



MicroCon

0.8 mm Connectors



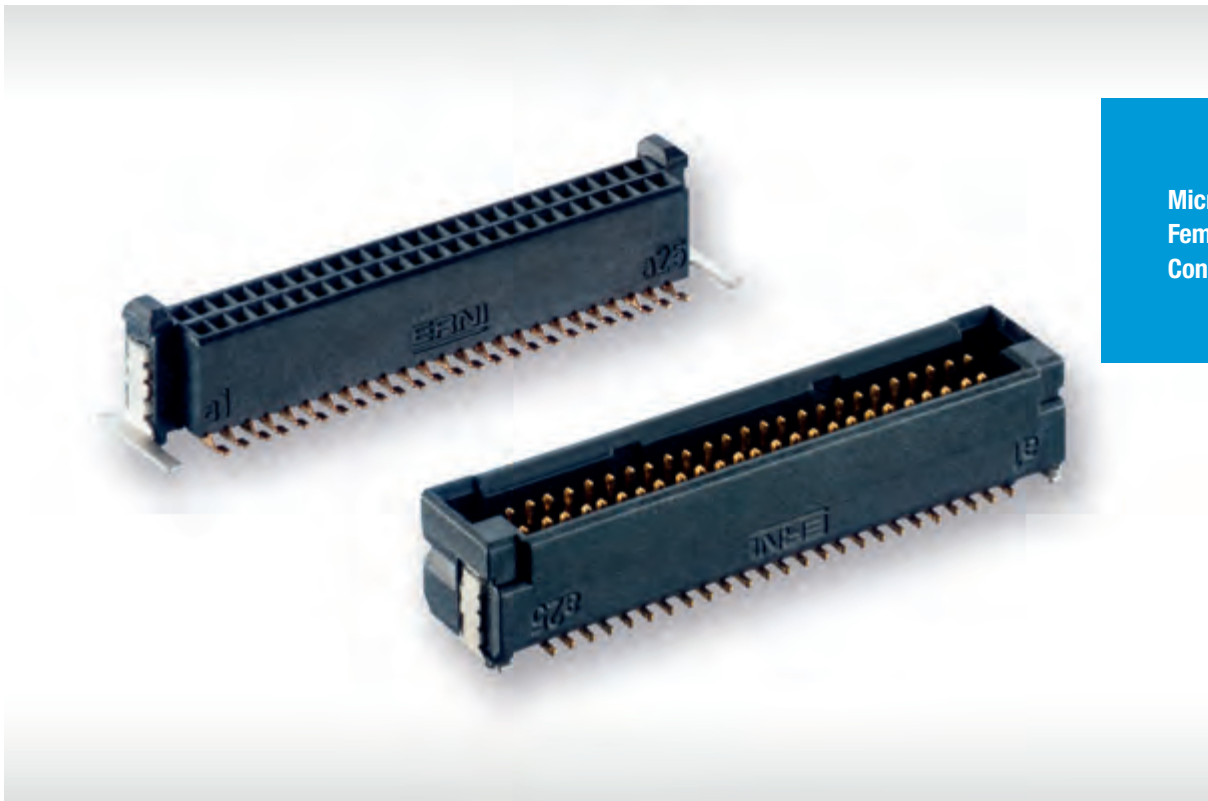
Full-scale MicroCon 50 Pins



MicroCon - 0.8 mm Connectors

DUAL ROW CONNECTOR

GENERAL



MicroCon
Female and Male
Connector

The dual-row MicroCon series with 0.8 mm pitch is ideal for various demanding applications in the industrial, medical, lighting, automotive and consumer market. Due to the small dimensions - the 50-pin male connectors show dimensions of only 24.2 mm x 4.7 mm with different heights - robustness was crucial during the development. The male connectors are provided with reinforced sidewalls. Secure mating is ensured by coding and blind-mate guide alignments, providing an increased locking range. A unique feature for this miniaturized device size is the double-sided spring contact. The reliable and high-quality spring contacts are based on a proven and patented principle, in which ERNI Electronics has been continuously scaled down for smaller dimensions. To support vari-

ous PCB applications parallel (Mezzanine), right angle (90 °) and coplanar configurations are available. With different heights for the male and female connectors, Board-to-Board distances from 5 mm to 10 mm can be realized for Mezzanine applications. Despite the miniaturization, the new connectors offer a high mating tolerance with allowed misalignment tolerances of longitudinal and transverse axes of ± 0.7 mm. The allowed angular inclination tolerance is specified with ± 4 degrees. The male connector is available with SMT termination. The robust plastic housing of the female connector withstands high temperature and is suitable for lead-free reflow soldering. Tape and reel packaging supports automatic assembly.



