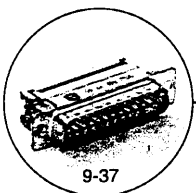
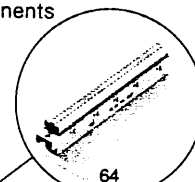
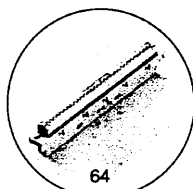
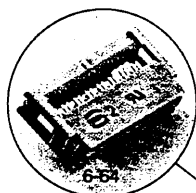
The HARTING[®] insulation displacement technique constitutes the ideal solution to your wiring problems.

¹⁾The HARTING insulation displacement system meets all the characteristics, specifications and test conditions of DIN 41 611/part 6.

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

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

Sales Department
HARTING-Components



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.
- Cables of all types in economic reel lengths are available.

Quality

- Cables professionally assembled on HARTING work stations ensure reliable connections.
- Finished harnesses are subject to 100% quality checks on a HARTING test device.
- 1 kV insulation test.
- Contact resistance test.

Economy

- The tested assembly of connectors and flat cables from one manufacturer guarantees a high degree of economy and reliability.
- Investment for work stations and test devices are not required.
- Stocks of piece parts are reduced.

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.

Technical Characteristics

Number of contacts 6, 9, 10, 14, 15, 16, 20, 24, 25, 26, 28, 34, 37, 40, 50, 60, 64
Series SEK 18
UL/CSA-approved

Pitch (mm)

Male header 2.54 mm

Insulation displacement contacts on the flat cable connector 1.27 mm

Working current 1 A

Test voltage $U_{r.m.s.}$ 1 kV
SEK 17, SEK 19: 500 V

Contact resistance $\leq 20 \text{ m}\Omega$

Insulation resistance $\geq 10^9 \Omega$

Temperature range $-55^\circ\text{C} + 125^\circ\text{C}$

The maximum temperature includes heating of contacts and ambient temperature.

Terminations

SEK 18 female connector transition connector
SEK 18 male header
Insulation displacement connection
Wire AWG 28 (7 x 0.127) 0.09 mm²
Wrap posts 0.6 x 0.6 mm
Diagonal 0.79-0.86 mm
Solder pins for P.C.B. hole $\varnothing$ 0.9 mm, DIN IEC 52 141

Compliant press-in termination for $\varnothing$ 0.94 - 1.06 mm
SEK 18 Card edge
Insulation displacement connection
Wire AWG 28 (7 x 0.127) 0.09 mm²
SEK 17 and 19
Insulation displacement connection
Wire AWG 28 (7 x 0.127) 0.09 mm²

Solder pins 0.45 x 0.35 mm for P.C.B. hole $\varnothing$ 0.8 mm
Insulation displacement connection
Wire AWG 28 (7 x 0.127) 0.09 mm²

Mouldings Thermoplastic resin (PBTP)
UL 94-V O

Contact surface

SEK 18
Contact zone: gold-plated according to Performance Level¹⁾
Termination zone: tinned

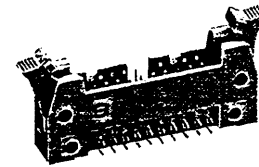
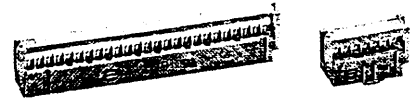
SEK 17 and 19
Tinned

Gds A-B · Gds A-C
D-Sub
Contact zone: gold-plated according to Performance Level¹⁾
Termination zone: tinned

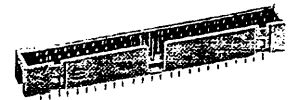
¹⁾Performance Level 3 as per DIN 41 651, Part 2
50 mating cycles
No gas test

¹⁾Performance Level 2 as per DIN 41 651, Part 2
200 mating cycles
4 days gas test

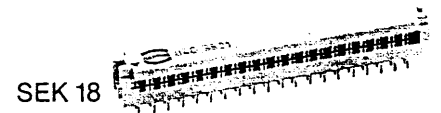
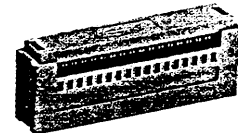
¹⁾Performance Level as per MIL-C 83 503
> 0.76 μm Au (30 μ inch) on request
Different contact surfaces on request



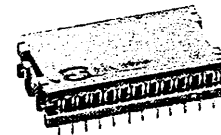
SEK 18



SEK 18



SEK 18



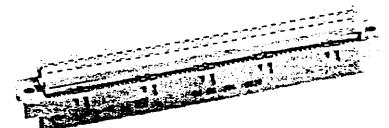
SEK 17



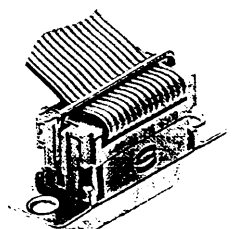
SEK 19



Gds A-B



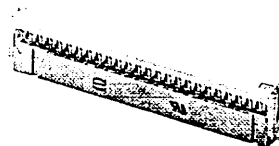
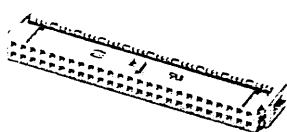
Gds A-C



D-Sub

Number of contacts

6-64



Female connector

Identification

No. of contacts

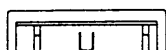
Part No.

Drawing

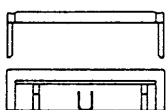
Dimensions in mm

Female connector
with central
polarization

without
strain relief clamp

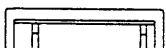


with
strain relief clamp



Female connector
without central
polarization

without
strain relief clamp

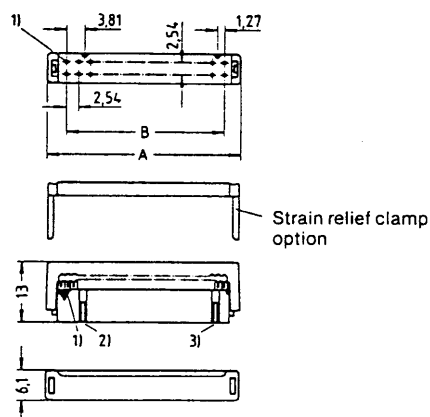
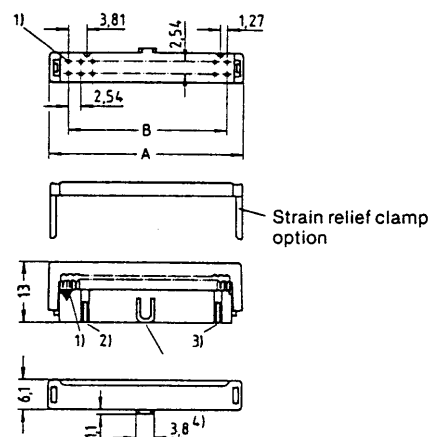
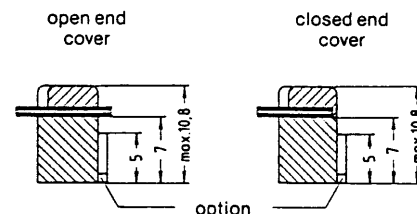


with
strain relief clamp



open end cover	closed end cover
09 18 506 803	09 18 506 804
09 18 510 803	09 18 510 804
09 18 514 803	09 18 514 804
09 18 516 803	09 18 516 804
09 18 520 803	09 18 520 804
09 18 526 803	09 18 526 804
09 18 534 803	09 18 534 804
09 18 540 803	09 18 540 804
09 18 550 803	09 18 550 804
09 18 560 803	09 18 560 804
09 18 564 803	09 18 564 804
09 18 506 813	09 18 506 814*
09 18 510 813	09 18 510 814*
09 18 514 813	09 18 514 814*
09 18 516 813	09 18 516 814*
09 18 520 813	09 18 520 814*
09 18 526 813	09 18 526 814*
09 18 534 813	09 18 534 814*
09 18 540 813	09 18 540 814*
09 18 550 813	09 18 550 814*
09 18 560 813	09 18 560 814*
09 18 564 813	09 18 564 814*

open end cover	closed end cover
09 18 510 805	09 18 510 806*
09 18 514 805	09 18 514 806*
09 18 516 805	09 18 516 806*
09 18 520 805	09 18 520 806*
09 18 526 805	09 18 526 806*
09 18 534 805	09 18 534 806*
09 18 540 805	09 18 540 806*
09 18 550 805	09 18 550 806*
09 18 560 805	09 18 560 806*
09 18 564 805	09 18 564 806*
09 18 510 815*	09 18 510 816*
09 18 514 815*	09 18 514 816*
09 18 516 815*	09 18 516 816*
09 18 520 815*	09 18 520 816*
09 18 526 815*	09 18 526 816*
09 18 534 815*	09 18 534 816*
09 18 540 815*	09 18 540 816*
09 18 550 815*	09 18 550 816*
09 18 560 815*	09 18 560 816*
09 18 564 815*	09 18 564 816*



No. of contacts	6	10	14	16	20	26	34	40	50	60	64
A	12,2	17,3	22,4	24,9	30,0	37,6	47,8	55,4	68,1	80,8	85,9
B	5,08	10,16	15,24	17,78	22,86	30,48	40,64	48,26	60,96	73,66	78,74

- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14way female connector
- 3) No polarization slot for 6way female connector
- 4) 6way: 2.0 mm

