

Number of contacts 20-96

Contact spacing (mm) 2.54

Working current 2 A max.
see current carrying capacity chart
Clearance ≥ 1.2 mm

Creepage
Working voltage

The working voltage also depends on the clearance and creepage dimensions of the PCB itself, and the associated wiring according to the safety regulations

of the equipment

≥ 1.2 mm

Test voltage  $U_{r.m.s.}$  1 kV Contact resistance  $\leq 15 \text{ m}\Omega$ Insulation resistance  $\geq 10^{12} \Omega$ 

Temperature range − 55 °C ... + 125 °C

The higher temperature limit includes the local ambient − 40 °C ... + 105 °C for press-in connectors

includes the local ambient and heating effects of the contacts under load

During reflow soldering max. + 240 °C for 15 s for SMC connectors

Electrical termination

Male and female connectors Solder pins for PCB connections

 $\emptyset$  1.0 ± 0.1 mm

according to IEC 60 326-3 Compliant press-in

terminations

Diameter of PCB plated

through holes see table on the right

PCB thickness  $\geq$  1.6 mm

Recommended PCB holes

for press-in process in acc. to EN 60352-5

Insertion and withdrawal force 20way ≤ 20 N

30way ≤ 30 N 32way ≤ 30 N 48way ≤ 45 N 64way ≤ 60 N 96way ≤ 90 N

Materials

Mouldings Poly Cyclohexylene

Terephthalate (PCT), UL 94-V0

Contacts Copper alloy

Contact surface

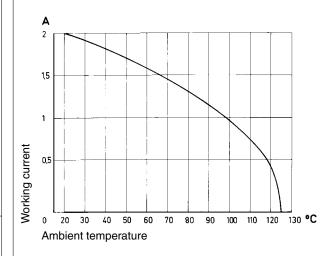
Contact zone Selectively plated according to

performance level

#### Current carrying capacity

The current carrying capacity is limited by maximum temperature of materials for inserts and contacts including terminals. The current capacity curve is valid for continuous, non interrupted current loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

Control and test procedures according to DIN IEC 60512



#### Recommended configuration of plated through holes

In addition to the hot-air-level (HAL) other PCB surfaces are getting more important. Due to their different properties, such as mechanical strength and coefficient of friction we recommend the following configuration of PCB through holes.

Tin-lead plated	Hole-Ø	1.15 <sup>±0.025</sup> mm
PCB	Cu	min. 25 µm
(HAL)	Sn	max. 15 μm
acc. EN 60352-5	Plated hole-Ø	0.94-1.09 mm
Chemical	Hole-Ø	1.15 <sup>±0.025</sup> mm
tin-plated PCB	Cu	min. 25 µm
•	Sn	min. 0.8 µm
	Plated hole-Ø	1.00-1.10 mm
Au / Ni plated PCB	Hole-Ø	1.15 <sup>±0.025</sup> mm
•	Cu	min. 25 μm
	Ni	3-7 µm
	Au	0.05-0.12 µm
	Plated hole-Ø	1.00-1.10 mm
Silver plated PCB	Hole-Ø	1.15 <sup>±0.025</sup> mm
,	Cu	min. 25 μm
	Ag	0.1-0.3 µm
	Plated hole-Ø	1.00-1.10 mm
OSP	Hole-Ø	1.15 <sup>±0.025</sup> mm
copper plated PCB	Cu	min. 25 µm
	Plated hole-Ø	1.00-1.10 mm

