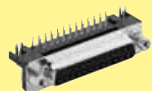
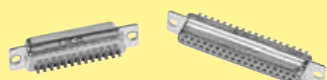


D-Sub – Standard subminiature D connectors

Page

Technical characteristics for solder connectors		02.02
Versions with straight solder pins		02.04
Mounting details for angled solder connectors		02.08
Original Versions		02.10
Mounting height 7.3 mm 9-37 way 8.7 mm 50 way		
Standard Versions		02.12
Mounting height 7.3 mm 9-37 way 8.7 mm 50 way		
Low Profile Versions		02.18
Mounting height 3.6 mm 9-37 way 6.2 mm 50 way		
U.S. Footprint Versions		02.22
Mounting height 6.3 mm 9-37 way		
Mounting details		02.24
Technical characteristics for cable connectors		02.26
Versions with wrap posts		02.27
Versions with crimp terminal/crimp contacts		02.28
Versions with insulation displacement termination		02.32
Versions with solder buckets		02.34

Number of contacts 9, 15, 25, 37, 50
UL recognized

Working current

see current carrying capacity chart

Turned contacts 7.5 A max.

Stamped contacts 6.5 A max.

Test voltage $U_{r.m.s.}$ 1 kV

Clearance and creepage ≥ 1.0 mm

Contact resistance ≤ 10 m Ω

Insulation resistance $\geq 10^{10}$ Ω

Temperature range -55 °C ... + 125 °C
The higher temperature limit includes the local ambient and heating effect of the contacts under load

Terminations

- Solder pins $\varnothing$ 0.6 mm for P.C.B. holes $\varnothing$ 0.8/1 mm
- Solder pins, angled 90° $\varnothing$ 0.6 mm for P.C.B. holes $\varnothing$ 1 mm

Materials

Mouldings and hoods Thermoplastic resin, glass-fibre filled (PBTP), UL 94-V0

Contacts Copper alloy

Contact surface

Contact zone selectively gold-plated according to performance level¹⁾

Metal shell Plated steel

Insertion and withdrawal force

Connector on P.C.B.

Solder, straight with clips

– insertion max. per connector: 60 N

– withdrawal min. per connector: 10 N

Mating force

9 way ≤ 30 N

15 way ≤ 50 N

25 way ≤ 83 N

37 way ≤ 123 N

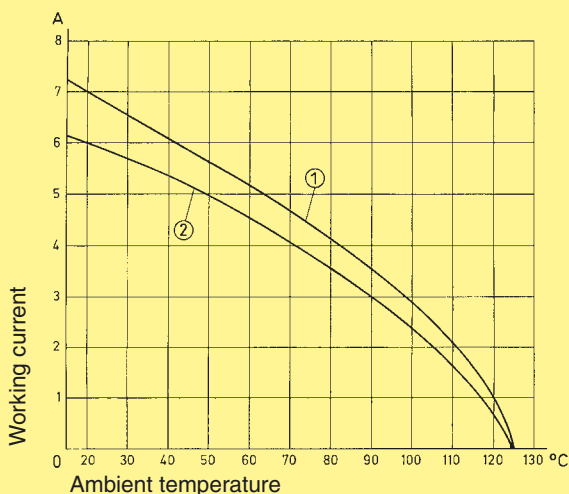
50 way ≤ 167 N

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, not 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 60 512.

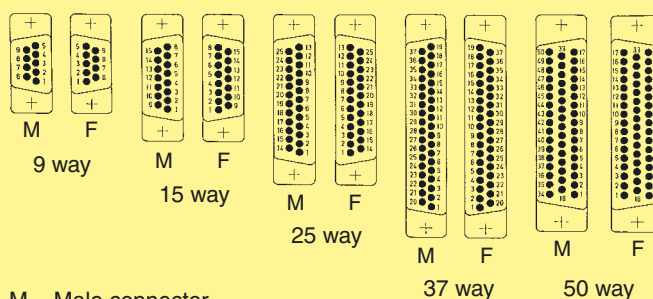


Example: 25 way connector

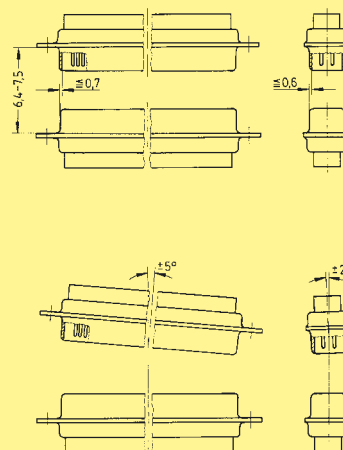
① Turned contacts

② Stamped contacts

Contact arrangement View from termination side



Mating conditions as per DIN 41 652

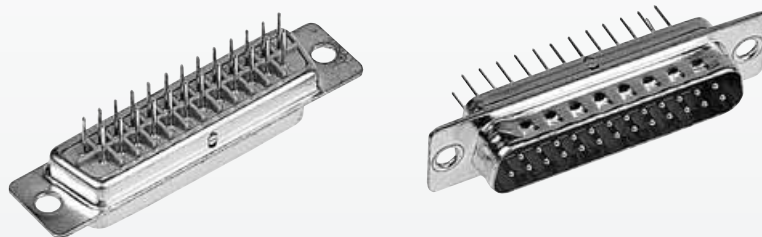


¹⁾ Performance level 3, 50 mating cycles, no gas test

Performance level 2 as per CECC 75 301-802, 250 mating cycles, 4 days 4 mixed gas test – IEC 60 512

Performance level 1 as per CECC 75 301-802, 500 mating cycles, 10 days 4 mixed gas test – IEC 60 512

9-50

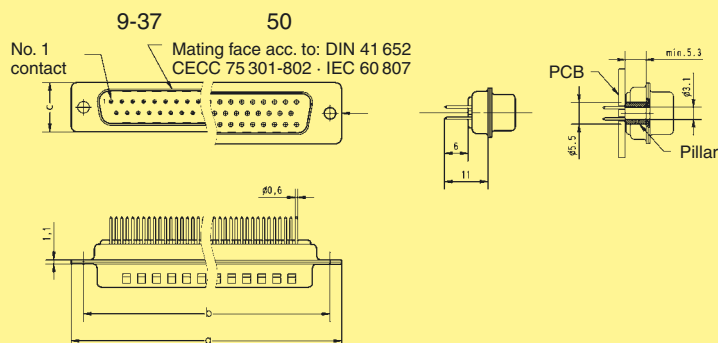


Turned solder pins, straight

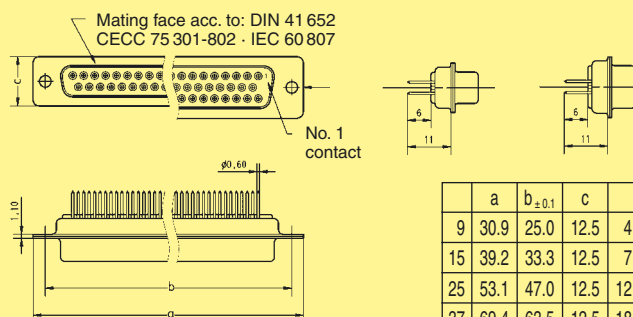
D-Sub - S

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples	9 15 25 37 50	09 67 009 5654 09 67 015 5654 09 67 025 5654 09 67 037 5654 09 67 050 5654 ¹⁾	09 67 009 5655 09 67 015 5655 09 67 025 5655 09 67 037 5655 09 67 050 5655 ¹⁾
Female connector metal shell	9 15 25 37 50	09 67 009 4754 09 67 015 4754 09 67 025 4754 09 67 037 4754 09 67 050 4754 ¹⁾	09 67 009 4755 09 67 015 4755 09 67 025 4755 09 67 037 4755 09 67 050 4755 ¹⁾

Male connector

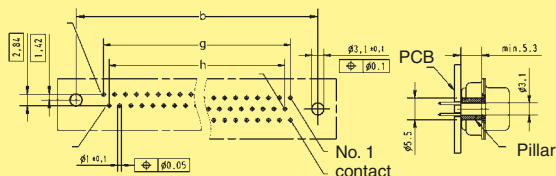


Female connector



	a	b ± 0.1	c	g		h	
9	30.9	25.0	12.5	4 x	$\frac{2.74}{10.96}$	3 x	$\frac{2.74}{8.22}$
15	39.2	33.3	12.5	7 x	$\frac{2.74}{19.18}$	6 x	$\frac{2.74}{16.44}$
25	53.1	47.0	12.5	12 x	$\frac{2.76}{33.12}$	11 x	$\frac{2.76}{30.36}$
37	69.4	63.5	12.5	18 x	$\frac{2.76}{49.68}$	17 x	$\frac{2.76}{46.92}$
50	67.0	61.1	15.4	16 x	$\frac{2.76}{44.16}$	15 x	$\frac{2.76}{41.40}$

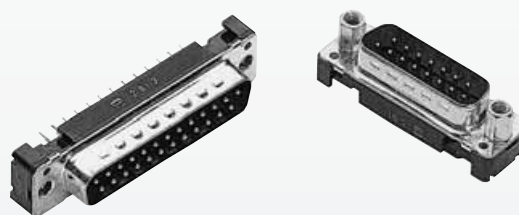
Board drillings



Dimensions in mm

Number of contacts

9–50

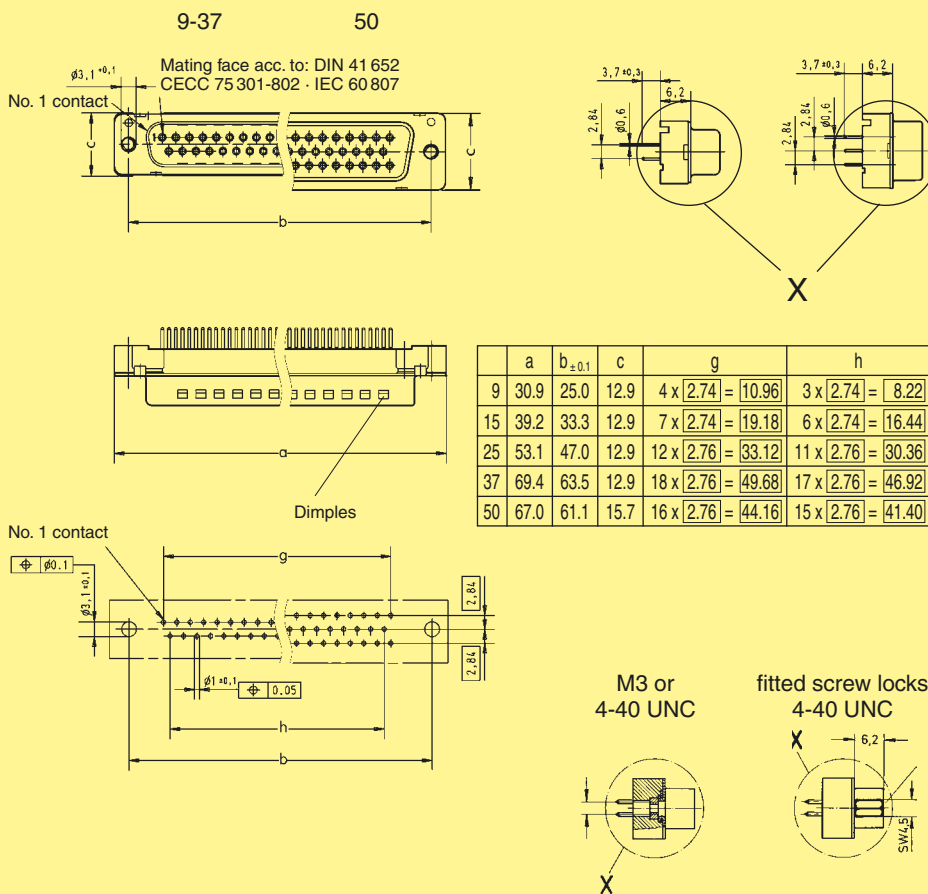


Turned solder pins, straight without grounding-pins

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples available on request	9 15 25 37 50	09 66 121 770 . 09 66 221 770 . 09 66 321 770 . 09 66 421 770 . 09 66 521 770 .	09 66 121 670 . 09 66 221 670 . 09 66 321 670 . 09 66 421 670 . 09 66 521 670 .
Please insert digit for flange thread or fitted female screw locks	M3 ▶ 1 4-40 UNC ▶ 2 fitted screw locks 4-40 UNC ▶ 3		

Male connector

Board drillings

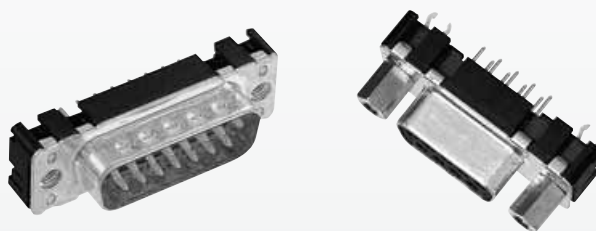


Dimensions in mm

Mating conditions see page 02.02

Number of contacts

9–37



Stamped solder pins, straight with/without grounding board locks

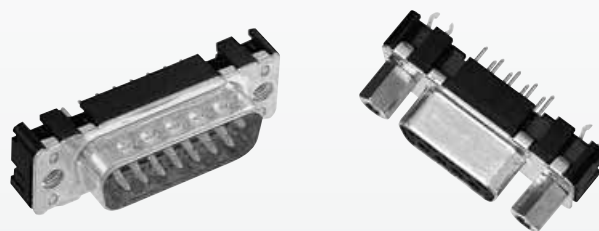
D-Sub - S

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples			
Without grounding board locks	9 15 25 37	09 65 121 770 . 09 65 221 770 . 09 65 321 770 . 09 65 421 770 .	09 65 121 670 . 09 65 221 670 . 09 65 321 670 . 09 65 421 670 .
With grounding board locks	9 15 25 37	09 65 161 771 . 09 65 261 771 . 09 65 361 771 . 09 65 461 771 .	09 65 161 671 . 09 65 261 671 . 09 65 361 671 . 09 65 461 671 .
Female connector metal shell			
Without grounding board locks	9 15 25 37 50	09 66 111 750 . 09 66 211 750 . 09 66 311 750 . 09 66 411 750 . 09 66 511 750 .	09 66 111 650 . 09 66 211 650 . 09 66 311 650 . 09 66 411 650 . 09 66 511 650 .
With grounding board locks	9 15 25 37	09 66 151 751 . 09 66 251 751 . 09 66 351 751 . 09 66 451 751 .	09 66 151 651 . 09 66 251 651 . 09 66 351 651 . 09 66 451 651 .
Please insert digit for flange thread or fitted female screw locks			
M3 ▶ 1 4-40 UNC ▶ 2 fitted screw locks 4-40 UNC ▶ 3 ¹⁾			

¹⁾ Fitted screw locks 4-40 UNC not normally kept in stock for performance level 3
 Connector dimensions see page 02.07. Mating conditions see page 02.02.

Number of contacts

9–37



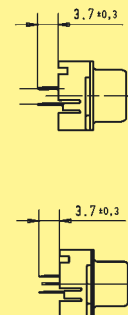
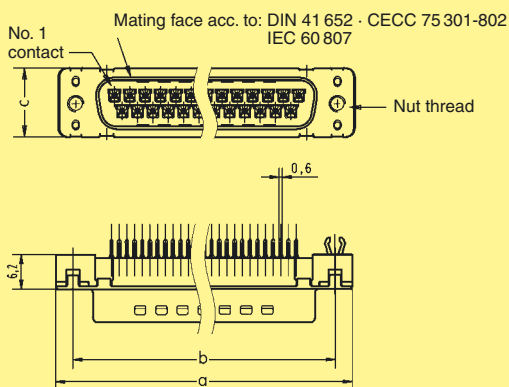
Stamped solder pins, straight with/without grounding board locks

Identification

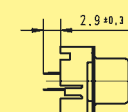
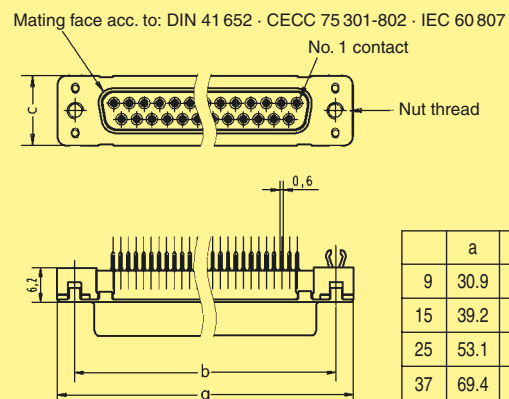
Drawing

Dimensions in mm

Male connector
9 – 37 contacts

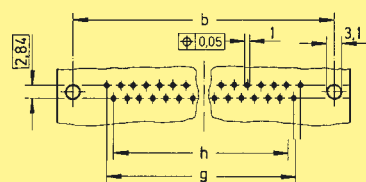


Female connector
9 – 37 contacts

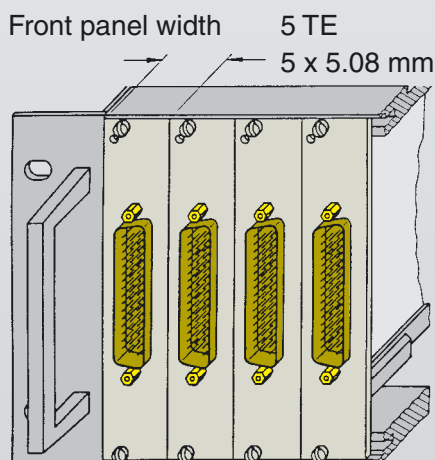
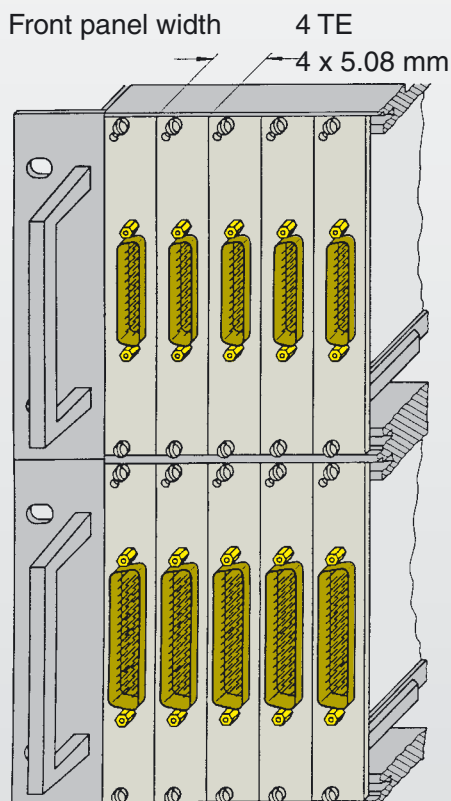
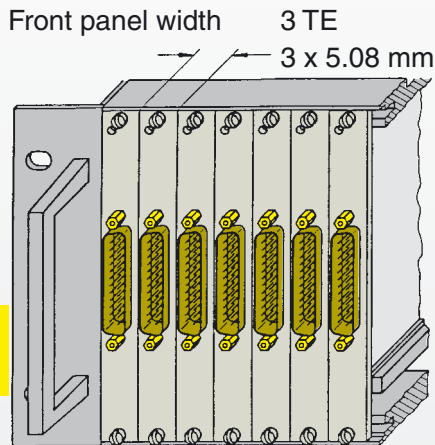


	a	b _{±0,1}	c	g	h
9	30.9	25.0	12.5	4 x 2.74 = 10.96	3 x 2.74 = 8.22
15	39.2	33.3	12.5	7 x 2.74 = 19.18	6 x 2.74 = 16.44
25	53.1	47.0	12.5	12 x 2.76 = 33.12	11 x 2.76 = 30.36
37	69.4	63.5	12.5	18 x 2.76 = 49.68	17 x 2.76 = 46.92

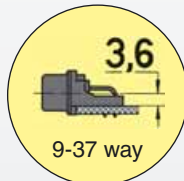
Board drillings
9 – 37 contacts



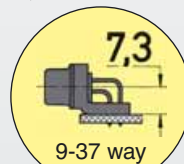
D-Sub - S



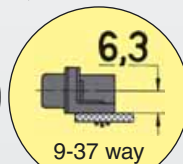
Low Profile Versions
pages 02.18 – 02.21



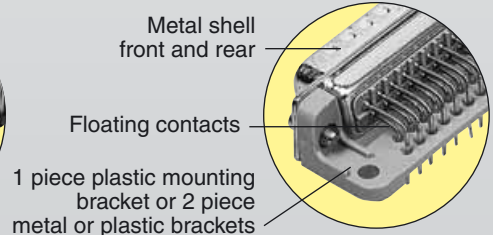
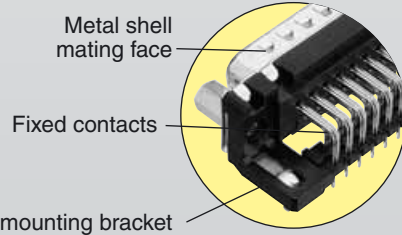
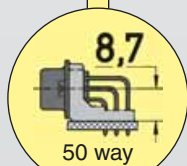
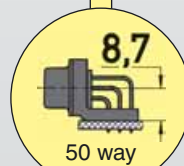
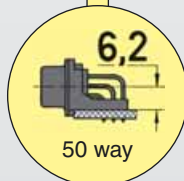
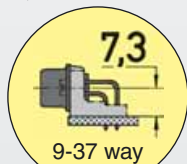
Standard Versions
pages 02.12 – 02.17



U.S. Footprint Versions
pages 02.22 – 02.23



Original Versions
pages 02.10 – 02.11



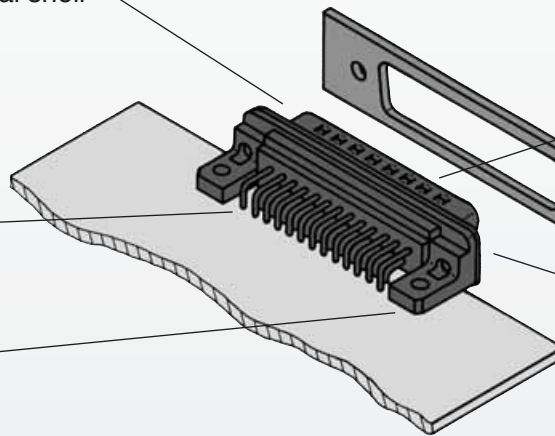
Advantages

All-round protective metal shell

- Polarisation
- Contact protection
- Plated shell
- Male connector with dimples

Plated terminations for increased solderability

Grounding contact riveted to metal shell



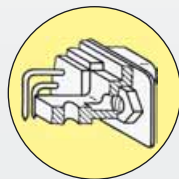
Contact surface finish to different performance levels

Panel

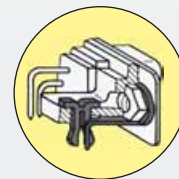
Different metal threads possible in flange area

- M3
- 4-40 UNC
- fitted female screw locks 4-40 UNC
- max. torque ≤ 0.8 Nm

Integrated plastic mounting bracket



Mounting bracket



Mounting bracket with snap-in-clips and grounding pin

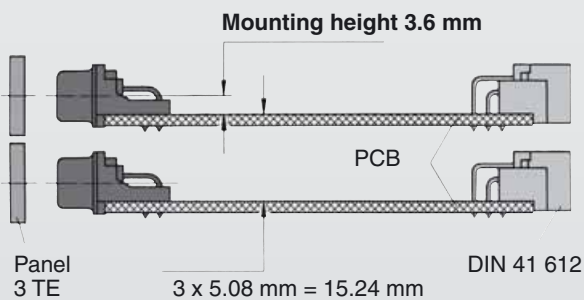
Mounting height

Low Profile Versions

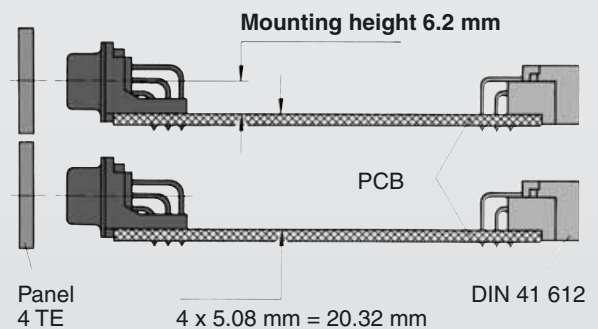
The reduced mounting height of these connectors allow them to be used on the same PCB as DIN 41 612 types

with no loss of packaging density when card frames to DIN 41 494 are used.

9-37 way connectors with 3.6 mm mounting height can be fitted to front panels of 3 TE (15.24 mm) width.



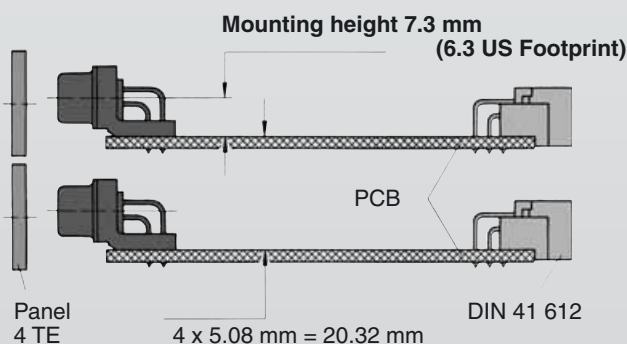
50 way connectors with 6.2 mm mounting height can be fitted to front panels of 4 TE (20.32 mm) width.



Standard Versions

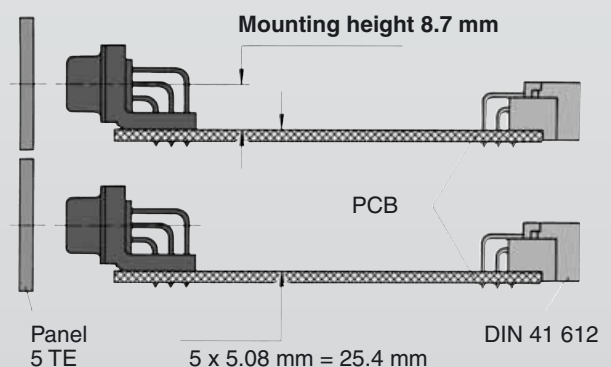
Original Versions

9-37 way connectors with 7.3 mm mounting height can be fitted to front panels of 4 TE (20.32 mm) width.

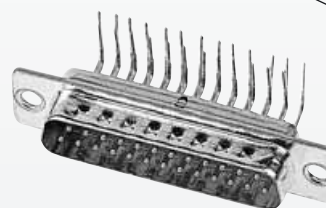
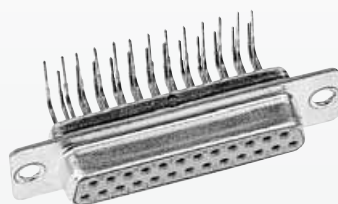


US Footprint

50 way connectors with 8.7 mm mounting height can be fitted to front panels of 5 TE (25.4 mm) width.



9-50



Original Versions

D-Sub - S

Identification	No. of contacts	Part No.																															
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2																														
Male connector metal shell with dimples	9 15 25 37 50	2.84 mm pitch 09 67 009 5663 09 67 015 5663 09 67 025 5663 09 67 037 5663 09 67 050 5663 2.54 mm pitch 09 67 009 5657 ²⁾ 09 67 015 5657 ²⁾ 09 67 025 5657 ²⁾ 09 67 037 5657 ²⁾ 09 67 050 5657 ²⁾	2.84 mm pitch 09 67 009 5664 09 67 015 5664 09 67 025 5664 09 67 037 5664 09 67 050 5664 ²⁾ 2.54 mm pitch 09 67 009 5658 ²⁾ 09 67 015 5658 ²⁾ 09 67 025 5658 ²⁾ 09 67 037 5658 ²⁾ 09 67 050 5658 ²⁾																														
Female connector metal shell	9 15 25 37 50	2.84 mm pitch 09 67 009 4763 09 67 015 4763 09 67 025 4763 09 67 037 4763 09 67 050 4763 2.54 mm pitch 09 67 009 4757 ²⁾ 09 67 015 4757 ²⁾ 09 67 025 4757 ²⁾ 09 67 037 4757 ²⁾ 09 67 050 4757 ²⁾	2.84 mm pitch 09 67 009 4764 09 67 015 4764 09 67 025 4764 09 67 037 4764 09 67 050 4764 ²⁾ 2.54 mm pitch 09 67 009 4758 ²⁾ 09 67 015 4758 ²⁾ 09 67 025 4758 ²⁾ 09 67 037 4758 ²⁾ 09 67 050 4758 ²⁾																														
Male connector	9-37 50	<table><tr><th></th><th>a</th><th>b ±0.1</th><th>c</th><th>f</th></tr><tr><td>9</td><td>30.9</td><td>25.0</td><td>12.5</td><td>2.74</td></tr><tr><td>15</td><td>39.2</td><td>33.3</td><td>12.5</td><td>2.74</td></tr><tr><td>25</td><td>53.1</td><td>47.0</td><td>12.5</td><td>2.76</td></tr><tr><td>37</td><td>69.4</td><td>63.5</td><td>12.5</td><td>2.76</td></tr><tr><td>50</td><td>67.0</td><td>61.1</td><td>15.4</td><td>2.76</td></tr></table>			a	b ±0.1	c	f	9	30.9	25.0	12.5	2.74	15	39.2	33.3	12.5	2.74	25	53.1	47.0	12.5	2.76	37	69.4	63.5	12.5	2.76	50	67.0	61.1	15.4	2.76
	a	b ±0.1	c	f																													
9	30.9	25.0	12.5	2.74																													
15	39.2	33.3	12.5	2.74																													
25	53.1	47.0	12.5	2.76																													
37	69.4	63.5	12.5	2.76																													
50	67.0	61.1	15.4	2.76																													
Female connector		<table><tr><th></th><th>a</th><th>b ±0.1</th><th>c</th><th>f</th></tr><tr><td>9</td><td>30.9</td><td>25.0</td><td>12.5</td><td>2.74</td></tr><tr><td>15</td><td>39.2</td><td>33.3</td><td>12.5</td><td>2.74</td></tr><tr><td>25</td><td>53.1</td><td>47.0</td><td>12.5</td><td>2.76</td></tr><tr><td>37</td><td>69.4</td><td>63.5</td><td>12.5</td><td>2.76</td></tr><tr><td>50</td><td>67.0</td><td>61.1</td><td>15.4</td><td>2.76</td></tr></table>			a	b ±0.1	c	f	9	30.9	25.0	12.5	2.74	15	39.2	33.3	12.5	2.74	25	53.1	47.0	12.5	2.76	37	69.4	63.5	12.5	2.76	50	67.0	61.1	15.4	2.76
	a	b ±0.1	c	f																													
9	30.9	25.0	12.5	2.74																													
15	39.2	33.3	12.5	2.74																													
25	53.1	47.0	12.5	2.76																													
37	69.4	63.5	12.5	2.76																													
50	67.0	61.1	15.4	2.76																													

Dimensions in mm

Dimensions in mm

Mating conditions see page 02.02
Accessories see page 02.11
Board drillings see page 02.11



Accessories for turned solder pins, angled

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																																				
Mounting comb for alignment of floating angled solder pins	9-50	09 99 000 0097																																						
Fixing bracket Metal bracket	9-37 50	09 67 000 9910 ¹⁾ 09 67 000 9911 ¹⁾	<table><tr><td></td><td>a</td><td>b</td></tr><tr><td>9-37</td><td>10.8</td><td>6.5</td></tr><tr><td>50</td><td>12.2</td><td>8.0</td></tr></table>		a	b	9-37	10.8	6.5	50	12.2	8.0																												
	a	b																																						
9-37	10.8	6.5																																						
50	12.2	8.0																																						
Plastic bracket	9-50	09 67 000 9913 ¹⁾																																						
Mounting bracket for row separation 2.54/2.84 mm threaded flange M3 threaded flange 4-40 UNC	9 15 25 37 50 9 15 25 37 50	09 67 000 9935 09 67 000 9997 09 67 000 9998 09 67 000 9938 09 67 000 9939 ²⁾ 09 67 000 9987 09 67 000 9988 09 67 000 9989 09 67 000 9990 09 67 000 9991 ²⁾	 M 3 or 4-40 UNC <table><tr><td></td><td>b</td><td>c</td><td>d</td><td>e</td><td>f</td></tr><tr><td>9</td><td>25.0</td><td>12.0</td><td>7.3^{+0.2}</td><td>14.7</td><td>2.74</td></tr><tr><td>15</td><td>33.3</td><td>12.0</td><td>7.3^{+0.2}</td><td>14.7</td><td>2.74</td></tr><tr><td>25</td><td>47.0</td><td>12.0</td><td>7.3^{+0.2}</td><td>14.7</td><td>2.76</td></tr><tr><td>37</td><td>63.5</td><td>12.0</td><td>7.3^{+0.2}</td><td>14.7</td><td>2.76</td></tr><tr><td>50</td><td>61.1</td><td>13.5</td><td>8.7^{-0.2}</td><td>17.0</td><td>2.76</td></tr></table>		b	c	d	e	f	9	25.0	12.0	7.3 ^{+0.2}	14.7	2.74	15	33.3	12.0	7.3 ^{+0.2}	14.7	2.74	25	47.0	12.0	7.3 ^{+0.2}	14.7	2.76	37	63.5	12.0	7.3 ^{+0.2}	14.7	2.76	50	61.1	13.5	8.7 ^{-0.2}	17.0	2.76	
	b	c	d	e	f																																			
9	25.0	12.0	7.3 ^{+0.2}	14.7	2.74																																			
15	33.3	12.0	7.3 ^{+0.2}	14.7	2.74																																			
25	47.0	12.0	7.3 ^{+0.2}	14.7	2.76																																			
37	63.5	12.0	7.3 ^{+0.2}	14.7	2.76																																			
50	61.1	13.5	8.7 ^{-0.2}	17.0	2.76																																			
Board drillings angled solder pins Mounting height 	9-37 50	 <table><tr><td></td><td>b</td><td>g</td><td>h</td></tr><tr><td>9</td><td>25.0</td><td>4 x 2.74 = 10.96</td><td>3 x 2.74 = 8.22</td></tr><tr><td>15</td><td>33.3</td><td>7 x 2.74 = 19.18</td><td>6 x 2.74 = 16.44</td></tr><tr><td>25</td><td>47.0</td><td>12 x 2.76 = 33.12</td><td>11 x 2.76 = 30.36</td></tr><tr><td>37</td><td>63.5</td><td>18 x 2.76 = 49.68</td><td>17 x 2.76 = 46.92</td></tr></table> <table><tr><td>f</td><td></td></tr><tr><td>09 67 000 9911</td><td>13.20</td></tr><tr><td>09 67 000 9913</td><td>13.20</td></tr><tr><td>Mounting bracket</td><td>12.95</td></tr></table>		b	g	h	9	25.0	4 x 2.74 = 10.96	3 x 2.74 = 8.22	15	33.3	7 x 2.74 = 19.18	6 x 2.74 = 16.44	25	47.0	12 x 2.76 = 33.12	11 x 2.76 = 30.36	37	63.5	18 x 2.76 = 49.68	17 x 2.76 = 46.92	f		09 67 000 9911	13.20	09 67 000 9913	13.20	Mounting bracket	12.95										
	b	g	h																																					
9	25.0	4 x 2.74 = 10.96	3 x 2.74 = 8.22																																					
15	33.3	7 x 2.74 = 19.18	6 x 2.74 = 16.44																																					
25	47.0	12 x 2.76 = 33.12	11 x 2.76 = 30.36																																					
37	63.5	18 x 2.76 = 49.68	17 x 2.76 = 46.92																																					
f																																								
09 67 000 9911	13.20																																							
09 67 000 9913	13.20																																							
Mounting bracket	12.95																																							

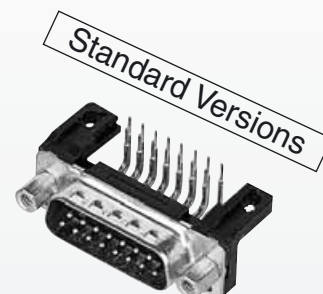
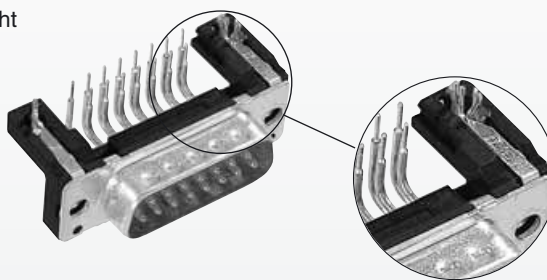
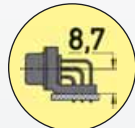
¹⁾ order 2 per connector
²⁾ only row separation 2.54 mm

³⁾ for 2.54/2.84 mm row separation
⁴⁾ Not in conjunction with mounting bracket

Number of contacts

Mounting height

9–37
50



Turned solder pins, angled with/without snap-in-clips and grounding board locks

D-Sub - S

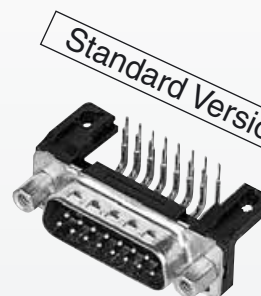
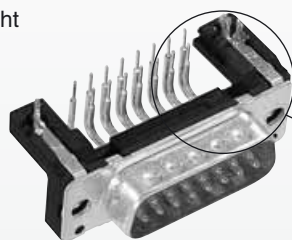
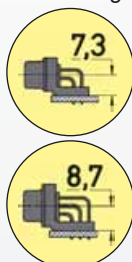
Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples		2.84 mm pitch	2.84 mm pitch
With snap-in clips and grounding board locks	9	09 66 163 781	09 66 163 681
	15	09 66 263 781	09 66 263 681
	25	09 66 363 781	09 66 363 681
	37	09 66 463 781	09 66 463 681
	50	09 66 563 781	09 66 563 681
		2.54 mm pitch	2.54 mm pitch
	9	09 66 162 781	09 66 162 681
	15	09 66 262 781	09 66 262 681
	25	09 66 362 781	09 66 362 681
	37	09 66 462 781	09 66 462 681
	50	09 66 562 781	09 66 562 681
Without snap-in clips and grounding board locks		2.84 mm pitch	2.84 mm pitch
	9	09 66 123 780	09 66 123 680
	15	09 66 223 780	09 66 223 680
	25	09 66 323 780	09 66 323 680
	37	09 66 423 780	09 66 423 680
	50	09 66 523 780	09 66 523 680
		2.54 mm pitch	2.54 mm pitch
	9	09 66 122 780	09 66 122 680
	15	09 66 222 780	09 66 222 680
	25	09 66 322 780	09 66 322 680
	37	09 66 422 780	09 66 422 680
	50	09 66 522 780	09 66 522 680
Please insert digit for flange thread or fitted female screw locks			
M3 ▶	1		
4-40 UNC ▶	2		
fitted screw locks 4-40 UNC ▶	3		

available
on requestavailable
on request

Number of contacts

9-37 50

Mounting height



Turned solder pins, angled with/without snap-in-clips and grounding board locks

Identification

Drawing

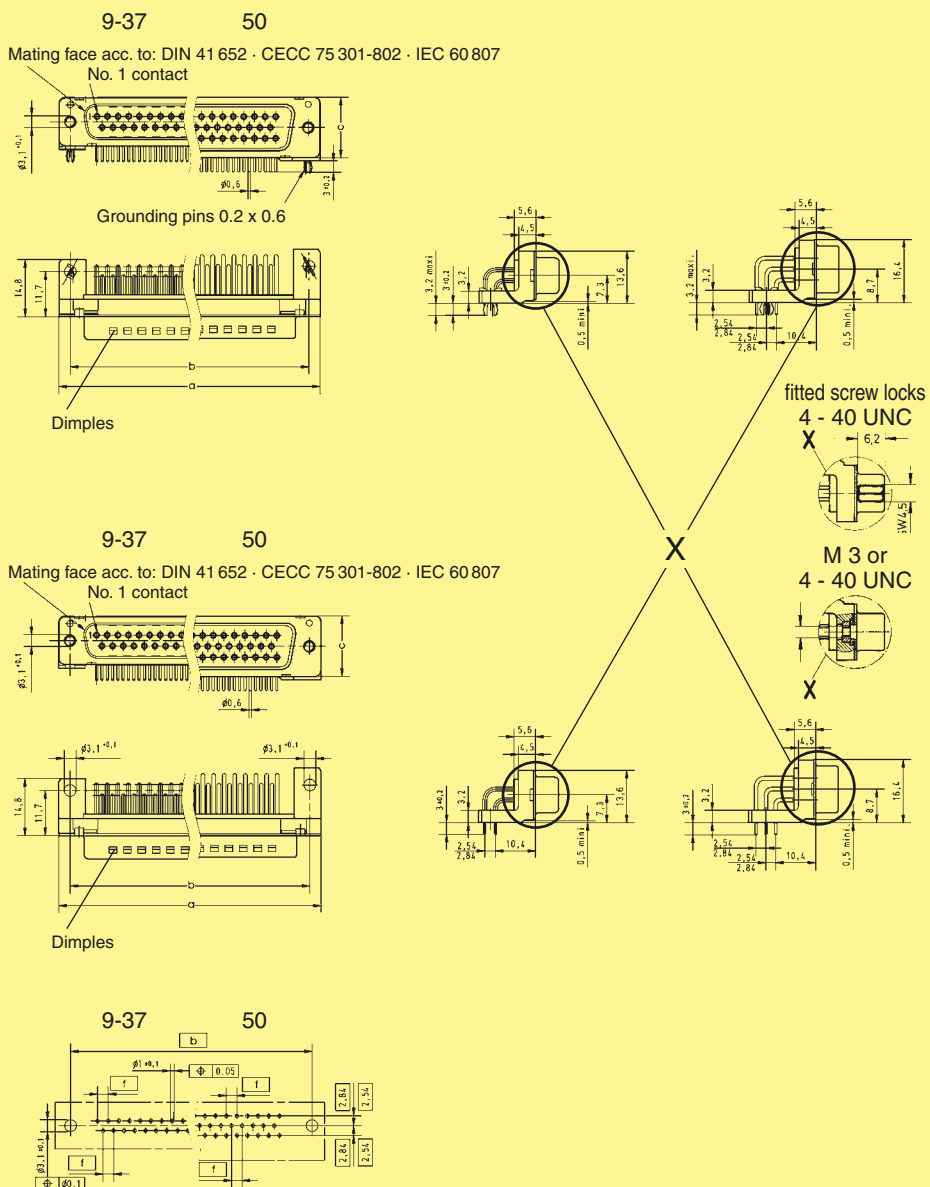
Dimensions in mm

Male connector

With snap-in clips
and grounding board locks

Without snap-in clips
and grounding board locks

Board drillings

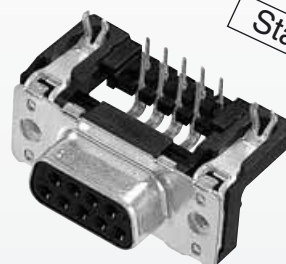
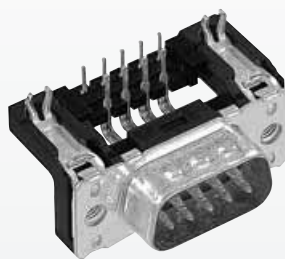
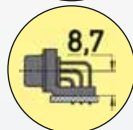


	a	b ± 0.1	c	f
9	30.90	25.00	12.90	2.74
15	39.20	33.30	12.90	2.74
25	53.10	47.00	12.90	2.76
37	69.40	63.50	12.90	2.76
50	67.00	61.10	15.70	2.76

Number of contacts

Mounting height

9–37
50



Standard Versions

Stamped solder pins, angled with grounding board locks

D-Sub - S

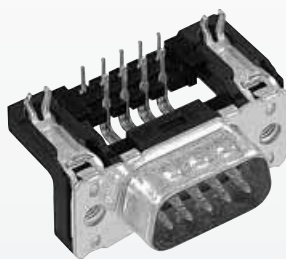
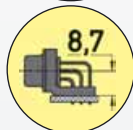
Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples		2.84 mm pitch	2.84 mm pitch
	9	09 65 163 781 . 1)	09 65 163 681 . 1)
	15	09 65 263 781 . 1)	09 65 263 681 . 1)
	25	09 65 363 781 . 1)	09 65 363 681 . 1)
	37	09 65 463 781 . 1)	09 65 463 681 . 1)
		2.54 mm pitch	2.54 mm pitch
	9	09 65 162 781 .	09 65 162 681 .
	15	09 65 262 781 .	09 65 262 681 .
	25	09 65 362 781 .	09 65 362 681 .
	37	09 65 462 781 .	09 65 462 681 .
Female connector metal shell		2.84 mm pitch	2.84 mm pitch
	9	09 66 153 761 . 1)	09 66 153 661 . 1)
	15	09 66 253 761 . 1)	09 66 253 661 . 1)
	25	09 66 353 761 . 1)	09 66 353 661 . 1)
	37	09 66 453 761 . 1)	09 66 453 661 . 1)
	50	09 66 553 761 . 1)	09 66 553 661 . 1)
		2.54 mm pitch	2.54 mm pitch
	9	09 66 152 761 .	09 66 152 661 .
	15	09 66 252 761 .	09 66 252 661 .
	25	09 66 352 761 .	09 66 352 661 .
	37	09 66 452 761 .	09 66 452 661 .
	50	09 66 552 761 . 1)	09 66 552 661 . 1)
Please insert digit for flange thread or fitted female screw locks			
Ø 3.1 mm hole ▶ 0 ¹⁾			
M3 ▶ 1			
4-40 UNC ▶ 2			
fitted screw locks 4-40 UNC ▶ 3			

¹⁾ Not normally kept in stock

Number of contacts

Mounting height

9–37
50



Standard Versions

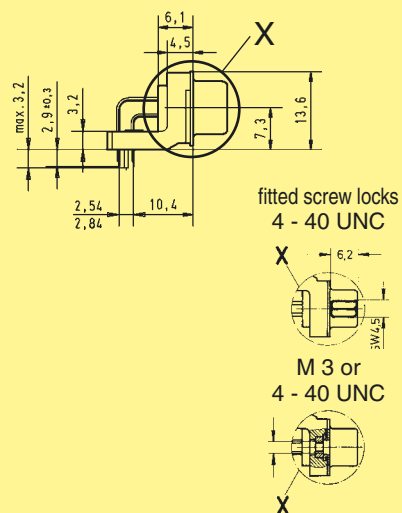
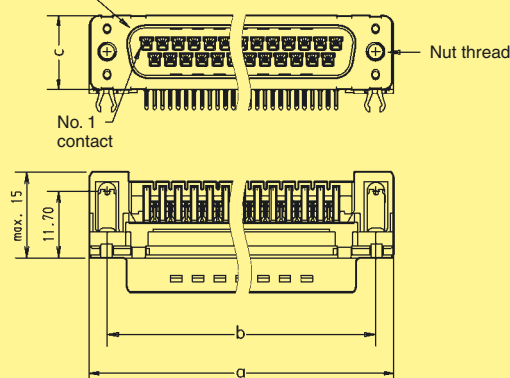
Stamped solder pins, angled with grounding board locks

Identification

Drawing

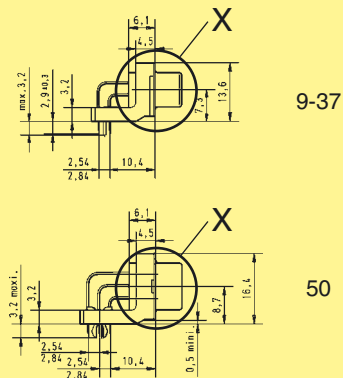
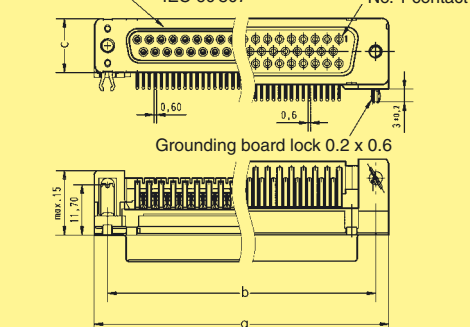
Dimensions in mm

Male connector

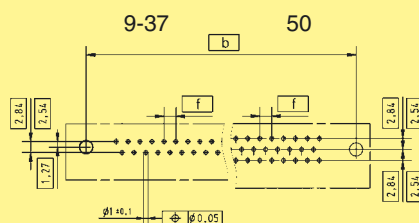
Mating face acc. to: DIN 41 652 · CECC 75 301-802
IEC 60 807


Female connector

9-37 50

Mating face acc. to: DIN 41 652 · CECC 75 301-802
IEC 60 807


Board drillings

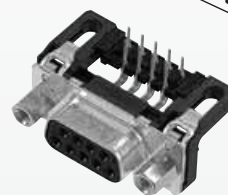
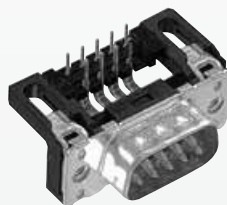
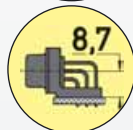


	a	b ± 0.1	c	f
9	30.90	25.00	12.50	2.74
15	39.20	33.30	12.50	2.74
25	53.10	47.00	12.50	2.76
37	69.40	63.50	12.50	2.76
50	67.00	61.10	15.40	2.76

Number of contacts

Mounting height

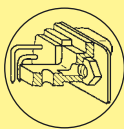
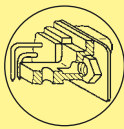
9–37
50



Standard Versions

Stamped solder pins, angled without grounding board locks

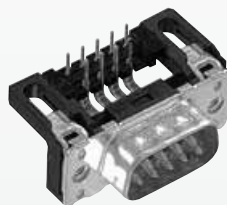
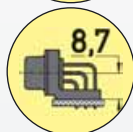
D-Sub - S