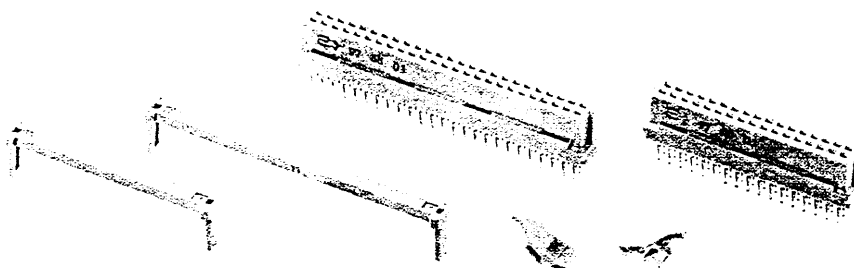
For Performance Level 3 please specify digit 7
 For Performance Level 2 please specify digit 6
 > 0.76 μ m Au (30 μ inch) on request 5*

7*
6*
5*

*Not kept in stock

SEK 18

SEK 24

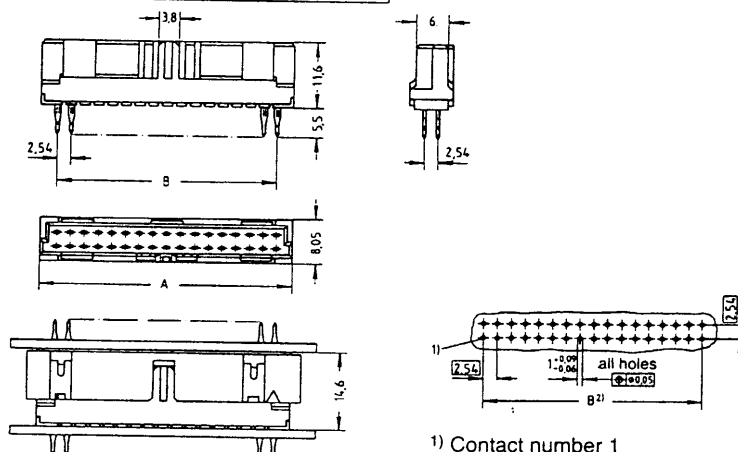


Press in female connector SEK 24

09 18 000 99051)

Female
connector SEK 24
with straight
press-in terminations
and central polarization

	No. of contacts	A	B
09 24 126 — 801	26	36.70	$2.54 \times 12 = 30.48$
09 24 134 — 801	34	46.90	$2.54 \times 16 = 40.64$
09 24 140 — 801	40	54.50	$2.54 \times 19 = 48.26$
09 24 150 — 801	50	67.20	$2.54 \times 24 = 60.96$
09 24 164 — 801	64	85.00	$2.54 \times 31 = 78.74$

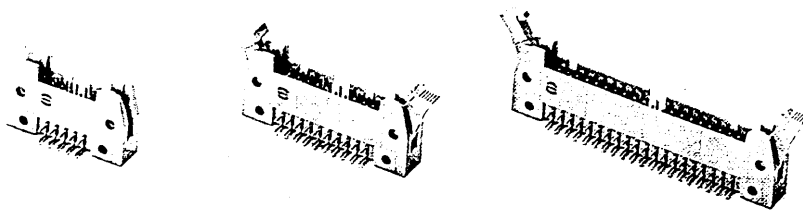


1) Contact number 1

2) Pitch tolerance: ± 0.1

Number of contacts

6-64



Male header with angled pins

Identification/pins

Male header with
angled solder pins

Length: 2.9 mm

Male header with
angled solder pins

Length: 4.5 mm

Male header with
angled wrap posts

Length: 15 mm
□ 0.6 mm

No. of contacts	Part No.		
	Without levers	With short levers	With long levers
6	09 18 506 □ 923	09 18 506 □ 913	09 18 506 □ 903
10	09 18 510 □ 923	09 18 510 □ 913	09 18 510 □ 903
14	09 18 514 □ 923	09 18 514 □ 913	09 18 514 □ 903
16	09 18 516 □ 923	09 18 516 □ 913	09 18 516 □ 903
20	09 18 520 □ 923	09 18 520 □ 913	09 18 520 □ 903
26	09 18 526 □ 923	09 18 526 □ 913	09 18 526 □ 903
34	09 18 534 □ 923	09 18 534 □ 913	09 18 534 □ 903
40	09 18 540 □ 923	09 18 540 □ 913	09 18 540 □ 903
50	09 18 550 □ 923	09 18 550 □ 913	09 18 550 □ 903
60	09 18 560 □ 923	09 18 560 □ 913	09 18 560 □ 903
64	09 18 564 □ 923	09 18 564 □ 913	09 18 564 □ 903
6	09 18 506 □ 921*	09 18 506 □ 911*	09 18 506 □ 901*
10	09 18 510 □ 921*	09 18 510 □ 911*	09 18 510 □ 901*
14	09 18 514 □ 921*	09 18 514 □ 911*	09 18 514 □ 901*
16	09 18 516 □ 921*	09 18 516 □ 911*	09 18 516 □ 901*
20	09 18 520 □ 921*	09 18 520 □ 911*	09 18 520 □ 901*
26	09 18 526 □ 921*	09 18 526 □ 911*	09 18 526 □ 901*
34	09 18 534 □ 921*	09 18 534 □ 911*	09 18 534 □ 901*
40	09 18 540 □ 921*	09 18 540 □ 911*	09 18 540 □ 901*
50	09 18 550 □ 921*	09 18 550 □ 911*	09 18 550 □ 901*
60	09 18 560 □ 921*	09 18 560 □ 911*	09 18 560 □ 901*
64	09 18 564 □ 921*	09 18 564 □ 911*	09 18 564 □ 901*
6	09 18 506 □ 926*	09 18 506 □ 916*	09 18 506 □ 906*
10	09 18 510 □ 926*	09 18 510 □ 916*	09 18 510 □ 906*
14	09 18 514 □ 926*	09 18 514 □ 916*	09 18 514 □ 906*
16	09 18 516 □ 926*	09 18 516 □ 916*	09 18 516 □ 906*
20	09 18 520 □ 926*	09 18 520 □ 916*	09 18 520 □ 906*
26	09 18 526 □ 926*	09 18 526 □ 916*	09 18 526 □ 906*
34	09 18 534 □ 926*	09 18 534 □ 916*	09 18 534 □ 906*
40	09 18 540 □ 926*	09 18 540 □ 916*	09 18 540 □ 906*
50	09 18 550 □ 926*	09 18 550 □ 916*	09 18 550 □ 906*
60	09 18 560 □ 926*	09 18 560 □ 916*	09 18 560 □ 906*
64	09 18 564 □ 926*	09 18 564 □ 916*	09 18 564 □ 906*

For Performance Level 3 please specify digit 7 *

For Performance Level 2 please specify digit 6 *

> 0.76 µm Au (30 µ inch) on request 5 *

7

6

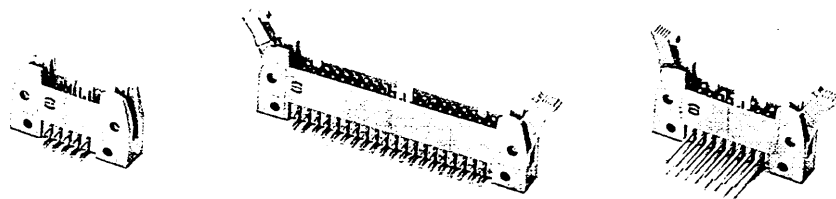
5 *

7

6

5 *

*Not kept in stock

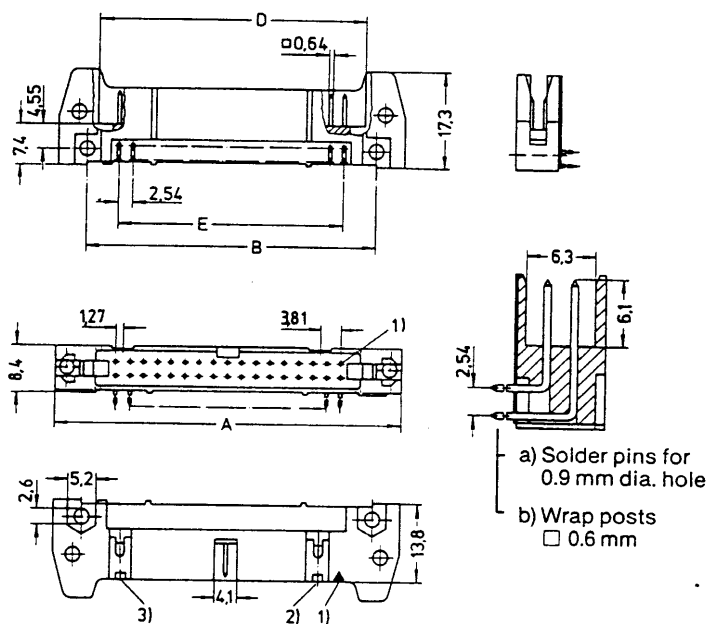
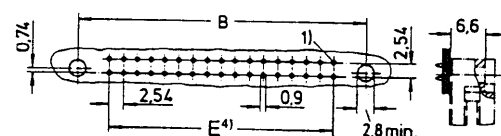


