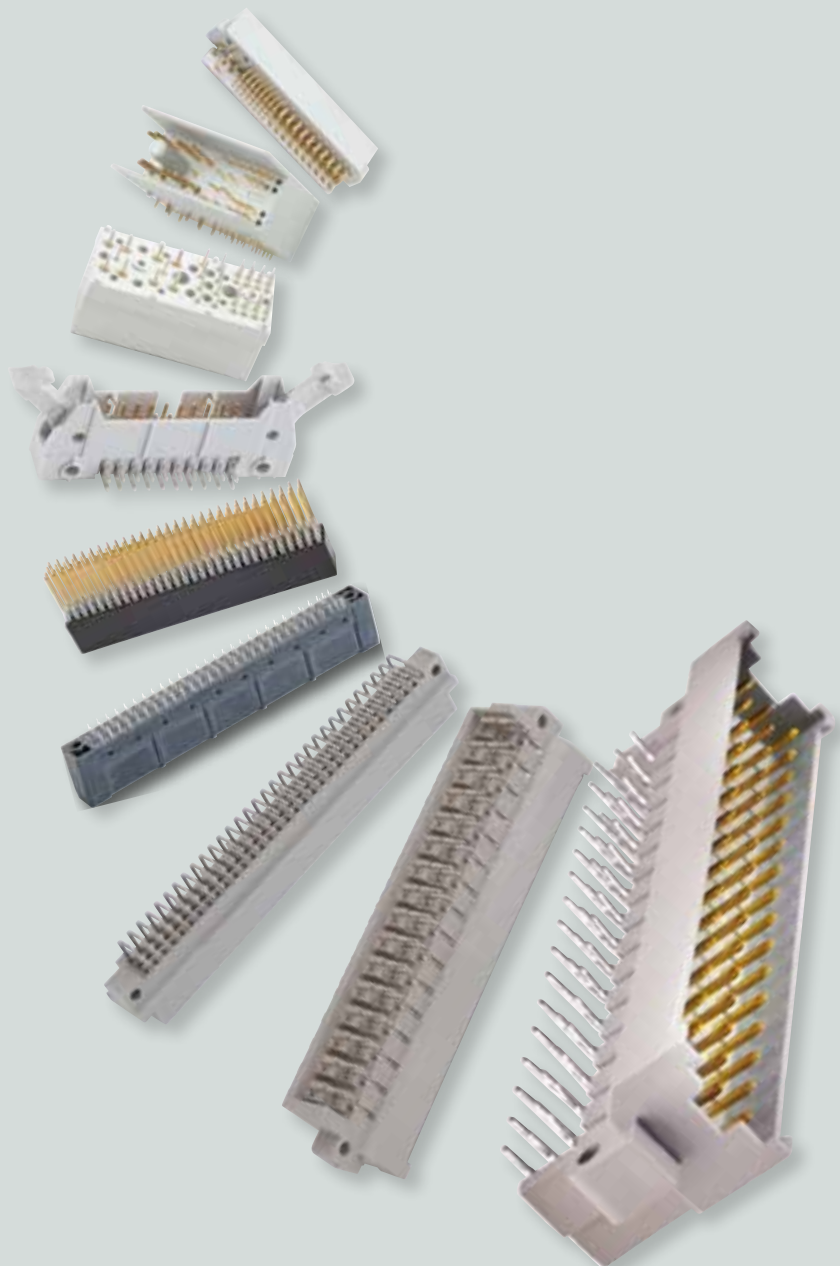




TECHNOLOGY IN CONNECTORS™

PCB CONNECTORS



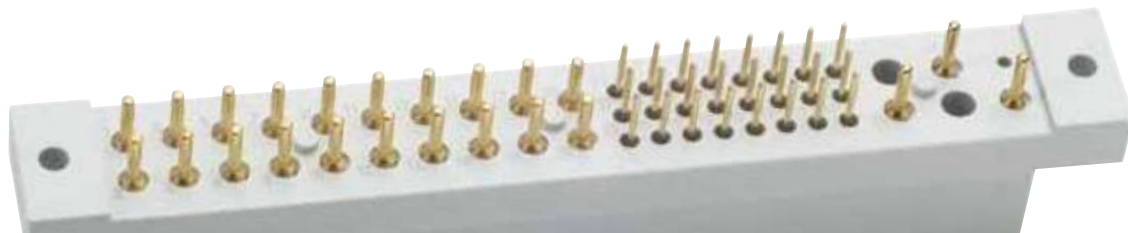


GERMANY

As a leading manufacturer of connectors, CONEC develops, produces and markets its products around the world to customers in the machine-tool, electronics and communications industries.

CONEC has dedicated itself to make a contribution to progress in the connector industry and to satisfy its customers through innovation, quality and excellent service. Around the world, our organization operates as a customer-oriented team.

CONEC is present in numerous countries with its own branch offices and representatives. Our local sales consultants transmit all information directly to the responsible departments to keep the paths of communication short. This provides support in the local language, quick response and competent consulting.



CANADA



USA

CONEC designs and manufactures products in modern facilities. The products are made in accordance to the highest quality standards and industry specifications.

CONEC provides reliable and effective solutions to OEM, EMS and cable houses.



OUR PHILOSOPHY – CUSTOMER SATISFACTION.



Quality is realized right from the beginning with Total Quality Management concept. Therefore our customers are included into all our processes, starting with design phase, first sampling, series production release and continuous sales support. The phases will be accompanied by drawings, samples and test reports. The entire quality process is documented and approved. CONEC is certified to ISO/TS16949:2002.

CONEC inhouse is equipped with modern test systems. We can verify the requirements and implement a continuous product improvement process to meet and exceed future requirements. To fulfill international and national requirements most of CONEC product series are registered by UL, CSA or VDE.



CONEC IS YOUR SPECIALIST FOR DESIGN AND PRODUCTION OF SPECIAL CUSTOMIZED PRODUCTS.

Flexibility, assurance and rapid response are required in today's market more than ever before. CONEC fulfills these demands with central order-processing and well implemented quality control systems. Statistical process control as well as just in time deliveries are a common practice. Numerous customers honored this performance by approving CONEC to a "Preferred Supplier" status.



Are you looking for application-specific solutions?
Standard products do not meet your needs?
The implementation deadline is tight?

CONEC experienced design team can create your solution for you:

- Special Interconnect solutions to customers specifications
- Prototypes and small series production batches
- Connectors with increased IP ratings for harsh environments.

Contact us to discuss your special requirements.



PRODUCT LINES



I/O Connectors

D-SUB Connectors, Standard, Combination and Water Resistant; D-SUB Hoods and D-SUB accessories; Filter D-SUB Connectors, Standard, Combination and Water Resistant; Filter Adapters; Filter Plates; RJ45-IP67 Industrial Ethernet Connector System; USB 2.0-IP67 Connector System; RJ45 Magnetic Modular Jacks



PCB Connectors

DIN 41617 Connectors; DIN EN 60603-2 Connectors; DIN 41651 Insulation Displacement Connectors CompactPCI Connectors; AdvancedTCA Connectors; MicroTCA Connectors; PC104-, PC104plus Connectors; Pin Header and Socket Connectors



Sensor Actor Line / Circular Connectors

M12x1 Connectors, Overmolded and Field Attachable, Sockets, Junction Boxes, M12x1 Connector Systems for High Temperature, Food+Beverage, Bus Systems; M8x1 Overmolded Connectors; 7/8" Connectors; Rund24 Connectors; Valve Connectors



Fiber Optic Connectors

Adapter; Hybrid Adapter; Outdoor Connectors; Patch cords



Coaxial Connectors

SMA, SSMA, MMCX, TNC, N, MCX, Mixed Adapters and BNC Connectors; D-SUB and DIN Coaxial Contacts; D-SUB and DIN High-Current Contacts

INDEX

SECTION 1

AdvancedTCA Connectors _____



SECTION 2

MicroTCA Connectors _____



SECTION 3

CompactPCI Connectors _____



SECTION 4

Connectors DIN EN 60603-2 (DIN 41612) _____



SECTION 5

Combination Connectors DIN EN 60603-2 (DIN 41612) _____



SECTION 6

PC104 and PC104plus Connectors _____



SECTION 7

Connectors DIN 41617 _____



SECTION 8

Flatcable Connectors DIN 41651 _____



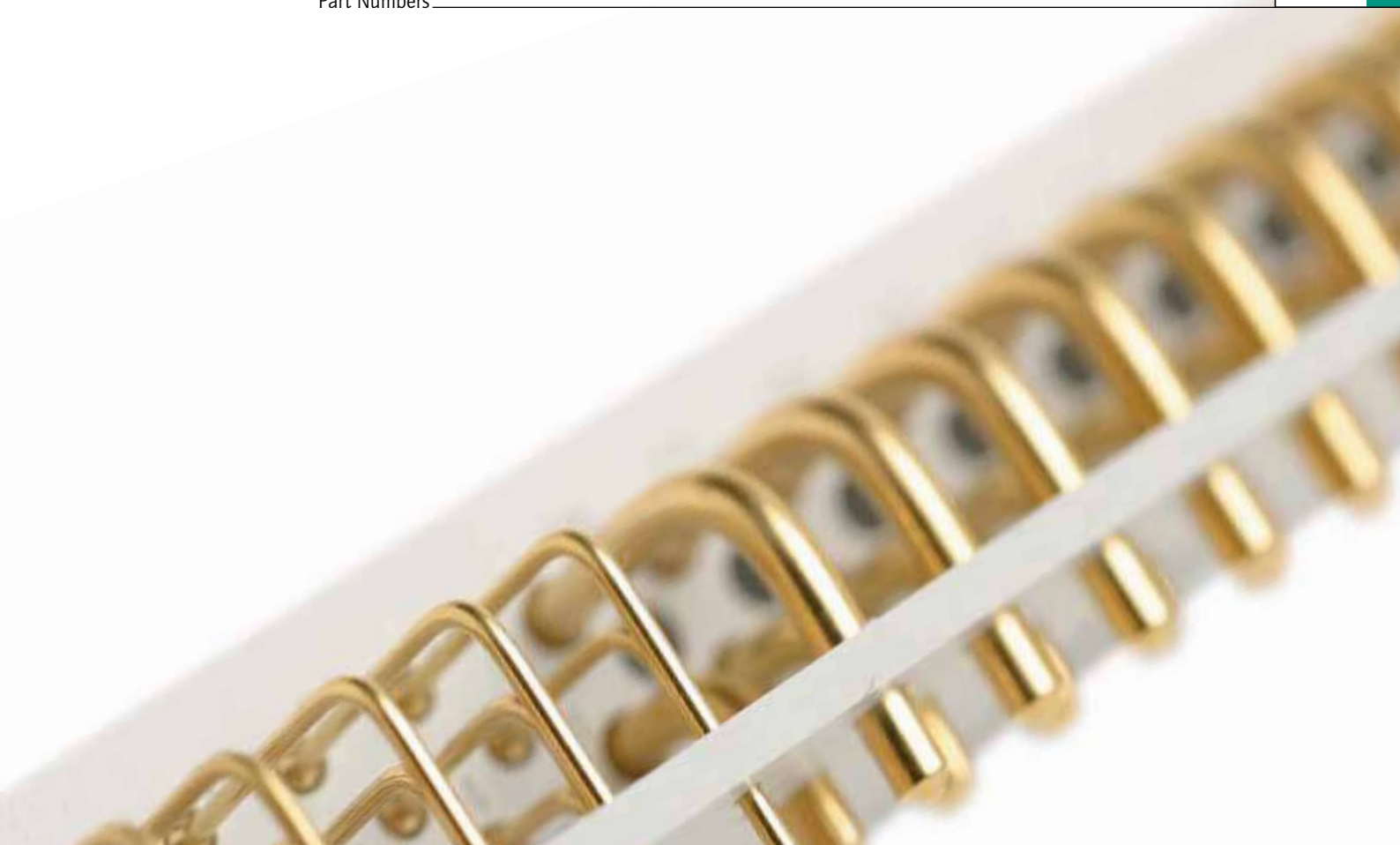
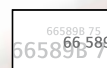
SECTION 9

Installation and Assembly Tools _____



SECTION 10

Part Numbers _____



SECTION 5

COMBINATION CONNECTORS DIN EN

The combination connectors in accordance with DIN EN 60603-2 offer a variety of applications. The design allows a combination of signal, high current, high voltage and coaxial contacts.

Standard termination types such as solder cup, PCB solder tails, straight right angle and wire wrap tails are available.



60603-2

**Product features:**

- Saves space on your PCB
- Various termination method
- Cost factor, one item as compared with separate connectors
- Easy assembly of high power and coaxial contacts
- High power and coaxial contacts are screw-machine types
- Gold plating options available

Fully assembled connectors with high power or coaxial contacts are available.



PART NUMBER CREATOR

9 0 7 8 M 2 M A T 1 1 X 9 0 X

Type
9 = Type M - DIN EN 60603-2

Variations
Type M = 40+4, 42+6, 52+2, 60+4, 78+2
Type M = 16+8, 24+8, 28+6
Mini type M = 8+4, 12+4, 20+2, 30+2
+ = to substitute "M" (look at example)

Type of contact
M = Male connector
F = Female connector

Quality class for contacts
A = Quality class 3 = 50 cycles
B = Quality class 2 = 400 cycles
C* = Quality class 1 = 500 cycles *on request

Termination only for signal contacts
N* = Wire Wrap *not available as male connector
R = solder pin straight
T* = solder pin angled *not available as female connector

Termination for high power and coaxial contacts

11/27 = Solder lug 10 A	26/13 = 4 solder pins angled 40 A
12/28 = Solder lug 20 A	31 = 5 solder pins straight 50 Ω
14/29 = Solder lug 40 A	32 = 5 solder pins straight 50 Ω
19/39 = Solder pin straight 20 A	33 = 5 solder pins straight 75 Ω
20/40 = Solder pin straight 40 A	35 = 5 solder pins angled 50 Ω
18/17 = Solder pin angled 10 A	36 = 5 solder pins angled 75 Ω
21/16 = Solder pin angled 20 A	99 = without contacts
23/15 = Solder pin angled 40 A	

Mounting style
X9 = Mounting hole for screwed or rivet

Standard
OX = Standard

TECHNICAL INFORMATION

SKIN EFFECT

Alternating currents do not uniformly occupy the entire cross section of the conductor, rather inductance effect in the conductor deflects the current towards the surface of the conductor, whereby this deflection increases with the frequency.

The resistive attenuation of a transmission line increases with the frequency as a result of this skin effect.

The skin depth (equivalent thickness of the layer in which current flows) can be determined using

$$\delta = \frac{1}{\sqrt{f \pi \sigma \mu_0 \mu_r}}$$

f = frequency

σ = conductivity of the conductor material

$\sigma_{Ag} = 62 \times 10^6 \text{ S/m}$

$\sigma_{Cu} = 58 \times 10^6 \text{ S/m}$

$\mu_0 = 1,256 \times 10^{-6} \text{ Vs / Am}$

μ_r ... relative permeability constant for the employed material

VSWR-VALUE

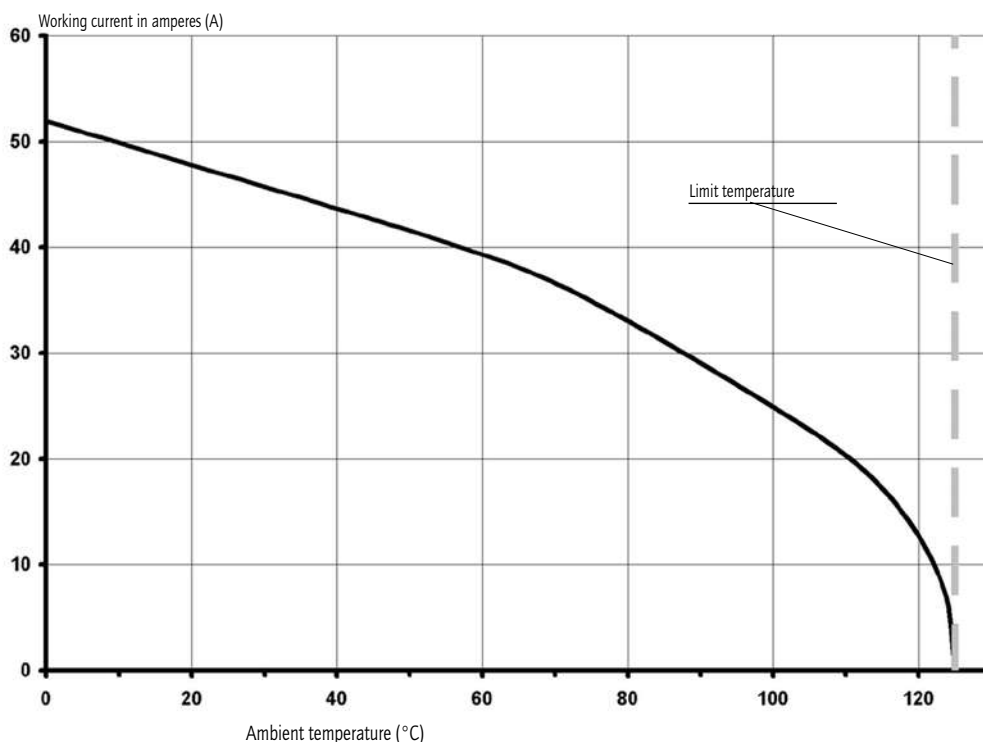
The ration between the value of the largest and the smallest voltages on a loss-free line is known as the ripple or voltage standing wave ratio s (with $1 \leq s < \infty$). The reciprocal value of the VSWR is known as the inverse voltage standing wave ratio m (with $0 < m \leq 1$). (VSWR = Voltage standing wave ratio). The value of s is linked with the $\rightarrow$ reflection coefficient r on s transmissionline according to the equation.

$$s = \frac{(1 + |r|)}{(1 - |r|)}$$

CURRENT RATING / DERATING CURVE

Measurement is according to DIN 41640 part 3 whereas all power contacts are connected in series.

For test procedure - product-no. 9024M8FCR14X90X has been equipped with 124C10069X and 9024M8MCR14X90X with 123C10069X.

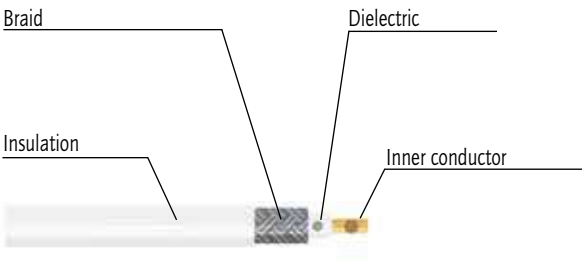


TECHNICAL DATA

Materials		Type M	Coaxial contacts	High power contacts	High voltage contacts
Insulator		PBT GF UL94V-0	PTFE/PBT/PI		PTFE
Contact plating		gold over nickel			
Contact material		copper alloy			
Retaining clip			copper alloy		
Current rating (DC)		2 A	2 A	10 to 40 A	2 A
Test voltage		1000 V, 50 Hz			
Resistance between mated contacts		≤ 2.7 mΩ			
Insulation resistance			10 ⁷ MΩ		≥2x10 ⁷ MΩ
Volume resistivity		10 ¹⁶ Ωcm			
Dielectric strength		50 KV/ mm			
Characteristic impedance			50/75 Ω		
Contact resistance	inner conductor		≤ 2.7 mΩ		≤ 2.7 mΩ
	outer conductor	≤ 2.7 mΩ	≤ 2.7 mΩ	≤ 1 mΩ	
VSWR-value according to MIL-C-39012	1.2 GHz		≤ 1.2		
	1.5 GHz		≤ 1.3		
	2.0 GHz		≤ 1.5		
Dielectric voltage			750 V 50 Hz		3.8 kV
Frequency range			0 to 2 GHz		
Working voltage		250 V	250 V		max. 2.8 kV
Temperature range		-55°C to +125°C	-55°C to +135°C	-55°C to +155°C	-55°C to +125°C
Mating force per signal contact		≤ 3.4 N	≤ 7 N	≤ 7 N	≤ 5 N
Withdrawal force per signal contact		≥ 0.2 N	≤ 7 N	ca. 5 N	ca. 2.5 N
Mating cycles		depending on plating			

Technical alterations are subjects to change without notice.

CRIMPING INSTRUCTIONS FOR COAXIAL CONTACTS



Strip the wire



Slide sleeve over coax cable



Crimp the inner contact on the inner conductor



Snap the inner contact into the outer contact



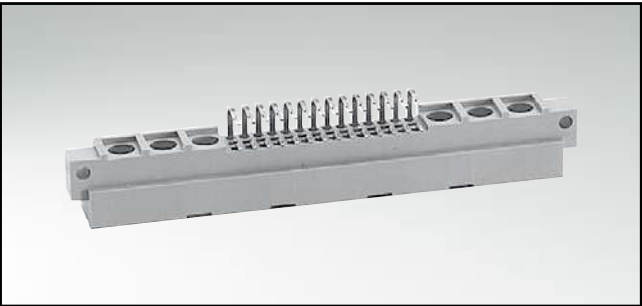
Slide braid over outer contact



Crimp the sleeve on to outer contact

TYPE M

Male connector – straight and angled

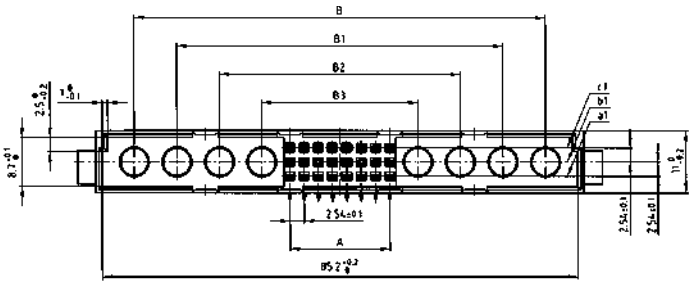


RoHS compliant

DESCRIPTION

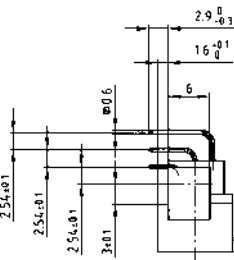
- Solder pin
- No. of Pos. 16+8 - 24+8 - 28+6 - 40+4 - 42+6 - 52+2 - 60+4 - 78+2
- Quality class 3 (also available in quality class 2 or 1)
- Part number creator on page 5 | 2
- For assembly with PCB power and coaxial contacts please contact factory

PRODUCT DRAWING

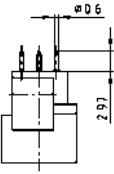


No. of Pos.	A ± 0.1	B ± 0.1	B ₁ ± 0.1	B ₂ ± 0.1	B ₃ ± 0.1
78 + 2	25x2.54=63.50	29x2.54=73.66	–	–	–
52 + 2	25x2.54=63.50	29x2.54=73.66	–	–	–
60 + 4	19x2.54=48.26	29x2.54=73.66	23x2.54=58.42	–	–
40 + 4	19x2.54=48.26	29x2.54=73.66	23x2.54=58.42	–	–
42 + 6	13x2.54=33.02	29x2.54=73.66	23x2.54=58.42	17x2.54=43.18	–
28 + 6	13x2.54=33.02	29x2.54=73.66	23x2.54=58.42	17x2.54=43.18	–
24 + 8	7x2.54=17.78	29x2.54=73.66	23x2.54=58.42	17x2.54=43.18	11x2.54=27.94
16 + 8	7x2.54=17.78	29x2.54=73.66	23x2.54=58.42	17x2.54=43.18	11x2.54=27.94

Solder pin angled **T**



Solder pin straight **R**



T = Ordering code

ORDER DATA

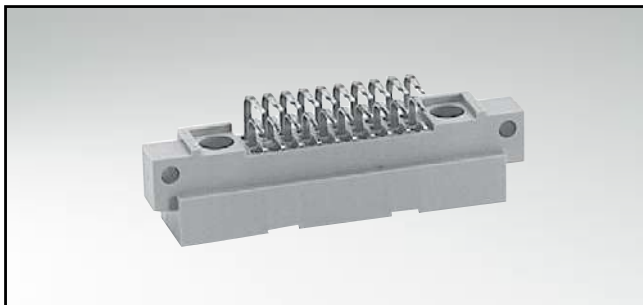
(Dim. = mm)

No. of Pos.	Version • = contact, + = no contact																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
78 + 2	a	⊕	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
	b	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
52 + 2	a	⊕	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
	b	•	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	c	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
60 + 4	a	⊕	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
	b	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
	c	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
40 + 4	a	⊕	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
	b	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕
	c	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	⊕

No. of Pos.	Version • = contact, + = no contact																																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
42 + 6	a	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+									•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
28 + 6	a	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
24 + 8	a	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
16 + 8	a	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+								•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

TYPE M/2

Male connector – straight and angled

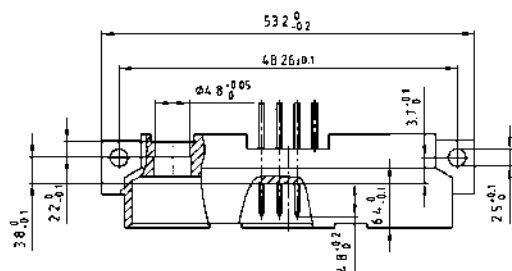
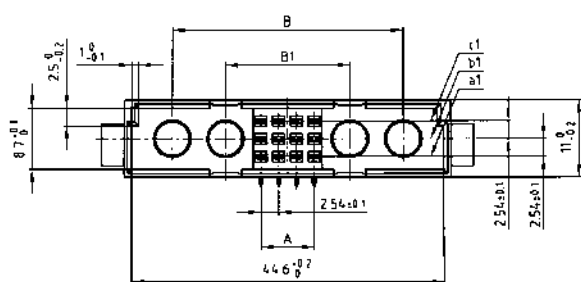


RoHS compliant

DESCRIPTION

- Solder pin
- No. of Pos. 8+4 - 12+4 - 20+2 - 30+2
- Quality class 3 (also available in quality class 2 or 1)
- Part number creator on page 5 | 2
- For assembly with PCB power and coaxial contacts
please contact factory

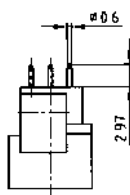
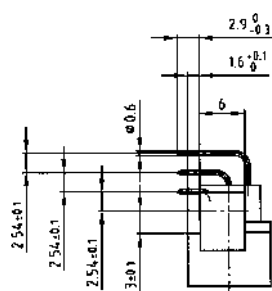
PRODUCT DRAWING



Solder pin angled ☐ T

Solder pin straight R

No. of Pos.	A ± 0.1	B ± 0.1	B ₁ ± 0.1
30 + 2	9x2.54=22.86	13x2.54=33.02	—
20 + 2	9x2.54=22.86	13x2.54=33.02	—
12 + 4	3x2.54=7.62	13x2.54=33.02	7x2.54=17.78
8 + 4	3x2.54=7.62	13x2.54=33.02	7x2.54=17.78



 = Ordering code

ORDER DATA

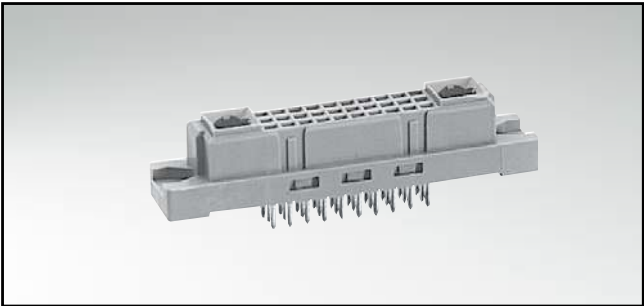
(Dim. = mm)

[illegible]

No. of Pos.	Version																
	• = contact, + = no contact																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
12 + 4	a																
	b	⊕			⊕			•	•	•	•	⊕			⊕		
	c							•	•	•	•	⊕			⊕		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
8 + 4	a																
	b	⊕			⊕			+	+	+	+	⊕			⊕		
	c							•	•	•	•	⊕			⊕		

TYPE M/2

Female connector – straight

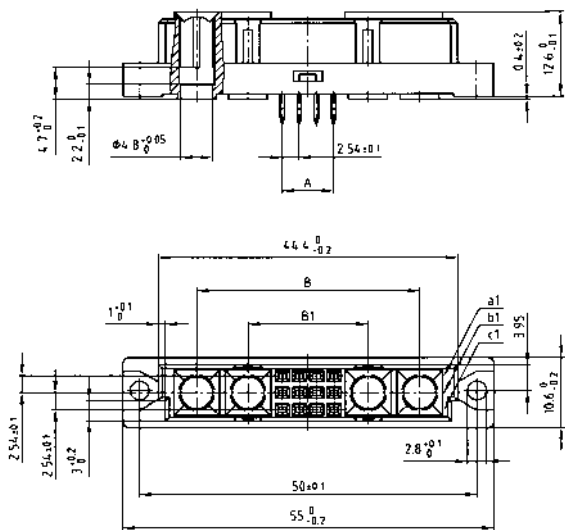


RoHS compliant

DESCRIPTION

- Solder pin and Wire Wrap
- No. of Pos. 8+4 - 12+4 - 20+2 - 30+2
- Quality class 3 (also available in quality class 2 or 1)
- Part number creator on page 5 | 2
- For assembly with PCB power and coaxial contacts please contact factory

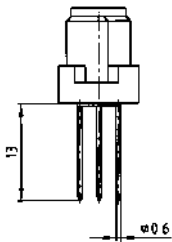
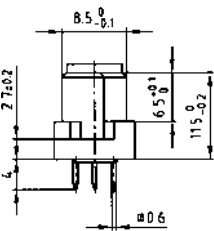
PRODUCT DRAWING



No. of Pos.	A ± 0.1	B ± 0.1	B ₁ ± 0.1
30 + 2	9x2.54=22.86	13x2.54=33.02	–
20 + 2	9x2.54=22.86	13x2.54=33.02	–
12 + 4	3x2.54=7.62	13x2.54=33.02	7x2.54=17.78
8 + 4	3x2.54=7.62	13x2.54=33.02	7x2.54=17.78

Solder pin straight 4 mm **R**

Wire Wrap **N**



R = Ordering code

ORDER DATA

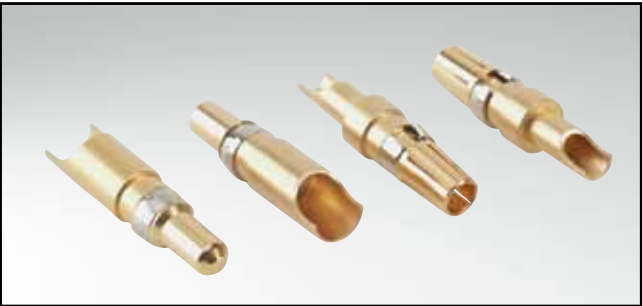
(Dim. = mm)

No. of Pos.	Version • = contact, + = no contact															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
30 + 2	a	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
20 + 2	a	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•

No. of Pos.	Version • = contact, + = no contact															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
12 + 4	a	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
8 + 4	a	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	b	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	c	+	•	•	•	•	•	•	•	•	•	•	•	•	•	•

TYPE M

High power contacts – solder cup – straight

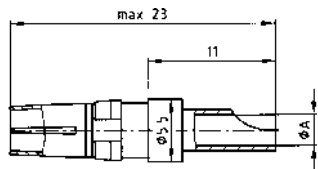


RoHS compliant

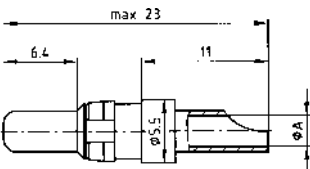
- DESCRIPTION
- Precision machined contacts
 - Quality class 3: gold flash
 - Quality class 1: 0.8µm gold on mating side
 - Other quality classes on request
 - Assembled contacts available on request

PRODUCT DRAWING

Socket contact

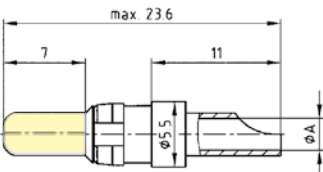


Plug contact



AWG	Current Rating	ØA ^{+0.15}
16 - 20	10 A	1,80
12 - 14	20 A	2,70
8 - 10	30 A	4,80

Premating contact



ORDER DATA

(Dim. = mm)

SOCKET CONTACT				
AWG	Current rating	Quality class	Termination	Part number
16 - 20	10 A	1	11	124 C 10039 X
16 - 20	10 A	3	27	124 A 10039 X
12 - 14	20 A	1	12	124 C 10049 X
12 - 14	20 A	3	28	124 A 10049 X
8 - 10	40 A	1	14	124 C 10069 X
8 - 10	40 A	3	29	124 A 10069 X

PLUG CONTACT				
AWG	Current rating	Quality class	Termination	Part number
16 - 20	10 A	1	11	123 C 10039 X
16 - 20	10 A	3	27	123 A 10039 X
12 - 14	20 A	1	12	123 C 10049 X
12 - 14	20 A	3	28	123 A 10049 X
8 - 10	40 A	1	14	123 C 10069 X
8 - 10	40 A	3	29	123 A 10069 X

PREMATING CONTACT			
AWG	Current rating	Quality class	Part number
16 - 20	10 A	1	123 C 10139 X
12 - 14	20 A	1	123 C 10149 X
8 - 10	40 A	1	123 C 10169 X

TYPE M

High power contacts – crimp – straight



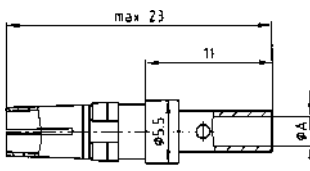
RoHS compliant

DESCRIPTION

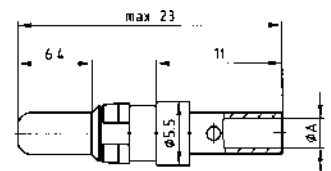
- Precision machined contacts
- Quality class 3: gold flash
- Quality class 1: 0.8µm gold on mating side
- Other quality classes on request

PRODUCT DRAWING

Socket contact

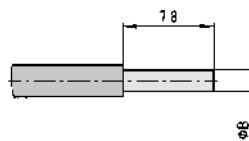


Plug contact

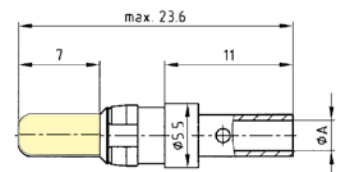


AWG	Current Rating	ØA ^{+0.15}	ØB max.
16 - 20	10 A	1,70	1,70
12 - 14	20 A	2,60	2,60
10 - 12	30 A	3,70	3,70
8 - 10	40 A	4,60	4,60

Wire stripping



Premating contact



ORDER DATA

(Dim. = mm)

SOCKET CONTACT				PLUG CONTACT				PREMATING CONTACT			
AWG	Current rating	Quality class	Part number	AWG	Current rating	Quality class	Part number	AWG	Current rating	Quality class	Part number
16 - 20	10 A	1	124 C 11019 X	16 - 20	10 A	1	123 C 11019 X	16 - 20	10 A	1	123 C 11119 X
16 - 20	10 A	3	124 A 11019 X	16 - 20	10 A	3	123 A 11019 X	12 - 14	20 A	1	123 C 11129 X
12 - 14	20 A	1	124 C 11029 X	12 - 14	20 A	1	123 C 11029 X	10 - 12	30 A	1	123 C 11139 X
12 - 14	20 A	3	124 A 11029 X	12 - 14	20 A	3	123 A 11029 X	8 - 10	40 A	1	123 C 11149 X
10 - 12	30 A	1	124 C 11039 X	10 - 12	30 A	1	123 C 11039 X				
10 - 12	30 A	3	124 A 11039 X	10 - 12	30 A	3	123 A 11039 X				
8 - 10	40 A	1	124 C 11049 X	8 - 10	40 A	1	123 C 11049 X				
8 - 10	40 A	3	124 A 11049 X	8 - 10	40 A	3	123 A 11049 X				