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples 	9 15 25 37	2.84 mm pitch 09 65 123 780 . 09 65 223 780 . 09 65 323 780 . 09 65 423 780 .	2.84 mm pitch 09 65 123 680 . 09 65 223 680 . 09 65 323 680 . 09 65 423 680 .
	9 15 25 37	2.54 mm pitch 09 65 122 780 . 09 65 222 780 . 09 65 322 780 . 09 65 422 780 .	2.54 mm pitch 09 65 122 680 . 09 65 222 680 . 09 65 322 680 . 09 65 422 680 .
Female connector metal shell 	9 15 25 37 50	2.84 mm pitch 09 66 113 760 . ¹⁾ 09 66 213 760 . ¹⁾ 09 66 313 760 . ¹⁾ 09 66 413 760 . ¹⁾ 09 66 513 760 . ¹⁾	2.84 mm pitch 09 66 113 660 . ¹⁾ 09 66 213 660 . ¹⁾ 09 66 313 660 . ¹⁾ 09 66 413 660 . ¹⁾ 09 66 513 660 . ¹⁾
	9 15 25 37 50	2.54 mm pitch 09 66 112 760 . 09 66 212 760 . 09 66 312 760 . 09 66 412 760 . 09 66 512 760 . ¹⁾	2.54 mm pitch 09 66 112 660 . 09 66 212 660 . 09 66 312 660 . 09 66 412 660 . 09 66 512 660 . ¹⁾
Please insert digit for flange thread or fitted female screw locks Ø 3.1 mm hole ▶ 0 ¹⁾ M3 ▶ 1 4-40 UNC ▶ 2 fitted screw locks 4-40 UNC ▶ 3			

Number of contacts

Mounting height

9-37
50



Standard Versions

Stamped solder pins, angled without grounding board locks

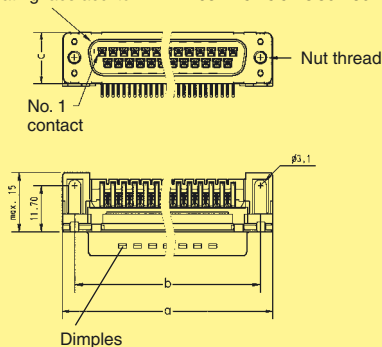
Identification

Drawing

Dimensions in mm

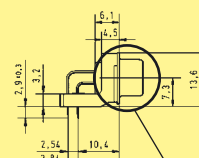
Male connector

Mating face acc. to: DIN 41 652 · CECC 75 301-802 · IEC 60 807

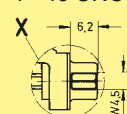


No. 1 contact

Dimples

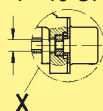


fitted screw locks
4 - 40 UNC



M 3 or
4 - 40 UNC

4 - 40 UNC

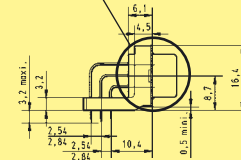
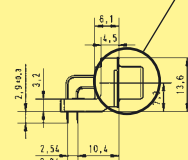
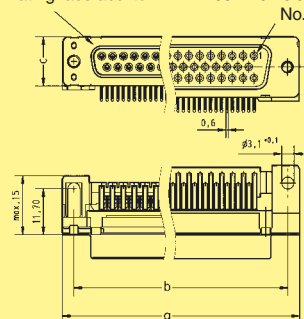


Female connector

9-37

50

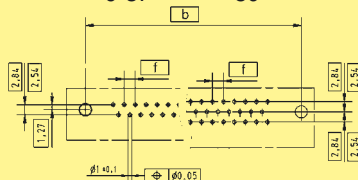
Mating face acc. to: DIN 41 652 · CECC 75 301-802 · IEC 60 807



Board drillings

9-37

50

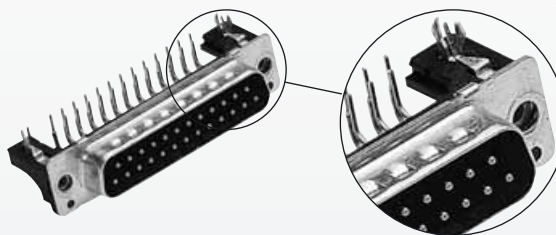
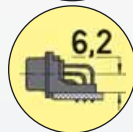
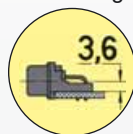


	a	b _{±0.1}	c	f
9	30.90	25.00	12.50	2.74
15	39.20	33.30	12.50	2.74
25	53.10	47.00	12.50	2.76
37	69.40	63.50	12.50	2.76
50	67.00	61.10	15.40	2.76

Number of contacts

Mounting height

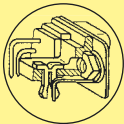
9–37
50



Low Profile Versions

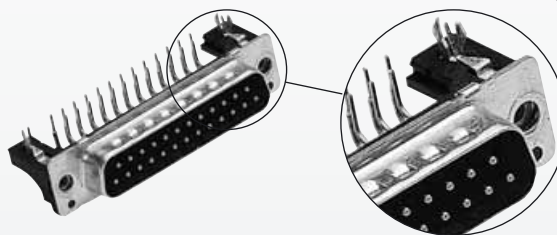
Turned solder pins, angled with snap-in-clips and grounding board locks

D-Sub - S

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples 		2.54 mm pitch	2.54 mm pitch
	9 15 25 37 50	09 66 162 781 09 66 262 781 09 66 362 781 09 66 462 781 09 66 562 781	09 66 162 681 09 66 262 681 09 66 362 681 09 66 462 681 09 66 562 681
Please insert digit for flange thread or fitted female screw locks M3 ▶ 5 4-40 UNC ▶ 6 fitted screw locks 4-40 UNC ▶ 7			

Number of contacts

Mounting height

9-37
50


Low Profile Versions

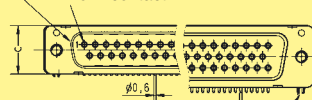
Turned solder pins, angled with snap-in-clips and grounding board locks

Identification

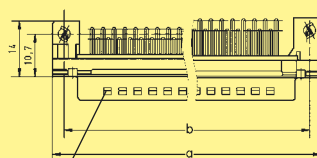
Drawing

Dimensions in mm

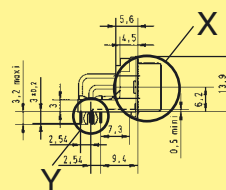
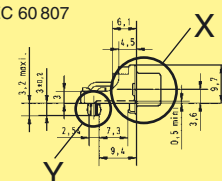
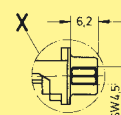
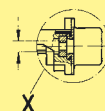
Male connector

9-37 50
Mating face acc. to: DIN 41 652 · CECC 75 301-802 · IEC 60 807
No. 1 contact


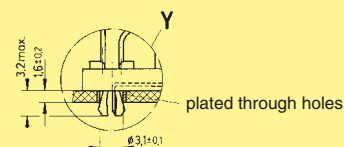
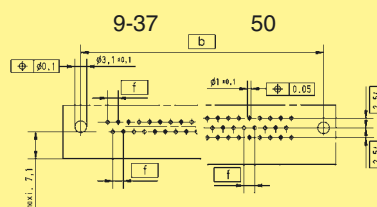
Grounding board lock 0.2 x 0.6



Dimples


fitted screw locks
4 - 40 UNC

M 3 or
4 - 40 UNC


Board drillings

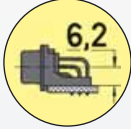


	a	b ± 0.1	c	f
9	30.90	25.00	12.50	2.74
15	39.20	33.30	12.50	2.74
25	53.10	47.00	12.50	2.76
37	69.40	63.50	12.50	2.76
50	67.00	61.10	15.70	2.76

Number of contacts

9–37
50

Mounting height



Low Profile Versions

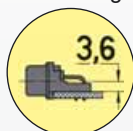
Stamped solder pins, angled with grounding board locks

Identification	No. of contacts	Part No.			
Performance levels Explanations see page 02.02 Other contact surfaces on request		Performance level 3		Performance level 2	
Male connector metal shell with dimples					
	9	09 65 162 781	.	09 65 162 681	.
	15	09 65 262 781	.	09 65 262 681	.
	25	09 65 362 781	.	09 65 362 681	.
	37	09 65 462 781	.	09 65 462 681	.
Female connector metal shell					
	9	09 66 152 761	.	09 66 152 661	.
	15	09 66 252 761	.	09 66 252 661	.
	25	09 66 352 761	.	09 66 352 661	.
	37	09 66 452 761	.	09 66 452 661	.
	50	09 66 552 761	¹⁾	09 66 552 661	¹⁾
Please insert digit for flange thread or fitted female screw locks					
M3 ▶	5				
4-40 UNC ▶	6				
fitted screw locks 4-40 UNC ▶	7				

¹⁾ Not normally kept in stock

Number of contacts

Mounting height

9-37
50


Low Profile Versions

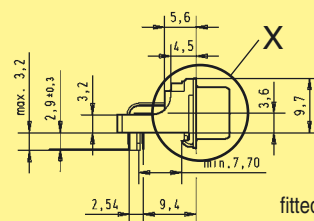
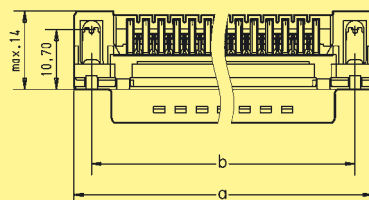
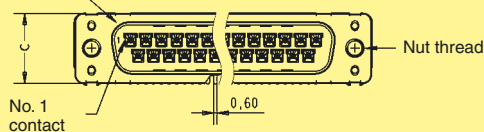
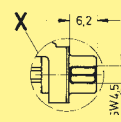
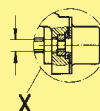
Stamped solder pins, angled with grounding board locks

Identification

Drawing

Dimensions in mm

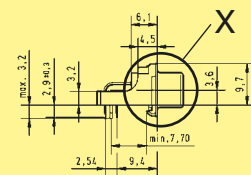
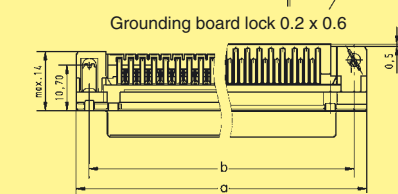
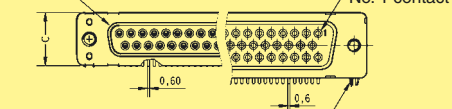
Male connector

Mating face acc. to: DIN 41 652 · CECC 75 301-802
IEC 60 807

fitted screw locks
4 - 40 UNC

M 3 or
4 - 40 UNC


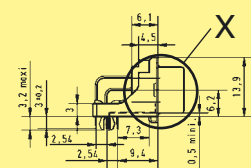
Female connector

9-37

50

Mating face acc. to: DIN 41 652 · CECC 75 301-802
IEC 60 807


9-37

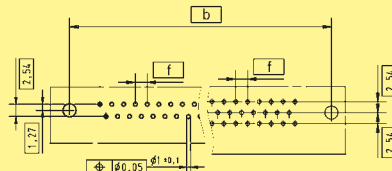


50

Board drillings

9-37

50

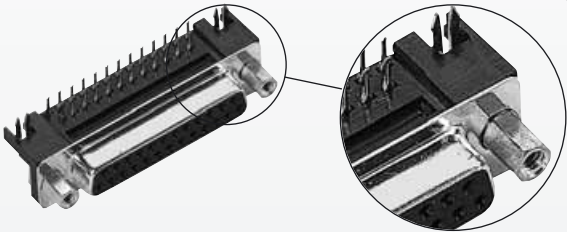
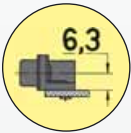


	a	b ± 0.1	c	f
9	30.90	25.00	12.50	2.74
15	39.20	33.30	12.50	2.74
25	53.10	47.00	12.50	2.76
37	69.40	63.50	12.50	2.76
50	67.00	61.10	15.40	2.76

Number of contacts

9–37

Mounting height



U.S. Footprint

Stamped solder pins, angled with snap-in-clips and grounding board locks

D-Sub - S

Identification	No. of contacts	Part No.			
Performance levels Explanations see page 02.02 Other performance levels on request		Performance level 3		S4 ¹⁾	
Male connector metal shell with dimples		2.84 mm pitch		2.84 mm pitch	
	9	09 68 163 781 .		09 68 163 581 .	
	15	09 68 263 781 .		09 68 263 581 .	
	25	09 68 363 781 .		09 68 363 581 .	
	37	09 68 463 781 .		09 68 463 581 .	
Female connector metal shell		2.84 mm pitch		2.84 mm pitch	
	9	09 68 153 761 .		09 68 153 561 .	
	15	09 68 253 761 .		09 68 253 561 .	
	25	09 68 353 761 .		09 68 353 561 .	
	37	09 68 453 761 .		09 68 453 561 .	
Please insert digit for flange thread or fitted female screw locks					
M3 ▶	1 ²⁾				
4-40 UNC ▶	2				
fitted screw locks 4-40 UNC ▶	3				

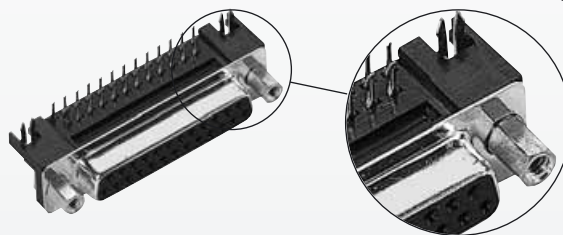
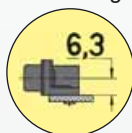
¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

²⁾ Not normally kept in stock

Number of contacts

Mounting height

9–37



U.S. Footprint

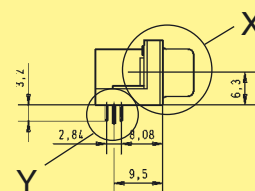
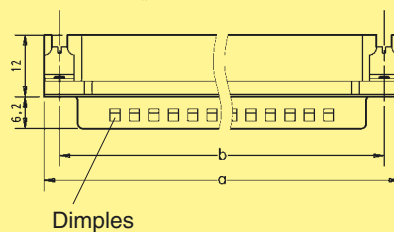
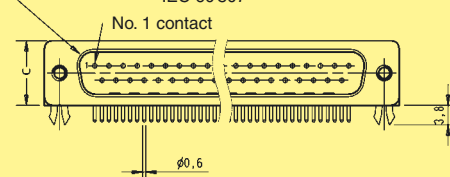
Stamped solder pins, angled with snap-in-clips and grounding board locks

Identification

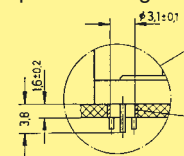
Drawing

Dimensions in mm

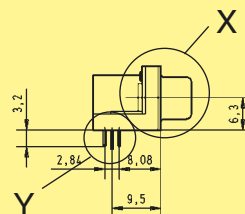
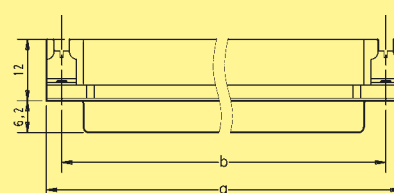
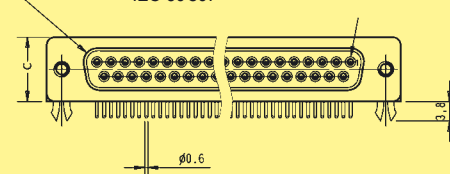
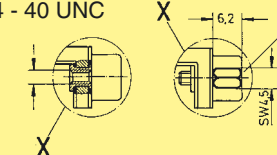
Male connector

Mating face acc. to: DIN 41 652 · CECC 75 301-802
IEC 60 807


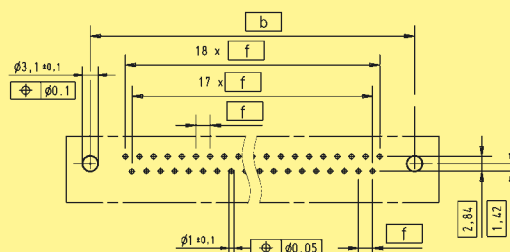
plated through holes



Female connector

Mating face acc. to: DIN 41 652 · CECC 75 301-802
IEC 60 807

M 3 or
4 - 40 UNC


Board drillings



	a	b±0.1	c	f
9	30.90	25.00	12.55	2.77
15	39.20	33.30	12.55	2.77
25	53.10	47.00	12.55	2.77
37	69.40	63.50	12.55	2.77

Identification

Drawing

Dimensions in mm

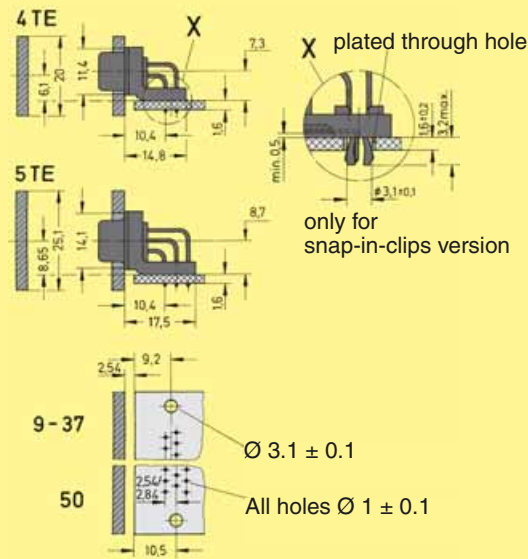
Standard Versions

Mounting height 7.3 mm

9-37 way
for front panel
4 units of width (TE)

Mounting height 8.7 mm

50 way
for front panel
5 units of width (TE)



for connectors see pages 02.12 – 02.17

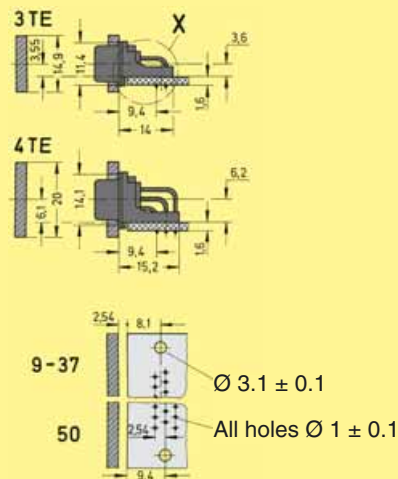
Low Profile Versions

Mounting height 3.6 mm

9-37 way
for front panel
3 units of width (TE)

Mounting height 6.2 mm

50 way
for front panel
4 units of width (TE)



When used in a wave soldering process the mating face of the connector must be protected with adhesive tape.

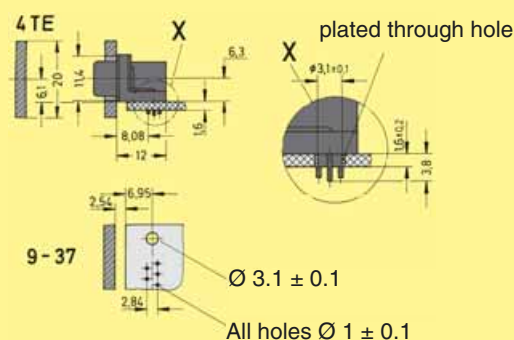


for connectors see pages 02.18 – 02.21

U.S. Footprint Versions

Mounting height 6.3 mm

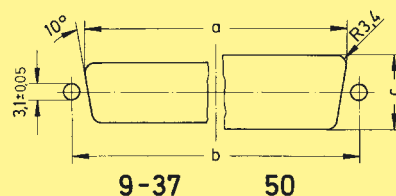
9-37 way
for front panel
4 units of width (TE)



for connectors see pages 02.22 – 02.23

Panel cut out
for front/rear mount

Values are taken from the
CECC 75 301-802

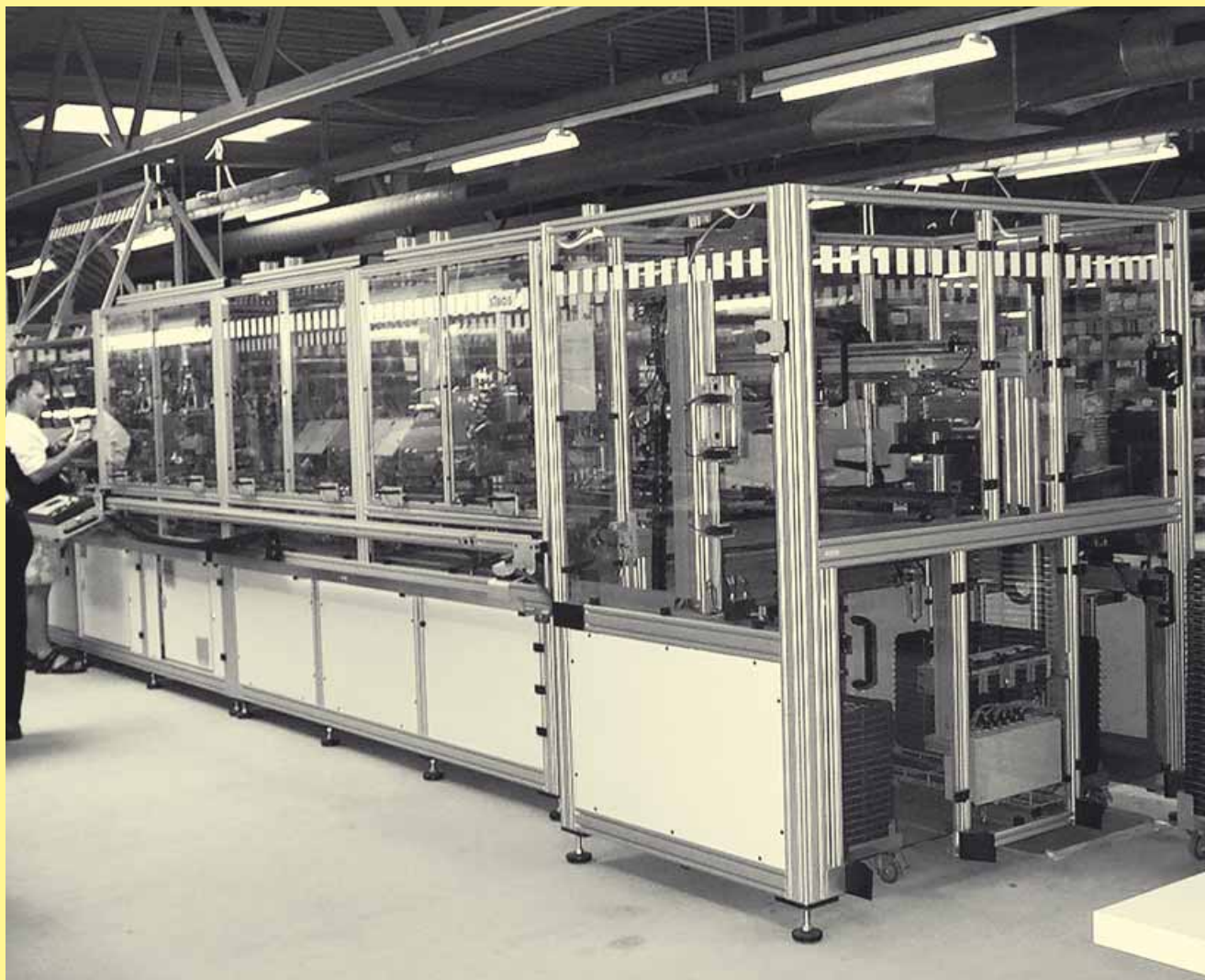


Front mount

	a±0.2	b±0.13	c±0.2
9	22.2	25.0	12.3
15	30.5	33.3	12.3
25	44.3	47.0	12.3
37	60.7	63.5	12.3
50	58.3	61.1	15.1

Rear mount

	a±0.2	b±0.13	c±0.2
9	20.5	25.0	11.4
15	28.8	33.3	11.4
25	42.5	47.0	11.4
37	59.1	63.5	11.4
50	56.3	61.1	14.1



Fully automated assembly line, split into two sublines for a high production flexibility.

Subline one for pre-assembly and subline two for customizing.

The assembly line features an integrated online camera inspection system and laser printing.

Our claim is quality.

Our challenge is to improve quality from day to day.



SEK connector mounted in a tape ready for placement using an odd form assembly station.

Number of contacts 9, 15, 25, 37, 50
UL recognized

Working current

see current carrying capacity chart

Turned contacts 7.5 A max.

Stamped contacts 6.5 A max.

Insulation displacement 2 A max.

Test voltage $U_{r.m.s.}$ 1 kV

Clearance and creepage ≥ 1.0 mm
 ≥ 0.7 mm (insulation displacement)

Contact resistance ≤ 10 m Ω

Insulation resistance $\geq 10^{10}$ Ω

Temperature range

turned version -55 °C ... + 125 °C

stamped solder

bucket version -25 °C ... + 85 °C

Terminations

- Solder buckets
max. 0.5 mm²
- Crimp contacts
0.09-0.25 mm²
AWG 28-24
max. insulation $\varnothing$ 1.02 mm
0.25-0.56 mm²
AWG 24-20
max. insulation $\varnothing$ 1.52 mm
- Insulation displacement
AWG 28/7 and AWG 26/7
AWG 28/1 and AWG 30/1
- Wrap posts 0.6 x 0.6 mm
diagonal 0.8-0.86 mm
length 13 mm

Materials

Mouldings and hoods Thermoplastic resin, glass-fibre filled (PBTP), UL 94-V0

Contacts Copper alloy

Contact surface

Contact zone selectively gold-plated according to performance level¹⁾

Metal shell Plated steel

Mating force

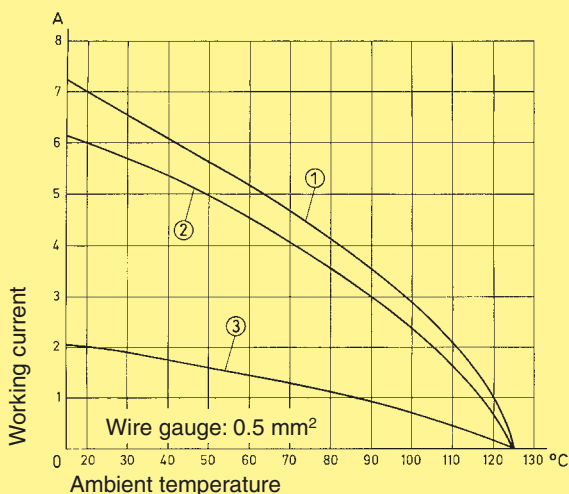
9 way	≤ 30 N
15 way	≤ 50 N
25 way	≤ 83 N
37 way	≤ 123 N
50 way	≤ 167 N

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, not 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 60 512.



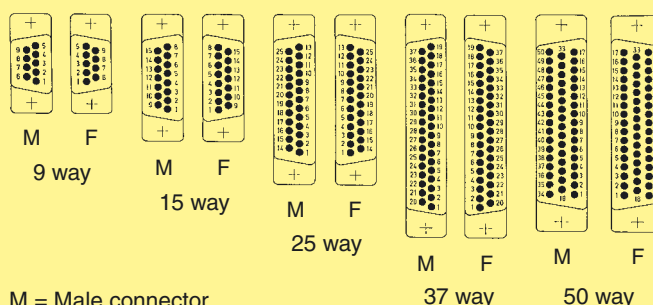
Example: 25 way connector

① Turned contacts

② Stamped contacts

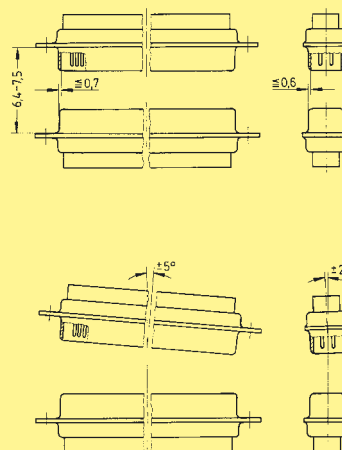
③ Insulation displacement contacts

Contact arrangement View from termination side



M = Male connector
F = Female connector

Mating conditions as per DIN 41 652



¹⁾ Performance level 3, 50 mating cycles, no gas test

Performance level 2 as per CECC 75 301-802, 250 mating cycles, 4 days 4 mixed gas test – IEC 60 512

Performance level 1 as per CECC 75 301-802, 500 mating cycles, 10 days 4 mixed gas test – IEC 60 512

9-50



D-Sub - S

02
27

Mating conditions see page 02.26

Number of contacts

9–50



Crimp terminal

D-Sub - S

Identification	No. of contacts	Part No.
Male connector Order contacts separately metal shell with dimples	9	09 67 009 5601
	15	09 67 015 5601
	25	09 67 025 5601
	37	09 67 037 5601
	50	09 67 050 5601
Female connector Order contacts separately metal shell	9	09 67 009 4701
	15	09 67 015 4701
	25	09 67 025 4701
	37	09 67 037 4701
	50	09 67 050 4701

Male connector

Female connector

Panel cut out
for front/rear mount
Values are taken from the
CECC 75 301-802

9-37 50

1.3

Dimples

9-37 50

10.9

9-37 50

10.9

1.3

3.05±0.13

	a	b±0.1	c
9	30.9	25.0	12.5
15	39.2	33.3	12.5
25	53.1	47.0	12.5
37	69.4	63.5	12.5
50	67.0	61.1	15.4

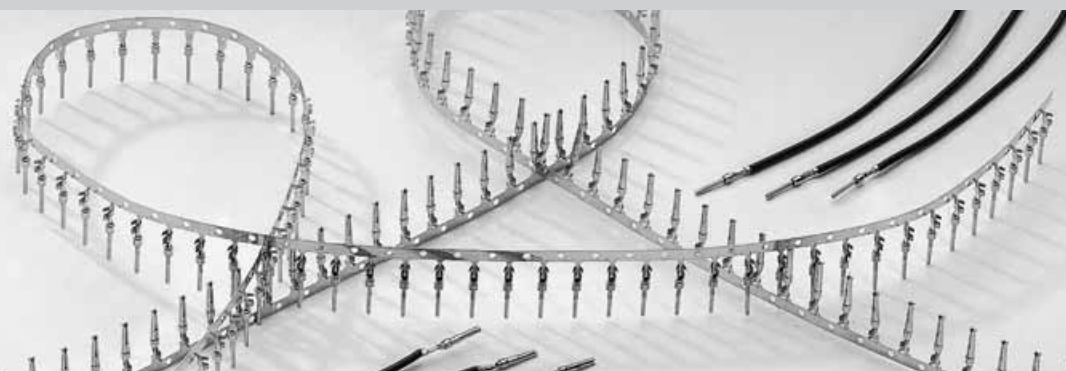
see page 02.24

Dimensions in mm

Crimp contacts

Identification	Wire gauge (mm ²)	Part No.			
Performance levels Explanations see page 02.26 Other performance levels on request		stamped male contacts		stamped female contacts	
		Performance level 3	Performance level 2	Performance level 3	Performance level 2
Individual contacts	0.09-0.25 AWG 28-24	09 67 000 7177 ¹⁾	09 67 000 7178 ¹⁾	09 67 000 7277 ¹⁾	09 67 000 7278 ¹⁾
500 pieces/reel Unrolling left	stranded	09 67 000 7167	09 67 000 7168	09 67 000 7267	09 67 000 7268
10 000 pieces/reel Unrolling left Unrolling left reversed Unrolling right reversed		09 67 000 7157 09 67 000 7147 09 67 000 7137	09 67 000 7158 09 67 000 7148 09 67 000 7138	09 67 000 7257 09 67 000 7247 09 67 000 7237	09 67 000 7258 09 67 000 7248 09 67 000 7238
Individual contacts	0.25-0.56 AWG 24-20	09 67 000 8177 ¹⁾	09 67 000 8178 ¹⁾	09 67 000 8277 ¹⁾	09 67 000 8278 ¹⁾
500 pieces/reel Unrolling left	stranded	09 67 000 8167	09 67 000 8168	09 67 000 8267	09 67 000 8268
10 000 pieces/reel Unrolling left Unrolling left reversed Unrolling right reversed		09 67 000 8157 09 67 000 8147 09 67 000 8137	09 67 000 8158 09 67 000 8148 09 67 000 8138	09 67 000 8257 09 67 000 8247 09 67 000 8237	09 67 000 8258 09 67 000 8248 09 67 000 8238
Unrolling direction					
		for HARTING tools			

¹⁾ Minimum order 500 pieces or multiples of 500
 Insertion and removal tool see chapter 31
 Contact dimensions see page 02.31



Crimp contacts

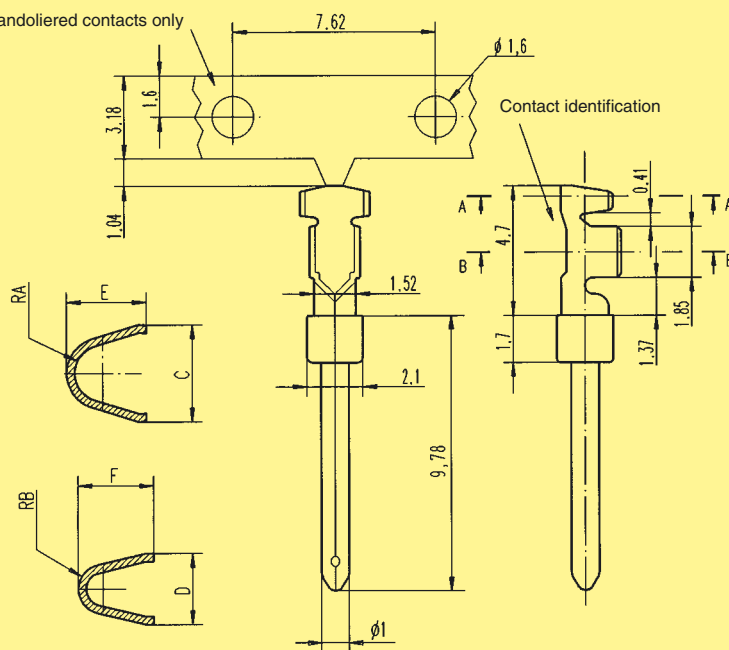
Identification

Drawing

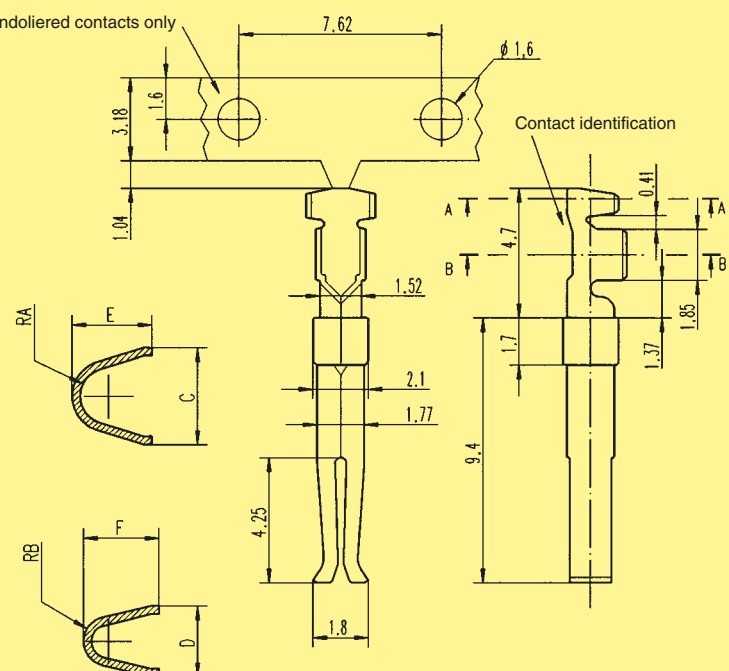
Dimensions in mm

D-Sub - S

Male contacts



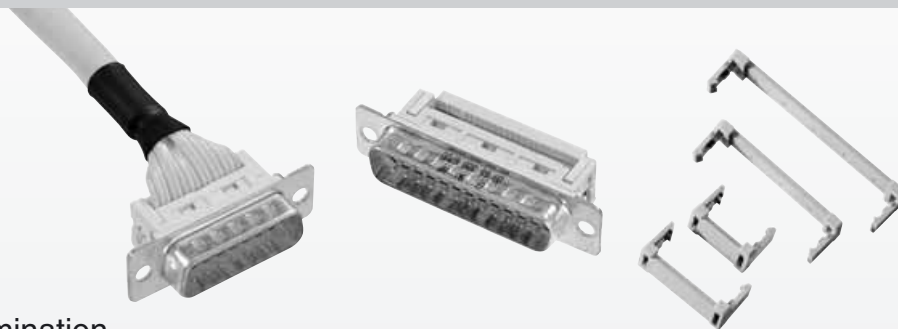
Female contacts



AWG	C	D	E	F	RA	RB	Contact identification
20-24	2.46	1.78	1.98	1.90	0.71	0.43	—
24-28	1.65	1.47	1.52	1.52	0.50	0.33	≡

Number of contacts

9–37



Insulation displacement termination

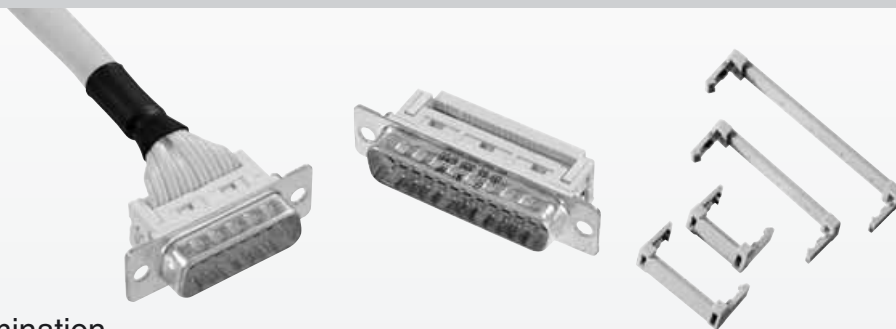
D-Sub - S

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.26 Other performance levels on request		Performance level 3	Performance level 2
Male connector pitch 1.27 mm metal shell with dimples	9 15 25 37	09 66 128 770 . 09 66 228 770 . 09 66 328 770 . 09 66 428 770 .	09 66 128 670 . 09 66 228 670 . 09 66 328 670 . 09 66 428 670 .
Female connector pitch 1.27 mm metal shell	9 15 25 37	09 66 118 750 . 09 66 218 750 . 09 66 318 750 . 09 66 418 750 .	09 66 118 650 . 09 66 218 650 . 09 66 318 650 . 09 66 418 650 .
Please insert digit for flange thread or fitted female screw locks ø 3.1 mm hole ▶ 0 M 3 ▶ 1 ¹⁾ 4-40 UNC ▶ 2			
Strain relief clamp corrosion resistant steel for male and female connector	9 15 25 37	09 66 108 0000 09 66 208 0000 09 66 308 0000 09 66 408 0000	09 66 108 0000 09 66 208 0000 09 66 308 0000 09 66 408 0000
plastic for male and female connector	9 15 25 37	09 66 108 0001 09 66 208 0001 09 66 308 0001 09 66 408 0001	09 66 108 0001 09 66 208 0001 09 66 308 0001 09 66 408 0001

Number of contacts

9–37

Insulation displacement termination

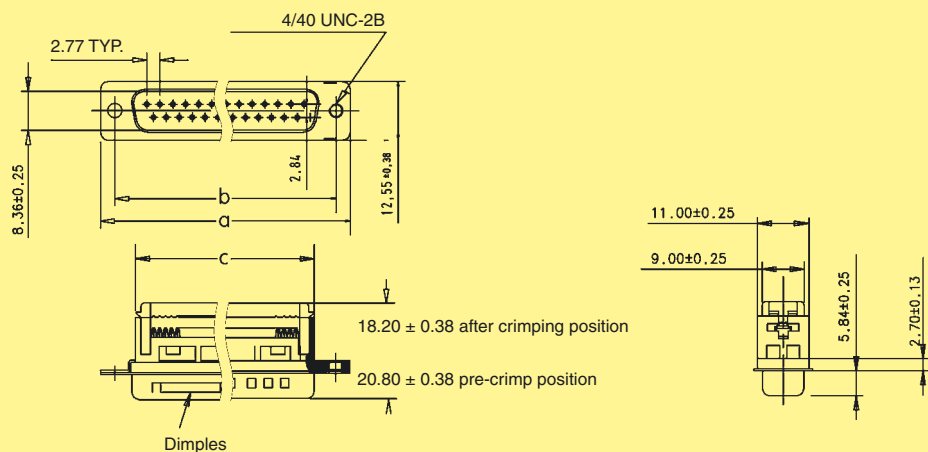


Identification

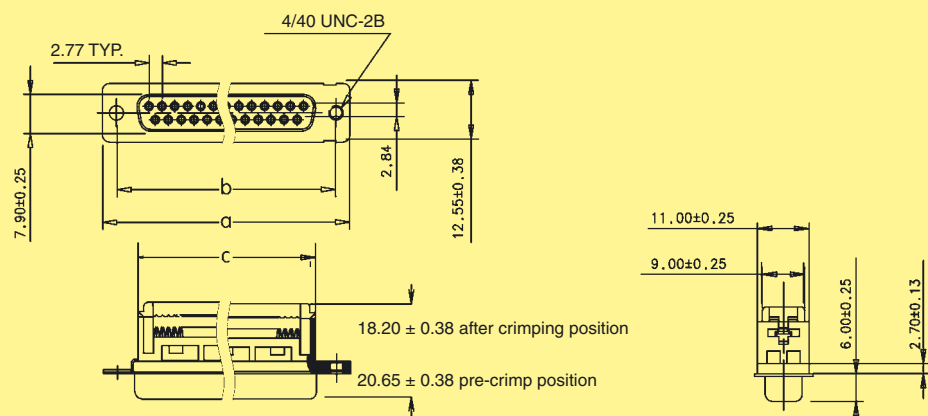
Drawing

Dimensions in mm

Male connector



Female connector



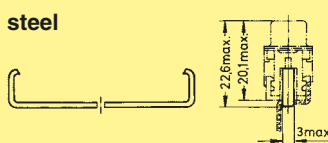
Male and female connectors

	a	b _{±0.1}	c
9	30.80	24.99	16.10
15	39.10	33.32	24.00
25	53.09	47.04	38.14
37	69.40	63.50	54.60

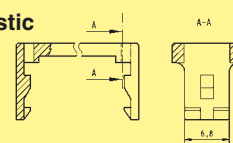
Specified conductors
 stranded wires – AWG 28/7
 – AWG 26/7
 solid wires – AWG 30/1
 – AWG 28/1

Strain relief clamps

steel



plastic

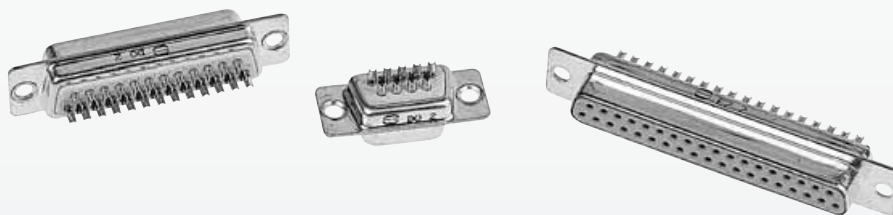

Panel cut out
for front/rear mount

Values are taken from the
 CECC 75 301-802

see page 02.24

Number of contacts

9–50



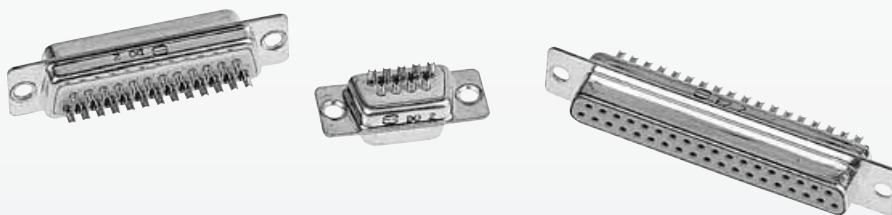
Solder buckets

D-Sub - S

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 02.26 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples		turned contacts 9 09 67 009 5604 15 09 67 015 5604 25 09 67 025 5604 37 09 67 037 5604 50 09 67 050 5604 ¹⁾ stamped contacts 9 09 67 209 5604 15 09 67 215 5604 25 09 67 225 5604 37 09 67 237 5604 50 09 67 250 5604 ¹⁾	turned contacts 09 67 009 5615 09 67 015 5615 09 67 025 5615 09 67 037 5615 09 67 050 5615 stamped contacts 09 67 209 5615 09 67 215 5615 09 67 225 5615 09 67 237 5615 09 67 250 5615 ¹⁾
Female connector metal shell		turned contacts 9 09 67 009 4704 15 09 67 015 4704 25 09 67 025 4704 37 09 67 037 4704 50 09 67 050 4704 ¹⁾ stamped contacts 9 09 67 209 4704 15 09 67 215 4704 25 09 67 225 4704 37 09 67 237 4704 50 09 67 250 4704 ¹⁾	turned contacts 09 67 009 4715 09 67 015 4715 09 67 025 4715 09 67 037 4715 09 67 050 4715 stamped contacts 09 67 209 4715 09 67 215 4715 09 67 225 4715 09 67 237 4715 09 67 250 4715 ¹⁾

Number of contacts

9–50



Solder buckets

Identification

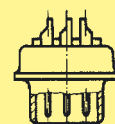
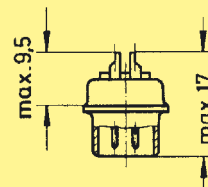
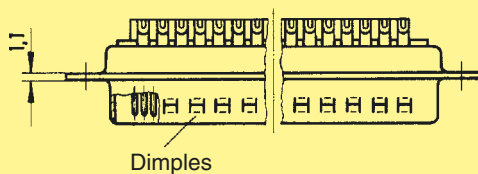
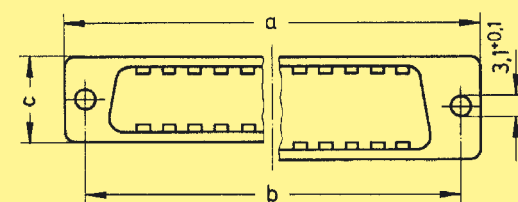
Drawing

Dimensions in mm

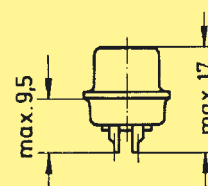
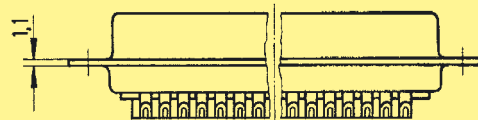
Male connector

9-37

50

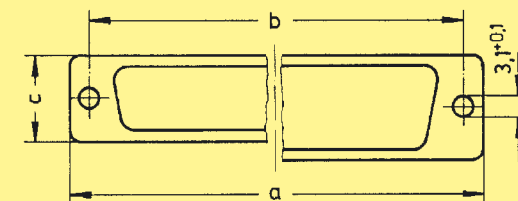


Female connector



9-37

50



	a	b _{±0.1}	c
9	30.9	25.0	12.5
15	39.2	33.3	12.5
25	53.1	47.0	12.5
37	69.4	63.5	12.5
50	67.0	61.1	15.4

Panel cut out
for front/rear mount

Values are taken from the
CECC 75 301-802

see page 02.24

Mating conditions see page 02.26

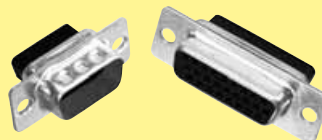
D-Sub - S

D-Sub – High Density subminiature D connectors

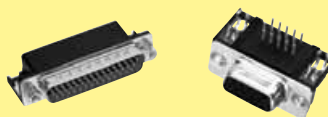
Page

Technical characteristics **03.02**

Connectors with crimp terminal / crimp contacts **03.03**



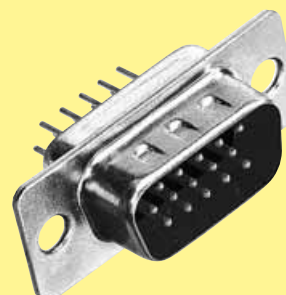
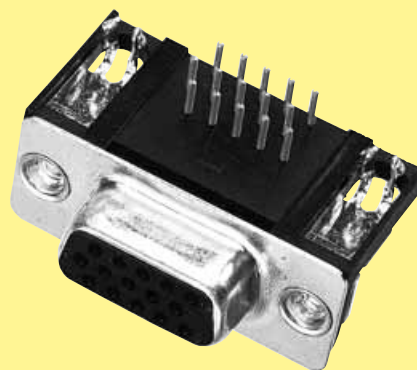
Connectors with angled solder pins **03.06**



Connectors with straight solder pins **03.09**



Number of contacts	15, 26, 44, 62, 78 UL recognized
Working current Stamped contacts	2 A max.
Test voltage $U_{r.m.s.}$	1 kV
Clearance and creepage	≥ 1.0 mm
Contact resistance Insulation resistance	≤ 20 m Ω $\geq 5 \times 10^9$ Ω
Temperature range The higher temperature limit includes the local ambient and heating effect of the contacts under load	-55 °C ... + 105 °C
Terminations	a) Solder pins $\varnothing$ 0.65 mm for P.C.B. holes $\varnothing$ 1.02 mm b) Solder pins, angled 90° $\varnothing$ 0.7 mm for P.C.B. holes $\varnothing$ 1.02 mm c) Crimp contacts 0.14 - 0.22 mm ² AWG 26 - 24 max. insulation $\varnothing$ 1.38 mm
Materials	
Mouldings and hoods	Thermoplastic resin, glass-fibre filled (PBTP), UL 94-V0
Contacts	Copper alloy
Contact surface Contact zone	selectively gold-plated according to performance level ¹⁾
Metal shell	Plated steel
Mating force	15 way ≤ 46 N 26 way ≤ 77 N 44 way ≤ 127 N 62 way ≤ 177 N 78 way ≤ 222 N



¹⁾ Performance level 3, 50 mating cycles, no gas test
S4, plating ≥ 0.76 μ m Au (30 μ inch)

Number of contacts

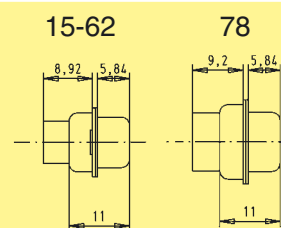
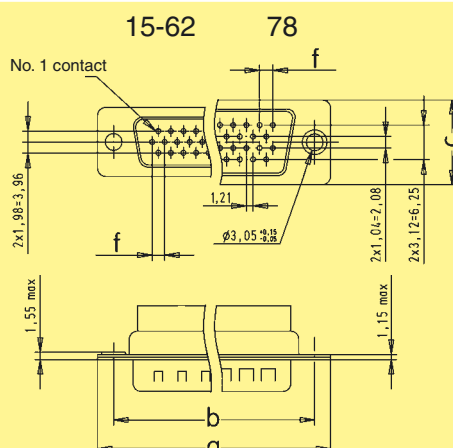
15-78



High density crimp terminal

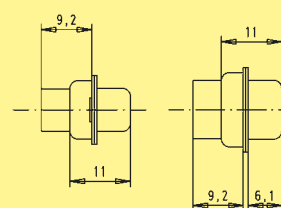
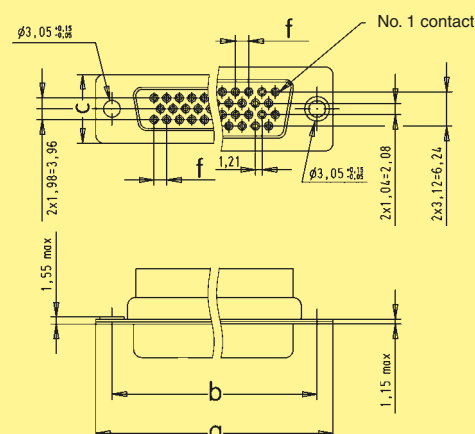
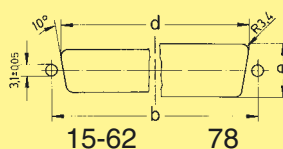
Identification	No. of contacts	Part No.
Male connector Order contacts separately metal shell with dimples	15	09 56 100 5601
	26	09 56 200 5601
	44	09 56 300 5601
	62	09 56 400 5601
	78	09 56 500 5601
Female connector Order contacts separately metal shell	15	09 56 100 4701
	26	09 56 200 4701
	44	09 56 300 4701
	62	09 56 400 4701
	78	09 56 500 4701

Male connector



	a	b ± 0.13	c	f
15	30.9	25.0	12.5	2.29
26	39.2	33.3	12.5	2.29
44	53.1	47.0	12.5	2.29
62	69.4	63.5	12.5	2.41
78	67.0	61.1	15.4	2.41

Female connector

Panel cut out
for front/rear mountValues are taken from the
CECC 75 301-802

Front mount

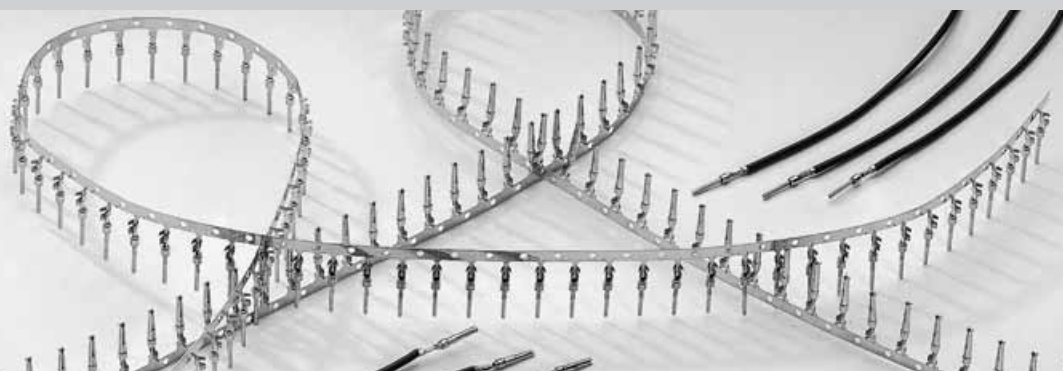
	b ± 0.13	d ± 0.2	e ± 0.2
15	25.0	22.2	12.3
26	33.3	30.5	12.3
44	47.0	44.3	12.3
62	63.5	60.7	12.3
78	61.1	58.3	15.1

Rear mount

	b ± 0.13	d ± 0.2	e ± 0.2
15	25.0	20.5	11.4
26	33.3	28.8	11.4
44	47.0	42.5	11.4
62	63.5	59.1	11.4
78	61.1	56.3	14.1

Dimensions in mm

Crimp contacts
for high density
connectors



Identification

Wire gauge
(mm²)

Part No.