Drawing

Dimensions in mm

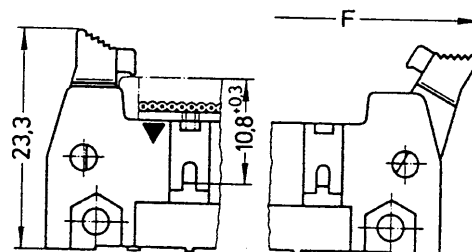
No. of contacts	A	B	D	E	F	G
6	26.9	16.76	12.45	2.54 x 2 = 5.08	36.9	40.3
10	32.0	21.84	17.53	2.54 x 4 = 10.16	42.0	45.4
14	37.1	26.92	22.61	2.54 x 6 = 15.24	47.1	50.4
16	39.6	29.46	25.15	2.54 x 7 = 17.78	49.6	53.0
20	44.7	34.54	30.23	2.54 x 9 = 22.86	54.7	58.1
26	52.3	42.16	37.85	2.54 x 12 = 30.48	62.3	65.7
34	62.5	52.32	48.01	2.54 x 16 = 40.64	72.5	75.8
40	70.1	59.94	55.63	2.54 x 19 = 48.26	80.1	83.5
50	82.8	72.64	68.33	2.54 x 24 = 60.96	92.8	96.2
60	95.5	85.34	81.03	2.54 x 29 = 73.66	105.5	108.9
64	100.6	90.42	86.11	2.54 x 31 = 78.74	110.6	113.9

PC. board layout



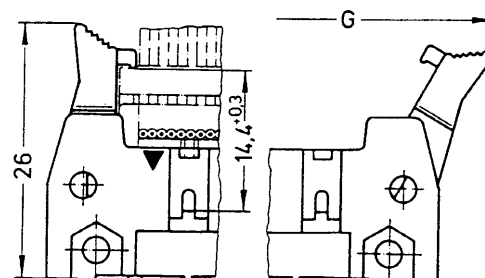
Short levers

for use with female connector without strain relief clamp



Long levers

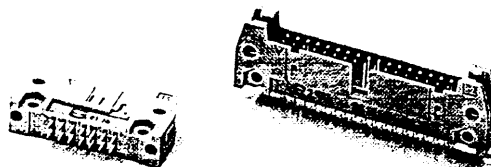
for use with female connector with strain relief clamp



- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance: ± 0.1

Number of contacts

6-64

Male header with straight pins

Identification/pins

Male header with
straight solder pins

Length: 2.9 mm

No. of contacts	Part No.		
	Without levers	With short levers	With long levers
6	09 18 506 □ 924	09 18 506 □ 914	09 18 506 □ 904
10	09 18 510 □ 924	09 18 510 □ 914	09 18 510 □ 904
14	09 18 514 □ 924	09 18 514 □ 914	09 18 514 □ 904
16	09 18 516 □ 924	09 18 516 □ 914	09 18 516 □ 904
20	09 18 520 □ 924	09 18 520 □ 914	09 18 520 □ 904
26	09 18 526 □ 924	09 18 526 □ 914	09 18 526 □ 904
34	09 18 534 □ 924	09 18 534 □ 914	09 18 534 □ 904
40	09 18 540 □ 924	09 18 540 □ 914	09 18 540 □ 904
50	09 18 550 □ 924	09 18 550 □ 914	09 18 550 □ 904
60	09 18 560 □ 924	09 18 560 □ 914	09 18 560 □ 904
64	09 18 564 □ 924	09 18 564 □ 914	09 18 564 □ 904
6	09 18 506 □ 922*	09 18 506 □ 912*	09 18 506 □ 902*
10	09 18 510 □ 922*	09 18 510 □ 912*	09 18 510 □ 902*
14	09 18 514 □ 922*	09 18 514 □ 912*	09 18 514 □ 902*
16	09 18 516 □ 922*	09 18 516 □ 912*	09 18 516 □ 902*
20	09 18 520 □ 922*	09 18 520 □ 912*	09 18 520 □ 902*
26	09 18 526 □ 922*	09 18 526 □ 912*	09 18 526 □ 902*
34	09 18 534 □ 922*	09 18 534 □ 912*	09 18 534 □ 902*
40	09 18 540 □ 922*	09 18 540 □ 912*	09 18 540 □ 902*
50	09 18 550 □ 922*	09 18 550 □ 912*	09 18 550 □ 902*
60	09 18 560 □ 922*	09 18 560 □ 912*	09 18 560 □ 902*
64	09 18 564 □ 922*	09 18 564 □ 912*	09 18 564 □ 902*
6	09 18 506 □ 927*	09 18 506 □ 917*	09 18 506 □ 907*
10	09 18 510 □ 927*	09 18 510 □ 917*	09 18 510 □ 907*
14	09 18 514 □ 927*	09 18 514 □ 917*	09 18 514 □ 907*
16	09 18 516 □ 927*	09 18 516 □ 917*	09 18 516 □ 907*
20	09 18 520 □ 927*	09 18 520 □ 917*	09 18 520 □ 907*
26	09 18 526 □ 927*	09 18 526 □ 917*	09 18 526 □ 907*
34	09 18 534 □ 927*	09 18 534 □ 917*	09 18 534 □ 907*
40	09 18 540 □ 927*	09 18 540 □ 917*	09 18 540 □ 907*
50	09 18 550 □ 927*	09 18 550 □ 917*	09 18 550 □ 907*
60	09 18 560 □ 927*	09 18 560 □ 917*	09 18 560 □ 907*
64	09 18 564 □ 927*	09 18 564 □ 917*	09 18 564 □ 907*

Male header with
straight solder pins

Length: 4.5 mm

Male header with
straight wrap posts

Length: 15 mm

□ 0.6 mm

For Performance Level 3 please specify digit 7*

7

7

For Performance Level 2 please specify digit 6

6

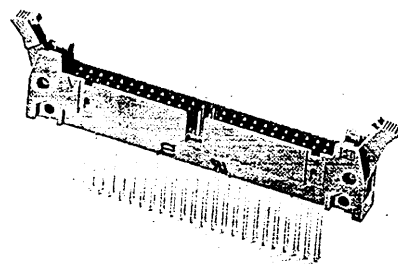
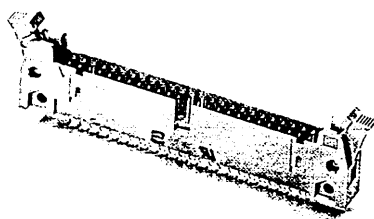
6

> 0.76 μm Au (30 μ inch) on request 5*

5*

5*

SEK 18 DIN 41 651

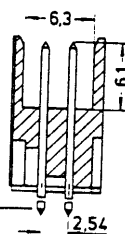
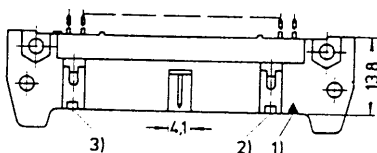
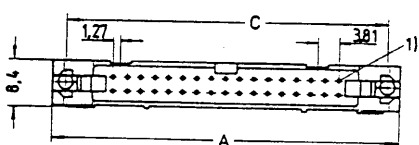
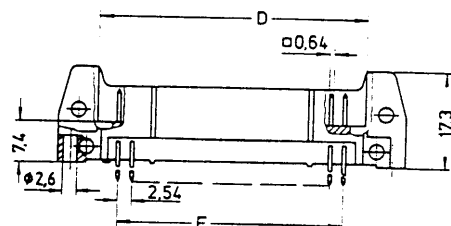
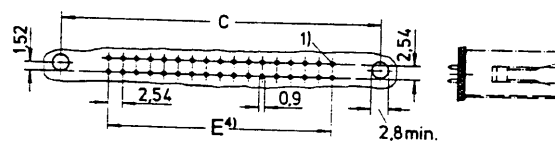


Drawing

No. of contacts	A	C	D	E	F	G
6	26.9	22.86	12.45	2.54 x 2 = 5.08	36.9	40.3
10	32.0	27.94	17.53	2.54 x 4 = 10.16	42.0	45.4
14	37.1	33.02	22.61	2.54 x 6 = 15.24	47.1	50.4
16	39.6	35.56	25.15	2.54 x 7 = 17.78	49.6	53.0
20	44.7	40.64	30.23	2.54 x 9 = 22.86	54.7	58.1
26	52.3	48.26	37.85	2.54 x 12 = 30.48	62.3	65.7
34	62.5	58.42	48.01	2.54 x 16 = 40.64	72.5	75.8
40	70.1	66.04	55.63	2.54 x 19 = 48.26	80.1	83.5
50	82.8	78.74	68.33	2.54 x 24 = 60.96	92.8	96.2
60	95.5	91.44	81.03	2.54 x 29 = 73.66	105.5	108.9
64	100.6	96.52	86.11	2.54 x 31 = 78.74	110.6	113.9