TYPE M

High power contacts – solder pin – straight

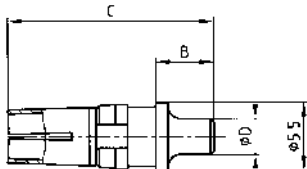


RoHS compliant

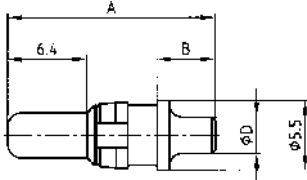
- DESCRIPTION
- Precision machined contacts
 - Quality class 3: gold flash
 - Quality class 1: 0.8µm gold on mating side
 - Other quality classes on request
 - Assembled contacts available on request

PRODUCT DRAWING

Socket contact

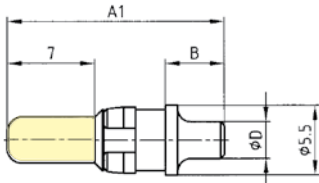


Plug contact



Current rating	A	A ₁	B	C	ØD
20 A	16.70	17.30	4.70	16.10	2.90
40 A	17.75	18.35	5.75	17.15	3.80

Premating contact



ORDER DATA

(Dim. = mm)

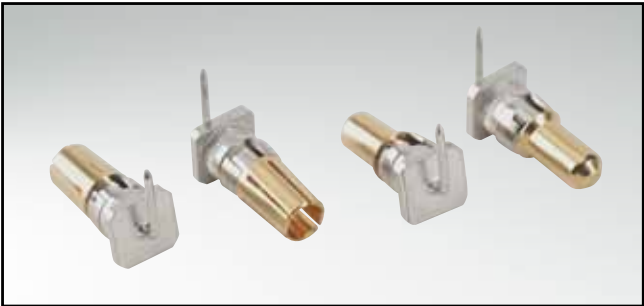
SOCKET CONTACT			
Current rating	Quality class	Termination	Part number
20 A	1	19	124 C 14029 X
20 A	3	39	124 A 14029 X
40 A	1	20	124 C 14049 X
40 A	3	40	124 A 14049 X

PLUG CONTACT			
Current rating	Quality class	Termination	Part number
20 A	1	19	123 C 14029 X
20 A	3	39	123 A 14029 X
40 A	1	20	123 C 14049 X
40 A	3	40	123 A 14049 X

PREMATING CONTACT			
Current rating	Quality class	Termination	Part number
20 A	1	19	123 C 14129 X
40 A	1	20	123 C 14149 X

TYPE M

High power contacts – solder pin – angled

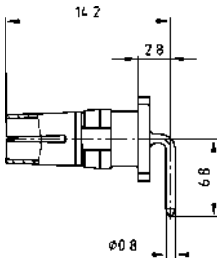


RoHS compliant

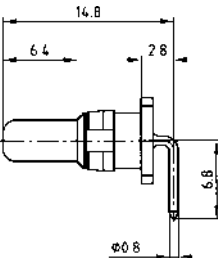
- DESCRIPTION**
- Precision machined contacts
 - Quality class 3: gold flash
 - Quality class 1: 0.8µm gold on mating side
 - Other quality classes on request
 - Assembled contacts available on request

PRODUCT DRAWING

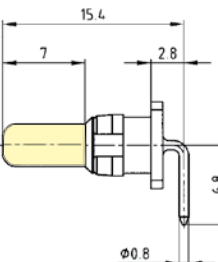
Socket contact



Plug contact



Premating contact



ORDER DATA (Dim. = mm)

SOCKET CONTACT			
Current rating	Quality class	Termination	Part number
10 A	1	18	124 C 12019 X
10 A	3	17	124 A 12019 X

PLUG CONTACT			
Current rating	Quality class	Termination	Part number
10 A	1	18	123 C 12019 X
10 A	3	17	123 A 12019 X

PREMATING CONTACT		
Current rating	Quality class	Part number
10 A	1	123 C 12119 X

TYPE M

High power contacts – solder pin – angled



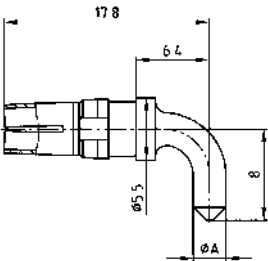
RoHS compliant

DESCRIPTION

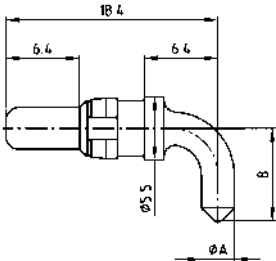
- Precision machined contacts
- Quality class 3: gold flash
- Quality class 1: 0.8µm gold on mating side
- Other quality classes on request
- Assembled contacts available on request

PRODUCT DRAWING

Socket contact

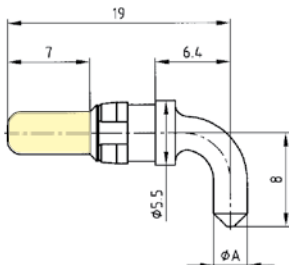


Plug contact



Current Rating	ØA
20 A	2.90
40 A	3.80

Premating contact



ORDER DATA

(Dim. = mm)

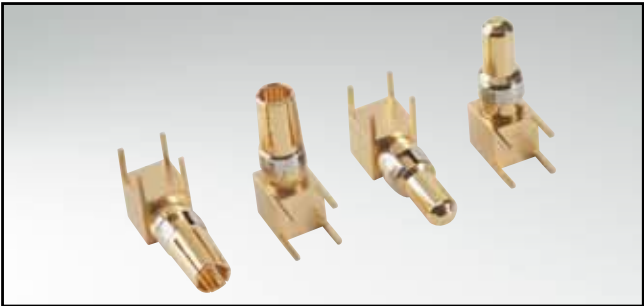
SOCKET CONTACT			
Current rating	Quality class	Termination	Part number
20 A	1	21	124 C 13019 X
20 A	3	16	124 A 13019 X
40 A	1	23	124 C 13039 X
40 A	3	15	124 A 13039 X

PLUG CONTACT			
Current rating	Quality class	Termination	Part number
20 A	1	21	123 C 13019 X
20 A	3	16	123 A 13019 X
40 A	1	23	123 C 13039 X
40 A	3	15	123 A 13039 X

PREMATING CONTACT		
Current rating	Quality class	Part number
20 A	1	123 C 13119 X
40 A	1	123 C 13139 X

TYPE M

High power contactcs – solder pin – angled

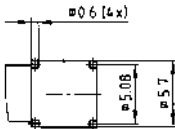
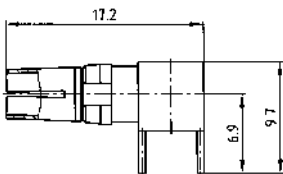


RoHS compliant

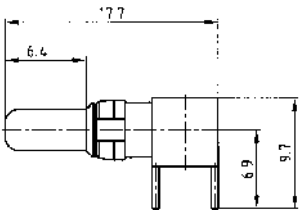
- DESCRIPTION**
- Precision machined contacts
 - Quality class 3: gold flash
 - Quality class 1: 0.8µm gold on mating side
 - Other quality classes on request
 - Assembled contacts available on request

PRODUCT DRAWING

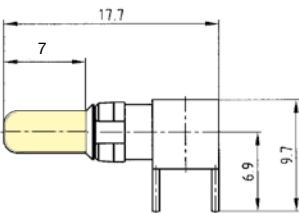
Socket contact



Plug contact



Premating contact



ORDER DATA (Dim. = mm)

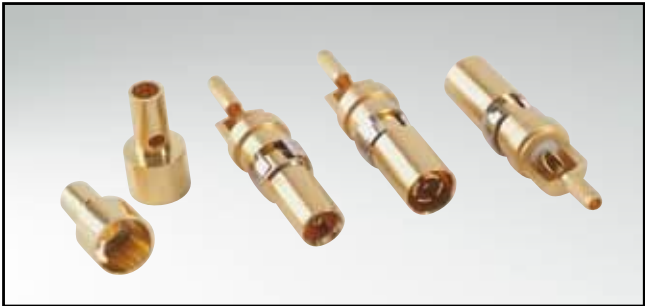
SOCKET CONTACT			
Current rating	Quality class	Termination	Part number
40 A	1	26	124 C 10019 X
40 A	3	13	124 A 10019 X

PLUG CONTACT			
Current rating	Quality class	Termination	Part number
40 A	1	26	123 C 10019 X
40 A	3	13	123 A 10019 X

PREMATING CONTACT		
Current rating	Quality class	Part number
40 A	1	123 C 10029 X

TYPE M

Coaxial contacts – straight – inner conductor solder – outer conductor crimp/solder termination



RoHS compliant

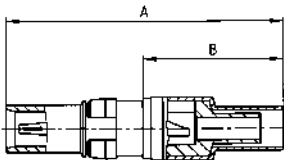
DESCRIPTION

- 50 Ω and 75 Ω Version
- Socket contact suitable for male connectors
- Plug contact suitable for female connectors
- Contact platings:
 - 0.8µm gold mating side inner conductor
 - other platings on request
- Delivery includes: contacts and sleeve supplied loose

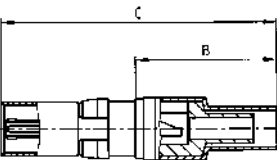
PRODUCT DRAWING

50 Ω Version

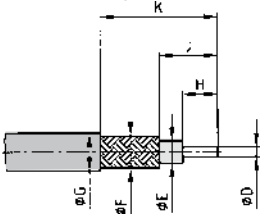
Socket contact



Plug contact



Wire stripping

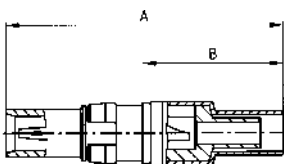


usable cable RG	A	B	C	ØD max.	ØE max.	ØF max.	ØG max.	H	J	K
178 B/U, 196 A/U, 404 U ⁺	24.2	12.3	23.9	0.90	1.2	1.4	2.3	2.5	5.0	10.0
174 U, 188 A/U, 316 U	24.2	12.3	23.9	0.80	1.9	2.3	3.2	2.5	5.0	10.0
316 U*	24.2	12.3	23.9	0.90	1.9	2.7	3.5	2.5	5.0	10.0
58 C/U, 141 A/U	25.4	13.5	25.2	0.90	3.0	4.1	5.2	3.0	5.0	9.5

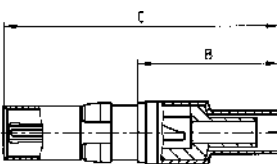
* = double braided - ⁺ = low noise

75 Ω Version

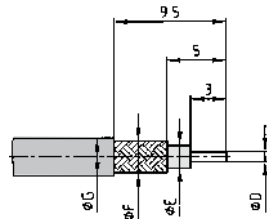
Socket contact



Plug contact



Wire stripping



usable cable RG	A	B	C	ØD max.	ØE max.	ØF max.	ØG max.
179 B/U, 187 A/U	24.2	12.3	23.9	0.50	1.9	2.3	3.2
180 B/U	23.1	11.2	22.8	0.90	2.8	3.1	4.5

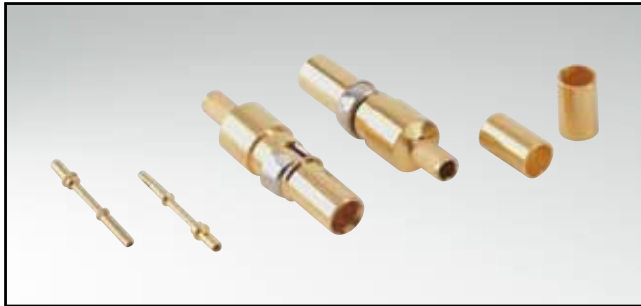
ORDER DATA

(Dim. = mm)

SOCKET CONTACT			PLUG CONTACT		
Version	Usable cable RG	Part number	Version	Usable cable RG	Part number
50 Ω	178 B/U, 196 A/U, 404 U ⁺	124 C 20059 X	50 Ω	178 B/U, 196 A/U, 404 U ⁺	123 C 20059 X
50 Ω	174 U, 188 A/U, 316 U	124 C 20069 X	50 Ω	174 U, 188 A/U, 316 U	123 C 20069 X
50 Ω	316 U *	124 C 20079 X	50 Ω	316 U *	123 C 20079 X
50 Ω	58 C/U, 141 A/U	124 C 20089 X	50 Ω	58 C/U, 141 A/U	123 C 20089 X
75 Ω	179 B/U, 187 A/U	124 C 30039 X	75 Ω	179 B/U, 187 A/U	123 C 30039 X
75 Ω	180 B/U	124 C 30049 X	75 Ω	180 B/U	123 C 30049 X

TYPE M

Coaxial contacts – straight – inner and outer conductor crimp termination



RoHS compliant

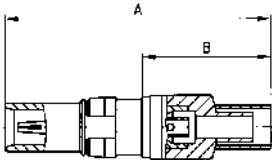
DESCRIPTION

- 50 Ω Version
- Socket contact suitable for male connectors
- Plug contact suitable for female connectors
- Contact platings:
 - 0.8µm gold mating side inner conductor
 - other platings on request
- Delivery includes: contacts and sleeve supplied loose

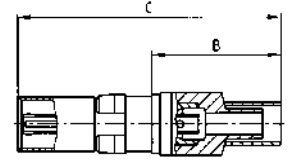
PRODUCT DRAWING

50 Ω Version

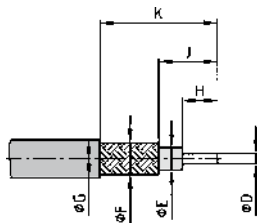
Socket contact



Plug contact



Wire stripping



usable cable RG	A	B	C	ØD max.	ØE max.	ØF max.	ØG max.	H	J	K
174 U, 188 A/U, 316 U	23.1	11.2	22.9	0.60	1.9	2.3	3.2	3.0	4.3	9.3
58 C/U, 141 A/U	22.8	10.9	22.6	1.30	3.7	4.4	5.2	3.8	5.3	9.0
316 U*	23.1	11.2	22.9	0.60	1.9	3.0	3.8	3.0	4.3	9.3

* = double braided

(Dim. = mm)

ORDER DATA

SOCKET CONTACT			PLUG CONTACT		
Version	Usable cable RG	Part number	Version	Usable cable RG	Part number
50 Ω	174 U, 188 A/U, 316 U	124 C 21049 X	50 Ω	174 U, 188 A/U, 316 U	123 C 21049 X
50 Ω	58 C/U, 141 A/U	124 C 21059 X	50 Ω	58 C/U, 141 A/U	123 C 21059 X
50 Ω	316 U *	124 C 21069 X	50 Ω	316 U *	123 C 21069 X

TYPE M

Coaxial contacts – angled – inner conductor solder – outer conductor crimp/solder termination



RoHS compliant

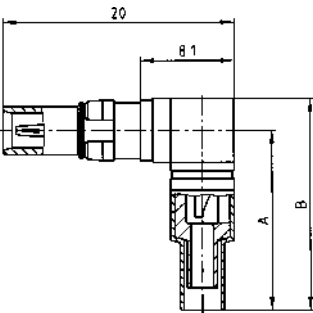
DESCRIPTION

- 50 and 75 Ω Version
- Socket contact suitable for male connectors
- Plug contact suitable for female connectors
- Contact platings:
 - 0.8µm gold mating side inner conductor
 - other platings on request
- Delivery includes: contacts and sleeve supplied loose

PRODUCT DRAWING

50 Ω Version

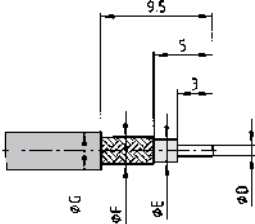
Socket contact



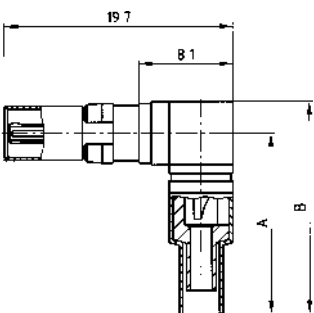
usable cable RG	A	B	ØD max.	ØE max.	ØF max.	ØG max.
178 B/U, 196 A/U, 404 U ⁺	15.7	18.5	0.90	1.2	1.4	2.3
174 U, 188 A/U, 316 U	15.7	18.5	0.90	1.9	2.3	3.2
122 U	15.7	18.5	0.90	2.8	3.1	4.5
316 U*	16.8	19.5	0.90	1.9	2.7	3.5
58 C/U, 141 A/U	18.0	20.8	0.90	3.0	4.1	5.2

* = double braided - + = low noise

Wire stripping

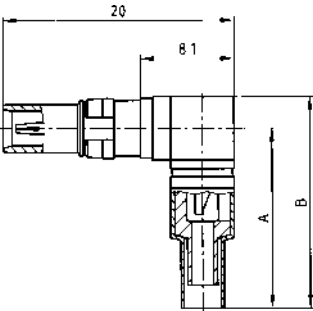


Plug contact



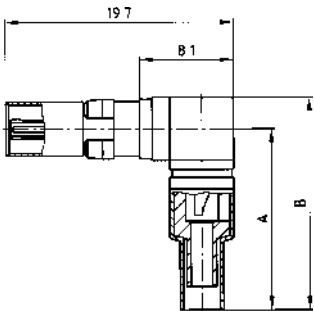
75 Ω Version

Socket contact



usable cable RG	A	B	ØD max.	ØE max.	ØF max.	ØG max.
196 A/U	15.7	18.5	0.90	1.2	1.4	2.3
179 B/U, 187 A/U	15.7	18.5	0.90	1.9	2.3	3.2
180 B/U	15.7	18.5	0.90	2.8	3.1	4.5

Plug contact



ORDER DATA

(Dim. = mm)

SOCKET CONTACT			PLUG CONTACT		
Version	Usable cable RG	Part number	Version	Usable cable RG	Part number
50 Ω	178 B/U, 196 A/U, 404 U ⁺	124 C 22069 X	50 Ω	178 B/U, 196 A/U, 404 U ⁺	123 C 22069 X
50 Ω	174 U, 188 A/U, 316 U	124 C 22079 X	50 Ω	174 U, 188 A/U, 316 U	123 C 22079 X
50 Ω	316 U *	124 C 22089 X	50 Ω	316 U *	123 C 22089 X
50 Ω	122 U	124 C 22099 X	50 Ω	122 U	123 C 22099 X
50 Ω	58 C/U, 141 A/U	124 C 22109 X	50 Ω	58 C/U, 141 A/U	123 C 22109 X
75 Ω	196 A/U	124 C 32049 X	75 Ω	196 A/U	123 C 32049 X
75 Ω	179 B/U, 187 A/U	124 C 32059 X	75 Ω	179 B/U, 187 A/U	123 C 32059 X
75 Ω	180 B/U	124 C 32069 X	75 Ω	180 B/U	123 C 32069 X

TYPE M

Coaxial contacts – angled – inner and outer conductor crimp termination



RoHS compliant

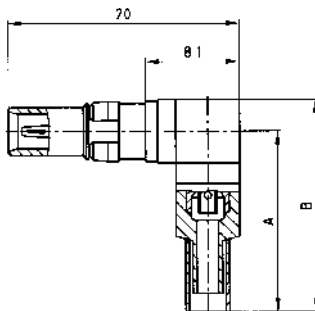
DESCRIPTION

- 50 and 75 Ω Version
- Socket contact suitable for male connectors
- Plug contact suitable for female connectors
- Contact platings:
 - 0.8µm gold mating side inner conductor
 - other platings on request
- Delivery includes: contacts and sleeve supplied loose

PRODUCT DRAWING

50 Ω Version

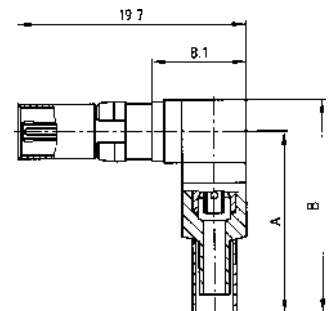
Socket contact



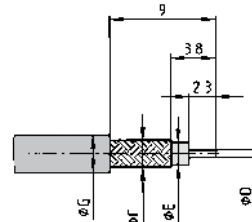
usable cable RG	A	B	ØD max.	ØE max.	ØF max.	ØG max.
174 U, 188 A/U, 316 U	15.7	18.5	0.60	1.9	2.3	2.3
316 U*	15.7	18.5	0.60	1.9	3.0	3.8
58 C/U, 141 A/U	15.4	18.2	1.00	3.7	4.4	5.2

* = double braided

Plug contact

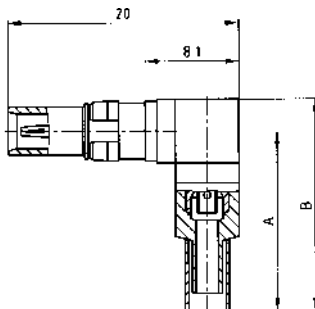


Wire stripping



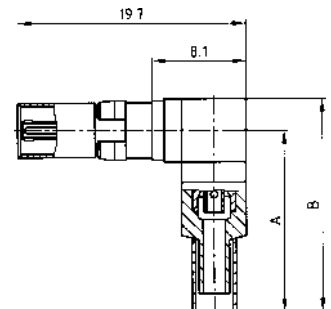
75 Ω Version

Socket contact



usable cable RG	A	B	ØD max.	ØE max.	ØF max.	ØG max.
179 B/U, 187 A/U	15.7	18.5	0.60	1.9	2.3	3.2
180 B/U	14.9	17.7	0.60	2.8	3.2	4.5

Plug contact



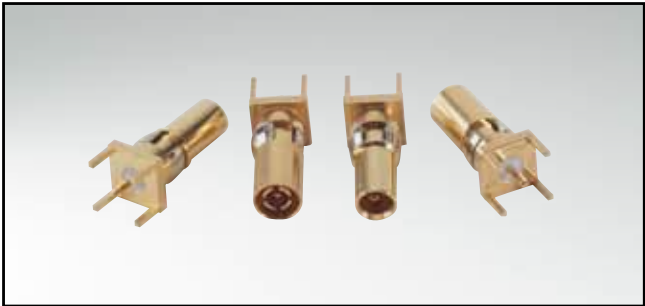
ORDER DATA

(Dim. = mm)

SOCKET CONTACT			PLUG CONTACT		
Version	Usable cable RG	Part number	Version	Usable cable RG	Part number
50 Ω	174 U, 188 A/U, 316 U	124 C 23049 X	50 Ω	174 U, 188 A/U, 316 U	123 C 23049 X
50 Ω	316 U *	124 C 23059 X	50 Ω	316 U *	123 C 23059 X
50 Ω	58 C/U, 141 A/U	124 C 23069 X	50 Ω	58 C/U, 141 A/U	123 C 23069 X
75 Ω	179 B/U, 187 A/U	124 C 33039 X	75 Ω	179 B/U, 187 A/U	123 C 33039 X
75 Ω	180 B/U	124 C 33049 X	75 Ω	180 B/U	123 C 33049 X

TYPE M

Coaxial contacts – straight – PCB termination – 5 solder pins



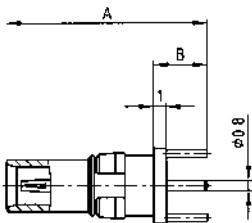
RoHS compliant

- DESCRIPTION
- 50 and 75 Ω Version
 - Socket contact suitable for male connectors
 - Plug contact suitable for female connectors
 - Contact platings:
 - 0.8µm gold mating side inner conductor
 - other platings on request

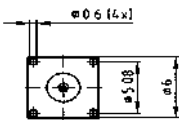
PRODUCT DRAWING

50 Ω Version

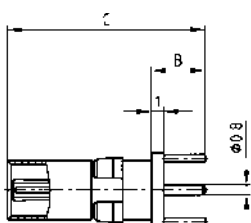
Socket contact



Termination type	A	B	C
31	16.2	4.3	16.0
32	17.7	5.8	17.5

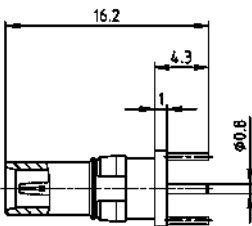


Plug contact

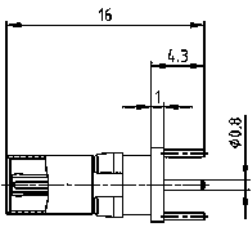


75 Ω Version

Socket contact



Plug contact



ORDER DATA

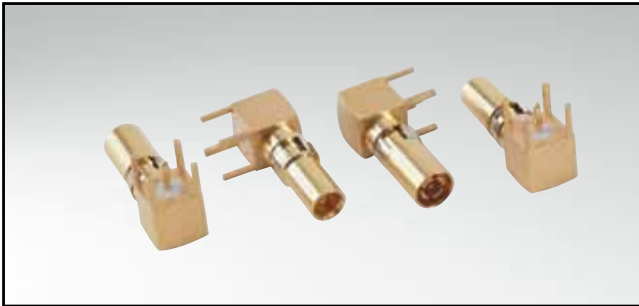
(Dim. = mm)

SOCKET CONTACT		
Version	Termination	Part number
50 Ω	31	124 C 24039 X
50 Ω	32	124 C 24049 X
75 Ω	33	124 C 34029 X

PLUG CONTACT		
Version	Termination	Part number
50 Ω	31	123 C 24039 X
50 Ω	32	123 C 24049 X
75 Ω	33	123 C 34029 X

TYPE M

Coaxial contacts – angled – PCB termination – 5 solder pins



RoHS compliant

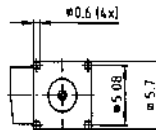
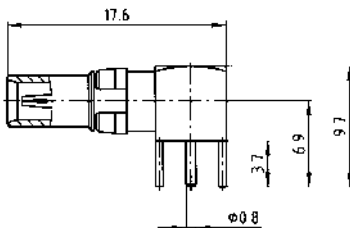
DESCRIPTION

- 50 and 75 Ω Version
- Socket contact suitable for male connectors
- Plug contact suitable for female connectors
- Contact platings:
 - 0.8 μ m gold mating side inner conductor
 - other platings on request

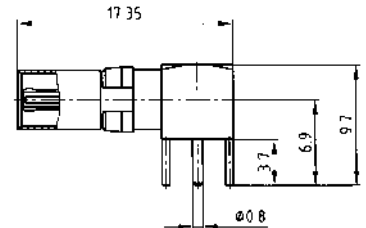
PRODUCT DRAWING

50 Ω Version

Socket contact

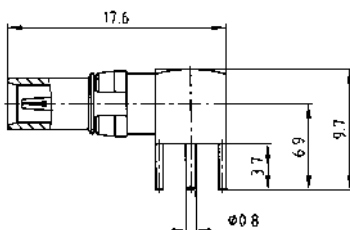


Plug contact

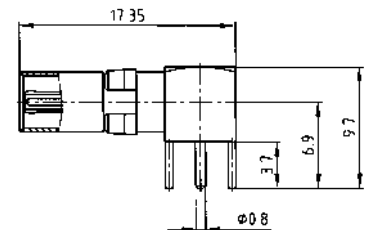


75 Ω Version

Socket contact



Plug contact



ORDER DATA

(Dim. = mm)

SOCKET CONTACT			PLUG CONTACT		
Version	Termination	Part number	Version	Termination	Part number
50 Ω	35	124 C 25029 X	50 Ω	35	123 C 25029 X
75 Ω	36	124 C 35029 X	75 Ω	36	123 C 35029 X

SECTION 6

PC104 AND PC104PLUS CONNECTORS

Numerous manufacturers now use these standards for system architecture. This has promoted the triumphant march of the "personal computer" to be carried over into the field of industrial production, in the form of IPCs (industrial personal computers).

Prerequisite for this was an adaptation of these well-known "office world" systems to the requirements and conditions prevailing in industrial production environments.

Among the most important development goals incorporated into the specifications were

- a compact form-factor of about 90 mm x 96 mm (3.6 x 3.8 inches) for individual, low-profile function modules,
- a universal, self-building bus system to achieve superior modularity and compatibility,
- the definition of a robust, reliable connector system capable of replacing the edge connectors common to the PC world,
- reduced power requirements for modules.

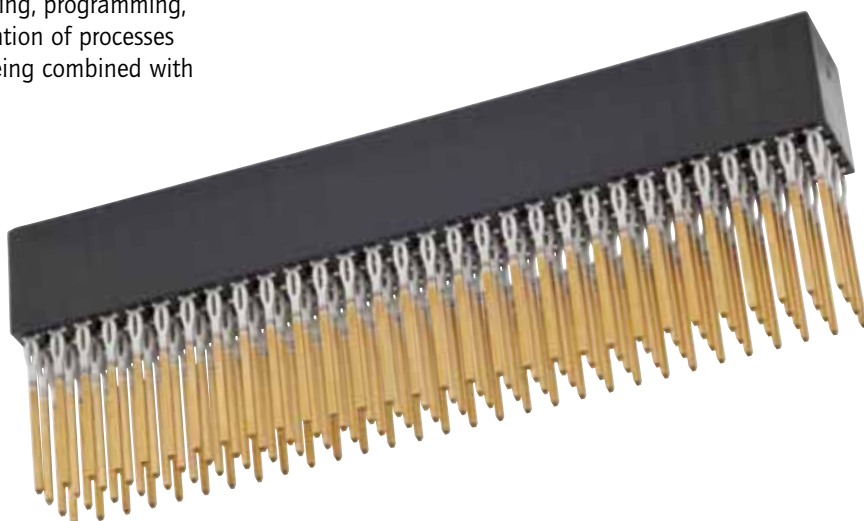
Realization of these goals has made it possible for today's industrial PCs to be deployed in the operating, programming, visualization, long-term archival and simulation of processes – and beyond this – they are capable of being combined with conventional industrial controllers or PLCs.

Specification-compliant bus connectors play a key role in PC104 and PC104plus system architecture interconnections.

In order to form a 104-pole ISA bus, the standard defines two, two-row connectors having a 2.54 mm contact grid; one connector with 64 contacts, the other with 40 contacts. These connectors must be located on the circuit board at prescribed positions.

In order to achieve a self-building system through the stacking of modules, these connectors are designed as "stack-through" and "non-stack-through" (terminating) connectors.

Stack through connectors have 12.2 mm and 17.0 mm long contacts and they function both as a pin connector and as a socket connector for signals routed from level-to-level in the module stack.





Press-fit contacts are the preferred technology for circuit board stack-through connectors. Terminating connectors with short contacts are used on the first stack level. These are often available either as solder or press-fit versions.

The PC104plus specification defines a connector for implementing a PCI bus. It is a 4 x 30 positions connector with a 2.00 mm contact grid pattern.

Because of the smaller grid spacing and increased contact density exhibited by these connectors, the specification describes an additional shroud that is to be plugged onto the circuit board's underside. This shroud stabilizes the stack-through contacts and ensures they are properly guided when modules are stacked.

PC104 and PC104plus connectors are specified to be compatible so that a mix of modules, compliant with either specification, can be used together in a single system configuration— which is often the case.

CONEC uses for its PC104 and PC104plus connectors a flexible press fit termination. This Eye of the needle design preserves the circuit board during the press-fit process and it ensures good retention force for the mounted component.



TECHNICAL DATA

PC104 Connectors

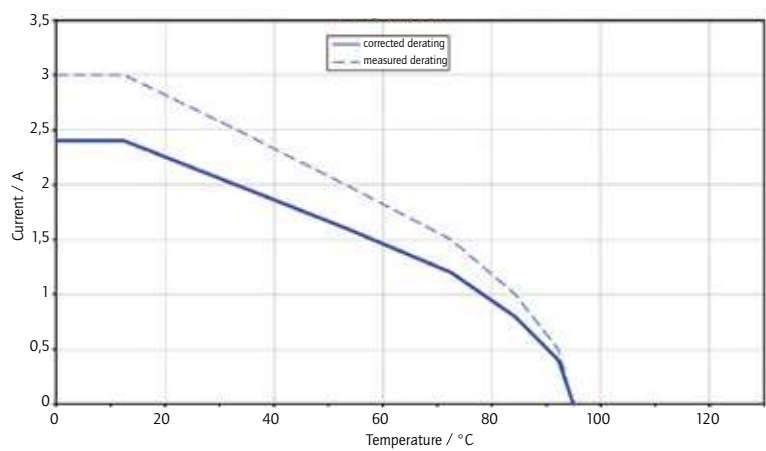
Materials	
Insulator	PBT, GF, UL94 V-O
Contacts	Copper alloy

Electrical Characteristics	
Current rating	2.2 A in acc. to IEC 60512-5-2
Contact resistance	< 20 mΩ
Working temperature	-55°C to +95°C

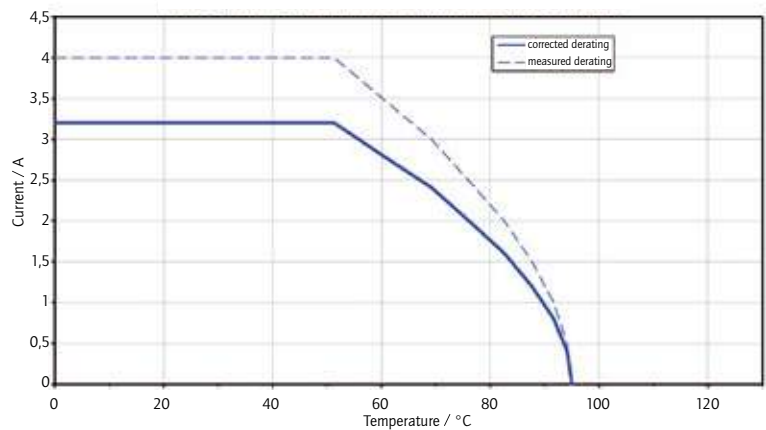
Mechanical characteristics	
Mating force	max. 0.9 N / Pin with test Pin Ø 0.6 mm
Withdrawal force	min. 0.3 N / Pin with test Pin Ø 0.6 mm
Press-in force	max. 80 N / Pin
PCB thickness	1.6 mm
Creepage distance	min. 1.2 mm

Technical alterations are subjects to change without notice.