## DIN 41 612 · complementary type 3B



Number of contacts

20



Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to 2	to IEC 60 603-2.
Male connector with angled solder pins		1234			
with fixing flange	20	b c c c c c c c c c c c c c c c c c c c		09 24 120 6921	
with fixing flange, SMC	20	1234 a 1234	Performance level 3 on request	09 24 120 6919	Performance level 1 on request
without fixing flange	20	b a ····	onrequest	09 24 120 6571	on request
without fixing flange, SMC	20	1234 a		09 24 120 6579	
Dimensions	wit	th fixing fland			
	31, 6 $_{-0,2}$ 9x2, 54 (=22, 86)  2, 54  row  3, 85 $_{-0,05}^{+0,2}$ mounting hole center line  33, 02 $_{-0,05}^{+0,1}$ A-B  2: 1  A-B  2: 1  A-B  2: 54				
Board drillings Mounting side	2.54	all holes  10	91±0,1 1 — position	Cross section of solder terminat	ions 9 0,5 +0.05
	9x 2,54 (=2	22,86)	8 *0.1 row 2,54 3,02 ±0.05	Cross area (A) of c row a, b: A = 0.29	contacts - 0.33 mm <sup>2</sup>
					Dimensions in mm

# DIN 41612 · complementary type 3B



Number of contacts

20



remale connectors					
Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to 2	IEC 60 603-2.
Female connector with solder pins 2.9 mm with fixing flange	20	1234 b 1234		09 24 220 6824	
with fixing flange, SMC without fixing flange, SMC	20	1234 b 0 ****		09 24 220 6841 09 24 220 6414	
Female connector with solder pins 4.5 mm with fixing flange	20	1234 b • ****	Performance level 3 on request	09 24 220 6825	Performance level 1 on request
Female connector with press-in pins 4.5 mm with fixing flange	20	1234 b 1234		09 24 220 6850	
without fixing flange	20			09 24 220 6870	

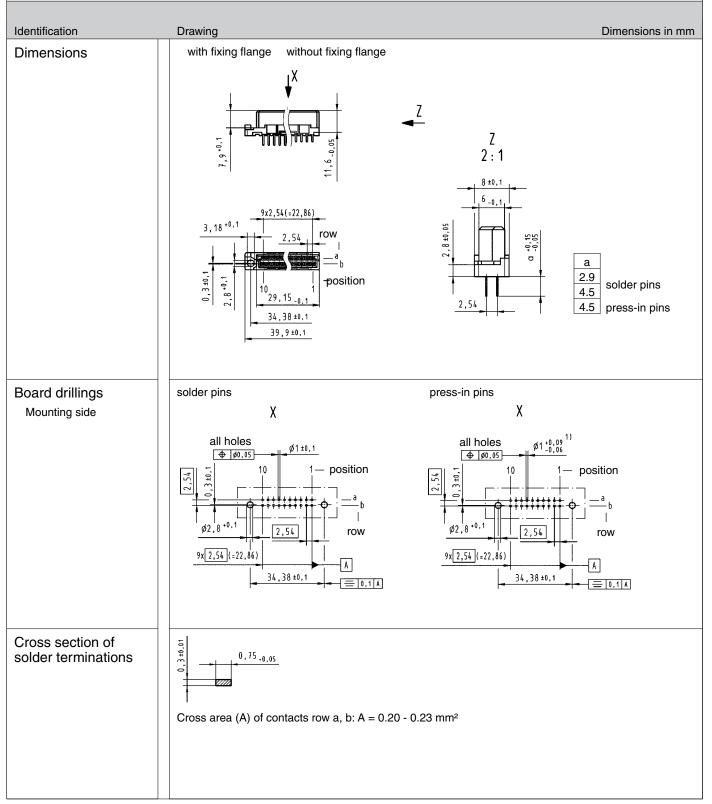
### DIN 41 612 · complementary type 3B



Number of contacts

20





<sup>1)</sup> for press-in connection acc. to IEC 60352-2

## DIN 41612 · complementary type 3C



Number of contacts

30, 20



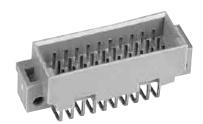
Identification	Number	Contact	Part No.	Performance levels according to 2	o IEC 60 603-2.
	of contacts	arrangement	<u> </u>		I
Male connector with angled solder pins		1234			
with fixing flange	30	g		09 25 130 6921	
	20	1234		09 25 120 6921	
with fixing flange, SMC	30	1234 b		09 25 130 6919	
without fixing flange	30	1234 b		09 25 130 6571	
without fixing flange, SMC	30	1234 b		09 25 130 6579	
			Performance level 3 on request		Performance level 1 on request
Male connector with straight solder pins		1234			
with fixing flange	30	g		09 25 130 6922	
	20	1234 b 0 0 0 0		09 25 120 6922	
without fixing flange	30	1234 b		09 25 130 6572	
without fixing flange, SMC	30	1234 b		09 25 130 6590	