Performance levels

Explanations see page 03.02
Other performance levels
on request



stamped male contacts

stamped female contacts

Performance level
3

S4¹⁾

Performance level
3

S4¹⁾

500 pieces/box

0.14-0.22
AWG
26-24
stranded

09 56 000 8177

09 56 000 8175

09 56 000 8277

09 56 000 8275

500 pieces/reel
Unrolling left

09 56 000 8167

09 56 000 8165

09 56 000 8267

09 56 000 8265

10 000 pieces/reel
Unrolling left

09 56 000 8157

09 56 000 8155

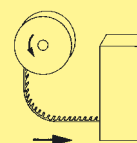
09 56 000 8257

09 56 000 8255

Unrolling direction



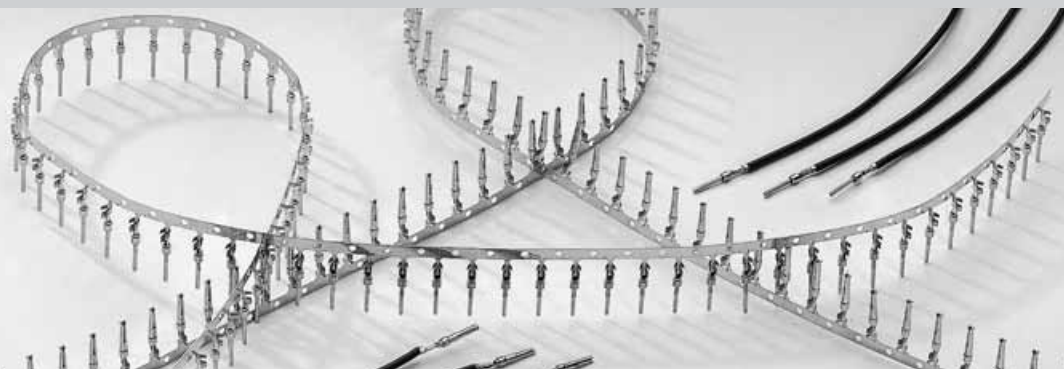
500 pieces/reel
Unrolling
left



10 000 pieces/reel
Unrolling
left

for HARTING tools

Crimp contacts for high density connectors



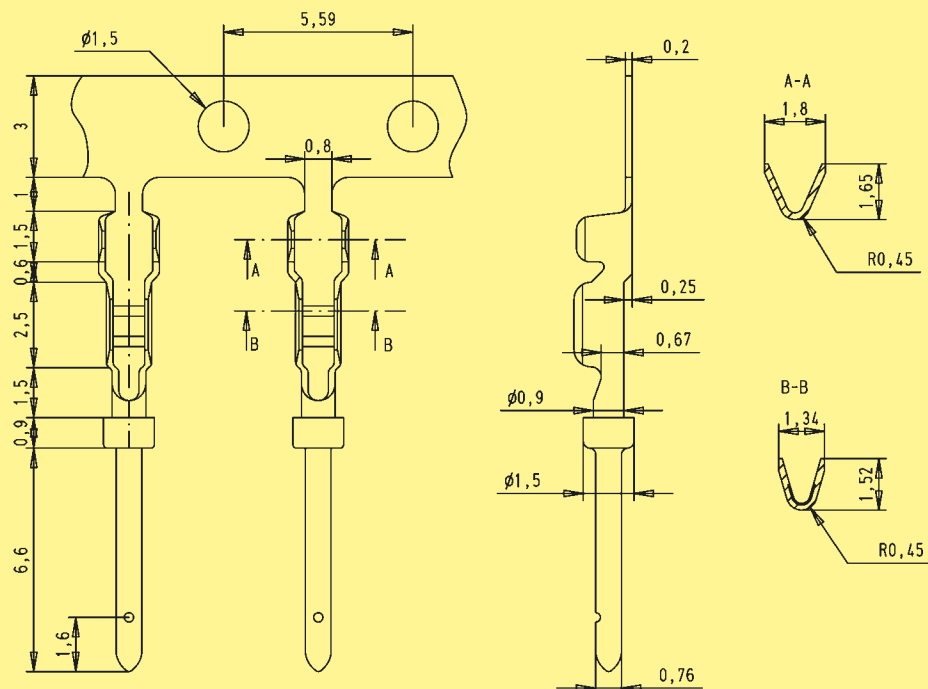
Identification

Drawing

Dimensions in mm

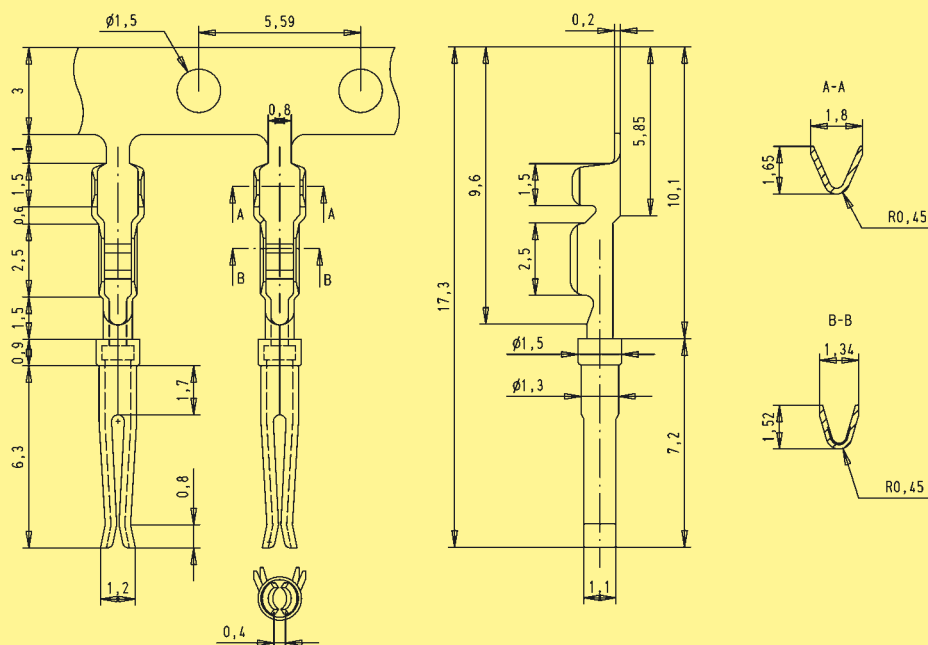
Male contacts

wire gauge AWG 26-24



Female contacts

wire gauge AWG 26-24



Number of contacts

15–78



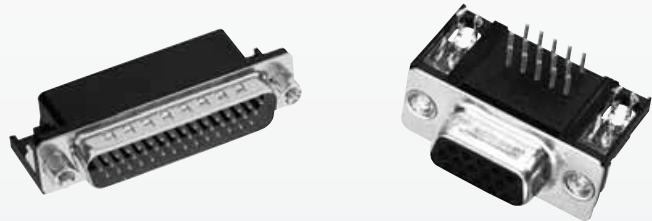
High density with stamped solder pins, angled with grounding board locks

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 03.02 Other performance levels on request		Performance level 3	
Male connector metal shell with dimples		S4 ¹⁾	
Female connector metal shell			
Please insert digit for flange thread or fitted female screw locks 4-40 UNC ► 2 fitted screw locks 4-40 UNC ► 3			

¹⁾ S4: $\geq 0.76 \mu\text{m Au}$ (30 μinch)

Number of contacts

15-78



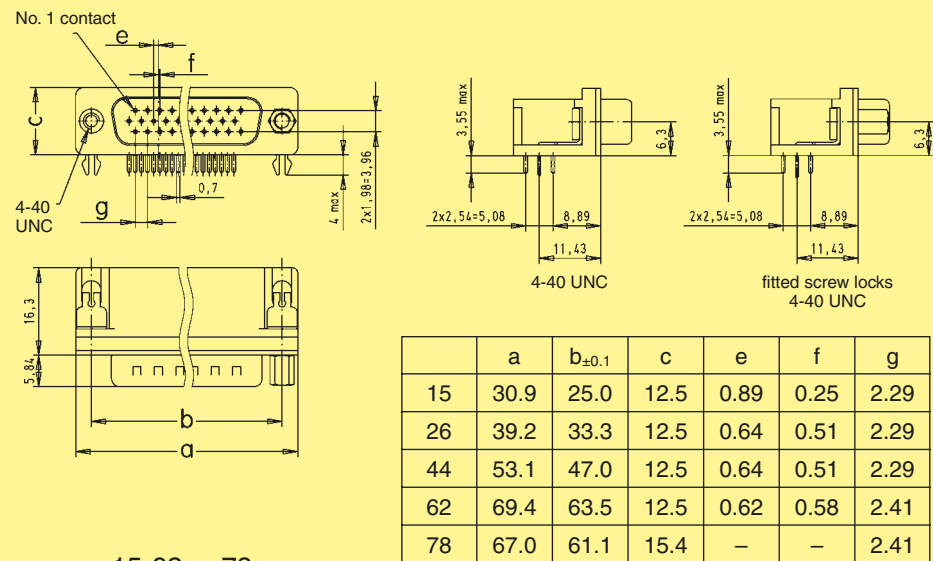
High density with stamped solder pins, angled with grounding board locks

Identification

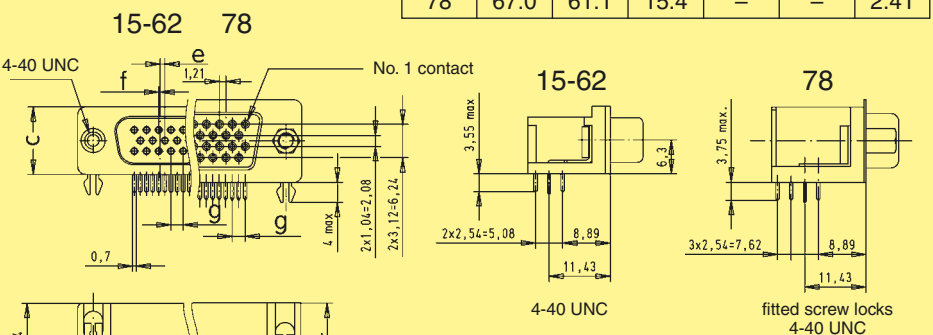
Drawing

Dimensions in mm

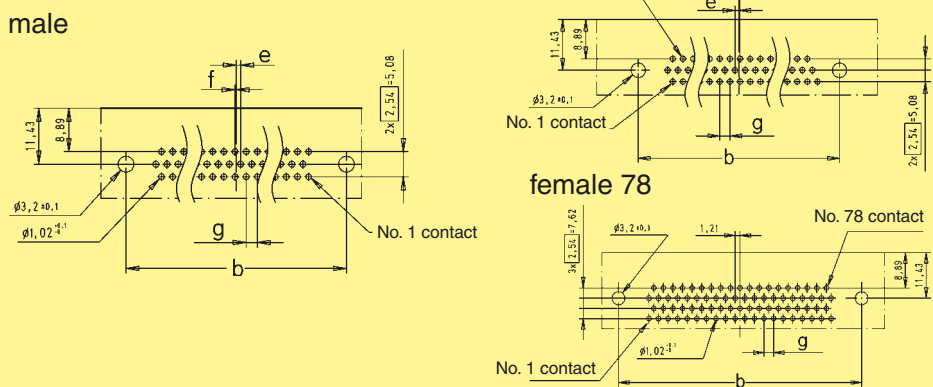
Male connector



Female connector



Board drillings

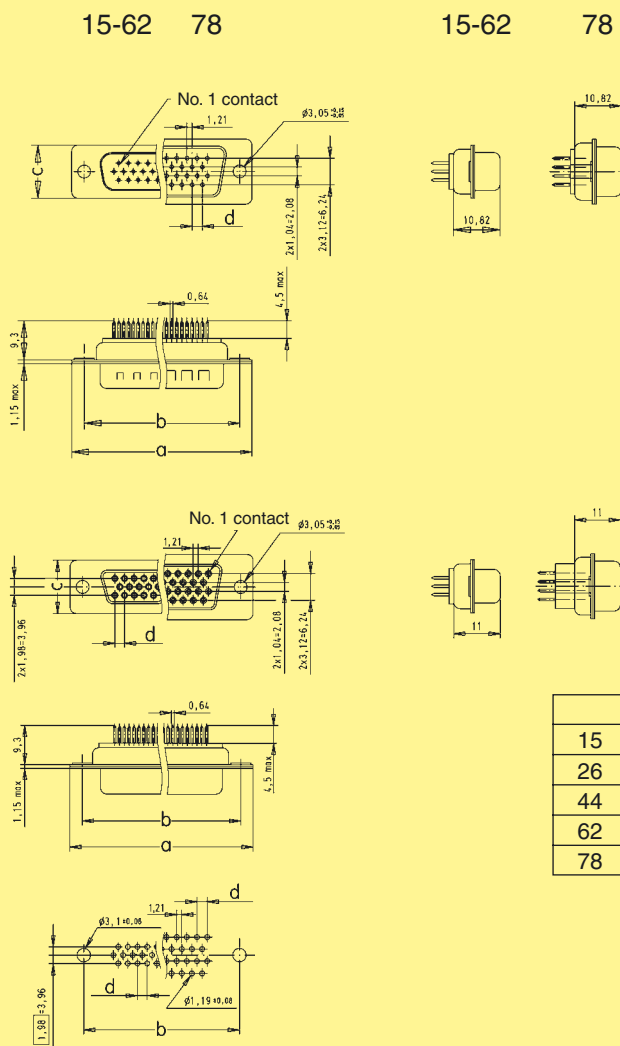


15-78



Identification	No. of contacts	Part No.	
Performance levels Explanations see page 03.02 Other performance levels on request		Performance level 3	S4 ¹⁾
Male connector metal shell with dimples	15	09 56 161 7700	09 56 161 5700
	26	09 56 261 7700	09 56 261 5700
	44	09 56 361 7700	09 56 361 5700
	62	09 56 461 7700	09 56 461 5700
	78	09 56 561 7700	09 56 561 5700
Female connector metal shell	15	09 56 151 7500	09 56 151 5500
	26	09 56 251 7500	09 56 251 5500
	44	09 56 351 7500	09 56 351 5500
	62	09 56 451 7500	09 56 451 5500
	78	09 56 551 7500	09 56 551 5500

Female connector



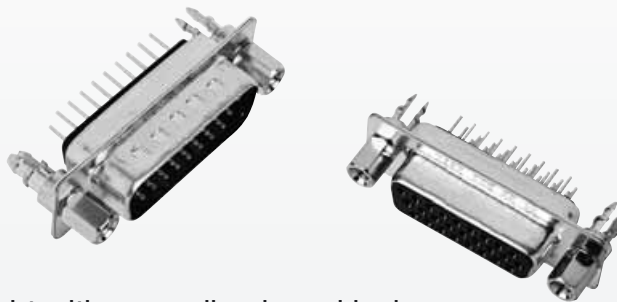
	a	b _{±0.1}	c	d
15	30.9	25.0	12.5	2.29
26	39.2	33.3	12.5	2.29
44	53.1	47.0	12.5	2.29
62	69.4	63.5	12.5	2.41
78	67.0	61.1	15.4	2.41

Board drillings

Dimensions in mm

Number of contacts

15–78



High density with stamped solder pins, straight with grounding board locks

D-Sub - HD

Identification

No. of
contacts

Part No.

Performance levels

 Explanations see page 03.02
 Other performance levels on request
Performance level
3S4¹⁾

Male connector

metal shell with dimples

15
26
44
62
7809 56 161 771 .
09 56 261 771 .
09 56 361 771 .
09 56 461 771 .
09 56 561 771 .09 56 161 571 .
09 56 261 571 .
09 56 361 571 .
09 56 461 571 .
09 56 561 571 .

Female connector

metal shell

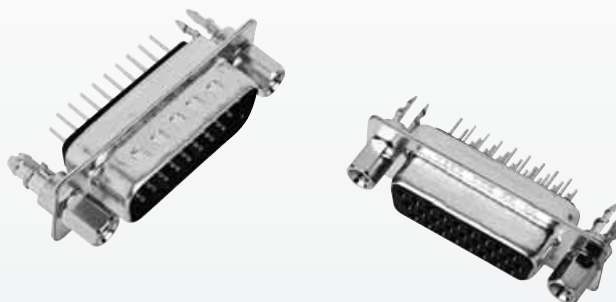
15
26
44
62
7809 56 151 751 .
09 56 251 751 .
09 56 351 751 .
09 56 451 751 .
09 56 551 751 .09 56 151 551 .
09 56 251 551 .
09 56 351 551 .
09 56 451 551 .
09 56 551 551 .Please insert digit for flange thread or
fitted female screw locks

4-40 UNC ► 2

fitted screw locks 4-40 UNC ► 3

¹⁾ S4: $\geq 0.76 \mu\text{m Au}$ (30 μinch)

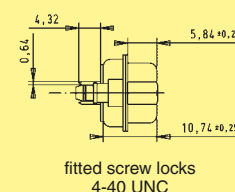
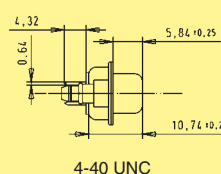
15-78



High density with stamped solder pins, straight with grounding board locks

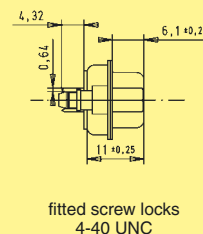
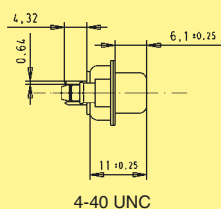
Dimensions in mm

15-62 78

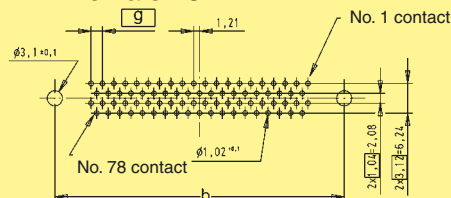
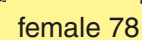
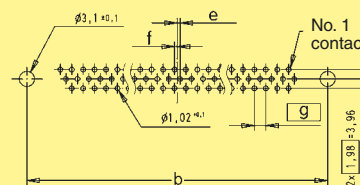


	a	b _{±0.1}	c	e	f	g
15	30.9	25.0	12.5	0.89	0.25	2.29
26	39.2	33.3	12.5	0.64	0.51	2.29
44	53.1	47.0	12.5	0.64	0.51	2.29
62	69.4	63.5	12.5	0.62	0.58	2.41
78	67.0	61.1	15.4	–	–	2.41

15-62 78



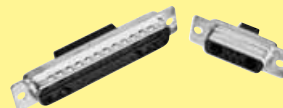
female 15-62



D-Sub – Mixed subminiature D connectors

Page

D-Sub mixed connector system – general information	04.02
Contact arrangements	04.03
Connectors for pcb applications – general information	04.04
Connectors for cable applications – general information	04.05
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Shells without signal contacts for cable applications ..	04.14
Coded shells without signal contacts for cable applications	04.15
Mixed shells for signal crimp contacts	04.17
Technical characteristics for special contacts	04.21
Straight signal crimp contacts for cable applications	04.22
High voltage contacts for cable applications	04.23
Straight power contacts for cable applications	04.24
Coaxial contacts for cable applications	04.26
Pcb hole patterns for power contacts	04.29
Board drillings for connectors with straight pcb contacts	04.30
Board drillings for connectors with right angled pcb contacts	04.32
Customer request form for pcb connectors	04.34
Customer request form for cable connectors	04.36



HARTINGs' mixed D-Sub range brings the advantage of an industry standard I/O inter-connect product with the possibility to customise for any application.

The range is designed around **the standard D-Sub shell sizes** with **the possibility to have a blend of contacts** such as signals with coaxial, power or high voltage contacts. Due to its construction, the product is **fully shielded** and helps reducing the EMI/RFI leakage.

All contacts are machined with two different platings.

When hot plug-in is required, **first mate last break** contacts can also be supplied.

For connectors to be fitted on a board with SMT components, they can be supplied in an **SMC (PiHIR) version** which is assembled in the reflow solder process, thus reducing assembly cost.

In addition, a complete range of accessories such as clinch nut, spacers, board locks, female screw lock, etc. ... meeting the requirements of virtually any application, including a blind mate feature, makes this product range very attractive thanks to its versatility, reliability and cost effectiveness.



Contact arrangements

The table shows the standard range supported by HARTING. Two versions are special since they allow to mix in the same shell male and female contacts: 2W2C and 3W3C. The purpose of these versions is to have a 100 % mating proof feature (the insulator shape prevents a 180° reversed mating).

The structure of the connectors' identification is so that the left side digits give the total number of contacts and the right side digits the number of special contacts which can be either power, coaxial or high voltage style.

Example: 13W3 stands for 13 contacts in total with 10 signal contacts and 3 special contacts.

2W2C	
5W1	
3W3	
3W3C	
7W2	
11W1	
5W5	
9W4	
13W3	
17W2	
21W1	

7W7	
8W8	
13W6	
21WA4	
25W3	
27W2	
24W7	
36W4	

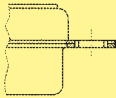
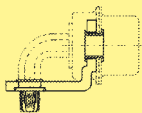
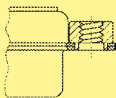
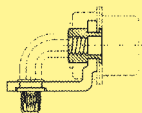
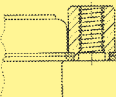
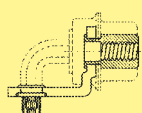
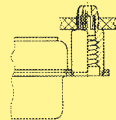
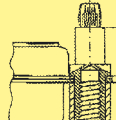
Note:
for any other layout please consult your HARTING representative.

Connectors for pcb applications – general information

The range of pcb connectors available at HARTING is summarised in the table under. For each of the basic connector versions, the available contact styles are documented with termination process, pitch, plating, rating for power contacts and impedance for coaxial contact etc..., as well as the accessory configuration.

Pcb connectors are delivered fully loaded thus providing a very good positioning of the contacts in their cavities for an easy and safe insertion of the pins in the pcb holes particularly crucial in the right angled versions.

Due to the numerous possibilities offered with the pcb connectors, suggested method is to contact your local HARTING representative to determine the part number to order; see customer request form on pages 04.34 and 04.35.

	Straight		Right angled	
Insulator body	• Standard • SMC: Solder Reflow Compatible		• Standard • SMC: Solder Reflow Compatible	
Signal contacts	Solder termination • Pitch: 2.84 mm • Plating: 0.76 µm Au over Ni • Pcb thickness from 1.6 to 3.2 mm		Solder termination • Pitch: 2.54 mm • Plating: 0.76 µm Au over Ni • Pcb thickness from 1.6 to 3.2 mm	
Power contacts	Solder termination • Rating: 20, 30, 40 A • Plating: 0.76 µm Au over Ni Press fit termination • Rating: 30 A • Plating: 0.76 µm Au over Ni		Solder termination • Rating: 20, 30, 40 A • Plating: 0.76 µm Au over Ni	
Coaxial contacts	Solder termination • 50 or 75 Ω • Plating: 1.3 µm Au over Ni inner conductor 0.76 µm Au over Ni outer ring		Solder termination • 50 or 75 Ω • Plating: 1.3 µm Au over Ni inner conductor 0.76 µm Au over Ni outer ring	
Accessories	Through hole		Metal bracket with board lock and through hole	
	Nut: M3 or UNC 4-40		Metal bracket with board lock and clinch nut M3 or UNC 4-40	
	Spacer: M3 or UNC 4-40		Metal bracket with board lock and female screw lock UNC 4-40	
	Spacer (M3 or UNC 4-40) with board lock			
	Spacer + board lock + female screw lock M3 or UNC 4-40			

Connectors for cable applications – general information

Two termination processes are available: crimp or solder

Shell		
Signal contacts	Crimp termination - For wire gauge: AWG 20-24 or 26-28 - Plating: 0.76 µm or 0.2 µm Au over Ni	Pre-mounted solder cup contacts Plating: 0.76 µm or 0.1 µm Au over Ni
Power contacts	Crimp - Rating: 20, 30, 40 A - Plating: 0.76 µm or 0.2 µm Au over Ni Solder cup - Rating: 20, 30, 40 A - Plating: 0.76 µm or 0.2 µm Au over Ni	Crimp - Rating: 20, 30, 40 A - Plating: 0.76 µm or 0.2 µm Au over Ni Solder cup - Rating: 20, 30, 40 A - Plating: 0.76 µm or 0.2 µm Au over Ni
Coaxial contacts ¹⁾	Solder/crimp termination 50 or 75 Ω - Plating: 1.3 µm or 0.2 µm Au over Ni inner conductor 0.76 µm or 0.2 µm Au over Ni outer ring - Cables: RG 178, 179 ... Crimp/crimp termination 50 or 75 Ω - Plating: 1.3 µm or 0.2 µm Au over Ni inner conductor 0.76 µm or 0.2 µm Au over Ni outer ring - Cables: RG 178, 179 ...	Solder/crimp termination 50 or 75 Ω - Plating: 1.3 µm or 0.2 µm Au over Ni inner conductor 0.76 µm or 0.2 µm Au over Ni outer ring - Cables: RG 178, 179 ... Crimp/crimp termination 50 or 75 Ω - Plating: 1.3 µm or 0.2 µm Au over Ni inner conductor 0.76 µm or 0.2 µm Au over Ni outer ring - Cables: RG 178, 179 ...
High voltage contacts	Solder termination - Plating: 1.3 µm Au over Ni terminating and mating side	Solder termination - Plating: 1.3 µm Au over Ni terminating and mating side

¹⁾ Coaxial contacts are provided in two versions:

- Inner conductor soldered and outer part crimped (solder/crimp termination)
- Both inner and outer part crimped (crimp/crimp termination); this version is recommended for medium or large size volume since crimping is faster than soldering.

Number of contacts 2, 3, 5, 7, 8, 9, 11, 13, 17, 21, 24, 25, 27, 36

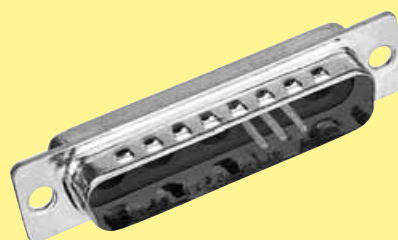
Approvals DIN 41 652, part 1
MIL-C 24 308

Working current 5 A for signal contacts

Temperature range -55 °C ... + 125 °C
The higher temperature limit includes the ambient and heating effect of the contacts under load

Materials
Mouldings Thermoplastic resin, glass-fibre filled (Polyester)
UL 94-V0
color: green for standard
black for crimp

Metal shell Plated steel



Number of contacts

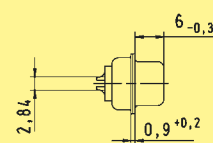
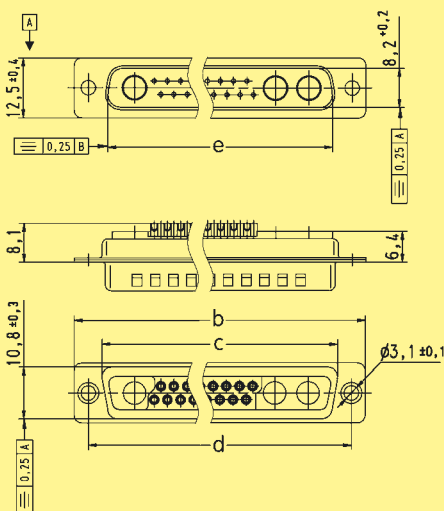
7-27



Mixed shells with pre-mounted signal solder cup contacts

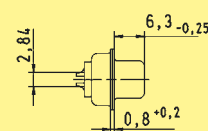
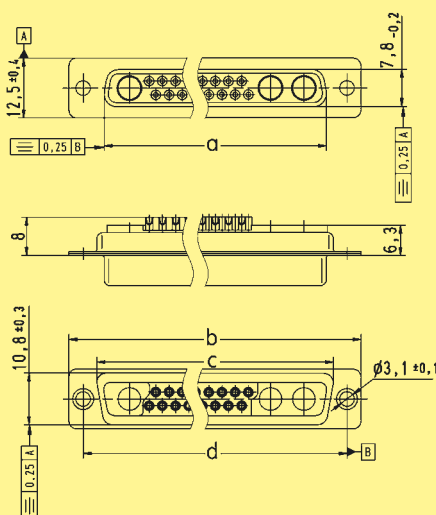
Identification	No. of contacts ¹⁾	Part No.			
		male connectors		female connectors	
		Performance level 3	S4 ²⁾	Performance level 3	S4 ²⁾
	7W2	09 69 211 7072	09 69 211 5072	09 69 201 7072	09 69 201 5072
	17W2	09 69 311 7172	09 69 311 5172	09 69 301 7172	09 69 301 5172
	21WA4	09 69 411 7214	09 69 411 5214	09 69 401 7214	09 69 401 5214
	27W2	09 69 411 7272	09 69 411 5272	09 69 401 7272	09 69 401 5272

Male connectors

Solder cup termination for AWG 20 (0.5 mm²)

	a	b	c	d	e
7W2	24.6	39.1	27.5	33.30	25.2
17W2	38.3	53.0	41.3	47.04	38.9
21WA4	54.8	69.3	57.7	63.50	55.3
27W2	54.9	69.3	57.7	63.50	55.3

Female connectors

Solder cup termination for AWG 20 (0.5 mm²)

Dimensions in mm

¹⁾ Explanations see page 04.03²⁾ S4: ≥ 0.76 µm Au

Board drillings see pages 04.29 ff

Order special contacts separately. See pages 04.21 ff

Number of contacts

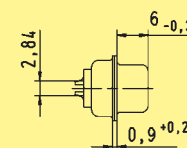
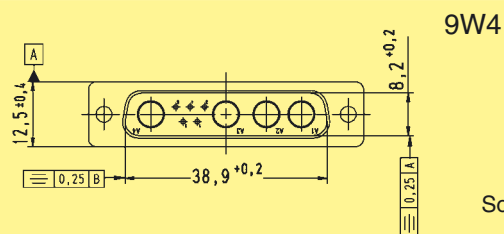
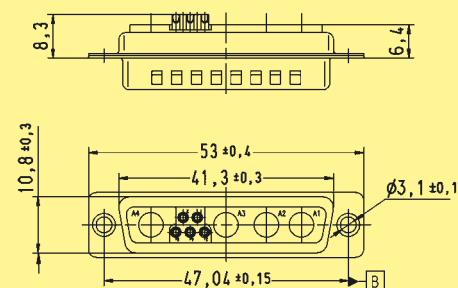
9–25



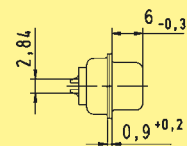
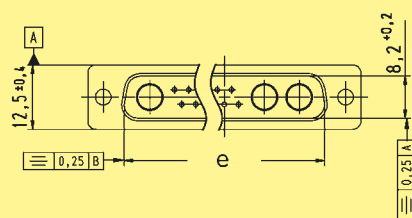
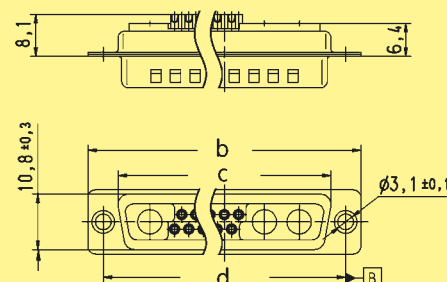
Mixed shells with pre-mounted signal solder cup contacts

Identification	No. of contacts ¹⁾	male connectors		female connectors	
		Performance level 3	S4 ²⁾	Performance level 3	S4 ²⁾
	9W4	09 69 311 7094	09 69 311 5094	09 69 301 7094	09 69 301 5094
	13W3	09 69 311 7133	09 69 311 5133	09 69 301 7133	09 69 301 5133
	25W3	09 69 411 7253	09 69 411 5253	09 69 401 7253	09 69 401 5253

Male connectors

Solder cup termination for AWG 20 (0.5 mm²)

13W3, 25W3

Solder cup termination for AWG 20 (0.5 mm²)

	b	c	d	e
13W3	53.0	41.3	47.04	38.90
25W3	69.3	57.7	63.50	49.84

Dimensions in mm

¹⁾ Explanations see page 04.03²⁾ S4: ≥ 0.76 μm Au

Board drillings see pages 04.29 ff

Drawings for female connectors see page 04.09

Order special contacts separately. See pages 04.21 ff

Number of contacts

9-25



Mixed shells with pre-mounted signal solder cup contacts

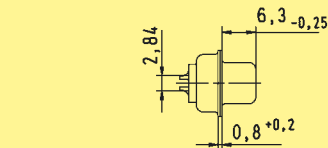
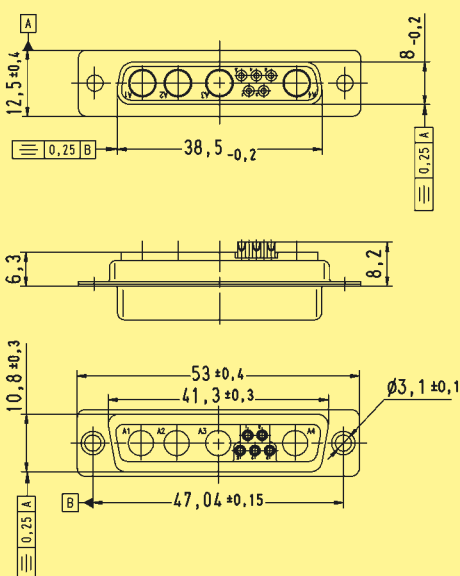
Identification

Drawing

Dimensions in mm

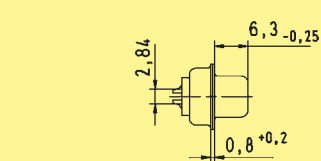
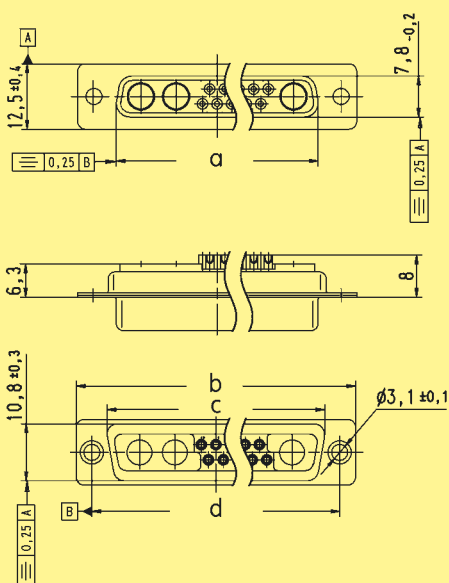
Female connectors

9W4



Solder cup termination for AWG 20 (0.5 mm²)

13W3, 25W3



Solder cup termination for AWG 20 (0.5 mm²)

	a	b	c	d
13W3	38.3	53.0	41.3	47.04
25W3	54.9	69.3	57.7	63.50

Number of contacts

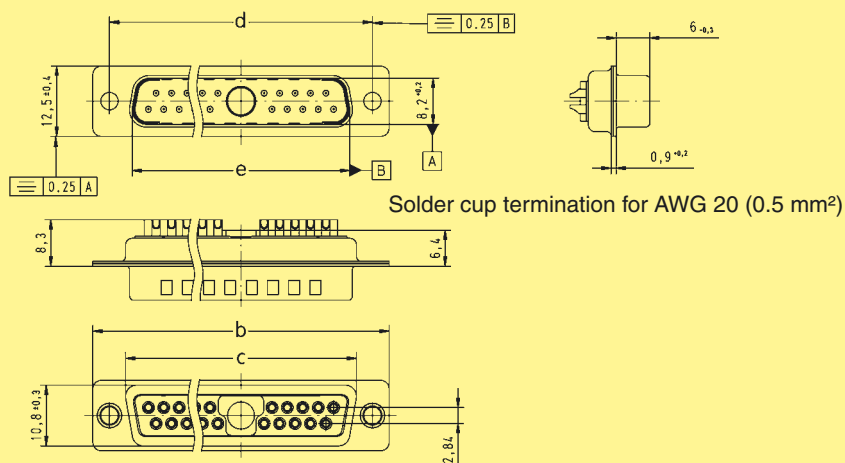
5-21



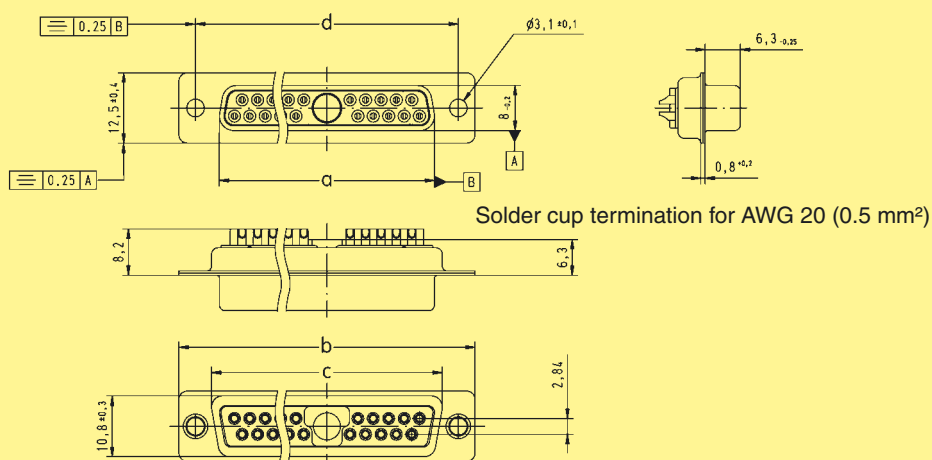
Mixed shells with pre-mounted signal solder cup contacts

Identification	No. of contacts ¹⁾	Part No.			
		male connectors		female connectors	
		Performance level 3	S4 ²⁾	Performance level 3	S4 ²⁾
	5W1	09 69 111 7051	09 69 111 5051	09 69 101 7051	09 69 101 5051
	11W1	09 69 211 7111	09 69 211 5111	09 69 201 7111	09 69 201 5111
	21W1	09 69 311 7211	09 69 311 5211	09 69 301 7211	09 69 301 5211

Male connectors



Female connectors



	a	b	c	d	e
5W1	16.4	30.8	19.3	25.00	16.9
11W1	24.7	39.1	27.5	33.30	25.2
21W1	38.5	53.0	41.3	47.04	38.9

Dimensions in mm

¹⁾ Explanations see page 04.03²⁾ S4: $\geq 0.76 \mu\text{m Au}$

Order special contacts separately. See pages 04.21 ff

Number of contacts

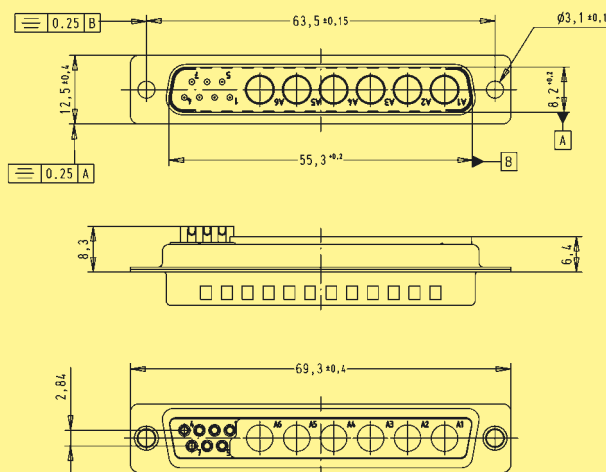
13



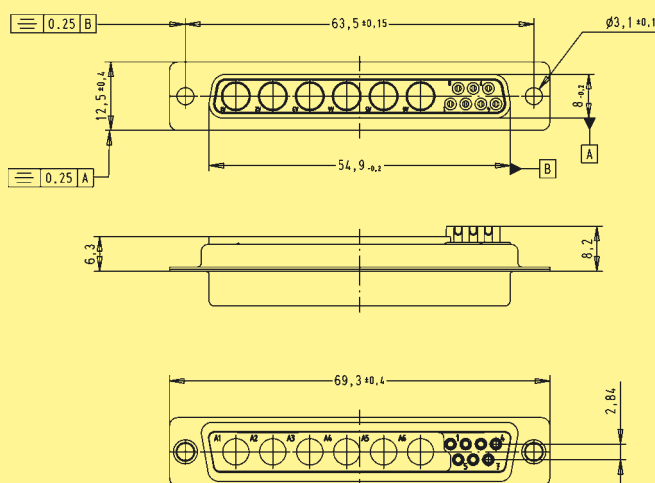
Mixed shells with pre-mounted signal solder cup contacts

Identification	No. of contacts ¹⁾	Part No.	
	13W6	male connectors	female connectors
		Performance level 3	S4 ²⁾
		09 69 411 7136	09 69 401 5136

Male connectors

Solder cup termination
for AWG 20 (0.5 mm²)

Female connectors

Solder cup termination
for AWG 20 (0.5 mm²)

Dimensions in mm

¹⁾ Explanations see page 04.03²⁾ S4: $\geq 0.76 \mu\text{m Au}$

Order special contacts separately. See pages 04.21 ff

Number of contacts

24



Mixed shells with pre-mounted signal solder cup contacts

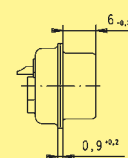
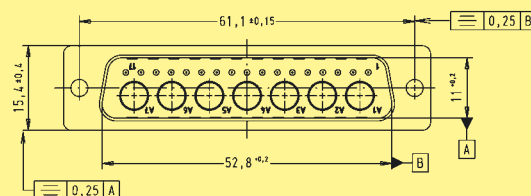
Identification

No. of contacts¹⁾

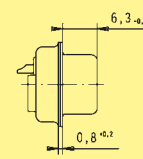
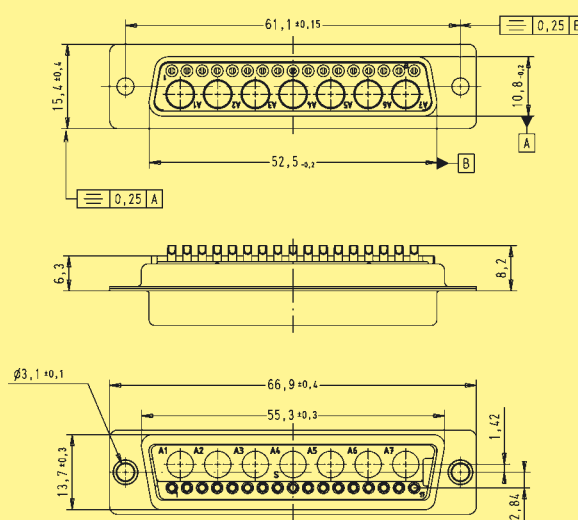
Part No.

		male connectors		female connectors	
		Performance level 3	S4 ²⁾	Performance level 3	S4 ²⁾
24W7		09 69 511 7247	09 69 511 5247	09 69 501 7247	09 69 501 5247

Male connectors

Solder cup termination for AWG 20 (0.5 mm²)

Female connectors

Solder cup termination for AWG 20 (0.5 mm²)

Dimensions in mm

¹⁾ Explanations see page 04.03²⁾ S4: ≥ 0.76 μm Au

Order special contacts separately. See pages 04.21 ff

Number of contacts

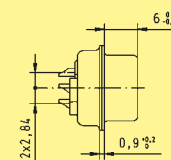
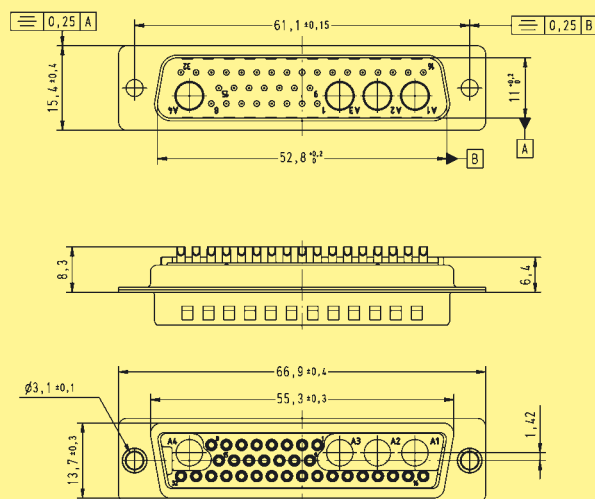
36



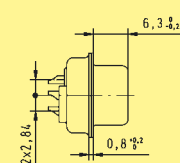
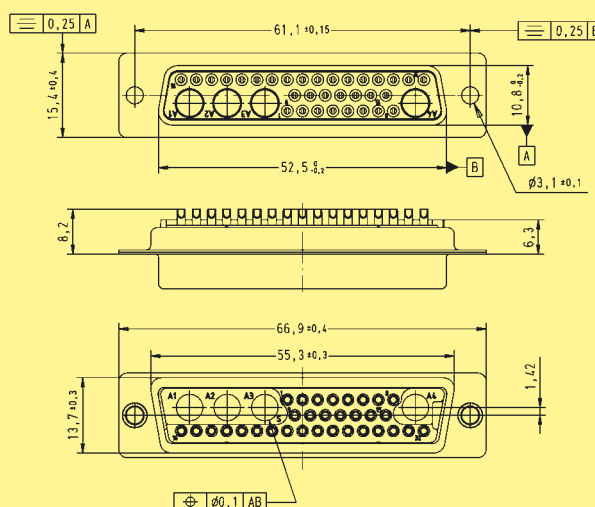
Mixed shells with pre-mounted signal solder cup contacts