Dimensions in mm

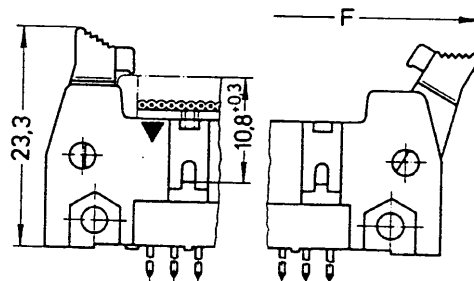
P.C. board layout



- a) Solder pins for 0.9 mm dia. hole
- b) Wrap posts 0.6 mm

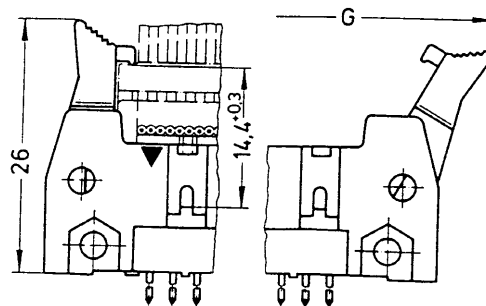
Short levers

for use with female connector without strain relief clamp



Long levers

for use with female connector with strain relief clamp



- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance: ± 0.1

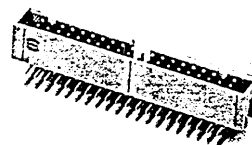
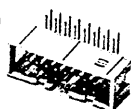
For accessories see page 15

SEK 18

Number of contacts

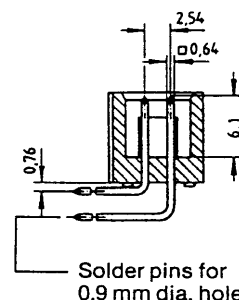
6-64

864 780
864 766
864-791.
864-821



Low-profile male header, angled pins

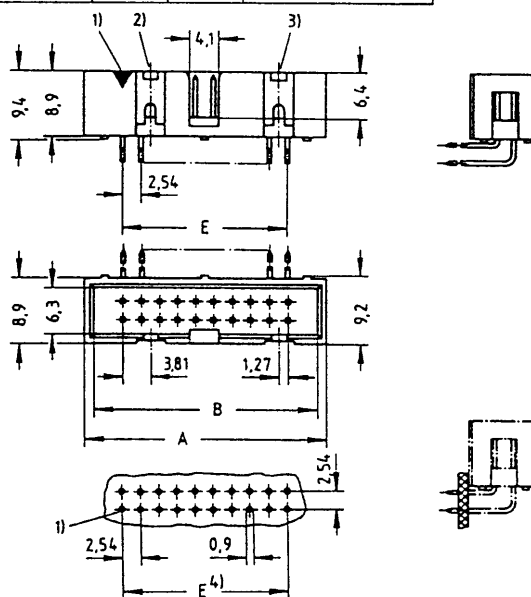
Identification/pins	No. of contacts	Part No.	Drawing	Dimensions in mm
Male header with angled solder pins				
Length: 2.9 mm				
	6	09 18 506 323	No. of contacts	
	10	09 18 510 323	A	
	14	09 18 514 323	B	
	16	09 18 516 323	E	
	20	09 18 520 323		
	26	09 18 526 323		
	34	09 18 534 323		
	40	09 18 540 323		
	50	09 18 550 323		
	60	09 18 560 323		
	64	09 18 564 323		



Male header with angled solder pins

Length: 4.5 mm

6	09 18 506 321*
10	09 18 510 321*
14	09 18 514 321*
16	09 18 516 321*
20	09 18 520 321*
26	09 18 526 321*
34	09 18 534 321*
40	09 18 540 321*
50	09 18 550 321*
60	09 18 560 321*
64	09 18 564 321*



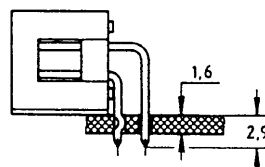
- 1) Contact number 1
- 2) No polarization slot for 6, 10, or 14 way male header
- 3) No polarization slot for 6 way male header
- 4) Pitch tolerance: ± 0.1

Male header with angled solder pins for prelocking on P.C.B 1.6 mm

Length: 2.9 mm

on request

on request



max. 6 specially formed soldered pins provide retention of the male header before soldering process

864-754



SEK 18

Number of contacts

6-64

Low-profile male header, straight pins

Identification/pins	No. of contacts	Part No.	Drawing	Dimensions in mm
Male header with straight solder pins				
Length: 2.9 mm	6	09 18 506 L 324	No. of contacts: 6, A: 15.2, B: 12.78, E: 2.54 x 2 = 5.08	a) Solder pins for 0.9 mm dia. hole
	10	09 18 510 L 324	No. of contacts: 10, A: 20.3, B: 17.86, E: 2.54 x 4 = 10.16	b) Press-in pins for 1.0 mm dia. hole
	14	09 18 514 L 324	No. of contacts: 14, A: 25.4, B: 22.94, E: 2.54 x 6 = 15.24	
	16	09 18 516 L 324	No. of contacts: 16, A: 27.9, B: 25.48, E: 2.54 x 7 = 17.78	
	20	09 18 520 L 324	No. of contacts: 20, A: 33.0, B: 30.56, E: 2.54 x 9 = 22.86	
	26	09 18 526 L 324	No. of contacts: 26, A: 40.6, B: 38.18, E: 2.54 x 12 = 30.48	
	34	09 18 534 L 324	No. of contacts: 34, A: 50.8, B: 48.34, E: 2.54 x 16 = 40.64	
	40	09 18 540 L 324	No. of contacts: 40, A: 58.4, B: 55.96, E: 2.54 x 19 = 48.26	
	50	09 18 550 L 324	No. of contacts: 50, A: 71.3, B: 68.66, E: 2.54 x 24 = 60.96	
	60	09 18 560 L 324	No. of contacts: 60, A: 84.0, B: 81.36, E: 2.54 x 29 = 73.66	
	64	09 18 564 L 324	No. of contacts: 64, A: 89.1, B: 86.44, E: 2.54 x 31 = 78.74	
Male header with straight solder pins				
Length: 4.5 mm	6	09 18 506 L 322*	1) Contact number 1, 2) No polarization slot for 6, 10, or 14 way male header, 3) No polarization slot for 6 way male header, Pitch tolerance: ± 0.1	
	10	09 18 510 L 322*		
	14	09 18 514 L 322*		
	16	09 18 516 L 322*		
	20	09 18 520 L 322*		
	26	09 18 526 L 322*		
	34	09 18 534 L 322*		
	40	09 18 540 L 322*		
	50	09 18 550 L 322*		
	60	09 18 560 L 322*		
	64	09 18 564 L 322*		
Male header with straight press-in terminations				
Length: 5.5 mm	6	09 18 506 L 329		
	10	09 18 510 L 329		
	14	09 18 514 L 329		
	16	09 18 516 L 329		
	20	09 18 520 L 329		
	26	09 18 526 L 329		
	34	09 18 534 L 329		
	40	09 18 540 L 329		
	50	09 18 550 L 329		
	60	09 18 560 L 329		
	64	09 18 564 L 329		

Tools page 14

For Performance Level 3 please specify digit 7
 For Performance Level 2 please specify digit 6
 > 0.76 µm Au (30 µ inch) on request 5 *

*Not kept in stock

For accessories see page 15

Tools for press-in technique

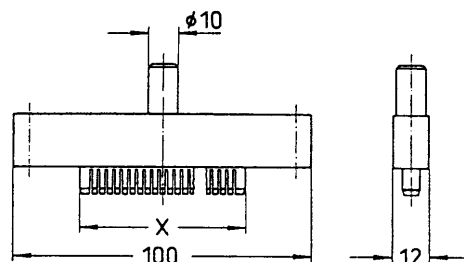


Identification	Part No.	Drawing	Dimensions in mm
Hand bench press	09 99 000 0201		
Pneumatic press	09 99 000 0258		
Base plate	09 99 000 0255		
Bottom tool narrow	09 99 000 0256		

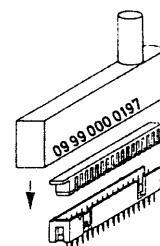
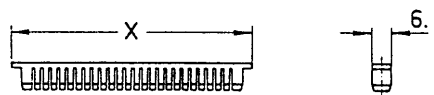
Tools

for male connectors	6	09 99 000 0 06
	10	09 99 000 0 10
	14	09 99 000 0 14
	16	09 99 000 0 16
	20	09 99 000 0 20
	26	09 99 000 0 26
	34	09 99 000 0 34
	40	09 99 000 0 40
	50	09 99 000 0 50
	60	09 99 000 0 60
	64	09 99 000 0 64

Top Tool including insert	4
Modular insert	5



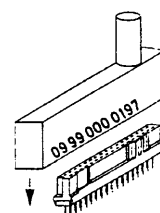
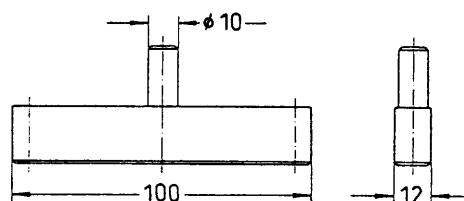
x Length depends on number of contacts



Top Tool

for SEK 24 female connectors and male connectors with modular insert

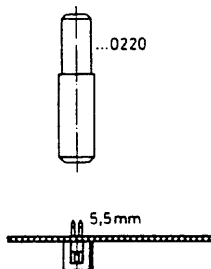
09 99 000 0197



Press-out tool for complete male connectors

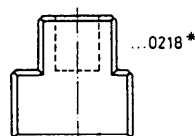
for 5.5 mm terminations

09 99 000 0220



Support block

09 99 000 0218



* Further versions on request

Identification

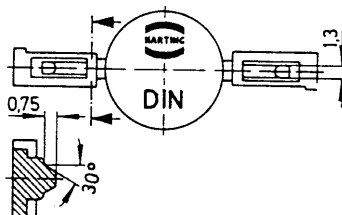
Part No.