Derating curve 100-pos. connector – all contacts loaded



Derating curve 64-pos. connector – contacts loaded in acc. to PC104 specification



TECHNICAL DATA

PC104plus Connectors

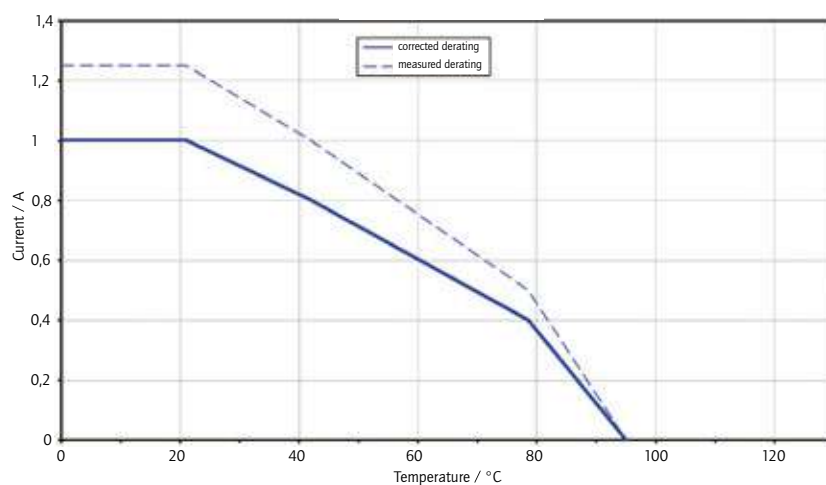
Materials	
Insulator	PBT, GF, UL94 V-0
Contacts	Copper alloy

Electrical Characteristics	
Current rating	1 A ref. IEC 60512-5-2
Contact resistance	< 20 mΩ
Working temperature	-55°C to +95°C

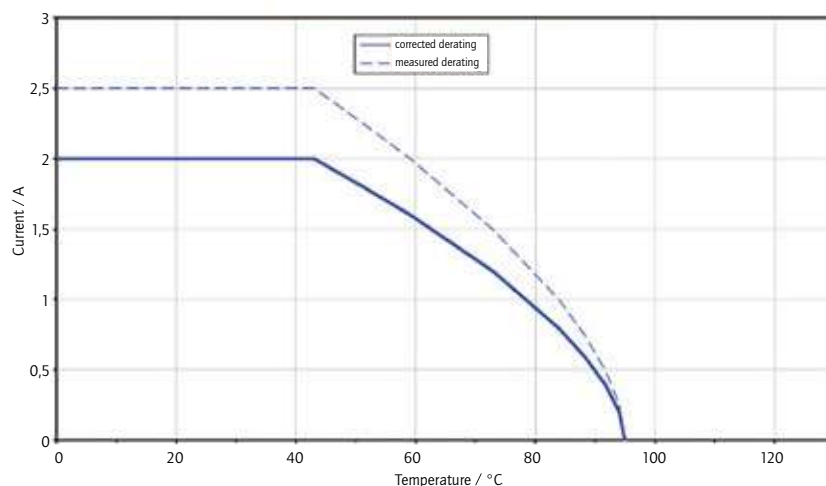
Mechanical characteristics	
Mating force	max. 1.5 N / Pin with test Pin Ø 0.5 mm
Withdrawal force	min. 0.3 N / Pin with test Pin Ø 0.5 mm
Press-in force	max. 80 N / Pin
PCB thickness	1.4 mm
Creepage distance	min. 0.6 mm

Technical alterations are subjects to change without notice.

Derating curve 120-pos. connector – all contacts loaded

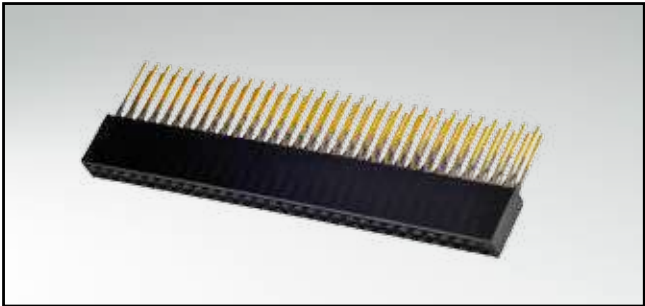


Derating curve 120-pos. connector – contacts loaded in acc. to PC104 specification



PC104 STACK-THROUGH VERSION

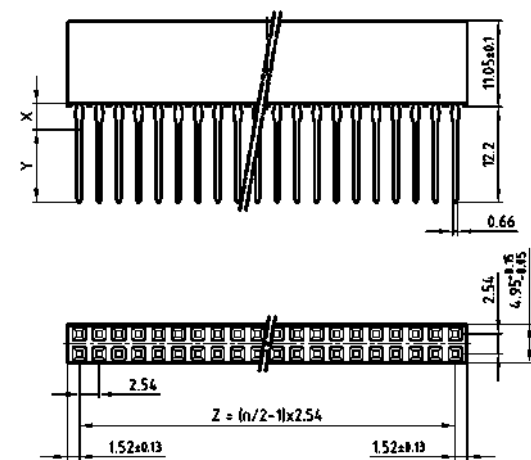
Female connector – straight – press fit contact – contact length 12.2 mm



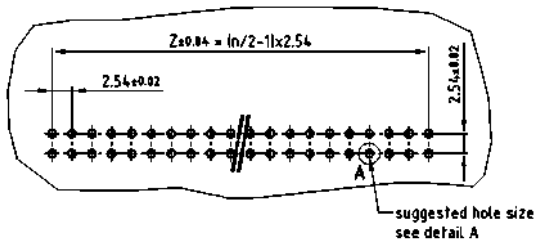
RoHS compliant

- DESCRIPTION**
- Standard version for PC104 module height 15.0 mm
 - Flexible press fit design
 - Double beam contacts
 - 40 / 64 / 100 positions version (further versions on request)
 - Quality class 3 and alternative quality class 2 available on request
 - Delivered as a set with "spacer"

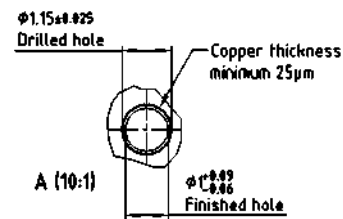
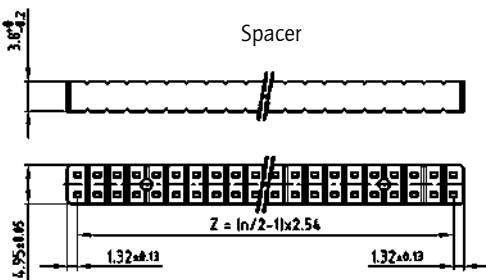
PRODUCT DRAWING



PCB-hole pattern



Quality Class	Plating		
	Mating Area	Post Area "X"	Post Area "Y"
3	0.25 µm Au	1.3 µm Sn 100 matt	0.10 µm Au
2	0.40 µm Au	1.3 µm Sn 100 matt	0.25 µm Au



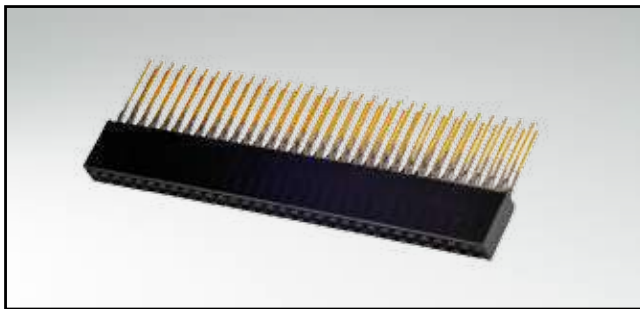
ORDER DATA

(Dim. = mm)

Number of positions	Quality class 3	Quality class 2
40	49-000023	49-000022
64	49-000103	49-000102
100	49-000143	49-000142

PC104 STACK-THROUGH VERSION

Female connector – straight – press fit contact – contact length 17 mm

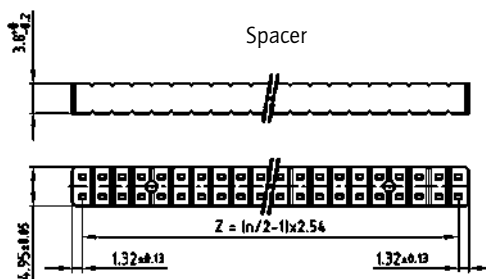
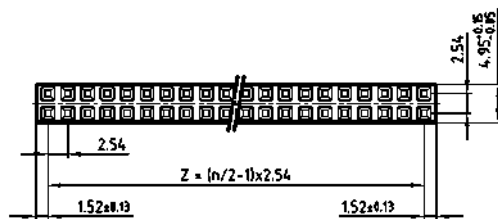
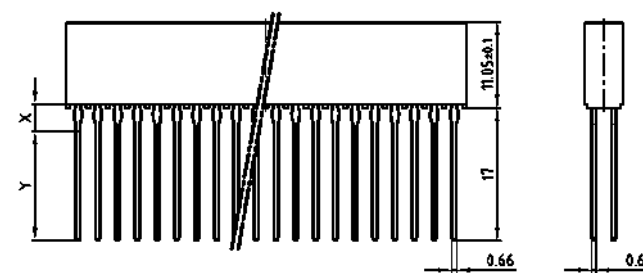


RoHS compliant

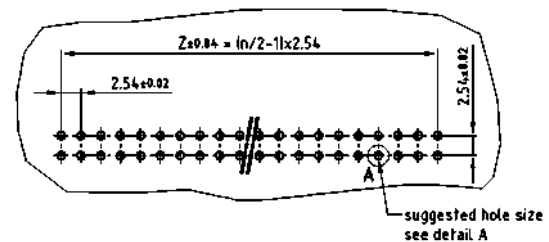
DESCRIPTION

- Special contact length to achieve higher module stacks
- Flexible press fit design
- Double beam contacts
- 40/64/100 positions version (further versions on request)
- Quality class 3 and alternative quality class 2 available on request
- Delivered as a set with "spacer"

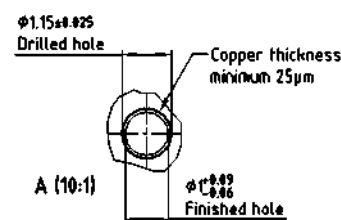
PRODUCT DRAWING



PCB-hole pattern



Quality Class	Plating		
	Underplate min. 1.3 µm Ni		
	Mating Area	Post Area "X"	Post Area "Y"
3	0.25 µm Au	1.3 µm Sn 100 matt	0.10 µm Au
2	0.40 µm Au	1.3 µm Sn 100 matt	0.25 µm Au



ORDER DATA

(Dim. = mm)

Number of positions	Quality class 3	Quality class 2
40	49-000033	49-000032
64	49-000113	49-000112
100	49-000153	49-000152

PC104 Non-Stack-Through Version

Female connector – straight – press fit contact – contact length 3.4 mm

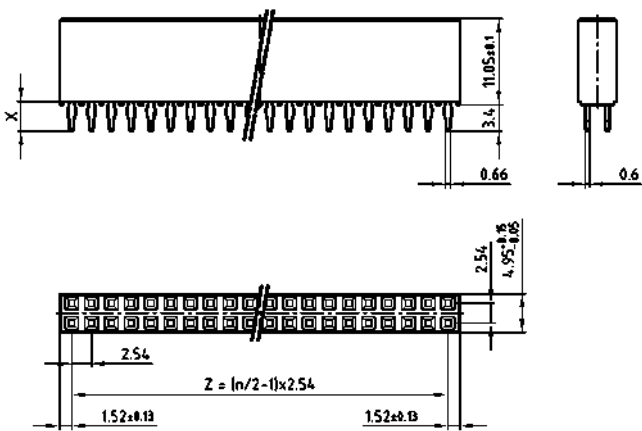


RoHS compliant

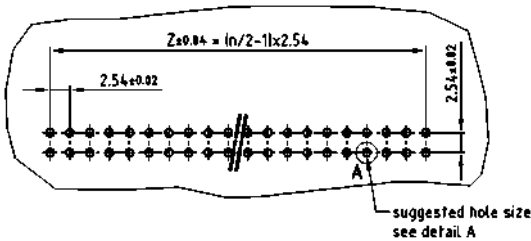
DESCRIPTION

- Flexible press fit design
- Double beam contacts
- 40 / 64 / 100 positions version (further versions on request)
- Quality class 3 and alternative quality class 2 available on request

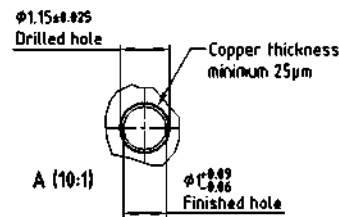
PRODUCT DRAWING



PCB-hole pattern



Quality Class	Plating	
	Underplate min. 1.3 µm Ni	
	Mating Area	Post Area "X"
3	0.25 µm Au	1.3 µm Sn 100 matt
2	0.40 µm Au	1.3 µm Sn 100 matt



ORDER DATA

(Dim. = mm)

Number of positions	Quality class 3	Quality class 2
40	49-000013	49-000012
64	49-000093	49-000092
100	49-000133	49-000132

PC104 Non-Stack-Through Version

Female connector – straight – solder pin – contact length 3.4 mm

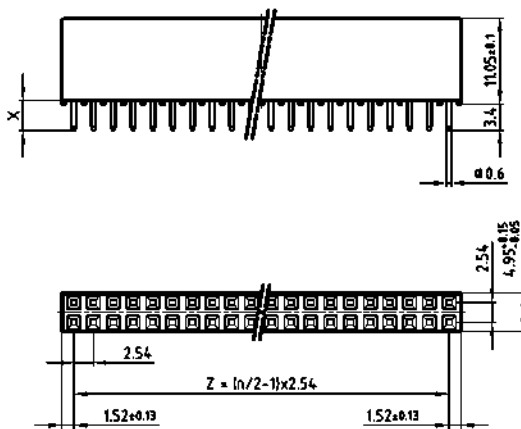


RoHS compliant

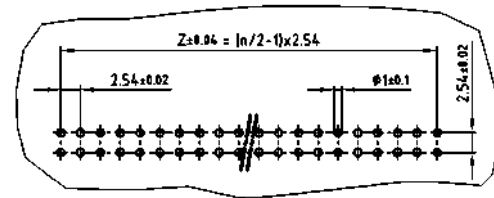
DESCRIPTION

- Double beam contacts
- 40 / 64 / 100 positions version (further versions on request)
- Quality class 3 and alternative quality class 2 available on request

PRODUCT DRAWING



PCB-hole pattern



Quality Class	Plating	
	Underplate min. 1.3 µm Ni	
	Mating Area	Post Area "X"
3	0.25 µm Au	1.3 µm Sn 100 matt
2	0.40 µm Au	1.3 µm Sn 100 matt

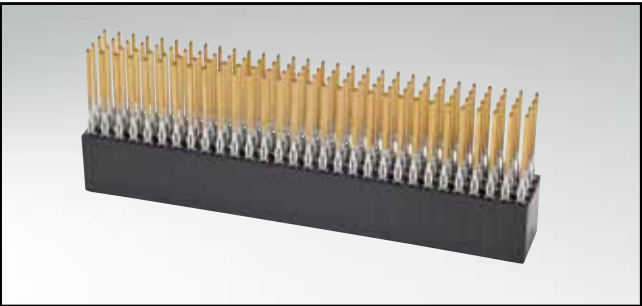
ORDER DATA

(Dim. = mm)

Number of positions	Quality class 3	Quality class 2
40	49-000043	49-000042
64	49-000123	49-000122
100	49-000163	49-000162

PC104PLUS STACK-THROUGH VERSION

Female connector – straight – press fit contact – contact length 12.2 mm

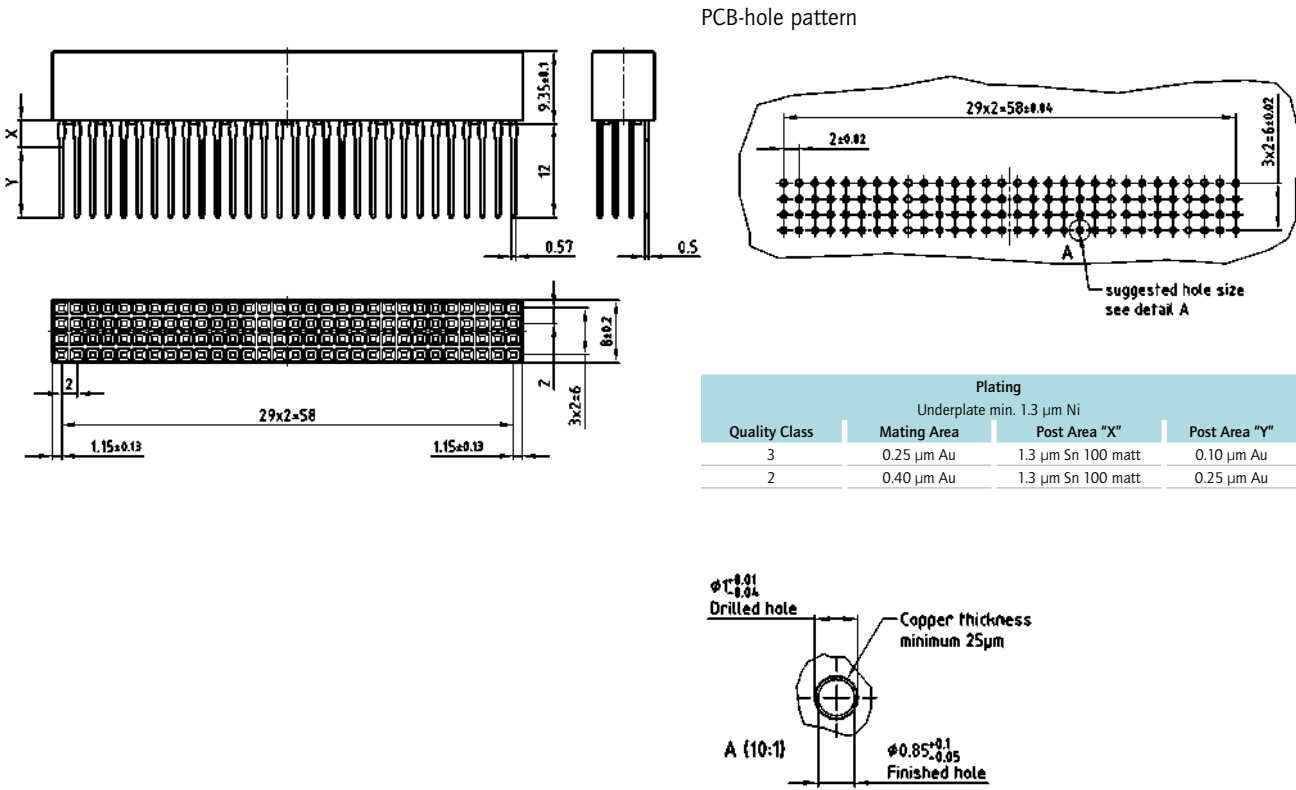


RoHS compliant

DESCRIPTION

- Flexible press fit design
- Double beam contacts
- Standard version 120 positions
- Quality class 3 and alternative quality class 2 available on request

PRODUCT DRAWING



ORDER DATA (Dim. = mm)

Number of positions	Quality class 3	Quality class 2
120	49-100023	49-100022

PC104PLUS Non-STACK-THROUGH VERSION

Female connector – straight – press fit contact – contact length 3.0 mm



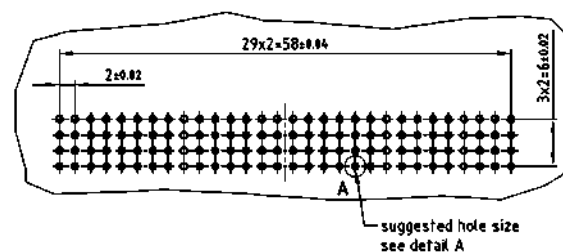
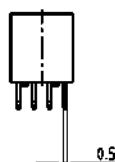
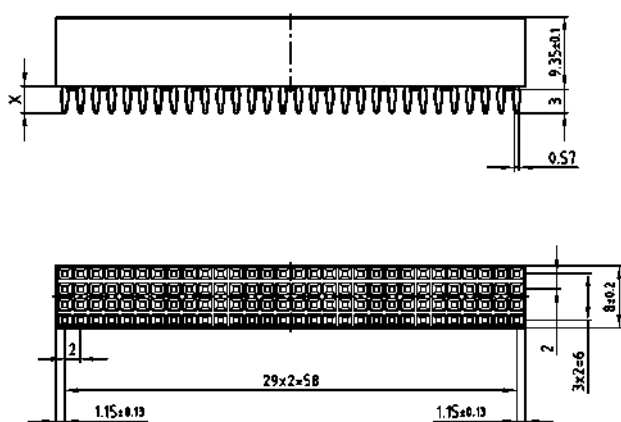
RoHS compliant

DESCRIPTION

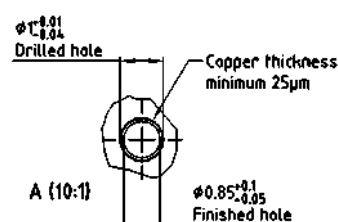
- Flexible press fit design
- Double beam contacts
- Standard version 120-position
- Quality class 3 and alternative quality class 2 available on request

PRODUCT DRAWING

PCB-hole pattern



Quality Class	Plating	
	Underplate min. 1.3 µm Ni	
3	Mating Area 0.25 µm Au	Post Area "X" 1.3 µm Sn 100 matt
2	Mating Area 0.40 µm Au	Post Area "X" 1.3 µm Sn 100 matt



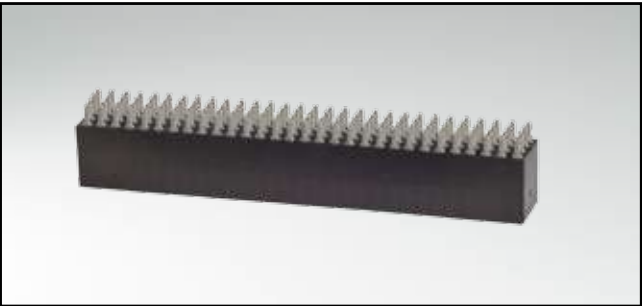
ORDER DATA

(Dim. = mm)

Number of positions	Quality class 3	Quality class 2
120	49-100013	49-100012

PC104PLUS Non-STACK-THROUGH VERSION

Female connector – straight – solder pin – contact length 3.0 mm

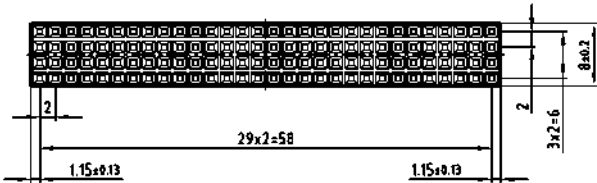
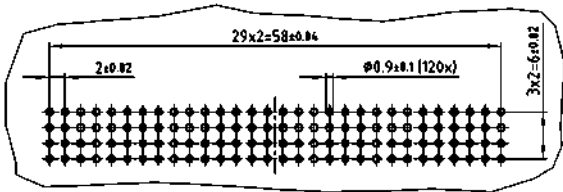
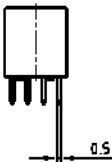
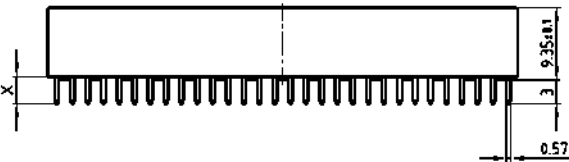


RoHS compliant

- DESCRIPTION**
- Double beam contacts
 - Standard version 120-position
 - Standard finishing quality class 2, alternative quality class 3

PRODUCT DRAWING

PCB-hole pattern



Quality Class	Plating	
	Underplate min. 1.3 µm Ni	
	Mating Area	Post Area "X"
3	0.25 µm Au	1.3 µm Sn 100 matt
2	0.40 µm Au	1.3 µm Sn 100 matt

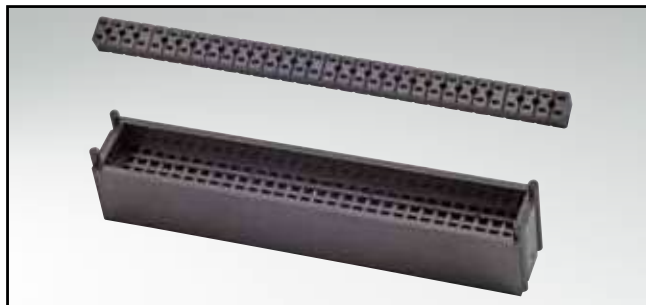
ORDER DATA

(Dim. = mm)

Number of positions	Quality class 3	Quality class 2
120	49-100003	49-100002

PC104 UND PC104PLUS ACCESSORIES

Spacer and interconnection housing "shroud"



RoHS compliant

DESCRIPTION

Spacer

- Can be ordered separately
- 40/64/100 positions version (further positions on request)

Interconnection housing (shroud)

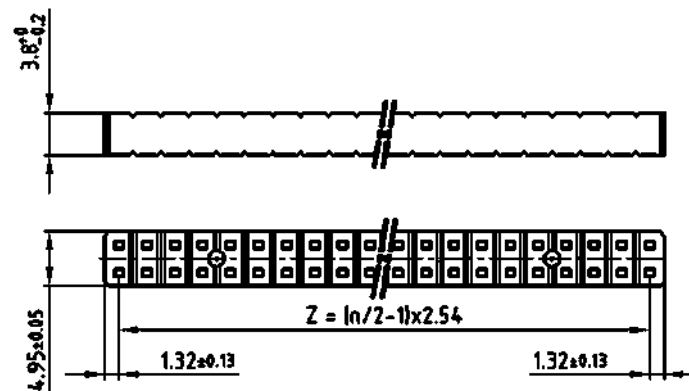
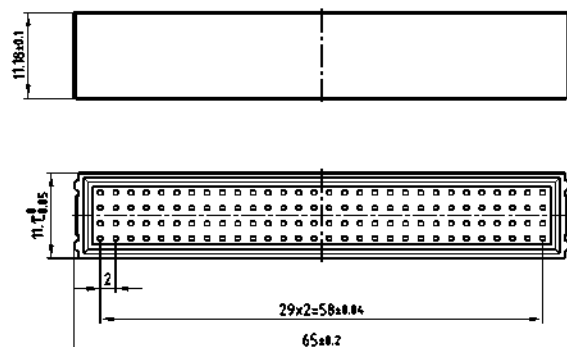
- Specific shroud to stabilize and guide stack-through contacts
- Available with and without positioning
- Color is black (further colors on request)

PRODUCT DRAWING

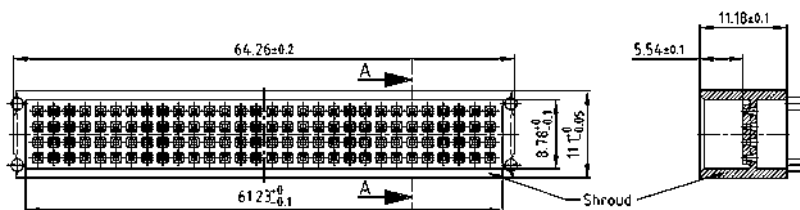
Interconnection housing for PC104plus

Spacer for PC104

Version without positioning



Version with positioning



(Dim. = mm)

ORDER DATA

INTERCONNECTION HOUSING PC104PLUS		
No. of Pos.	Design	Part number
120	with positioning	49-100030
120	without positioning	49-100040

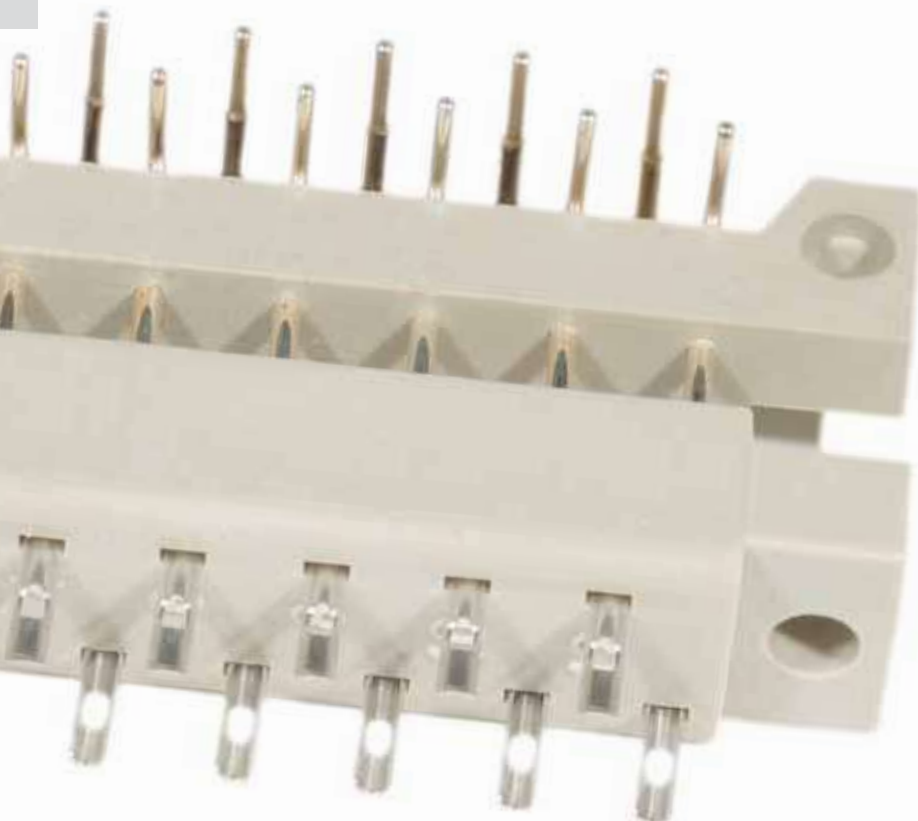
SPACER FOR PC104	
Number of positions	Part number
40	49-100080
64	49-100060
100	49-100050

SECTION 7

CONNECTORS DIN 41617

This traditional connector is still being used in many applications. New designs as well as redesigns of existing systems are manufactured with this series of connectors.

One reason is the proven solid design and the high current carrying capability.





The connector is available in three layouts:
13, 21 and 31 positions in male and female
version with gold or silver plated contacts.
Available termination styles are: solder cup,
straight and right angled PCB solder tails.

In addition a connector converter from
DIN 41617 to DIN EN 60603-2 provides
adaptability to the newer connector series.

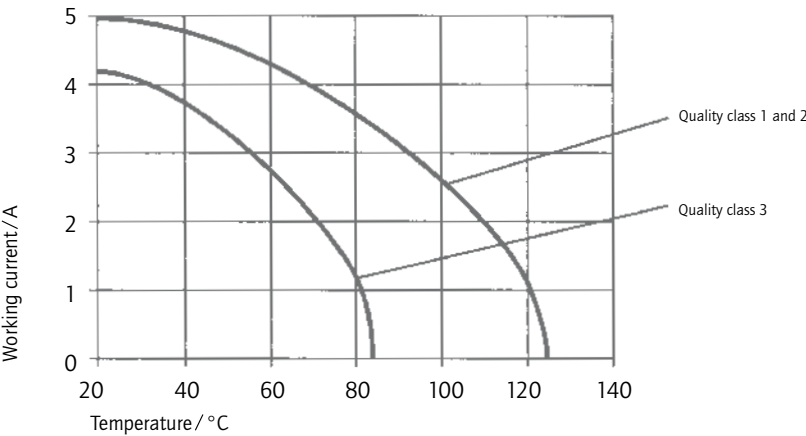


TECHNICAL DATA

Material		DIN 41617	DIN 41617 / DIN EN 60603
Insulator		Polycarbonat GF	
Contacts		Copper alloy	
Flammability		UL 94 V-1	
Initial contact resistance		≤ 15 mΩ	≤ 10 mΩ
Initial insulation resistance	Quality class 1	≥ 10 ¹² Ω	≥ 10 ¹¹ Ω
	Quality class 2	≥ 10 ¹¹ Ω	
	Quality class 3	≥ 10 ¹⁰ Ω	
Creepage distance	Contact–Ground	≥ 1 mm	≥ 1.2 mm
	Contact–Contact	≥ 0.5 mm	
Clearance distance	Contact–Ground	≥ 1 mm	≥ 1.2 mm
	Contact–Contact	≥ 1 mm	
Voltage Proof U eff.	Contact–Ground	900 V	1000 V
	Contact–Contact	1150 V	1550 V
Working voltage		250 V depending on isolation coordination (refer to DIN VDE 0110/IEC 664-1)	
Working current	+ 20 °C	Quality class 1 + 2 = 4 A max.	4 A max.
	+ 70 °C		
	+ 100 °C	Quality class 3 = 2 A max.	
Working temperature	Quality class 1	-65 °C to +125 °C	-65 °C to +125 °C
	Quality class 2	-55 °C to +125 °C	
	Quality class 3	-25 °C to + 85 °C	
Mating and unmating forces (F max.)		13 pos. 32 N / AU 30 N / AG 21 pos. 33 N / AU 48 N / AG 31 pos. 48 N / AU 70 N / AG	31 + 1 pos. 80 N
Quality class 3		50 cycles	50 cycles
Quality class 2		400 cycles	400 cycles
Quality class 1		500 cycles	500 cycles
Silver plating		500 cycles	

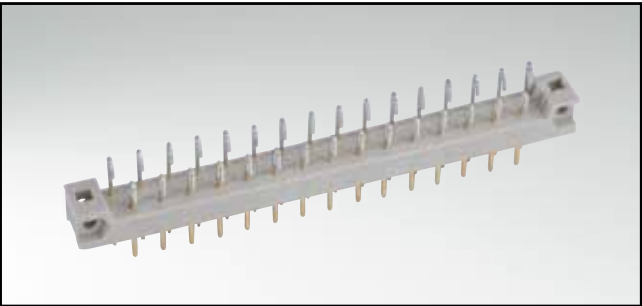
Technical alterations are subjects to change without notice.