Identification	No. of contacts ¹⁾	Part No.			
	36W4	male connectors		female connectors	
		Performance level 3	S4 ²⁾	Performance level 3	S4 ²⁾
		09 69 511 7364	09 69 511 5364	09 69 501 7364	09 69 501 5364

Male connectors

Solder cup termination for AWG 20 (0.5 mm²)

Female connectors

Solder cup termination for AWG 20 (0.5 mm²)

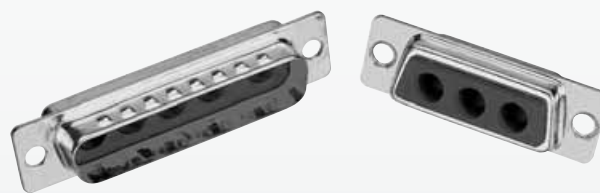
Dimensions in mm

¹⁾ Explanations see page 04.03²⁾ S4: $\geq 0.76 \mu\text{m Au}$

Order special contacts separately. See pages 04.21 ff

Number of contacts

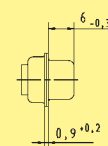
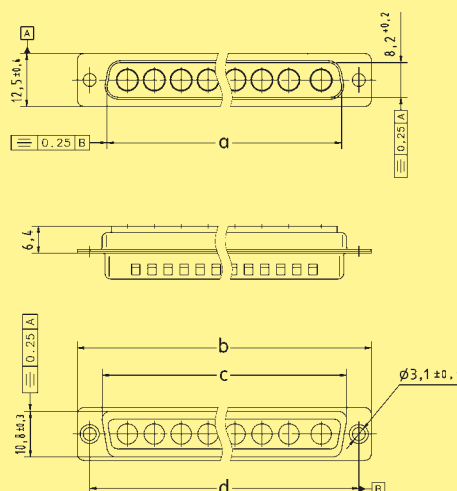
3–8



Shells without signal contacts for cable applications

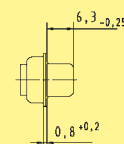
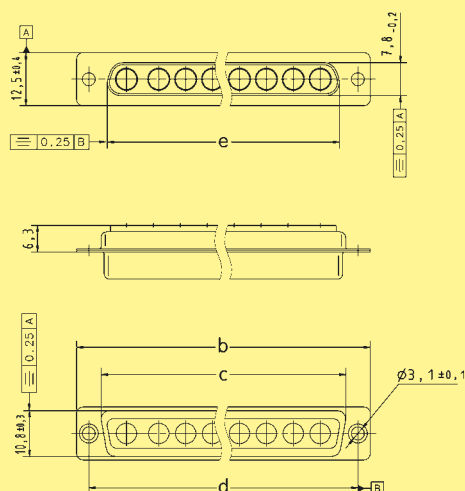
Identification	No. of contacts ¹⁾	Part No.
		male connectors
	3W3	09 69 210 0033
	5W5	09 69 310 0055
	7W7	09 69 410 0077
	8W8	09 69 410 0088
		female connectors
		09 69 200 0033
		09 69 300 0055
		09 69 400 0077
		09 69 400 0088

Male connectors



	a	b	c	d	e
3W3	25.2	39.1	27.5	33.30	24.6
5W5	38.9	53.0	41.3	47.04	38.3
7W7	55.3	69.3	57.7	63.50	54.9
8W8	55.3	69.3	57.7	63.50	54.8

Female connectors



Dimensions in mm

¹⁾ Explanations see page 04.03
 Board drillings see pages 04.29 ff
 Order special contacts separately. See pages 04.21 ff

Number of contacts

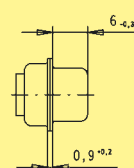
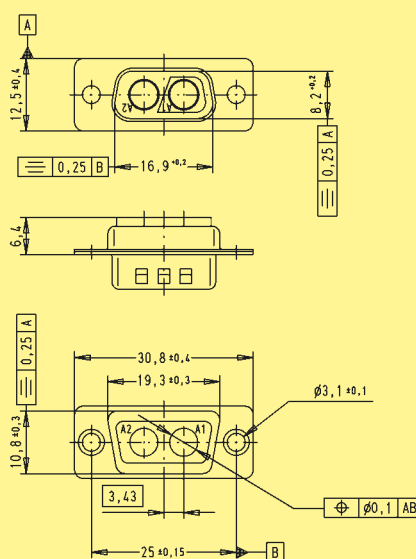
2



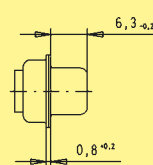
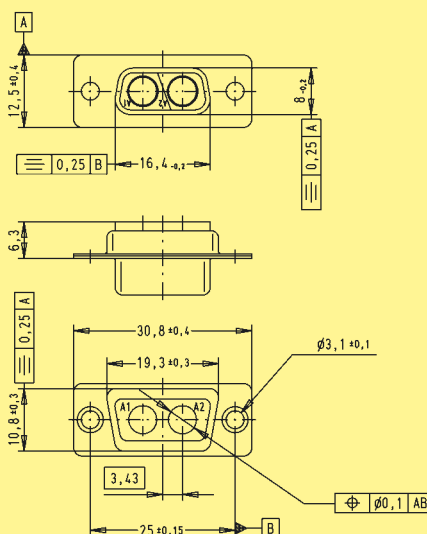
Coded shells without signal contacts for cable applications

Identification	No. of contacts ¹⁾	Part No.
		male connector
	2W2C	09 69 110 0022
		female connector
		09 69 100 0022

Male connectors



Female connectors



Dimensions in mm

¹⁾ Explanations see page 04.03
 Board drillings see pages 04.29 ff
 Order special contacts separately. See pages 04.21 ff

3

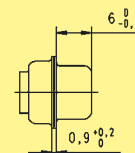


Coded shells without signal contacts for cable applications

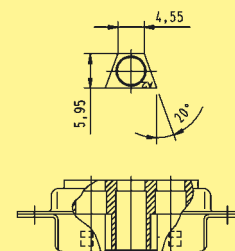
Identification	No. of contacts ¹⁾	Part No.	
		male connector	female connector
	3W3C	09 69 210 0633	09 69 200 0633

Technical drawing of a rectangular component with three circular features and mounting holes. The drawing includes the following dimensions and features:

- Top View:**
 - Overall width: $39,1 \pm 0,4$
 - Overall height: $12,5 \pm 0,4$
 - Distance from top edge to center of first hole: $8,2 \pm 0,2$
 - Distance between centers of first and second holes: $25,2 \pm 0,2$
 - Distance between centers of second and third holes: $25,2 \pm 0,2$
 - Distance from center of third hole to right edge: $8,2 \pm 0,2$
 - Feature labels: A, B, 1, 2, 3
 - Material specification: $0,25$
- Front View:**
 - Overall width: $39,1 \pm 0,4$
 - Overall height: $6,4$
 - Distance from top edge to center of first hole: $8,2 \pm 0,2$
 - Distance between centers of first and second holes: $27,5 \pm 0,3$
 - Distance between centers of second and third holes: $27,5 \pm 0,3$
 - Distance from center of third hole to right edge: $8,2 \pm 0,2$
 - Feature labels: 1, 2, 3
 - Material specification: $0,25$
- Bottom View:**
 - Overall width: $39,1 \pm 0,4$
 - Overall height: $10,8 \pm 0,3$
 - Distance from bottom edge to center of first hole: $8,2 \pm 0,2$
 - Distance between centers of first and second holes: $27,5 \pm 0,3$
 - Distance between centers of second and third holes: $27,5 \pm 0,3$
 - Distance from center of third hole to right edge: $8,2 \pm 0,2$
 - Feature labels: A, B, 1, 2, 3
 - Material specification: $0,25$



detail:
polarization feature



Technical drawing of the 3000 series pressure washer, showing front, side, and top views with dimensions and tolerances.

Front View (Top):

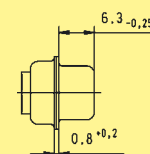
- Overall width: $39,1 \pm 0,4$
- Distance from left edge to center of first nozzle: $12,5 \pm 0,4$
- Distance between centers of nozzles: $24,7 \pm 0,2$
- Distance from center of last nozzle to right edge: $8 \pm 0,2$
- Surface texture symbol: $\sqrt{0,25}$ A

Side View (Middle):

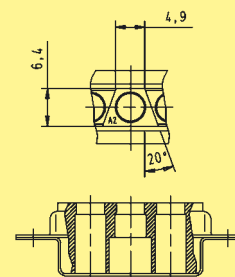
- Overall height: $6,3$

Top View (Bottom):

- Overall width: $39,1 \pm 0,4$
- Distance from left edge to center of first nozzle: $27,5 \pm 0,3$
- Distance between centers of nozzles: $6,86$
- Distance from center of last nozzle to right edge: $33,3 \pm 0,15$
- Distance from left edge to center of trigger gun: $\phi 3,1 \pm 0,1$
- Distance from center of trigger gun to left edge: $10,8 \pm 0,3$
- Surface texture symbol: $\sqrt{0,25}$ A



detail:
polarization feature



Dimensions in mm

Number of contacts

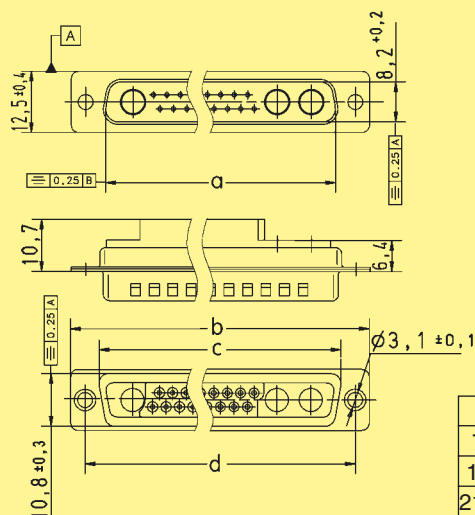
7-21



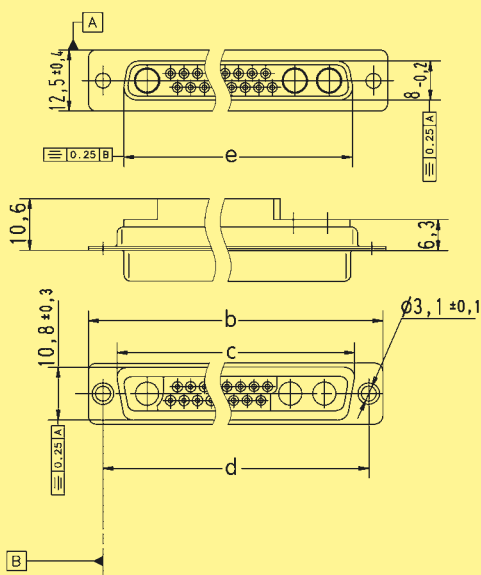
Mixed shells for signal crimp contacts

Identification	No. of contacts ¹⁾	Part No.
		male connectors
	7W2	09 69 212 0072
	17W2	09 69 312 0172
	21WA4	09 69 412 0214
		female connectors
		09 69 202 0072
		09 69 302 0172
		09 69 402 0214

Male connectors



Female connectors



Dimensions in mm

¹⁾ Explanations see page 04.03
Board drillings see pages 04.29 ff
Order special contacts separately. See pages 04.21 ff

Number of contacts

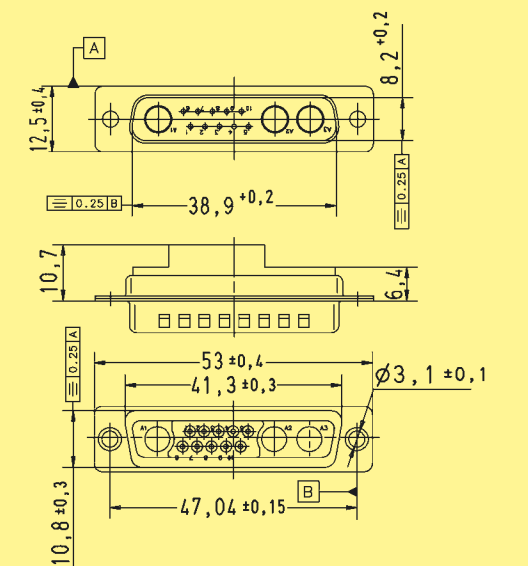
13



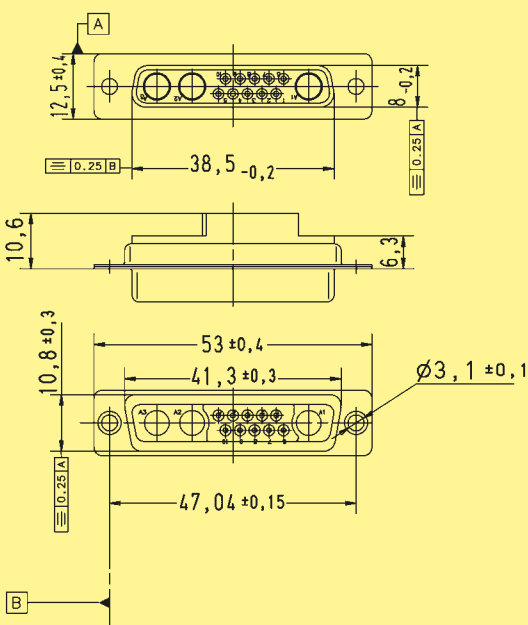
Mixed shells for signal crimp contacts

Identification	No. of contacts ¹⁾	Part No.	
		male connector	female connector
	13W3	09 69 312 0133	09 69 302 0133

Male connectors



Female connectors



Dimensions in mm

¹⁾ Explanations see page 04.03
Board drillings see pages 04.29 ff
Order special contacts separately. See pages 04.21 ff

D-Sub - M

Number of contacts

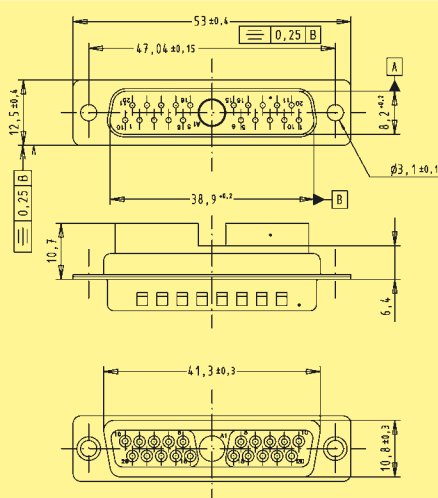
21



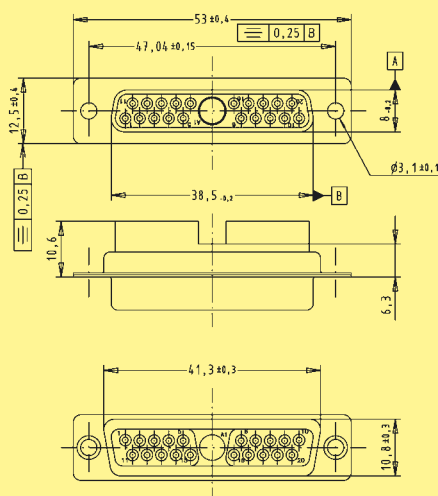
Mixed shells for signal crimp contacts

Identification	No. of contacts ¹⁾	Part No.	
	21W1	male connector	female connector
		09 69 312 0211	09 69 302 0211

Male connectors



Female connectors



Dimensions in mm

¹⁾ Explanations see page 04.03
Order special contacts separately. See pages 04.21 ff

	Signal contacts see page 04.22	Coaxial contacts see pages 04.26 – 04.28	Power contacts see pages 04.24 + 04.25	High voltage contacts see page 04.23
Working current	5 A	2 A	20 A, 30 A or 40 A	2 A DC
Test voltage $U_{r.m.s.}$	–	750 V / 50 Hz	–	4 kV / 50 Hz
Operating voltage	–	–	–	≤ 3 kV
Contact resistance	–	≤ 2.7 m Ω (inner and outer conductor)	≤ 1 m Ω	≤ 3 m Ω (outer conductor)
Impedance	–	50 / 75 Ω	–	–
Frequency range	–	0 - 2 GHz	–	–
Temperature range	–	-55 °C ... + 135 °C	-55 °C ... + 155 °C	-55 °C ... + 125 °C
Mating cycles				
high performance level	≥ 500	≥ 500	≥ 500	–
standard performance level	≥ 200	≥ 200	≥ 200	≥ 500
Mating force	≤ 3.4 N	≤ 7 N/mated pair	≤ 7 N/mated pair	≤ 5 N
Unmating force	≥ 0.2 N	≤ 7 N/mated pair	appr. 5 N	appr. 2.5 N
Materials				
Contacts	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Plating*				
Mating side / terminating side	0.76 μm Au / 0.76 μm Au or 0.2 μ m Au / 0.2 μ m Au		0.76 μm Au / 0.2 μm Au or 0.2 μ m Au / 5 μ m Sn	1.3 μm Au / 1.3 μm Au
Inner conductor mating side / terminating side	–	1.3 μm Au / 1.3 μm Au or 0.2 μ m Au / 0.2 μ m Au	–	–
Outer conductor mating side / terminating side	–	0.76 μm Au / 0.2 μm Au or 0.2 μ m Au / 5 μ m Sn	–	–
Retaining clip	–	Copper alloy	Copper alloy	PI
Insulator	–	PBFE/PBTP/PI	–	PTFE

Technical characteristics for shells see page 04.06

* **High performance** or standard performance level



Straight signal crimp contacts for cable applications

Identification	Wire gauge (mm²)	Part No.	
Male contact	0.09 - 0.14 AWG 28 - 26	Performance level 3	S4 ¹⁾
		09 69 282 7311	09 69 282 5311
	0.25 - 0.56 AWG 24 - 20	09 69 282 7310	09 69 282 5310
Female contact	0.09 - 0.14 AWG 28 - 26	09 69 182 7311	09 69 182 5311
	0.25 - 0.56 AWG 24 - 20	09 69 182 7310	09 69 182 5310

Male contact	
Female contact	

Dimensions in mm

¹⁾ S4: $\geq 0.76 \mu\text{m Au}$
Tooling see chapter 31



High voltage contacts for cable applications

Identification	Wire gauge (mm ²)	Part No.	
Straight versions	0.25 - 0.56 AWG 24 - 20	Male contacts Plating: 1.3 µm Au ¹⁾	Female contacts Plating: 1.3 µm Au ¹⁾
		09 69 281 2550	09 69 181 2550
Right angled versions	0.25 - 0.56 AWG 24 - 20	09 69 681 2550	09 69 581 2550
Straight versions	Male contacts		Female contacts
Right angled versions			

Dimensions in mm

¹⁾ for mating and terminating side



Straight power contacts for cable applications

Identification		Rating (A)	Part No.	
Performance levels 			Performance level 3	S4 ¹⁾
D-Sub - M	Solder version			
	Male contacts	10	09 69 281 7420	09 69 281 5420
		20	09 69 281 7421	09 69 281 5421
		30	09 69 281 7422	09 69 281 5422
		40	09 69 281 7423	09 69 281 5423
	Female contacts	10	09 69 181 7420	09 69 181 5420
		20	09 69 181 7421	09 69 181 5421
		30	09 69 181 7422	09 69 181 5422
		40	09 69 181 7423	09 69 181 5423
	Crimp version ²⁾			
	Male contacts	10	09 69 282 7420	09 69 282 5420
		20	09 69 282 7421	09 69 282 5421
		30	09 69 282 7422	09 69 282 5422
		40	09 69 282 7423	09 69 282 5423
	Female contacts	10	09 69 182 7420	09 69 182 5420
		20	09 69 182 7421	09 69 182 5421
		30	09 69 182 7422	09 69 182 5422
		40	09 69 182 7423	09 69 182 5423

¹⁾ S4: $\geq 0.76 \mu\text{m Au}$
²⁾ Tooling see chapter 31

Dimensions see page 04.25



Straight power contacts for cable applications

Identification

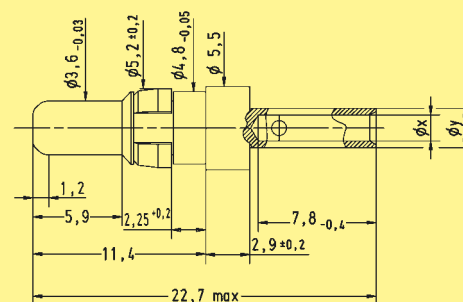
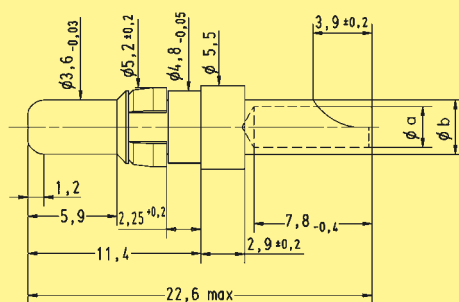
Drawing

Dimensions in mm

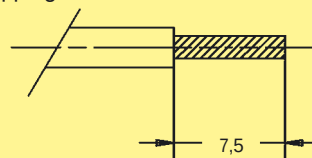
Male contacts

solder

crimp



stripping dimensions



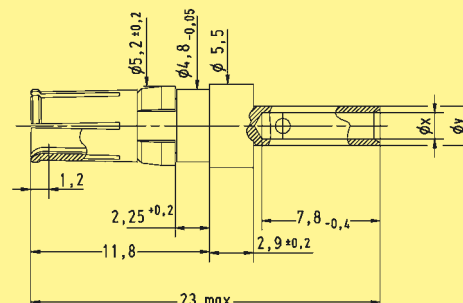
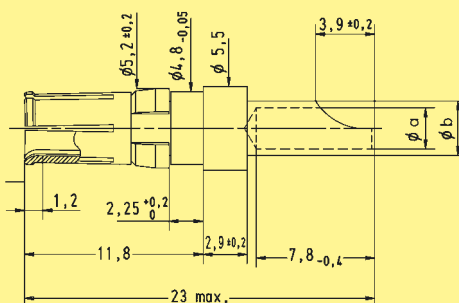
Rating (A)	$\varnothing a -0.1$	$\varnothing b \pm 0.05$
10	1.8	2.54
20	2.7	3.63
30	3.5	4.40
40	4.8	5.50

Rating (A)	$\varnothing x -0.1$	$\varnothing y \pm 0.05$	AWG
10	1.7	2.6	16 - 20
20	2.6	3.6	12 - 14
30	3.7	4.7	10 - 12
40	4.6	5.8	8 - 10

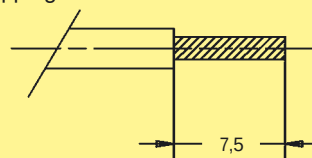
Female contacts

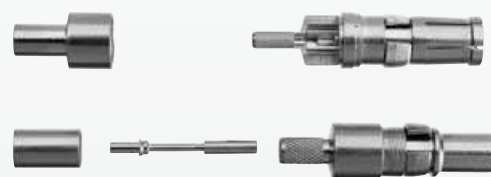
solder

crimp



stripping dimensions

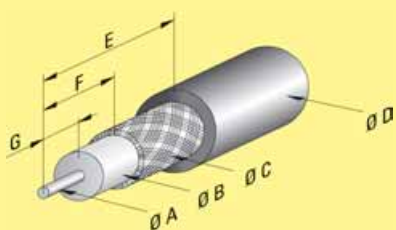




Coaxial contacts for cable applications

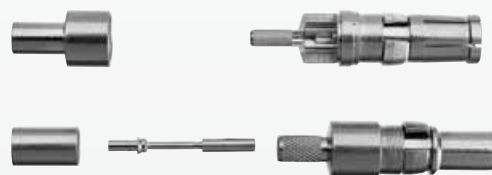
Identification	Impedance (Ω)	Part No.			
		Straight male contacts		Straight female contacts	
		Performance level 3	S4 ¹⁾	Performance level 3	S4 ¹⁾
Solder / crimp contact					
for cables RG 174 U, 188 AU, 316 U	50	09 69 281 7140	09 69 281 5140	09 69 181 7140	09 69 181 5140
for cables RG 178 BU, 196 AU, 404 U	50	09 69 281 7141	09 69 281 5141	09 69 181 7141	09 69 181 5141
for cables RG 58 CU, 141 AU	50	09 69 281 7143	09 69 281 5143	09 69 181 7143	09 69 181 5143
for cables RG 179 BU, 187 AU	75	09 69 281 7230	09 69 281 5230	09 69 181 7230	09 69 181 5230
Crimp / crimp contact					
for cables RG 174 U, 188 AU, 316 U	50	09 69 282 7140	09 69 282 5140	09 69 182 7140	09 69 182 5140
for cables RG 179 BU, 187 AU	75	09 69 282 7230	09 69 282 5230	09 69 182 7230	09 69 182 5230
for cables RG 59	75	09 69 282 7232	09 69 282 5232	09 69 182 7232	09 69 182 5232

Harnessing dimensions (mm)



Part No.	Ø A	Ø B	Ø C	Ø D	E	F	G
09 69 181 x140 09 69 281 x140	0.85	1.9	2.3	3.2	9.5	5.0	3.0
09 69 181 x141 09 69 281 x141	0.85	1.2	1.4	2.3	9.5	5.0	3.0
09 69 181 x143 09 69 281 x143	1.00	3.0	4.4	5.2	9.5	5.0	3.0
09 69 181 x230 09 69 281 x230	0.50	1.9	2.3	3.2	9.5	5.0	3.0
09 69 182 x140 09 69 282 x140	0.60	1.9	2.4	3.2	9.0	5.0	3.0
09 69 182 x230 09 69 282 x230	0.60	1.9	2.4	3.2	9.0	5.0	3.0
09 69 182 x232 09 69 282 x232	0.95	3.8	5.1	6.2	9.0	4.3	3.7

¹⁾ S4: $\geq 0.76 \mu\text{m Au}$
Dimensions see pages 04.27 and 04.28
Tooling see chapter 31



Coaxial contacts for cable applications

Identification

Drawing

Dimensions in mm

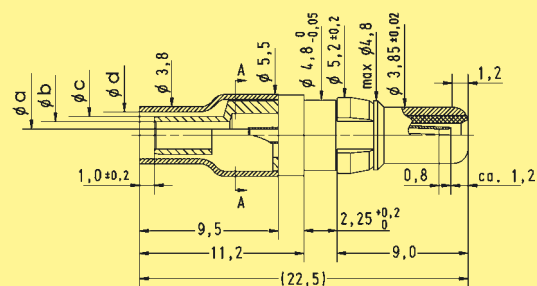
Male contacts

Part No.	$\varnothing a$	$\varnothing b$	$\varnothing c$	$\varnothing d$
09 69 281 x140	0.85	1.9	2.6	3.2
09 69 281 x141	0.85	1.2	1.7	2.3
09 69 281 x230	0.50	1.9	2.6	3.2

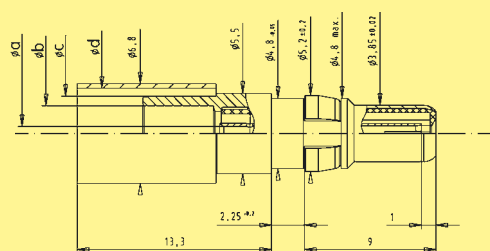
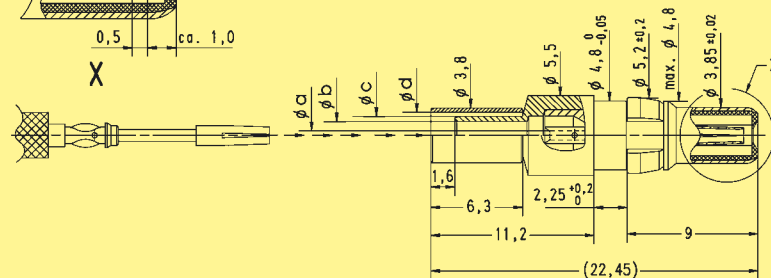
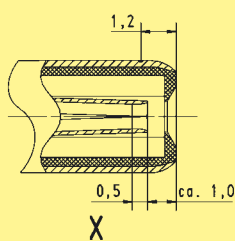
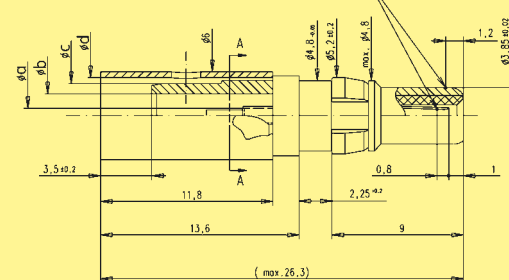
Part No.	$\varnothing a$	$\varnothing b$	$\varnothing c$	$\varnothing d$
09 69 281 x143	1.0	3.0	4.4	5.2

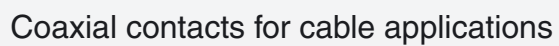
Part No.	$\varnothing a$	$\varnothing b$	$\varnothing c$	$\varnothing d$
09 69 282 x140	0.6	1.9	2.6	3.2
09 69 282 x230	0.6	1.9	2.6	3.2

Part No.	$\varnothing a$	$\varnothing b$	$\varnothing c$	$\varnothing d$
09 69 282 x232	0.95	3.8	5.1	6.2



Points of plating thickness measurement





Dimensions in mm

Technical drawing of a mechanical assembly (Fig. 10) showing a cross-section of a shaft with a key and a housing. The drawing includes dimensions for diameters (ϕa , ϕb , ϕc , ϕd , $\phi 3.8$, $\phi 5.5$, $\phi 4.8$, $\phi 5.2$, $\phi 1$), lengths (1 ± 0.2 , 9.5 , 11.2 , 2.25 ± 0.2 , 9.5 ± 0.2 , 0.3 ± 0.2), and tolerances (0.05 , ± 0.2). A section line A-A is indicated.

Points of plating thickness measurement

The technical drawing shows a shaft assembly with the following dimensions and features:

- Shaft Diameter:** $\phi 6$
- Key Width:** $\phi 8$
- Internal Thread:** $M5 \times 0.8$
- External Thread:** $M5 \times 0.8$
- Threaded Section Length:** $2,25 \pm 0,2$
- Total Assembly Length:** $9,4$
- Other Dimensions:** $13,3$, $0,3 \pm 0,2$, $\phi 14,72$

Pcb hole patterns for power contacts

In the next pages, the pcb hole pattern is given for the power and the coaxial contact per connector layout. In the case of the power contact, the drilling hole dimension is not mentioned; the table here under provides relevant information according to the current rating of the contact and its version.

Power contact diameter and pcb related drilling diameter

	Straight connectors		Right angled connectors	
Rating	Pin Ø (mm)	Pcb drilling Ø (mm)	Pin Ø (mm)	Pcb drilling Ø (mm)
20 A	2.6	2.9	2.85	3.15
30 A	–	–	3.20	3.50
40 A	3.75	4.0	3.75	4.05



Board drillings for connectors with straight pcb contacts

Identification

Drawing

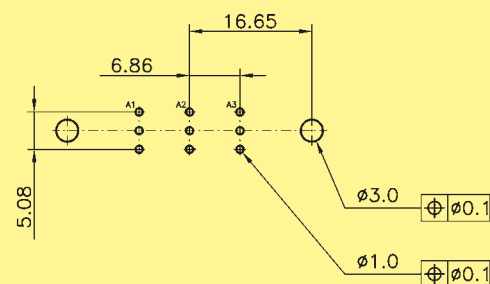
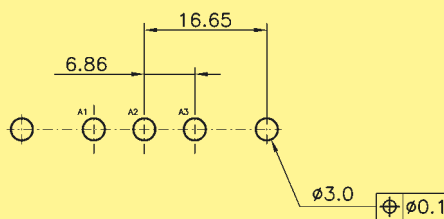
Dimensions in mm

Male connector*

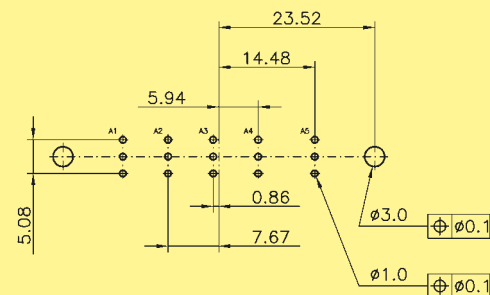
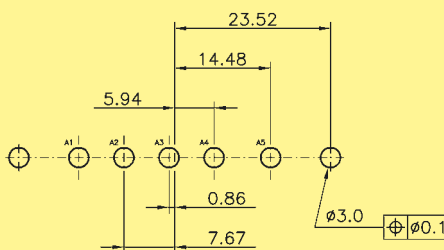
3W3 / 3W3C

Power contact

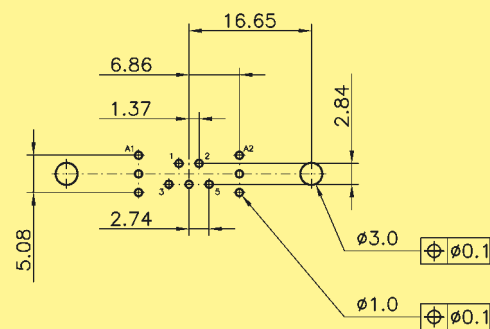
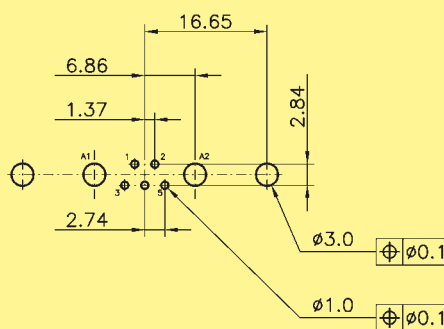
Coaxial contact



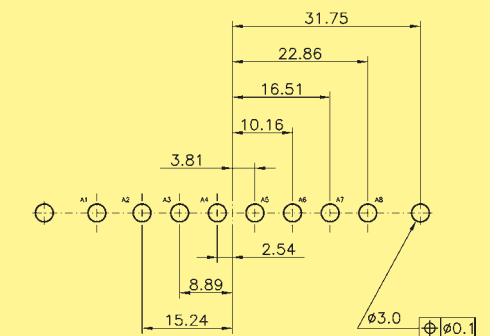
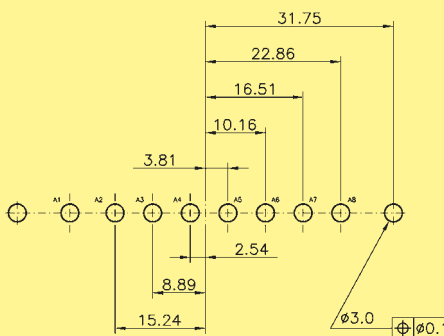
5W5



7W2



8W8



* When using a female connector with straight pcb contacts the board drilling pattern must be mirrored in the Y axis.



Board drillings for connectors with straight pcb contacts

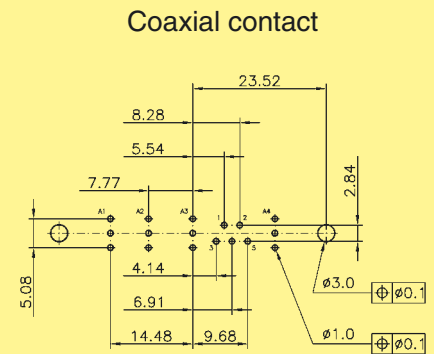
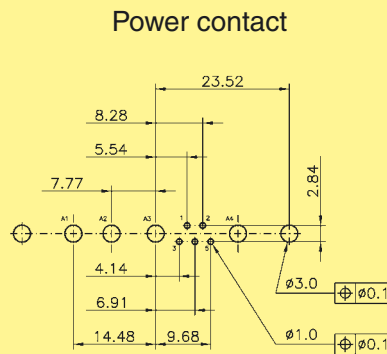
Identification

Drawing

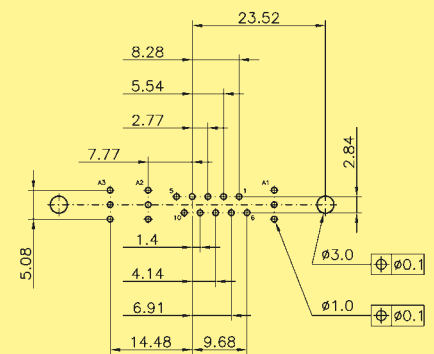
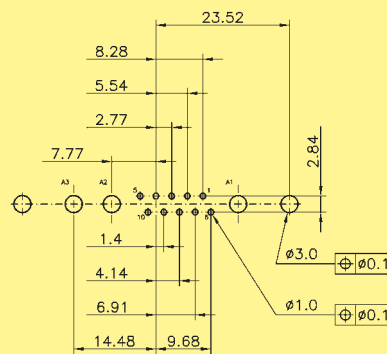
Dimensions in mm

Male connector*

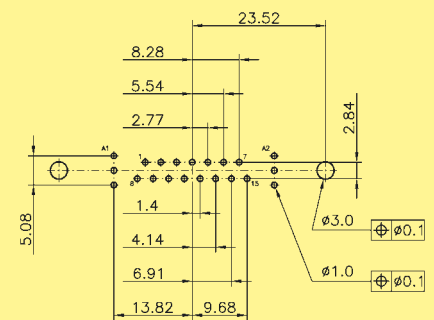
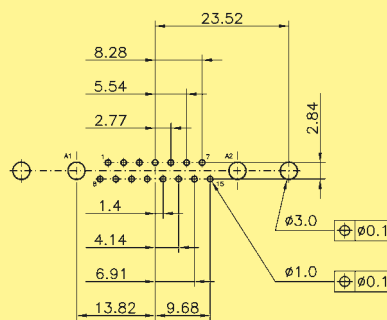
9W4



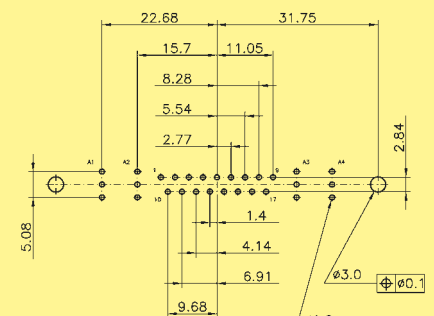
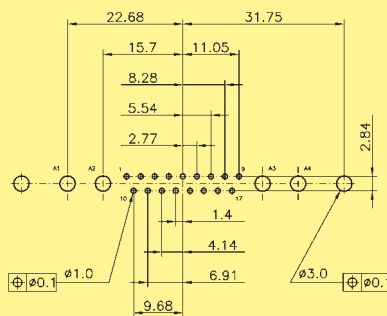
13W3



17W2



21WA4



* When using a female connector with straight pcb contacts the board drilling pattern must be mirrored in the Y axis.



Board drillings for connectors with right angled pcb contacts

Identification

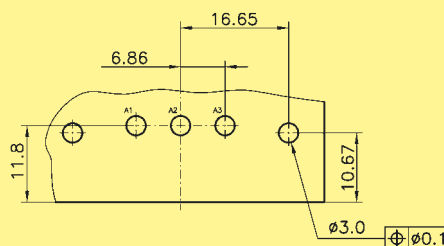
Drawing

Dimensions in mm

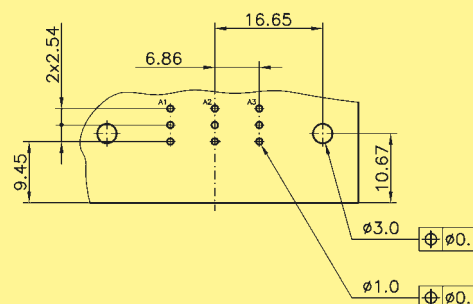
Male connector*

3W3 / 3W3C

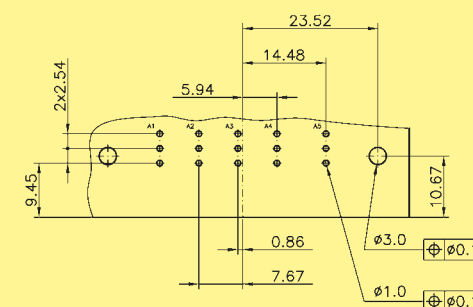
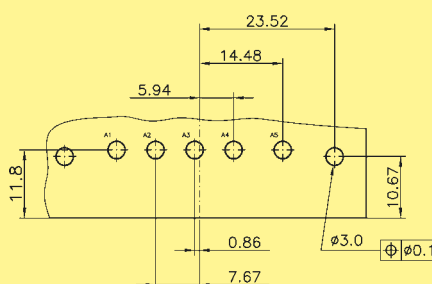
Power contact



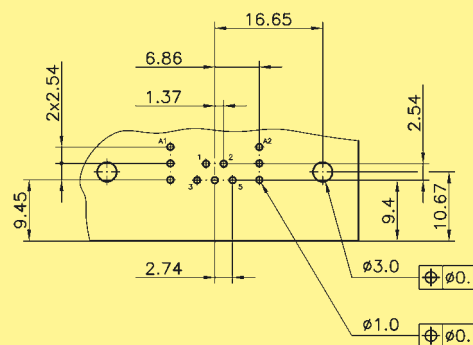
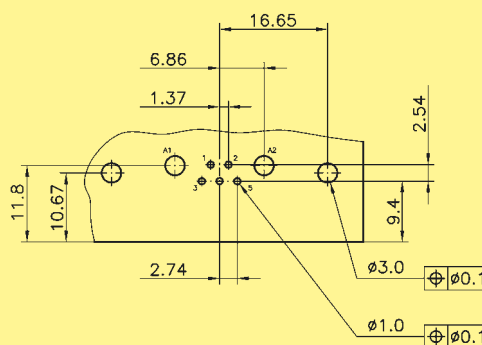
Coaxial contact



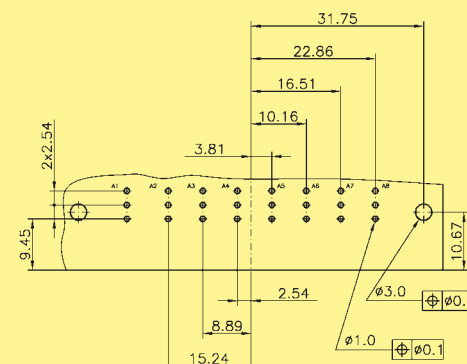
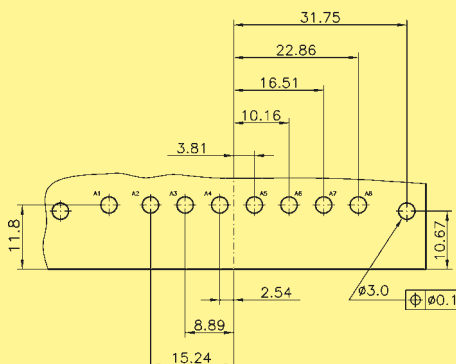
5W5



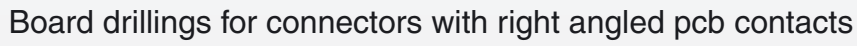
7W2

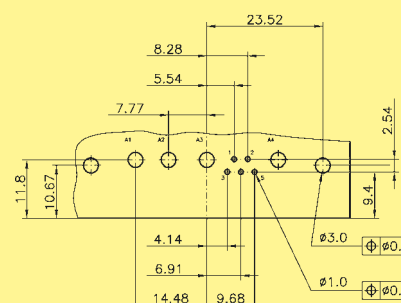
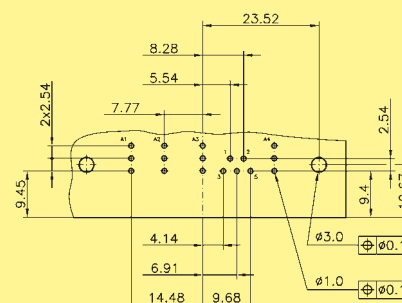
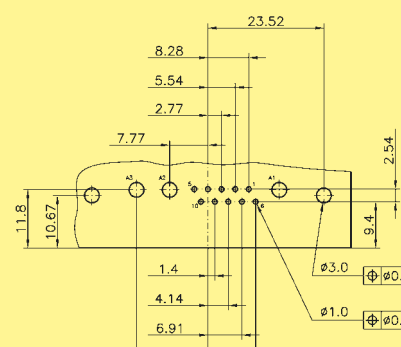
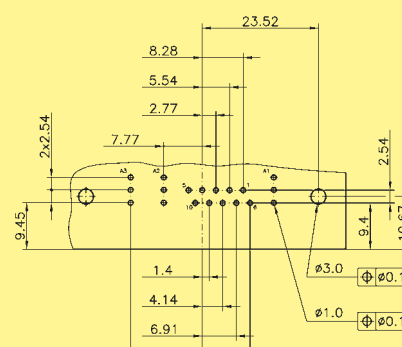
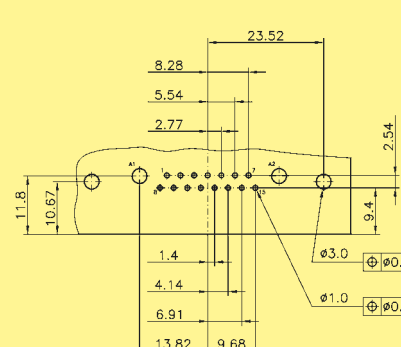
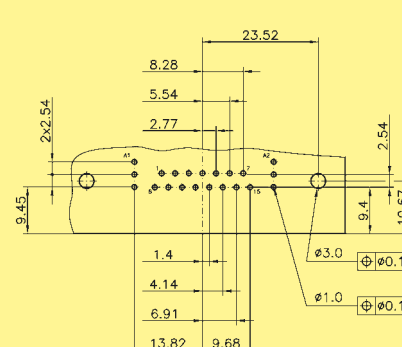
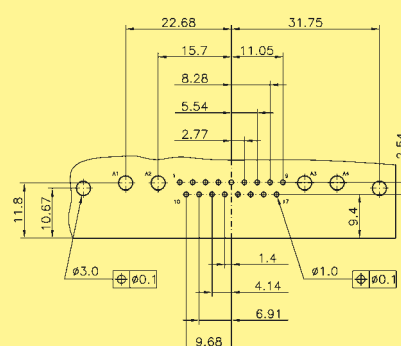
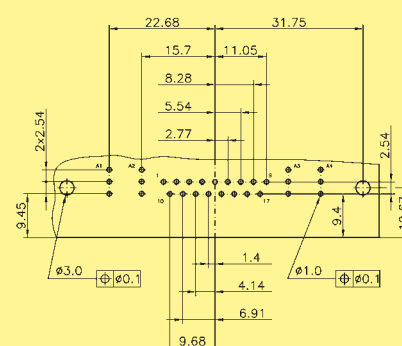


8W8



* When using a female connector with right angled pcb contacts the board drilling pattern must be mirrored in the Y axis.



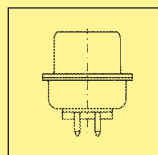
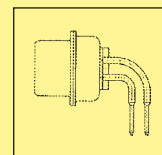
Male connector*	Power contact	Coaxial contact
9W4	 Technical drawing of the 9W4 power contact connector. It shows a side view with dimensions: overall length 23.52, mounting hole spacing 8.28, 5.54, 7.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 4.14, 6.91, 14.48, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.	 Technical drawing of the 9W4 coaxial contact connector. It shows a side view with dimensions: overall length 23.52, mounting hole spacing 8.28, 5.54, 7.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 4.14, 6.91, 14.48, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.
13W3	 Technical drawing of the 13W3 power contact connector. It shows a side view with dimensions: overall length 23.52, mounting hole spacing 8.28, 5.54, 2.77, 7.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 1.4, 4.14, 6.91, 14.48, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.	 Technical drawing of the 13W3 coaxial contact connector. It shows a side view with dimensions: overall length 23.52, mounting hole spacing 8.28, 5.54, 2.77, 7.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 1.4, 4.14, 6.91, 14.48, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.
17W2	 Technical drawing of the 17W2 power contact connector. It shows a side view with dimensions: overall length 23.52, mounting hole spacing 8.28, 5.54, 2.77, 7.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 1.4, 4.14, 6.91, 13.82, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.	 Technical drawing of the 17W2 coaxial contact connector. It shows a side view with dimensions: overall length 23.52, mounting hole spacing 8.28, 5.54, 2.77, 7.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 1.4, 4.14, 6.91, 13.82, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.
21WA4	 Technical drawing of the 21WA4 power contact connector. It shows a side view with dimensions: overall length 31.75, mounting hole spacing 22.68, 15.7, 11.05, 8.28, 5.54, 2.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 1.4, 4.14, 6.91, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.	 Technical drawing of the 21WA4 coaxial contact connector. It shows a side view with dimensions: overall length 31.75, mounting hole spacing 22.68, 15.7, 11.05, 8.28, 5.54, 2.77, 2.54, 9.4, 10.67, 11.8. Pin dimensions: 1.4, 4.14, 6.91, 9.68. Pin diameters: $\phi 3.0$, $\phi 1.0$. Pin positions: $\phi 0.1$.

* When using a female connector with right angled pcb contacts the board drilling pattern must be mirrored in the Y axis.