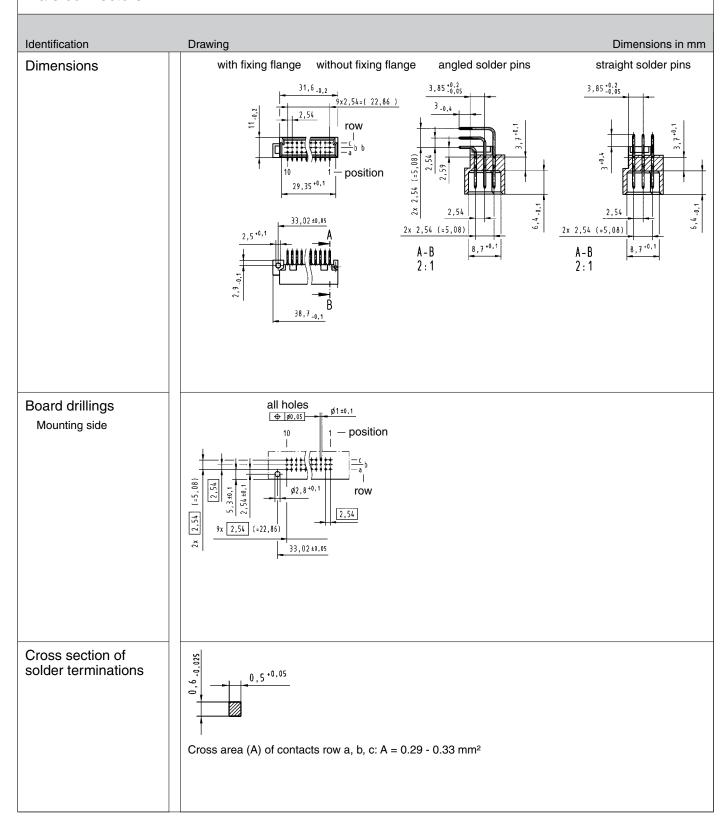
## DIN 41 612 · complementary type 3C



Number of contacts

30, 20





# DIN 41612 · complementary type 3C



Number of contacts

30, 20



remaie connectors					
Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to 2	1 IEC 60 603-2.
Female connector with solder pins 2.9 mm with fixing flange	30	1234 E 1234 E 1234		09 25 230 6824 09 25 220 6824	
with fixing flange, SMC	30	1234		09 25 230 6841	
without fixing flange, SMC	30	g 1234		09 25 230 6414	
Female connector with solder pins 4.5 mm with fixing flange	30	1234 BO 1234 BO 1234	Performance level 3 on request	09 25 230 6825 09 25 220 6825	Performance level 1 on request
Female connector with press-in pins 4.5 mm with fixing flange without fixing flange	30	1234 BO 1234 BO 1234		09 25 230 6850 09 25 230 6870	