Derating-Diagramm DIN 41617



CONNECTOR ACCORDING TO DIN 41617

Male connector – solder lug – 13, 21 and 31 positions

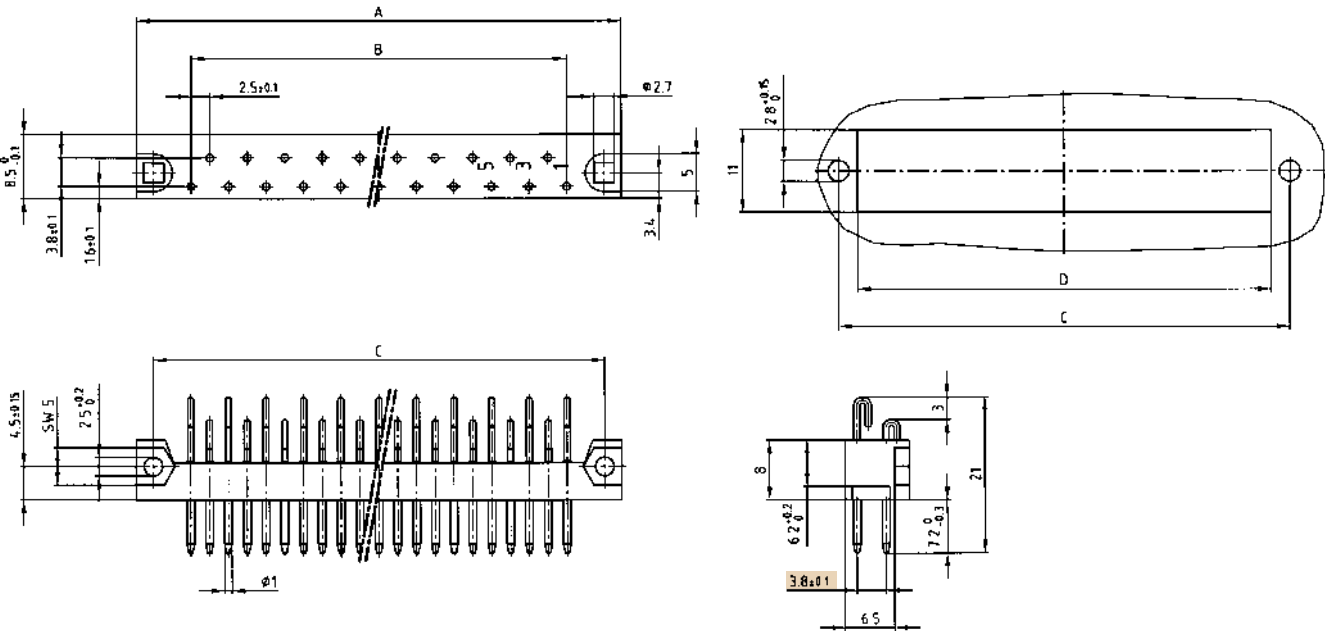


RoHS compliant

- DESCRIPTION
- Solder lug
 - Contact plating
 - standard quality classes 3 and 2
 - quality class 1 on request (*)
 - hard silver plated
 - Special insulator

PRODUCT DRAWING

Panel cutout



No. of Pos.	A ±0.2	B ±0.1	C ±0.1	D
13	44.6	12x2.5=30	40	35
21	64.6	20x2.5=50	60	55
31	89.6	30x2.5=75	85	80

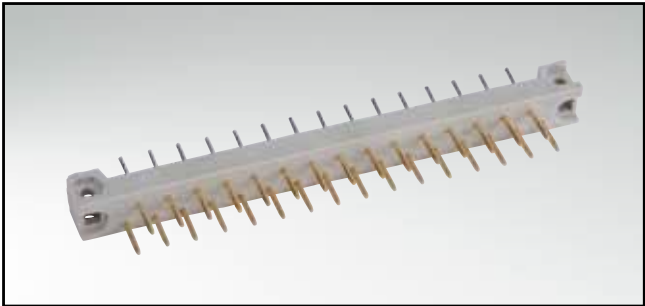
ORDER DATA

(Dim. = mm)

No. of Pos.	hard silver plated	Quality class 3	Quality class 2	Quality class 1*
13	101 E 10139 X	101 A 10139 X	101 B 10139 X	101 C 10139 X
21	101 E 10149 X	101 A 10149 X	101 B 10149 X	101 C 10149 X
31	101 E 10159 X	101 A 10159 X	101 B 10159 X	101 C 10159 X

CONNECTOR ACCORDING TO DIN 41617

Male connector – straight – 13, 21 and 31 positions



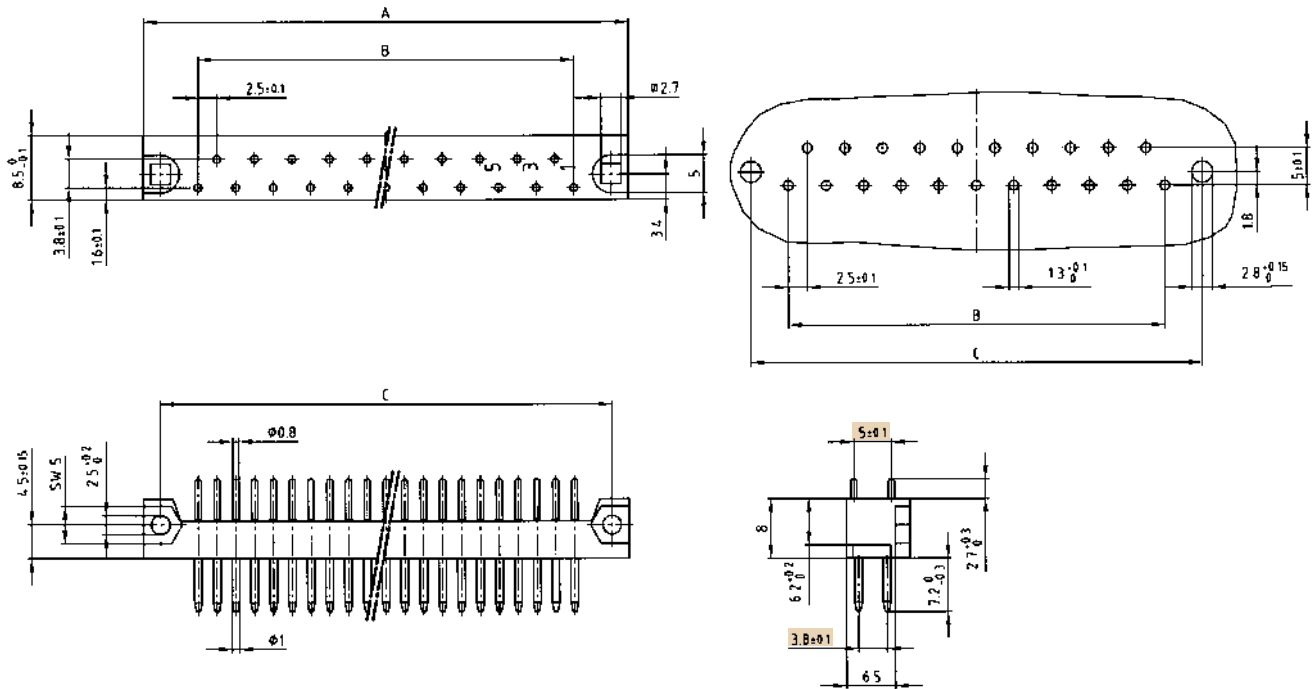
RoHS compliant

DESCRIPTION

- Solder pin
- Contact plating
 - standard quality classes 3 and 2
 - quality class 1 on request (*)
 - hard silver plated
- Special insulator

PRODUCT DRAWING

PCB-hole pattern



No. of Pos.	A ±0.2	B ±0.1	C ±0.1
13	44.6	12x2.5=30	40
21	64.6	20x2.5=50	60
31	89.6	30x2.5=75	85

ORDER DATA

(Dim. = mm)

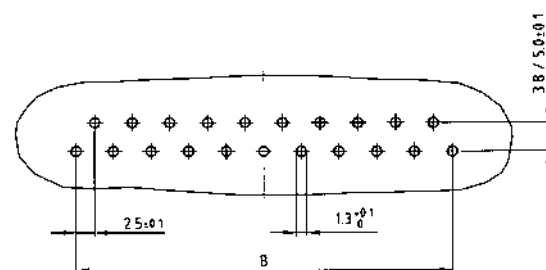
No. of Pos.	hard silver plated	Quality class 3	Quality class 2	Quality class 1*
13	101 E 10019 X	101 A 10019 X	101 B 10019 X	101 C 10019 X
21	101 E 10029 X	101 A 10029 X	101 B 10029 X	101 C 10029 X
31	101 E 10039 X	101 A 10039 X	101 B 10039 X	101 C 10039 X

Male connector – angled – 13, 21 and 31 positions

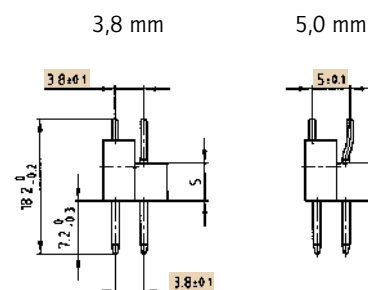


- Solder pin
- Contact plating
 - standard quality classes 3 and 2
 - quality class 1 on request (*)
 - hard silver plated
- Standard insulator

PCB-hole pattern



Contact spacing



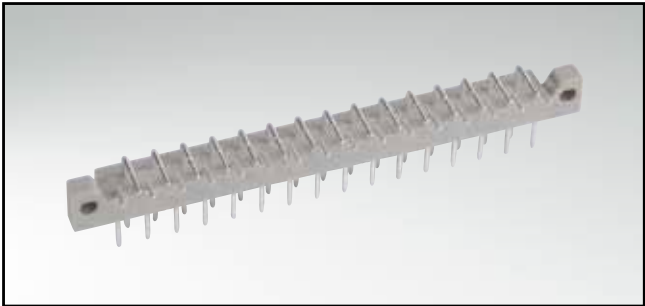
ORDER DATA

(Dim. = mm)



CONNECTOR ACCORDING TO DIN 41617

Male connector – angled – 13, 21 and 31 positions

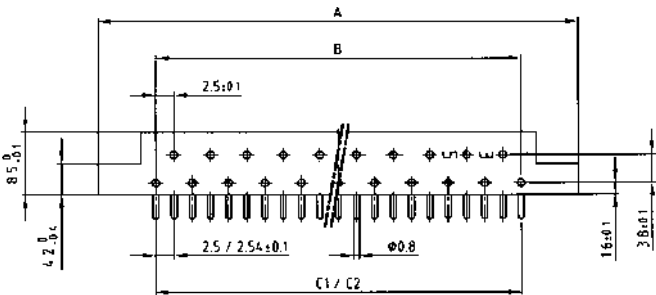


RoHS compliant

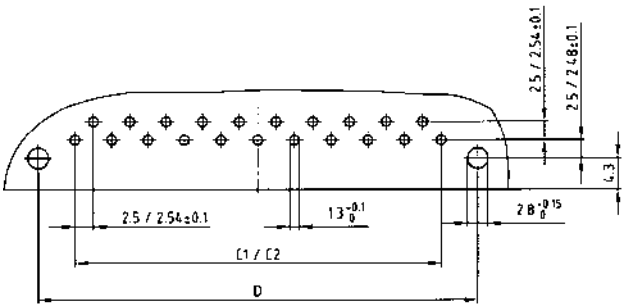
DESCRIPTION

- Solder pin
- Contact plating
 - standard quality classes 3 and 2
 - quality class 1 on request (*)
 - hard silver plated
- Standard insulator

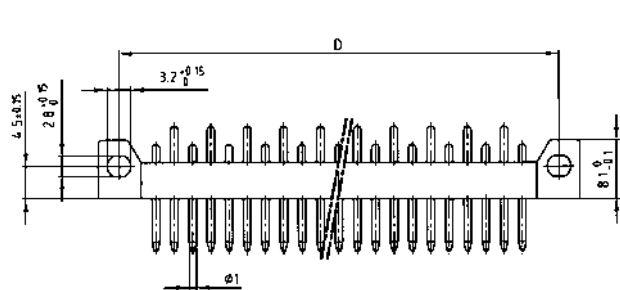
PRODUCT DRAWING



PCB-hole pattern

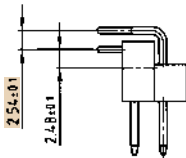
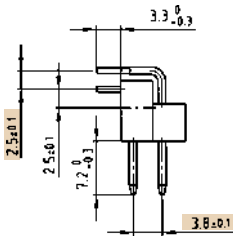


Contact spacing



2,5 mm

2,54 mm



No. of Pos.	A ±0.2	B ±0.1	C ₁ ±0.1	C ₂ ±0.1	D ±0.1
13	45.6	12x2.5=30	12x2.5=30	12x2.54=30.48	40
21	65.6	20x2.5=50	20x2.5=50	20x2.54=50.80	60
31	90.6	30x2.5=75	30x2.5=75	30x2.54=75.20	85

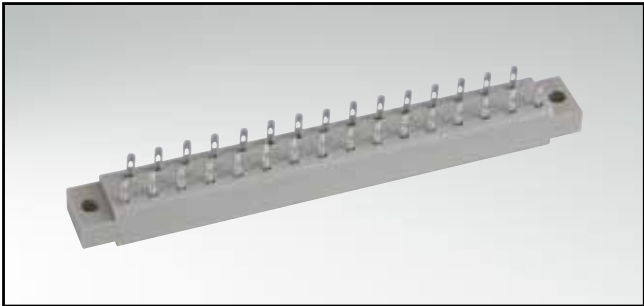
ORDER DATA

(Dim. = mm)

No. of Pos.	Contact spacing	hard silver plated	Quality class 3	Quality class 2	Quality class 1 *
13	2.50 mm	101 E 10079 X	101 A 10079 X	101 B 10079 X	101 C 10079 X
13	2.54 mm	101 E 10089 X	101 A 10089 X	101 B 10089 X	101 C 10089 X
21	2.50 mm	101 E 10099 X	101 A 10099 X	101 B 10099 X	101 C 10099 X
21	2.54 mm	101 E 10109 X	101 A 10109 X	101 B 10109 X	101 C 10109 X
31	2.50 mm	101 E 10119 X	101 A 10119 X	101 B 10119 X	101 C 10119 X
31	2.54 mm	101 E 10129 X	101 A 10129 X	101 B 10129 X	101 C 10129 X

CONNECTOR ACCORDING TO DIN 41617

Female connector – solder lug – 13, 21 and 31 positions

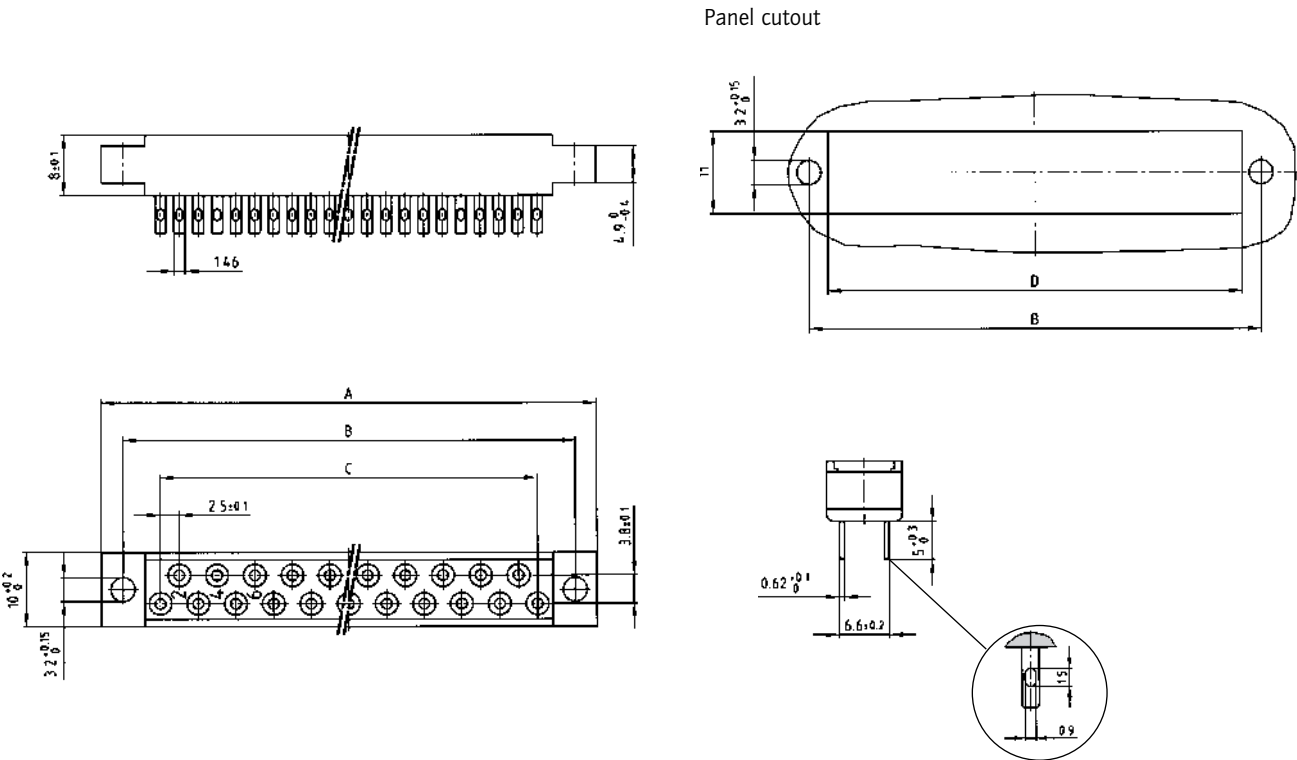


RoHS compliant

DESCRIPTION

- Solder lug
- Contact plating
 - standard quality classes 3 and 2
 - quality class 1 on request (*)
 - hard silver plated

PRODUCT DRAWING



No. of Pos.	A ±0.3	B ±0.1	C ±0.1	D
13	45.8	40	12x2.5=30	35
21	65.8	60	20x2.5=50	55
31	90.8	85	30x2.5=75	80

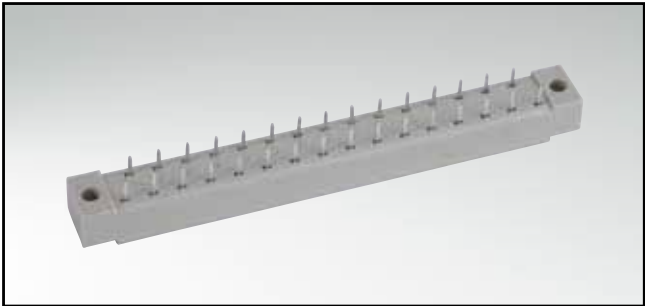
ORDER DATA

(Dim. = mm)

No. of Pos.	hard silver plated	Quality class 3	Quality class 2	Quality class 1 *
13	102 E 10019 X	102 A 10019 X	102 B 10019 X	102 C 10019 X
21	102 E 10029 X	102 A 10029 X	102 B 10029 X	102 C 10029 X
31	102 E 10039 X	102 A 10039 X	102 B 10039 X	102 C 10039 X

CONNECTOR ACCORDING TO DIN 41617

Female connector – straight – 13, 21 and 31 positions



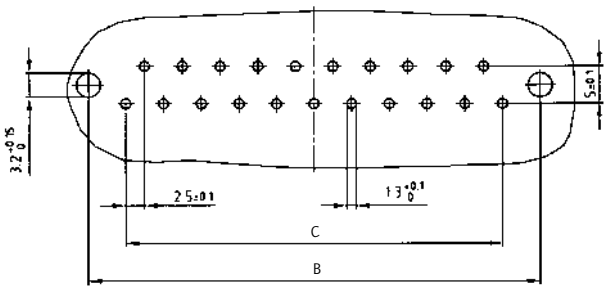
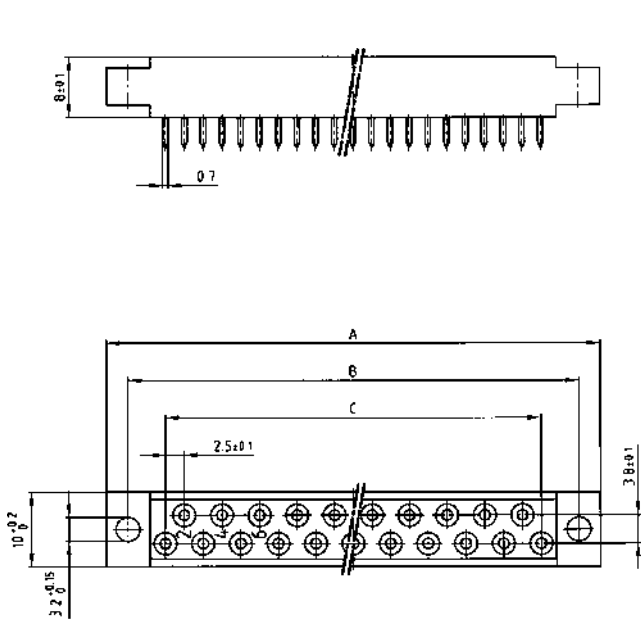
RoHS compliant

DESCRIPTION

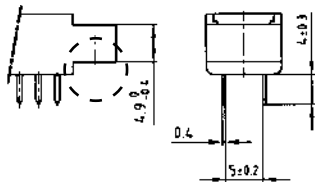
- Solder pin
- Insulator “set up” (A) or “connected” (D)
- Contact plating
 - standard quality classes 3 and 2
 - quality class 1 on request (*)
 - hard silver plated

PRODUCT DRAWING

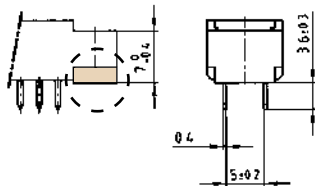
PCB-hole pattern



No. of Pos.	A -0.3	B ±0.1	C ±0.1
13	45.8	40	12x2.5=30
21	65.8	60	20x2.5=50
31	90.8	85	30x2.5=75



Version A
“set up”



Version D
“connected”

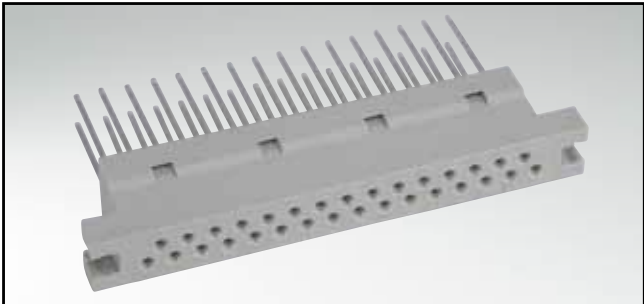
ORDER DATA

(Dim. = mm)

No. of Pos.	Insulator	hard silver plated	Quality class 3	Quality class 2	Quality class 1 *
13	Version A	102 E 10049 X	102 A 10049 X	102 B 10049 X	102 C 10049 X
13	Version D	102 E 10059 X	102 A 10059 X	102 B 10059 X	102 C 10059 X
21	Version A	102 E 10069 X	102 A 10069 X	102 B 10069 X	102 C 10069 X
21	Version D	102 E 10079 X	102 A 10079 X	102 B 10079 X	102 C 10079 X
31	Version A	102 E 10089 X	102 A 10089 X	102 B 10089 X	102 C 10089 X
31	Version D	102 E 10099 X	102 A 10099 X	102 B 10099 X	102 C 10099 X

CONNECTOR ACCORDING TO DIN 41617 / DIN EN 60603-2

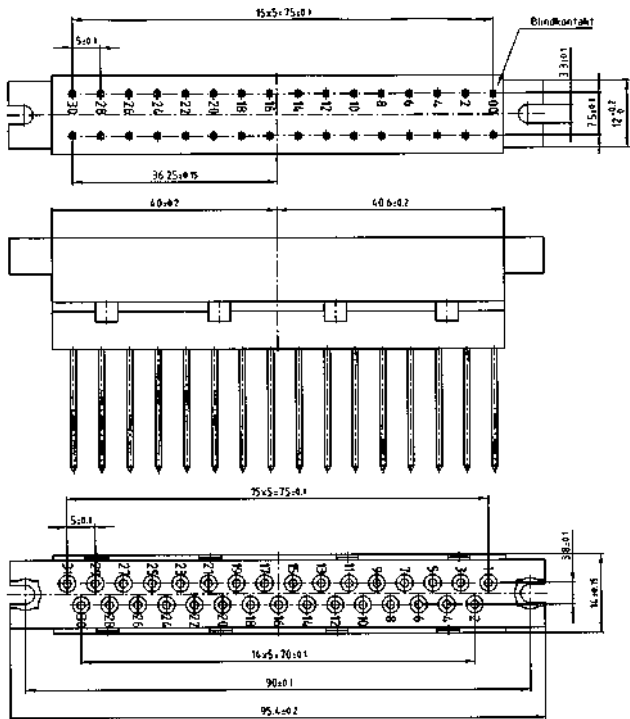
Converter female connector – 31 / 32 positions



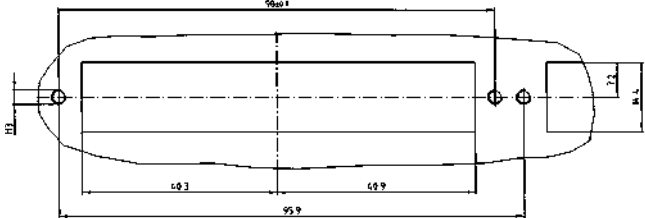
RoHS compliant

- DESCRIPTION**
- Wire Wrap and solder lug
 - Quality class 1 (Standard)
 - Mating side with 31 contacts
 - Connecting side with 32 contacts (one contact not contacted)

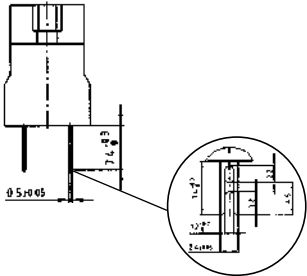
PRODUCT DRAWING



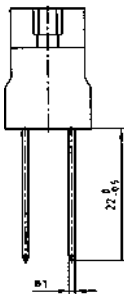
Panel cutout



Solder lug



Wire Wrap



ORDER DATA

No. of Pos.	Quality class	Solder lug	Wire Wrap
31/32	1	122 C 13019 X	122 C 13069 X

(Dim. = mm)

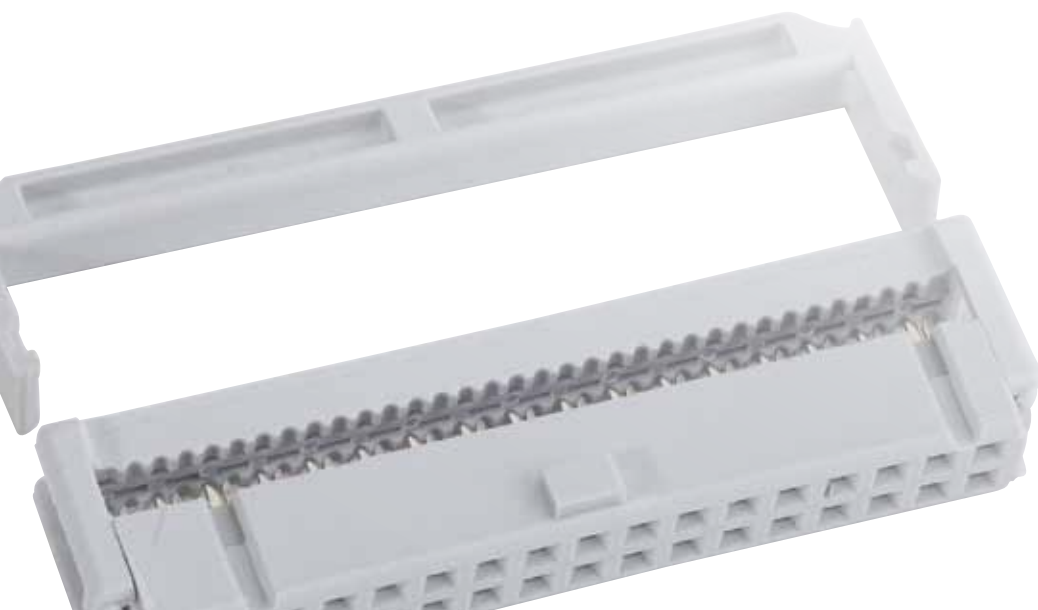
SECTION 8

FLATCABLE CONNECTORS DIN 41651

The CONEC flatcable connector system meets DIN 41651 requirement. It is a reliable and cost effective interconnect system.

The flat cables used with this connector family have 10 to 64 (AWG 28) conductors at 1.27 mm pitch.

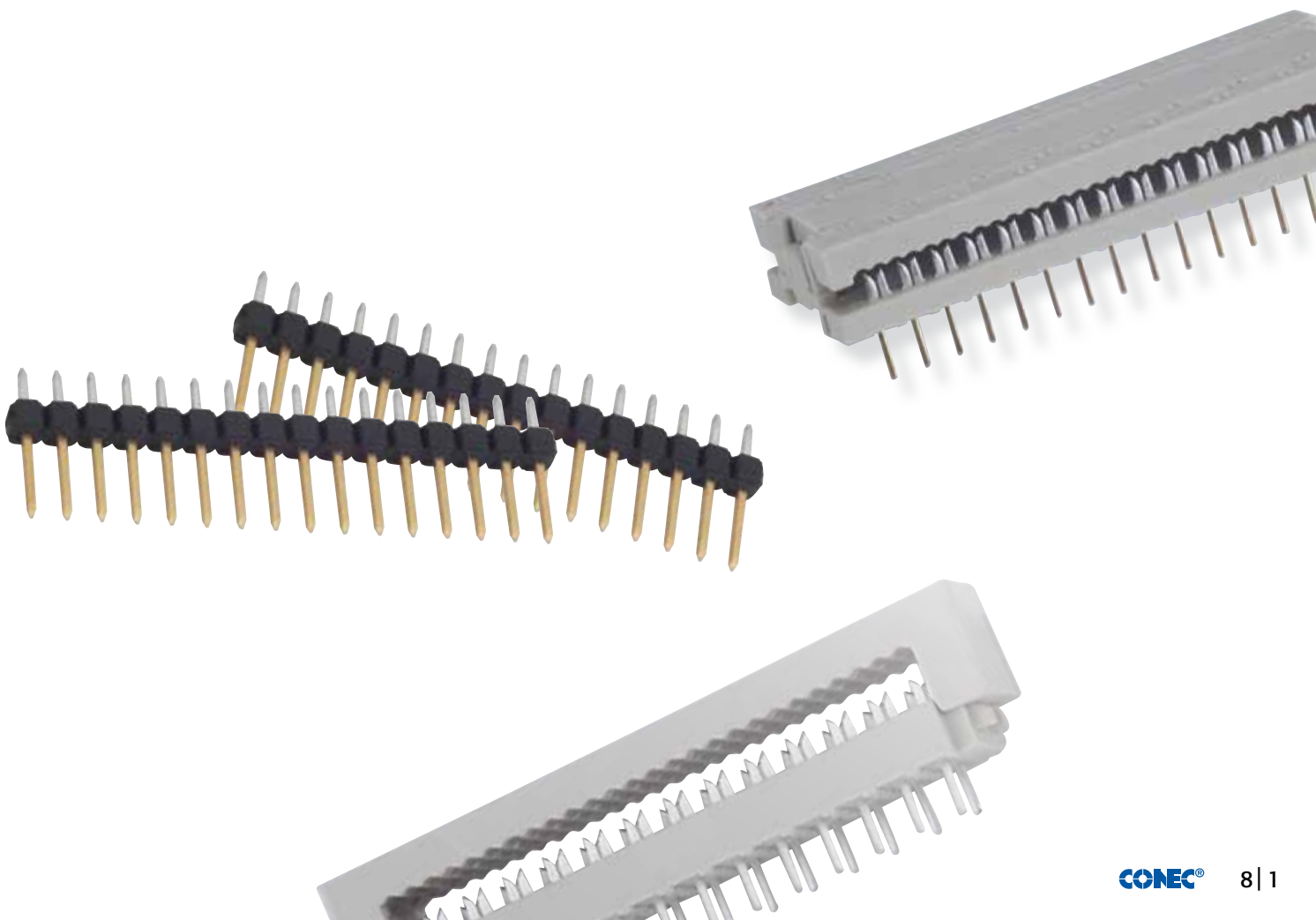
The shrouded headers provide convenient guide for the mating socket connectors. The shroud also provides polarization to prevent incorrect mating. The locking ears not only provide latching of the mated pair but also act as ejectors for unmating the mated pair.





CONEC has beside the DIN41651 Connector serie another flatcable connectors in the program. This are D-Subminiature, Type C (DIN 41612), DIP and PCB Connectors.

Plug and Socket Connectors with 2.54 mm contact spacing complete the program.



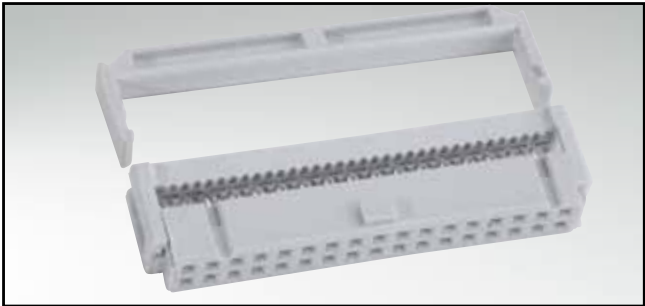
TECHNICAL DATA

Materials	DIN 41651	DIP + PCB	DIN 41612-IDC	CBL	CSU
Insulator	PBT GF			PA	PA
Flammability	UL 94 V-O				
Material contacts	Copper alloy				
Contact plating	gold over nickel	gold over nickel or tin plated	gold over nickel	gold over nickel or tin plated	gold over nickel or tin plated
Working temperature	-65° C to +150° C			-40°C to +135°C	-45°C to +115°C
Working current	1 A			5 A +70° C	
Insulation resistance		≥ 10 ¹² Ω		≥ 10 ¹² Ω	≥ 10 ¹² Ω
Contact resistance				≤ 10 mΩ	4 mΩ
Voltage proof	1000 V eff.	550 V eff.			
Working voltage		250 V			250 V
Quality class 3 Quality class 2 Quality class 1	50 cycles 400 cycles 500 cycles				

Technical alterations are subjects to change without notice.