HARTING customer request form for pcb connectors

1 Connector gender and type

- ☐ Male
- ☐ Female


☐ Straight

☐ Right angled

2 Contact arrangement

Standard

- ☐ 3W3 ☐ 8W8 ☐ 21WA4 ☐ Other configuration
☐ 5W5 ☐ 13W3 ☐ 24W7 _____
☐ 7W2 ☐ 17W2 ☐ 36W4 _____

 Special configurations
 (mixed contact genders)

- ☐ 2W2C ☐ 3W3C

2.1 Any signal contacts?

- ☐ Yes (fill in questions below) ☐ No (go directly to item 2.2)
- ☐ Right angled 2.54 mm pitch
☐ Other pitch: _____

2.2 Any power contacts?

- ☐ Yes (fill in questions below) ☐ No (go directly to item 2.3)

Current rating

- ☐ 10 A ☐ 30 A
☐ 20 A ☐ 40 A

Termination type

- ☐ Solder pin for pcb
☐ Press in for pcb (30A)

Performance level

[mating side / termination side]

- ☐ S4 [0.76 μ m Au / 0.2 μ m Au]
☐ PL 3 [0.2 μ m Au / 5.0 μ m Sn]

2.3 Any coaxial contacts?

- ☐ Yes (fill in questions below) ☐ No (go directly to item 3)

Impedance

- ☐ 50 Ω
☐ 75 Ω

Performance level

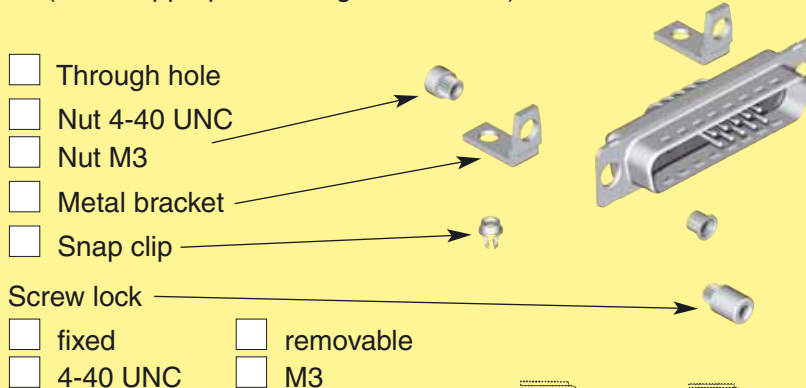
[mating side inner / outer conductor]

- ☐ S4 [1.3 μ m Au / 0.76 μ m Au]
☐ PL 3 [0.2 μ m Au / 0.2 μ m Au]

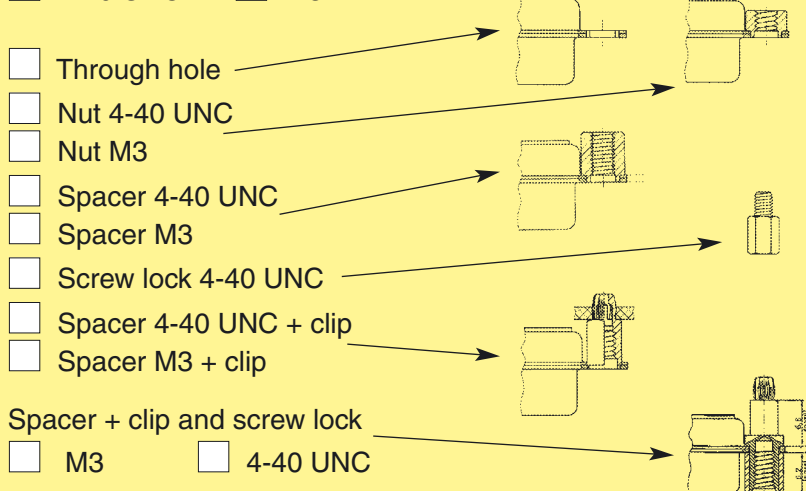
HARTING customer request form for pcb connectors

3 Pcb mounting accessories (select appropriate fixing accessories)

3.1 Right angled version

- ☐ Through hole
☐ Nut 4-40 UNC
☐ Nut M3
☐ Metal bracket
☐ Snap clip
 Screw lock
☐ fixed ☐ removable
☐ 4-40 UNC ☐ M3
- 

3.2 Straight version

- ☐ Through hole
☐ Nut 4-40 UNC
☐ Nut M3
☐ Spacer 4-40 UNC
☐ Spacer M3
☐ Screw lock 4-40 UNC
☐ Spacer 4-40 UNC + clip
☐ Spacer M3 + clip
 Spacer + clip and screw lock
☐ M3 ☐ 4-40 UNC
- 

4 Additional information

Pcb thickness:

(if possible provide pcb layout with plating specifications)

Operating temperature:

☐ standard

☐ SMC compatible

Is hot plugging required

☐ No

☐ Yes

Short description: _____

Is a vacuum pick and place process considered?

☐ No

☐ Yes

Is blind mating feature required?

☐ No

☐ Yes (provide precise requirements)

Name: _____

Drawing: ☐ no ☐ yes

Company: _____

Samples: ☐ no ☐ yes, quantity

Address: _____

Volume (pcs./year): _____

Phone: _____

Special requirements: _____

Fax: _____

E-Mail: _____

HARTING customer request form for cable connectors

1 Connector gender

Note: for a right angled configuration please consult us

- ☐ Straight plug (male contacts)
☐ Straight receptacle (female contacts)



21W4 mixed male for cable

2 Contact arrangement

Standard

- | | | | |
|--|-------------------------------|--------------------------------|-------------------------------|
| ☐ 3W3 | ☐ 8W8 | ☐ 17W2 | |
| ☐ 5W1 | ☐ 9W4 | ☐ 21W1 | |
| ☐ 5W5 | ☐ 11W1 | ☐ 21WA4 | |
| ☐ 7W2 | ☐ 13W3 | ☐ 24W7 | ☐ 27W2 |
| ☐ 7W7 | ☐ 13W6 | ☐ 25W3 | ☐ 36W4 |
| ☐ Other configuration _____ | | | |
| ☐ 2W2C | | ☐ 3W3C | |

Special configurations
(mixed contact genders)

2.1 Any signal contacts?

- ☐ Yes (fill in questions below) ☐ No (go directly to item 2.2)

Termination type

- ☐ Crimp ☐ Solder cup S4 [0.76 µm Au]

Signal cable size for crimp contact

- ☐ AWG 20-24 ☐ AWG 26-28

Crimp contact performance level

- ☐ S4 [0.76 µm Au / 0.2 µm Au]
☐ PL3 [0.2 µm Au / 5.0 µm Sn]

2.2 Any power contacts?

- ☐ Yes (fill in questions below) ☐ No (go directly to item 2.3)

Current rating

- ☐ 20 A ☐ 30 A ☐ 40 A

Termination type

- ☐ Crimp ☐ Solder cup

Performance level

[mating side / termination side]

- ☐ S4 [0.76 µm Au / 0.2 µm Au]
☐ PL3 [0.2 µm Au / 5.0 µm Sn]

2.3 Any coaxial contacts?

- ☐ Yes (fill in questions below) ☐ No

Impedance

- ☐ 50 Ω ☐ 75 Ω

Termination type

- ☐ Crimp/crimp
☐ Crimp/solder [inner conductor is soldered, outer crimped]

Performance level

[mating side inner / outer conductor]

- ☐ S4 [1.3 µm Au / 0.76 µm Au]
☐ PL3 [0.2 µm Au / 0.2 µm Au]

Cable reference (e.g. RG 178): _____

Name: _____

Drawing: _____

- ☐ no ☐ yes

Company: _____

Samples: _____

- ☐ no ☐ yes, quantity

Address: _____

Volume (pcs./year): _____

Phone: _____

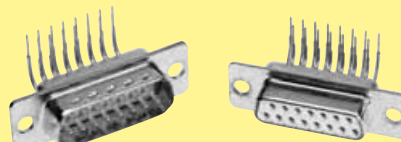
Special requirements: _____

Fax: _____

E-Mail: _____

D-Sub – Filter subminiature D connectors, 2.54 mm pitch

Page

General information **05.02**Technical characteristics **05.03**Attenuation characteristics for standard capacitance values **05.04**Connectors with turned solder pins,
straight**05.06**Connectors with turned solder pins, right angled
(European footprint 2.54 mm)**05.12**

Connectors with solder buckets

**05.24**

Panel cut outs / panel mountings

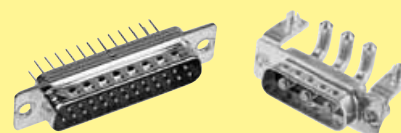
05.28

Customized solutions

General information

05.29

HARTING customer request form

**05.32**

HARTING filter D connectors are distinguished by their high performance and offer optimal filtering. The filtering element incorporates a multi-layer printed circuit board and surface mount components, all within the standard D-Sub shell.

The HARTING filter D range consists of:

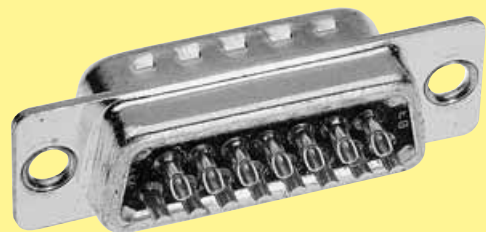
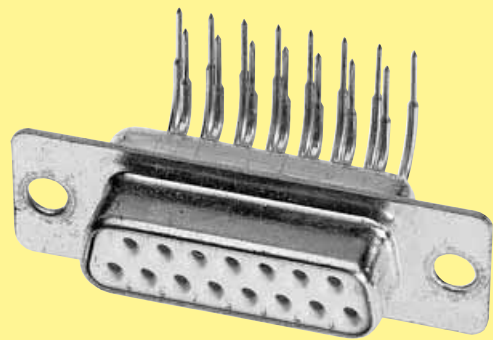
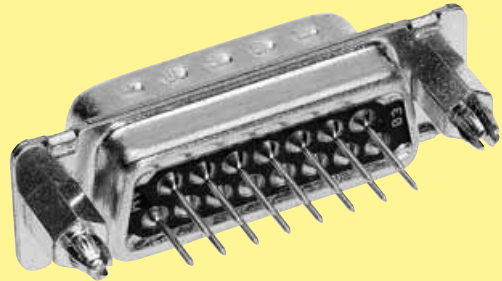
- A standard range of products (available from stock for pcb and cable applications):
 - male and female connectors
 - various terminations such as solder buckets, straight and right angled solder pins
 - 9, 15, 25 and 37 contact versions
 - a large range of accessories

- **Customized solutions:**

The innovative technical solution of filtering enables customers to select the optimum filter on a contact by contact approach. This flexible technology allows not only to segregate the filtering per contact but also to mix the type of filter in a single competitive product. Please contact your local HARTING representative. Customized possibilities are explained on pages 05.29 ff.

HARTING filtered D connectors are suitable for military, aerospace, industrial, medical, telecom and computers applications.

HARTING filter D connectors can also take advantage of **reflow soldering** and the cost savings it brings.



Number of contacts 9, 15, 25, 37
UL recognized

Working current 7.5 A max.

Test voltage $U_{r.m.s.}$ 1 kV

Contact resistance $\leq 10 \text{ m}\Omega$
Insulation resistance $\geq 1000 \text{ M}\Omega$

Temperature range $-55^\circ\text{C} \dots +125^\circ\text{C}$
Heat deflection temperature
limit according to DIN 53 461 $+255^\circ\text{C}$

Terminations
a) Solder buckets max. 0.8 mm^2
b) Solder pins $\varnothing 0.6 \text{ mm}$ for
P.C.B. holes $\varnothing 0.8/1 \text{ mm}$
c) Solder pins, angled 90°
 $\varnothing 0.6 \text{ mm}$ for P.C.B. holes
 $\varnothing 0.8/1 \text{ mm}$

Materials
Insulation PCT, glass-fibre filled,
flame retardant acc. to
UL 94-V0
Colour: natural

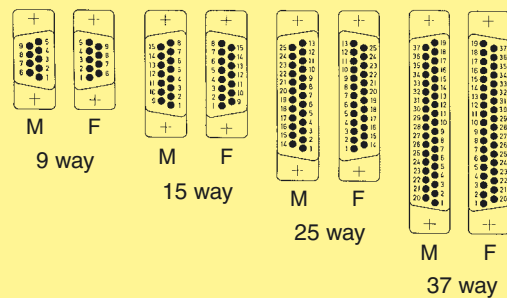
Contacts Copper alloy
Male and female contacts
are turned

Contact surface
Contact zone Selectively plated according
to performance level

Performance level Performance level 2, as per
CECC 75 301-802,
250 mating cycles,
4 days 4 mixed gas test –
IEC 60 512

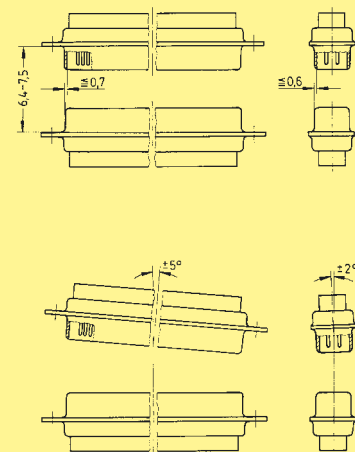
Metal shell Steel

Contact arrangement
View from termination side



M = Male connector
F = Female connector

Mating conditions as per CECC 75 301



Attenuation characteristics for standard capacitance values

Min. insertion loss

Capacitance [pF] ¹⁾	Attenuation (in dB) vs. frequency [MHz]						
	1	5	10	50	100	500	1000
47						30	35
470			1	11	16	35	32
1000		1	3	12	24	38	30
3900	1	6	11	25	35	38	32

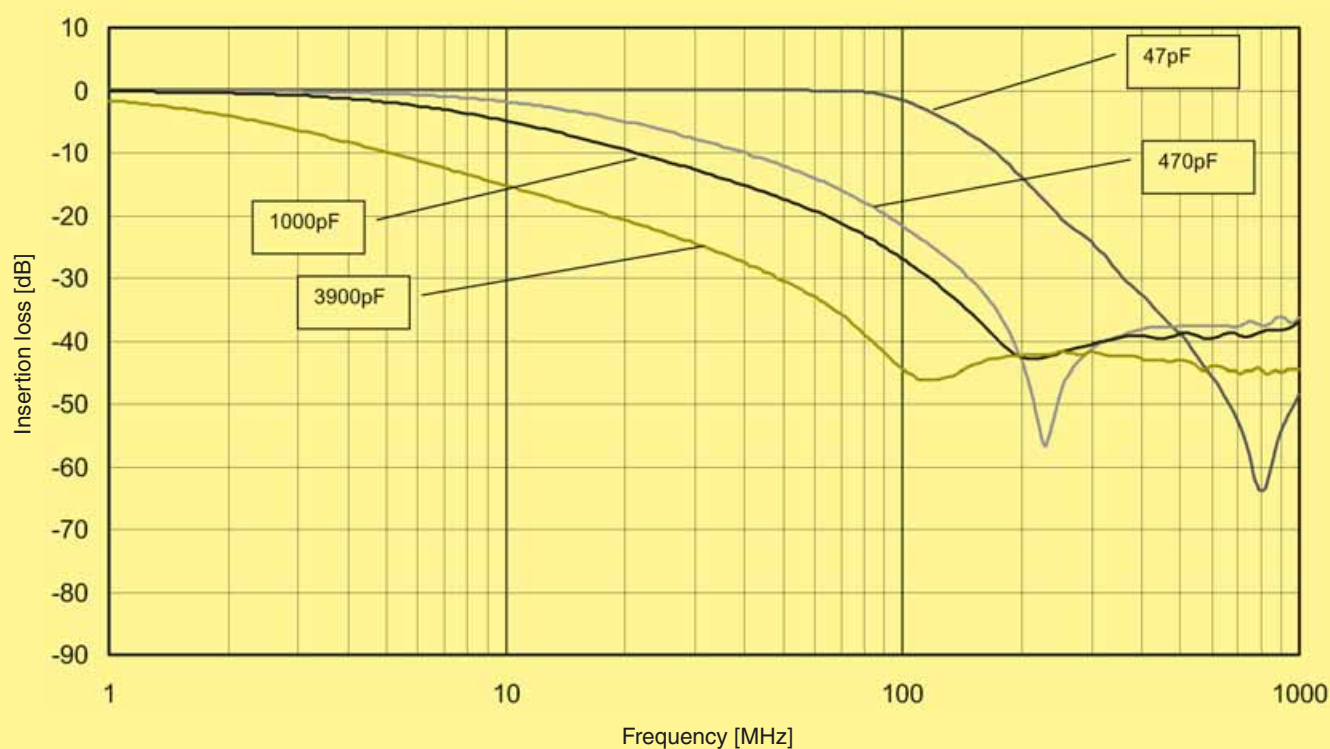
¹⁾ Capacitance tolerance = $\pm 20\%$ (For other capacitor values see pages 05.30 ff).

Measured in 50 Ω system according to MIL-STD-220, no load.

Working voltage: 100 V max for standard capacitance values – higher working voltages are available as specific.

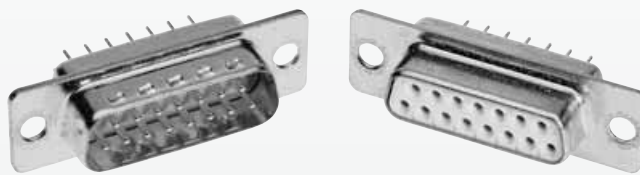
Dielectric withstanding voltage: 250 V DC max. – higher dielectric withstanding voltages are available as specific (see page 05.30)

Typical insertion loss for different filters (measured)



Number of contacts

9–37



Turned solder pins, straight, through hole

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter			
	9	09 64 122 7210	09 64 112 7210
	15	09 64 222 7210	09 64 212 7210
	25	09 64 322 7210	09 64 312 7210
	37	09 64 422 7210	09 64 412 7210
Connectors with 470 pF C filter			
	9	09 64 122 7220	09 64 112 7220
	15	09 64 222 7220	09 64 212 7220
	25	09 64 322 7220	09 64 312 7220
	37	09 64 422 7220	09 64 412 7220
Connectors with 1000 pF C filter			
	9	09 64 122 7230	09 64 112 7230
	15	09 64 222 7230	09 64 212 7230
	25	09 64 322 7230	09 64 312 7230
	37	09 64 422 7230	09 64 412 7230
Connectors with 3900 pF C filter			
	9	09 64 122 7240	09 64 112 7240
	15	09 64 222 7240	09 64 212 7240
	25	09 64 322 7240	09 64 312 7240
	37	09 64 422 7240	09 64 412 7240

Number of contacts

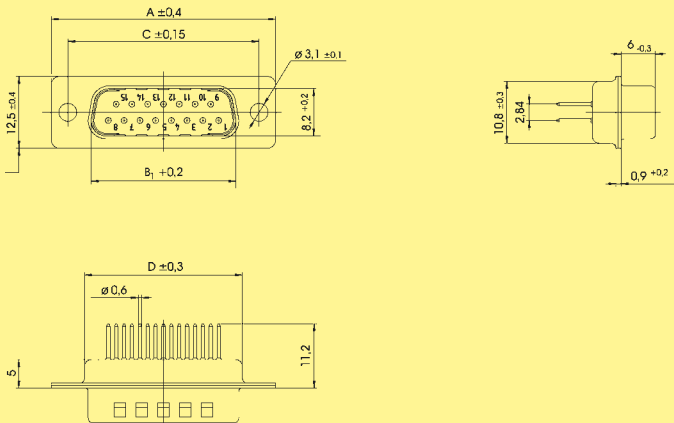
9–37



Turned solder pins, straight, through hole

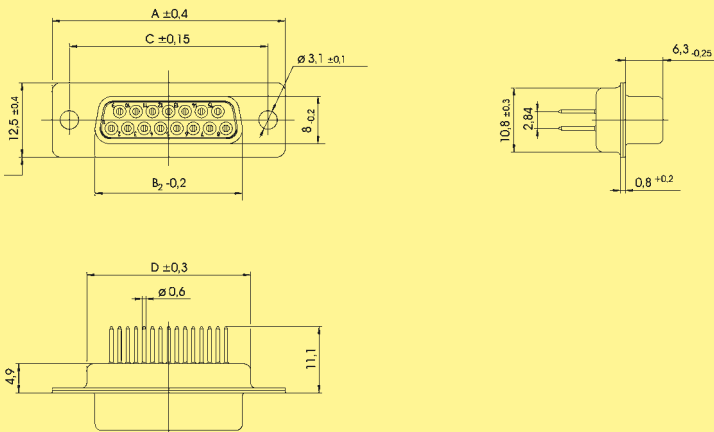
IdentificationDrawingDimensions in mm

Male connector

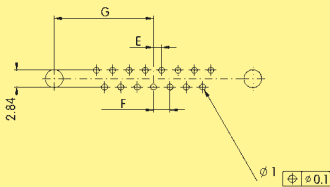


No. of contacts	A	B ₁	B ₂	C	D	E	F	G
9	30.8	16.9	16.4	25.00	19.3	1.37	2.74	12.50
15	39.1	25.2	24.7	33.30	27.5	1.37	2.74	16.65
25	53.0	38.9	38.5	47.04	41.3	1.40	2.77	23.52
37	69.3	55.3	54.9	63.50	57.7	1.40	2.77	31.75

Female connector



Board drillings



Number of contacts

9–37



Turned solder pins, straight, clinch nut

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter			
	9	09 64 122 721 .	09 64 112 721 .
	15	09 64 222 721 .	09 64 212 721 .
	25	09 64 322 721 .	09 64 312 721 .
	37	09 64 422 721 .	09 64 412 721 .
Connectors with 470 pF C filter			
	9	09 64 122 722 .	09 64 112 722 .
	15	09 64 222 722 .	09 64 212 722 .
	25	09 64 322 722 .	09 64 312 722 .
	37	09 64 422 722 .	09 64 412 722 .
Connectors with 1000 pF C filter			
	9	09 64 122 723 .	09 64 112 723 .
	15	09 64 222 723 .	09 64 212 723 .
	25	09 64 322 723 .	09 64 312 723 .
	37	09 64 422 723 .	09 64 412 723 .
Connectors with 3900 pF C filter			
	9	09 64 122 724 .	09 64 112 724 .
	15	09 64 222 724 .	09 64 212 724 .
	25	09 64 322 724 .	09 64 312 724 .
	37	09 64 422 724 .	09 64 412 724 .
Please insert digit for flange thread			
	4-40 UNC ▶ 7 M3 ▶ 8		

D-Sub

Number of contacts

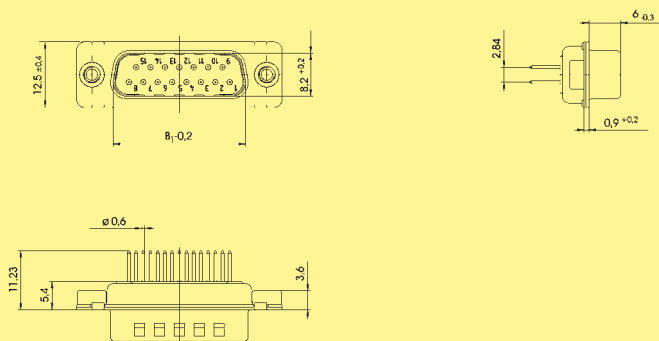
9-37



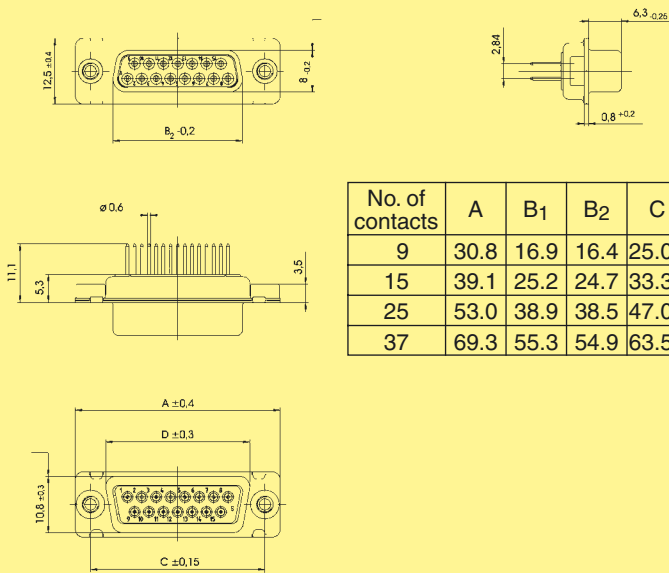
Turned solder pins, straight, clinch nut

Identification Drawing Dimensions in mm

Male connector

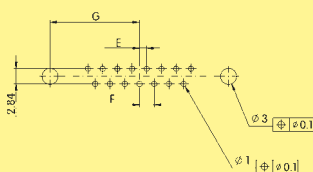


Female connector



No. of contacts	A	B ₁	B ₂	C	D	E	F	G
9	30.8	16.9	16.4	25.00	19.3	1.37	2.74	12.50
15	39.1	25.2	24.7	33.30	27.5	1.37	2.74	16.65
25	53.0	38.9	38.5	47.04	41.3	1.40	2.77	23.52
37	69.3	55.3	54.9	63.50	57.7	1.40	2.77	31.75

Board drillings



Number of contacts

9–37



Turned solder pins, straight, straight board clips

D-Sub - F

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter			
	9	09 64 122 721 .	09 64 112 721 .
	15	09 64 222 721 .	09 64 212 721 .
	25	09 64 322 721 .	09 64 312 721 .
	37	09 64 422 721 .	09 64 412 721 .
Connectors with 470 pF C filter			
	9	09 64 122 722 .	09 64 112 722 .
	15	09 64 222 722 .	09 64 212 722 .
	25	09 64 322 722 .	09 64 312 722 .
	37	09 64 422 722 .	09 64 412 722 .
Connectors with 1000 pF C filter			
	9	09 64 122 723 .	09 64 112 723 .
	15	09 64 222 723 .	09 64 212 723 .
	25	09 64 322 723 .	09 64 312 723 .
	37	09 64 422 723 .	09 64 412 723 .
Connectors with 3900 pF C filter			
	9	09 64 122 724 .	09 64 112 724 .
	15	09 64 222 724 .	09 64 212 724 .
	25	09 64 322 724 .	09 64 312 724 .
	37	09 64 422 724 .	09 64 412 724 .
Please insert digit for flange thread			
	4-40 UNC ▶ 5 M3 ▶ 6		

D-Sub

Number of contacts

9-37



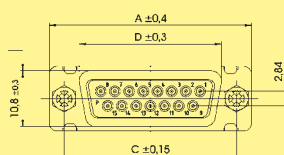
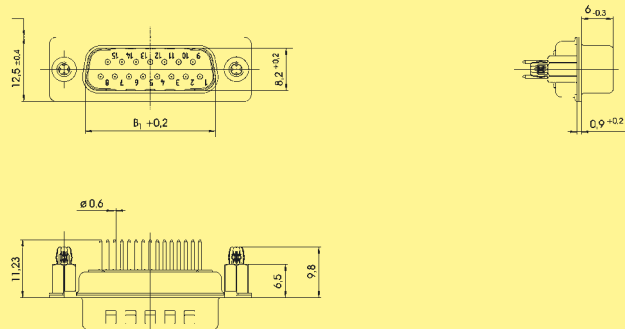
Turned solder pins, straight, straight board clips

Identification

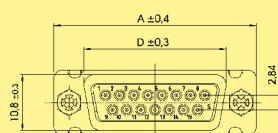
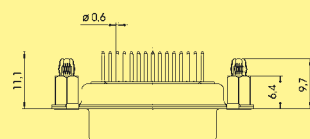
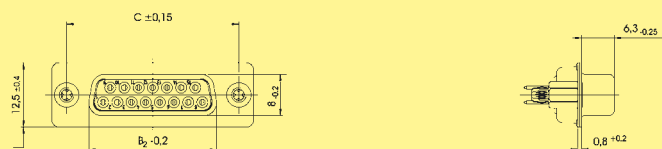
Drawing

Dimensions in mm

Male connector

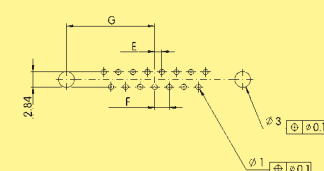


Female connector



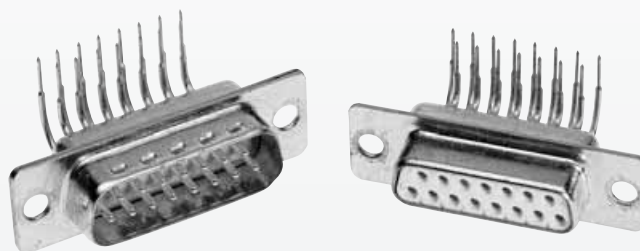
No. of contacts	A	B ₁	B ₂	C	D	E	F	G
9	30.8	16.9	16.4	25.00	19.3	1.37	2.74	12.50
15	39.1	25.2	24.7	33.30	27.5	1.37	2.74	16.65
25	53.0	38.9	38.5	47.04	41.3	1.40	2.77	23.52
37	69.3	55.3	54.9	63.50	57.7	1.40	2.77	31.75

Board drillings



Number of contacts

9–37

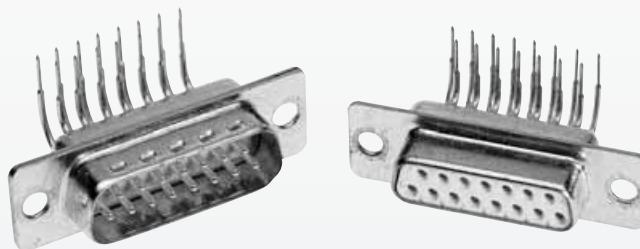


Turned solder pins, right angled, through hole

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter			
	9	09 64 124 7210	09 64 114 7210
	15	09 64 224 7210	09 64 214 7210
	25	09 64 324 7210	09 64 314 7210
	37	09 64 424 7210	09 64 414 7210
Connectors with 470 pF C filter			
	9	09 64 124 7220	09 64 114 7220
	15	09 64 224 7220	09 64 214 7220
	25	09 64 324 7220	09 64 314 7220
	37	09 64 424 7220	09 64 414 7220
Connectors with 1000 pF C filter			
	9	09 64 124 7230	09 64 114 7230
	15	09 64 224 7230	09 64 214 7230
	25	09 64 324 7230	09 64 314 7230
	37	09 64 424 7230	09 64 414 7230
Connectors with 3900 pF C filter			
	9	09 64 124 7240	09 64 114 7240
	15	09 64 224 7240	09 64 214 7240
	25	09 64 324 7240	09 64 314 7240
	37	09 64 424 7240	09 64 414 7240

Number of contacts

9-37



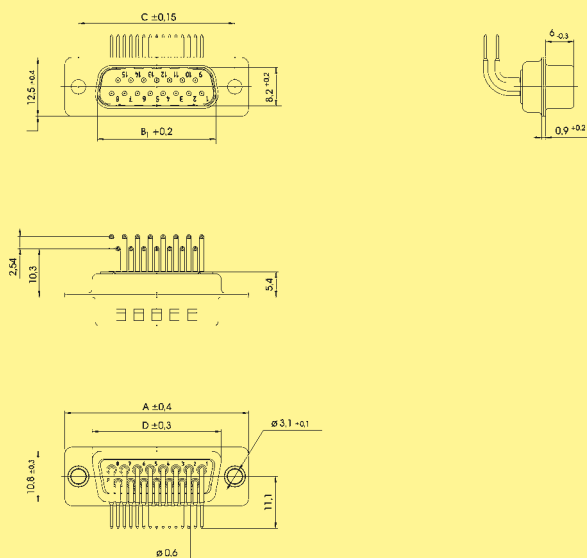
Turned solder pins, right angled, through hole

Identification

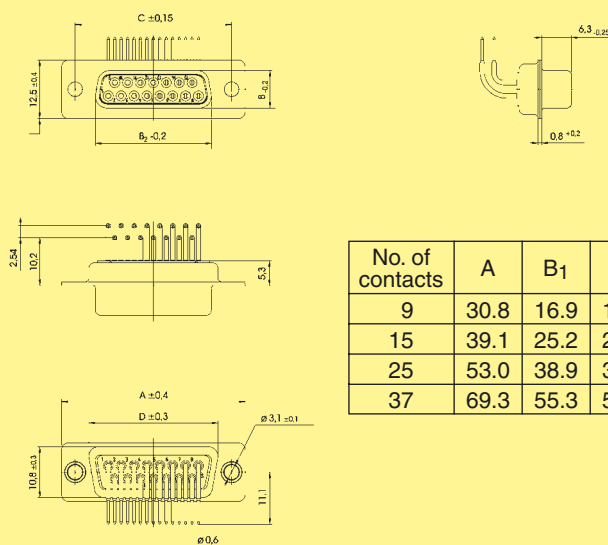
Drawing

Dimensions in mm

Male connector

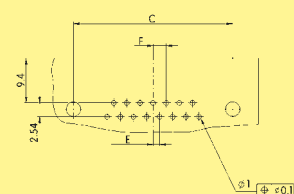


Female connector



No. of contacts	A	B ₁	B ₂	C	D	E	F
9	30.8	16.9	16.4	25.00	19.3	1.37	2.74
15	39.1	25.2	24.7	33.30	27.5	1.37	2.74
25	53.0	38.9	38.5	47.04	41.3	1.40	2.77
37	69.3	55.3	54.9	63.50	57.7	1.40	2.77

Board drillings



Number of contacts

9–37



Turned solder pins, right angled, bracket, board lock and through hole

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter			
	9	09 64 124 7211	09 64 114 7211
	15	09 64 224 7211	09 64 214 7211
	25	09 64 324 7211	09 64 314 7211
	37	09 64 424 7211	09 64 414 7211
Connectors with 470 pF C filter			
	9	09 64 124 7221	09 64 114 7221
	15	09 64 224 7221	09 64 214 7221
	25	09 64 324 7221	09 64 314 7221
	37	09 64 424 7221	09 64 414 7221
Connectors with 1000 pF C filter			
	9	09 64 124 7231	09 64 114 7231
	15	09 64 224 7231	09 64 214 7231
	25	09 64 324 7231	09 64 314 7231
	37	09 64 424 7231	09 64 414 7231
Connectors with 3900 pF C filter			
	9	09 64 124 7241	09 64 114 7241
	15	09 64 224 7241	09 64 214 7241
	25	09 64 324 7241	09 64 314 7241
	37	09 64 424 7241	09 64 414 7241

Number of contacts

9-37



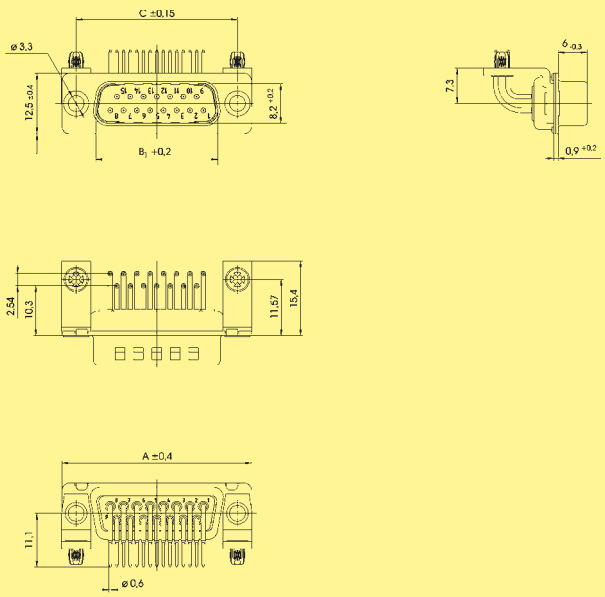
Turned solder pins, right angled, bracket, board lock and through hole

Identification

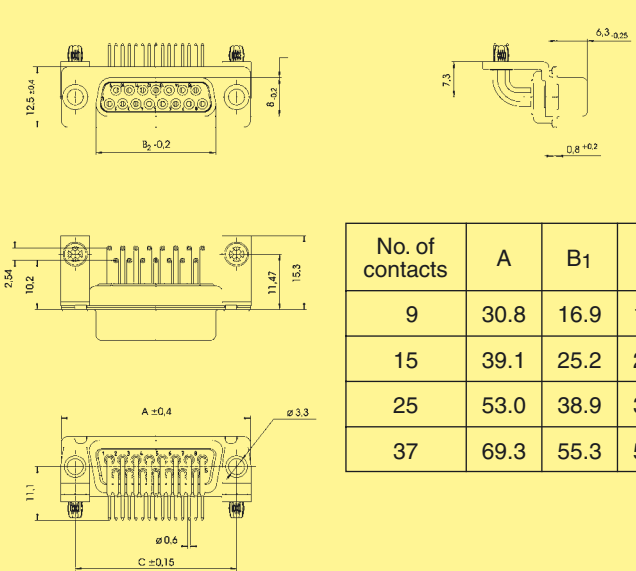
Drawing

Dimensions in mm

Male connector

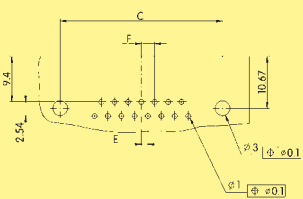


Female connector



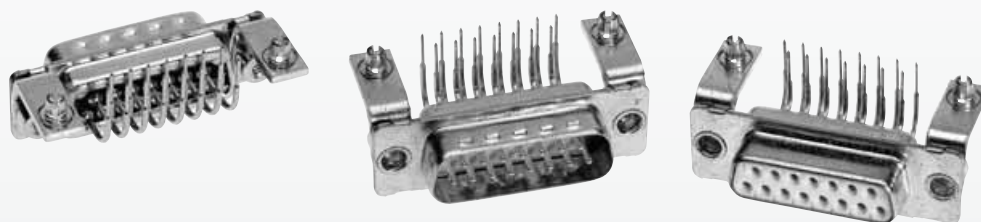
No. of contacts	A	B ₁	B ₂	C	E	F
9	30.8	16.9	16.4	25.00	1.37	2.74
15	39.1	25.2	24.7	33.30	1.37	2.74
25	53.0	38.9	38.5	47.04	1.40	2.77
37	69.3	55.3	54.9	63.50	1.40	2.77

Board drillings



Number of contacts

9–37



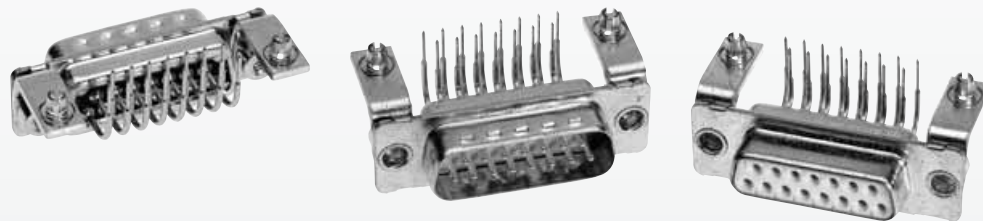
Turned solder pins, right angled, bracket, board lock and clinch nut

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter	9	09 64 124 721 .	09 64 114 721 .
	15	09 64 224 721 .	09 64 214 721 .
	25	09 64 324 721 .	09 64 314 721 .
	37	09 64 424 721 .	09 64 414 721 .
Connectors with 470 pF C filter	9	09 64 124 722 .	09 64 114 722 .
	15	09 64 224 722 .	09 64 214 722 .
	25	09 64 324 722 .	09 64 314 722 .
	37	09 64 424 722 .	09 64 414 722 .
Connectors with 1000 pF C filter	9	09 64 124 723 .	09 64 114 723 .
	15	09 64 224 723 .	09 64 214 723 .
	25	09 64 324 723 .	09 64 314 723 .
	37	09 64 424 723 .	09 64 414 723 .
Connectors with 3900 pF C filter	9	09 64 124 724 .	09 64 114 724 .
	15	09 64 224 724 .	09 64 214 724 .
	25	09 64 324 724 .	09 64 314 724 .
	37	09 64 424 724 .	09 64 414 724 .
Please insert digit for flange thread	4-40 UNC ▶ 2		
	M3 ▶ 3		

D-Sub

Number of contacts

9-37



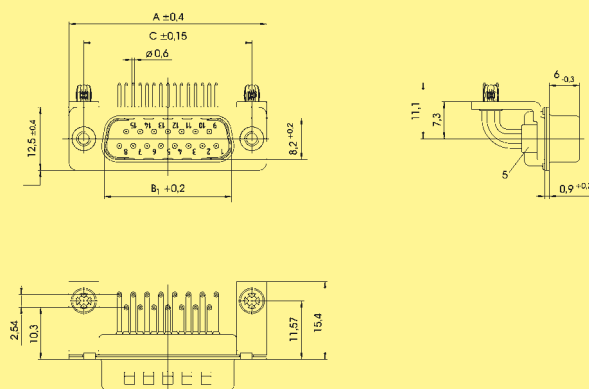
Turned solder pins, right angled, bracket, board lock and clinch nut

Identification

Drawing

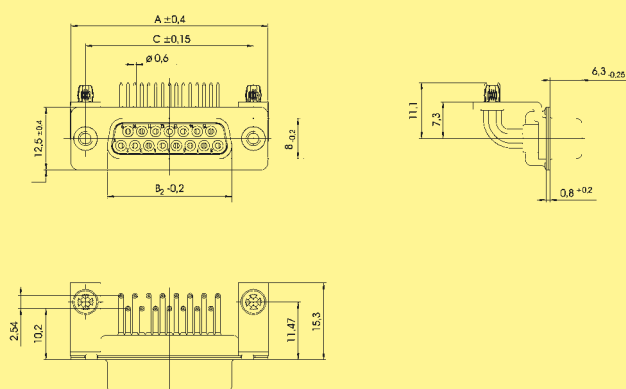
Dimensions in mm

Male connector

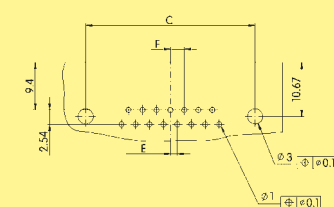


No. of contacts	A	B ₁	B ₂	C	E	F
9	30.8	16.9	16.4	25.00	1.37	2.74
15	39.1	25.2	24.7	33.30	1.37	2.74
25	53.0	38.9	38.5	47.04	1.40	2.77
37	69.3	55.3	54.9	63.50	1.40	2.77

Female connector

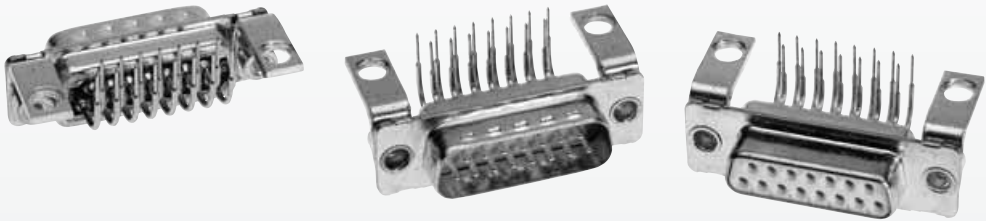


Board drillings



Number of contacts

9–37

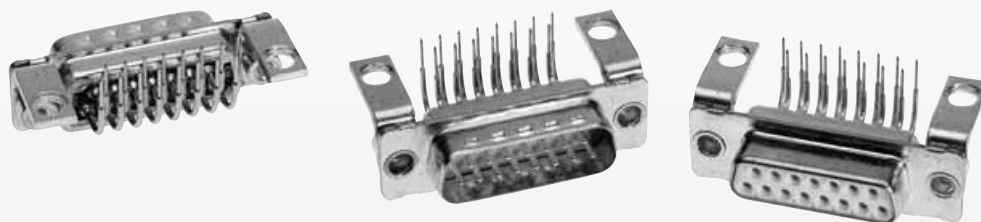


Turned solder pins, right angled, bracket and clinch nut

D-Sub - F

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter	9	09 64 124 721 .	09 64 114 721 .
	15	09 64 224 721 .	09 64 214 721 .
	25	09 64 324 721 .	09 64 314 721 .
	37	09 64 424 721 .	09 64 414 721 .
Connectors with 470 pF C filter	9	09 64 124 722 .	09 64 114 722 .
	15	09 64 224 722 .	09 64 214 722 .
	25	09 64 324 722 .	09 64 314 722 .
	37	09 64 424 722 .	09 64 414 722 .
Connectors with 1000 pF C filter	9	09 64 124 723 .	09 64 114 723 .
	15	09 64 224 723 .	09 64 214 723 .
	25	09 64 324 723 .	09 64 314 723 .
	37	09 64 424 723 .	09 64 414 723 .
Connectors with 3900 pF C filter	9	09 64 124 724 .	09 64 114 724 .
	15	09 64 224 724 .	09 64 214 724 .
	25	09 64 324 724 .	09 64 314 724 .
	37	09 64 424 724 .	09 64 414 724 .
Please insert digit for flange thread	4-40 UNC ▶ 6		
	M3 ▶ 7		

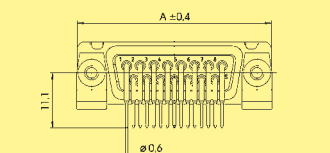
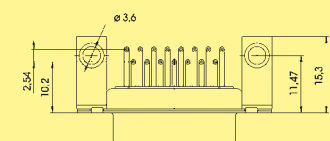
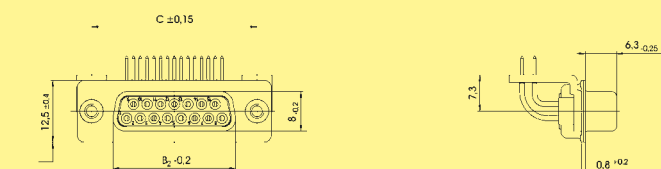
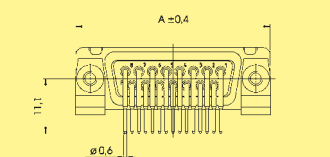
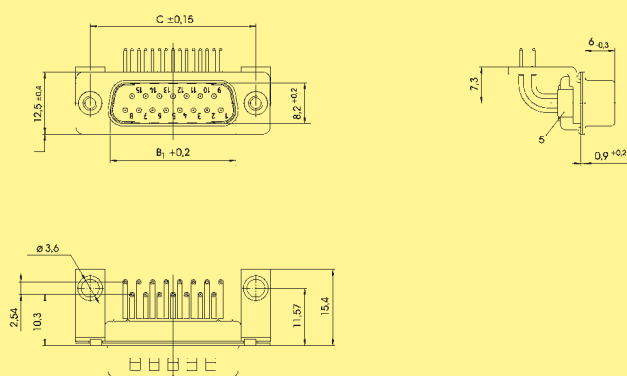
9-37



Turned solder pins, right angled, bracket and clinch nut

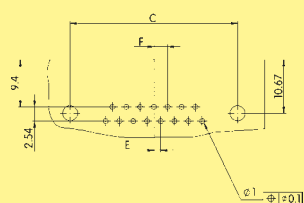
Dimensions in mm

Female connector



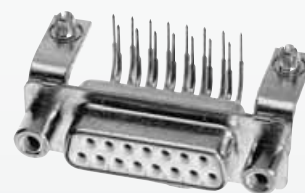
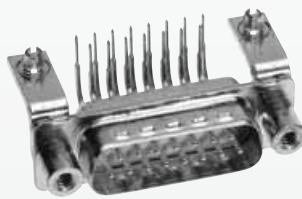
No. of contacts	A	B ₁	B ₂	C	E	F
9	30.8	16.9	16.4	25.00	1.37	2.74
15	39.1	25.2	24.7	33.30	1.37	2.74
25	53.0	38.9	38.5	47.04	1.40	2.77
37	69.3	55.3	54.9	63.50	1.40	2.77

Board drillings



Number of contacts

9–37



Turned solder pins, right angled, bracket, board lock and female screw

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter	9	09 64 124 721 .	09 64 114 721 .
	15	09 64 224 721 .	09 64 214 721 .
	25	09 64 324 721 .	09 64 314 721 .
	37	09 64 424 721 .	09 64 414 721 .
Connectors with 470 pF C filter	9	09 64 124 722 .	09 64 114 722 .
	15	09 64 224 722 .	09 64 214 722 .
	25	09 64 324 722 .	09 64 314 722 .
	37	09 64 424 722 .	09 64 414 722 .
Connectors with 1000 pF C filter	9	09 64 124 723 .	09 64 114 723 .
	15	09 64 224 723 .	09 64 214 723 .
	25	09 64 324 723 .	09 64 314 723 .
	37	09 64 424 723 .	09 64 414 723 .
Connectors with 3900 pF C filter	9	09 64 124 724 .	09 64 114 724 .
	15	09 64 224 724 .	09 64 214 724 .
	25	09 64 324 724 .	09 64 314 724 .
	37	09 64 424 724 .	09 64 414 724 .
Please insert digit for flange thread	4-40 UNC ▶ 4		
	M3 ▶ 5		

Number of contacts

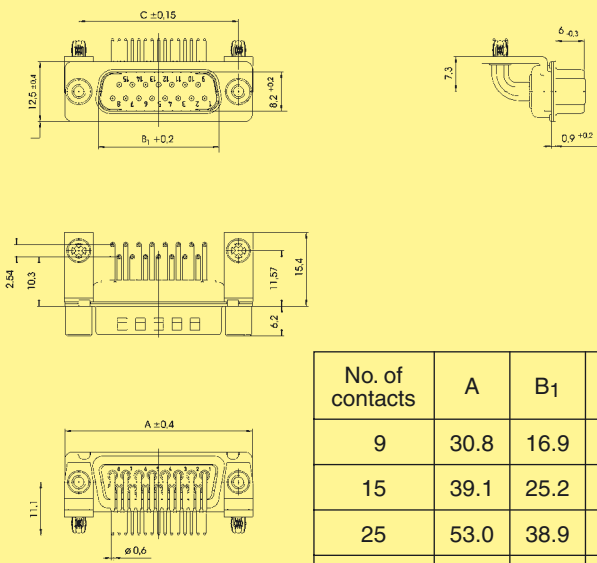
9-37



Turned solder pins, right angled, bracket, board lock and female screw

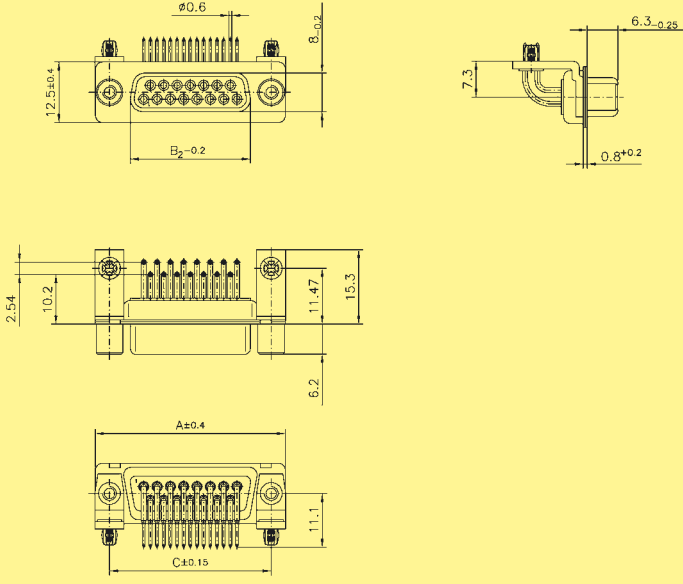
Identification Drawing Dimensions in mm

Male connector

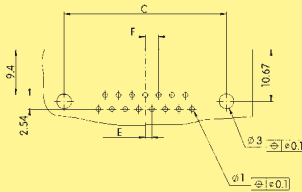


No. of contacts	A	B ₁	B ₂	C	E	F
9	30.8	16.9	16.4	25.00	1.37	2.74
15	39.1	25.2	24.7	33.30	1.37	2.74
25	53.0	38.9	38.5	47.04	1.40	2.77
37	69.3	55.3	54.9	63.50	1.40	2.77