Drawing

Dimensions in mm

Polarization key

09 18 500 9902¹⁾



¹⁾ Part No. comprises
2 keys

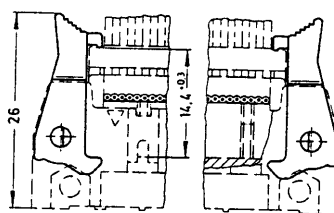
Locking lever

(snaps into place, can be
fitted whenever required)

Long:

09 18 000 9903²⁾

Long

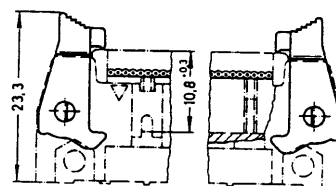


For use with female connector
with strain relief clamp

Short:

09 18 000 9904²⁾

Short



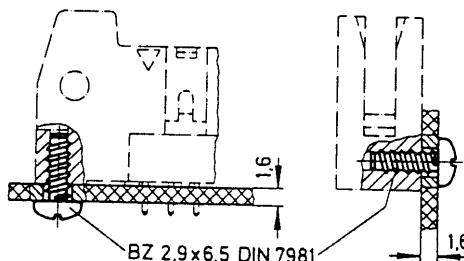
For use with female connector
without strain relief clamp

²⁾ Order 2 per
male header

Fixing screws

for 1.6 mm PC. board

09 18 000 9906³⁾



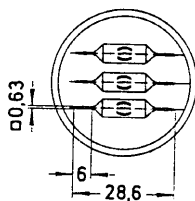
³⁾ Part No. comprises
50 pieces
(Order 50 or multiples
of 50)

Coding system with
loss of contact

Code pin

09 18 000 9901⁴⁾

To avoid cross-plugging adjacent connectors a coding system is required. A code pin is inserted into the appropriate cavity in the female connector. The corresponding male contact is removed by a special removal tool.



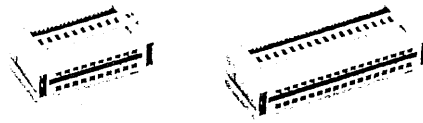
Removal tool
for
male contacts
09 99 000 0133



⁴⁾ Part No. comprises
6 code pins

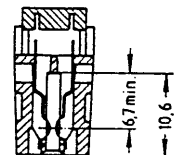
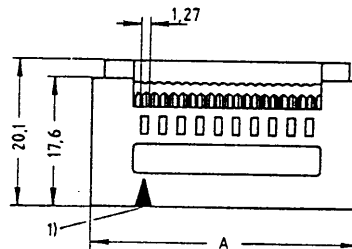
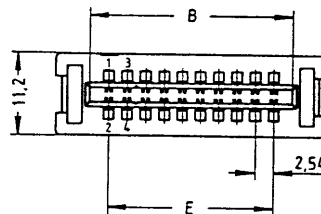
Number of contacts

20, 34

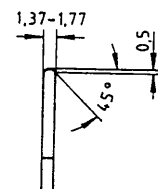
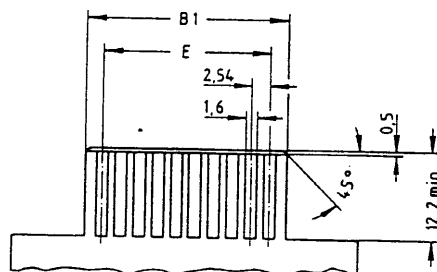


Card edge connectors for insulation displacement

Identification	Number of contacts	Part No.	Drawing					Dimensions in mm
Card edge connectors for insulation displacement for PC.B. thickness 1.6 mm		09 18 620 — 803	No. of contacts	A	B	B ₁ ±0,1	E	
			20	37.30	28.20	27.80	2.54 x 9 = 22.86	
			34	55.10	46	45.60	2.54 x 16 = 40.64	



PC.B.



1) Contact number 1

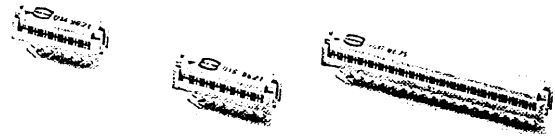
SEK 18

Number of contacts

6-64

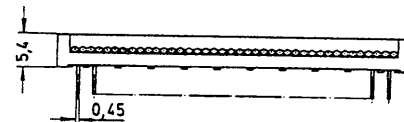
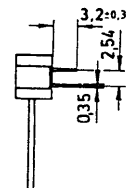
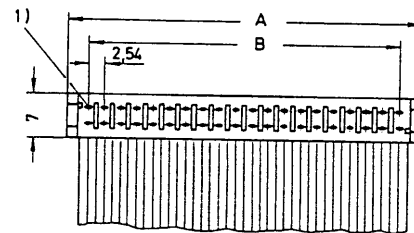
864900
864 845
864912

864 882
864 857

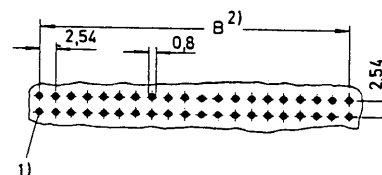


PC.B. transition connector, 2 rows

Identification	No. of contacts	Part No.	Drawing			Dimensions in mm
P.C.B. transition connector	2 rows		No. of contacts	A	B	
		09 18 106 9621	6	11.9	2.54x 2 = 5.08	
		09 18 110 9621	10	17.0	2.54x 4 = 10.16	
		09 18 114 9621	14	22.1	2.54x 6 = 15.24	
		09 18 116 9621	16	24.6	2.54x 7 = 17.78	
		09 18 120 9621	20	29.7	2.54x 9 = 22.86	
		09 18 126 9621	26	37.3	2.54x12 = 30.48	
		09 18 134 9621	34	47.5	2.54x16 = 40.64	
		09 18 140 9621	40	55.1	2.54x19 = 48.26	
		09 18 150 9621	50	67.8	2.54x24 = 60.96	
		09 18 160 9621	60	80.5	2.54x29 = 73.66	
		09 18 164 9621	64	85.6	2.54x31 = 78.74	



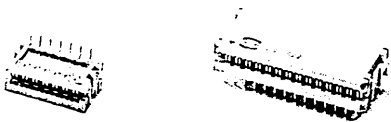
PC. board layout



- 1) Lead number 1
2) Pitch
tolerance: ± 0.1

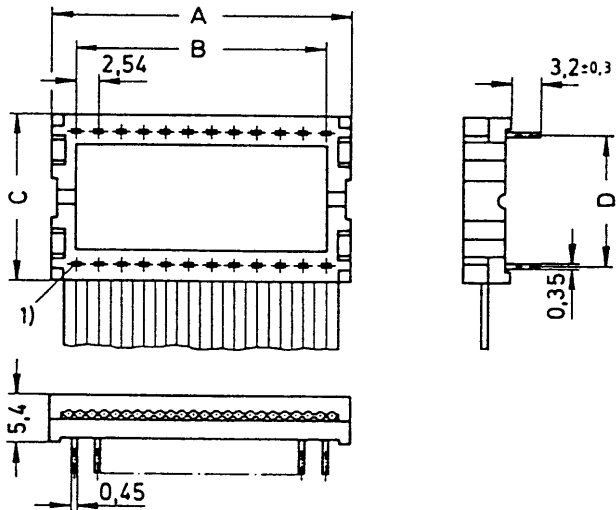
Number of contacts

14-40

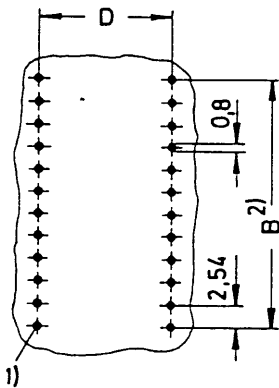


DIP connector for IC base or for soldering into P.C. boards

Identification	No. of contacts	Part No.	Drawing					Dimensions in mm
DIP connector			No. of contacts	A	B	C	D	
	14	09 17 014 9622	14	20.5	2.54x 6 = 15.24	11	7.62	
	16	09 17 016 9622	16	23.0	2.54x 7 = 17.78	11	7.62	
	24	09 17 024 9622	24	33.0	2.54x11 = 27.94	18.7	15.24	
	28	09 17 028 9622	28	38.1	2.54x13 = 33.02	18.7	15.24	
	40	09 17 040 9622	40	53.3	2.54x19 = 48.26	18.7	15.24	



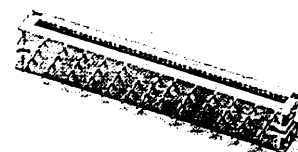
P.C. board layout



1) Lead number 1
2) Pitch
tolerance: ± 0.1

Number of contacts

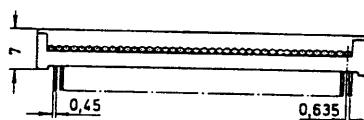
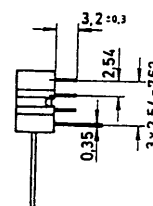
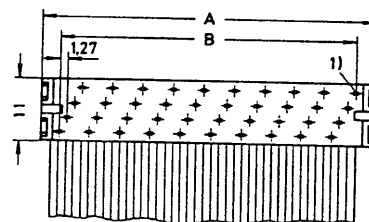
10-50