FLATCABLE CONNECTORS

Socket connector – insulation displacement termination (IDC)

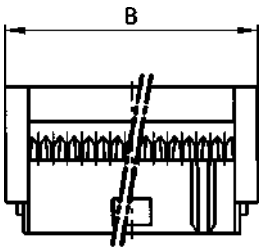
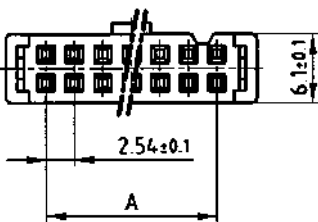


RoHS compliant

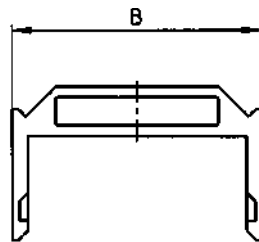
DESCRIPTION

- Contact spacing 2.54 mm
- 6 to 64 positions
- Strain relief needs to be ordered separately
- With polarization key
- Standard quality class 3
- Other quality classes on request

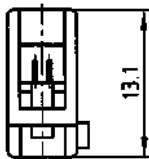
PRODUCT DRAWING



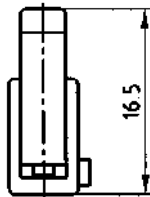
strain relief



without strain relief



with strain relief (installed)



No. of Pos.	A ± 0.1	B ± 0.2	No. of Pos.	A ± 0.1	B ± 0.2
06	2 x 2.54 = 5.08	12.30	26	12 x 2.54 = 30.48	37.60
08	3 x 2.54 = 7.62	14.80	34	16 x 2.54 = 40.64	47.80
10	4 x 2.54 = 10.16	17.30	40	19 x 2.54 = 48.26	55.40
14	6 x 2.54 = 15.24	22.40	50	24 x 2.54 = 60.96	68.10
16	7 x 2.54 = 17.78	24.90	60	29 x 2.54 = 73.66	80.80
20	9 x 2.54 = 22.86	30.00	64	31 x 2.54 = 78.74	85.85

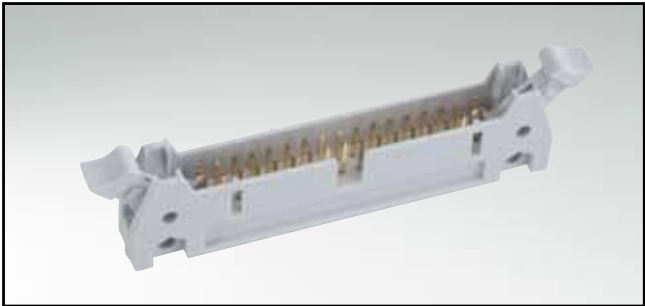
ORDER DATA

(Dim. = mm)

No. of Pos.	Socket connector	Strain relief	No. of Pos.	Socket connector	Strain relief
6	142 A 10199 X		26	142 A 10259 X	140 X 10099 X
8	142 A 10209 X		34	142 A 10269 X	140 X 10109 X
10	142 A 10219 X	140 X 10059 X	40	142 A 10279 X	140 X 10119 X
14	142 A 10229 X	140 X 10069 X	50	142 A 10289 X	140 X 10129 X
16	142 A 10239 X	140 X 10079 X	60	142 A 10299 X	140 X 10139 X
20	142 A 10249 X	140 X 10089 X	64	142 A 10419 X	140 X 10159 X

FLATCABLE CONNECTORS

Plug connector – straight



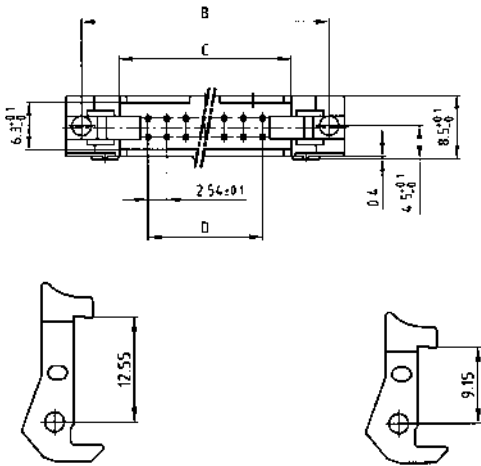
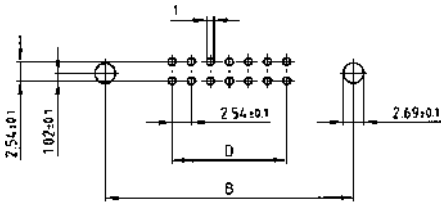
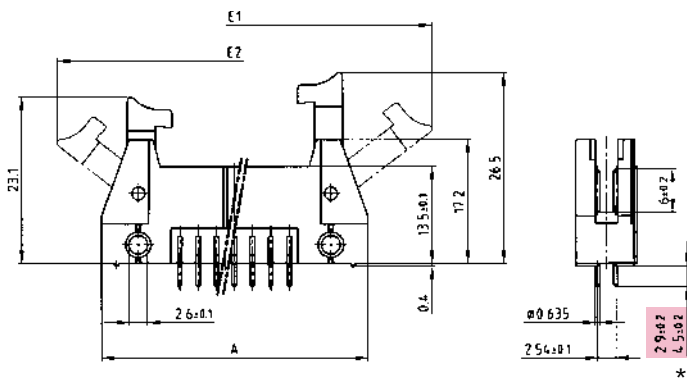
RoHS compliant

DESCRIPTION

- Solder pin
- Pin length 2.9 mm alternative 4.5 mm (*) on request
- 10 to 64 positions
- Center polarization
- Available with long, short and without latches
- Long latches for socket connector with strain relief

PRODUCT DRAWING

PCB-hole pattern



Long latches
Part no. 140 X 10019 X

Short latches
Part no. 140 X 10029 X

No. of Pos.	A ±0.2	B ±0.1	C ±0.2	D ±0.1	E1	E2
10	32.00	27.94	17.82	4x2.54= 10.16	50.00	44.50
14	37.08	33.02	22.90	6x2.54= 15.24	55.00	49.50
16	39.62	35.56	25.44	7x2.54= 17.78	57.60	52.10
20	44.70	40.64	30.52	9x2.54= 22.86	62.50	57.00
26	52.32	48.26	38.14	12x2.54= 30.48	70.10	64.60
34	62.48	58.42	48.30	16x2.54= 40.64	80.30	74.80
40	70.10	66.04	55.92	19x2.54= 48.26	87.90	82.40
50	82.80	78.74	68.62	24x2.54= 60.96	100.70	95.20
60	95.50	91.44	81.32	29x2.54= 73.66	113.40	107.90
64	100.58	96.52	86.40	31x2.54= 78.74	118.52	113.02

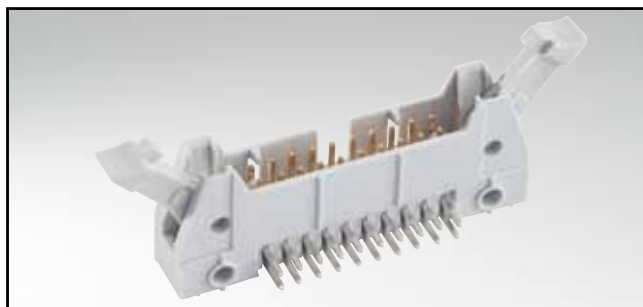
ORDER DATA

(Dim. = mm)

No. of Pos.	WITHOUT LATCHES		WITH SHORT LATCHES		WITH LONG LATCHES	
	Pin length 2.9 mm	Pin length 4.5 mm*	Pin length 2.9 mm	Pin length 4.5 mm*	Pin length 2.9 mm	Pin length 4.5 mm*
10	141 A 10019 X	141 A 10109 X	141 A 10199 X	141 A 10289 X	141 A 10379 X	141 A 10469 X
14	141 A 10029 X	141 A 10119 X	141 A 10209 X	141 A 10299 X	141 A 10389 X	141 A 10479 X
16	141 A 10039 X	141 A 10129 X	141 A 10219 X	141 A 10309 X	141 A 10399 X	141 A 10489 X
20	141 A 10049 X	141 A 10139 X	141 A 10229 X	141 A 10319 X	141 A 10409 X	141 A 10499 X
26	141 A 10059 X	141 A 10149 X	141 A 10239 X	141 A 10329 X	141 A 10419 X	141 A 10509 X
34	141 A 10069 X	141 A 10159 X	141 A 10249 X	141 A 10239 X	141 A 10429 X	141 A 10519 X
40	141 A 10079 X	141 A 10169 X	141 A 10259 X	141 A 10349 X	141 A 10439 X	141 A 10529 X
50	141 A 10089 X	141 A 10179 X	141 A 10269 X	141 A 10359 X	141 A 10449 X	141 A 10539 X
60	141 A 10099 X	141 A 10189 X	141 A 10279 X	141 A 10369 X	141 A 10459 X	141 A 10549 X
64	141 A 12289 X	141 A 12429 X	141 A 12319 X	141 A 12329 X	141 A 12339 X	141 A 12349 X

FLATCABLE CONNECTORS

Plug connector – angled



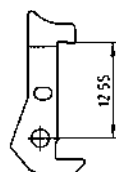
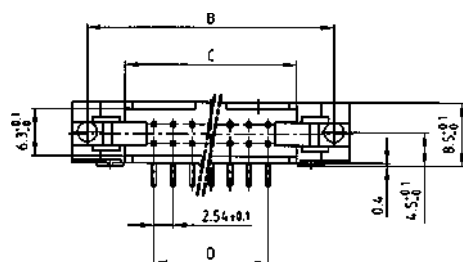
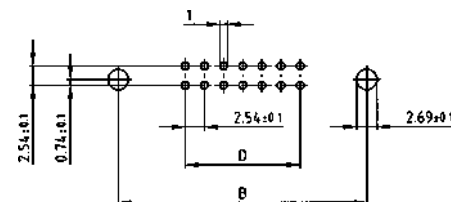
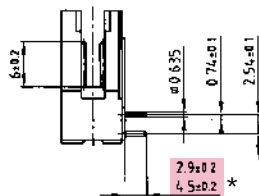
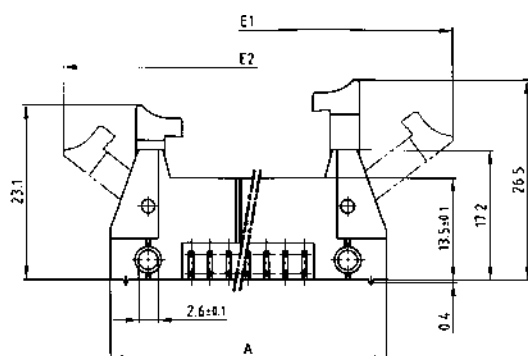
RoHS compliant

DESCRIPTION

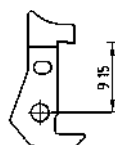
- Solder pin
- Pin length 2.9 mm alternative 4.5 mm (*) on request
- 10 to 64 positions
- Center polarization
- Available with long, short and without latches
- Long latches for socket connector with strain relief

PRODUCT DRAWING

PCB-hole pattern



Long latches
Part no. 140 X 10019 X



Short latches
Part no. 140 X 10029 X

No. of Pos.	A ±0.2	B ±0.1	C ±0.2	D ±0.1	E1	E2
10	32.00	27.94	17.82	4x2.54=10.16	50.00	44.50
14	37.08	33.02	22.90	6x2.54=15.24	55.00	49.50
16	39.62	35.56	25.44	7x2.54=17.78	57.60	52.10
20	44.70	40.64	30.52	9x2.54=22.86	62.50	57.00
26	52.32	48.26	38.14	12x2.54=30.48	70.10	64.60
34	62.48	58.42	48.30	16x2.54=40.64	80.30	74.80
40	70.10	66.04	55.92	19x2.54=48.26	87.90	82.40
50	82.80	78.74	68.62	24x2.54=60.96	100.70	95.20
60	95.50	91.44	81.32	29x2.54=73.66	113.40	107.90
64	100.58	96.52	86.40	31x2.54=78.74	118.52	113.02

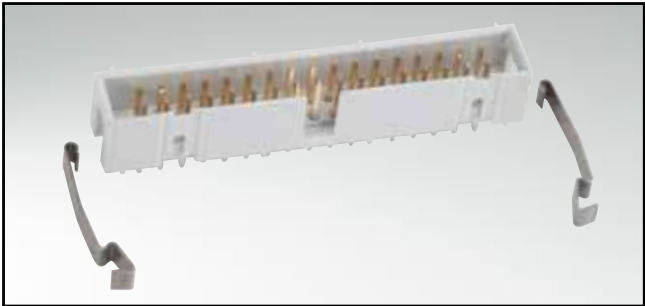
ORDER DATA

(Dim. = mm)

No. of Pos.	WITHOUT LATCHES		WITH SHORT LATCHES		WITH LONG LATCHES	
	Pin length 2.9 mm	Pin length 4.5 mm*	Pin length 2.9 mm	Pin length 4.5 mm*	Pin length 2.9 mm	Pin length 4.5 mm*
10	141 A 10559 X	141 A 10649 X	141 A 10739 X	141 A 10829 X	141 A 10919 X	141 A 11009 X
14	141 A 10569 X	141 A 10659 X	141 A 10749 X	141 A 10839 X	141 A 10929 X	141 A 11019 X
16	141 A 10579 X	141 A 10669 X	141 A 10759 X	141 A 10849 X	141 A 10939 X	141 A 11029 X
20	141 A 10589 X	141 A 10679 X	141 A 10769 X	141 A 10859 X	141 A 10949 X	141 A 11039 X
26	141 A 10599 X	141 A 10689 X	141 A 10779 X	141 A 10869 X	141 A 10959 X	141 A 11049 X
34	141 A 10609 X	141 A 10699 X	141 A 10789 X	141 A 10879 X	141 A 10969 X	141 A 11059 X
40	141 A 10619 X	141 A 10709 X	141 A 10799 X	141 A 10889 X	141 A 10979 X	141 A 11069 X
50	141 A 10629 X	141 A 10719 X	141 A 10809 X	141 A 10899 X	141 A 10989 X	141 A 11079 X
60	141 A 10639 X	141 A 10729 X	141 A 10819 X	141 A 10909 X	141 A 10999 X	141 A 11089 X
64	141 A 12279 X	141 A 12439 X	141 A 12359 X	141 A 12369 X	141 A 12379 X	141 A 12389 X

FLATCABLE CONNECTORS

Low profile header – straight



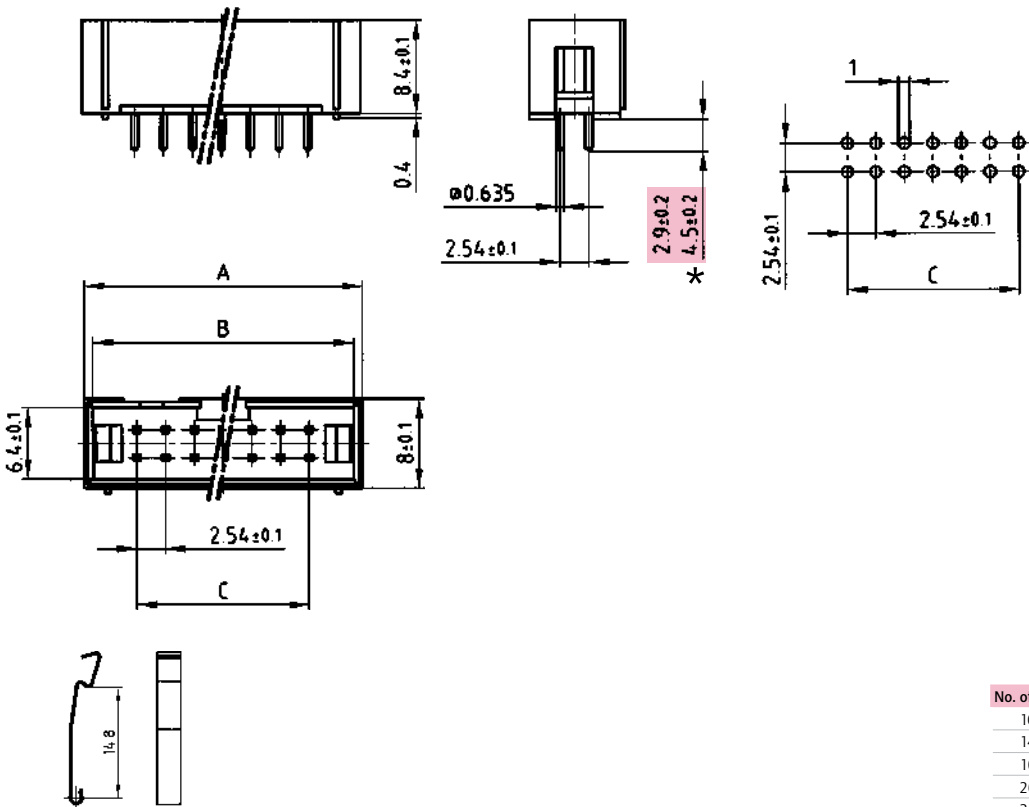
RoHS compliant

DESCRIPTION

- Solder pin
- Pin length 2.9 mm alternative 4.5 mm (*) on request
- 10 to 64 positions
- Center polarization
- Space saving version
- Clip latches need to be ordered separately

PRODUCT DRAWING

PCB-hole pattern



Clip latches
Part no. 140 X 10039 X

No. of Pos.	A ± 0.2	B ± 0.1	C ± 0.1
10	19,50	17,90	4x2.54=10.16
14	24,60	23,00	6x2.54=15.24
16	27,20	25,60	7x2.54=17.78
20	32,30	30,70	9x2.54=22.86
26	39,90	38,30	12x2.54=30.48
34	50,10	48,50	16x2.54=40.64
40	57,80	56,20	19x2.54=48.26
50	70,50	68,90	24x2.54=60.96
64	89,10	86,40	31x2.54=78.74

ORDER DATA

No. of Pos.	Pin length 2.9 mm	Pin length 4.5 mm*	No. of Pos.	Pin length 2.9 mm	Pin length 4.5 mm*
10	141 A 11639 X	141 A 11729 X	34	141 A 11689 X	141 A 11779 X
14	141 A 11649 X	141 A 11739 X	40	141 A 11699 X	141 A 11789 X
16	141 A 11659 X	141 A 11749 X	50	141 A 11709 X	141 A 11799 X
20	141 A 11669 X	141 A 11759 X	60	141 A 12269 X	141 A 12449 X
26	141 A 11679 X	141 A 11769 X			

FLATCABLE CONNECTORS

Low profile header – angled

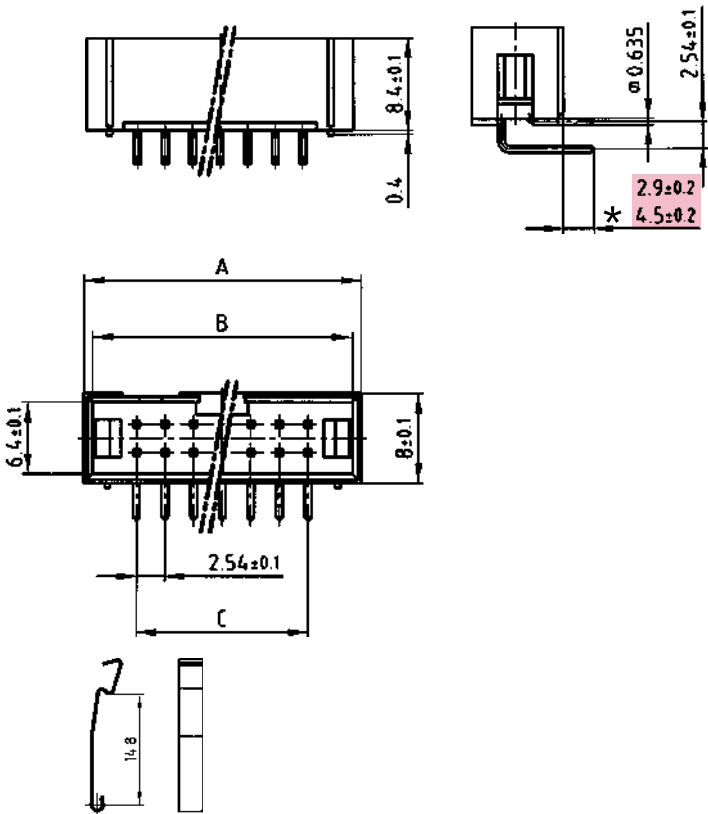


RoHS compliant

DESCRIPTION

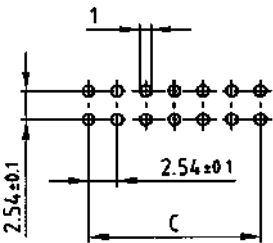
- Solder pin
- Pin length 2.9 mm alternative 4.5 mm (*) on request
- 10 to 64 positions
- Center polarization
- Space saving version
- Clip latches need to be ordered separately

PRODUCT DRAWING



Clip latches
Part no. 140 X 10039 X

PCB-hole pattern



No. of Pos.	A ± 0.2	B ± 0.1	C ± 0.1
10	19.50	17.90	4 x 2.54 = 10.16
14	24.60	23.00	6 x 2.54 = 15.24
16	27.20	25.60	7 x 2.54 = 17.78
20	32.30	30.70	9 x 2.54 = 22.86
26	39.90	38.30	12 x 2.54 = 30.48
34	50.10	48.50	16 x 2.54 = 40.64
40	57.80	56.20	19 x 2.54 = 48.26
50	70.50	68.90	24 x 2.54 = 60.96
64	89.10	86.40	31 x 2.54 = 78.74

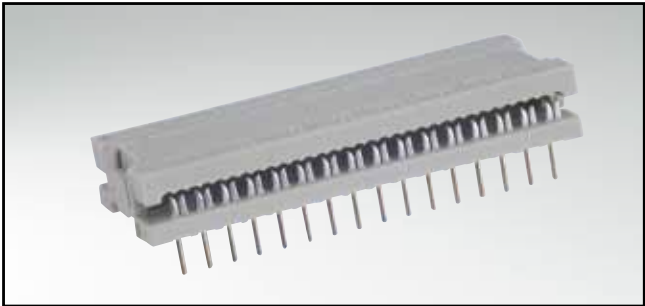
ORDER DATA

(Dim. = mm)

No. of Pos.	Pin length 2.9 mm	Pin length 4.5 mm*	No. of Pos.	Pin length 2.9 mm	Pin length 4.5 mm*
10	141 A 11909 X	141 A 11999 X	34	141 A 11959 X	141 A 12049 X
14	141 A 11919 X	141 A 12009 X	40	141 A 11969 X	141 A 12059 X
16	141 A 11929 X	141 A 12019 X	50	141 A 11979 X	141 A 12069 X
20	141 A 11939 X	141 A 12029 X	60	141 A 12399 X	141 A 12459 X
26	141 A 11949 X	141 A 12039 X			

FLATCABLE CONNECTORS

Dip connector – 4 to 40 positions

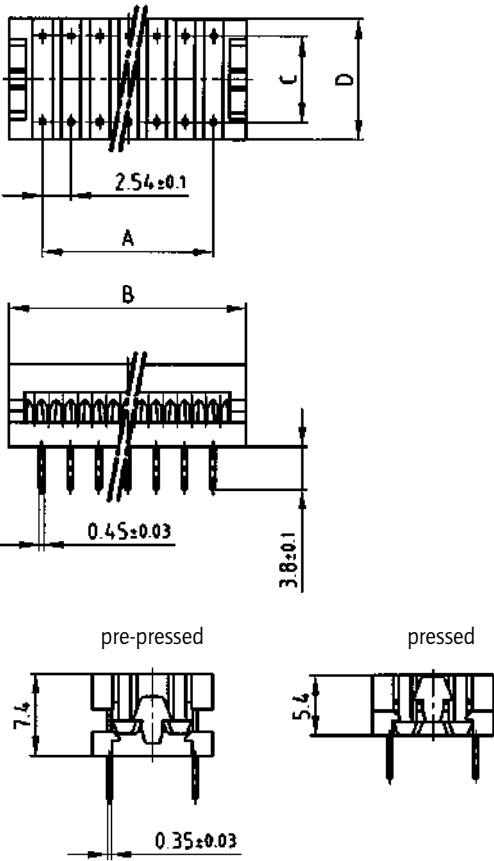


RoHS compliant

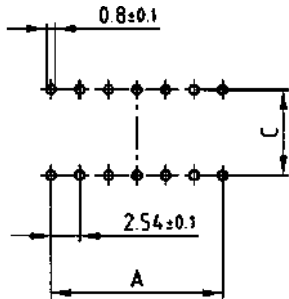
DESCRIPTION

- Insulation displacement termination (IDC)
- Contact spacing 2.54 mm
- Contact plating: gold or tin plated

PRODUCT DRAWING



PCB-hole pattern



No. of Pos.	A ± 0.1	B ± 0.2	C ± 0.1	D ± 0.1
4	2.54	8.41	7.62	10.7
6	2x2.54=5.08	10.95	7.62	10.7
8	3x2.54=7.62	13.49	7.62	10.7
10	4x2.54=10.16	16.03	7.62	10.7
12	5x2.54=12.70	18.57	7.62	10.7
14	6x2.54=15.24	21.11	7.62	10.7
16	7x2.54=17.78	23.56	7.62	10.7
18	8x2.54=20.32	26.19	7.62	10.7
20	9x2.54=22.86	28.73	7.62	10.7
22	10x2.54=25.40	31.35	10.16	13.2
24	11x2.54=27.94	33.60	15.24	18.3
28	13x2.54=33.02	38.97	15.24	18.3
32	15x2.54=38.10	44.05	15.24	18.3
36	17x2.54=43.18	49.13	15.24	18.3
40	19x2.54=48.26	53.90	15.24	18.3

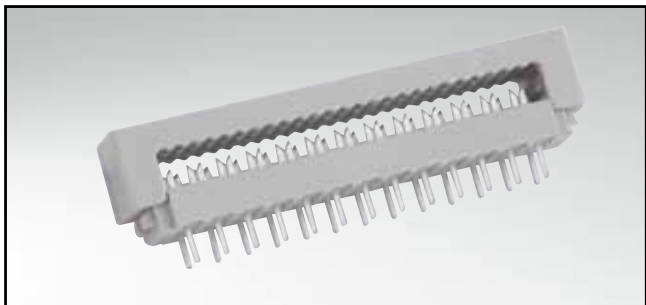
ORDER DATA

(Dim. = mm)

No. of Pos.	gold plated	tin plated	No. of Pos.	gold plated	tin plated
4	220 A 10019 X	220 F 10019 X	20	220 A 10099 X	220 F 10099 X
6	220 A 10029 X	220 F 10029 X	22	220 A 10109 X	220 F 10109 X
8	220 A 10039 X	220 F 10039 X	24	220 A 10119 X	220 F 10119 X
10	220 A 10049 X	220 F 10049 X	28	220 A 10129 X	220 F 10129 X
12	220 A 10059 X	220 F 10059 X	32	220 A 10139 X	220 F 10139 X
14	220 A 10069 X	220 F 10069 X	36	220 A 10149 X	220 F 10149 X
16	220 A 10079 X	220 F 10079 X	40	220 A 10159 X	220 F 10159 X
18	220 A 10089 X	220 F 10089 X			

FLATCABLE CONNECTORS

PCB connector – 10 to 64 positions

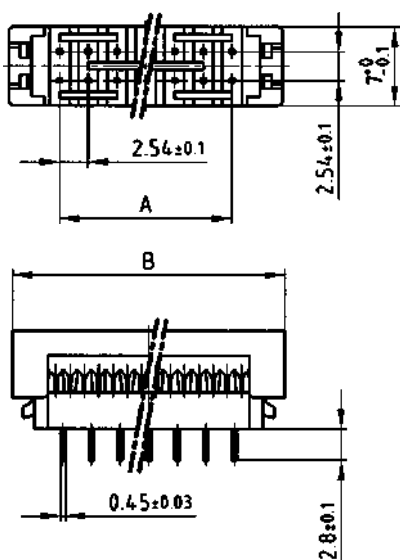


RoHS compliant

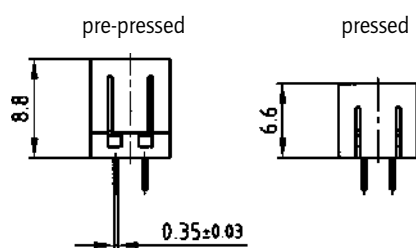
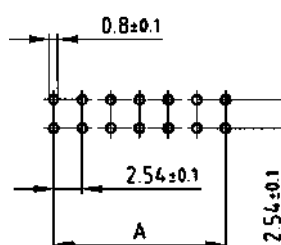
DESCRIPTION

- Insulation displacement termination (IDC)
- Contact spacing 2.54 mm
- Contact plating: gold or tin plated

PRODUCT DRAWING



PCB-hole pattern



No. of Pos.	A ±0.1	B ±0.2
10	4x2.54=10.16	19.15
14	6x2.54=15.24	24.25
16	7x2.54=17.78	26.82
20	9x2.54=22.86	31.90
26	12x2.54=30.48	39.50
34	16x2.54=40.64	49.68
40	19x2.54=48.26	57.30
50	24x2.54=60.96	70.00
60	29x2.54=73.66	82.75
64	31x2.54=78.74	87.78

ORDER DATA

(Dim. = mm)

No. of Pos.	tin plated
10	220 F 10169 X
14	220 F 10179 X
16	220 F 10189 X
20	220 F 10199 X
26	220 F 10209 X

No. of Pos.	tin plated
34	220 F 10219 X
40	220 F 10229 X
50	220 F 10239 X
60	220 F 10249 X
64	220 F 10259 X

FLATCABLE CONNECTORS

D-SUB IDC – stamped contacts – 9 to 37 positions



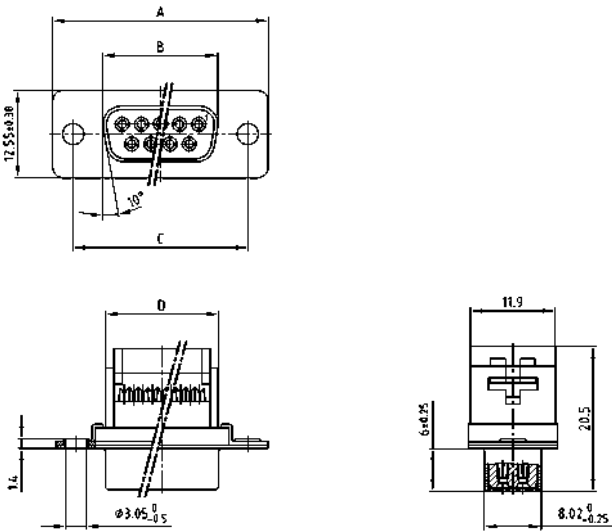
RoHS compliant – CSA listed, File No.: LR 115000-1 – UL listed, File No.: E202784

DESCRIPTION

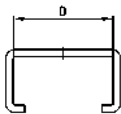
- For wire size AWG 26 to 28 flatcable
- Mounting style: with through-hole, Ø 3 mm
- Connector includes strain relief
- Quality class 3 (other quality classes on request)
- Shell: steel tin plated

PRODUCT DRAWING

Socket connector

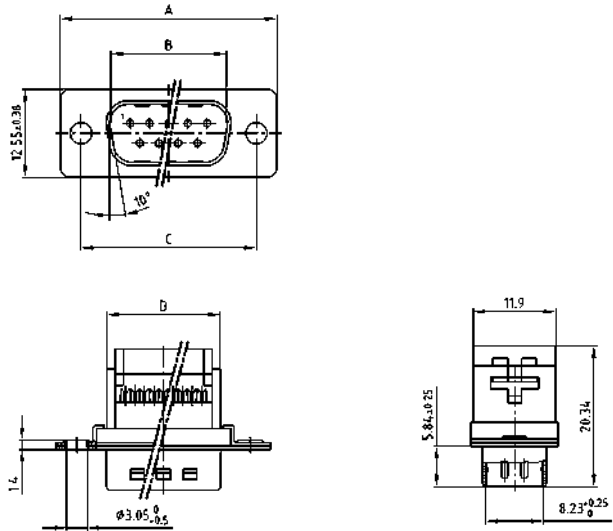


Strain relief

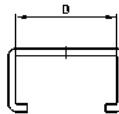


No. of Pos.	A ± 0.25	B ± 0.25	C ± 0.25	D ± 0.25
09	30.80	16.46	25.00	16.10
15	39.10	24.79	33.30	24.00
25	53.09	38.50	47.04	38.14
37	69.40	54.96	63.50	54.60

Plug connector



Strain relief



No. of Pos.	A ± 0.25	B ± 0.25	C ± 0.25	D ± 0.25
09	30.80	16.79	25.00	16.10
15	39.10	25.12	33.30	24.00
25	53.09	83.84	47.04	38.14
37	69.40	55.30	63.50	54.60

ORDER DATA

(Dim. = mm)

SOCKET CONNECTOR		
Number of positions	Mounting style	Part number
09	Through-hole	302 A 10089 X
15	Through-hole	302 A 10099 X
25	Through-hole	302 A 10109 X
37	Through-hole	302 A 10119 X

PLUG CONNECTOR		
Number of positions	Mounting style	Part number
09	Through-hole	301 A 10089 X
15	Through-hole	301 A 10099 X
25	Through-hole	301 A 10109 X
37	Through-hole	301 A 10119 X

FLATCABLE CONNECTORS

D-SUB IDC – stamped contacts – 9 to 37 positions



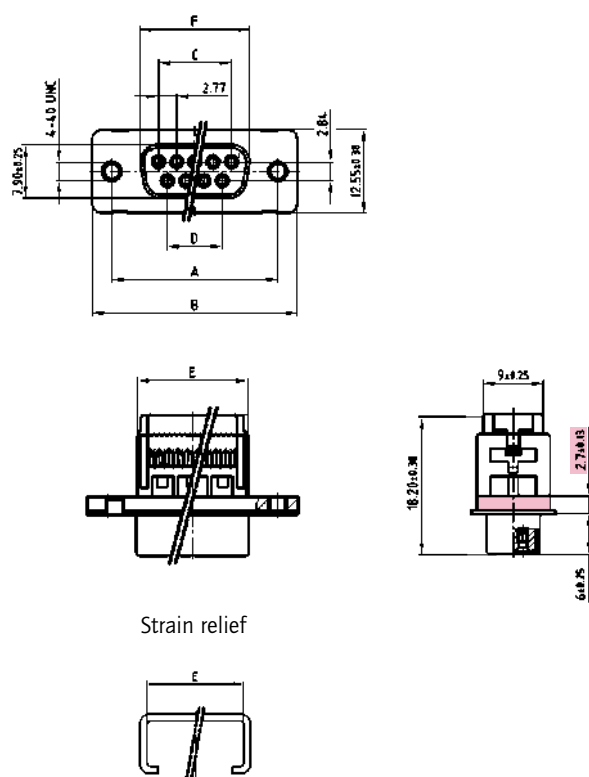
RoHS compliant – CSA listed, File No.: LR 115000-1 – UL listed, File No.: E202784

DESCRIPTION

- For wire size AWG 26 to 28 flatcable
- Mounting style: with 4-40 UNC threaded insert
- Connector includes strain relief
- Quality class 3 (other quality classes on request)
- Shell: steel tin plated
- Not suitable for hood assembly

PRODUCT DRAWING

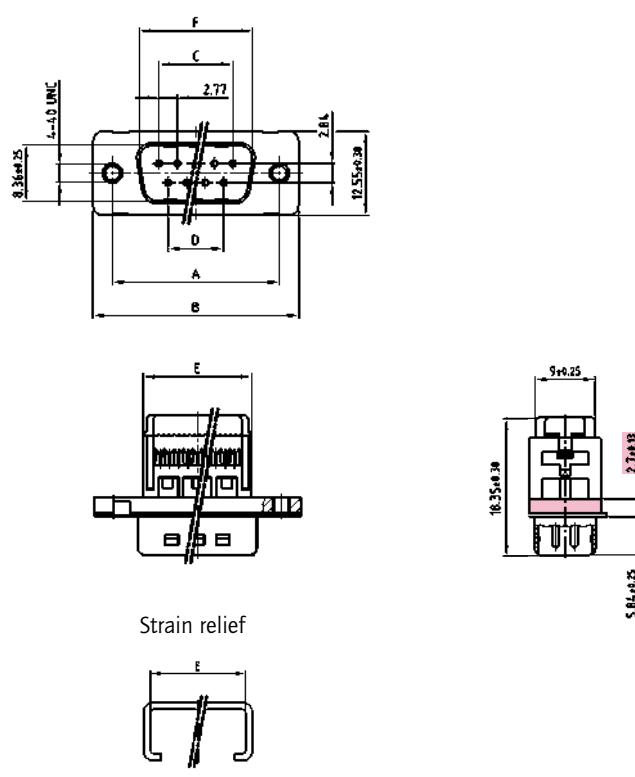
Socket connector



Strain relief

No. of Pos.	A ± 0.13	B ± 0.25	C ± 0.13	D ± 0.13	E ± 0.25	F ± 0.25
09	24.99	30.80	11.08	8.31	16.10	16.33
15	33.32	39.10	19.39	16.62	24.00	24.66
25	47.04	53.09	33.24	30.47	38.14	38.38
37	63.50	69.40	49.86	47.09	54.60	54.84

Plug connector



Strain relief

No. of Pos.	A ± 0.13	B ± 0.25	C ± 0.13	D ± 0.13	E ± 0.25	F ± 0.25
09	24.99	30.80	11.08	8.31	16.10	16.92
15	33.32	39.10	19.39	16.62	24.00	25.25
25	47.04	53.09	33.24	30.47	38.14	38.96
37	63.50	69.40	49.86	47.09	54.60	55.45

ORDER DATA

(Dim. = mm)

SOCKET CONNECTOR		
Number of positions	Mounting style	Part number
09	Threaded insert 4-40 UNC	DLS 1XSSAG04 X
15	Threaded insert 4-40 UNC	DLS 2XSSAG04 X
25	Threaded insert 4-40 UNC	DLS 3XSSAG04 X
37	Threaded insert 4-40 UNC	DLS 4XSSAG04 X

PLUG CONNECTOR		
Number of positions	Mounting style	Part number
09	Threaded insert 4-40 UNC	DLS 1XPSAG04 X
15	Threaded insert 4-40 UNC	DLS 2XPSAG04 X
25	Threaded insert 4-40 UNC	DLS 3XPSAG04 X
37	Threaded insert 4-40 UNC	DLS 4XPSAG04 X

FLATCABLE CONNECTORS

D-SUB IDC – stamped contacts – 9 to 37 positions



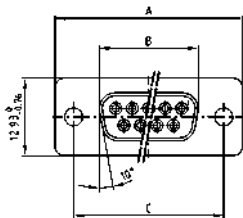
RoHS compliant – CSA listed, File No.: LR 115000-1 – UL listed, File No.: E202784

DESCRIPTION

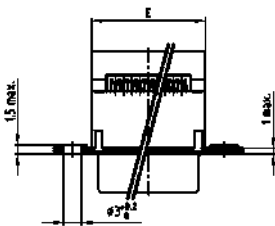
- For wire size AWG 26 to 28 flatcable
- Mounting style: with through-hole, Ø 3 mm
- Strain relief need to be ordered separately
- Quality class 3 (also available in quality class 1)
- Shell: Steel tin plated

PRODUCT DRAWING

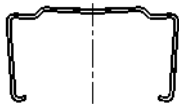
Socket connector



Mounting style: Through-hole

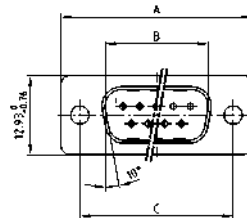


Strain relief

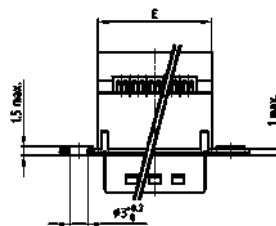


No. of Pos.	A -0.76	B +0.25	C	E +0.10
09	30.80	16.30	25.00 +0.12	18.73
15	39.20	24.60	33.30 +0.15 -0.10	26.86
25	53.10	38.30	47.04 ±0.13	40.78
37	69.40	54.80	63.50 ±0.13	57.04