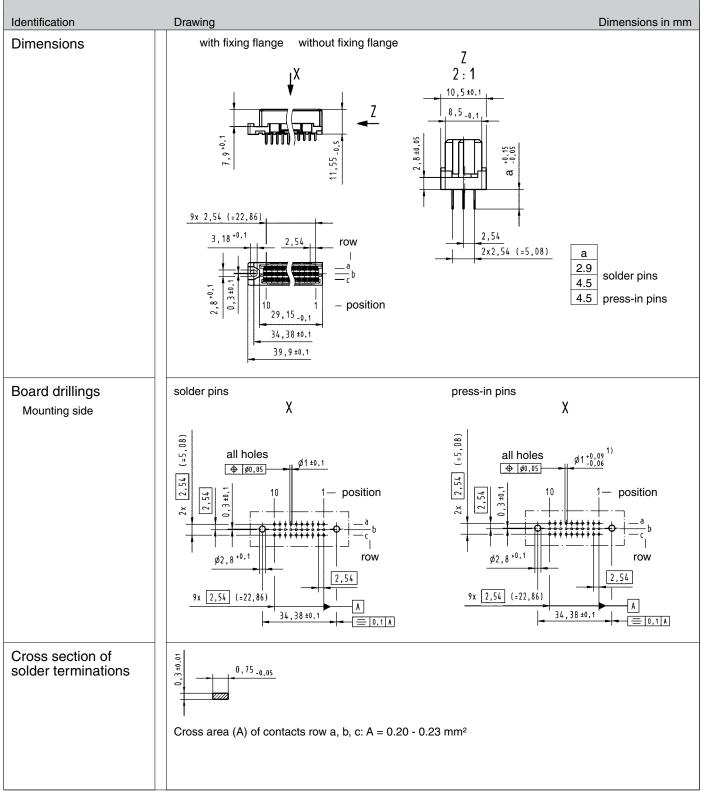
### DIN 41 612 · complementary type 3C



Number of contacts

30, 20





<sup>1)</sup> for press-in connection acc. to IEC 60352-2

## DIN 41612 · complementary type 2B (SMC)



Number of contacts

32





Male connector with angled solder pins without clip with clip  32  32  32  32  32  32  32  32  32  3					
Male connector with angled solder pins without elip with clip 32 8 2 2224 Performance level 3 09 22 132 6919 O9 22 132 6919  Male connector with straight solder pins  Dimensions  Dimensi	Identification		CT	<del>-</del>	
Board drillings  Mounting side    Straight	Male connector with angled solder pins without clip with clip  Male connector with straight	32 b 12 b	Performance level 3 on request	09 22 132 6919 09 22 332 6919	Performance level 1
Mounting side  Notice Third attoris  Solder terminations $g$ $g$ $g$ $g$ $g$ $g$ $g$ $g$	Dimensions	ø2,5 *0.1	15x 2,54 (=38,1) 2,54 row 16 44,6+0,1 1 position	2:1  3,85 <sup>0,2</sup> 3-0,4  2:54  6,2 <sup>0,1</sup> Angled	2:1  2:1  2:54  6,2.0,05  Straight
Dimensions in mm	· ·		16 1 — position  1 — position  1 — position  2 , 8 + 0, 1 1) row  15x 2, 54 (= 38, 1) A	solder terminati Cross area (A) of crow a, b: A = 0.29 -	ons 9 0,5 · 0.05

<sup>1)</sup> Recommendation for variants with clip: Drillings can be enlarged up to 3.1 mm ø to reduce standard mounting force

## DIN 41 612 · complementary type 2B (SMC)



Number of contacts

32





Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according to 2	o IEC 60 603-2.
Female connector with solder pins 2.9 mm	32	a 0 ****	Performance level 3	09 22 232 6841	Performance level 1
Female connector with solder pins 4.5 mm	32	1234 BO ****	on request	09 22 232 6829	on request
Dimensions	\$5.00 1.04 E, 0	0,1 15x 2	2,54 (=38,1) 2,54 (=38,1) 2,54 (=38,1) 1,4,4 <sub>-0,1</sub> 1 — position 50±0.1 — position	Z 2:1	a 2.9 4.5 Solder pins
Board drillings Mounting side	\$ 2,54 0,3 ±0,1	0,1 15x 2	X 01 ±0.1 1— position 1— row 2.54 (=38,1) 50 ±0.1	Cross section of solder terminations  Cross area (A) of co row a, b: A = 0.20 - 0	0,75 <sub>.0,05</sub>
					Dimensions in mm

