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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 ≥ 1.2 mm

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

Test voltage U<sub>r.m.s.</sub> 1 kV Contact resistance  $\leq 15 \,\mathrm{m}\Omega$ Insulation resistance  $\geq 10^{12} \Omega$ 

Temperature range - 55 °C ... + 125 °C – 40 °C ... + 105 °C The higher temperature limit includes the local ambient for press-in connectors

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  $\pm$  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 ≥ 1.6 mm

Recommended PCB holes

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

Insertion and withdrawal force 20way  $\leq 20$  N

30way ≤ 30 N  $32way \le 30 \text{ N}$ 48way  $\leq 45$  N 64way  $\leq 60$  N  $96\text{way} \leq 90 \text{ N}$ 

Materials

Mouldings Poly Cyclohexylene

Terephthalate (PCT), UL 94-V0 Contacts

Copper alloy

Contact surface

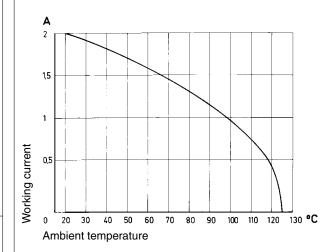
Contact zone Selectively plated according to

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 C	Contact angement	Part No.	Per	rformance levels according	to IEC 60 603-2.
Male connector with angled solder pins with fixing flange	20 ै	1234			09 24 120 6921	
with fixing flange, SMC	20   [ [	1234	Performance level 3 on request		09 24 120 6919	Performance level 1 on request
without fixing flange	20   b[	****	Sirroquost		09 24 120 6571	omroquoot
without fixing flange, SMC	20   b a	1234			09 24 120 6579	
Board drillings Mounting side	<u>\$2,5</u> *(	9x2 9x2 10 10 2 33 0,1 10 10 10 10 10 10 10 10 10 10 10 10 10	31,6 <sub>-0,2</sub> ,54(=22,86) 2,54  row  -a  position  3,02±0.05  A  B  38,7 <sub>-0,1</sub> 1 — position	A - 2 :	Cross section solder termina  Cross area (A) of row a, b: A = 0.29	tions 0,5.0.05
						Dimensions in mm

# DIN 41612 · complementary type 3B



Number of contacts

20



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 with fixing flange, SMC	20	1234 b 1234 a 0 1234 b 0 1134		09 24 220 6824 09 24 220 6841	
without fixing flange, SMC	20	1234 b 0		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 without fixing flange	20	1234 a 0 1234 a 0 1234		09 24 220 6850 09 24 220 6870	

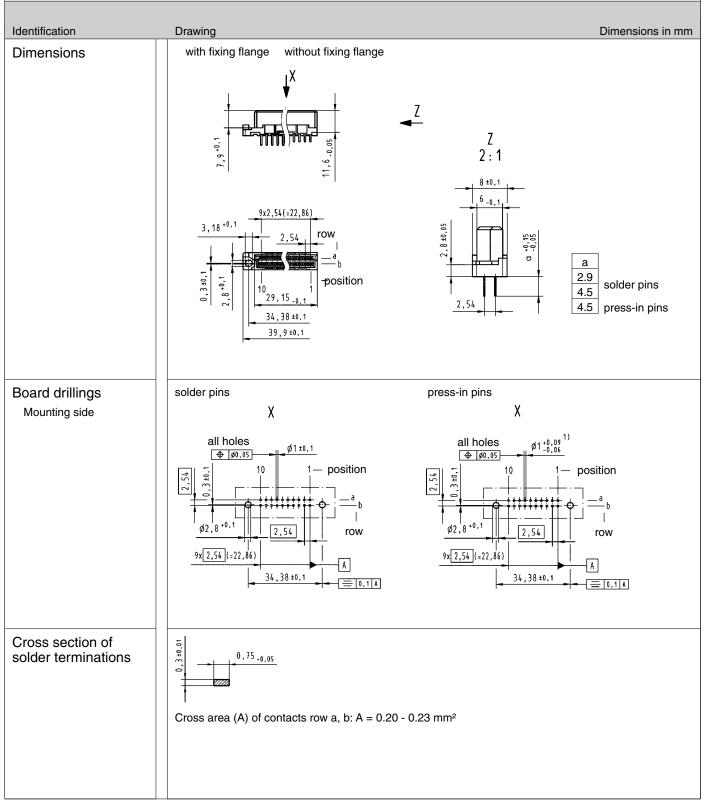
### DIN 41 612 · complementary type 3B



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	E		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	b		09 25 130 6922	
	20	1234 b		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	