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DUAL ROW CONNECTOR

TECHNICAL DETAILS

Pitch	0.8 mm
No. of Pins	12 - 100 possible
Packaging	Tape and reel for automatic assembly
Current rating per contact	up to 2.3 A at 20 °C
Datarate	up to 3 Gbit/s
Termination	SMT
Variants	Vertical male, Right angle male, Vertical female, Right angle female Cable assemblies



Due to the different connector heights, Board-to-Board distances from 5 to 10 mm can be realized.



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CONCEPT —

CAPABILITIES

Stacked boards
(Mezzanine)



Extender card
(coplanar)



Orthogonal boards

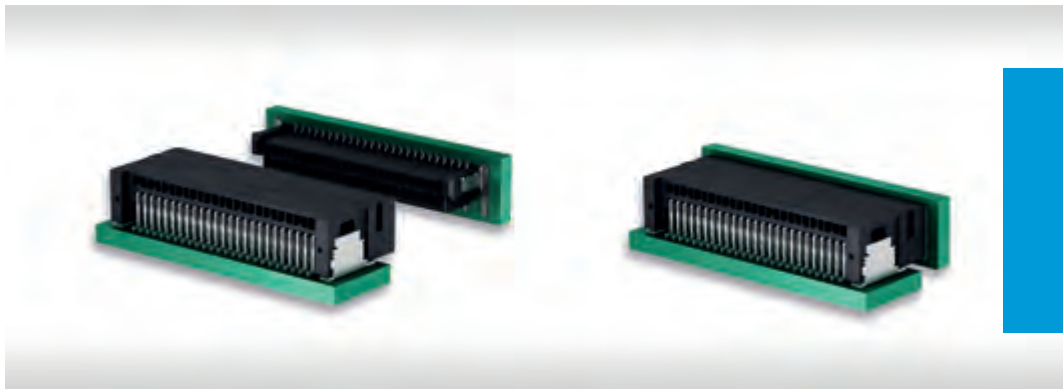




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CONCEPT —

CAPABILITIES



Orthogonal boards



Wire-to-board



Wire-to-board



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ADVANTAGES

HIGH RELIABLE CONTACT DESIGN



- ultra-reliable, dual-beam female contact
- rolled, homogeneous surface, guarantees secure contact mating
- wide contact surfaces between the mated pairs
- extremely low surface roughness minimizes abrasion
- low contact resistance

POLARIZATION / MATING FACE



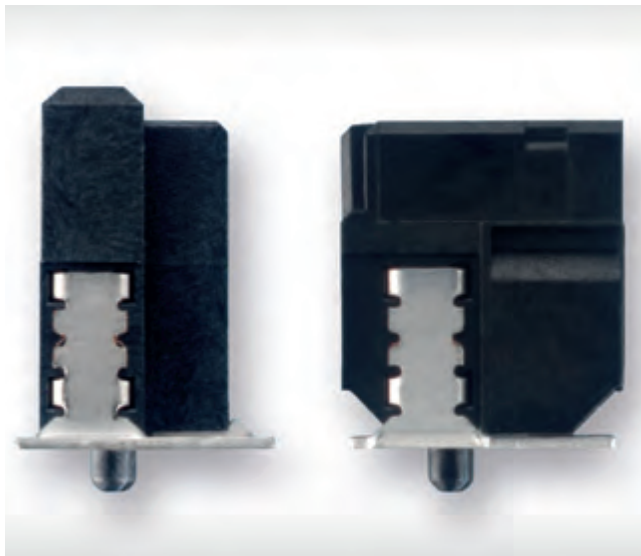
- mating face polarization prevents mismating and incorrect connection
- insertion chamfers in the capture range ensure secure mating
- distinctive guide elements for precise insertion