# DIN 41 612 · Type B (SMC)



Number of contacts

64



Identification	Number of contacts	Contact arrangement	Part No.	Performance levels acco	rding to IEC 60 603-2.
Male connector with angled solder pins	64	1234 d	09 02 164 7919	09 02 164 6919	Performance level 1
Male connector with straight solder pins	64	1234 a ••••	Performance level 3 on request	09 02 164 6920	on request
Dimensions	94 max. 1a 1b  Angled Straight solder pins  2,54  31x2,54 = 78,74  85,2  87,5  88,9				
Board drillings Mounting side	2,8°01	2.54	1×2.54=78.74 	5,08	
Cross section of solder terminations	0,6-0,025	0,5 +0,05	- ea (A) of contacts row a, b:	A = 0.29 - 0.33 mm <sup>2</sup>	Dimensions in mm

# DIN 41 612 · Type B (SMC)



Number of contacts

64





			5	B. ( )	
Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according 2	g to IEC 60 603-2.
Female connector with solder pins 2.9 mm	64	a 1234	Performance level 3	09 02 264 6841	Performance level 1
Female connector with solder pins 4.5 mm	64	1234 b • • • • • •	on request	09 02 264 6829	on request
Dimensions	\$2.0°.6,7		31x 2,54 (=78,74)	2 : 1  2 : 1  8 ±0.1  6 -0.1  ow  pow  position  2,54	a 2.9 4.5 Solder pins
Panel cut out	M 2 5 / #2 8	•	85 -90:01 95,5	0,16	
Board drillings Mounting side	0,3 ±0.1	32 all ho		osition  -a b row  A -==0.1 A	
Cross section of solder terminations	0,3±0,01	0,75_	0,05		
	I	Cross are	ea (A) of contacts row a, b:	A = 0.20 - 0.23 mm <sup>2</sup>	Dimensions in mm

## DIN 41 612 · complementary type 2C (SMC)



Number of contacts

48, 32





			Part No.	Performance levels according	to IFC 60 603-2
Identification	Number of contacts	Contact arrangement	3	2	1
Male connector with angled solder pins	48	1234	09 23 148 7919	09 23 148 6919	09 23 148 2919
without clip	32	b ++++		09 23 132 6919	09 23 132 2919
with clip	48	1234		09 23 348 6919	09 23 348 2919
	32	b ++++		09 23 332 6919	09 23 332 2919
Male connector with straight solder pins	48	1234		09 23 148 6920	
	32	b ++++		09 23 132 6920	
Dimensions		2,9.0.1	15x 2,54 (=38,1) 2,54 row 16 44,6+0.1 position 48,26±0.05	3,85 <sup>-0,25</sup> 3 <sub>-0,4</sub> (80 <sup>-5</sup> 2 <sup>-1</sup>	3,85 -0,25 -B -8,7 *0.1 Straight solder pins
Board drillings Mounting side	2x 2,54 (=5,08)	-	all holes $0.1 \pm 0.1$ position $0.1 \pm 0.1$	Cross area (Arow a, b, c: A	0,5 +0.05

<sup>1)</sup> Recommendation for variants with clip: Drillings can be enlarged up to 3.1 mm ø to reduce standard mounting force

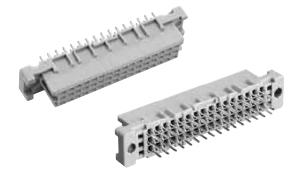
## DIN 41 612 · complementary type 2C (SMC)



Number of contacts

48, 32





Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according 2	to IEC 60 603-2.
Female connector with solder pins 2.9 mm	48	1234 80 1234 80 1234 80 1134	Performance level 3	09 23 248 6841 09 23 232 6841	Performance level 1
Female connector with solder pins 4.5 mm	48	1234 80 1234 1234 80 1134	on request	09 23 248 6829 09 23 232 6829	on request
Dimensions		÷ 6 ' ⊬	15x 2,54 (=38,1) 2,54 row 	Z 2:1 2:1 10,5±0,1 8,5-0,1 2,54 2x 2,5	a 2.9 4.5 Solder pins
Board drillings Mounting side	2x 2,54 (=5,08)	all hole	DS =   =   V   ±0,1	termination	0,75 -0.05