Female connector

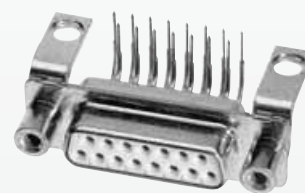


Board drillings



Number of contacts

9–37



Turned solder pins, right angled, bracket and female screw

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter	9	09 64 124 721 .	09 64 114 721 .
	15	09 64 224 721 .	09 64 214 721 .
	25	09 64 324 721 .	09 64 314 721 .
	37	09 64 424 721 .	09 64 414 721 .
Connectors with 470 pF C filter	9	09 64 124 722 .	09 64 114 722 .
	15	09 64 224 722 .	09 64 214 722 .
	25	09 64 324 722 .	09 64 314 722 .
	37	09 64 424 722 .	09 64 414 722 .
Connectors with 1000 pF C filter	9	09 64 124 723 .	09 64 114 723 .
	15	09 64 224 723 .	09 64 214 723 .
	25	09 64 324 723 .	09 64 314 723 .
	37	09 64 424 723 .	09 64 414 723 .
Connectors with 3900 pF C filter	9	09 64 124 724 .	09 64 114 724 .
	15	09 64 224 724 .	09 64 214 724 .
	25	09 64 324 724 .	09 64 314 724 .
	37	09 64 424 724 .	09 64 414 724 .
Please insert digit for flange thread	4-40 UNC ▶ 8		
	M3 ▶ 9		

Number of contacts

9–37



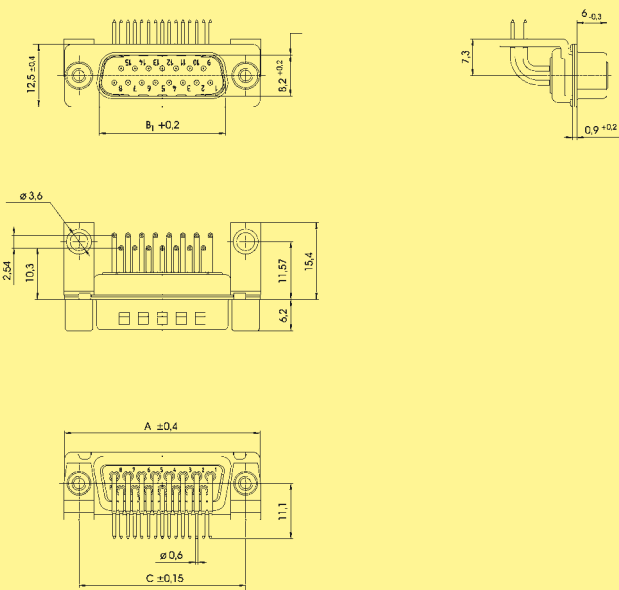
Turned solder pins, right angled, bracket and female screw

Identification

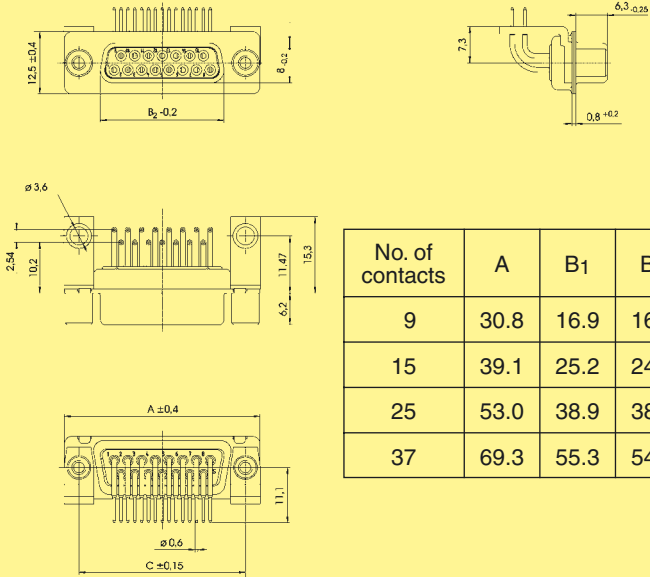
Drawing

Dimensions in mm

Male connector

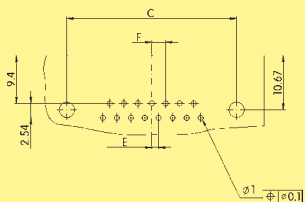


Female connector



No. of contacts	A	B1	B2	C	E	F
9	30.8	16.9	16.4	25.00	1.37	2.74
15	39.1	25.2	24.7	33.30	1.37	2.74
25	53.0	38.9	38.5	47.04	1.40	2.77
37	69.3	55.3	54.9	63.50	1.40	2.77

Board drillings



Number of contacts

9–37



Solder buckets, through hole

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter	9	09 64 121 7210	09 64 111 7210
	15	09 64 221 7210	09 64 211 7210
	25	09 64 321 7210	09 64 311 7210
	37	09 64 421 7210	09 64 411 7210
Connectors with 470 pF C filter	9	09 64 121 7220	09 64 111 7220
	15	09 64 221 7220	09 64 211 7220
	25	09 64 321 7220	09 64 311 7220
	37	09 64 421 7220	09 64 411 7220
Connectors with 1000 pF C filter	9	09 64 121 7230	09 64 111 7230
	15	09 64 221 7230	09 64 211 7230
	25	09 64 321 7230	09 64 311 7230
	37	09 64 421 7230	09 64 411 7230
Connectors with 3900 pF C filter	9	09 64 121 7240	09 64 111 7240
	15	09 64 221 7240	09 64 211 7240
	25	09 64 321 7240	09 64 311 7240
	37	09 64 421 7240	09 64 411 7240

Number of contacts

9–37



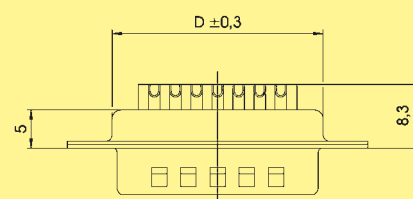
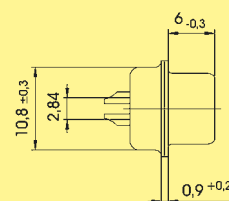
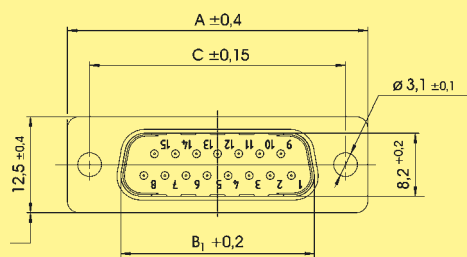
Solder buckets, through hole

Identification

Drawing

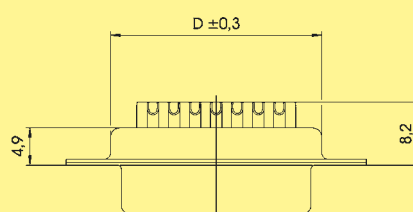
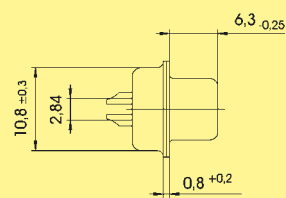
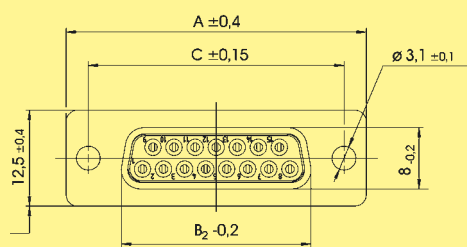
Dimensions in mm

Male connector



No. of contacts	A	B ₁	B ₂	C	D
9	30.8	16.9	16.4	25.00	19.3
15	39.1	25.2	24.7	33.30	27.5
25	53.0	38.9	38.5	47.04	41.3
37	69.3	55.3	54.9	63.50	57.7

Female connector



Number of contacts

9–37



Solder buckets, clinch nut

Identification	No. of contacts	Part No.	
		male connectors	female connectors
Connectors with 47 pF C filter			
	9	09 64 121 721 .	09 64 111 721 .
	15	09 64 221 721 .	09 64 211 721 .
	25	09 64 321 721 .	09 64 311 721 .
	37	09 64 421 721 .	09 64 411 721 .
Connectors with 470 pF C filter			
	9	09 64 121 722 .	09 64 111 722 .
	15	09 64 221 722 .	09 64 211 722 .
	25	09 64 321 722 .	09 64 311 722 .
	37	09 64 421 722 .	09 64 411 722 .
Connectors with 1000 pF C filter			
	9	09 64 121 723 .	09 64 111 723 .
	15	09 64 221 723 .	09 64 211 723 .
	25	09 64 321 723 .	09 64 311 723 .
	37	09 64 421 723 .	09 64 411 723 .
Connectors with 3900 pF C filter			
	9	09 64 121 724 .	09 64 111 724 .
	15	09 64 221 724 .	09 64 211 724 .
	25	09 64 321 724 .	09 64 311 724 .
	37	09 64 421 724 .	09 64 411 724 .
Please insert digit for flange thread			
	4-40 UNC ▶ 7 M3 ▶ 8		

Number of contacts

9–37



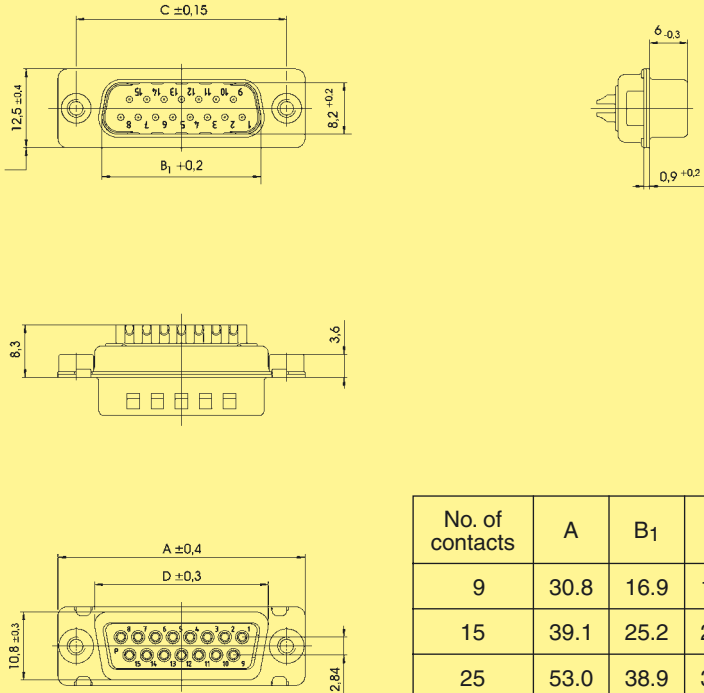
Solder buckets, clinch nut

Identification

Drawing

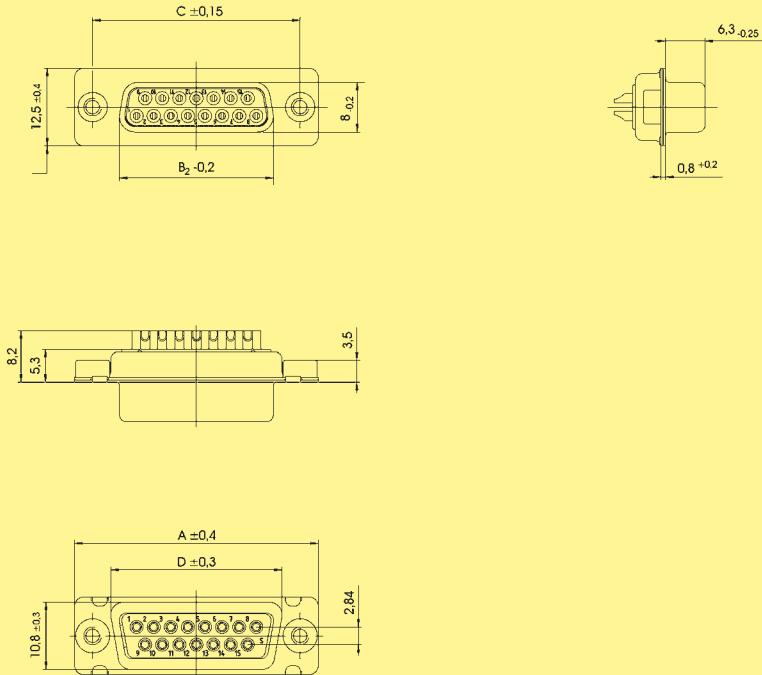
Dimensions in mm

Male connector



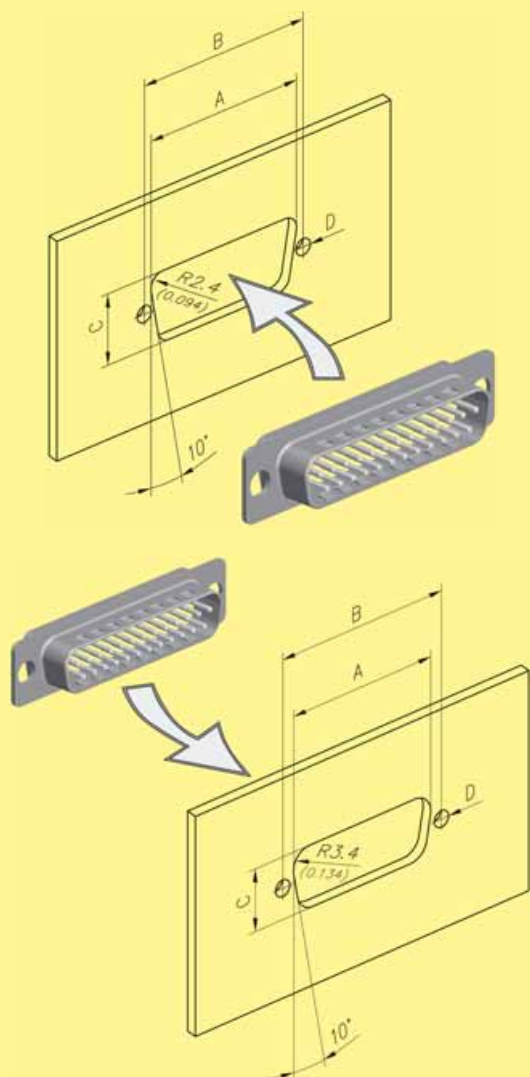
No. of contacts	A	B ₁	B ₂	C	D
9	30.8	16.9	16.4	25.00	19.3
15	39.1	25.2	24.7	33.30	27.5
25	53.0	38.9	38.5	47.04	41.3
37	69.3	55.3	54.9	63.50	57.7

Female connector

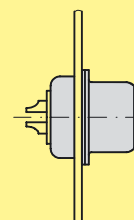


Panel cut outs / panel mountings

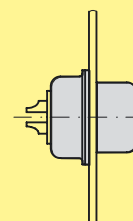
Panel cut outs



Front mounting

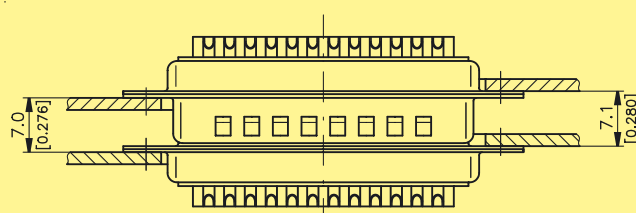
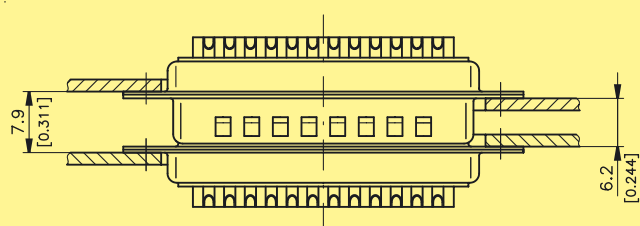


Rear mounting



No. of contacts	Mounting assembly	A ± 0.2	B ± 0.2	C ± 0.2
9	Front	22.2	25.0	12.3
	Rear	20.5	25.0	11.4
15	Front	30.5	33.3	12.3
	Rear	28.8	33.3	11.4
25	Front	44.3	47.0	12.3
	Rear	42.5	47.0	11.4
37	Front	60.7	63.5	12.3
	Rear	59.1	63.5	11.4

Panel mountings



For float mounting option please contact your local HARTING representative.

Dimensions in mm

General information

With the innovative EMC platform approach, this enables customers to select their optimum filter requirements, contact per contact. Allowing not only to segregate the filtering per contact but also to mix the type of filter used. This is then cast in a single competitive product (in a standard D-Sub shell).

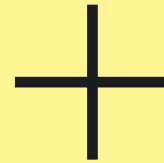
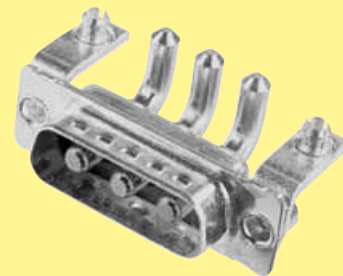
The biggest advantage of the HARTING technology is that multiple filter assemblies can be configured to create different filter designs: C, Pi, L and T types. Since any value of capacitor can be placed on any contact, a wide range of configurations can be built, it is even possible to have an individual pin unfiltered if necessary.

Furthermore, ***Pi filters can be supplied in a standard connector size shell.*** In addition, protection against lightening and transient voltage can be included upon request.

In the next few pages, you will find all the necessary information plus a selection guide to help you to choose your appropriate solution.



or



- C filter
- L filter
- Pi filter
- Ferrite filter
- ESD protection
- Lightening protection
- Combination



With any capacitance on any pin in a **standard D-Sub shell.**

General information

Filter possibilities

C filter:

Non exhaustive list of C filter values that HARTING can supply (for specials see page 05.32 ff)

C filter capacitance in pF	Minimum insertion loss								Max. working voltage	Max. dielectric withstanding
	Attenuation [dB] vs frequency [MHz]									
	0.1	1	5	10	50	100	500	1000		
47							30	35	500 V DC	750 V DC
100					1	3	40	35	500 V DC	750 V DC
150					1	6	45	35	500 V DC	750 V DC
180					1	10	40	32	500 V DC	750 V DC
270				1	3	12	35	32	500 V DC	750 V DC
330				1	7	13	35	32	500 V DC	750 V DC
470				1	10	15	35	32	500 V DC	750 V DC
820				2	10	18	30	30	500 V DC	750 V DC
1000			1	3	12	20	34	30	500 V DC	750 V DC
1800			2	6	17	30	35	32	500 V DC	750 V DC
3900		1	6	11	25	35	35	32	500 V DC	750 V DC
4700		1	9	13	30	38	35	32	500 V DC	750 V DC
5600		2	10	14	30	32	32	32	500 V DC	750 V DC
10000		1	10	15	30	32	30	30	200 V DC	500 V DC
33000	1	9	19	29	32	34	39	32	100 V DC	150 V DC
47000	1	11	23	30	32	32	35	32	100 V DC	150 V DC
100000	2	18	32	40	34	34	36	35	25 V DC	40 V DC

Pi filter:

Non exhaustive list of Pi filter values that HARTING can supply (for specials see page 05.32 ff)

Pi filter capacitance in pF	Minimum insertion loss								Max. working voltage	Max. dielectric withstanding
	Attenuation [dB] vs frequency [MHz]									
	0.1	1	5	10	50	100	500	1000		
94						2	35	50	200 V DC	500 V DC
200					1	8	50	40	200 V DC	500 V DC
440				1	8	16	50	40	200 V DC	500 V DC
940				2	12	24	50	40	200 V DC	500 V DC
2000			2	7	17	40	45	40	200 V DC	500 V DC
4400			5	10	28	60	45	40	200 V DC	500 V DC
9400		2	10	15	48	50	45	40	200 V DC	500 V DC
20000		5	14	20	50	60	52	48	100 V DC	250 V DC
94000	2	15	32	50	51	52	48	42	50 V DC	125 V DC
200000	7	21	48	65	55	52	48	42	16 V DC	25 V DC

Ferrite filter:

Inductance (μH) ¹⁾	Min. insertion loss						
	Attenuation vs. frequency [MHz]						
	1	5	10	50	100	500	1000
0.2	–	–	–	–	2 dB	2 dB	15 dB

¹⁾ Measured at 0.1 V_{rms} @ 1 KHz

Measured in 50 Ω system according to MIL-STD-220, no load.

General information

Other protection possibilities

ESD protection

(Electro Static Discharge protection)

For equipment to comply with:

- IEC-1000-4-2; levels 1 to 4 (Contact discharge test)
- RTCA-160 D; section 25

Typical parasitic capacitance (pF)	Max. clamp voltage (V)	Working voltage (V)
0.5 V _{rms} @ 1 KHz	@ I = 1 A @ 8/20 μS	@ I = 10 μA
1750	7.5	3
1250	13	5
650	22	12
430	33	18
220	48	26
200	51	30

EMP protection

(Electro Magnetic Pulse protection)

For equipment to comply with:

- MIL-STD-461 C: requirements CS 06, CS 10, CS 11, RS 05
- IEC-1000-4-4; EFT TESTS
- RTCA-160 D; section 17

Typical parasitic capacitance (pF)	Max. clamp voltage (V)	Working voltage (V)
0.5 V _{rms} @ 1 KHz	@ I = 10 A @ 8/20 μS	@ I = 10 μA
5675	9	3
3620	15	5
1500	26	14
820	34	18
275	50	26

Lightening protection

For equipment to comply with:

- IEC-1000-4-5; levels 1 and 2 (1.2 μ / 50 μS)
- RTCA-160 D; section 22 (pin injection, level 1)

Typical parasitic capacitance (pF)	Max. clamp voltage (V)	Working voltage (V)
0.5 V _{rms} @ 1 KHz	@ I = 30 A @ 8/20 μS	@ I = 10 μA
5500	12	3
3175	18	5
2000	21	9
1680	30	14
900	38	18
720	60	26
600	63	30

HARTING customer request form

Our innovative technology offers all the possibilities you may need.

For customer solutions, please contact your local HARTING representative.

Here is a summary of the information we need to develop a customer solution:

Connector

Standard D-Sub	Gender	☐ Male	☐ Female
	No. of contacts	☐ 9 ☐ 15 ☐ 25 ☐ 37 ☐ 50	
	Termination	☐ Solder bucket ☐ Straight pcb ☐ R/A Eur, 2.54 mm ☐ R/A US, 2.84 mm	

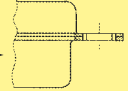
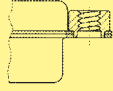
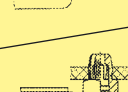
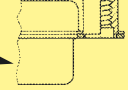
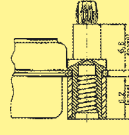
Mixed D-Sub	Gender	☐ Male	☐ Female
	Contact arrangement	☐ 3W3 ☐ 3W3C ☐ Other _____	
	Power contact rating	☐ 10 A ☐ 20 A ☐ 30 A ☐ 40 A	
	Termination	☐ Solder bucket ☐ Straight pcb ☐ R/A pcb (please specify the board drillings)	

Flange thread and board locking options

Right angled version

☐ Through hole	
☐ Clinch nut 4-40 UNC	
☐ Clinch nut M3	
☐ Bracket	
☐ Board lock	
☐ Female screw lock 4-40 UNC	
☐ Female screw lock M3	

Straight version

☐ Through hole	
☐ Clinch nut 4-40 UNC	
☐ Clinch nut M3	
☐ Spacer 4-40 UNC	
☐ Spacer M3	
☐ Female screw lock 4-40 UNC	
☐ Spacer 4-40 UNC + board lock	
☐ Spacer M3 + board lock	
Spacer + board lock and female screw lock	
☐ M3 ☐ 4-40 UNC	

HARTING customer request from

Filter

What working voltage is used? _____

What is the maximum dielectric withstanding voltage needed? _____

Type of filter _____ (C filter, Pi filter, L filter ...)

Capacitance _____

Are there other protections needed? ☐ No

☐ Yes

☐ ESD ☐ Transient

☐ EMP ☐ Lightening

If a pin-to-pin selection has to be done, please state the details

Pin 1: ?, Pin 2: ?, ...

Name: _____

Drawing: ☐ no ☐ yes

Company: _____

Samples: ☐ no ☐ yes, quantity

Address: _____

Volume (pcs./year): _____

Phone: _____

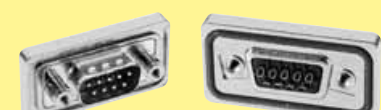
Special requirements: _____

Fax: _____

E-Mail: _____

D-Sub – Waterproof subminiature D IP 67 connectors

Page

Technical characteristics		06.02
IP 67 versions with turned solder cups		06.04
IP 67 versions with turned solder cups and rear plastic mounting plate		06.06
IP 67 versions with turned solder cups and front plastic mounting plate		06.08
IP 67 versions with turned solder cups and rear metal mounting plate		06.10
IP 67 versions with turned solder cups and front metal mounting plate		06.12
IP 67 versions with straight turned solder pins, rear plastic mounting plate, spacer and board lock		06.14
IP 67 versions with angled turned solder pins, rear plastic mounting plate, bracket and board lock		06.16
Accessories for IP 67 connectors		06.18
IP 67 plastic hoods		06.19
IP 67 metallized plastic hoods		06.20
Accessories for IP 67 hoods		06.21

Number of contacts 9, 15, 25, 37, 50
UL recognized

Working current 5 A

Test voltage 1200 V for 1 minute
between 2 contacts / contact and shell

Clearance and creepage ≥ 1.0 mm

Contact resistance
Straight contact ≤ 10 m Ω
Angled contact ≤ 25 m Ω
Angled contact 50 pole ≤ 35 m Ω

Insulation resistance
between contacts ≥ 5000 M Ω

Dielectric strength 50 kV/mm

Temperature range -25 °C ... +70 °C

Protection IP 67
(per DIN 40 050 / IEC 529)

Termination
Solder cup max. AWG 20
Solder pin straight 0.6 mm diameter
Solder pin angled 0.6 mm diameter

Material
Shell Brass, nickel plated
Insulator and plastic watertight frame Thermoplastic, glass-fibre filled, UL 94-V0
Metal watertight frame Nickel plated zinc die cast
Contact material Machined copper alloy

Contact surface
Contact zone 0.76 μ m Au min. over Ni

Waterproofing element Silicone

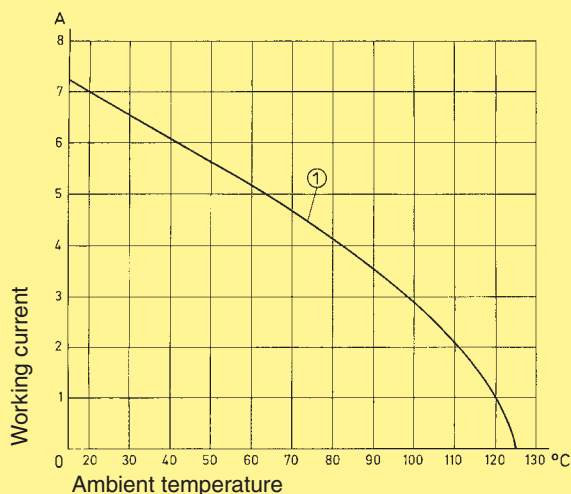
Mechanical
Mating cycles ≥ 500
Mating force per signal contact ≤ 3.4 N
Unmating force per signal contact ≥ 0.2 N

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, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

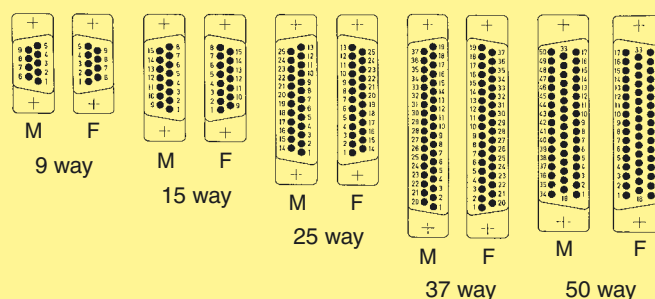
Control and test procedures according to DIN IEC 60 512.



Example: 25 way connector

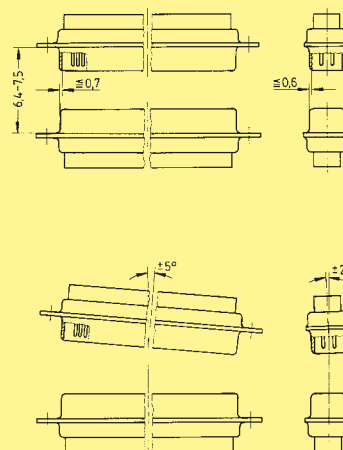
① Turned contacts

Contact arrangement View from termination side



M = Male connector
F = Female connector

Mating conditions as per DIN 41 652



Number of contacts

9–50



IP 67, turned solder cups

D-Sub - W

Identification	No. of contacts	Part No.
		S4 ¹⁾
Male connector metal shell with dimples	9 15 25 37 50	09 67 409 5615 09 67 415 5615 09 67 425 5615 09 67 437 5615 09 67 450 5615
Female connector metal shell	9 15 25 37 50	09 67 409 4715 09 67 415 4715 09 67 425 4715 09 67 437 4715 09 67 450 4715

¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

Number of contacts

9–50



IP 67, turned solder cups

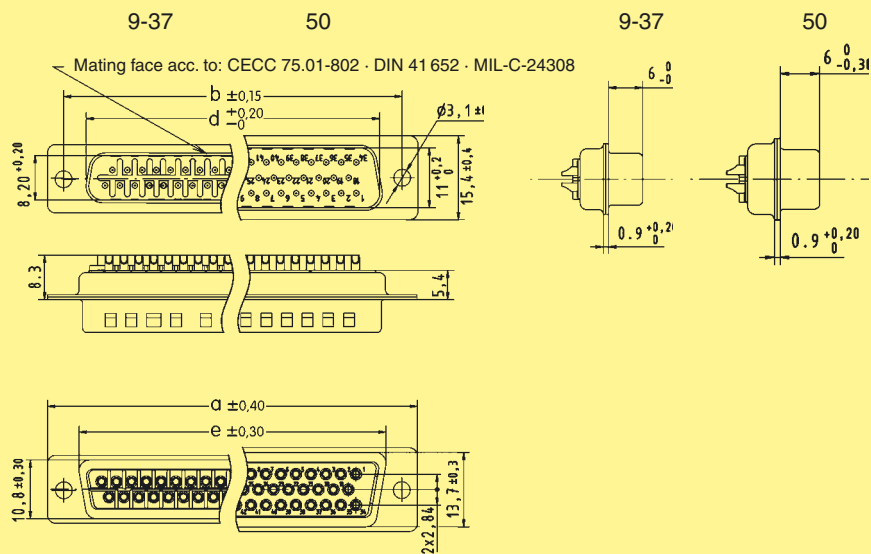
Identification

Drawing

Dimensions in mm

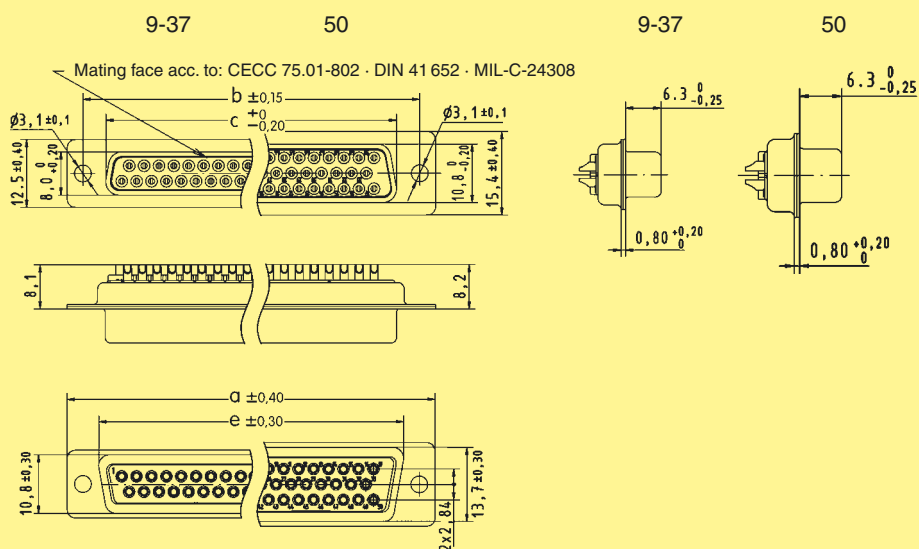
Male connector

9 – 50 contacts



Female connector

9 – 50 contacts



	a	b	c	d	e
9	30.8	25.00	16.4	16.9	19.3
15	39.1	33.30	24.7	25.2	27.5
25	53.0	47.04	38.5	38.9	41.3
37	69.3	63.50	54.9	55.3	57.7
50	66.9	61.10	52.5	52.8	55.3

Number of contacts

9–25



IP 67, turned solder cups, with rear plastic mounting plate

D-Sub - W

Identification	No. of contacts	Part No.	
		S4 ¹⁾	
Male connector metal shell with dimples	9 15 25	09 67 509 09 67 515 09 67 525	. 615 . 615 . 615
Please insert digit for flange thread	4-40 UNC ▶ 7 M3 ▶ 9		
Female connector metal shell	9 15 25	09 67 509 09 67 515 09 67 525	. 715 . 715 . 715
Please insert digit for flange thread	4-40 UNC ▶ 6 M3 ▶ 8		

¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

Number of contacts

9–25



IP 67, turned solder cups, with rear plastic mounting plate

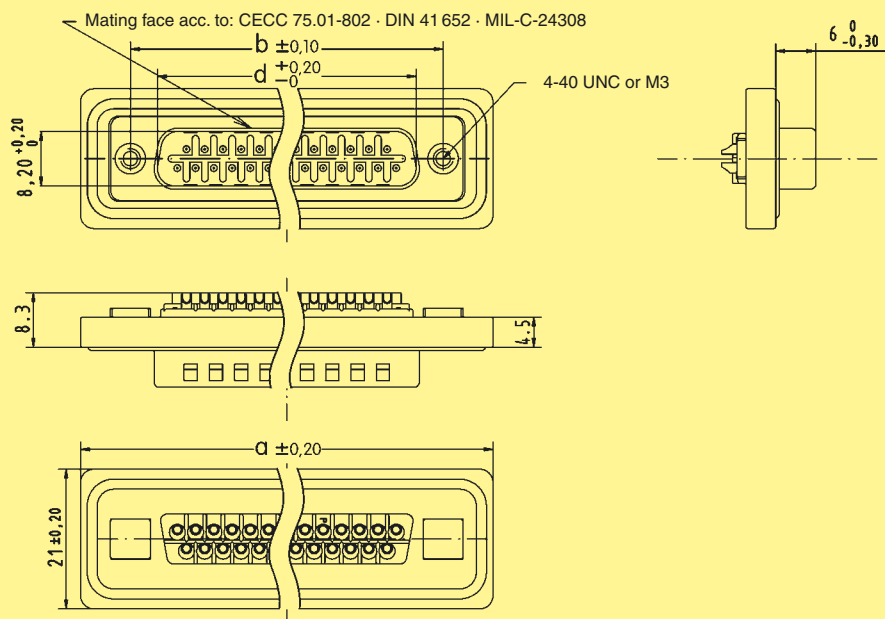
Identification

Drawing

Dimensions in mm

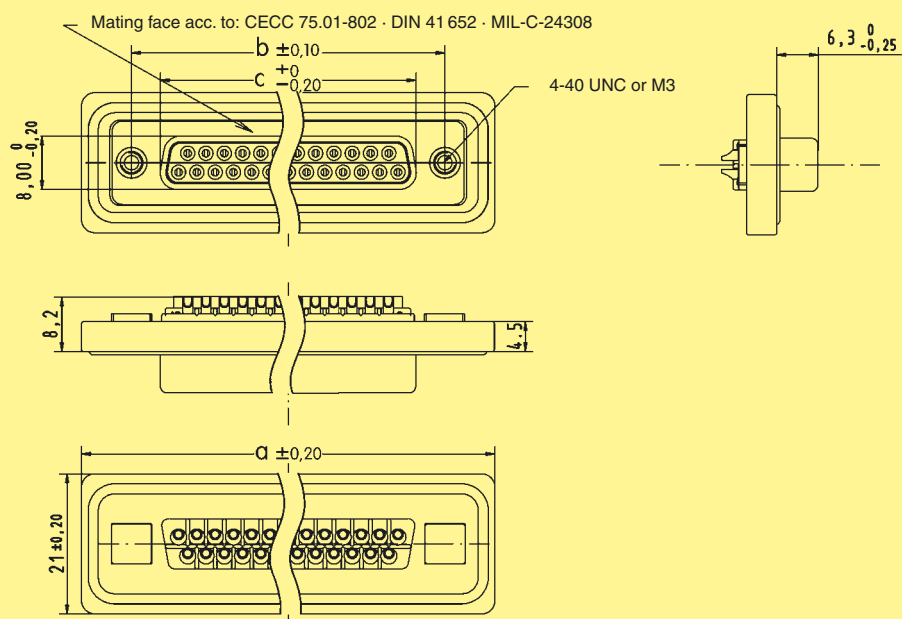
Male connector

9 – 25 contacts



Female connector

9 – 25 contacts



	a	b	c	d
9	40.0	25.00	16.4	16.9
15	48.3	33.30	24.7	25.2
25	62.0	47.04	38.5	38.9

Number of contacts

9–25



IP 67, turned solder cups, with front plastic mounting plate

D-Sub - W

Identification	No. of contacts	Part No.	
		S4 ¹⁾	
Male connector metal shell with dimples	9 15 25	09 67 709 09 67 715 09 67 725	. 615 . 615 . 615
Please insert digit for flange thread			
4-40 UNC ▶	7		
M3 ▶	9		
Female connector metal shell	9 15 25	09 67 709 09 67 715 09 67 725	. 715 . 715 . 715
Please insert digit for flange thread			
4-40 UNC ▶	6		
M3 ▶	8		

¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

Number of contacts

9-25



IP 67, turned solder cups, with front plastic mounting plate

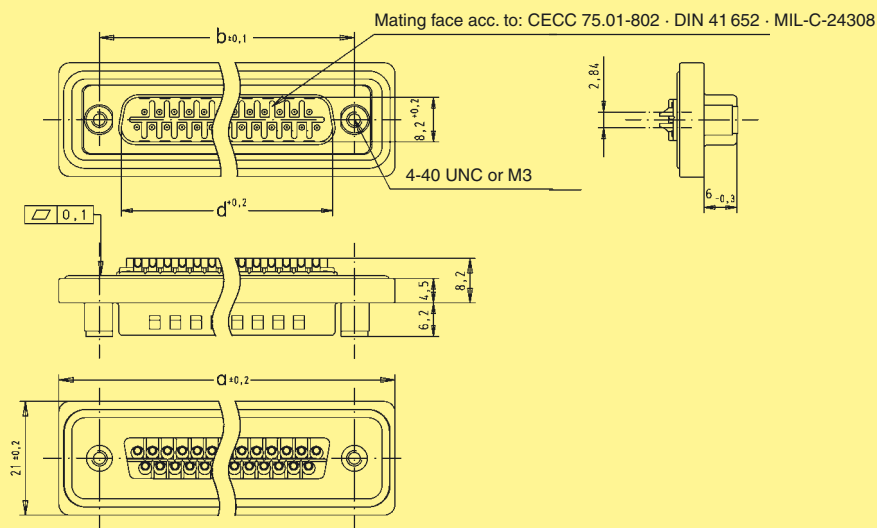
Identification

Drawing

Dimensions in mm

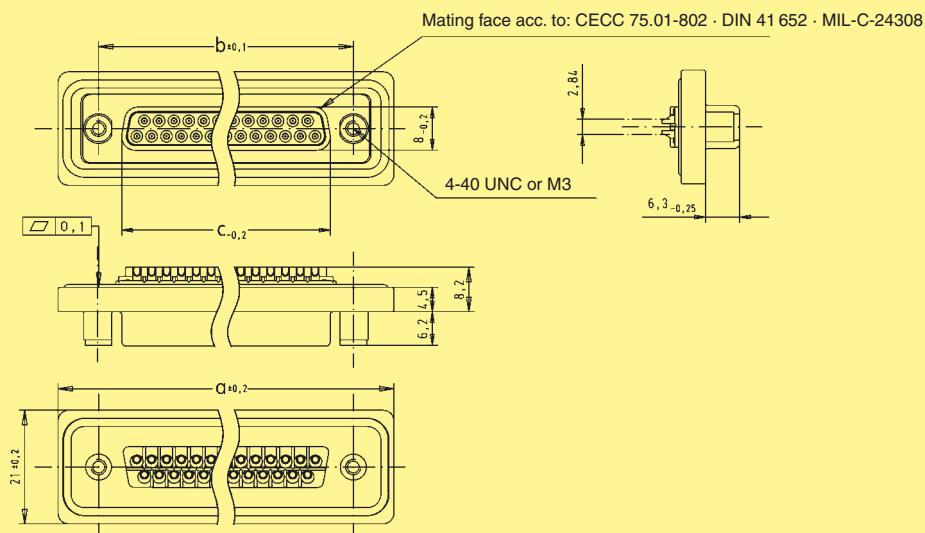
Male connector

9 – 25 contacts

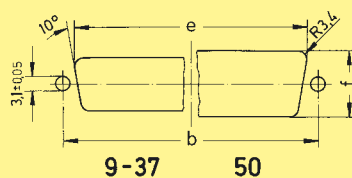


Female connector

9 – 25 contacts



	a	b	c	d
9	40.0	25.00	16.4	16.9
15	48.3	33.30	24.7	25.2
25	62.0	47.04	38.5	38.9

Panel cut out
for front/rear mountValues are taken from the
CECC 75 301-802

Front mount

	b ± 0.13	e ± 0.2	f ± 0.2
9	25.0	22.2	12.3
15	33.3	30.5	12.3
25	47.0	44.3	12.3

Rear mount

	b ± 0.13	e ± 0.2	f ± 0.2
9	25.0	20.5	11.4
15	33.3	28.8	11.4
25	47.0	42.5	11.4

Number of contacts

9–50



IP 67, turned solder cups, with rear metal mounting plate

D-Sub - W

Identification	No. of contacts	Part No.	
		S4 ¹⁾	
Male connector metal shell with dimples	9 15 25 37 50	09 67 609 09 67 615 09 67 625 09 67 637 09 67 650	. 615 . 615 . 615 . 615 . 615
Please insert digit for flange thread			
4-40 UNC ▶	7		
M3 ▶	9		
Female connector metal shell	9 15 25 37 50	09 67 609 09 67 615 09 67 625 09 67 637 09 67 650	. 715 . 715 . 715 . 715 . 715
Please insert digit for flange thread			
4-40 UNC ▶	6		
M3 ▶	8		

¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

Number of contacts

9–50

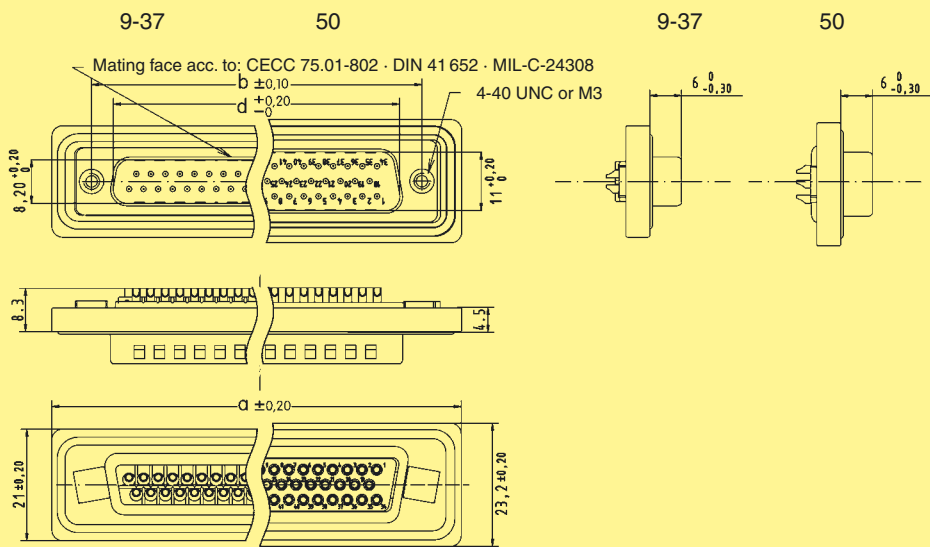
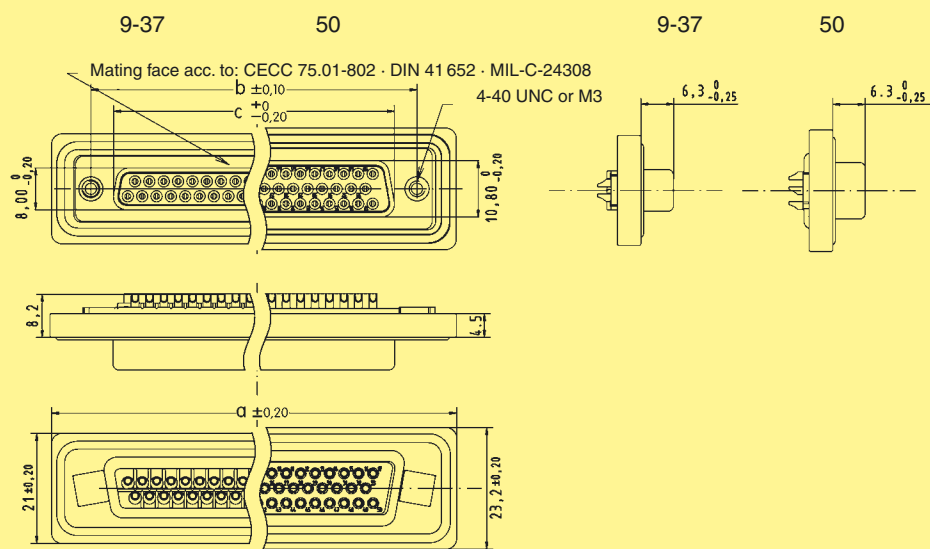


IP 67, turned solder cups, with rear metal mounting plate

Identification

Drawing

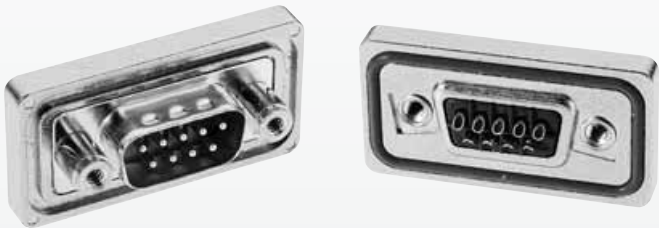
Dimensions in mm

Male connector
 9 – 50 contacts

Female connector
 9 – 50 contacts


	a	b	c	d
9	40.0	25.00	16.4	16.9
15	48.3	33.30	24.7	25.2
25	62.0	47.04	38.5	38.9
37	78.5	63.50	54.9	55.3
50	76.1	61.10	52.5	52.8

Number of contacts

9–50



IP 67, turned solder cups, with front metal mounting plate

D-Sub - W

Identification	No. of contacts	Part No.	
		S4 ¹⁾	
Male connector metal shell with dimples	9	09 67 809	615
	15	09 67 815	615
	25	09 67 825	615
	37	09 67 837	615
	50	09 67 850	615
Please insert digit for flange thread	4-40 UNC ▶	7	
	M3 ▶	9	
Female connector metal shell	9	09 67 809	715
	15	09 67 815	715
	25	09 67 825	715
	37	09 67 837	715
	50	09 67 850	715
Please insert digit for flange thread	4-40 UNC ▶	6	
	M3 ▶	8	

¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

Number of contacts

9–50



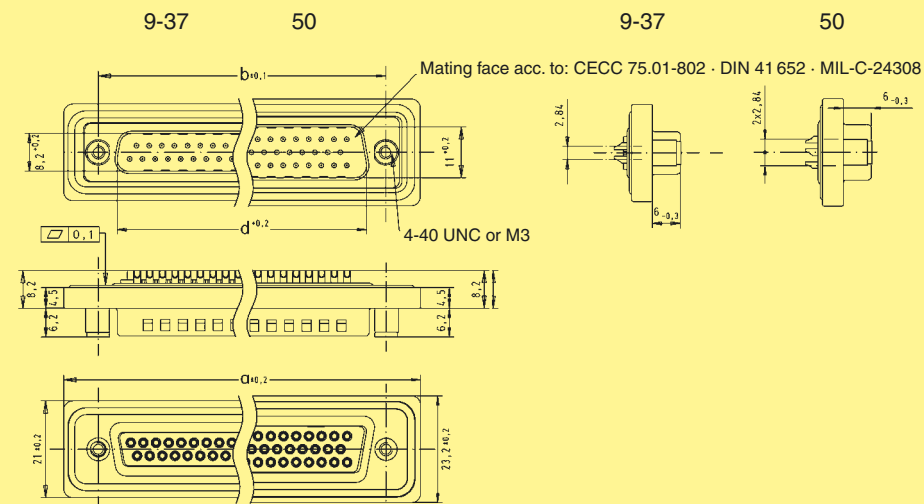
IP 67, turned solder cups, with front metal mounting plate