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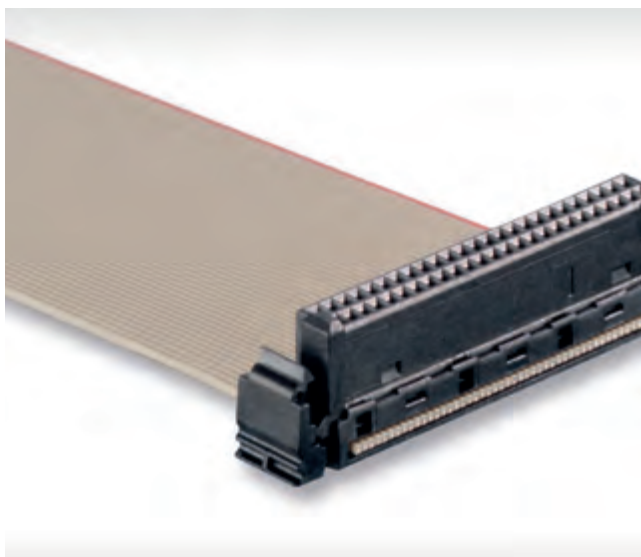
ADVANTAGES

ROBUST SOLDER CLIPS



- outstanding retention forces on the circuit board
- soldering brackets absorb mechanical stress and are able to withstand high shock and vibration loads

LOCKABLE CABLE ASSEMBLIES



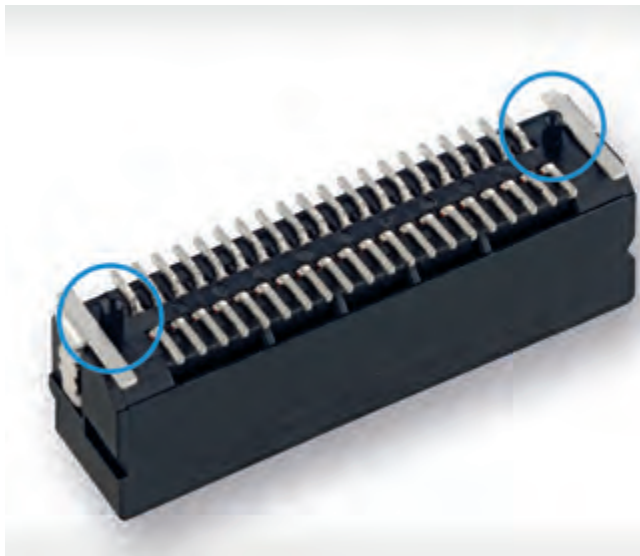
- integrated locking lever; can be manually released without tools
- protection against accidental release of wire-to-board connections
- cable guide ensures strain relief



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ADVANTAGES

LOCATING PEGS



- geometrically heterogeneous locating pegs for precise positioning on the circuit board
- enables best possible compensation of PCB holes for both positive and negative tolerances

STACKED BOARDS / MEZZANINE



Board-to-Board Height	Male Connector Stacking Height	Female Connector Stacking Height
5.00 - 6.00 mm	1 mm	4 mm
6.00 - 7.00 mm	2 mm	4 mm
7.00 - 8.00 mm	1 mm	6 mm
8.00 - 9.00 mm	2 mm	6 mm
9.00 - 10.00 mm	1 mm	8 mm
10.00 mm	2 mm	8 mm