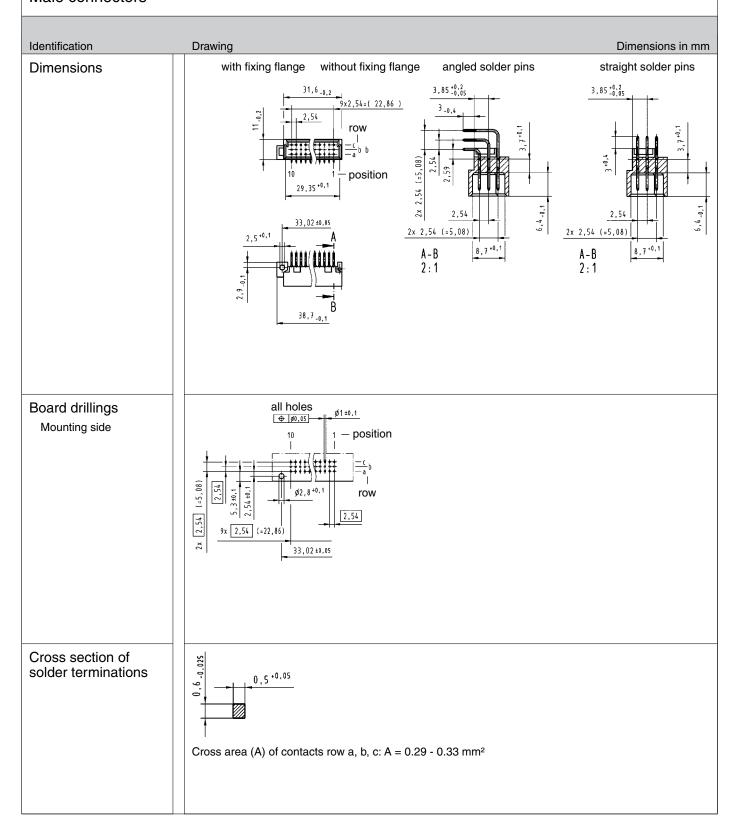
## DIN 41 612 · complementary type 3C



Number of contacts

30, 20





# DIN 41612 · complementary type 3C



Number of contacts

30, 20



Identification	Number	Contact	Part No.	Performance levels according to 2	IEC 60 603-2.
Female connector	of contacts	arrangement	3		I
with solder pins 2.9 mm		1234			
with fixing flange	30	g 0		09 25 230 6824	
		1234			
	20	g b €		09 25 220 6824	
with fixing flange, SMC	30	1234		09 25 230 6841	
		1234			
without fixing flange, SMC	30	g O		09 25 230 6414	
Female connector with solder pins 4.5 mm			Performance level 3 on request		Performance level 1 on request
with fixing flange	30	1234 b 0		09 25 230 6825	
3 3		1234			
	20	g O ++++		09 25 220 6825	
Female connector with press-in pins 4.5 mm		1234			
with fixing flange	30	b C		09 25 230 6850	
without fixing flange	30	1234		09 25 230 6870	