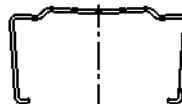
Plug connector



Mounting style: Through-hole



Strain relief



No. of Pos.	A -0.76	B +0.25	C	E +0.10
09	30.80	16.79	25.00 +0.12	18.73
15	39.20	25.12	33.30 +0.15 -0.10	26.86
25	53.10	38.84	47.04 ±0.13	40.78
37	69.40	55.30	63.50 ±0.13	57.04

ORDER DATA

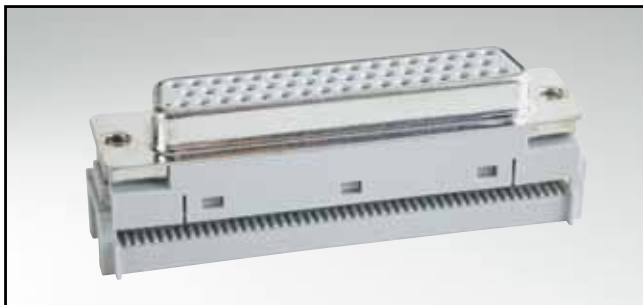
(Dim. = mm)

SOCKET CONNECTOR		
Number of positions	Mounting style	Part number
09	Through-hole	162 A 11899 X
15	Through-hole	162 A 11909 X
25	Through-hole	162 A 11919 X
37	Through-hole	162 A 11929 X
09	Strain relief	160 X 10019 X
15	Strain relief	160 X 10029 X
25	Strain relief	160 X 10039 X
37	Strain relief	160 X 10049 X

PLUG CONNECTOR		
Number of positions	Mounting style	Part number
09	Through-hole	161 A 13499 X
15	Through-hole	161 A 13509 X
25	Through-hole	161 A 13519 X
37	Through-hole	161 A 13529 X
09	Strain relief	160 X 10019 X
15	Strain relief	160 X 10029 X
25	Strain relief	160 X 10039 X
37	Strain relief	160 X 10049 X

FLATCABLE CONNECTORS

D-SUB IDC – stamped contacts – 50 positions



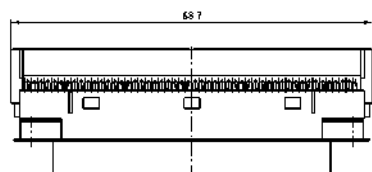
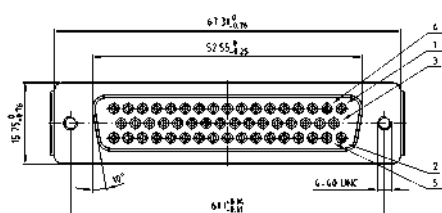
RoHS compliant – CSA listed, File No.: LR 115000-1 – UL listed, File No.: E202784

DESCRIPTION

- For wire size AWG 26 to 28 flatcable
- Mounting style: with 4-40 UNC threaded insert
- Strain relief need to be ordered separately
- Quality class 3 (also available in quality class 1)
- Shell: Steel tin plated

PRODUCT DRAWING

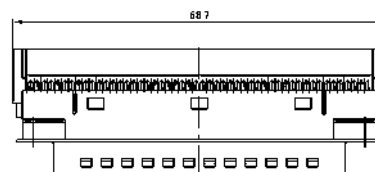
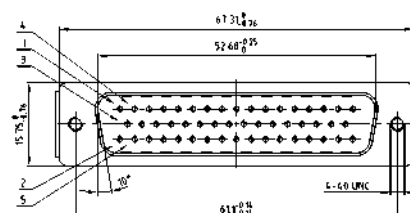
Socket connector



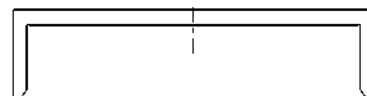
Strain relief



Plug connector



Strain relief



ORDER DATA

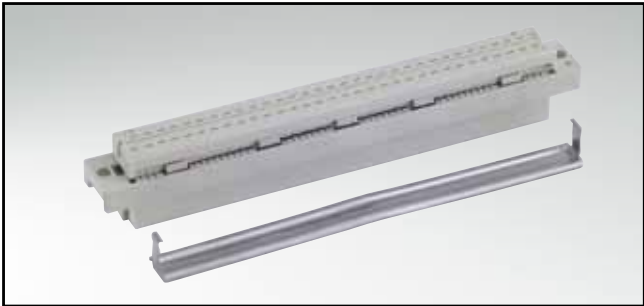
(Dim. = mm)

SOCKET CONNECTOR		
Number of positions	Mounting style	Part number
50	Threaded insert 4-40 UNC	162 A 11939 X
50	Strain relief	160 X 10059 X

PLUG CONNECTOR		
Number of positions	Mounting style	Part number
50	Threaded insert 4-40 UNC	161 A 13539 X
50	Strain relief	160 X 10059 X

FLATCABLE CONNECTORS

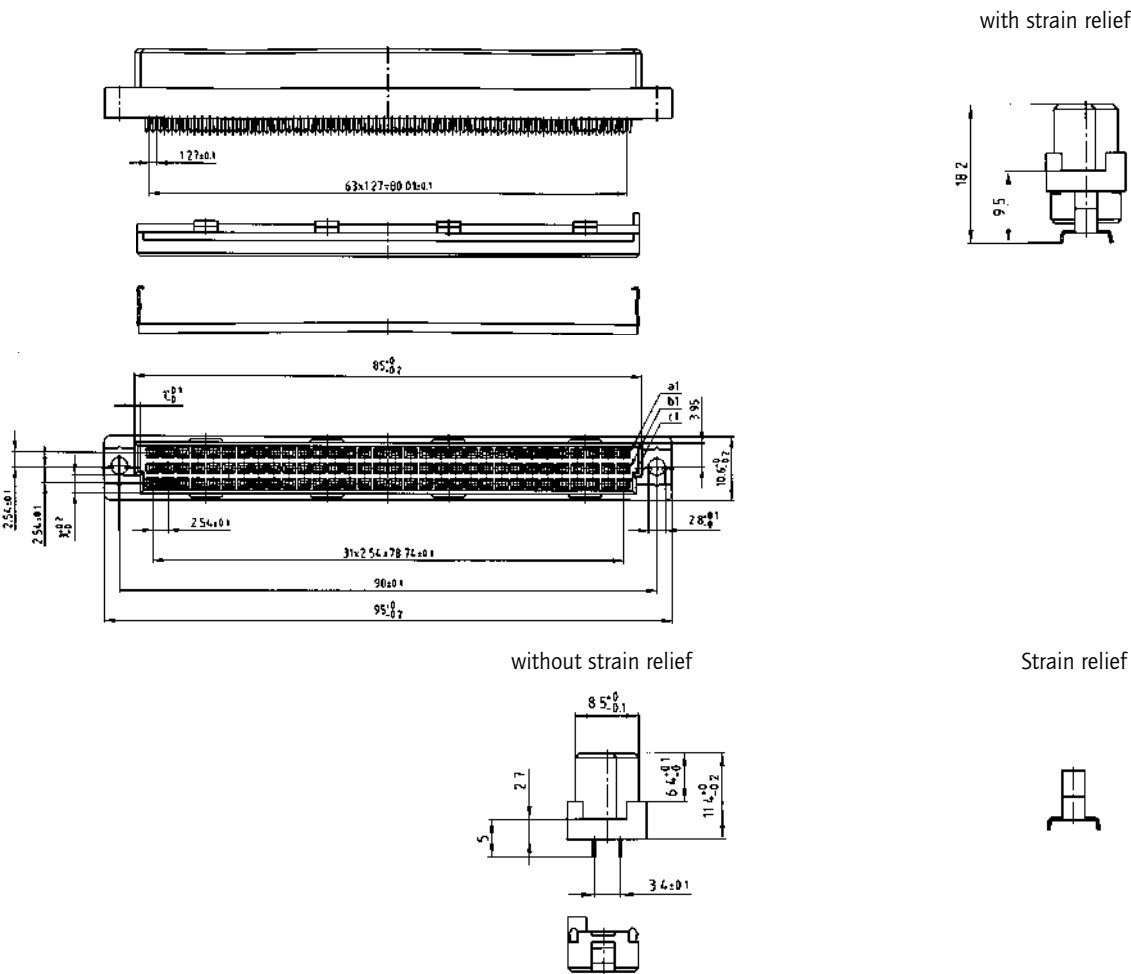
Type C – female connector – Insulation displacement termination (IDC) – 64 positions



RoHS compliant

- DESCRIPTION
- Flat cable termination
 - Strain relief need to be ordered separately
 - Quality class 3 (also available in quality class 2 or 1)

PRODUCT DRAWING

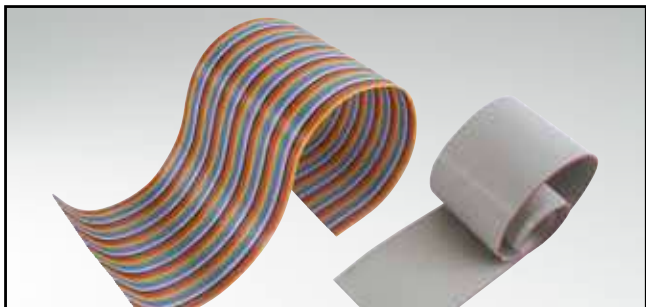


ORDER DATA (Dim. = mm)

No. of Pos.	• = contact, + = no contact						Female connector without strain relief	Strain relief
	Pos	1	2	3	4	5		
64	a	•	•	•	•	•	122 A 11699 X	120 X 10169 X
	b	+	+	+	+	+		
	c	•	•	•	•	•		

FLATCABLE

Grey or color-coded



RoHS compliant

DESCRIPTION

Flat cable **colored grey**

■ Flame-retardant ref. class UL-VW-1

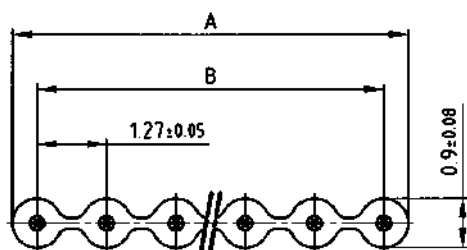
■ UL-Style No. 2651

Flat cable **color-coded**

■ Flame-retardant ref. class UL-VW-1

■ UL-Style No. 2651

PRODUCT DRAWING



Technical Data	
Conductor:	Cu tin plated
Dielectric strength:	> 2 kV at 50 Hz, at acc. over one minute
Insulation:	min. 100 Ω x km at 20 °C
Conductor resistant:	max. 216 Ω / km at 20 °C
Capacitance:	max. 60 pF / m at 1 kHz
Impedance (GSG):	ca. 100 Ω at 1 MHz
Current rating:	max. 2,1 A at 25 °C
Working voltage:	max. 300 V
Temperature range:	at rest: -30 °C to +105 °C (-40 °C per ISO6722) in motion: -20 °C to +105 °C (-40 °C per ISO6722)

Flame-retardant ref. class UL-VW-1 / CSA FT-1

No. of Pos.	A	B
10	12.70 ^{+0.25}	11.43 ^{+0.18}
14	17.78 ^{+0.25}	16.51 ^{+0.18}
16	20.32 ^{+0.38}	19.05 ^{+0.28}
20	25.40 ^{+0.38}	24.13 ^{+0.28}
25	31.75 ^{+0.38}	30.48 ^{+0.28}
34	43.18 ^{+0.51}	41.91 ^{+0.38}
40	50.80 ^{+0.51}	49.53 ^{+0.38}
50	63.50 ^{+0.51}	62.23 ^{+0.38}
64	81.28 ^{+0.51}	80.01 ^{+0.38}

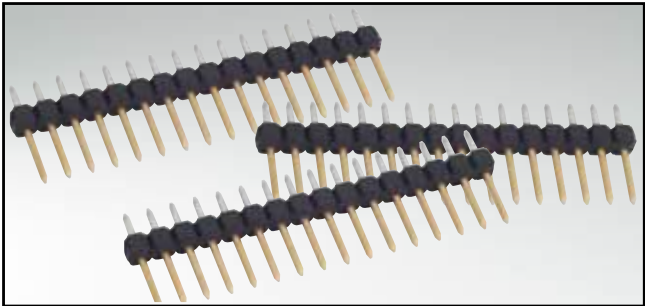
ORDER DATA

(Dim. = mm)

No. of Pos.	Flat cable grey	No. of Pos.	Flat cable color-coded
10	145 X 10029 X	10	145 X 10179 X
14	145 X 10039 X	14	145 X 10189 X
16	145 X 10059 X	16	145 X 10209 X
20	145 X 10069 X	20	145 X 10219 X
25	145 X 10089 X	25	145 X 10239 X
34	145 X 10109 X	34	145 X 10259 X
40	145 X 10129 X	40	145 X 10279 X
50	145 X 10139 X	50	145 X 10289 X
64	145 X 10159 X	64	145 X 10309 X

CSU - PIN HEADER

Straight version – one and two rows



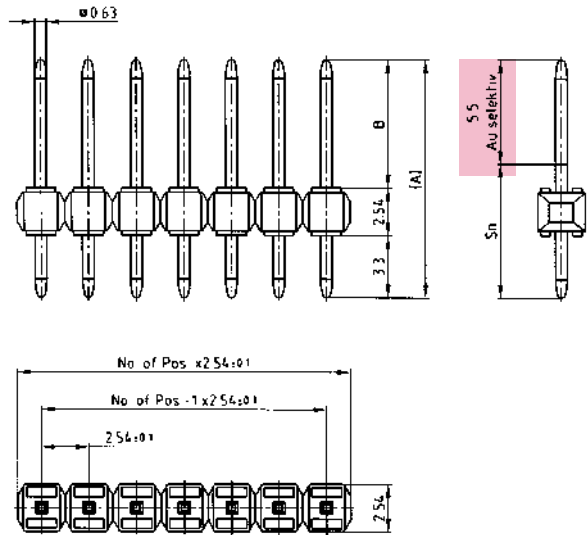
RoHS compliant

DESCRIPTION

- Solder pin
- Contact spacing 2.54 mm
- One row: 5, 10, 20, 30, 40 and 50 positions
- Two row: 10, 20, 40, 60, 80 and 100 positions
- Further positions on request
- Contact plating:
 - gold plated in mating area and tin in solder area
 - completely tin plated
- Other platings on request

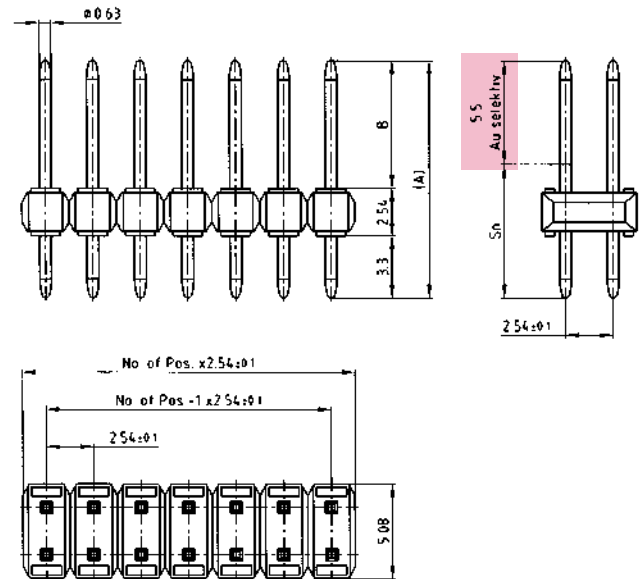
PRODUCT DRAWING

One row straight



Pin lenght A	B ± 0,1
11,3	5,46
12,6	6,76
14,7	8,66
17,7	11,86
19,8	13,96
21,6	15,76
24,9	19,06

Two row straight



ORDER DATA

(Dim. = mm)

ONE ROW – STRAIGHT – PIN LENGTH 11.3 MM		
Number of positions	gold plated	tin plated
5	201 A 12059 X	201 F 12059 X
10	201 A 12109 X	201 F 12109 X
20	201 A 12209 X	201 F 12209 X
30	201 A 12309 X	201 F 12309 X
40	201 A 22159 X	201 F 22159 X
50	201 A 22259 X	201 F 22259 X

ONE ROW – STRAIGHT – PIN LENGTH 12.6 MM		
Number of positions	gold plated	tin plated
5	201 A 10059 X	201 F 10059 X
10	201 A 10109 X	201 F 10109 X
20	201 A 10209 X	201 F 10209 X
30	201 A 10309 X	201 F 10309 X
40	201 A 22439 X	201 F 22439 X
50	201 A 22539 X	201 F 22539 X

TWO ROW – STRAIGHT – PIN LENGTH 11.3 MM		
Number of positions	gold plated	tin plated
10	201 A 12419 X	201 F 12419 X
20	201 A 12469 X	201 F 12469 X
40	201 A 12569 X	201 F 12569 X
60	201 A 12669 X	201 F 12669 X
80	201 A 22299 X	201 F 22299 X
100	201 A 22399 X	201 F 22399 X

TWO ROW – STRAIGHT – PIN LENGTH 12.6 MM		
Number of positions	gold plated	tin plated
10	201 A 10419 X	201 F 10419 X
20	201 A 10469 X	201 F 10469 X
40	201 A 10569 X	201 F 10569 X
60	201 A 10669 X	201 F 10669 X
80	201 A 22579 X	201 F 22579 X
100	201 A 22679 X	201 F 22679 X

CSU - PIN HEADER

Straight version – one and two rows

ORDER DATA

ONE ROW – STRAIGHT – PIN LENGTH 14.7 MM		
Number of positions	gold plated	tin plated
5	201 A 12779 X	201 F 12779 X
10	201 A 12829 X	201 F 12829 X
20	201 A 12929 X	201 F 12929 X
30	201 A 13029 X	201 F 13029 X
40	201 A 22719 X	201 F 22719 X
50	201 A 22819 X	201 F 22819 X

ONE ROW – STRAIGHT – PIN LENGTH 17.7 MM		
Number of positions	gold plated	tin plated
5	201 A 13499 X	201 F 13499 X
10	201 A 13549 X	201 F 13549 X
20	201 A 13649 X	201 F 13649 X
30	201 A 13749 X	201 F 13749 X
40	201 A 22999 X	201 F 22999 X
50	201 A 23099 X	201 F 23099 X

ONE ROW – STRAIGHT – PIN LENGTH 19.8 MM		
Number of positions	gold plated	tin plated
5	201 A 14219 X	201 F 14219 X
10	201 A 14269 X	201 F 14269 X
20	201 A 14369 X	201 F 14369 X
30	201 A 14469 X	201 F 14469 X
40	201 A 23279 X	201 F 23279 X
50	201 A 23379 X	201 F 23379 X

ONE ROW – STRAIGHT – PIN LENGTH 21.6 MM		
Number of positions	gold plated	tin plated
5	201 A 14939 X	201 F 14939 X
10	201 A 14989 X	201 F 14989 X
20	201 A 15089 X	201 F 15089 X
30	201 A 15189 X	201 F 15189 X
40	201 A 23559 X	201 F 23559 X
50	201 A 23659 X	201 F 23659 X

ONE ROW – STRAIGHT – PIN LENGTH 24.9 MM		
Number of positions	gold plated	tin plated
5	201 A 15659 X	201 F 15659 X
10	201 A 15709 X	201 F 15709 X
20	201 A 15809 X	201 F 15809 X
30	201 A 15909 X	201 F 15909 X
40	201 A 23839 X	201 F 23839 X
50	201 A 23939 X	201 F 23939 X

TWO ROW – STRAIGHT – PIN LENGTH 14.7 MM		
Number of positions	gold plated	tin plated
10	201 A 13139 X	201 F 13139 X
20	201 A 13189 X	201 F 13189 X
40	201 A 13289 X	201 F 13289 X
60	201 A 13389 X	201 F 13389 X
80	201 A 22859 X	201 F 22859 X
100	201 A 22959 X	201 F 22959 X

TWO ROW – STRAIGHT – PIN LENGTH 17.7 MM		
Number of positions	gold plated	tin plated
10	201 A 13859 X	201 F 13859 X
20	201 A 13909 X	201 F 13909 X
40	201 A 14009 X	201 F 14009 X
60	201 A 14109 X	201 F 14109 X
80	201 A 23139 X	201 F 23139 X
100	201 A 23239 X	201 F 23239 X

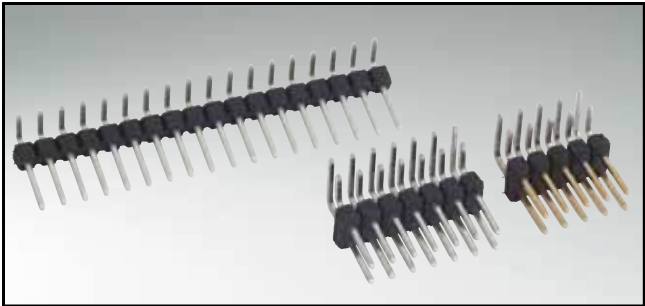
TWO ROW – STRAIGHT – PIN LENGTH 19.8 MM		
Number of positions	gold plated	tin plated
10	201 A 14579 X	201 F 14579 X
20	201 A 14629 X	201 F 14629 X
40	201 A 14729 X	201 F 14729 X
60	201 A 14829 X	201 F 14829 X
80	201 A 23419 X	201 F 23419 X
100	201 A 23519 X	201 F 23519 X

TWO ROW – STRAIGHT – PIN LENGTH 21.6 MM		
Number of positions	gold plated	tin plated
10	201 A 15299 X	201 F 15299 X
20	201 A 15349 X	201 F 15349 X
40	201 A 15449 X	201 F 15449 X
60	201 A 15549 X	201 F 15549 X
80	201 A 23699 X	201 F 23699 X
100	201 A 23799 X	201 F 23799 X

TWO ROW – STRAIGHT – PIN LENGTH 24.9 MM		
Number of positions	gold plated	tin plated
10	201 A 16019 X	201 F 16019 X
20	201 A 16069 X	201 F 16069 X
40	201 A 16169 X	201 F 16169 X
60	201 A 16269 X	201 F 16269 X
80	201 A 23979 X	201 F 23979 X
100	201 A 24079 X	201 F 24079 X

CSU - PIN HEADER

Angled version – one and two row



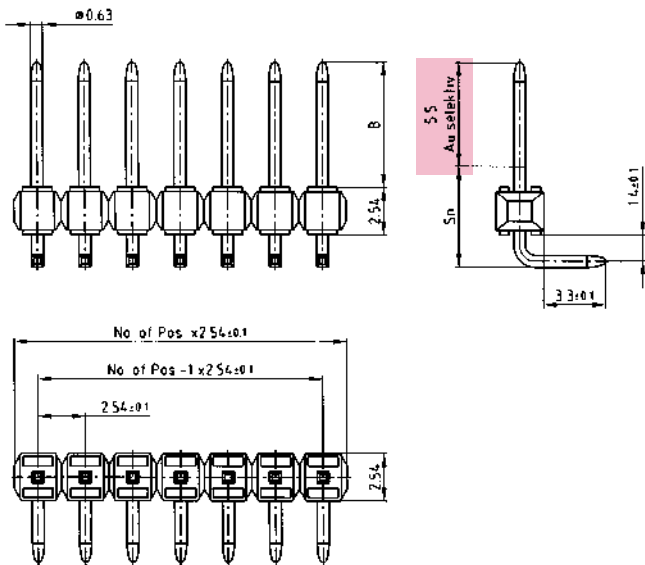
RoHS compliant

DESCRIPTION

- Solder pin
- Contact spacing 2.54 mm
- One row: 5, 10, 20, 30, 40 and 50 positions
- Two row: 10, 20, 40, 60, 80 and 100 positions
- Further positions on request
- Contact plating:
 - gold plated in mating area and tin in solder area
 - completely tin plated
- Other platings on request

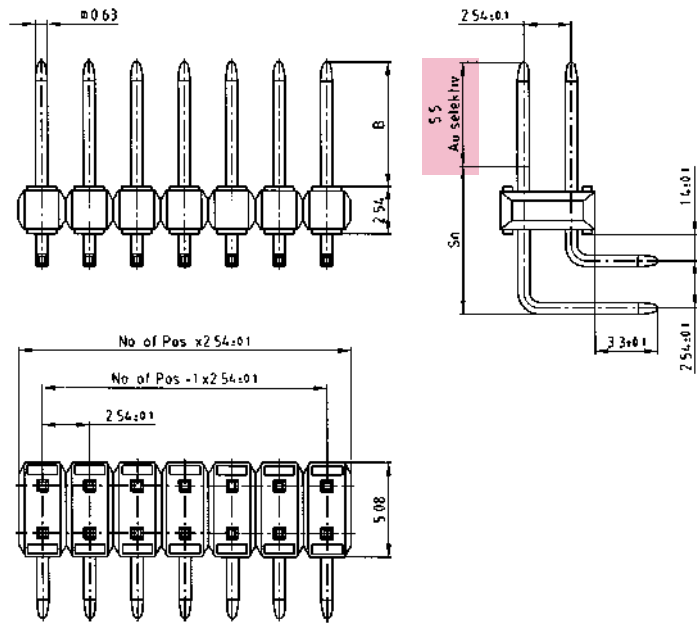
PRODUCT DRAWING

One row angled



One row angled	
Pin length	$B \pm 0.1$
12.6 mm	04.5
14.7 mm	06.6
17.7 mm	09.6
19.8 mm	11.7
21.6 mm	13.5
24.9 mm	16.8

Two row angled



Two row angled		
Pin length inner row	Pin length outer row	$B \pm 0.1$
12.6 mm	17.7 mm	4.5
14.7 mm	19.8 mm	6.6

(Dim. = mm)

CSU - PIN HEADER

Angled version – one and two row

ORDER DATA

ONE ROW – ANGLED – PIN LENGTH 12.6 MM		
Number of positions	gold plated	tin plated
5	201 A 16379 X	201 F 16379 X
10	201 A 16429 X	201 F 16429 X
20	201 A 16529 X	201 F 16529 X
30	201 A 16629 X	201 F 16629 X
40	201 A 24119 X	201 F 24119 X
50	201 A 24219 X	201 F 24219 X

ONE ROW – ANGLED – PIN LENGTH 14.7 MM		
Number of positions	gold plated	tin plated
5	201 A 10779 X	201 F 10779 X
10	201 A 10829 X	201 F 10829 X
20	201 A 10929 X	201 F 10929 X
30	201 A 11029 X	201 F 11029 X
40	201 A 24399 X	201 F 24399 X
50	201 A 24499 X	201 F 24499 X

ONE ROW – ANGLED – PIN LENGTH 17.7 MM		
Number of positions	gold plated	tin plated
5	201 A 17099 X	201 F 17099 X
10	201 A 17149 X	201 F 17149 X
20	201 A 17249 X	201 F 17249 X
30	201 A 17349 X	201 F 17349 X
40	201 A 24679 X	201 F 24679 X
50	201 A 24779 X	201 F 24779 X

ONE ROW – ANGLED – PIN LENGTH 19.8 MM		
Number of positions	gold plated	tin plated
5	201 A 17459 X	201 F 17459 X
10	201 A 17509 X	201 F 17509 X
20	201 A 17609 X	201 F 17609 X
30	201 A 17709 X	201 F 17709 X
40	201 A 24819 X	201 F 24819 X
50	201 A 24919 X	201 F 24919 X

ONE ROW – ANGLED – PIN LENGTH 21.6 MM		
Number of positions	gold plated	tin plated
5	201 A 17819 X	201 F 17819 X
10	201 A 17869 X	201 F 17869 X
20	201 A 17969 X	201 F 17969 X
30	201 A 18069 X	201 F 18069 X
40	201 A 24959 X	201 F 24959 X
50	201 A 25059 X	201 F 25059 X

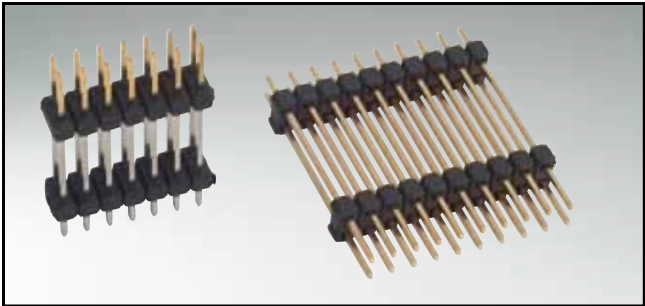
ONE ROW – ANGLED – PIN LENGTH 24.9 MM		
Number of positions	gold plated	tin plated
5	201 A 18179 X	201 F 18179 X
10	201 A 18229 X	201 F 18229 X
20	201 A 18329 X	201 F 18329 X
30	201 A 18429 X	201 F 18429 X
40	201 A 25099 X	201 F 25099 X
50	201 A 25199 X	201 F 25199 X

TWO ROW – ANGLED – PIN LENGTH 12.6 / 17.7 MM		
Number of positions	gold plated	tin plated
10	201 A 16739 X	201 F 16739 X
20	201 A 16789 X	201 F 16789 X
40	201 A 16889 X	201 F 16889 X
60	201 A 16989 X	201 F 16989 X
80	201 A 24259 X	201 F 24259 X
100	201 A 24359 X	201 F 24359 X

TWO ROW – ANGLED – PIN LENGTH 14.7 / 19.8 MM		
Number of positions	gold plated	tin plated
10	201 A 11139 X	201 F 11139 X
20	201 A 11189 X	201 F 11189 X
40	201 A 11289 X	201 F 11289 X
60	201 A 11389 X	201 F 11389 X
80	201 A 24539 X	201 F 24539 X
100	201 A 24639 X	201 F 24639 X

CSU - PIN HEADER

Double hood – straight – one and two row



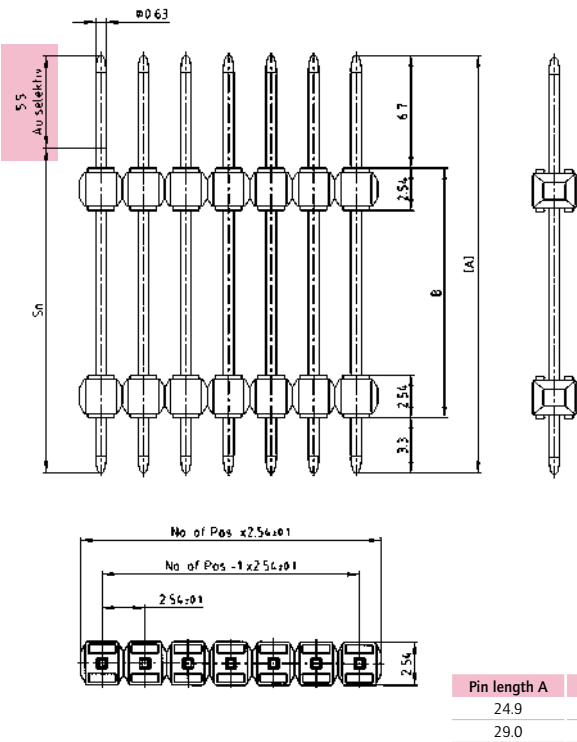
RoHS compliant

DESCRIPTION

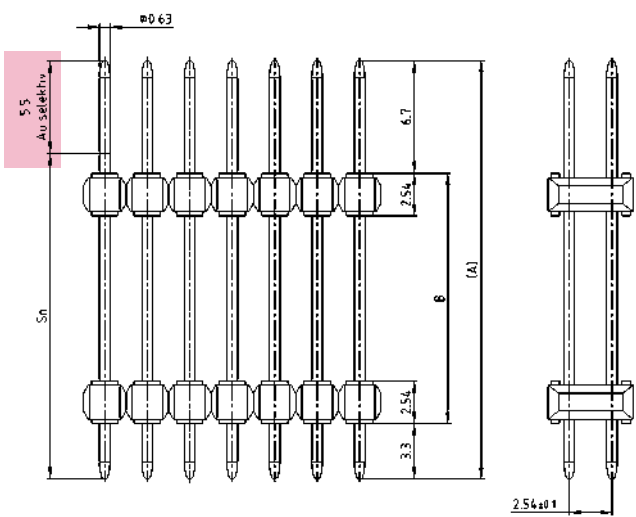
- Solder pin
- Contact spacing 2.54 mm
- One row: 5, 10, 20, 30, 40 and 50 positions
- Two row: 10, 20, 40, 60, 80 and 100 positions
- Further positions on request
- Contact plating
 - gold plated in mating area and tin in solder area
 - completely tin plated
- Other platings on request

PRODUCT DRAWING

One row straight



Two row straight



ORDER DATA

(Dim. = mm)

ONE ROW – STRAIGHT – PIN LENGTH 24.9 MM		
Number of positions	gold plated	tin plated
5	201 A 18539 X	201 F 18539 X
10	201 A 18589 X	201 F 18589 X
20	201 A 18689 X	201 F 18689 X
30	201 A 18789 X	201 F 18789 X
40	201 A 25239 X	201 F 25239 X
50	201 A 25339 X	201 F 25339 X

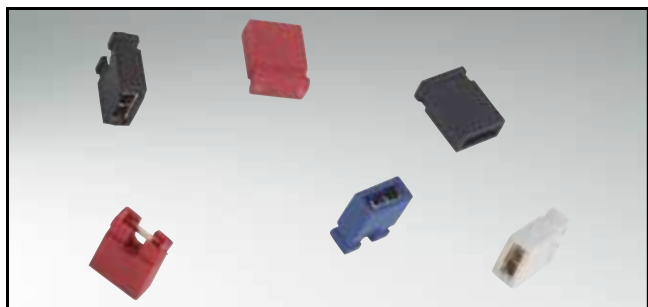
ONE ROW – STRAIGHT – PIN LENGTH 29.0 MM		
Number of positions	gold plated	tin plated
5	201 A 19259 X	201 F 19259 X
10	201 A 19309 X	201 F 19309 X
20	201 A 19409 X	201 F 19409 X
30	201 A 19509 X	201 F 19509 X
40	201 A 25519 X	201 F 25519 X
50	201 A 25619 X	201 F 25619 X

TWO ROW – STRAIGHT – PIN LENGTH 24.9 MM		
Number of positions	gold plated	tin plated
10	201 A 18899 X	201 F 18899 X
20	201 A 18949 X	201 F 18949 X
40	201 A 19049 X	201 F 19049 X
60	201 A 19149 X	201 F 19149 X
80	201 A 25379 X	201 F 25379 X
100	201 A 25479 X	201 F 25479 X

TWO ROW – STRAIGHT – PIN LENGTH 29.0 MM		
Number of positions	gold plated	tin plated
10	201 A 19619 X	201 F 19619 X
20	201 A 19669 X	201 F 19669 X
40	201 A 19769 X	201 F 19769 X
60	201 A 19869 X	201 F 19869 X
80	201 A 25659 X	201 F 25659 X
100	201 A 25759 X	201 F 25759 X

SHORT CIRCUIT PLUG

Open and closed version



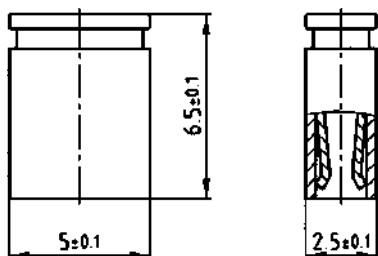
RoHS compliant

DESCRIPTION

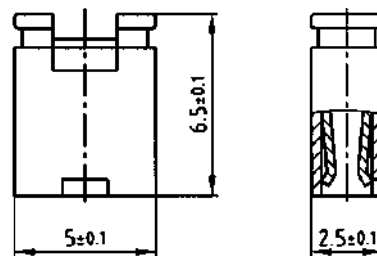
- Gold plated contacts
- Contact spacing 2.54 mm
- Several colors

PRODUCT DRAWING

Closed version



Open version



Technical Data

Contacts:	Phosphorbronze
Insulator:	PA 6,6 UL 94 V-0
Contact resistance:	≤ 7 mΩ
Current rating:	2.5 A
Insulation resistance:	10 ¹² Ω
Withdrawal force:	≤ 3 N
Insertion force:	≤ 6 N
Temperature range:	-65°C to + 150°C
Contact surface:	Gold over nickel
Contact spacing:	2.54 mm