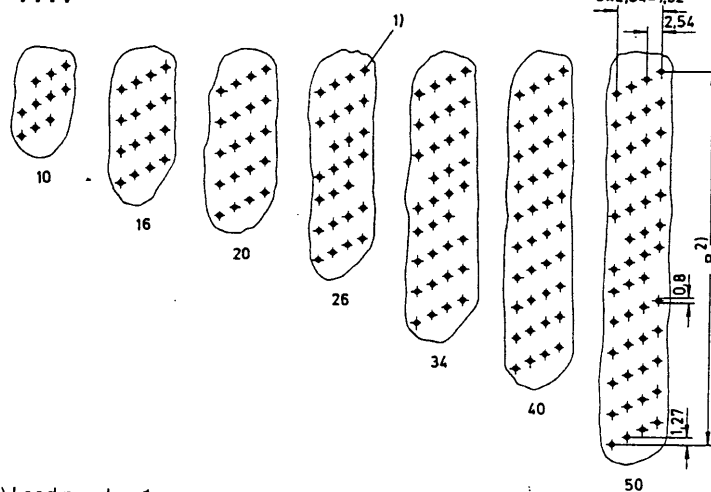
PC.B. transition connector, 4 rows

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
P.C.B. transition connector				
4 rows	10	09 19 010 9643	10	17.78
	16	09 19 016 9643	16	25.40
	20	09 19 020 9643	20	30.48
	26	09 19 026 9643	26	38.10
	34	09 19 034 9643	34	48.26
	40	09 19 040 9643	40	55.88
	50	09 19 050 9643	50	68.58

No. of contacts	A	B
10	17.78	$1.27 \times 9 = 11.43$
16	25.40	$1.27 \times 15 = 19.05$
20	30.48	$1.27 \times 19 = 24.13$
26	38.10	$1.27 \times 25 = 31.75$
34	48.26	$1.27 \times 33 = 41.91$
40	55.88	$1.27 \times 39 = 49.53$
50	68.58	$1.27 \times 49 = 62.23$



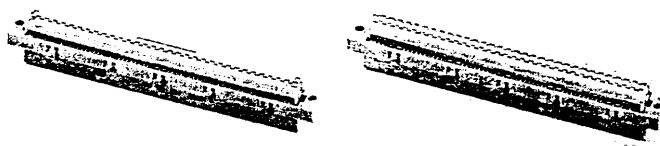
PC. board layout



- 1) Lead number 1
2) Pitch tolerance: ± 0.1

Number of contacts

64

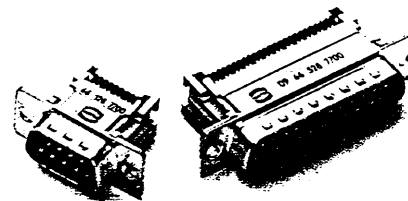
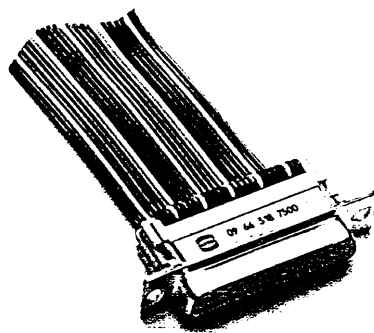


Female connectors for insulation displacement

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm									
Female connector for insulation displacement			 										
Gds A-B	34	Performance Level 2 09 02 264 6828 Performance Level 3 09 02 264 7828	Lead number 1 of flat cable on contact 1 b Contact arrangement View from wiring side										
Gds A-C	34	Performance Level 2 09 03 264 6828 Performance Level 3 09 03 264 7828	 Lead number 1 of flat cable on contact 1 c Contact arrangement View from wiring side Mateable with 3-row male connector Gds A-C. No female contact in middle row.										
Panel cut out													
<table><tr><td></td><td>a</td><td>b</td></tr><tr><td>Gds A-B</td><td>8,3</td><td>10,16</td></tr><tr><td>Gds A-C</td><td>10,8</td><td>12,7</td></tr></table>						a	b	Gds A-B	8,3	10,16	Gds A-C	10,8	12,7
	a	b											
Gds A-B	8,3	10,16											
Gds A-C	10,8	12,7											

Number of contacts

9-37



Male and female connectors

Identification

Performance Levels

as per DIN 41652
Other contact surfaces on request

Male connector

- insulation displacement
termination
pitch 1.27 mm
tinned metal shell

Female connector

- insulation displacement
termination
pitch 1.27 mm
tinned metal shell

Strain relief clamp

corrosion resistant steel
for male and female connectors

No. of
contacts9
15
25
379
15
25
379
15
25
37

Performance Level

3

09 66 128 7700
09 66 228 7700
09 66 328 7700
09 66 428 7700

09 66 118 7500
09 66 218 7500
09 66 318 7500
09 66 418 7500

09 66 108 0000
09 66 208 0000
09 66 308 0000
09 66 408 0000

Part No.

Performance Level

2

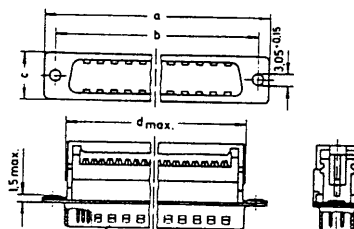
09 66 128 6700
09 66 228 6700
09 66 328 6700
09 66 428 6700

09 66 118 6500
09 66 218 6500
09 66 318 6500
09 66 418 6500

09 66 108 0000
09 66 208 0000
09 66 308 0000
09 66 408 0000

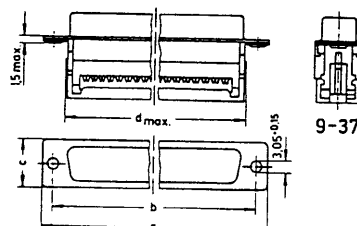
Dimensions

Male connector



Dimples

Female connector



9-37

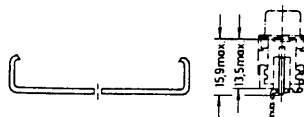
Dimensions in mm

	a-0.76	b	c-0.76	d
9	31.19	25	12.93	18.6
15	39.52	33.3	12.93	26.9
25	53.42	47	12.93	40.6
37	69.7	63.5	12.93	57.1

Specified conductors

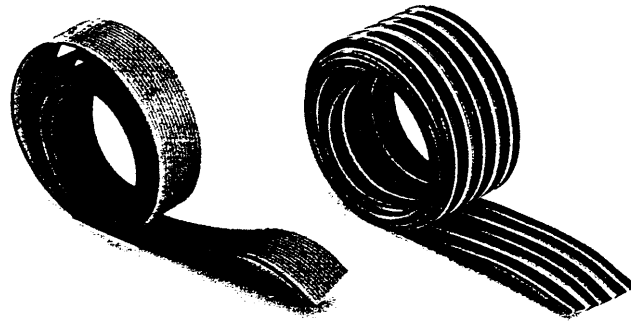
stranded wires AWG 28/7
AWG 26/7

Strain relief clamp



Other terminations, hoods and accessories see "Subminiature D Connectors" catalogue

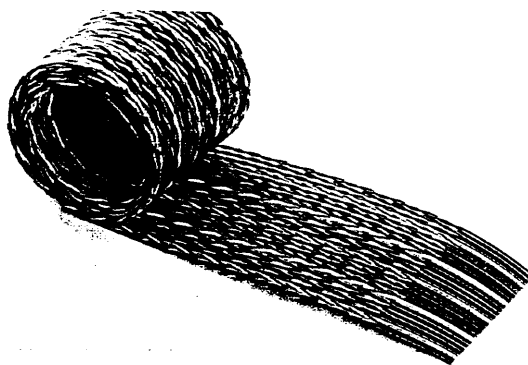
Flat cable AWG 28/7



Important:
always store reels vertically.