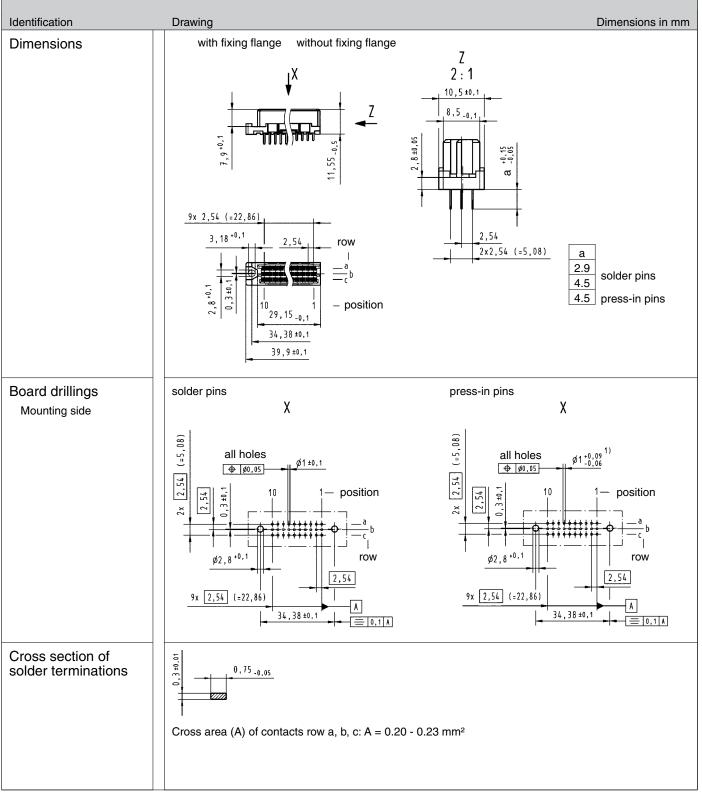
### DIN 41 612 · complementary type 3C



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





	Number	Contact	Part No.	Performance levels according	g to IEC 60 603-2.
Identification	of contacts a	rrangement	3	2	1
Male connector with angled solder pins without clip with clip  Male connector with straight solder pins	32	1234 b 1234 b 1234 b 1234	Performance level 3 on request	09 22 132 6919 09 22 332 6919 09 22 132 6920	Performance level 1 on request
Dimensions		15x	46,9 <sub>-0,2</sub> 2,54 (=38,1) 2,54 row	A-B 2:1 3,85 <sup>+0,25</sup> 3-0.4	A-B 2:1
	<u>\$2,5</u>	5 +0,1	44,6 +0,1 1 position  48,26 ±0,05  A  B  54 -0,1	2,54 6,2 <sup>+0,1</sup> Angled solder pins	2,54 6,2*0,1 Straight solder pins
Board drillings Mounting side	5,3±0,1		$ \frac{ a }{ a } = \frac{(6)^{1 \pm 0, 1}}{ a } - position $ $ \frac{ a }{ a } = \frac{(6)^{1 \pm 0, 1}}{ a } - position $ $ \frac{ a }{ a } = \frac{(6)^{1 \pm 0, 1}}{ a } - position $ $ \frac{ a }{ a } = \frac{(6)^{1 \pm 0, 1}}{ a } + \frac{(6)^{1 \pm 0, 1}}{ a } - position $ $ \frac{ a }{ a } = \frac{(6)^{1 \pm 0, 1}}{ a } + \frac{(6)^{1 \pm 0, 1}}{ a $	Cross area (A) of row a, b: A = 0.29	ations 0,5.0.05
					Dimensions in mm

<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





Performance level 3   12.36	Identification	Number of contacts	Contact arrangement	Part No.	Performance levels according t	o IEC 60 603-2.
Female connector with solder pins 4.5 mm  Dimensions $ \begin{array}{cccccccccccccccccccccccccccccccccc$	with solder pins		1234	Performance level 3	09 22 232 6841	Performance level 1
Board drillings  Mounting side $ \begin{array}{cccccccccccccccccccccccccccccccccc$	with solder pins	32	1234 b 0 ****		09 22 232 6829	
Mounting side	Dimensions	<u> </u>	15x 2	2,54 (=38,1) 2,54 (=38,1) 2,54 - row - a - position 50 ±0,1	2:1	2.9 Solder pine
Dimensions in mm		2,	16 10 10 10 10 10 10 10 10 10 10 10 10 10	1— position 1— position 1— position 2,54 (=38,1) row	of solder terminations  Cross area (A) of co	ntacts 0.23 mm²

# DIN 41 612 · Type B (SMC)



Number of contacts

64



ividie connectors						
Identification	Number of contacts a	Contact rrangement	Part No.	Pe	erformance levels according 2	to IEC 60 603-2.
Male connector with angled solder pins	64	1234 b	09 02 164 7919		09 02 164 6919	Performance level 1
Male connector with straight solder pins	64	1234 ba ••••	Performance level 3 on request		09 02 164 6920	on request
Dimensions	2.5 - CC - C	_2,54	94 max — 1a 1b  -31x2,54=78,74  -85,2 -87,5 -88,9		Angled Strasolder pins solder	aight der pins
Board drillings Mounting side	2,8°0.	254	1×2.54=78.74 	21	5,08	
Cross section of solder terminations	0,6-0,025	0,5 *0,05	- ea (A) of contacts row a, b	o: <b>A</b> :	= 0.29 - 0.33 mm²	Dimensions in mm