## DIN 41 612 · Type C (SMC)



Number of contacts

96, 64





Identification	Number of contacts a	Contact	Part No. Performance levels at 2	ccording to IEC 60 603-2.
Male connector with angled solder pins		rrangement	09 03 196 6919 09 03 696 6919°)	09 03 196 2919
without clip	64	b + + + + +	09 03 164 6919	09 03 164 2919
	62 + 2 <b>▲</b>	1234 b ++++		09 03 164 2918
with clip	96	1234 b	09 03 396 6919	09 03 396 2919
	94 + 24	1234 b	09 03 396 6918	
	64	1234 b ++++	09 03 364 6919	09 03 364 2919
Male connector with straight solder pins	96	1234 b	09 03 196 6920	
Dimensions	11 mx	132	31× 2.54 (=78.74)  2.54  85.2 c1 b1 a1  85.2 ship at a s	Angled solder pins solder pins
Board drillings Mounting side	2x [2,54](±5,08)	7 . 16 ±0.1	all holes 32 — position  ⊕ № 0.05) — 1±0.1  ⊕ 2.8 • 0.11   88,9±0.1	Cross section of solder terminations  Cross area (A) of contacts row a, b, c: A = 0.29 - 0.33 mm <sup>2</sup>

<sup>▲</sup> Male connectors with 2 leading contacts [(0.8 mm) pos. a1 and a32]. Lagging pins row b on request.

¹) Recommendation for variants with clip: Drillings can be enlarged up to 3.1 mm ø to reduce standard mounting force

c) Connectors with coding



Number of contacts

96, 64





Identification	Number	Contact	Part No.	Performance levels according	to IEC 60 603-2.
Female connector with solder pins 2.9 mm	96 64	1234 g c 1234 g c 1234	Performance level 3	09 03 296 6841 09 03 264 6841	Performance level 1
Female connector with solder pins 4.5 mm	96 64	1234 0 0 1234 0 1234	on request	09 03 296 6829 09 03 264 6829	on request
Dimensions	2,8.0,1	32	31x 2,54 (=78,74)  2,54  85 -0,2  90 ±0,1  94,9±0,1	row position - position	Z 2:1 10,5.0,1 8,5.0,1 2,54 2x 2,54 (=5,08) a 2.9 4.5 Solder pins
Board drillings Mounting side	2x [2,54] (+5,08)		all holes $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Cross section of solder terminations  - position  Cross area (A) or row a, b, c: A = 0	0,75_0.05

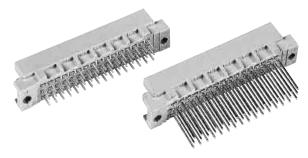
# DIN 41 612 · complementary type 2R (SMC)



Number of contacts

48, 32





Wate confidence							
Identification	Number Contact of contacts arrangemen	Part No.	Performance levels according 2	to IEC 60 603-2.			
Male connector with straight solder pins 2.5 mm	48   1234 b 0 1234 32   1234 c 0 ++++		09 28 148 6519 09 28 132 6519				
Male connector with straight solder pins 4.0 mm	48 1234 32 2 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Performance level 3 on request	09 28 148 6520 09 28 132 6520	Performance level 1 on request			
Male connector with straight solder pins 13 mm	48		09 28 148 6521				
Dimensions	44.6 48 8.7 8.7 44.6 48 2.5 4 Solder pins 13 Solder pins 13 Solder pins 15 50 mox.						
Board drillings Mounting side	1±0.0 1c 1b 1o 28.0 1c						
Cross section of solder terminations	0,6.0.05						
	Cross area (A) of contacts row a, b, c: A = 0.35 - 0.39 mm <sup>2</sup>						
				Dimensions in mm			