ORDER DATA

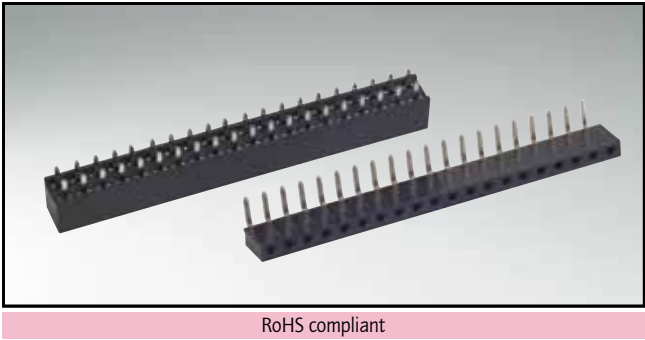
(Dim. = mm)

Color	closed version
grey	200 A 10069 X
black	200 A 10079 X
blue	200 A 10089 X
red	200 A 10099 X
green	200 A 10109 X

Color	open version
grey	200 A 10019 X
black	200 A 10029 X
blue	200 A 10039 X
red	200 A 10049 X
green	200 A 10059 X

CBL - SOCKET CONNECTOR

Straight and angled – one and two row – installation height 5.7 mm



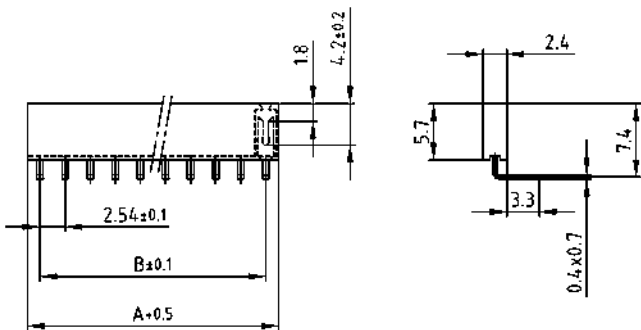
RoHS compliant

DESCRIPTION

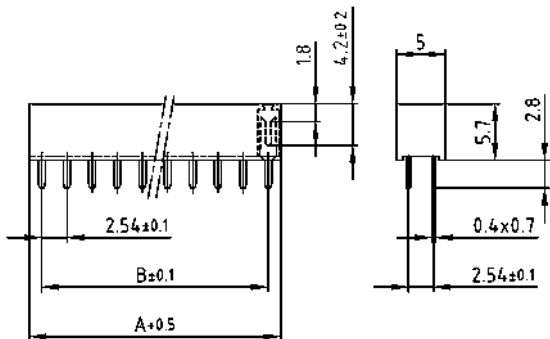
- Solder pin
- Contact spacing 2.54 mm
- One row: 5, 10 and 20 positions
- Two row: 10, 20 and 40 positions
- Further positions on request
- Contact plating: gold or tin plated
- Suitable for CSU pin headers

PRODUCT DRAWING

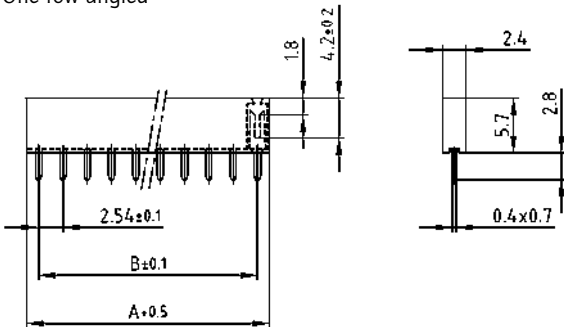
One row straight



Two row straight



One row angled



No. of Pos.		A + 0.5	B ± 0.1
One row	Two row		
5	10	12.7	4 x 2.54 = 10.16
10	20	25.4	9 x 2.54 = 22.86
20	40	50.8	19 x 2.54 = 48.26

ORDER DATA

(Dim. = mm)

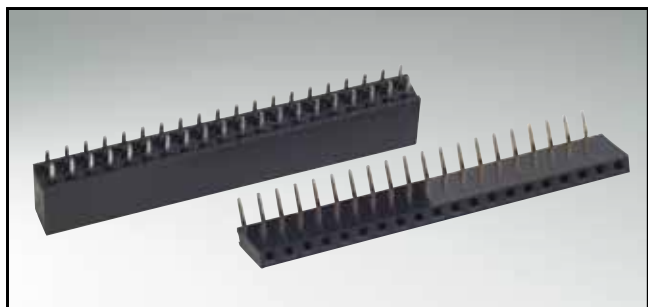
ONE ROW – STRAIGHT		
No. of Pos.	gold plated	tin plated
5	202 A 10019 X	202 F 10019 X
10	202 A 10029 X	202 F 10029 X
20	202 A 10039 X	202 F 10039 X

TWO ROW – STRAIGHT		
No. of Pos.	gold plated	tin plated
10	202 A 10079 X	202 F 10079 X
20	202 A 10089 X	202 F 10089 X
40	202 A 10099 X	202 F 10099 X

ONE ROW – ANGLED		
No. of Pos.	gold plated	tin plated
5	202 A 10049 X	202 F 10049 X
10	202 A 10059 X	202 F 10059 X
20	202 A 10069 X	202 F 10069 X

CBL SOCKET CONNECTOR

Straight – one and two row – installation height 8.5 mm



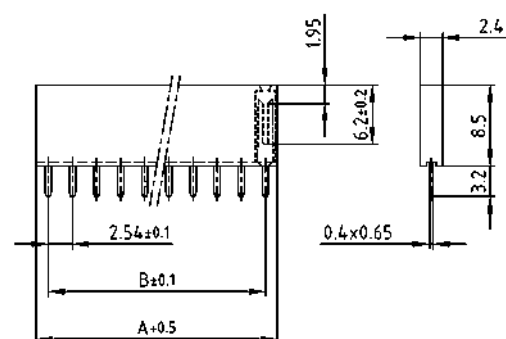
RoHS compliant

DESCRIPTION

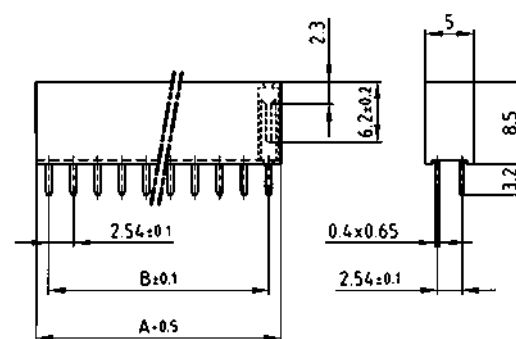
- Solder pin
- Contact spacing 2.54 mm
- One row: 5, 10 and 20 positions
- Two row: 10, 20 and 40 positions
- Further positions on request
- Contact plating: gold plated or tin plated
- Suitable for CSU pin headers

PRODUCT DRAWING

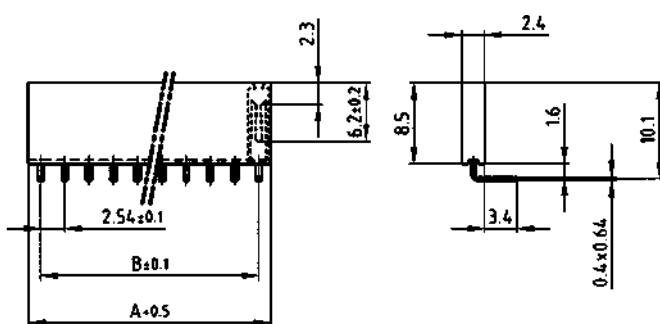
One row straight



Two row straight



One row angled



No. of Pos.		A + 0.5	B ± 0.1
one row	two row		
5	10	12.7	4 x 2.54 = 10.16
10	20	25.4	9 x 2.54 = 22.86
20	40	50.8	19 x 2.54 = 48.26

ORDER DATA

(Dim. = mm)

ONE ROW – STRAIGHT		
No. of Pos.	gold plated	tin plated
5	202 A 10109 X	202 F 10109 X
10	202 A 10119 X	202 F 10119 X
20	202 A 10129 X	202 F 10129 X

TWO ROW – STRAIGHT		
No. of Pos.	gold plated	tin plated
10	202 A 10169 X	202 F 10169 X
20	202 A 10179 X	202 F 10179 X
40	202 A 10189 X	202 F 10189 X

ONE ROW – ANGLED		
No. of Pos.	gold plated	tin plated
5	202 A 10139 X	202 F 10139 X
10	202 A 10149 X	202 F 10149 X
20	202 A 10159 X	202 F 10159 X

SECTION 9

INSTALLATION AND ASSEMBLY TOOLS



CONEC offers a variety of special tools to facilitate the reliable, rational assembly of contacts and connectors in its line of flatcable connectors. These tools are practice-proven and ensure the optimal handling of our products.



For technical support and handling technic
please contact the factory.





DESCRIPTION _____

Press in tool
for straight CompactPCI male connector, 38 positions

Part number 360X15129X

Press in tool
for straight CompactPCI male connector, 47 positions

Part number 360X15139X



DESCRIPTION _____

Press in tool
for straight CompactPCI female connector,
38 and 47 positions

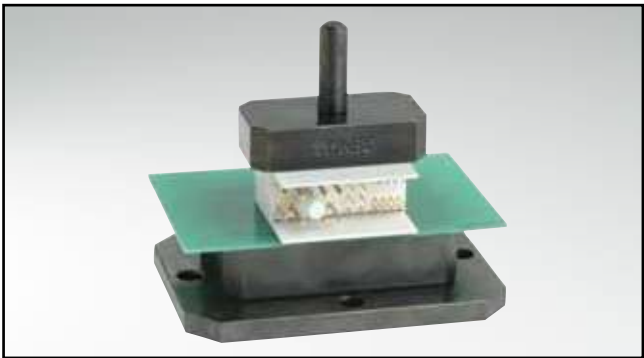
Part number 360X15119X



DESCRIPTION _____

Press in tool
for straight AdvancedTCA female connectors

Part number 360X15149X



DESCRIPTION _____

Press in tool
for angled AdvancedTCA male connectors

Part number 360X15159X



DESCRIPTION _____

Hand crimp tool
for CompactPCI crimp contacts
(Inserts need to be ordered separately)

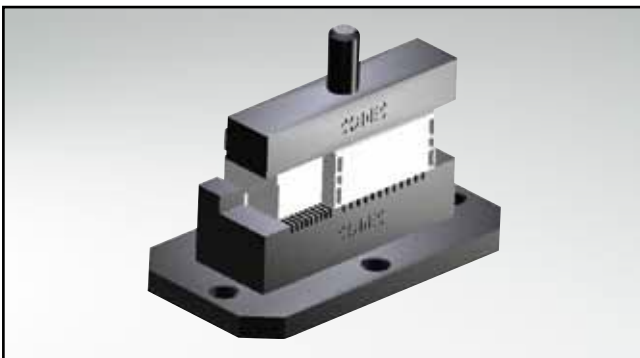
Part number 360X21079X



DESCRIPTION _____

Inserts
for above hand crimp tool

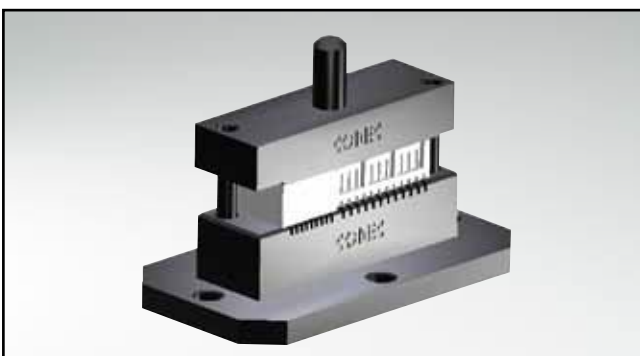
Part number 360X21089X



DESCRIPTION _____

Press in tool
for MicroTCA Power Module output connector, angled

Part number 36-000080



DESCRIPTION _____

Press in tool
for MicroTCA Power Backplane output connector, straight

Part number 36-000070



DESCRIPTION _____

Hand Crimp tool
for high power contacts DIN EN 60603-2

Part number 360 X 10409 X



DESCRIPTION _____

Inserts
for above hand crimp tool

Part number 360 X 20029 X



DESCRIPTION _____

Hand Crimp tool
for coaxial contacts (inner conductor) and
D-SUB for Signal Crimp contacts standard and High Density
(Inserts must be ordered separately)

Part number 360 X 10329 X



DESCRIPTION _____

Inserts
for above hand crimp tool

Inserts for hand crimp tool
for use with hand crimp tool 360X10329X

Plug Connector	Socket connector	Tool Inserts	Inserts cavity	
123 C 21049 X	124 C 21049 X	360 X 11049 X	depends on wire select cavity	
123 C 21059 X	124 C 21059 X	360 X 11049 X		
123 C 21069 X	124 C 21069 X	360 X 11049 X		
123 C 23049 X	124 C 23049 X	360 X 11059 X		
123 C 23059 X	124 C 23059 X	360 X 11059 X	AWG	Cavity
123 C 23069 X	124 C 23069 X	360 X 11059 X	24 →	5
			26 →	5
			28 →	4
123 C 33039 X	124 C 33039 X	360 X 11059 X	30 →	3
123 C 33049 X	124 C 33049 X	360 X 11059 X		

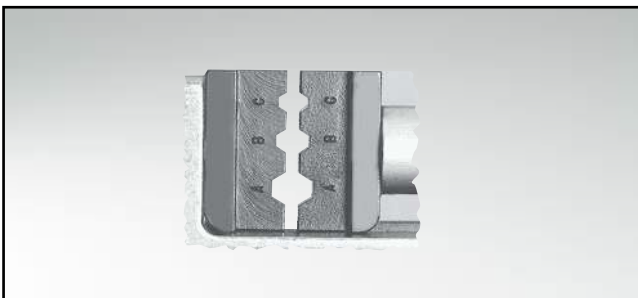


DESCRIPTION _____

Hand Crimp tool

for coaxial contacts (outer conductor),
(Inserts must be ordered separately)

Part number 360 X 10519 X



DESCRIPTION _____

Inserts

for above hand crimp tool

**Inserts for hand crimp tool coaxial contacts (outer conductor)
for use with hand crimp tool 360X10519X**

Plug Connector	Socket connector	Tool Inserts	Inserts cavity
123 C 20059 X	124 C 20059 X	360 X 11019 X	C
123 C 20069 X	124 C 20069 X	360 X 11019 X	B
123 C 20079 X	124 C 20079 X	360 X 11039 X	B
123 C 20089 X	124 C 20089 X	360 X 11029 X	A
123 C 21049 X	124 C 21049 X	360 X 11019 X	B
123 C 21059 X	124 C 21059 X	360 X 11029 X	A
123 C 21069 X	124 C 21069 X	360 X 11039 X	B
123 C 22069 X	124 C 22069 X	360 X 11019 X	C
123 C 22079 X	124 C 22079 X	360 X 11019 X	B
123 C 22089 X	124 C 22089 X	360 X 11039 X	B
123 C 22099 X	124 C 22099 X	360 X 11019 X	A
123 C 22109 X	124 C 22109 X	360 X 11029 X	A
123 C 32049 X	124 C 32049 X	360 X 11019 X	C
123 C 32059 X	124 C 32059 X	360 X 11019 X	B
123 C 32069 X	124 C 32069 X	360 X 11019 X	A
123 C 23049 X	124 C 23049 X	360 X 11019 X	B
123 C 23059 X	124 C 23059 X	360 X 11039 X	B
123 C 23069 X	124 C 23069 X	360 X 11029 X	A
123 C 33039 X	124 C 33039 X	360 X 11019 X	B
123 C 33049 X	124 C 33049 X	360 X 11019 X	A



DESCRIPTION _____

Extraction tool
for D-SUB coaxial, high power and high voltage contacts
for DIN EN 60603-2 high power and coaxial contacts

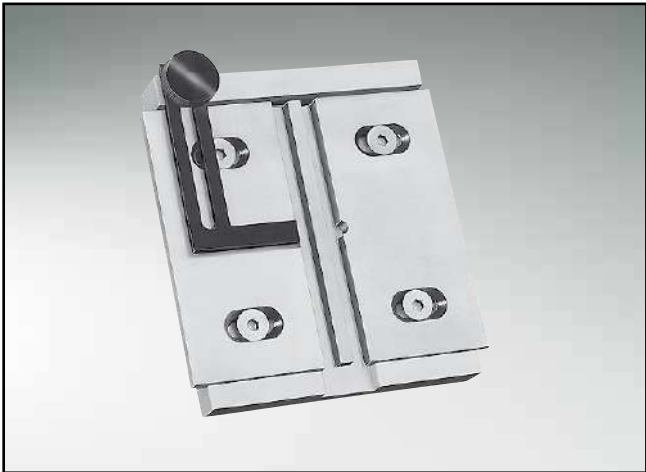
Part number 360 X 10219 X



DESCRIPTION _____

Hand cutting scissors

Part number 360 X 10059 X



DESCRIPTION _____

Tooling set
for hand lever press (see page 9 | 7)

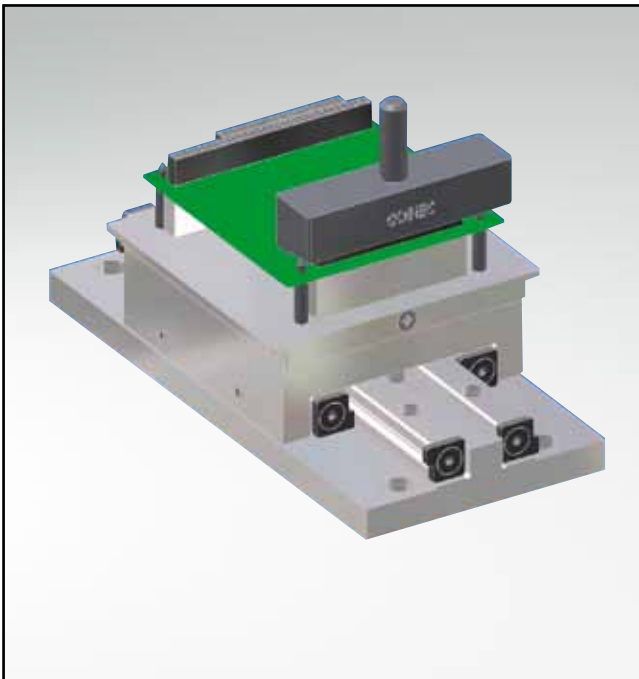
Part number 360 X 10029 X



DESCRIPTION _____

Manually operated lever press

Part number 360 X 12369 X



DESCRIPTION _____

Press in tool
for PC104 and PC104plus connectors

Part number 36-000130

SECTION 10
PART NUMBERS



6658
6
66589



66589B 74

9B 75

6 589B 76

B 77

PART NUMBERS

Part Number	Section Page	Part Number	Section Page	Part Number	Section Page
101 A 10019 X	7 4	101 C 10189 X	7 5	102 E 10089 X	7 8
101 A 10029 X	7 4	101 E 10019 X	7 4	102 E 10099 X	7 8
101 A 10039 X	7 4	101 E 10029 X	7 4	120 X 10019 X	4 29
101 A 10049 X	7 5	101 E 10039 X	7 4	120 X 10019 X	4 31
101 A 10059 X	7 5	101 E 10049 X	7 5	120 X 10039 X	4 36
101 A 10069 X	7 5	101 E 10059 X	7 5	120 X 10049 X	4 36
101 A 10079 X	7 6	101 E 10069 X	7 5	120 X 10059 X	4 36
101 A 10089 X	7 6	101 E 10079 X	7 6	120 X 10089 X	4 35
101 A 10099 X	7 6	101 E 10089 X	7 6	120 X 10099 X	4 35
101 A 10109 X	7 6	101 E 10099 X	7 6	120 X 10109 X	4 35
101 A 10119 X	7 6	101 E 10109 X	7 6	120 X 10119 X	4 35
101 A 10129 X	7 6	101 E 10119 X	7 6	120 X 10129 X	4 35
101 A 10139 X	7 3	101 E 10129 X	7 6	120 X 10129 X	4 35
101 A 10149 X	7 3	101 E 10139 X	7 3	120 X 10129 X	4 35
101 A 10159 X	7 3	101 E 10149 X	7 3	120 X 10129 X	4 35
101 A 10169 X	7 5	101 E 10159 X	7 3	120 X 10149 X	4 35
101 A 10179 X	7 5	101 E 10169 X	7 5	120 X 10149 X	4 35
101 A 10189 X	7 5	101 E 10179 X	7 5	120 X 10149 X	4 35
101 B 10019 X	7 4	101 E 10189 X	7 5	120 X 10149 X	4 35
101 B 10029 X	7 4	102 A 10019 X	7 7	120 X 10169 X	4 34
101 B 10039 X	7 4	102 A 10029 X	7 7	120 X 10169 X	8 14
101 B 10049 X	7 5	102 A 10039 X	7 7	120 X 10319 X	4 37
101 B 10059 X	7 5	102 A 10049 X	7 8	120 X 10359 X	4 37
101 B 10069 X	7 5	102 A 10059 X	7 8	120 X 10369 X	4 37
101 B 10079 X	7 6	102 A 10069 X	7 8	120 X 10379 X	4 37
101 B 10089 X	7 6	102 A 10079 X	7 8	121 A 10019 X	4 6
101 B 10099 X	7 6	102 A 10089 X	7 8	121 A 10029 X	4 6
101 B 10109 X	7 6	102 A 10099 X	7 8	121 A 10039 X	4 6
101 B 10119 X	7 6	102 B 10019 X	7 7	121 A 10049 X	4 6
101 B 10129 X	7 6	102 B 10029 X	7 7	121 A 10059 X	4 6
101 B 10139 X	7 3	102 B 10039 X	7 7	121 A 10069 X	4 6
101 B 10149 X	7 3	102 B 10049 X	7 8	121 A 10109 X	4 10
101 B 10159 X	7 3	102 B 10059 X	7 8	121 A 10119 X	4 10
101 B 10169 X	7 5	102 B 10069 X	7 8	121 A 10139 X	4 10
101 B 10179 X	7 5	102 B 10079 X	7 8	121 A 10149 X	4 10
101 B 10189 X	7 5	102 B 10089 X	7 8	121 A 10159 X	4 10
101 C 10019 X	7 4	102 B 10099 X	7 8	121 A 10169 X	4 10
101 C 10029 X	7 4	102 C 10019 X	7 7	121 A 10189 X	4 10
101 C 10039 X	7 4	102 C 10029 X	7 7	121 A 10199 X	4 10
101 C 10049 X	7 5	102 C 10039 X	7 7	121 A 10259 X	4 8
101 C 10059 X	7 5	102 C 10049 X	7 8	121 A 10269 X	4 8
101 C 10069 X	7 5	102 C 10059 X	7 8	121 A 10279 X	4 8
101 C 10079 X	7 6	102 C 10069 X	7 8	121 A 10289 X	4 8
101 C 10089 X	7 6	102 C 10079 X	7 8	121 A 10299 X	4 8
101 C 10099 X	7 6	102 C 10089 X	7 8	121 A 10309 X	4 8
101 C 10109 X	7 6	102 C 10099 X	7 8	121 A 10349 X	4 12
101 C 10119 X	7 6	102 E 10019 X	7 7	121 A 10359 X	4 12
101 C 10129 X	7 6	102 E 10029 X	7 7	121 A 10379 X	4 12
101 C 10139 X	7 3	102 E 10039 X	7 7	121 A 10389 X	4 12
101 C 10149 X	7 3	102 E 10049 X	7 8	121 A 10399 X	4 12
101 C 10159 X	7 3	102 E 10059 X	7 8	121 A 10409 X	4 12
101 C 10169 X	7 5	102 E 10069 X	7 8	121 A 10429 X	4 12
101 C 10179 X	7 5	102 E 10079 X	7 8	121 A 10439 X	4 12

Part Number Section | Page

121 A 10509 X	4 14
121 A 10519 X	4 14
121 A 10529 X	4 14
121 A 10549 X	4 14
121 A 10559 X	4 14
121 A 10569 X	4 14
121 A 10589 X	4 16
121 A 10599 X	4 16
121 A 10619 X	4 16
121 A 10629 X	4 16
121 A 10639 X	4 18
121 A 10649 X	4 18
121 A 10659 X	4 18
121 A 10669 X	4 18
121 A 10699 X	4 23
121 A 10709 X	4 23
121 A 10719 X	4 23
121 A 10789 X	4 26
121 A 10849 X	4 21
121 A 10859 X	4 21
121 A 20779 X	4 21
121 A 20789 X	4 21
121 A 20799 X	4 21
121 A 20809 X	4 21
121 A 20819 X	4 6
121 A 20829 X	4 6
121 A 20839 X	4 6
121 A 20849 X	4 8
121 A 20859 X	4 8
121 A 20869 X	4 8
121 A 20879 X	4 10
121 A 20889 X	4 10
121 A 20909 X	4 10
121 A 20919 X	4 10
121 A 20929 X	4 12
121 A 20939 X	4 12
121 A 20959 X	4 12
121 A 20969 X	4 12
121 A 20979 X	4 18
121 A 20989 X	4 18
121 B 10799 X	4 32
121 E 10949 X	4 30
121 E 10959 X	4 30
121 E 21109 X	4 28
121 E 21119 X	4 28
121 E 21129 X	4 28
122 A 10019 X	4 7
122 A 10029 X	4 7
122 A 10039 X	4 7
122 A 10049 X	4 7
122 A 10059 X	4 7
122 A 10069 X	4 7
122 A 10079 X	4 7

Part Number Section | Page

122 A 10089 X	4 7
122 A 10099 X	4 7
122 A 10109 X	4 7
122 A 10119 X	4 7
122 A 10129 X	4 7
122 A 10139 X	4 7
122 A 10149 X	4 7
122 A 10159 X	4 7
122 A 10169 X	4 11
122 A 10179 X	4 11
122 A 10199 X	4 11
122 A 10209 X	4 11
122 A 10219 X	4 11
122 A 10229 X	4 11
122 A 10249 X	4 11
122 A 10259 X	4 11
122 A 10269 X	4 11
122 A 10279 X	4 11
122 A 10299 X	4 11
122 A 10309 X	4 11
122 A 10319 X	4 11
122 A 10329 X	4 11
122 A 10349 X	4 11
122 A 10359 X	4 11
122 A 10369 X	4 11
122 A 10379 X	4 11
122 A 10399 X	4 11
122 A 10409 X	4 11
122 A 10419 X	4 9
122 A 10429 X	4 9
122 A 10439 X	4 9
122 A 10449 X	4 9
122 A 10459 X	4 9
122 A 10469 X	4 9
122 A 10479 X	4 9
122 A 10489 X	4 9
122 A 10499 X	4 9
122 A 10509 X	4 9
122 A 10519 X	4 9
122 A 10529 X	4 9
122 A 10539 X	4 9
122 A 10559 X	4 9
122 A 10579 X	4 13
122 A 10589 X	4 13
122 A 10609 X	4 13
122 A 10619 X	4 13
122 A 10629 X	4 13
122 A 10639 X	4 13
122 A 10659 X	4 13
122 A 10669 X	4 13
122 A 10679 X	4 13
122 A 10689 X	4 13
122 A 10709 X	4 13

Part Number Section | Page

122 A 10719 X	4 13
122 A 10729 X	4 13
122 A 10739 X	4 13
122 A 10759 X	4 13
122 A 10769 X	4 13
122 A 10779 X	4 13
122 A 10789 X	4 13
122 A 10809 X	4 13
122 A 10819 X	4 13
122 A 10839 X	4 15
122 A 10849 X	4 15
122 A 10859 X	4 15
122 A 10879 X	4 17
122 A 10889 X	4 17
122 A 10919 X	4 19
122 A 10929 X	4 19
122 A 10939 X	4 19
122 A 10949 X	4 19
122 A 10959 X	4 19
122 A 10969 X	4 19
122 A 10979 X	4 24
122 A 10989 X	4 24
122 A 10999 X	4 24
122 A 11039 X	4 24
122 A 11049 X	4 24
122 A 11059 X	4 24
122 A 11069 X	4 24
122 A 11079 X	4 24
122 A 11089 X	4 24
122 A 11099 X	4 24
122 A 11109 X	4 24
122 A 11119 X	4 24
122 A 11129 X	4 27
122 A 11139 X	4 27
122 A 11609 X	4 22
122 A 11619 X	4 22
122 A 11629 X	4 22
122 A 11699 X	4 34
122 A 11699 X	8 14
122 A 13079 X	4 19
122 A 13089 X	4 19
122 A 13099 X	4 22
122 A 13109 X	4 22
122 A 13119 X	4 22
122 A 13129 X	4 22
122 A 13139 X	4 22
122 A 13149 X	4 22
122 A 13159 X	4 22
122 A 13169 X	4 22
122 A 13179 X	4 22
122 A 13189 X	4 7
122 A 13199 X	4 7
122 A 13209 X	4 7

PART NUMBERS

Part Number	Section Page	Part Number	Section Page	Part Number	Section Page
122 A 13219 X	4 9	123 C 11129 X	5 11	123 C 30049 X	5 16
122 A 13229 X	4 9	123 C 11139 X	5 11	123 C 32049 X	5 18
122 A 13239 X	4 9	123 C 11149 X	5 11	123 C 32049 X	9 5
122 A 13249 X	4 11	123 C 12019 X	5 13	123 C 32059 X	5 18
122 A 13259 X	4 11	123 C 12119 X	5 13	123 C 32059 X	9 5
122 A 13279 X	4 11	123 C 13019 X	5 14	123 C 32069 X	5 18
122 A 13289 X	4 11	123 C 13039 X	5 14	123 C 32069 X	9 5
122 A 13299 X	4 13	123 C 13119 X	5 14	123 C 33039 X	5 19
122 A 13309 X	4 13	123 C 13139 X	5 14	123 C 33039 X	9 4
122 A 13329 X	4 13	123 C 14029 X	5 12	123 C 33039 X	9 5
122 A 13339 X	4 13	123 C 14049 X	5 12	123 C 33049 X	5 19
122 A 13349 X	4 19	123 C 14129 X	5 12	123 C 33049 X	9 4
122 A 13359 X	4 19	123 C 14149 X	5 12	123 C 33049 X	9 5
122 B 11159 X	4 33	123 C 20059 X	5 16	123 C 34029 X	5 20
122 B 11739 X	4 25	123 C 20059 X	9 5	123 C 35029 X	5 21
122 B 11749 X	4 25	123 C 20069 X	5 16	124 A 10019 X	5 15
122 B 11759 X	4 25	123 C 20069 X	9 5	124 A 10039 X	5 10
122 C 13019 X	7 9	123 C 20079 X	5 16	124 A 10049 X	5 10
122 C 13069 X	7 9	123 C 20079 X	9 5	124 A 10069 X	5 10
122 E 11609 X	4 29	123 C 20089 X	5 16	124 A 11019 X	5 11
122 E 11619 X	4 29	123 C 20089 X	9 5	124 A 11029 X	5 11
122 E 11629 X	4 29	123 C 21049 X	5 17	124 A 11039 X	5 11
122 E 11639 X	4 29	123 C 21049 X	9 4	124 A 11049 X	5 11
122 E 11649 X	4 29	123 C 21049 X	9 5	124 A 12019 X	5 13
122 E 11659 X	4 29	123 C 21059 X	5 17	124 A 13019 X	5 14
122 E 11709 X	4 31	123 C 21059 X	9 5	124 A 13039 X	5 14
122 E 11719 X	4 31	123 C 21059 X	9 4	124 A 14029 X	5 12
123 A 10019 X	5 15	123 C 21069 X	5 17	124 A 14049 X	5 12
123 A 10039 X	5 10	123 C 21069 X	9 4	124 C 10019 X	5 15
123 A 10049 X	5 10	123 C 21069 X	9 5	124 C 10039 X	5 10
123 A 10069 X	5 10	123 C 22069 X	5 18	124 C 10049 X	5 10
123 A 11019 X	5 11	123 C 22069 X	9 5	124 C 10069 X	5 10
123 A 11029 X	5 11	123 C 22079 X	5 18	124 C 11019 X	5 11
123 A 11039 X	5 11	123 C 22079 X	9 5	124 C 11029 X	5 11
123 A 11049 X	5 11	123 C 22089 X	5 18	124 C 11039 X	5 11
123 A 12019 X	5 13	123 C 22089 X	9 5	124 C 11049 X	5 11
123 A 13019 X	5 14	123 C 22099 X	5 18	124 C 12019 X	5 13
123 A 13039 X	5 14	123 C 22099 X	9 5	124 C 13019 X	5 14
123 A 14029 X	5 12	123 C 22109 X	5 18	124 C 13039 X	5 14
123 A 14049 X	5 12	123 C 22109 X	9 5	124 C 14029 X	5 12
123 C 10019 X	5 15	123 C 23049 X	5 19	124 C 14049 X	5 12
123 C 10029 X	5 15	123 C 23049 X	9 4	124 C 20059 X	5 16
123 C 10039 X	5 10	123 C 23049 X	9 5	124 C 20059 X	9 5
123 C 10049 X	5 10	123 C 23059 X	5 19	124 C 20069 X	5 16
123 C 10069 X	5 10	123 C 23059 X	9 4	124 C 20069 X	9 5
123 C 10139 X	5 10	123 C 23059 X	9 5	124 C 20079 X	5 16
123 C 10149 X	5 10	123 C 23069 X	5 19	124 C 20079 X	9 5
123 C 10169 X	5 10	123 C 23069 X	9 4	124 C 20089 X	5 16
123 C 11019 X	5 11	123 C 23069 X	9 5	124 C 20089 X	9 5
123 C 11029 X	5 11	123 C 24039 X	5 20	124 C 21049 X	5 17
123 C 11039 X	5 11	123 C 24049 X	5 20	124 C 21049 X	9 4
123 C 11049 X	5 11	123 C 25029 X	5 21	124 C 21049 X	9 5
123 C 11119 X	5 11	123 C 30039 X	5 16	124 C 21059 X	5 17

Part Number Section | Page

124 C 21059 X	9 4
124 C 21059 X	9 5
124 C 21069 X	5 17
124 C 21069 X	9 4
124 C 21069 X	9 5
124 C 22069 X	5 18
124 C 22069 X	9 5
124 C 22079 X	5 18
124 C 22079 X	9 5
124 C 22089 X	5 18
124 C 22089 X	9 5
124 C 22099 X	5 18
124 C 22099 X	9 5
124 C 22109 X	5 18
124 C 22109 X	9 5
124 C 23049 X	5 19
124 C 23049 X	9 4
124 C 23049 X	9 5
124 C 23059 X	5 19
124 C 23059 X	9 4
124 C 23059 X	9 5
124 C 23069 X	5 19
124 C 23069 X	9 4
124 C 23069 X	9 5
124 C 24039 X	5 20
124 C 24049 X	5 20
124 C 25029 X	5 21
124 C 30039 X	5 16
124 C 30049 X	5 16
124 C 32049 X	5 18
124 C 32049 X	9 5
124 C 32059 X	5 18
124 C 32059 X	9 5
124 C 32069 X	5 18
124 C 32069 X	9 5
124 C 33039 X	5 19
124 C 33039 X	9 4
124 C 33039 X	9 5
124 C 33049 X	5 19
124 C 33049 X	9 4
124 C 33049 X	9 5
124 C 34029 X	5 20
124 C 35029 X	5 21
12-500590	4 20
12-500600	4 20
13-000011	2 8
13-000021	2 8
13-000051	2 9
13-000061	2 9
13-000131	2 10
13-000141	2 10
13-000151	2 10
13-000161	2 10