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PROCESSING —

TAPE AND REEL PACKAGING



FULLY AUTOMATIC ASSEMBLY AND REFLOW SOLDERING

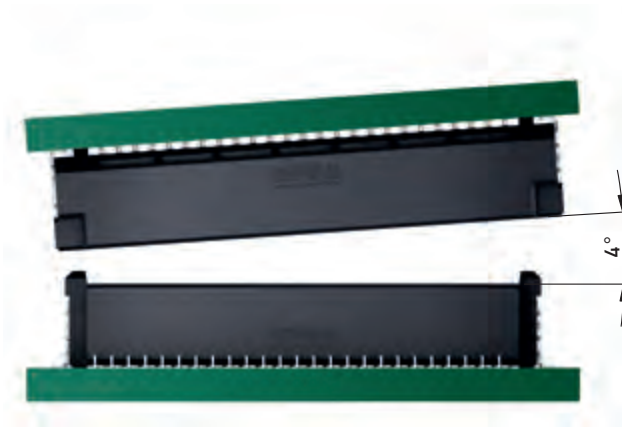




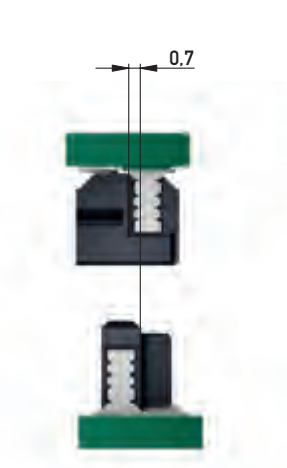
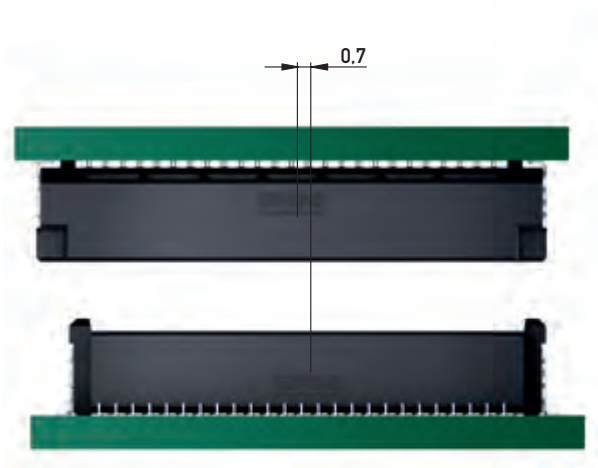
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MATING CONDITIONS

ALLOWED INCLINATION FOR A SECURE SELF-CENTERING



ALLOWED MISALIGNMENT TOLERANCES FOR A SECURE SELF-CENTERING





MicroCon - 0.8 mm Connectors

CHARACTERISTICS

TECHNICAL DATA

Description	Standard	Male Connector Vertical and Right Angle	Female Connector Vertical and Right Angle
Climate category	DIN EN 60068-1 test b	55 / 125 / 56	
Temperature range		-55 / 125 °C	
Current rating per contact	IEC60512-5-2 Test 5b	16 pin Version 50 pin Version	2.33 A at 20 °C 1.86 A at 20 °C
Air- and creepage distance		0,25 mm	
Operating voltage	IEC 60664	<p>The permissible operating voltages depend on the customer application and on the applicable or specified safety requirements. Insulation coordination according to IEC 60664-1 has to be regarded for the complete electrical device. Therefore, the maximum creepage and clearance distances of the mated connectors are specified for consideration as a part of the whole current path. In practice, reductions in creepage or clearance distances may occur due to the conductive pattern of the printed board or the wiring used, and have to be taken into account separately. As a result the creepage and clearance distances for the application may be reduced compared to those of the connector.</p>	
Dielectric strength	IEC 60512 test 4a	contact – contact 500 V _{rms}	
Contact resistance	IEC 60512 test 2a	< 25 mΩ	
Insulation resistance	IEC 60512 test 3a	> 10 ⁴ MΩ	
Vibration, sine	IEC 60512 test 6d	10 – 2000 Hz 20 g	
Contact disturbance (while vibration test)	IEC 60512 test 2e	< 1 μs	
Shock halfsine	IEC 60512 test 6c	50 g 11 ms	
Contact disturbance (while shock test)	IEC 60512 test 2e	< 1 μs	



MicroCon - 0.8 mm Connectors

CHARACTERISTICS —

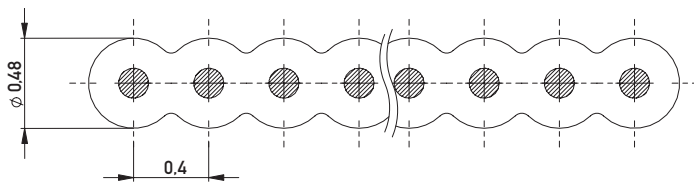
Description	Standard	Male Connector Vertical and Right Angle	Female Connector Vertical and Right Angle
Mechanical operation	IEC 60512 test 9a	> 500 mating cycles	
Insertion and withdrawal force	IEC 60512 test 13b	16 pin: ~3 N	
Gauge retention force	IEC 60512 test 16e	0.22 N min.	
Processing Conditions			
Reflow soldering temperature max.	JEDEC J-STD-020	20 - 40 s at 260 °C	
Coplanarity		< 0,1 mm	
Housing Material			
Insulation body		LCP	
CTI value	IEC 112	175	
UL flame rating		UL 94 V-0	
UL file plastic material		E171666	
Contact Material			
Base material		Cu alloy	
Mating area		gold plating	
Termination area		Sn	
Clip Material			
Base material		Cu alloy	
Plating		Sn	