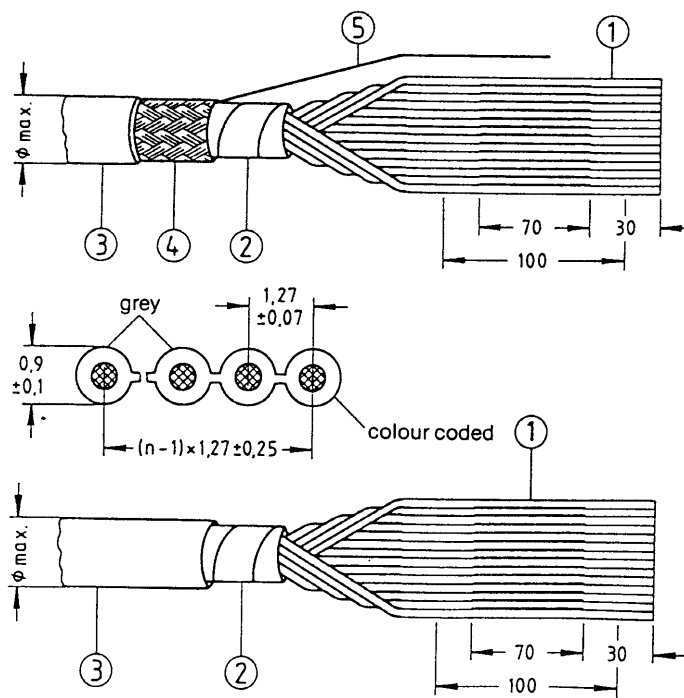
Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
Flat cable grey UL 2651 IEC 918	3 9 10 14 15 16 20 24 25 26 28 34 37 40 50 60 64	09 18 006 700 09 18 009 700 09 18 010 700 09 18 014 700 09 18 015 700 09 18 016 700 09 18 020 700 09 18 024 700 09 18 025 700 09 18 026 700 09 18 028 700 09 18 034 700 09 18 037 700 09 18 040 700 09 18 050 700 09 18 060 700 09 18 064 700		NEW Grey 7001 = Metric packaging of 50 m Grey 7004 = Metric packaging of 150 m Wire (tinned) _____ Cu Gauge _____ AWG 28/7 0.089 mm² Conductor resistance _____ 230 mΩ/m Capacity _____ 60 pF/m Characteristic impedance _____ 110 Ω Signal delay _____ 5 ns/m Insulation material _____ PVC Temperature rating _____ -20 °C + 105 °C Insulation resistance _____ 10⁴ MΩ / km
Length per reel 50 m (164 feet) 1 150 m (492 feet) 4				
Flat cable colour coded	10 14 15 20 24 25 26 34 37 40 50 60 64	09 18 010 7005 09 18 014 7005 09 18 016 7005 09 18 020 7005 09 18 024 7005 09 18 025 7005 09 18 026 7005 09 18 034 7005 09 18 037 7005 09 18 040 7005 09 18 050 7005 09 18 060 7005 09 18 064 7005		Colour code sequence (in 10 steps) brown, red, orange, yellow, green, blue, violet, grey, white, black Wire (tinned) _____ Cu Gauge _____ AWG 28/7 0.089 mm² Conductor resistance _____ 230 mΩ/m Capacity _____ 49 pF/m Characteristic impedance _____ 105 Ω Signal delay _____ 4.6 ns/m Insulation material _____ PVC Temperature rating _____ -20 °C + 105 °C Insulation resistance _____ 10³ MΩ / km
Length per reel 30.48 m (100 feet)				
UL 2884				

Flat cable AWG 28/7



Important:
always store reels vertically.

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																																								
Flat cable twisted pair																																												
Length per reel 30.48 m (100 feet)	10	09 18 010 7006	colour coded 1,07 ± 0,1 1,27 ± 0,07 (n-1) × 1,27 ± 0,25 457,2 50,8 508																																									
	12	09 18 014 7006																																										
	16	09 18 016 7006																																										
UL 2693	20	09 18 020 7006																																										
	26	09 18 026 7006																																										
	31	09 18 034 7006																																										
	40	09 18 040 7006																																										
	50	09 18 050 7006																																										
	60	09 18 060 7006																																										
	64	09 18 064 7006																																										
Round flat cable																																												
Length per reel 30.48 m (100 feet)			<table><tr><th></th><th>Flat cable twisted pair</th><th>Round flat cable with screening</th><th>Round flat cable without screening</th></tr><tr><td>Wire (tinned)</td><td></td><td colspan="2">Cu</td></tr><tr><td>Gauge</td><td></td><td colspan="2">AWG 28/7 0.089 mm²</td></tr><tr><td>Conductor resistance</td><td>230 mΩ/m</td><td colspan="2">< 225 mΩ/m</td></tr><tr><td>Capacity</td><td>52 pF/m</td><td>95 pF/m</td><td>65 pF/m</td></tr><tr><td>Characteristic impedance</td><td>100 Ω</td><td>73 Ω</td><td>90 Ω</td></tr><tr><td>Signal delay</td><td>5.3 ns/m</td><td colspan="2">5.0 ns/m</td></tr><tr><td>Insulation material</td><td>PVC</td><td colspan="2">PVC</td></tr><tr><td>Temperature rating</td><td>-20 °C + 105 °C</td><td colspan="2">-20 °C + 80 °C</td></tr><tr><td>Insulation resistance</td><td>10³ MΩ/km</td><td colspan="2">> 50 MΩ/km</td></tr></table>		Flat cable twisted pair	Round flat cable with screening	Round flat cable without screening	Wire (tinned)		Cu		Gauge		AWG 28/7 0.089 mm²		Conductor resistance	230 mΩ/m	< 225 mΩ/m		Capacity	52 pF/m	95 pF/m	65 pF/m	Characteristic impedance	100 Ω	73 Ω	90 Ω	Signal delay	5.3 ns/m	5.0 ns/m		Insulation material	PVC	PVC		Temperature rating	-20 °C + 105 °C	-20 °C + 80 °C		Insulation resistance	10³ MΩ/km	> 50 MΩ/km		
	Flat cable twisted pair	Round flat cable with screening	Round flat cable without screening																																									
Wire (tinned)		Cu																																										
Gauge		AWG 28/7 0.089 mm²																																										
Conductor resistance	230 mΩ/m	< 225 mΩ/m																																										
Capacity	52 pF/m	95 pF/m	65 pF/m																																									
Characteristic impedance	100 Ω	73 Ω	90 Ω																																									
Signal delay	5.3 ns/m	5.0 ns/m																																										
Insulation material	PVC	PVC																																										
Temperature rating	-20 °C + 105 °C	-20 °C + 80 °C																																										
Insulation resistance	10³ MΩ/km	> 50 MΩ/km																																										
with screening	9	09 18 009 7007	5 1 3 4 2 70 30 100																																									
	10	09 18 010 7007																																										
	11	09 18 014 7007																																										
	13	09 18 015 7007																																										
	16	09 18 016 7007																																										
	20	09 18 020 7007																																										
	25	09 18 025 7007																																										
	26	09 18 026 7007																																										
	31	09 18 034 7007																																										
	37	09 18 037 7007																																										
	40	09 18 040 7007																																										
	50	09 18 050 7007																																										
	60	09 18 060 7007																																										
	64	09 18 064 7007																																										
without screening	9	09 18 009 7008	grey 1,27 ± 0,07 0,9 ± 0,1 (n-1) × 1,27 ± 0,25 colour coded 1 3 2 70 30 100																																									
	10	09 18 010 7008																																										
	11	09 18 014 7008																																										
	13	09 18 015 7008																																										
	16	09 18 016 7008																																										
	20	09 18 020 7008																																										
	25	09 18 025 7008																																										
	26	09 18 026 7008																																										
	31	09 18 034 7008																																										
	37	09 18 037 7008																																										
	40	09 18 040 7008																																										
	50	09 18 050 7008																																										
	60	09 18 060 7008																																										
	64	09 18 064 7008																																										



- ① Flat cable, grey AWG 28/7
- ② Barrier tape
- ③ Outer insulation PVC, grey
- ④ Tinned copper screen (shielded version)
- ⑤ Drain Wire AWG 28 (shielded version)

Tools for termination of flat cables

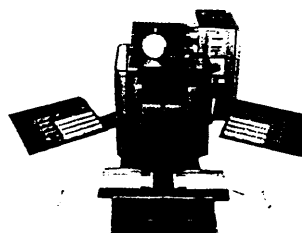


Identification

Part No.

SEK Harnessing
Work-station

on request



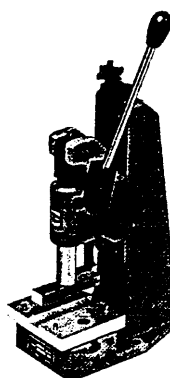
Bench press

for termination
of insulation
displacement
connectors

09 99 000 0114

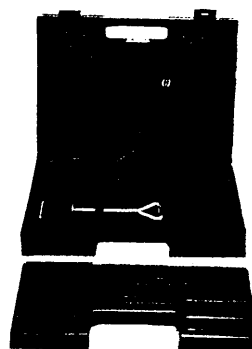
Base plate
for termination
of flat cables

SEK 18	09 99 000 0115
SEK 18 Card edge	09 99 000 0268
SEK 17	09 99 000 0134
SEK 18 2 rows	09 99 000 0131
SEK 19 4 rows	09 99 000 0130
Gds A-B, Gds A-C	09 99 000 0150
D-Sub	09 99 000 0135



Hand tool with
base plates
(included in tool kit)
for termination
of insulation
displacement
connectors

SEK 18	09 99 000 0149
SEK 18 Card edge	
SEK 17	
SEK 18 2 rows	
Gds A-B	
Gds A-C	
D-Sub	