Identification

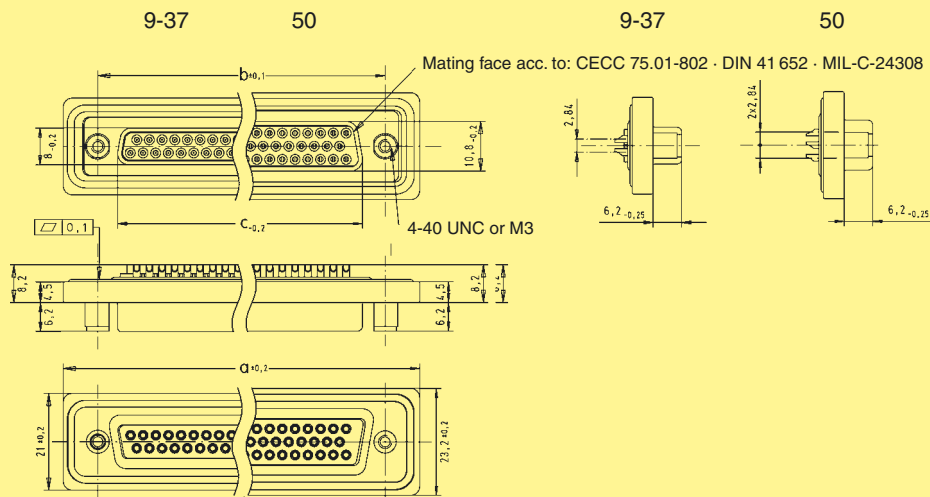
Drawing

Dimensions in mm

Male connector
9 – 50 contacts



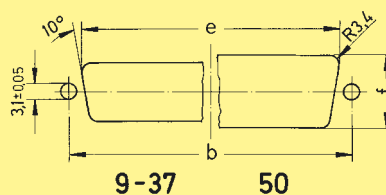
Female connector
9 – 50 contacts



	a	b	c	d
9	40.0	25.00	16.4	16.9
15	48.3	33.30	24.7	25.2
25	62.0	47.04	38.5	38.9
37	78.5	63.50	54.9	55.3
50	76.1	61.10	51.3	52.8

Panel cut out
for front/rear mount

Values are taken from the
CECC 75 301-802



Front mount

	b ± 0.13	e ± 0.2	f ± 0.2
9	25.0	22.2	12.3
15	33.3	30.5	12.3
25	47.0	44.3	12.3
37	63.5	60.7	12.3
50	61.1	58.3	15.1

Rear mount

	b ± 0.13	e ± 0.2	f ± 0.2
9	25.0	20.5	11.4
15	33.3	28.8	11.4
25	47.0	42.5	11.4
37	63.5	59.1	11.4
50	61.1	56.3	14.1

Number of contacts

9–25



IP 67, straight turned solder pins,
with rear plastic mounting plate, spacer and board lock

D-Sub - W

Identification	No. of contacts	Part No.	
		S4 ¹⁾	
Male connector metal shell with dimples	9 15 25	09 67 509 09 67 515 09 67 525	. 675 . 675 . 675
Please insert digit for flange thread	4-40 UNC ▶ 7 M3 ▶ 9		
Female connector metal shell	9 15 25	09 67 509 09 67 515 09 67 525	. 775 . 775 . 775
Please insert digit for flange thread	4-40 UNC ▶ 6 M3 ▶ 8		

¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

Number of contacts

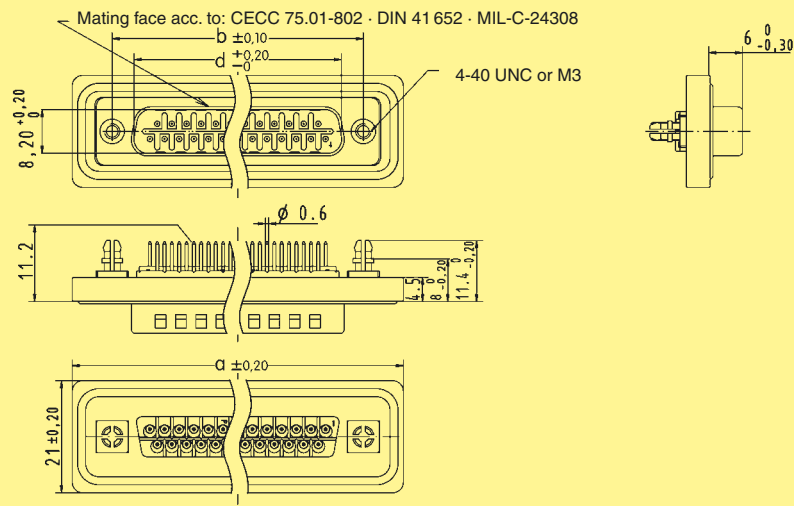
9-25



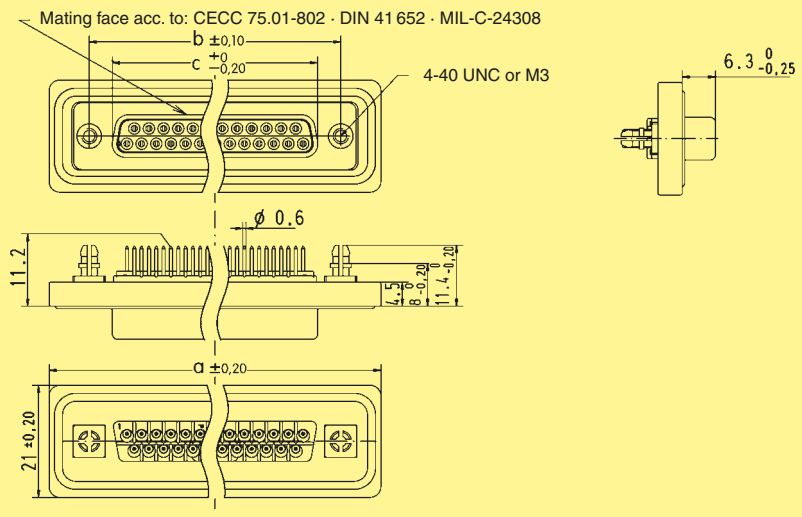
IP 67, straight turned solder pins,
with rear plastic mounting plate, spacer and board lock

Identification Drawing Dimensions in mm

Male connector
9 – 25 contacts

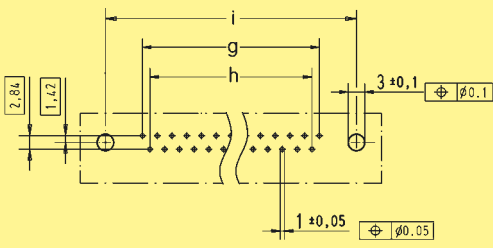


Female connector
9 – 25 contacts



	a	b	c	d	g	h	i
9	40.0	25.00	16.4	16.9	4 x 2.74 = 10.96	3 x 2.74 = 8.22	25.0
15	48.3	33.30	24.7	25.2	7 x 2.74 = 19.18	6 x 2.74 = 16.44	33.3
25	62.0	47.04	38.5	38.9	12 x 2.76 = 33.12	11 x 2.76 = 30.36	47.0

Board drillings



D-Sub - W

Number of contacts

9–25



IP 67, angled turned solder pins,
with rear plastic mounting plate, bracket and board lock

D-Sub - W

Identification	No. of contacts	Part No.	
		S4 ¹⁾	
Male connector metal shell with dimples	9 15 25	09 67 509 09 67 515 09 67 525	. 658 . 658 . 658
Please insert digit for flange thread	4-40 UNC ▶ 7 M3 ▶ 9		
Female connector metal shell	9 15 25	09 67 509 09 67 515 09 67 525	. 758 . 758 . 758
Please insert digit for flange thread	4-40 UNC ▶ 6 M3 ▶ 8		

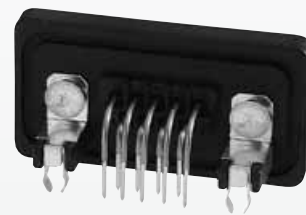
¹⁾ S4: ≥ 0.76 µm Au (30 µinch)

D-Sub

Number of contacts

9-25

IP 67, angled turned solder pins,
with rear plastic mounting plate, bracket and board lock

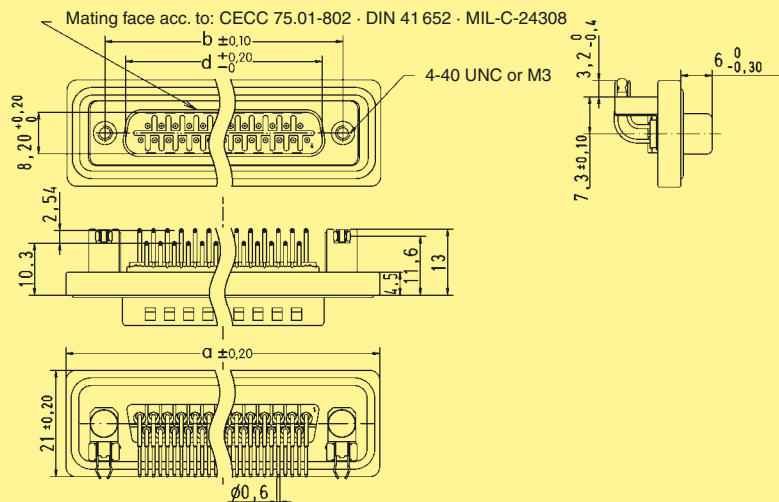


Identification

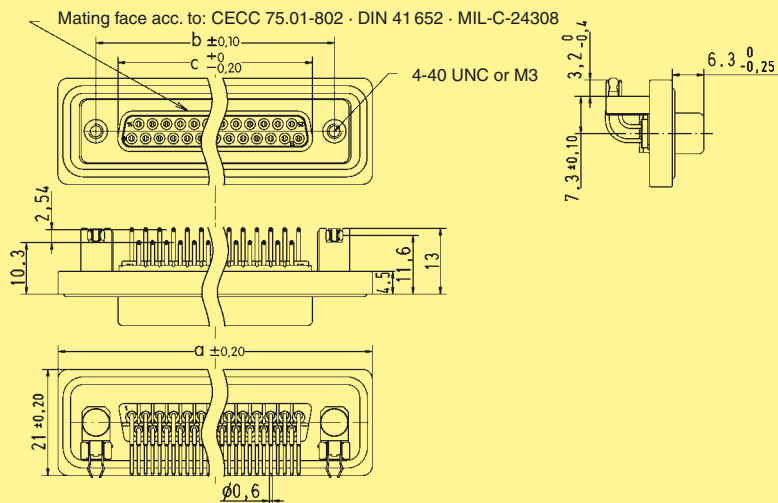
Drawing

Dimensions in mm

Male connector
9 – 25 contacts

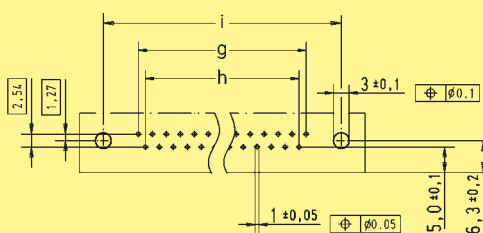


Female connector
9 – 25 contacts

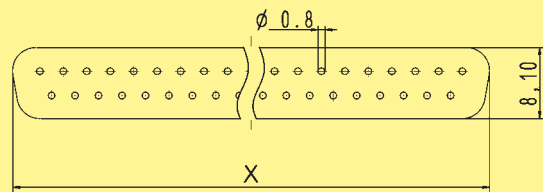
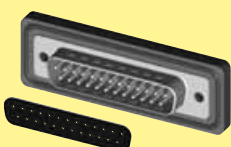
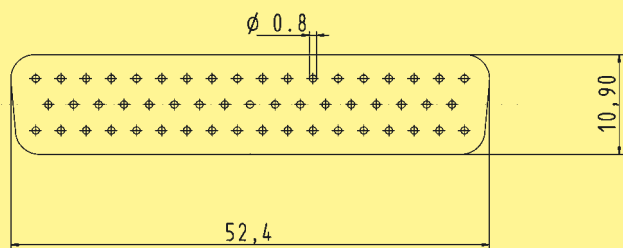
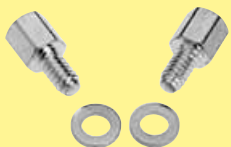
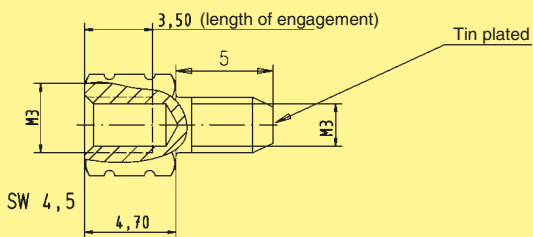
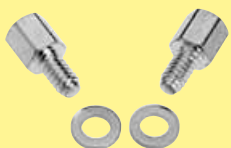
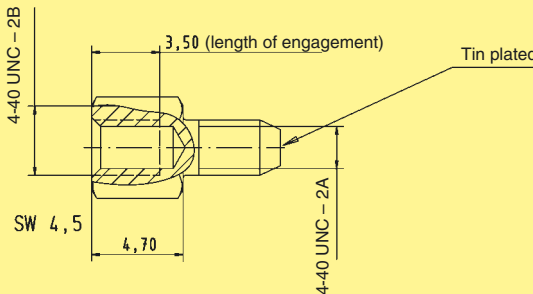


	a	b	c	d	g	h	i
9	40.0	25.00	16.4	16.9	4 x 2.74 = 10.96	3 x 2.74 = 8.22	25.0
15	48.3	33.30	24.7	25.2	7 x 2.74 = 19.18	6 x 2.74 = 16.44	33.3
25	62.0	47.04	38.5	38.9	12 x 2.76 = 33.12	11 x 2.76 = 30.36	47.0

Board drillings



Accessories for IP 67 connectors

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm										
Front sealing rubber ¹⁾ IP 67 	9 15 25 37	09 67 002 9001 09 67 002 9002 09 67 002 9003 09 67 002 9004		<table><tr><th></th><th>x</th></tr><tr><td>9</td><td>16.7</td></tr><tr><td>15</td><td>24.8</td></tr><tr><td>25</td><td>38.8</td></tr><tr><td>37</td><td>54.7</td></tr></table>		x	9	16.7	15	24.8	25	38.8	37	54.7
	x													
9	16.7													
15	24.8													
25	38.8													
37	54.7													
Mounting example 	50	09 67 002 9005												
Female screw lock M3 		09 67 002 9006												
Female screw lock 4-40 UNC 		09 67 002 9007												

¹⁾ The front sealing rubber is necessary when a mated system needs to have the IP 67 performance; in this case, the front sealing rubber is positioned in the IP 67 male connector prior to the mating operation with the facing IP 67 connector; it provides a full protection of the contacts at the mated area by preventing possible ingress of liquids or dust between the shells.



IP 67 plastic hoods

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
----------------	-----------------	----------	---------	------------------

Hood

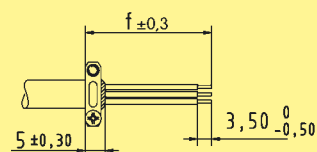
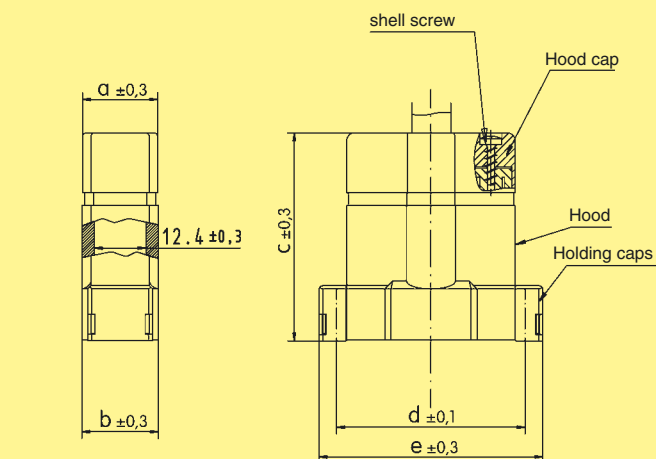
Black thermoplastic

9
15
25

09 67 009 0436
09 67 015 0436
09 67 025 0436

Drawing

Dimensions in mm



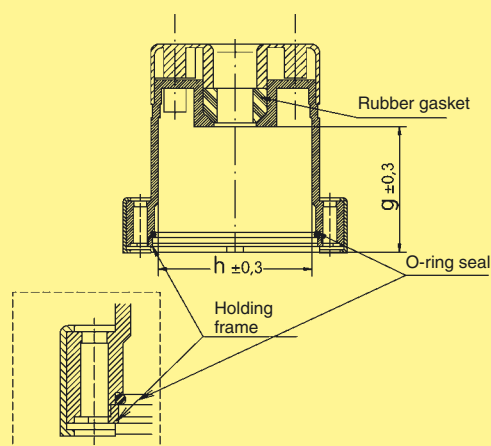
Mounting instructions

The stripped braid should not be fold back to avoid damaging the cable clamp and reducing its performance.

cable clamp



cable clamp screw



	a	b	c	d	e	f	g	h
9	15.6	15.6	41.0	25.00	33.6	23.0	25.0	17.0
15	15.6	15.6	46.8	33.30	42.0	27.5	30.8	25.1
25	18.8	19.1	52.0	47.04	55.7	31.5	33.8	38.8



IP 67 metallized plastic hoods

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
----------------	-----------------	----------	---------	------------------

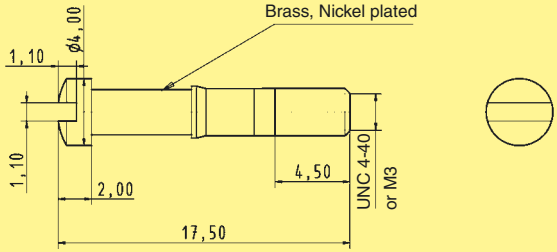
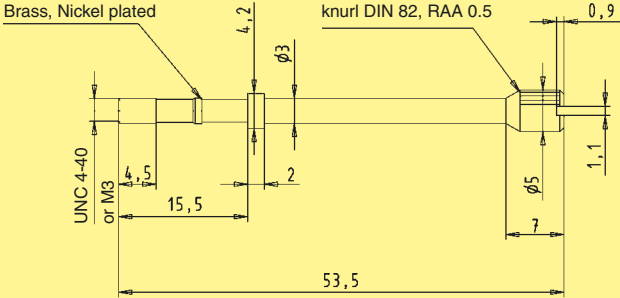
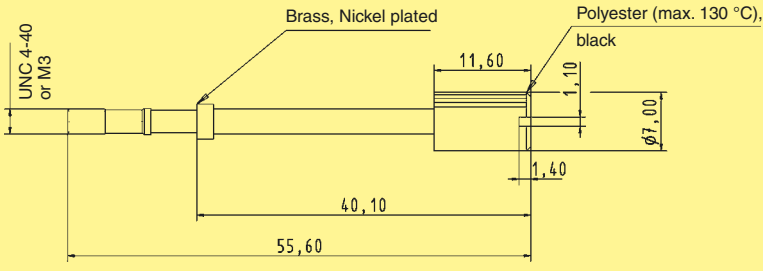
Hood
Metallized
thermoplastic

9	09 67 009 0437
15	09 67 015 0437
25	09 67 025 0437

Mounting instructions
The stripped braid should not be fold back to avoid damaging the cable clamp and reducing its performance.

	a	b	c	d	e	f	g	h
9	15.6	15.6	41.0	25.00	33.6	23.0	25.0	17.0
15	15.6	15.6	46.8	33.30	42.0	27.5	30.8	25.1
25	18.8	19.1	52.0	47.04	55.7	31.5	33.8	38.8

Accessories for IP 67 hoods

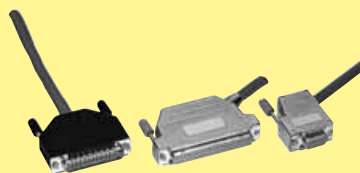
Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
Short locking screw 4-40 UNC 		09 67 002 9008		
Short locking screw M3 		09 67 002 9009		
Knurled locking screw 4-40 UNC 		09 67 002 9010		
Knurled locking screw M3 		09 67 002 9011		
Knurled locking screw 4-40 UNC with plastic cap 		09 67 002 9012		
Knurled locking screw M3 with plastic cap 		09 67 002 9013		

D-Sub – Housing range for subminiature D connectors

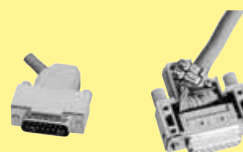
Page

General information – hoods for screw locking **07.02**

Thermoplastic top and side entry hoods
with knurled screws **07.04**



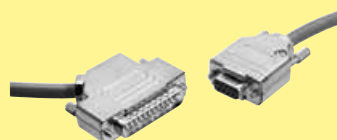
Thermoplastic side entry hoods
with knurled screws **07.05**



Thermoplastic top entry hoods
with knurled or locking screws **07.06**



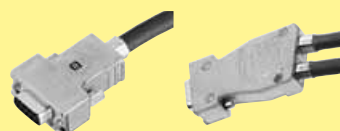
Full metal top and side entry hoods
with knurled screws **07.07**



Full metal top and side entry hoods with short screws ... **07.08**

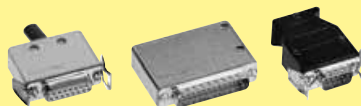


Full metal top and side entry hoods
with different screw options **07.09**

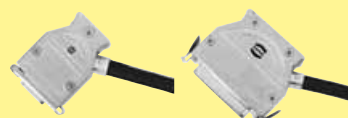


General information – hoods for spring or slide locking **07.10**

Thermoplastic top and side entry hoods
for spring or slide locking **07.11**



Full metal top and side entry hoods
for spring or slide locking **07.13**



HARTING – Guarantee a secure connection

Modern electronic applications demand a high degree of mechanical and electrical security.

To meet these requirements, continuous screening from the cable to the PCB via the connector is achieved by using state of the art components to DIN 41 652.

HARTING offer many solutions. These utilise various combinations of male and female connectors with hoods, featuring either screw locking or latching facilities.

Only 2 examples are shown:

- Continuous security screening and grounding with screw locking and metallized hood.
- Continuous grounding and vibration proof latching system with metallized hood.

D-Sub - H

Male connector with dimples

Screw lock

Cable with protective screen

Strain relief

Metallized hood

Female connector with protective metal shell

Grounding contact between protective metal shell and PCB

Female connector with protective metal shell

Spring latch

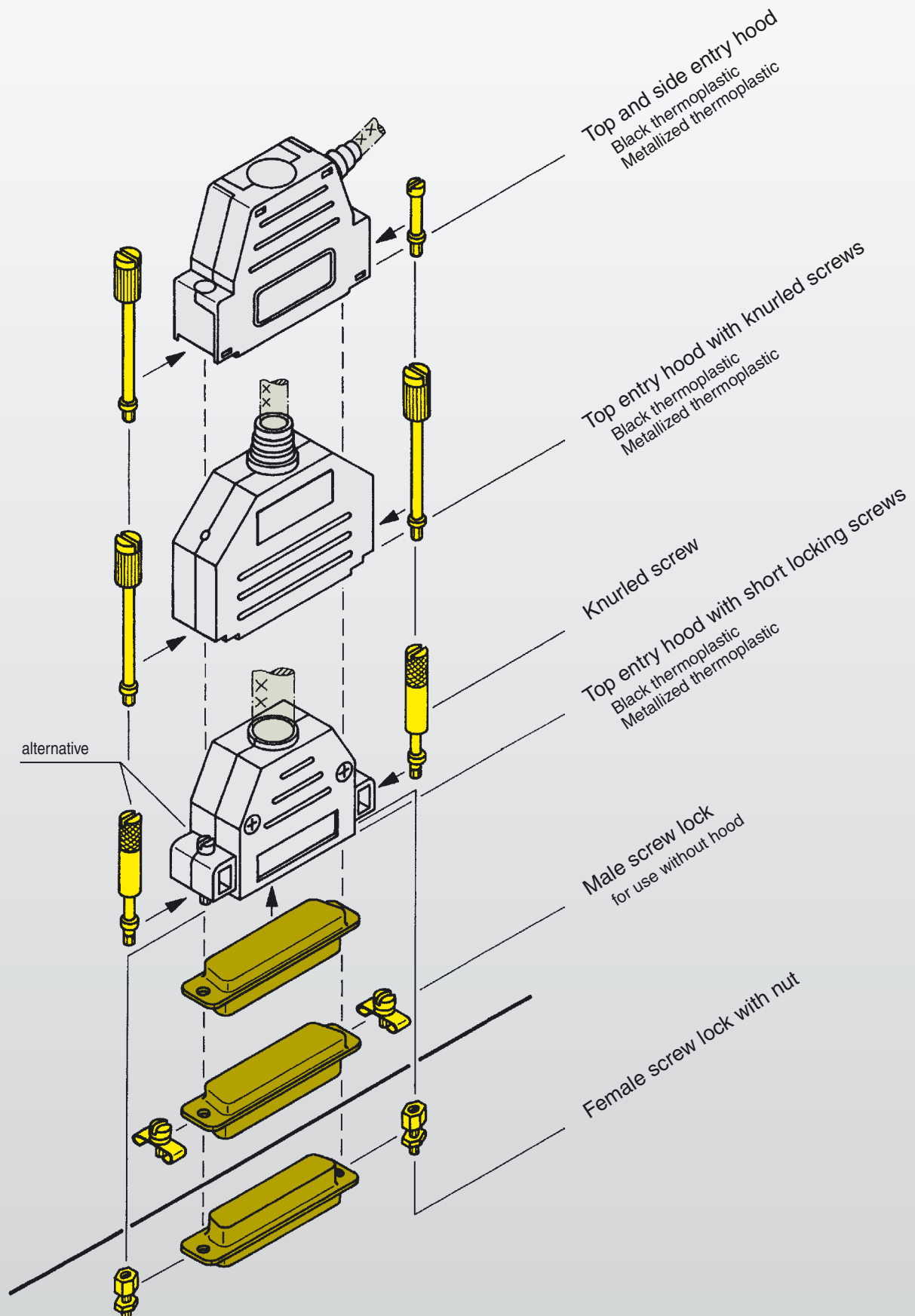
Strain relief

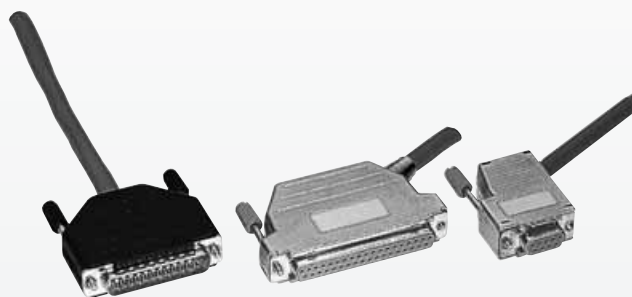
Cable with protective screen

Metallized hood

Male connector with dimples

Connector hoods for screw locking

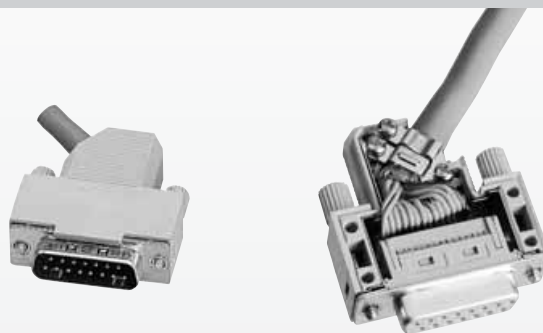




Top and side entry hoods with knurled screws

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																																				
Top entry hood Black thermoplastic	9 15 25 37 50	09 67 009 0424 09 67 015 0424 09 67 025 0424 09 67 037 0424 09 67 050 0424	max. Ø UNC 4-40 B C max. Ø 3.3 4.3 5.3 6.3	<table><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>max. Ø</th></tr><tr><td>9</td><td>30.5</td><td>15</td><td>38</td><td>49</td><td>11.5</td></tr><tr><td>15</td><td>41.0</td><td>15</td><td>38</td><td>49</td><td>11.5</td></tr><tr><td>25</td><td>54.5</td><td>15</td><td>40</td><td>49</td><td>11.5</td></tr><tr><td>37</td><td>71.0</td><td>15</td><td>40</td><td>49</td><td>11.5</td></tr><tr><td>50</td><td>67.5</td><td>19</td><td>40</td><td>49</td><td>14.0</td></tr></table>		A	B	C	D	max. Ø	9	30.5	15	38	49	11.5	15	41.0	15	38	49	11.5	25	54.5	15	40	49	11.5	37	71.0	15	40	49	11.5	50	67.5	19	40	49	14.0
	A	B	C	D	max. Ø																																			
9	30.5	15	38	49	11.5																																			
15	41.0	15	38	49	11.5																																			
25	54.5	15	40	49	11.5																																			
37	71.0	15	40	49	11.5																																			
50	67.5	19	40	49	14.0																																			
Top entry hood Metallized thermoplastic	9 15 25 37	09 67 009 0425 09 67 015 0425 09 67 025 0425 09 67 037 0425	max. Ø Thread UNC 4-40 B C max. Ø 7.3 8.3 9.3 10.3	<table><tr><th></th><th>A</th><th>B</th><th>C</th><th>D</th><th>max. Ø</th></tr><tr><td>9</td><td>30.5</td><td>15</td><td>38</td><td>49</td><td>11.5</td></tr><tr><td>15</td><td>41.0</td><td>15</td><td>38</td><td>49</td><td>11.5</td></tr><tr><td>25</td><td>54.5</td><td>15</td><td>40</td><td>49</td><td>11.5</td></tr><tr><td>37</td><td>71.0</td><td>15</td><td>40</td><td>49</td><td>11.5</td></tr></table> Cut appropriate cable entry to fit actual cable diameter		A	B	C	D	max. Ø	9	30.5	15	38	49	11.5	15	41.0	15	38	49	11.5	25	54.5	15	40	49	11.5	37	71.0	15	40	49	11.5						
	A	B	C	D	max. Ø																																			
9	30.5	15	38	49	11.5																																			
15	41.0	15	38	49	11.5																																			
25	54.5	15	40	49	11.5																																			
37	71.0	15	40	49	11.5																																			
Top and side entry hood Black thermoplastic	9 15 25 37	09 67 009 0434 09 67 015 0434 09 67 025 0434 09 67 037 0434 ¹⁾	9 15-25 9-15-25 37 4-40UNC A B C D max. Ø 3.3 4.3 5.3 6.3	<table><tr><th></th><th>A</th><th>B</th><th>C</th></tr><tr><td>9</td><td>31.5</td><td>15</td><td>40.0</td></tr><tr><td>15</td><td>40.0</td><td>15</td><td>40.0</td></tr><tr><td>25</td><td>53.5</td><td>15</td><td>43.0</td></tr><tr><td>37</td><td>71.3</td><td>15</td><td>42.5</td></tr></table>		A	B	C	9	31.5	15	40.0	15	40.0	15	40.0	25	53.5	15	43.0	37	71.3	15	42.5																
	A	B	C																																					
9	31.5	15	40.0																																					
15	40.0	15	40.0																																					
25	53.5	15	43.0																																					
37	71.3	15	42.5																																					
Top and side entry hood Metallized thermoplastic	9 15 25 37	09 67 009 0435 09 67 015 0435 ²⁾ 09 67 025 0435 ²⁾ 09 67 037 0435 ¹⁾	9 15-25 9-15-25 37 4-40UNC A B C D max. Ø 7.3 8.3 9.3 10.3	<table><tr><th></th><th>A</th><th>B</th><th>C</th></tr><tr><td>9</td><td>31.5</td><td>15</td><td>40.0</td></tr><tr><td>15</td><td>40.0</td><td>15</td><td>40.0</td></tr><tr><td>25</td><td>53.5</td><td>15</td><td>43.0</td></tr><tr><td>37</td><td>71.3</td><td>15</td><td>42.5</td></tr></table>		A	B	C	9	31.5	15	40.0	15	40.0	15	40.0	25	53.5	15	43.0	37	71.3	15	42.5																
	A	B	C																																					
9	31.5	15	40.0																																					
15	40.0	15	40.0																																					
25	53.5	15	43.0																																					
37	71.3	15	42.5																																					
Grommet for top and side entry black thermoplastic hood		09 67 001 9968	max. Ø 3.3 4.3 5.3 6.3	<table><tr><th></th><th>A</th><th>B</th><th>C</th></tr><tr><td>9</td><td>31.5</td><td>15</td><td>40.0</td></tr><tr><td>15</td><td>40.0</td><td>15</td><td>40.0</td></tr><tr><td>25</td><td>53.5</td><td>15</td><td>43.0</td></tr><tr><td>37</td><td>71.3</td><td>15</td><td>42.5</td></tr></table>		A	B	C	9	31.5	15	40.0	15	40.0	15	40.0	25	53.5	15	43.0	37	71.3	15	42.5																
	A	B	C																																					
9	31.5	15	40.0																																					
15	40.0	15	40.0																																					
25	53.5	15	43.0																																					
37	71.3	15	42.5																																					

¹⁾ 37 ways is only side entry²⁾ Cable clamp kit for two outputs is available with part no. 09 67 001 9988 (it includes: screw, metal clamp, plastic insert and grommet)



H-Sub-C

07
05

6) Additional tooling (bench press) see chapter 32



Top entry hoods with knurled or locking screws

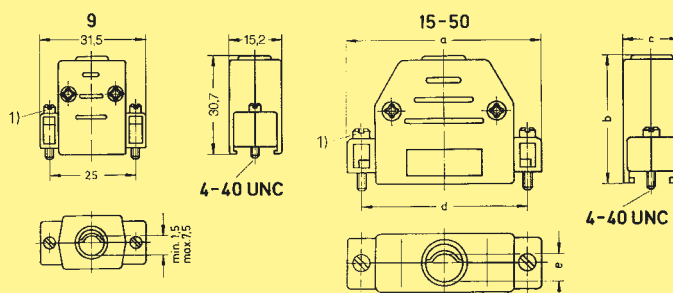
Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
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Hood

Black thermoplastic with short locking screws

9
15
25
37
50

09 67 009 0442
09 67 015 0442
09 67 025 0442
09 67 037 0442
09 67 050 0442

**Hood**

Metallized thermoplastic with short locking screws

9
15
25
37
50

09 67 009 0443
09 67 015 0443
09 67 025 0443
09 67 037 0443
09 67 050 0443

	a	b	c	d	e	
					min.	max.
15	40.0	34.7	15.2	33.3	3.3	8.5
25	53.2	39.7	15.2	47.0	3.5	11.0
37	70.0	39.7	15.2	63.5	3.5	11.0
50	67.5	39.7	18.2	61.1	9.3	12.0

Knurled screw

for black hood

Thread UNC

9-50

09 67 000 9926²⁾

Thread M3

9-50

09 67 000 9931²⁾

for metallized hood

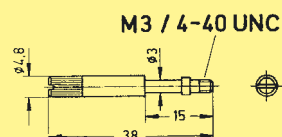
Thread UNC

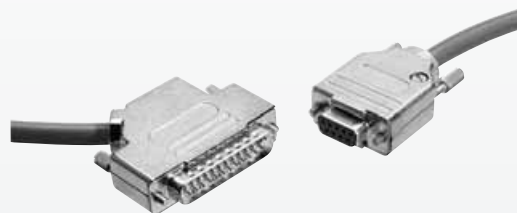
9-50

09 67 000 9925²⁾

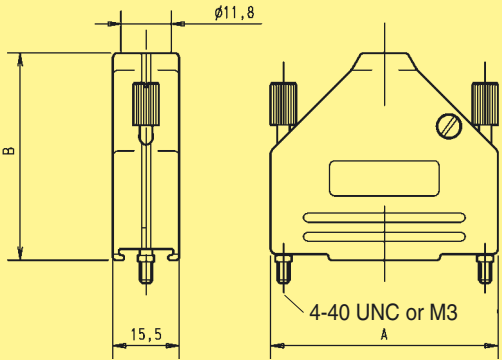
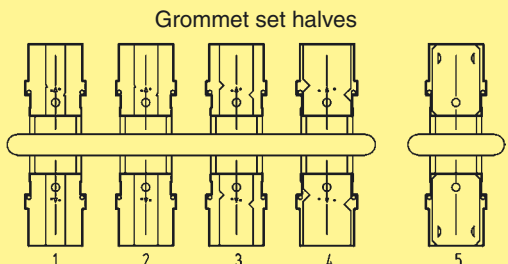
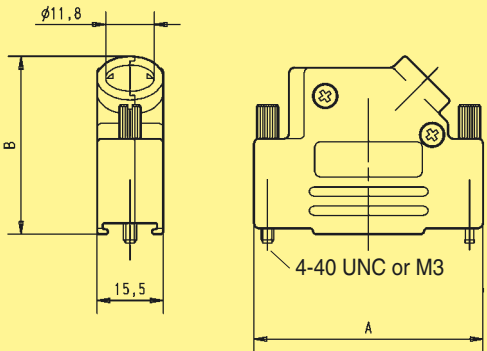
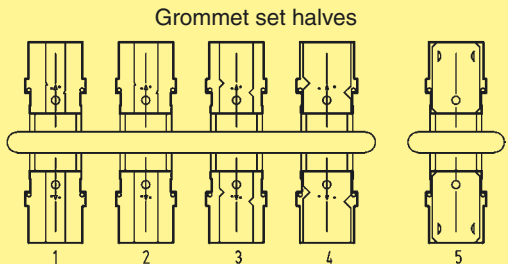
Thread M3

9-50

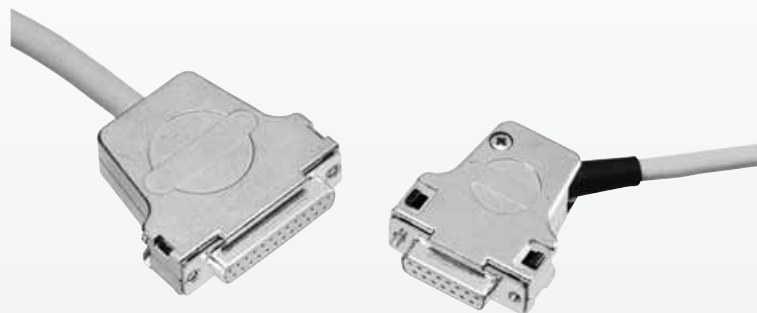
09 67 000 9930²⁾¹⁾ Use of knurled screws is possible. Please order separately²⁾ Order 2 for each hood



Full metal top and side entry hoods with knurled screws

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm															
Top entry hood				<table><tr><th>Poles</th><th>A</th><th>B</th></tr><tr><td>9</td><td>31.2</td><td>39.9</td></tr><tr><td>15</td><td>39.5</td><td>41.5</td></tr><tr><td>25</td><td>53.4</td><td>48.6</td></tr><tr><td>37</td><td>69.7</td><td>53.6</td></tr></table>	Poles	A	B	9	31.2	39.9	15	39.5	41.5	25	53.4	48.6	37	69.7	53.6
Poles	A	B																	
9	31.2	39.9																	
15	39.5	41.5																	
25	53.4	48.6																	
37	69.7	53.6																	
	9	09 67 009 034 .																	
	15	09 67 015 034 .																	
	25	09 67 025 034 .																	
	37	09 67 037 034 .																	
Please insert digit for screw option																			
Knurled screw, thread 4-40 UNC ▶	3																		
Knurled screw, thread M3 ▶	8																		
				<table><tr><th colspan="2">Grommet dimensions</th></tr><tr><th>Number</th><th>Diameter</th></tr><tr><td>1</td><td>4.0</td></tr><tr><td>2</td><td>5.0</td></tr><tr><td>3</td><td>7.0</td></tr><tr><td>4</td><td>10.0</td></tr><tr><td>5</td><td>10.2</td></tr></table>	Grommet dimensions		Number	Diameter	1	4.0	2	5.0	3	7.0	4	10.0	5	10.2	
Grommet dimensions																			
Number	Diameter																		
1	4.0																		
2	5.0																		
3	7.0																		
4	10.0																		
5	10.2																		
Side entry hood				<table><tr><th>Poles</th><th>A</th><th>B</th></tr><tr><td>9</td><td>31.0</td><td>38.0</td></tr><tr><td>15</td><td>40.5</td><td>41.1</td></tr><tr><td>25</td><td>53.7</td><td>41.8</td></tr><tr><td>37</td><td>69.8</td><td>41.8</td></tr></table>	Poles	A	B	9	31.0	38.0	15	40.5	41.1	25	53.7	41.8	37	69.8	41.8
Poles	A	B																	
9	31.0	38.0																	
15	40.5	41.1																	
25	53.7	41.8																	
37	69.8	41.8																	
	9 ¹⁾	09 67 009 033 .																	
	15	09 67 015 033 .																	
	25	09 67 025 033 .																	
	37	09 67 037 033 .																	
Please insert digit for screw option																			
Knurled screw, thread 4-40 UNC ▶	3																		
Knurled screw, thread M3 ▶	6																		
				<table><tr><th colspan="2">Grommet dimensions</th></tr><tr><th>Number</th><th>Diameter</th></tr><tr><td>1</td><td>4.0</td></tr><tr><td>2</td><td>5.0</td></tr><tr><td>3</td><td>7.0</td></tr><tr><td>4</td><td>10.0</td></tr><tr><td>5</td><td>10.2</td></tr></table>	Grommet dimensions		Number	Diameter	1	4.0	2	5.0	3	7.0	4	10.0	5	10.2	
Grommet dimensions																			
Number	Diameter																		
1	4.0																		
2	5.0																		
3	7.0																		
4	10.0																		
5	10.2																		

¹⁾ 9 pole hood provided with only one screw on the opposite side of the cable entry.

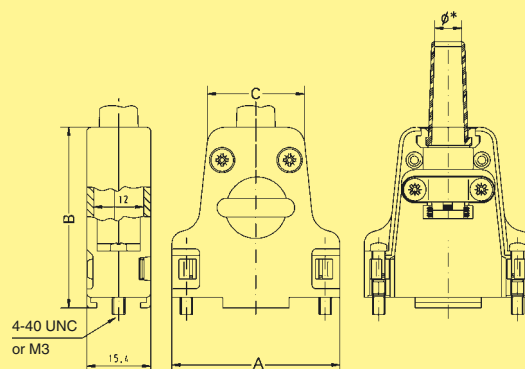


Full metal top and side entry hoods
with short screws

Identification No. of contacts Part No. Drawing Dimensions in mm

Top entry hood

9 09 67 009 034 .
15 09 67 015 034 .
25 09 67 025 034 .
37 09 67 037 034 .



Poles	A	B	C	Ø F1		Ø F2	Ø F3
				Min.	Max.		
9	31.8	42.4	20.8	3.0	9.5	6.5	—
15	40.3	43.5	23.3	3.0	8.5	6.5	12.5
25	54.0	47.7	31.7	3.0	8.5	8.0	12.5
37	70.2	50.4	48.2	3.0	12.0	9.0	15.0

Please insert digit for screw option

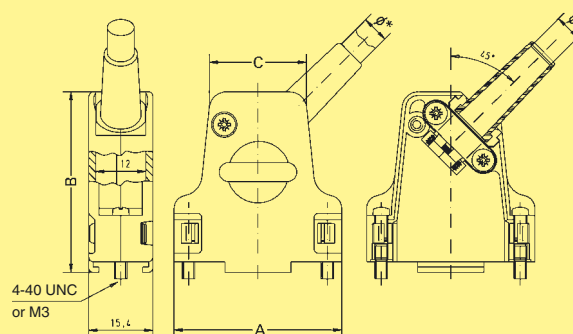
Knurled screw,
thread 4-40 UNC ▶ 4

Knurled screw, thread M3 ▶ 9

* Cable diameter without rubber bushing = Ø F1
Cable diameter with rubber bushing = Ø F2
Cable diameter without rubber bushing
and without cable reduction plate = Ø F3

Side entry hood

9 09 67 009 033 .
15 09 67 015 033 .
25 09 67 025 033 .
37 09 67 037 033 .



Poles	A	B	C	Ø F1		Ø F2	Ø F3
				Min.	Max.		
9	31.8	42.4	20.8	3.0	9.5	6.5	—
15	40.3	43.5	23.3	3.0	8.5	6.5	12.5
25	54.0	47.7	31.7	3.0	8.5	8.0	12.5
37	70.2	50.4	48.2	3.0	12.0	9.0	15.0

Please insert digit for screw option

Knurled screw,
thread 4-40 UNC ▶ 4

Knurled screw, thread M3 ▶ 5

* Cable diameter without rubber bushing = Ø F1
Cable diameter with rubber bushing = Ø F2
Cable diameter without rubber bushing
and without cable reduction plate = Ø F3



Full metal top and side entry hoods
with different screw options

Identification

No. of
contacts

Part No.