MicroCon - 0.8 mm Connectors

CABLE CHARACTERISTICS

TECHNICAL DATA FLAT RIBBON CABLES



Description	Standard cable (PVC)
Cross section	AWG-34 / 0.02 mm ²
Conductor	solid Cu wire, tinned, 0.02 mm ²
Coded wire	available
Insulation	PVC gray (similar to RAL 7032)
Insulation thickness	min. 0.1mm
Shore hardness	94 ±2 (Shore A)
Bending radius	single: 7,5 x thickness multiple: 25 x thickness
Technical Data	
Temperature range	-20/105 °C (fixed) -10/105 °C (mobile)
Dielectric strength	500 V _{rms}
Conductor resistance	≤ 980 Ω/km at 20 °C
Insulation resistance	≥ 20 MΩ x km at 20 °C
Impedance	130 Ω (wire-wire) 80 Ω (Ground-Signal-Ground)
RoHS	compliant
Flame rating	UL 1581 Sec. 1090 (Horizontal Flame Test) IEC 60332-2-2



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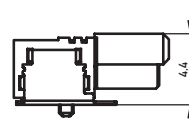
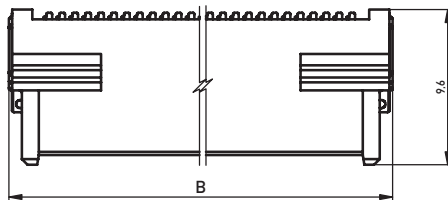
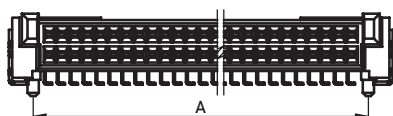
RIGHT ANGLE FEMALE

PRODUCT SPECIFICATION

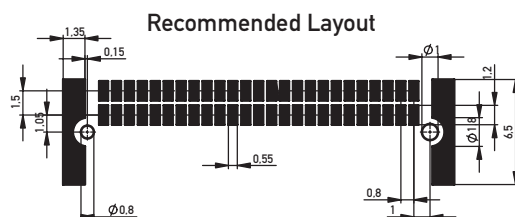


- SMT Termination
- 2 - 100 pins possible
- tape and reel packaging for automatic assembly
- blind mate guide alignment for secure mating
- for available part numbers please refer to our website

DIMENSIONAL DRAWINGS



12	6.00	9.00
16	7.60	10.60
26	11.60	14.60
32	14.00	17.00
40	17.20	20.20
50	21.20	24.20
68	28.40	31.40
80	33.20	36.20
100	41.20	44.20
No. of contacts	A	B





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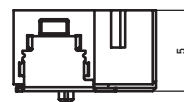
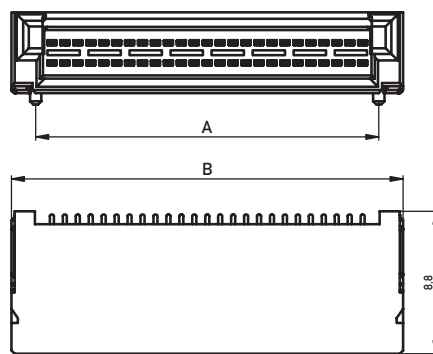
RIGHT ANGLE MALE

PRODUCT SPECIFICATION

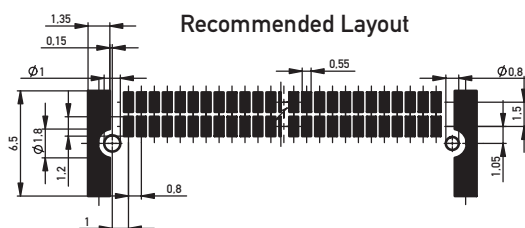


- SMT Termination
- 2 - 100 pins possible
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DIMENSIONAL DRAWINGS