# DIN 41 612 · Type B (SMC)



Number of contacts

64





Female connector with solder pins 2.9 mm  Female connector with solder pins 4.5 mm  Dimensions	64 \$\begin{array}{c} \begin{array}{c} \begin{array}{c} \limit{12.34} \\ \b		09 02 264 6841  09 02 264 6829  7 2:1	Performance level 1 on request  a 2.9 4.5 Solder pins
with solder pins 4.5 mm	64	**************************************	Z 2:1	a 2.9
Dimensions	1.0. 9.		2:1 	2.9
	32		ow -a -b - position 2,54	
Panel cut out	M2,5,62,8	90:0:	0.10	
Board drillings Mounting side	32 all hol		osition  -a b row -A -==0.1A	
Cross section of solder terminations	0,75_0	,05 a (A) of contacts row a, b:		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		\$2,5.0.1	15x 2,54 (=38,1) 2,54 row 	3,85 <sup>-0,25</sup> 3 <sub>-0,4</sub> (80 <sup>-5</sup> -2) 2x 2,54 (=5,08)  A-B 2:1  Angled solder pins	3,85 ±0,25 1,0,05 2,54 5,08 8,7 *0.1 Straight solder pins
Board drillings Mounting side	2x 2,54 (=5,08)	[4	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

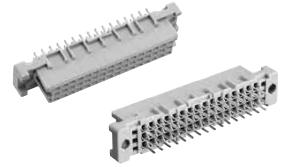
## DIN 41 612 · complementary type 2C (SMC)



Number of contacts

48, 32





Identification	Number Contact of contacts arrangement		Performance levels according 2	to IEC 60 603-2.	
Female connector with solder pins 2.9 mm	48 \$\\ \begin{align*}	4	09 23 248 6841 09 23 232 6841	Performance level 1	
Female connector with solder pins 4.5 mm	48 \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	4	09 23 248 6829 09 23 232 6829	on request	
Dimensions	Ø2,8+0.1	15x 2,54 (=38,1) 2,54 row 16 44,4 -0,1 50 ± 0,1 54,9 ± 0,1	2,54	a 2.9 4.5 Solder pins	
Board drillings Mounting side		holes $0.05$	termination	A) of contacts = 0.20 - 0.23 mm <sup>2</sup> Dimensions in mm	

## DIN 41 612 · Type C (SMC)



Number of contacts

96, 64





		Contact		ecording to IEC 60 603-2.
Identification	of contacts arra		2	1
Male connector with angled solder pins	96   [6]	1234	09 03 196 6919 09 03 696 6919 <sup>c)</sup>	09 03 196 2919
without clip	64   6	1234	09 03 164 6919	09 03 164 2919
	62 + 2▲   c b d [	* * * * * * * * * * * * * * * * * * * *		09 03 164 2918
with clip	96   [5]	1234	09 03 396 6919	09 03 396 2919
	94 + 2▲   b b c c b c c c c c c c c c c c c c c		09 03 396 6918	
	64 g	1234	09 03 364 6919	09 03 364 2919
Male connector with straight solder pins	96   [6]	1234	09 03 196 6920	
Dimensions	3.7 111 max	32	31× 2.54 (=78.74)  2.54  85.2 c1 b1 a1  85.2 g4 max.  88.9  92.5 min.  0.6  87.5	Angled solder pins solder pins
Board drillings Mounting side	2x 2,54 (=5,08) 2,54 (=5,08)		all holes  \$\int \text{1 \display 1 \display 1} \display 1 \din 1 \din 1 \din 1 \din 1 \display 1 \display 1 \display 1 \display 1 \display 1 \display 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.

¹¹) 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





lala satifica ation	Number	Contact	Part No.	Performance levels according	to IEC 60 603-2.
Female connector with solder pins 2.9 mm	96 64	1234 b 1234 c 1234 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 6 0 1234 1234 6 0 1234	on request	09 03 296 6829 09 03 264 6829	on request
Dimensions	2.8.6.1	0,3 ±0,1	31x 2,54 (=78,74)  2,54  85_0,2  90 ±0,1  94,9±0,1	row – 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    1±0,1	Cross section of solder terminations  - position  Cross area (A) or row a, b, c: A = 0	0,75 <sub>-0,05</sub>

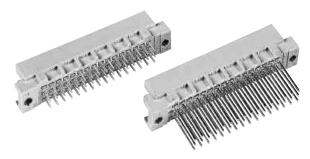
# DIN 41 612 · complementary type 2R (SMC)



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 8.7 44.6 48 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.7 8.						
Board drillings Mounting side	1±01 1c 1b 1o 28:01 252						
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			