Part Number Section | Page

13-000171	2 10
13-000181	2 10
13-000190	2 10
13-000201	2 10
13-000210	2 12
13-000220	2 12
13-000231	2 12
13-000241	2 12
13-000291	2 11
13-000301	2 11
13-000311	2 11
13-000321	2 11
13-000370	2 12
13-000380	2 12
13-000391	2 12
13-000401	2 12
132 C 11019 X	2 11
132 C 11029 X	2 11
132 C 11039 X	2 11
132 C 15019 X	2 11
140 X 10059 X	8 3
140 X 10069 X	8 3
140 X 10079 X	8 3
140 X 10099 X	8 3
140 X 10109 X	8 3
140 X 10119 X	8 3
140 X 10129 X	8 3
140 X 10139 X	8 3
140 X 10159 X	8 3
141 A 10019 X	8 4
141 A 10029 X	8 4
141 A 10039 X	8 4
141 A 10049 X	8 4
141 A 10059 X	8 4
141 A 10069 X	8 4
141 A 10079 X	8 4
141 A 10089 X	8 4
141 A 10099 X	8 4
141 A 10109 X	8 4
141 A 10119 X	8 4
141 A 10129 X	8 4
141 A 10139 X	8 4
141 A 10149 X	8 4
141 A 10159 X	8 4
141 A 10169 X	8 4
141 A 10179 X	8 4
141 A 10189 X	8 4
141 A 10199 X	8 4
141 A 10209 X	8 4
141 A 10219 X	8 4
141 A 10229 X	8 4
141 A 10239 X	8 4
141 A 10239 X	8 4

Part Number Section | Page

141 A 10249 X	8 4
141 A 10259 X	8 4
141 A 10269 X	8 4
141 A 10279 X	8 4
141 A 10289 X	8 4
141 A 10299 X	8 4
141 A 10309 X	8 4
141 A 10319 X	8 4
141 A 10329 X	8 4
141 A 10349 X	8 4
141 A 10359 X	8 4
141 A 10369 X	8 4
141 A 10379 X	8 4
141 A 10389 X	8 4
141 A 10399 X	8 4
141 A 10409 X	8 4
141 A 10419 X	8 4
141 A 10429 X	8 4
141 A 10439 X	8 4
141 A 10449 X	8 4
141 A 10459 X	8 4
141 A 10469 X	8 4
141 A 10479 X	8 4
141 A 10489 X	8 4
141 A 10499 X	8 4
141 A 10509 X	8 4
141 A 10519 X	8 4
141 A 10529 X	8 4
141 A 10539 X	8 4
141 A 10549 X	8 4
141 A 10559 X	8 5
141 A 10569 X	8 5
141 A 10579 X	8 5
141 A 10589 X	8 5
141 A 10599 X	8 5
141 A 10609 X	8 5
141 A 10619 X	8 5
141 A 10629 X	8 5
141 A 10639 X	8 5
141 A 10649 X	8 5
141 A 10659 X	8 5
141 A 10669 X	8 5
141 A 10679 X	8 5
141 A 10689 X	8 5
141 A 10699 X	8 5
141 A 10709 X	8 5
141 A 10719 X	8 5
141 A 10729 X	8 5
141 A 10739 X	8 5
141 A 10749 X	8 5
141 A 10759 X	8 5
141 A 10769 X	8 5
141 A 10779 X	8 5

PART NUMBERS

Part Number	Section Page	Part Number	Section Page	Part Number	Section Page
141 A 10789 X	8 5	141 A 11969 X	8 7	145 X 10279 X	8 15
141 A 10799 X	8 5	141 A 11979 X	8 7	145 X 10289 X	8 15
141 A 10809 X	8 5	141 A 11999 X	8 7	145 X 10309 X	8 15
141 A 10819 X	8 5	141 A 12009 X	8 7	160 X 10019 X	8 12
141 A 10829 X	8 5	141 A 12019 X	8 7	160 X 10019 X	8 12
141 A 10839 X	8 5	141 A 12029 X	8 7	160 X 10029 X	8 12
141 A 10849 X	8 5	141 A 12039 X	8 7	160 X 10029 X	8 12
141 A 10859 X	8 5	141 A 12049 X	8 7	160 X 10039 X	8 12
141 A 10869 X	8 5	141 A 12059 X	8 7	160 X 10039 X	8 12
141 A 10879 X	8 5	141 A 12069 X	8 7	160 X 10049 X	8 12
141 A 10889 X	8 5	141 A 12269 X	8 6	160 X 10049 X	8 12
141 A 10899 X	8 5	141 A 12279 X	8 5	160 X 10059 X	8 13
141 A 10909 X	8 5	141 A 12289 X	8 4	160 X 10059 X	8 13
141 A 10919 X	8 5	141 A 12319 X	8 4	16-000010	2 13
141 A 10929 X	8 5	141 A 12329 X	8 4	161 A 13499 X	8 12
141 A 10939 X	8 5	141 A 12339 X	8 4	161 A 13509 X	8 12
141 A 10949 X	8 5	141 A 12349 X	8 4	161 A 13519 X	8 12
141 A 10959 X	8 5	141 A 12359 X	8 5	161 A 13529 X	8 12
141 A 10969 X	8 5	141 A 12369 X	8 5	161 A 13539 X	8 13
141 A 10979 X	8 5	141 A 12379 X	8 5	162 A 11899 X	8 12
141 A 10989 X	8 5	141 A 12389 X	8 5	162 A 11909 X	8 12
141 A 10999 X	8 5	141 A 12399 X	8 7	162 A 11919 X	8 12
141 A 11009 X	8 5	141 A 12429 X	8 4	162 A 11929 X	8 12
141 A 11019 X	8 5	141 A 12439 X	8 5	162 A 11939 X	8 13
141 A 11029 X	8 5	141 A 12449 X	8 6	162 C 18709 X	2 11
141 A 11039 X	8 5	141 A 12459 X	8 7	200 A 10019 X	8 21
141 A 11049 X	8 5	142 A 10199 X	8 3	200 A 10029 X	8 21
141 A 11059 X	8 5	142 A 10209 X	8 3	200 A 10039 X	8 21
141 A 11069 X	8 5	142 A 10219 X	8 3	200 A 10049 X	8 21
141 A 11079 X	8 5	142 A 10229 X	8 3	200 A 10059 X	8 21
141 A 11089 X	8 5	142 A 10239 X	8 3	200 A 10069 X	8 21
141 A 11639 X	8 6	142 A 10249 X	8 3	200 A 10079 X	8 21
141 A 11649 X	8 6	142 A 10259 X	8 3	200 A 10089 X	8 21
141 A 11659 X	8 6	142 A 10269 X	8 3	200 A 10099 X	8 21
141 A 11669 X	8 6	142 A 10279 X	8 3	200 A 10109 X	8 21
141 A 11679 X	8 6	142 A 10289 X	8 3	201 A 10059 X	8 16
141 A 11689 X	8 6	142 A 10299 X	8 3	201 A 10109 X	8 16
141 A 11699 X	8 6	142 A 10419 X	8 3	201 A 10209 X	8 16
141 A 11709 X	8 6	145 X 10029 X	8 15	201 A 10309 X	8 16
141 A 11729 X	8 6	145 X 10039 X	8 15	201 A 10419 X	8 16
141 A 11739 X	8 6	145 X 10059 X	8 15	201 A 10469 x	8 16
141 A 11749 X	8 6	145 X 10069 X	8 15	201 A 10569 X	8 16
141 A 11759 X	8 6	145 X 10089 X	8 15	201 A 10669 X	8 16
141 A 11769 X	8 6	145 X 10109 X	8 15	201 A 10779 X	8 19
141 A 11779 X	8 6	145 X 10129 X	8 15	201 A 10829 X	8 19
141 A 11789 X	8 6	145 X 10139 X	8 15	201 A 10929 X	8 19
141 A 11799 X	8 6	145 X 10159 X	8 15	201 A 11029 X	8 19
141 A 11909 X	8 7	145 X 10179 X	8 15	201 A 11139 X	8 19
141 A 11919 X	8 7	145 X 10189 X	8 15	201 A 11189 X	8 19
141 A 11929 X	8 7	145 X 10209 X	8 15	201 A 11289 X	8 19
141 A 11939 X	8 7	145 X 10219 X	8 15	201 A 11389 X	8 19
141 A 11949 X	8 7	145 X 10239 X	8 15	201 A 12059 X	8 16
141 A 11959 X	8 7	145 X 10259 X	8 15	201 A 12109 X	8 16

Part Number Section | Page

201 A 12209 X	8 16
201 A 12309 X	8 16
201 A 12419 X	8 16
201 A 12469 X	8 16
201 A 12569 X	8 16
201 A 12669 X	8 16
201 A 12779 X	8 17
201 A 12829 X	8 17
201 A 12929 X	8 17
201 A 13029 X	8 17
201 A 13139 X	8 17
201 A 13189 X	8 17
201 A 13289 X	8 17
201 A 13389 X	8 17
201 A 13499 X	8 17
201 A 13549 X	8 17
201 A 13649 X	8 17
201 A 13749 X	8 17
201 A 13859 X	8 17
201 A 13909 X	8 17
201 A 14009 X	8 17
201 A 14109 X	8 17
201 A 14219 X	8 17
201 A 14269 X	8 17
201 A 14369 X	8 17
201 A 14469 X	8 17
201 A 14579 X	8 17
201 A 14629 X	8 17
201 A 14729 X	8 17
201 A 14829 X	8 17
201 A 14939 X	8 17
201 A 14989 X	8 17
201 A 15089 X	8 17
201 A 15189 X	8 17
201 A 15299 X	8 17
201 A 15349 X	8 17
201 A 15449 X	8 17
201 A 15549 X	8 17
201 A 15659 X	8 17
201 A 15709 X	8 17
201 A 15809 X	8 17
201 A 15909 X	8 17
201 A 16019 X	8 17
201 A 16069 X	8 17
201 A 16169 X	8 17
201 A 16269 X	8 17
201 A 16379 X	8 19
201 A 16429 X	8 19
201 A 16529 X	8 19
201 A 16629 X	8 19
201 A 16739 X	8 19
201 A 16789 X	8 19
201 A 16889 X	8 19

Part Number Section | Page

201 A 16989 X	8 19
201 A 17099 X	8 19
201 A 17149 X	8 19
201 A 17249 X	8 19
201 A 17349 X	8 19
201 A 17459 X	8 19
201 A 17509 X	8 19
201 A 17609 X	8 19
201 A 17709 X	8 19
201 A 17819 X	8 19
201 A 17869 X	8 19
201 A 17969 X	8 19
201 A 18069 X	8 19
201 A 18179 X	8 19
201 A 18229 X	8 19
201 A 18329 X	8 19
201 A 18429 X	8 19
201 A 18539 X	8 20
201 A 18589 X	8 20
201 A 18689 X	8 20
201 A 18789 X	8 20
201 A 18899 X	8 20
201 A 18949 X	8 20
201 A 19049 X	8 20
201 A 19149 X	8 20
201 A 19259 X	8 20
201 A 19309 X	8 20
201 A 19409 X	8 20
201 A 19509 X	8 20
201 A 19619 X	8 20
201 A 19669 X	8 20
201 A 19769 X	8 20
201 A 19869 X	8 20
201 A 22159 X	8 16
201 A 22259 X	8 16
201 A 22299 X	8 16
201 A 22399 X	8 16
201 A 22439 X	8 16
201 A 22539 X	8 16
201 A 22579 X	8 16
201 A 22679 X	8 16
201 A 22719 X	8 17
201 A 22819 X	8 17
201 A 22859 X	8 17
201 A 22959 X	8 17
201 A 22999 X	8 17
201 A 23099 X	8 17
201 A 23139 X	8 17
201 A 23239 X	8 17
201 A 23279 X	8 17
201 A 23379 X	8 17
201 A 23419 X	8 17
201 A 23519 X	8 17

Part Number Section | Page

201 A 23559 X	8 17
201 A 23659 X	8 17
201 A 23699 X	8 17
201 A 23799 X	8 17
201 A 23839 X	8 17
201 A 23979 X	8 17
201 A 24079 X	8 17
201 A 24119 X	8 19
201 A 24219 X	8 19
201 A 24259 X	8 19
201 A 24359 X	8 19
201 A 24399 X	8 19
201 A 24499 X	8 19
201 A 24539 X	8 19
201 A 24639 X	8 19
201 A 24679 X	8 19
201 A 24779 X	8 19
201 A 24819 X	8 19
201 A 24919 X	8 19
201 A 24959 X	8 19
201 A 25059 X	8 19
201 A 25099 X	8 19
201 A 25199 X	8 19
201 A 25239 X	8 20
201 A 25339 X	8 20
201 A 25379 X	8 20
201 A 25479 X	8 20
201 A 25519 X	8 20
201 A 25619 X	8 20
201 A 25659 X	8 20
201 A 25759 X	8 20
201 F 10059 X	8 16
201 F 10109 X	8 16
201 F 10209 X	8 16
201 F 10309 X	8 16
201 F 10419 X	8 16
201 F 10469 X	8 16
201 F 10569 X	8 16
201 F 10669 X	8 16
201 F 10779 X	8 19
201 F 10829 X	8 19
201 F 10929 X	8 19
201 F 11029 X	8 19
201 F 11139 X	8 19
201 F 11189 X	8 19
201 F 11289 X	8 19
201 F 11389 X	8 19
201 F 12059 X	8 16
201 F 12109 X	8 16
201 F 12209 X	8 16
201 F 12309 X	8 16
201 F 12419 X	8 16
201 F 12469 X	8 16

PART NUMBERS

Part Number	Section Page	Part Number	Section Page	Part Number	Section Page
201 F 12569 X	8 16	201 F 17349 X	8 19	201 F 23839 X	8 17
201 F 12669 X	8 16	201 F 17459 X	8 19	201 F 23979 X	8 17
201 F 12779 X	8 17	201 F 17509 X	8 19	201 F 24079 X	8 17
201 F 12829 X	8 17	201 F 17609 X	8 19	201 F 24119 X	8 19
201 F 12929 X	8 17	201 F 17709 X	8 19	201 F 24219 X	8 19
201 F 13029 X	8 17	201 F 17819 X	8 19	201 F 24259 X	8 19
201 F 13139 X	8 17	201 F 17869 X	8 19	201 F 24359 X	8 19
201 F 13189 X	8 17	201 F 17969 X	8 19	201 F 24399 X	8 19
201 F 13289 X	8 17	201 F 18069 X	8 19	201 F 24499 X	8 19
201 F 13389 X	8 17	201 F 18179 X	8 19	201 F 24539 X	8 19
201 F 13499 X	8 17	201 F 18229 X	8 19	201 F 24639 X	8 19
201 F 13549 X	8 17	201 F 18329 X	8 19	201 F 24679 X	8 19
201 F 13649 X	8 17	201 F 18429 X	8 19	201 F 24779 X	8 19
201 F 13749 X	8 17	201 F 18539 X	8 20	201 F 24819 X	8 19
201 F 13859 X	8 17	201 F 18589 X	8 20	201 F 24919 X	8 19
201 F 13909 X	8 17	201 F 18689 X	8 20	201 F 24959 X	8 19
201 F 14009 X	8 17	201 F 18789 X	8 20	201 F 25059 X	8 19
201 F 14109 X	8 17	201 F 18899 X	8 20	201 F 25099 X	8 19
201 F 14219 X	8 17	201 F 18949 X	8 20	201 F 25199 X	8 19
201 F 14269 X	8 17	201 F 19049 X	8 20	201 F 25239 X	8 20
201 F 14369 X	8 17	201 F 19149 X	8 20	201 F 25339 X	8 20
201 F 14469 X	8 17	201 F 19259 X	8 20	201 F 25379 X	8 20
201 F 14579 X	8 17	201 F 19309 X	8 20	201 F 25479 X	8 20
201 F 14629 X	8 17	201 F 19409 X	8 20	201 F 25519 X	8 20
201 F 14729 X	8 17	201 F 19509 X	8 20	201 F 25619 X	8 20
201 F 14829 X	8 17	201 F 19619 X	8 20	201 F 25659 X	8 20
201 F 14939 X	8 17	201 F 19669 X	8 20	201 F 25759 X	8 20
201 F 14989 X	8 17	201 F 19769 X	8 20	202 A 10019 X	8 22
201 F 15089 X	8 17	201 F 19869 X	8 20	202 A 10029 X	8 22
201 F 15189 X	8 17	201 F 22159 X	8 16	202 A 10039 X	8 22
201 F 15299 X	8 17	201 F 22259 X	8 16	202 A 10049 X	8 22
201 F 15349 X	8 17	201 F 22299 X	8 16	202 A 10059 X	8 22
201 F 15449 X	8 17	201 F 22399 X	8 16	202 A 10069 X	8 22
201 F 15549 X	8 17	201 F 22439 X	8 16	202 A 10079 X	8 22
201 F 15659 X	8 17	201 F 22539 X	8 16	202 A 10089 X	8 22
201 F 15709 X	8 17	201 F 22579 X	8 16	202 A 10099 X	8 22
201 F 15809 X	8 17	201 F 22679 X	8 16	202 A 10109 X	8 23
201 F 15909 X	8 17	201 F 22719 X	8 17	202 A 10119 X	8 23
201 F 16019 X	8 17	201 F 22819 X	8 17	202 A 10129 X	8 23
201 F 16069 X	8 17	201 F 22859 X	8 17	202 A 10139 X	8 23
201 F 16169 X	8 17	201 F 22959 X	8 17	202 A 10149 X	8 23
201 F 16269 X	8 17	201 F 22999 X	8 17	202 A 10159 X	8 23
201 F 16379 X	8 19	201 F 23099 X	8 17	202 A 10169 X	8 23
201 F 16429 X	8 19	201 F 23139 X	8 17	202 A 10179 X	8 23
201 F 16529 X	8 19	201 F 23239 X	8 17	202 A 10189 X	8 23
201 F 16629 X	8 19	201 F 23279 X	8 17	202 F 10019 X	8 22
201 F 16739 X	8 19	201 F 23379 X	8 17	202 F 10029 X	8 22
201 F 16789 X	8 19	201 F 23419 X	8 17	202 F 10039 X	8 22
201 F 16889 X	8 19	201 F 23519 X	8 17	202 F 10049 X	8 22
201 F 16989 X	8 19	201 F 23559 X	8 17	202 F 10059 X	8 22
201 F 17099 X	8 19	201 F 23659 X	8 17	202 F 10069 X	8 22
201 F 17149 X	8 19	201 F 23699 X	8 17	202 F 10079 X	8 22
201 F 17249 X	8 19	201 F 23799 X	8 17	202 F 10089 X	8 22

Part Number Section | Page

202 F 10099 X	8 22
202 F 10109 X	8 23
202 F 10119 X	8 23
202 F 10129 X	8 23
202 F 10139 X	8 23
202 F 10149 X	8 23
202 F 10159 X	8 23
202 F 10169 X	8 23
202 F 10179 X	8 23
202 F 10189 X	8 23
220 A 10019 X	8 8
220 A 10029 X	8 8
220 A 10039 X	8 8
220 A 10049 X	8 8
220 A 10059 X	8 8
220 A 10069 X	8 8
220 A 10079 X	8 8
220 A 10089 X	8 8
220 A 10099 X	8 8
220 A 10109 X	8 8
220 A 10119 X	8 8
220 A 10129 X	8 8
220 A 10139 X	8 8
220 A 10149 X	8 8
220 A 10159 X	8 8
220 F 10019 X	8 8
220 F 10029 X	8 8
220 F 10039 X	8 8
220 F 10049 X	8 8
220 F 10059 X	8 8
220 F 10069 X	8 8
220 F 10079 X	8 8
220 F 10089 X	8 8
220 F 10099 X	8 8
220 F 10109 X	8 8
220 F 10119 X	8 8
220 F 10129 X	8 8
220 F 10139 X	8 8
220 F 10149 X	8 8
220 F 10159 X	8 8
220 F 10169 X	8 9
220 F 10179 X	8 9
220 F 10189 X	8 9
220 F 10199 X	8 9
220 F 10209 X	8 9
220 F 10219 X	8 9
220 F 10229 X	8 9
220 F 10239 X	8 9
220 F 10249 X	8 9
220 F 10259 X	8 9
301 A 10089 X	8 10
301 A 10099 X	8 10
301 A 10109 X	8 10

Part Number Section | Page

301 A 10119 X	8 10
302 A 10089 X	8 10
302 A 10099 X	8 10
302 A 10109 X	8 10
302 A 10119 X	8 10
360 X 10029 X	9 6
360 X 10059 X	9 6
360 X 10219 X	9 6
360 X 10329 X	9 4
360 X 10409 X	9 4
360 X 10519 X	9 5
360 X 11019 X	9 5
360 X 11029 X	9 5
360 X 11039 X	9 5
360 X 11049 X	9 4
360 X 11049 X	9 4
360 X 11049 X	9 4
360 X 11059 X	9 4
360 X 11059 X	9 4
360 X 11059 X	9 4
360 X 11059 X	9 4
360 X 11059 X	9 4
360 X 12369 X	9 7
360 X 20029 X	9 4
36-000070	9 3
36-000080	9 3
36-000130	9 7
360X15119X	9 2
360X15129X	9 2
360X15139X	9 2
360X15149X	9 2
360X15159X	9 2
360X21079X	9 3
360X21089X	9 3
45-000101	3 34
45-000103	3 34
45-000121	3 42
45-000123	3 42
45-000131	3 43
45-000133	3 43
45-000141	3 32
45-000143	3 32
45-000151	3 33
45-000153	3 33
46-000011	1 8
46-000013	1 8
46-000021	1 8
46-000023	1 8
46-000031	1 8
46-000033	1 8
47-100001	2 5
47-100011	2 6
49-000012	6 6

Part Number Section | Page

49-000013	6 6
49-000022	6 4
49-000023	6 4
49-000032	6 5
49-000033	6 5
49-000042	6 7
49-000043	6 7
49-000092	6 6
49-000093	6 6
49-000102	6 4
49-000103	6 4
49-000112	6 5
49-000113	6 5
49-000122	6 7
49-000123	6 7
49-000132	6 6
49-000133	6 6
49-000142	6 4
49-000143	6 4
49-000152	6 5
49-000153	6 5
49-000162	6 7
49-000163	6 7
49-100002	6 10
49-100003	6 10
49-100012	6 9
49-100013	6 9
49-100022	6 8
49-100023	6 8
49-100030	6 11
49-100040	6 11
49-100050	6 11
49-100060	6 11
49-100080	6 11
ATC22 W08 FGE1S5 X	1 5
ATC22 W08 FGE3S5 X	1 5
ATC22 W08 FGRAS5 X	1 7
ATC22 W08 MAE1S5 X	1 4
ATC22 W08 MAE3S5 X	1 4
ATC22 W08 MARAS5 X	1 6
ATC22 W08 MARCS5 X	1 6
ATC22 W08FGRCS5 X	1 7
ATC30 W08 FGE1S5 X	1 5
ATC30 W08 FGE3S5 X	1 5
ATC30 W08 FGRAS5 X	1 7
ATC30 W08 MAE1S5 X	1 4
ATC30 W08 MAE3S5 X	1 4
ATC30 W08 MARAS5 X	1 6
ATC30 W08 MARCS5 X	1 6
ATC30 W08FGRCS5 X	1 7
ATC34 W08 FGE1S5 X	1 5
ATC34 W08 FGE3S5 X	1 5
ATC34 W08 FGRAS5 X	1 7

PART NUMBERS

Part Number Section | Page

ATC34 W08 MAE1S5 X	1 4
ATC34 W08 MAE3S5 X	1 4
ATC34 W08 MARAS5 X	1 6
ATC34 W08 MARCS5 X	1 6
ATC34 W08 FGRC55 X	1 7
CPD24 W09 MARASK9 X	3 38
CPD24 W09 MARCSK9 X	3 38
CPD24 W09 MGRASK9 X	3 40
CPD24 W09 MGRCSK9 X	3 40
CPD26 W11 MARASK9 X	3 39
CPD26 W11 MARCSK9 X	3 39
CPD26 W11 MGRASK9 X	3 41
CPD26 W11 MGRCSK9 X	3 41
CPH38 W23 FARARK9 X	3 13
CPH38 W23 FARASK9 X	3 12
CPH38 W23 FARCRK9 X	3 13
CPH38 W23 FARCSK9 X	3 12
CPH38 W23 FGE1SH9 X	3 29
CPH38 W23 FGE1SK9 X	3 27
CPH38 W23 FGE1SN9 X	3 28
CPH38 W23 FGE3SH9 X	3 29
CPH38 W23 FGE3SK9 X	3 27
CPH38 W23 FGE3SN9 X	3 28
CPH38 W23 FGRASH9 X	3 22
CPH38 W23 FGRASK9 X	3 20
CPH38 W23 FGRASN9 X	3 21
CPH38 W23 FGRC5H9 X	3 22
CPH38 W23 FGRC5K9 X	3 20
CPH38 W23 FGRC5N9 X	3 21
CPH38 W23 MARARK9 X	3 9
CPH38 W23 MARASK9 X	3 8
CPH38 W23 MARCRK9 X	3 9
CPH38 W23 MARCSK9 X	3 8
CPH38 W23 MGE1SK9 X	3 25
CPH38 W23 MGE3SK9 X	3 25
CPH38 W23 MGRASK9 X	3 18
CPH38 W23 MGRCSK9 X	3 18
CPH47 W23 FARARK9 X	3 15
CPH47 W23 FARARN9 X	3 17
CPH47 W23 FARASK9 X	3 14
CPH47 W23 FARASN9 X	3 16
CPH47 W23 FARCRK9 X	3 15
CPH47 W23 FARCRN9 X	3 17
CPH47 W23 FARCSK9 X	3 14
CPH47 W23 FARCSN9 X	3 16
CPH47 W23 FGE1SK9 X	3 30
CPH47 W23 FGE1SN9 X	3 31
CPH47 W23 FGE3SK9 X	3 30
CPH47 W23 FGE3SN9 X	3 31
CPH47 W23 FGRASK9 X	3 23
CPH47 W23 FGRASN9 X	3 24
CPH47 W23 FGRC5K9 X	3 23

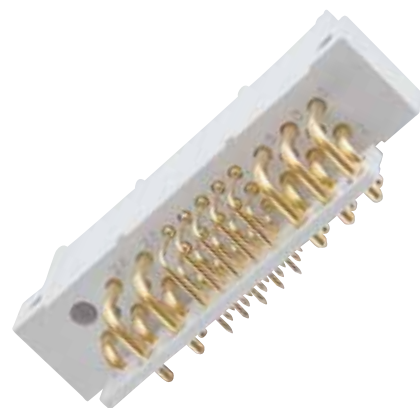
Part Number Section | Page

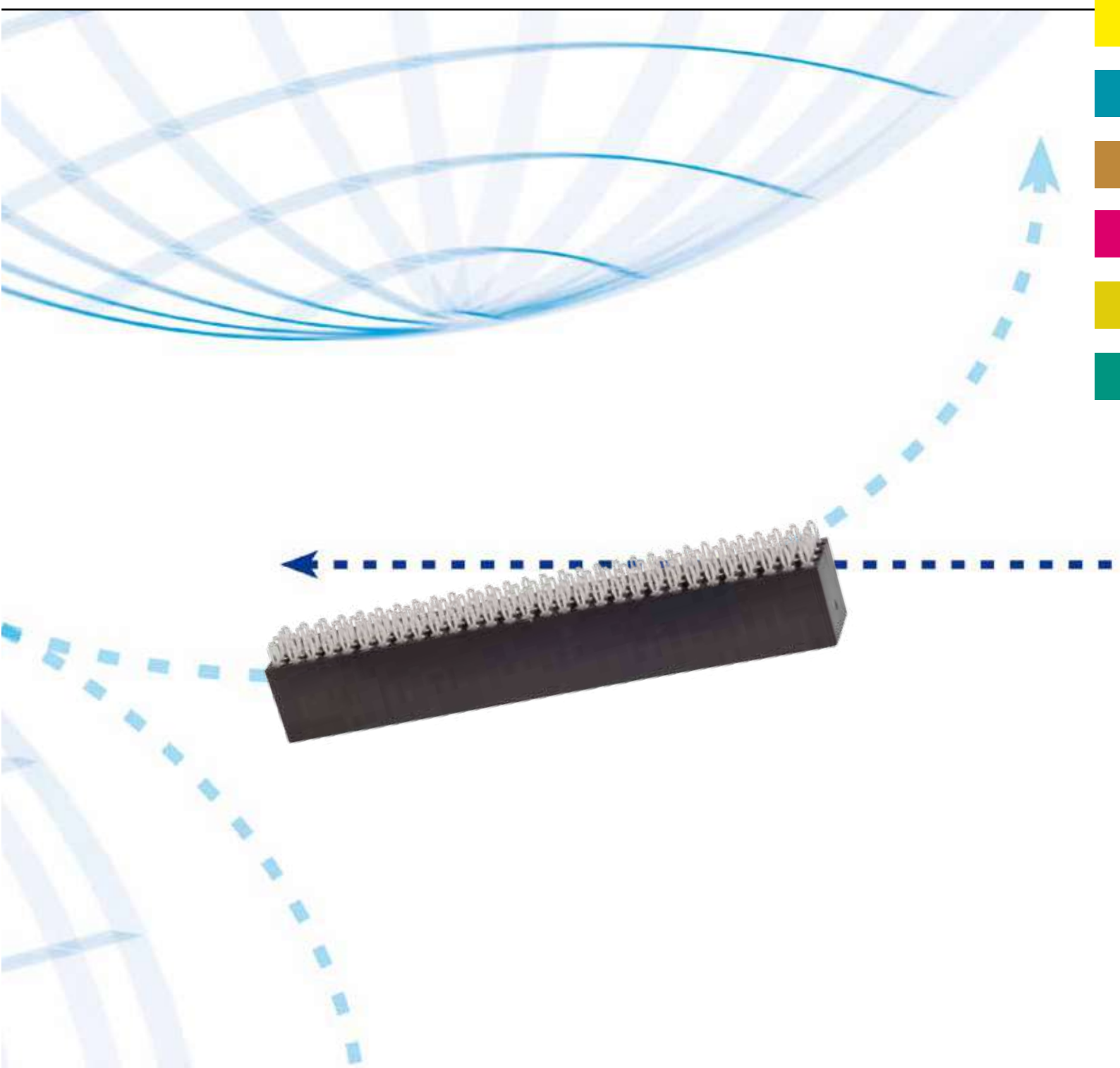
CPH47 W23 FGRC5N9 X	3 24
CPH47 W23 FXXXSH9 X	3 35
CPH47 W23 MARARK9 X	3 11
CPH47 W23 MARASK9 X	3 10
CPH47 W23 MARCRK9 X	3 11
CPH47 W23 MARCSK9 X	3 10
CPH47 W23 MGE1SK9 X	3 26
CPH47 W23 MGE3SK9 X	3 26
CPH47 W23 MGRASK9 X	3 19
CPH47 W23 MGRCSK9 X	3 19
CPZC 0822FA X	3 36
CPZC 0822FC X	3 36
CPZC 1612FA X	3 36
CPZC 1612FC X	3 36
CPZC 1614FA X	3 36
CPZC 1614FC X	3 36
CPZC 1616FA X	3 36
CPZC 1616FC X	3 36
CPZC 1620FA X	3 36
CPZC 1620FC X	3 36
CPZS 0170 X	3 37
CPZS 0270 X	3 37
CPZS 0370 X	3 37
CPZS 0470 X	3 37
CPZS 5170 X	3 37
CPZS 5270 X	3 37
CPZS 5370 X	3 37
CPZS 5470 X	3 37
DLS 1XPSAG04 X	8 11
DLS 1XSSAG04 X	8 11
DLS 2XPSAG04 X	8 11
DLS 2XSSAG04 X	8 11
DLS 3XPSAG04 X	8 11
DLS 3XSSAG04 X	8 11
DLS 4XPSAG04 X	8 11
DLS 4XSSAG04 X	8 11

Internet www.conec.com

Use the fastest connection to reach us. Behind this address you'll find a company with an international well-known name.

Our web side will support you to find all information about us and our product range.

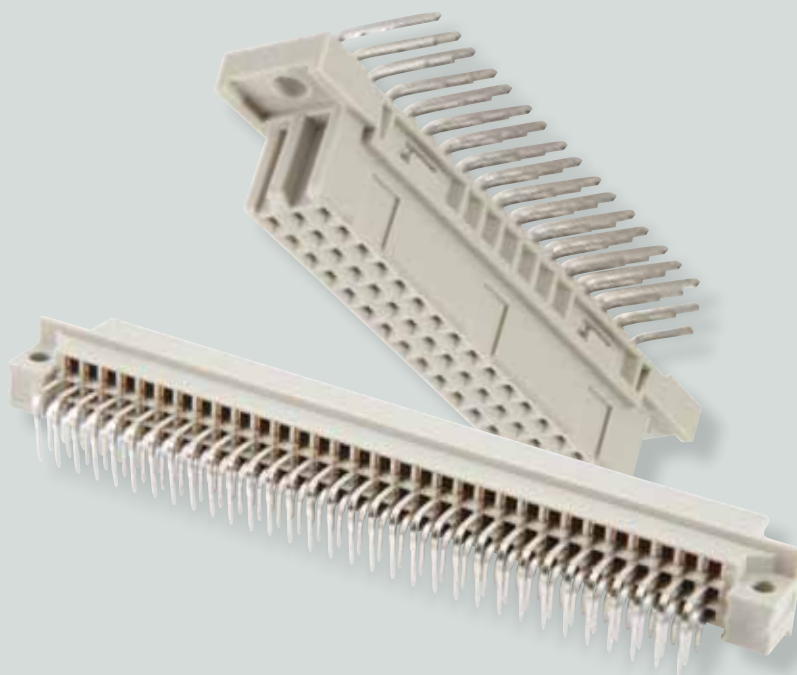




CONEC

Elektronische Bauelemente GmbH
 Ostenfeldmark 16
 59557 Lippstadt
 Germany

Tel. +49 2941 765-0
 Fax +49 2941 76565
 E-Mail info@conec.de
www.conec.com



CONEC Corporation

125 Sun Pac Blvd.
 Brampton Ontario
 Canada L6S 5Z6
 Tel. +1 905 790 2200
 Fax +1 905 790 2201
 E-Mail info@conec.com

CONEC

343 Technology Drive
 Garner, NC, USA 27529
 Tel. +1 919 460 8800
 Fax +1 919 460 0141
 E-Mail info@conec.com

CONEC (UK) Limited

Ringway House East
 Kelvin Road
 Newbury, Berkshire
 RG14 2DB
 Tel. +44 1635 36929
 Fax +44 1635 36925
 E-Mail info@conec.co.uk

CONEC Polska Sp. zo.o

ul.Szmaragdowa 10
 52-215 Wrocław
 Tel. +48 713744045
 Fax +48 713744049
 E-Mail info@conec.pl

CONEC s.r.o.

Loucka 119
 76325 Ujezd
 Czech Republic
 Tel. +42 0577 350132
 Fax +42 0577 350134
 E-Mail info@conec.cz

CONEC France SARL

202 Rue des Chevreuils
 30320 Poulx
 Tel. +33 9 75267217
 Fax +33 4 66570916
 E-Mail info@conec.fr

CONEC (Shanghai)

Int. Trading Co., Ltd.
 Rm. 715 Yongding Bldg.
 No. 3388 Gong He Xin Rd.
 200436 Shanghai
 Tel. +86 21 66300930
 Fax +86 21 66300911
 E-Mail info@conec.cn

CONEC GmbH Schatz Electronic

Schubertstr. 14a
 99096 Erfurt
 Tel. +49 361 340110
 Fax +49 361 3401111
 E-Mail info@schatz-electronic.de