12	6.00	9.00
16	7.60	10.60
26	11.60	14.60
32	14.00	17.00
40	17.20	20.20
50	21.20	24.20
68	28.40	31.40
80	33.20	36.20
100	41.20	44.20
No. of contacts	A	B





MicroCon - 0.8 mm Connector

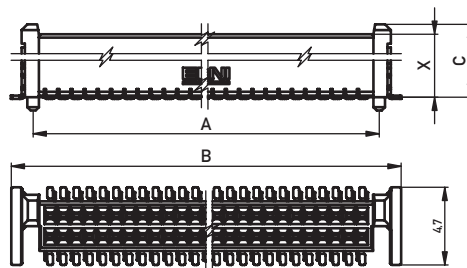
VERTICAL FEMALE

PRODUCT SPECIFICATION



- SMT Termination
- 2 - 100 pins possible
- various heights possible
- tape and reel packaging for automatic assembly
- blind mate guide alignment for secure mating
- for available part numbers please refer to our website

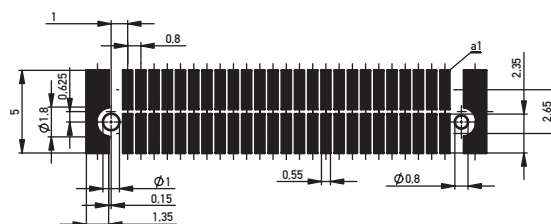
DIMENSIONAL DRAWINGS



8	8.60
6	6.60
4	4.60
Stacking height X	C

12	6.00	8.70
16	7.60	10.30
26	11.60	14.30
32	14.00	16.70
40	17.20	19.90
50	21.20	23.90
68	28.40	31.10
80	33.20	35.90
100	41.20	43.90
No. of contacts	A	B

Recommended Layout





MicroCon - 0.8 mm Connector

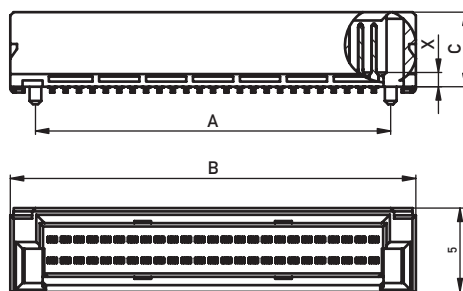
VERTICAL MALE

PRODUCT SPECIFICATION



- SMT Termination
- 2 - 100 pins possible
- various heights possible
- tape and reel packaging for automatic assembly
- blind mate guide alignment for secure mating
- for available part numbers please refer to our website

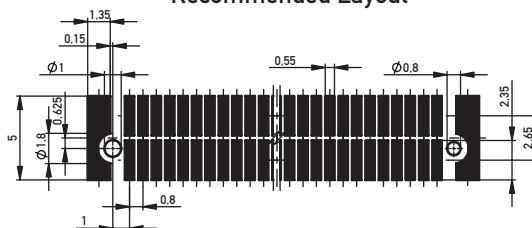
DIMENSIONAL DRAWINGS



2	5,8
1	4,8
Stacking height X	C

12	6,00	9,00
16	7,60	10,60
26	11,60	14,60
32	14,00	17,00
40	17,20	19,20
50	21,20	24,20
68	28,40	31,40
80	33,20	36,20
100	41,20	44,20
No. of contacts	A	B

Recommended Layout





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CABLE ASSEMBLIES

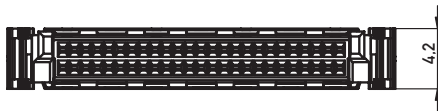
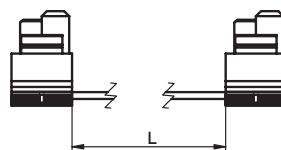
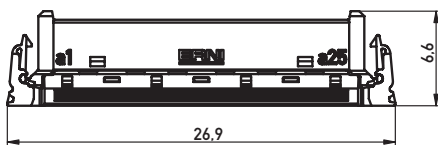
PRODUCT SPECIFICATION



- IDC termination
- 2 - 100 pins possible
- various cable length possible
- ribbon cable AWG 34
- 90° cable outlet
- blind mate guide alignment for secure mating
- for available part numbers please refer to our website

DIMENSIONAL DRAWINGS

50 pin Version





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