Cable cutter
for flat cables

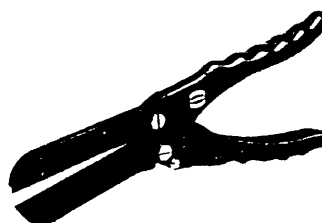
09 99 000 0116

Spare parts
Blade

09 99 000 0179

Cutting plate

09 99 000 0180



List of part numbers

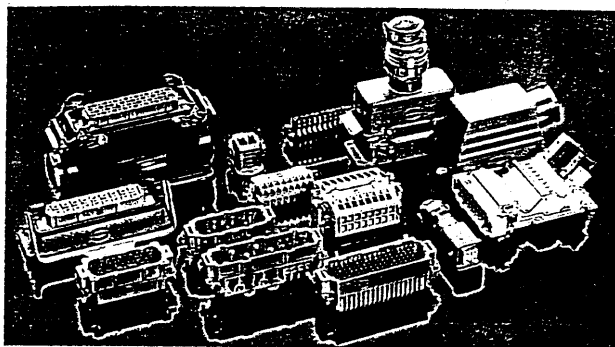


Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
09 02 264 6828	20	09 18 5	5321 * 12	09 18 5	6321 * 12	09 18 5	7321 * 12	09 24 164 5801	7
7828	20		5322 * 13		6322 * 13		7322 * 13	6801	7
09 03 264 6828	20		5323 * 12		6323 12		7323 12	7801	7
7828	20		5324 * 13		6324 13		7324 13		
			5329 * 13		6329 13		7329 13	09 66 108 0000	21
09 17 014 9622	18	09 18 5	5803 * 6	09 18 5	6803 6	09 18 5	7803 6	118 6500	21
016 9622	18		5804 * 6		6804 6		7804 * 6	7500	21
024 9622	18		5805 * 6		6805 6		7805 6	128 6700 *	21
028 9622	18		5806 * 6		6806 6		7806 * 6	7700	21
040 9622	18		5813 * 6		6813 6		7813 6	09 66 208 0000	21
09 18 000 9901	15		5814 * 6		6814 6		7814 * 6	218 6500	21
9903	15		5815 * 6		6815 6		7815 * 6	7500	21
9904	15		5816 * 6		6816 6		7816 * 6	228 6700	21
9905	7							7700	21
9906	15								
09 18 006 7001/4	22	09 18 5	5901 * 8	09 18 5	6901 * 8	09 18 5	7901 * 8	09 66 308 0000	21
009 7001/4	22		5902 * 10		6902 * 10		7902 * 10	318 6500	21
010 7001/4	22		5903 * 8		6903 8		7903 8	7500	21
014 7001/4	22		5904 * 10		6904 10		7904 10	328 6700	21
015 7001/4	22		5906 * 8		6906 * 8		7906 * 8	7700	21
016 7001/4	22		5907 * 10		6907 * 10		7907 * 10		
020 7001/4	22		5911 * 8		6911 * 8		7911 * 8	09 66 408 0000	21
024 7001/4	22		5912 * 10		6912 * 10		7912 * 10	418 6500	21
025 7001/4	22		5913 * 8		6913 8		7913 8	7500	21
026 7001/4	22		5914 * 10		6914 10		7914 10	428 6700	21
028 7001/4	22		5916 * 8		6916 * 8		7916 * 8	7700	21
034 7001/4	22		5917 * 10		6917 * 10		7917 * 10		
037 7001/4	22		5921 * 8		6921 * 8		7921 * 8	09 99 000 0114	24
040 7001/4	22		5922 * 10		6922 * 10		7922 * 10	0115	24
050 7001/4	22		5923 * 8		6923 8		7923 * 8	0116	24
060 7001/4	22		5924 * 10		6924 10		7924 * 10	0130	24
064 7001/4	22		5926 * 8		6926 * 8		7926 * 8	0131	24
			5927 * 10		6927 * 10		7927 * 10	0133	15
09 18 010 7005	22					09 18 5	9002 7	0134	24
014 7005	22							0135	24
016 7005	22							0149	24
020 7005	22							0150	24
024 7005	22							0179	24
025 7005	22							0180	24
026 7005	22								
034 7005	22								
037 7005	22								
040 7005	22								
050 7005	22								
060 7005	22								
064 7005	22								
09 18 010 7006	23					09 18 106 9621	17	09 99 000 0197	14
014 7006	23					110 9621	17	0201	14
016 7006	23					114 9621	17	0218	14
020 7006	23					116 9621	17	0220	14
026 7006	23					120 9621	17	0255	14
034 7006	23					126 9621	17	0256	14
040 7006	23					134 9621	17	0258	14
050 7006	23					140 9621	17	0268	24
060 7006	23					150 9621	17	0406	14
064 7006	23					160 9621	17	0410	14
						164 9621	17	0414	14
09 18 009 7007/8	23					09 19 010 9643	19	0416	14
010 7007/8	23					016 9643	19	0420	14
014 7007/8	23					020 9643	19	0426	14
015 7007/8	23					026 9643	19	0434	14
016 7007/8	23					034 9643	19	0440	14
020 7007/8	23					040 9643	19	0450	14
025 7007/8	23					050 9643	19	0460	14
026 7007/8	23							0464	14
034 7007/8	23					09 24 126 5801	7	09 99 000 0506	14
037 7007/8	23					6801	7	0510	14
040 7007/8	23					7801	7	0514	14
050 7007/8	23					134 5801	7	0516	14
060 7007/8	23					6801	7	0520	14
064 7007/8	23					7801	7	0526	14
						140 5801	7	0534	14
09 18 500 9002	15			09 18 6	5803 16	6801	7	0540	14
					7803 16	7801	7	0550	14
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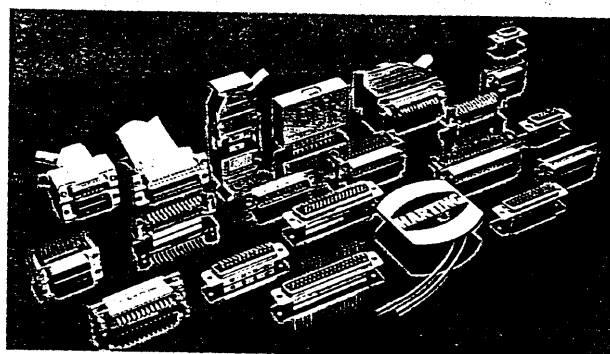
Complete the Part No. by inserting the required number of contacts where indicated thus:

23

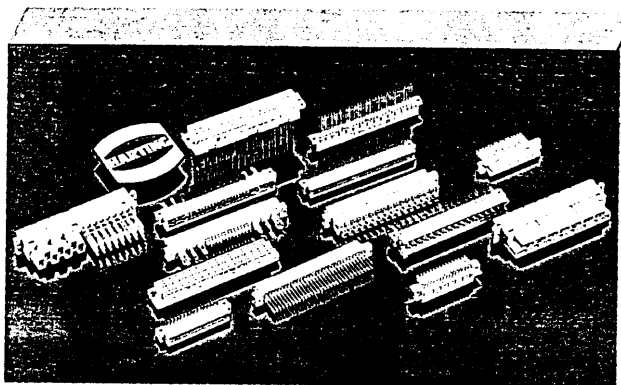
*Not kept in stock



Heavy Duty Connectors
for industrial engineering



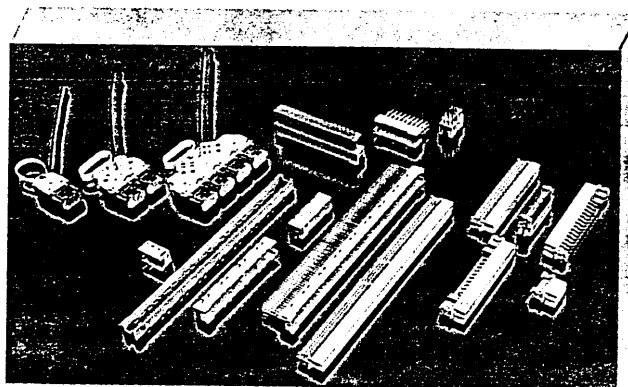
Subminiature D-Connectors
DIN 41 652



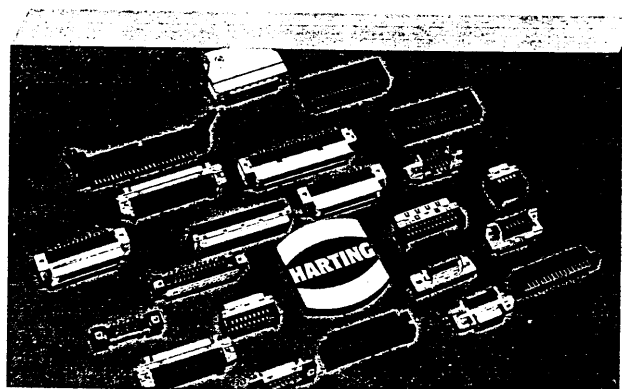
Printed Circuit Connectors
DIN 41 612 · DIN 41 617



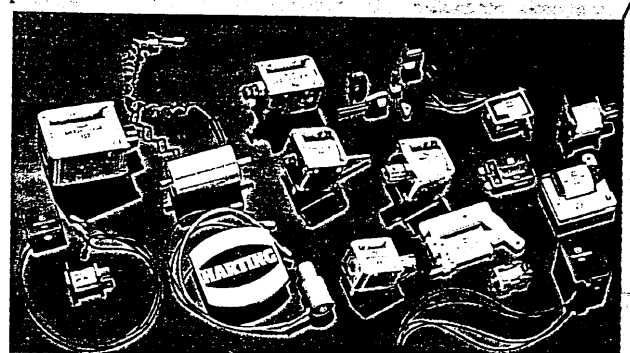
Flat Cable Connector System
DIN 41 651



High Density Connector System
Modular · Metric · DIN 41 642



Micro-Electronic-Connectors
Contact spacing 1.27 mm



Solenoids

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– Espelkamp*

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– Espelkamp

Bremen

– Espelkamp

Hamburg

– Espelkamp

Hessen

– Espelkamp

Mecklenburg-Vorpommern

– Espelkamp

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– Espelkamp

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Foreign representatives

Australia

Brazil

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