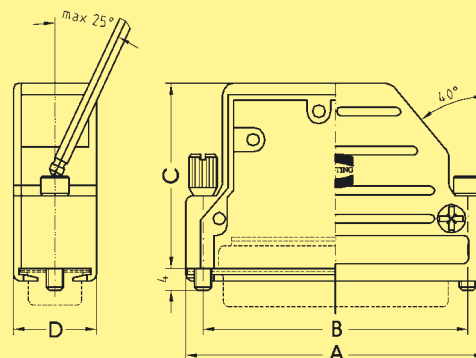
Drawing

Dimensions in mm

40° side entry hood

9
15
25

61 03 001 . 013
61 03 001 . 014
61 03 001 . 015

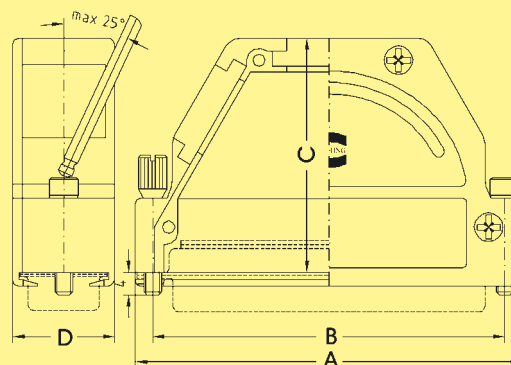


No. of contacts	A	B	C	D
9	31.0	25.0	35.0	15.0
15	39.3	33.3	35.0	15.0
25	53.0	47.0	35.0	15.0

Top/side entry hood

9
15
25
37
50

61 03 001 . 010
61 03 001 . 016
61 03 001 . 017 ¹⁾
61 03 001 . 018 ¹⁾
61 03 001 . 019 ¹⁾



No. of contacts	No. of cable entries	A	B	C	D
9	1 (top)	31.0	25.0	38.0	15.0
15	1 (top)	39.5	33.3	35.0	15.0
25	3	53.0	47.0	43.0	15.0
37	3	69.5	63.5	43.0	15.0
50	3	67.2	61.6	43.0	17.8

Please insert digit for screw option

- Knurled screw, thread 4-40 UNC ▶ 0
- Hexagonal screw, thread M3 with captive washer ▶ 1
- Hexagonal screw, thread 4-40 UNC with captive washer ▶ 2
- Knurled screw, thread M3 ▶ 3

InduCom 9 hood
with straight entries

Hexagonal screw, thread 4-40 UNC

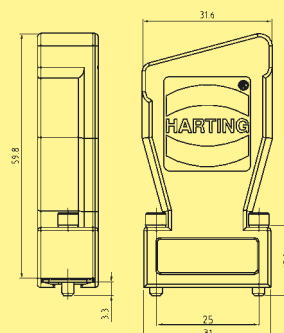
9

66 67 009 0346

Hexagonal screw, thread M3

9

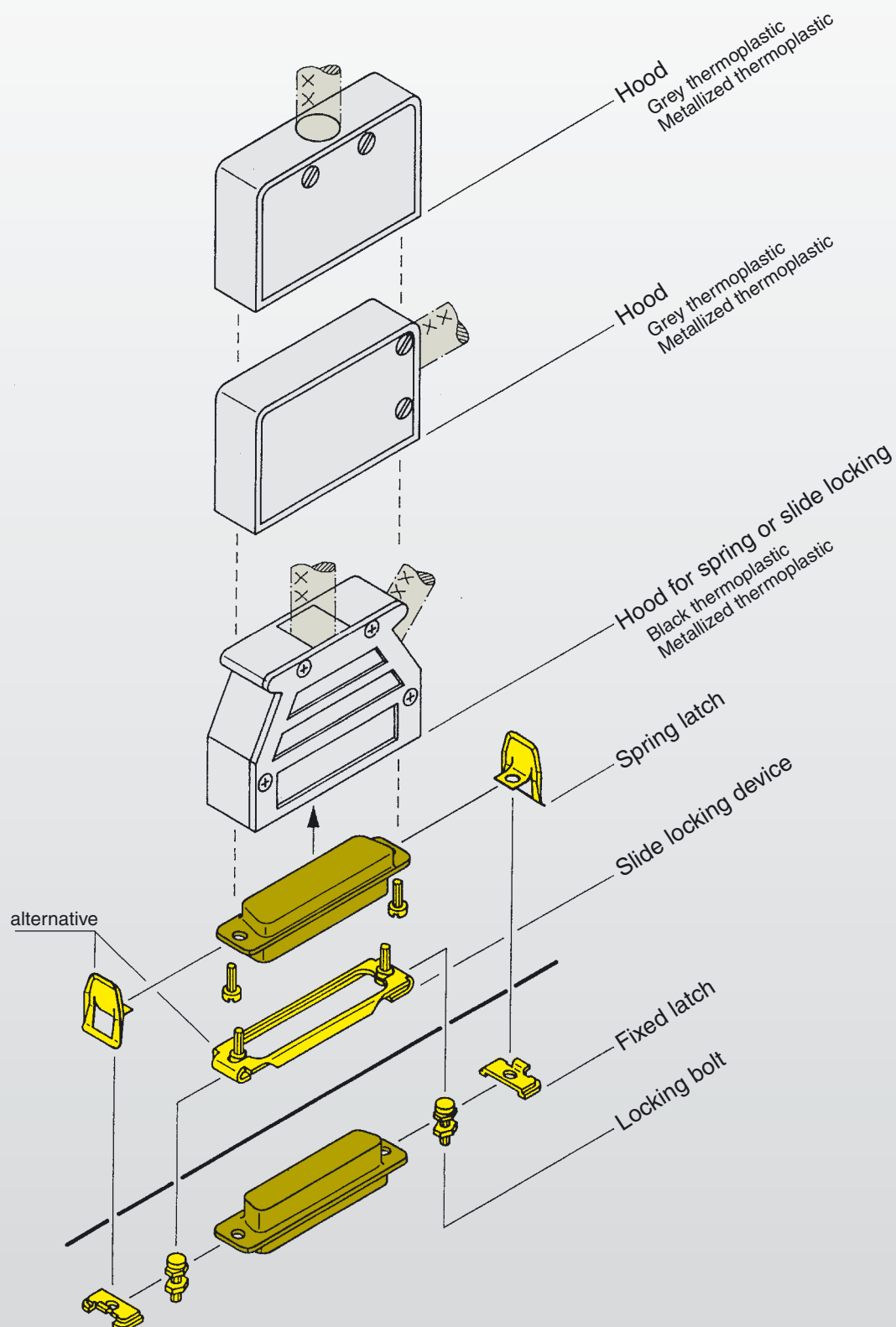
66 67 009 0347



2 cable entries

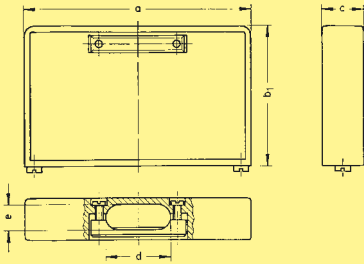
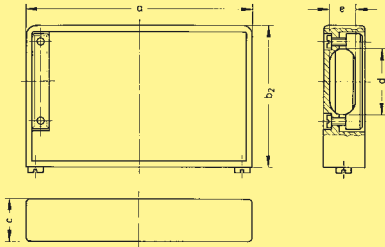
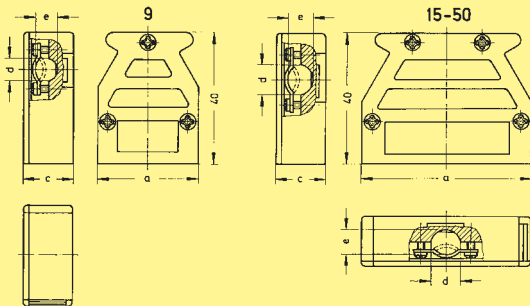
¹⁾ Part no. contains two blanking pieces

Connector hoods for spring or slide locking





Thermoplastic top
and side entry hoods
for spring or slide locking and accessories

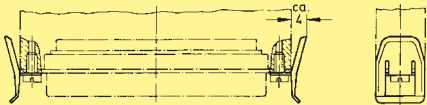
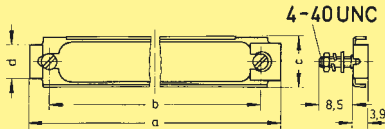
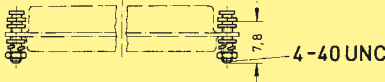
Identification	No. of contacts	Part No.		Drawing	Dimensions in mm																																																							
Top entry hood	9 15 25 37 50	Thermoplastic grey	Thermoplastic metallized		<table><thead><tr><th></th><th>a</th><th>b₁</th><th>b₂</th><th>c</th><th>d</th><th colspan="2">e</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th>min.</th><th>max.</th></tr></thead><tbody><tr><td>9</td><td>31.0</td><td>23</td><td>28</td><td>12.8</td><td>10</td><td>5.75</td><td>9.0</td></tr><tr><td>15</td><td>39.4</td><td>28</td><td>28</td><td>12.8</td><td>10</td><td>5.75</td><td>9.0</td></tr><tr><td>25</td><td>53.3</td><td>34</td><td>34</td><td>12.8</td><td>14</td><td>5.75</td><td>9.0</td></tr><tr><td>37</td><td>69.7</td><td>43</td><td>43</td><td>12.8</td><td>20</td><td>5.75</td><td>9.0</td></tr><tr><td>50</td><td>67.1</td><td>41</td><td>41</td><td>15.8</td><td>20</td><td>5.75</td><td>11.6</td></tr></tbody></table>		a	b ₁	b ₂	c	d	e							min.	max.	9	31.0	23	28	12.8	10	5.75	9.0	15	39.4	28	28	12.8	10	5.75	9.0	25	53.3	34	34	12.8	14	5.75	9.0	37	69.7	43	43	12.8	20	5.75	9.0	50	67.1	41	41	15.8	20	5.75	11.6
							a	b ₁	b ₂	c	d	e																																																
											min.	max.																																																
						9	31.0	23	28	12.8	10	5.75	9.0																																															
						15	39.4	28	28	12.8	10	5.75	9.0																																															
						25	53.3	34	34	12.8	14	5.75	9.0																																															
37	69.7	43	43	12.8	20	5.75	9.0																																																					
50	67.1	41	41	15.8	20	5.75	11.6																																																					
Side entry hood	9 15 25 37 50	Thermoplastic grey	Thermoplastic metallized																																																									
Top and side entry hood ¹⁾	9 15 25 37 50	Thermoplastic black	Thermoplastic metallized		<table><thead><tr><th></th><th>a</th><th>c</th><th>d</th><th colspan="2">e</th></tr><tr><th></th><th></th><th></th><th></th><th>min.</th><th>max.</th></tr></thead><tbody><tr><td>9</td><td>31.0</td><td>15.4</td><td>7</td><td>1.7</td><td>7.5</td></tr><tr><td>15</td><td>39.4</td><td>15.4</td><td>7</td><td>1.7</td><td>8.0</td></tr><tr><td>25</td><td>53.2</td><td>15.4</td><td>9</td><td>1.5</td><td>8.0</td></tr><tr><td>37</td><td>69.5</td><td>15.4</td><td>9</td><td>1.5</td><td>8.0</td></tr><tr><td>50</td><td>67.0</td><td>17.9</td><td>9</td><td>1.5</td><td>8.0</td></tr></tbody></table>		a	c	d	e						min.	max.	9	31.0	15.4	7	1.7	7.5	15	39.4	15.4	7	1.7	8.0	25	53.2	15.4	9	1.5	8.0	37	69.5	15.4	9	1.5	8.0	50	67.0	17.9	9	1.5	8.0													
							a	c	d	e																																																		
										min.	max.																																																	
						9	31.0	15.4	7	1.7	7.5																																																	
						15	39.4	15.4	7	1.7	8.0																																																	
						25	53.2	15.4	9	1.5	8.0																																																	
37	69.5	15.4	9	1.5	8.0																																																							
50	67.0	17.9	9	1.5	8.0																																																							

¹⁾ 9 poles is only side entry
Accessories see page 07.12



Thermoplastic top
and side entry hoods
for spring or slide locking and accessories

D-Sub - H

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																														
Spring latch	9-50	corrosion resistant steel 09 67 000 9907 ¹⁾																																
Fixed latch	9-37 50	corrosion resistant steel 09 67 001 9971 ¹⁾ 09 67 001 9972 ¹⁾																																
Slide locking device	9 15 25 37 50	corrosion resistant steel 09 67 000 9914 09 67 000 9915 09 67 000 9916 09 67 000 9917 09 67 000 9918	 <table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>9</td><td>35.6</td><td>25.0</td><td>12.0</td><td>10.0</td></tr><tr><td>15</td><td>44.0</td><td>33.3</td><td>12.0</td><td>10.0</td></tr><tr><td>25</td><td>57.8</td><td>47.0</td><td>12.0</td><td>10.0</td></tr><tr><td>37</td><td>74.3</td><td>63.5</td><td>12.0</td><td>10.0</td></tr><tr><td>50</td><td>72.0</td><td>61.1</td><td>14.8</td><td>13.5</td></tr></table>		a	b	c	d	9	35.6	25.0	12.0	10.0	15	44.0	33.3	12.0	10.0	25	57.8	47.0	12.0	10.0	37	74.3	63.5	12.0	10.0	50	72.0	61.1	14.8	13.5	
	a	b	c	d																														
9	35.6	25.0	12.0	10.0																														
15	44.0	33.3	12.0	10.0																														
25	57.8	47.0	12.0	10.0																														
37	74.3	63.5	12.0	10.0																														
50	72.0	61.1	14.8	13.5																														
Locking bolt	9-50	tinned 09 67 001 9973 ¹⁾																																

¹⁾ Order 2 for each connector

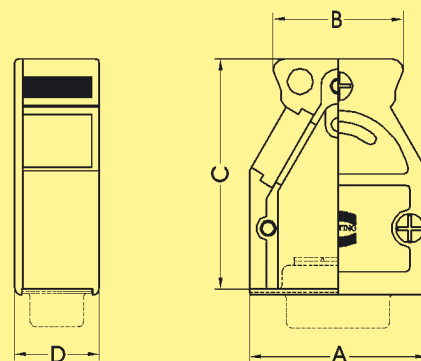


Full metal top and side entry hoods
for spring or slide locking and accessories

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
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Top/side entry hood with
spring/slide locking

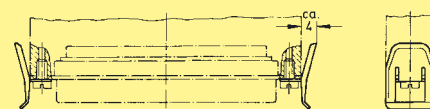
9	61 03 001 0022 ¹⁾
15	61 03 001 0011 ²⁾
25	61 03 001 0012 ²⁾
37	61 03 001 0021 ²⁾
50	61 03 001 0020 ²⁾



No. of contacts	No. of cable entries	A	B	C	D
9	2	31.0	22.6	40.0	14.8
15	3	39.0	30.6	40.0	14.8
25	3	53.0	42.6	40.0	14.8
37	3	69.5	59.2	40.0	14.8
50	3	67.0	55.0	40.0	17.6

Spring latch
corrosion resistant steel

9-50 09 67 000 9907³⁾



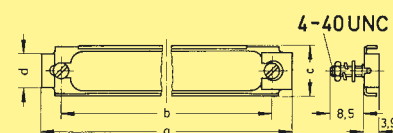
Fixed latch
corrosion resistant steel

9-37 09 67 001 9971³⁾
50 09 67 001 9972³⁾



Slide locking device
corrosion resistant steel

9	09 67 000 9914
15	09 67 000 9915
25	09 67 000 9916
37	09 67 000 9917
50	09 67 000 9918



	a	b	c	d
9	35.6	25.0	12.0	10.0
15	44.0	33.3	12.0	10.0
25	57.8	47.0	12.0	10.0
37	74.3	63.5	12.0	10.0
50	72.0	61.1	14.8	13.5

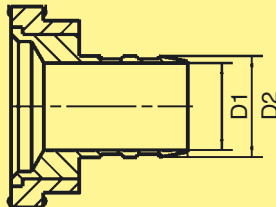
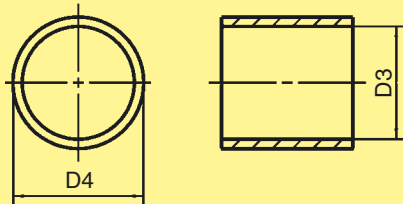
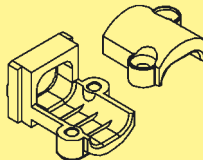
Locking bolt
tinned

9-50 09 67 001 9973³⁾



¹⁾ Part no. contains one blanking piece
²⁾ Part no. contains two blanking pieces
³⁾ Order two for each connector

Accessories for full metal hoods

Identification	Part No.		Drawing	Dimensions in mm																																								
Crimp flange	Hoods for 9-37 pole D-Sub	Hoods for 50 pole D-Sub	<table><tr><th>D1</th><th>D2</th></tr><tr><td>3.0</td><td>4.0</td></tr><tr><td>3.5</td><td>4.5</td></tr><tr><td>4.0</td><td>5.0</td></tr><tr><td>4.5</td><td>5.5</td></tr><tr><td>5.0</td><td>6.0</td></tr><tr><td>5.5</td><td>6.5</td></tr><tr><td>6.0</td><td>7.0</td></tr><tr><td>6.5</td><td>7.5</td></tr><tr><td>7.0</td><td>8.0</td></tr><tr><td>7.5</td><td>8.5</td></tr><tr><td>8.0</td><td>9.0</td></tr><tr><td>8.5</td><td>9.5</td></tr><tr><td>9.0</td><td>10.0</td></tr></table> 	D1	D2	3.0	4.0	3.5	4.5	4.0	5.0	4.5	5.5	5.0	6.0	5.5	6.5	6.0	7.0	6.5	7.5	7.0	8.0	7.5	8.5	8.0	9.0	8.5	9.5	9.0	10.0													
	D1	D2																																										
	3.0	4.0																																										
	3.5	4.5																																										
	4.0	5.0																																										
	4.5	5.5																																										
	5.0	6.0																																										
	5.5	6.5																																										
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	7.5	8.5																																										
	8.0	9.0																																										
	8.5	9.5																																										
	9.0	10.0																																										
61 03 000 0062	61 03 000 5062																																											
61 03 000 0063	61 03 000 5063																																											
61 03 000 0064	61 03 000 5064																																											
61 03 000 0065	61 03 000 5065																																											
61 03 000 0066	61 03 000 5066																																											
61 03 000 0166	61 03 000 5166																																											
61 03 000 0067	61 03 000 5067																																											
61 03 000 0068	61 03 000 5068																																											
61 03 000 0069	61 03 000 5069																																											
61 03 000 0070	61 03 000 5070																																											
61 03 000 0071	61 03 000 5071																																											
61 03 000 0165	61 03 000 5165																																											
61 03 000 0072	61 03 000 5072																																											
Crimp ferrule	61 03 000 0045 61 03 000 0046 61 03 000 0047 61 03 000 0048 61 03 000 0049 61 03 000 0050 61 03 000 0051 61 03 000 0052 61 03 000 0053 61 03 000 0054 61 03 000 0055 61 03 000 0056 61 03 000 0057 61 03 000 0058 61 03 000 0142 61 03 000 0059 61 03 000 0127 61 03 000 0060 61 03 000 0061		<table><tr><th>D3</th><th>D4</th></tr><tr><td>5.0</td><td>6.0</td></tr><tr><td>5.5</td><td>6.5</td></tr><tr><td>6.0</td><td>7.0</td></tr><tr><td>6.5</td><td>7.5</td></tr><tr><td>7.0</td><td>8.0</td></tr><tr><td>7.5</td><td>8.5</td></tr><tr><td>8.0</td><td>9.0</td></tr><tr><td>8.5</td><td>9.5</td></tr><tr><td>9.0</td><td>10.0</td></tr><tr><td>9.5</td><td>10.5</td></tr><tr><td>10.0</td><td>11.0</td></tr><tr><td>10.5</td><td>11.5</td></tr><tr><td>11.0</td><td>12.0</td></tr><tr><td>11.5</td><td>12.5</td></tr><tr><td>12.0</td><td>13.0</td></tr><tr><td>12.5</td><td>13.5</td></tr><tr><td>13.0</td><td>14.0</td></tr><tr><td>13.7</td><td>15.0</td></tr><tr><td>14.0</td><td>15.0</td></tr></table> 	D3	D4	5.0	6.0	5.5	6.5	6.0	7.0	6.5	7.5	7.0	8.0	7.5	8.5	8.0	9.0	8.5	9.5	9.0	10.0	9.5	10.5	10.0	11.0	10.5	11.5	11.0	12.0	11.5	12.5	12.0	13.0	12.5	13.5	13.0	14.0	13.7	15.0	14.0	15.0	
			D3	D4																																								
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			12.5	13.5																																								
			13.0	14.0																																								
			13.7	15.0																																								
14.0	15.0																																											
Cable clamp	cable-Ø appr. 5- 7 mm	61 03 000 0141																																										
	cable-Ø appr. 7-10 mm	61 03 000 0044																																										
	cable-Ø appr. 10-12 mm	61 03 000 0143																																										
	cable-Ø appr. 11-14 mm	61 03 000 0145																																										
Blanking piece for hoods	61 03 000 0042	61 03 000 0041																																										
Hexagonal screw thread 4-40 UNC x 17.5- 8.8 with captive washer thread M3 x 17.5-8.8 with captive washer	09 67 002 9020																																											
	09 67 002 9019																																											
Knurled screw thread 4-40 UNC thread M3	09 67 002 9018																																											
	09 67 002 9017																																											

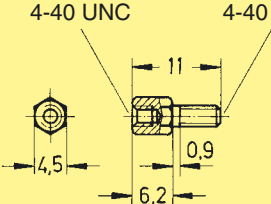
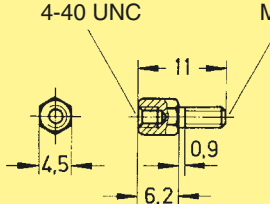
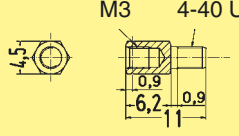
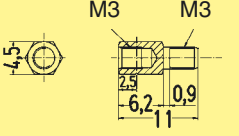
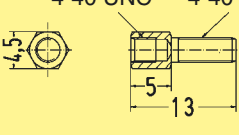
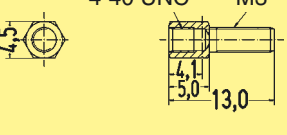
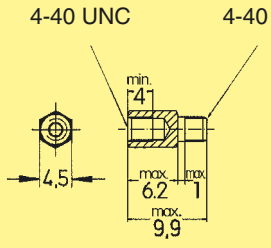
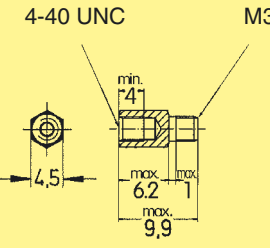
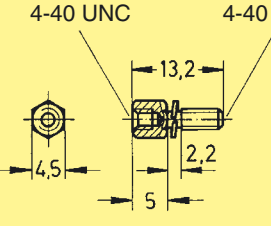
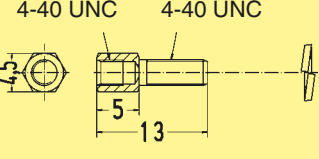
D-Sub – Accessories for subminiature D connectors

Page

Accessories

08.02

Accessories

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
Female screw locks without nut Thread UNC/UNC Thread UNC/M3 Thread M3/UNC Thread M3/M3 Thread UNC/UNC Thread UNC/M3	 9-50 9-50 9-50 9-50 9-50 9-50	 09 67 000 9972 ¹⁾ 09 67 000 9974 ¹⁾ 09 67 001 9976 ¹⁾ 09 67 001 9974 ¹⁾ 09 67 001 9941 ¹⁾ 09 67 001 9954 ¹⁾	     	
for press-in connectors with grounding-pins or straight solder with grounding-clips. Thread UNC/UNC Thread UNC/M3	 9-50 9-50	 09 66 000 9972 ¹⁾ 09 66 000 9974 ¹⁾²⁾	 	
with captive washer Thread UNC/UNC	 9-50	 09 67 001 9957 ¹⁾		
with spring washer Thread UNC/UNC	 9-50	 09 67 001 9939 ¹⁾		

¹⁾ Order 2 for each connector

²⁾ M3 inner thread available on request

Accessories

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm
Female screw locks with nut Thread UNC/UNC Thread UNC/M3 Thread UNC/UNC	9-50 9-50 9-50	09 67 000 9922 ¹⁾ 09 67 000 9924 ¹⁾ 09 67 000 9973 ¹⁾		
Male screw locks for use without hood	9-37 50	09 67 001 9969 ¹⁾ 09 67 001 9970 ¹⁾		
Hex extender	50	09 67 001 9985		

¹⁾ Order 2 for each connector

²⁾ M3 inner thread available on request

Accessories

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm															
Dust cap black thermoplastic for male connector	9 15 25 37	09 67 009 0611 09 67 015 0611 09 67 025 0611 09 67 037 0611		<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>9</td><td>17.0</td><td>22.40</td></tr><tr><td>15</td><td>25.3</td><td>30.80</td></tr><tr><td>25</td><td>38.9</td><td>44.40</td></tr><tr><td>37</td><td>55.4</td><td>60.75</td></tr></table>		A	B	9	17.0	22.40	15	25.3	30.80	25	38.9	44.40	37	55.4	60.75
	A	B																	
9	17.0	22.40																	
15	25.3	30.80																	
25	38.9	44.40																	
37	55.4	60.75																	
for female connector	9 15 25 37	09 67 009 0711 09 67 015 0711 09 67 025 0711 09 67 037 0711		<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>9</td><td>16.0</td><td>22.5</td></tr><tr><td>15</td><td>24.4</td><td>31.0</td></tr><tr><td>25</td><td>37.8</td><td>44.3</td></tr><tr><td>37</td><td>54.3</td><td>60.8</td></tr></table>		A	B	9	16.0	22.5	15	24.4	31.0	25	37.8	44.3	37	54.3	60.8
	A	B																	
9	16.0	22.5																	
15	24.4	31.0																	
25	37.8	44.3																	
37	54.3	60.8																	
antistatic black thermoplastic for male connector	9 15 25 37	09 67 009 0612 09 67 015 0612 09 67 025 0612 09 67 037 0612		<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>9</td><td>17.7</td><td>21.8</td></tr><tr><td>15</td><td>26.0</td><td>30.0</td></tr><tr><td>25</td><td>40.0</td><td>44.2</td></tr><tr><td>37</td><td>56.4</td><td>59.8</td></tr></table>		A	B	9	17.7	21.8	15	26.0	30.0	25	40.0	44.2	37	56.4	59.8
	A	B																	
9	17.7	21.8																	
15	26.0	30.0																	
25	40.0	44.2																	
37	56.4	59.8																	
for female connector	9 15 25 37	09 67 009 0712 09 67 015 0712 09 67 025 0712 09 67 037 0712		<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>9</td><td>15.9</td><td>20.0</td></tr><tr><td>15</td><td>24.4</td><td>28.5</td></tr><tr><td>25</td><td>38.3</td><td>42.3</td></tr><tr><td>37</td><td>54.7</td><td>58.8</td></tr></table>		A	B	9	15.9	20.0	15	24.4	28.5	25	38.3	42.3	37	54.7	58.8
	A	B																	
9	15.9	20.0																	
15	24.4	28.5																	
25	38.3	42.3																	
37	54.7	58.8																	
UL 94 V0 grey thermoplastic for male connector	9 15 25 37	09 67 009 0613 09 67 015 0613 09 67 025 0613 09 67 037 0613		<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>9</td><td>17.7</td><td>21.8</td></tr><tr><td>15</td><td>26.0</td><td>30.0</td></tr><tr><td>25</td><td>40.0</td><td>44.2</td></tr><tr><td>37</td><td>56.4</td><td>59.8</td></tr></table>		A	B	9	17.7	21.8	15	26.0	30.0	25	40.0	44.2	37	56.4	59.8
	A	B																	
9	17.7	21.8																	
15	26.0	30.0																	
25	40.0	44.2																	
37	56.4	59.8																	
for female connector	9 15 25 37	09 67 009 0713 09 67 015 0713 09 67 025 0713 09 67 037 0713		<table><tr><th></th><th>A</th><th>B</th></tr><tr><td>9</td><td>15.9</td><td>20.0</td></tr><tr><td>15</td><td>24.4</td><td>28.5</td></tr><tr><td>25</td><td>38.3</td><td>42.3</td></tr><tr><td>37</td><td>54.7</td><td>58.8</td></tr></table>		A	B	9	15.9	20.0	15	24.4	28.5	25	38.3	42.3	37	54.7	58.8
	A	B																	
9	15.9	20.0																	
15	24.4	28.5																	
25	38.3	42.3																	
37	54.7	58.8																	

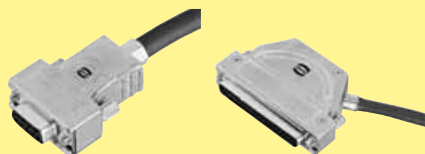
InduCom – Robust and RF-shielded D-Sub interfaces

Page

General information **09.02**

Mounting details **09.05**

Full metal hoods **09.06**



Accessories for full metal hoods **09.08**

Technical characteristics for connectors **09.09**

Connectors with solder buckets/crimp terminal ... **09.10**



Crimp contacts **09.13**

InduCom 9 –
Industrial bus interface system **09.14**



Tooling **09.16**



D-Sub industrial bus interface systems

The InduCom family consists of RF-shielded die-cast hoods for 9 to 50 way D-Sub connectors according to DIN 41 652, MIL-DTL-24-308 and IEC 60 807. It is specially designed for bus systems in transportation and industrial applications where good EMC performance and mechanical strength is required. The full metal hoods are available with 1, 2 or 3 cable entries. The large space inside the InduCom 9 version allows the integration of PCBs, e.g. for bus systems and customised solutions.

The labyrinth design of the InduCom 9 metal hood guarantees together with its crimp flange technology a good EMC/RF performance with very high shielding attenuation greater than 60 dB up to 500 MHz. Low resistance is achieved due to the co-action of the crimp flange and the crimp ferrule which are connected to the hood. Also there is an excellent 360° low resistance connection between the cable shield and the hood.

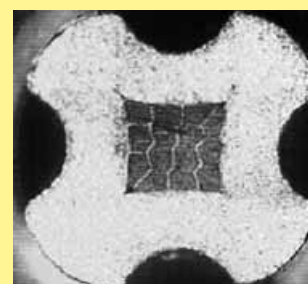
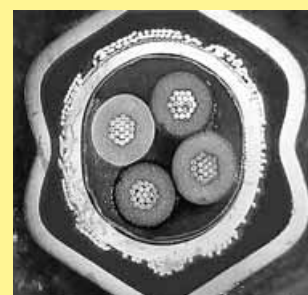
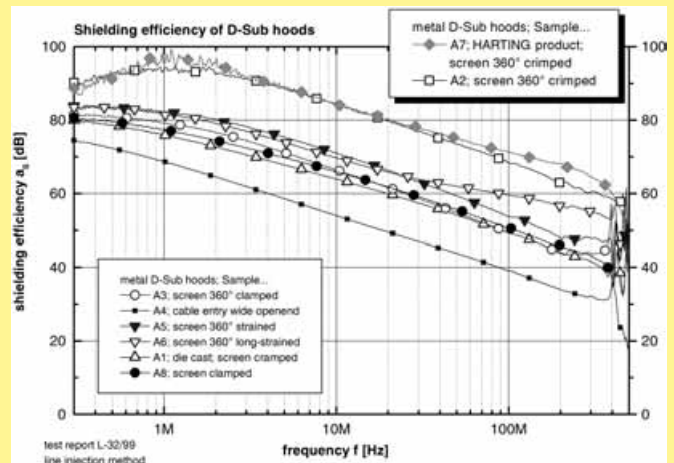
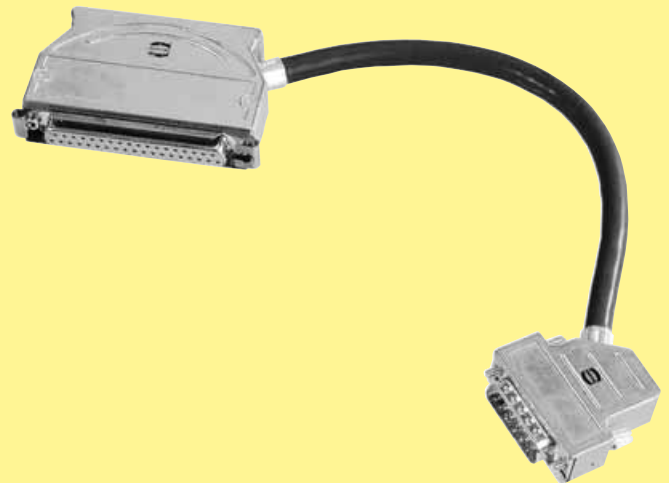
Furthermore this technique provides continuous pressure on the cable after the crimp process for good mechanical strength with good strain relief and pull out resistance as well as anti rotation security for harsh industrial environments.

Another advantage is the possibility to connect thicker cables with the crimp flange, for instance, you can connect a hood for 9 pole connectors with a cable of approx. 13.5 mm diameter.

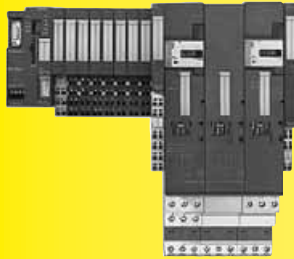
With this technique it is possible to reproduce consistent production quality either in the field or in the plant, which is very important for a bus structure with many interfaces.

Turned and stamped male and female crimp contacts guarantee an optimised electrical and mechanical connection between the cable and the crimp contact. In order to fulfil the required 500 mating cycles for transportation applications most of the contacts are available in performance level 1.

For turned contacts HARTING offers an ultra precision hand crimp tool with an 4-impression crimp, which assures maximum tensile strength. This crimp tool is suitable for wire sizes from AWG 18 to AWG 28.



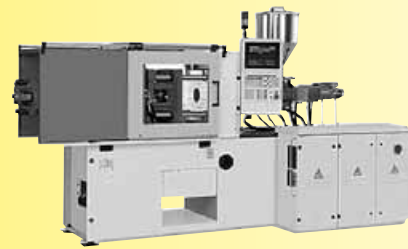
InduCom full metal hoods – applications



Factory Automation



Transportation



Machinery

InduCom 9 interfaces – features and benefits

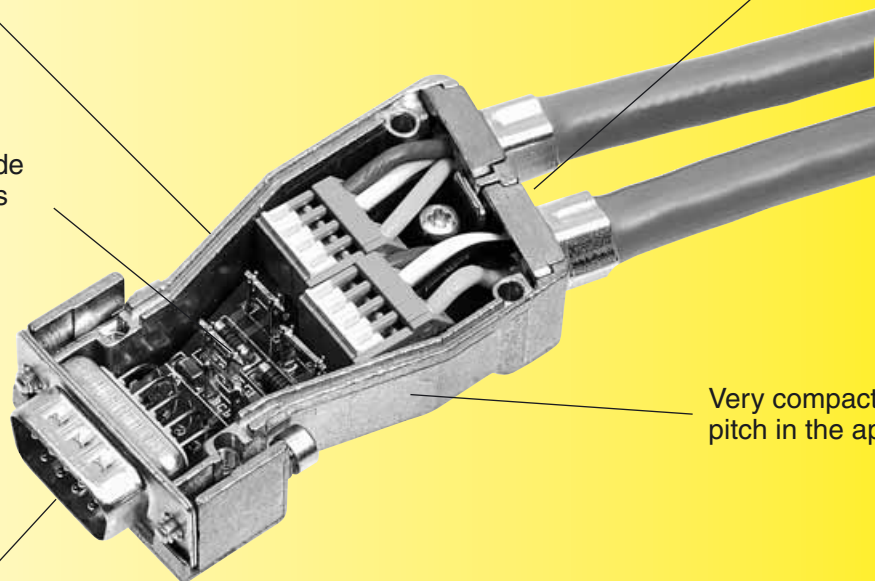
Special labyrinth design between housing and cover for highest RF shielding

2 cable entries: Ideal to loop through bus lines

Large space inside to integrate PCBs

Very compact design for a low pitch in the application

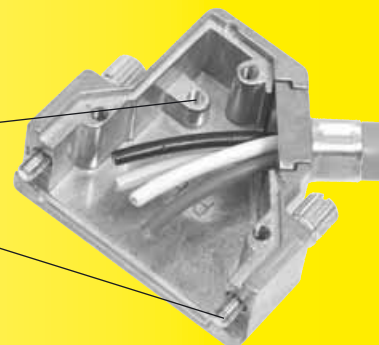
Solution for MVB, WTB, Profibus and CAN available



InduCom full metal hoods – features and benefits

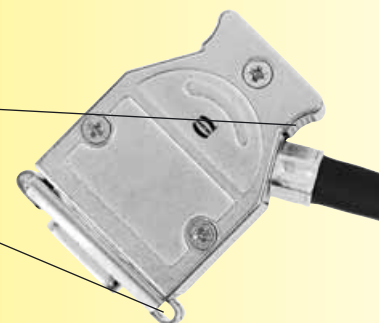
Integrated ground connection

Vibration proof screw locking (M3 / UNC, hexagonal / knurled)



Practical design for an easy plugging and pulling

Easy spring / slide locking for a quick plugging / pulling of the connectors



Up to 3 cable entries to loop through (bus) lines

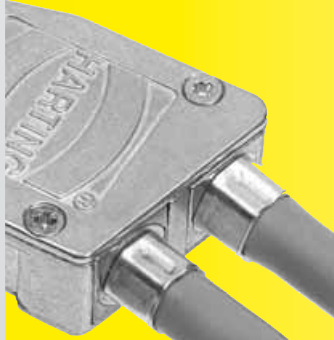
Blind plugs to close unused cable entries



Crimp flanges and ferrules:

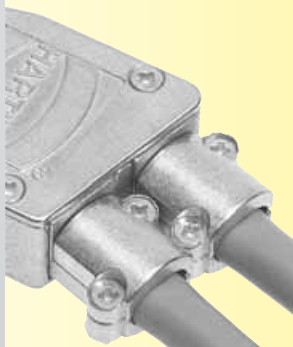
- Low impedance 360° shielding connection
- Very good strain relief and torque retention

HARTING offers to test and define the best crimp flange and ferrule combination for customer specific cables.



Cable clamp termination:

- For lower EMC requirements and strain relief
- Ideal for noncircular or very thin cables



Crimp flange termination instruction

1. Strip the cable sheath to the correct length (approx. 35 to 40 mm, depending on interface type).
2. Place the crimp ferrule over the cable sheath. Bend the outer screen backwards over the cable sheath. Cut screen approx. 2 mm from the end of the cable sheath.
3. Place the crimp flange over the wires covered by the remaining foil shield. Push and twist the crimp flange under the outer screen and cable sheath until the end of the cable sheath touches the crimp flange. HARTING has developed a special tool for optimised installation of the shielding over the crimp flange, part number 61 03 600 0017.
4. Move the crimp ferrule back onto the crimp flange and crimp the two parts together with the special service crimp tool part number 61 03 600 0020. For an optimised crimp process the tool should be positioned as close as possible to the crimp flange shoulder.
5. Cut off the internal screen foil and push the crimp flange inside the metal hood.



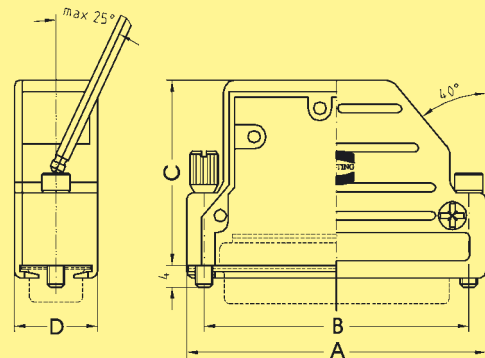


Full metal hoods

Identification No. of contacts Part No. Drawing Dimensions in mm

40° side entry hood

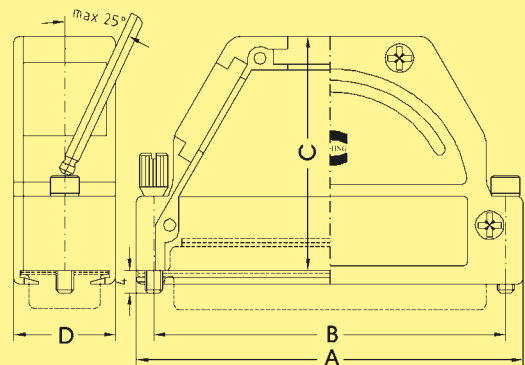
9	61 03 001 . 013
15	61 03 001 . 014
25	61 03 001 . 015



No. of contacts	A	B	C	D
9	31.0	25.0	35.0	15.0
15	39.3	33.3	35.0	15.0
25	53.0	47.0	35.0	15.0

Top/side entry hood

9	61 03 001 . 010
15	61 03 001 . 016
25	61 03 001 . 017 ¹⁾
37	61 03 001 . 018 ¹⁾
50	61 03 001 . 019 ¹⁾



No. of contacts	No. of cable entries	A	B	C	D
9	1 (top)	31.0	25.0	38.0	15.0
15	1 (top)	39.5	33.3	35.0	15.0
25	3	53.0	47.0	43.0	15.0
37	3	69.5	63.5	43.0	15.0
50	3	67.2	61.6	43.0	17.8

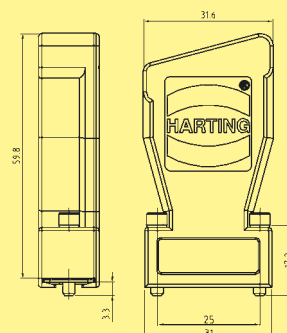
Please insert digit for screw option

Knurled screw, thread 4-40 UNC	0
Hexagonal screw, thread M3 with captive washer	1
Hexagonal screw, thread 4-40 UNC with captive washer	2
Knurled screw, thread M3	3

InduCom 9 hood with straight entries

Hexagonal screw, thread 4-40 UNC 9 66 67 009 0346

Hexagonal screw, thread M3 9 66 67 009 0347

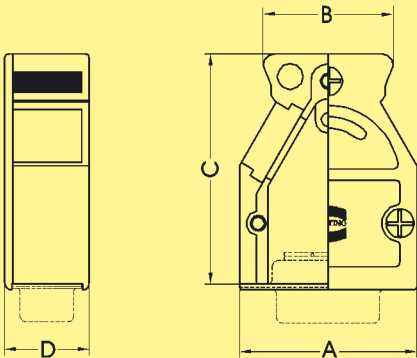
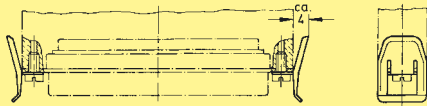
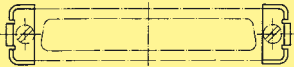
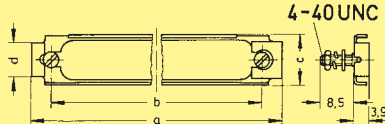
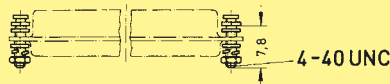


2 cable entries

¹⁾ Part no. contains two blanking pieces

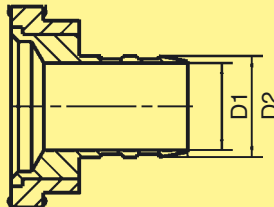
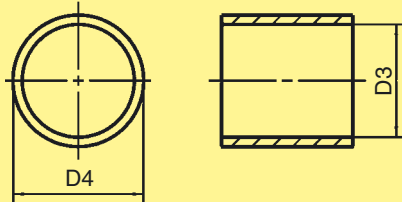
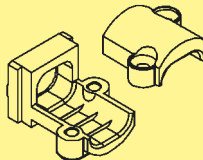


Full metal hoods

Identification	No. of contacts	Part No.	Drawing	Dimensions in mm																																				
Top/side entry hood with spring/slide locking	9 15 25 37 50	61 03 001 0022 ¹⁾ 61 03 001 0011 ²⁾ 61 03 001 0012 ²⁾ 61 03 001 0021 ²⁾ 61 03 001 0020 ²⁾	 <table><tr><th>No. of contacts</th><th>No. of cable entries</th><th>A</th><th>B</th><th>C</th><th>D</th></tr><tr><td>9</td><td>2</td><td>31.0</td><td>22.6</td><td>40.0</td><td>14.8</td></tr><tr><td>15</td><td>3</td><td>39.0</td><td>30.6</td><td>40.0</td><td>14.8</td></tr><tr><td>25</td><td>3</td><td>53.0</td><td>42.6</td><td>40.0</td><td>14.8</td></tr><tr><td>37</td><td>3</td><td>69.5</td><td>59.2</td><td>40.0</td><td>14.8</td></tr><tr><td>50</td><td>3</td><td>67.0</td><td>55.0</td><td>40.0</td><td>17.6</td></tr></table>	No. of contacts	No. of cable entries	A	B	C	D	9	2	31.0	22.6	40.0	14.8	15	3	39.0	30.6	40.0	14.8	25	3	53.0	42.6	40.0	14.8	37	3	69.5	59.2	40.0	14.8	50	3	67.0	55.0	40.0	17.6	
No. of contacts	No. of cable entries	A	B	C	D																																			
9	2	31.0	22.6	40.0	14.8																																			
15	3	39.0	30.6	40.0	14.8																																			
25	3	53.0	42.6	40.0	14.8																																			
37	3	69.5	59.2	40.0	14.8																																			
50	3	67.0	55.0	40.0	17.6																																			
Spring latch corrosion resistant steel	9-50	09 67 000 9907 ³⁾																																						
Fixed latch corrosion resistant steel	9-37 50	09 67 001 9971 ³⁾ 09 67 001 9972 ³⁾																																						
Slide locking device corrosion resistant steel	9 15 25 37 50	09 67 000 9914 09 67 000 9915 09 67 000 9916 09 67 000 9917 09 67 000 9918	 <table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>9</td><td>35.6</td><td>25.0</td><td>12.0</td><td>10.0</td></tr><tr><td>15</td><td>44.0</td><td>33.3</td><td>12.0</td><td>10.0</td></tr><tr><td>25</td><td>57.8</td><td>47.0</td><td>12.0</td><td>10.0</td></tr><tr><td>37</td><td>74.3</td><td>63.5</td><td>12.0</td><td>10.0</td></tr><tr><td>50</td><td>72.0</td><td>61.1</td><td>14.8</td><td>13.5</td></tr></table>		a	b	c	d	9	35.6	25.0	12.0	10.0	15	44.0	33.3	12.0	10.0	25	57.8	47.0	12.0	10.0	37	74.3	63.5	12.0	10.0	50	72.0	61.1	14.8	13.5							
	a	b	c	d																																				
9	35.6	25.0	12.0	10.0																																				
15	44.0	33.3	12.0	10.0																																				
25	57.8	47.0	12.0	10.0																																				
37	74.3	63.5	12.0	10.0																																				
50	72.0	61.1	14.8	13.5																																				
Locking bolt tinned	9-50	09 67 001 9973 ³⁾																																						

¹⁾ Part no. contains one blanking piece
²⁾ Part no. contains two blanking pieces
³⁾ Order two for each connector

Accessories for full metal hoods

Identification	Part No.		Drawing	Dimensions in mm																																								
Crimp flange	Hoods for 9-37 pole D-Sub	Hoods for 50 pole D-Sub	<table><tr><th>D1</th><th>D2</th></tr><tr><td>3.0</td><td>4.0</td></tr><tr><td>3.5</td><td>4.5</td></tr><tr><td>4.0</td><td>5.0</td></tr><tr><td>4.5</td><td>5.5</td></tr><tr><td>5.0</td><td>6.0</td></tr><tr><td>5.5</td><td>6.5</td></tr><tr><td>6.0</td><td>7.0</td></tr><tr><td>6.5</td><td>7.5</td></tr><tr><td>7.0</td><td>8.0</td></tr><tr><td>7.5</td><td>8.5</td></tr><tr><td>8.0</td><td>9.0</td></tr><tr><td>8.5</td><td>9.5</td></tr><tr><td>9.0</td><td>10.0</td></tr></table> 	D1	D2	3.0	4.0	3.5	4.5	4.0	5.0	4.5	5.5	5.0	6.0	5.5	6.5	6.0	7.0	6.5	7.5	7.0	8.0	7.5	8.5	8.0	9.0	8.5	9.5	9.0	10.0													
	D1	D2																																										
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	8.5	9.5																																										
	9.0	10.0																																										
61 03 000 0062	61 03 000 5062																																											
61 03 000 0063	61 03 000 5063																																											
61 03 000 0064	61 03 000 5064																																											
61 03 000 0065	61 03 000 5065																																											
61 03 000 0066	61 03 000 5066																																											
61 03 000 0166	61 03 000 5166																																											
61 03 000 0067	61 03 000 5067																																											
61 03 000 0068	61 03 000 5068																																											
61 03 000 0069	61 03 000 5069																																											
61 03 000 0070	61 03 000 5070																																											
61 03 000 0071	61 03 000 5071																																											
61 03 000 0165	61 03 000 5165																																											
61 03 000 0072	61 03 000 5072																																											
Crimp ferrule	61 03 000 0045 61 03 000 0046 61 03 000 0047 61 03 000 0048 61 03 000 0049 61 03 000 0050 61 03 000 0051 61 03 000 0052 61 03 000 0053 61 03 000 0054 61 03 000 0055 61 03 000 0056 61 03 000 0057 61 03 000 0058 61 03 000 0142 61 03 000 0059 61 03 000 0127 61 03 000 0060 61 03 000 0061		<table><tr><th>D3</th><th>D4</th></tr><tr><td>5.0</td><td>6.0</td></tr><tr><td>5.5</td><td>6.5</td></tr><tr><td>6.0</td><td>7.0</td></tr><tr><td>6.5</td><td>7.5</td></tr><tr><td>7.0</td><td>8.0</td></tr><tr><td>7.5</td><td>8.5</td></tr><tr><td>8.0</td><td>9.0</td></tr><tr><td>8.5</td><td>9.5</td></tr><tr><td>9.0</td><td>10.0</td></tr><tr><td>9.5</td><td>10.5</td></tr><tr><td>10.0</td><td>11.0</td></tr><tr><td>10.5</td><td>11.5</td></tr><tr><td>11.0</td><td>12.0</td></tr><tr><td>11.5</td><td>12.5</td></tr><tr><td>12.0</td><td>13.0</td></tr><tr><td>12.5</td><td>13.5</td></tr><tr><td>13.0</td><td>14.0</td></tr><tr><td>13.7</td><td>15.0</td></tr><tr><td>14.0</td><td>15.0</td></tr></table> 	D3	D4	5.0	6.0	5.5	6.5	6.0	7.0	6.5	7.5	7.0	8.0	7.5	8.5	8.0	9.0	8.5	9.5	9.0	10.0	9.5	10.5	10.0	11.0	10.5	11.5	11.0	12.0	11.5	12.5	12.0	13.0	12.5	13.5	13.0	14.0	13.7	15.0	14.0	15.0	
			D3	D4																																								
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			13.0	14.0																																								
			13.7	15.0																																								
			14.0	15.0																																								
			Cable clamp	cable-Ø appr. 5- 7 mm	61 03 000 0141																																							
				cable-Ø appr. 7-10 mm	61 03 000 0044																																							
				cable-Ø appr. 10-12 mm	61 03 000 0143																																							
				cable-Ø appr. 11-14 mm			61 03 000 0145																																					
Blanking piece for hoods	61 03 000 0042	61 03 000 0041																																										
Hexagonal screw thread 4-40 UNC x 17.5- 8.8 with captive washer	09 67 002 9020																																											
	09 67 002 9019																																											
Knurled screw thread 4-40 UNC	09 67 002 9018																																											
	09 67 002 9017																																											

Number of contacts 9, 15, 25, 37, 50
UL recognized

Working current

see current carrying capacity chart

Turned contacts 7.5 A max.
Stamped contacts 6.5 A max.

Test voltage $U_{r.m.s.}$ 1 kV

Clearance and creepage ≥ 1.0 mm

Contact resistance ≤ 10 m Ω
Insulation resistance $\geq 10^{10}$ Ω

Temperature range

turned version -55 °C ... + 125 °C
stamped solder -25 °C ... + 85 °C
bucket version

Terminations

a) Solder buckets
max. 0.5 mm²
b) Crimp contacts

Materials

Mouldings and hoods Thermoplastic resin, glass-fibre filled (PBTP), UL 94-V0

Contacts Copper alloy

Contact surface
Contact zone

selectively gold-plated
according to performance level¹⁾

Metal shell Plated steel

Mating force

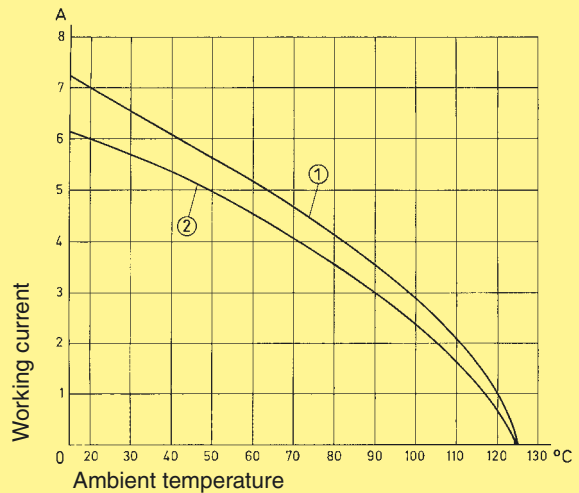
9 way ≤ 30 N
15 way ≤ 50 N
25 way ≤ 83 N
37 way ≤ 123 N
50 way ≤ 167 N

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, not interrupted current-loaded contacts of connectors when simultaneous power on all contacts is given, without exceeding the maximum temperature.

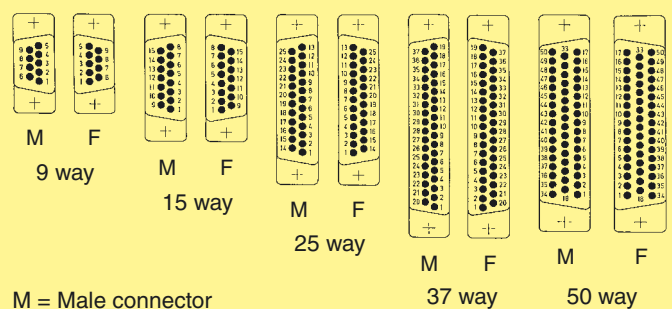
Control and test procedures according to DIN IEC 60 512.



Example: 25 way connector

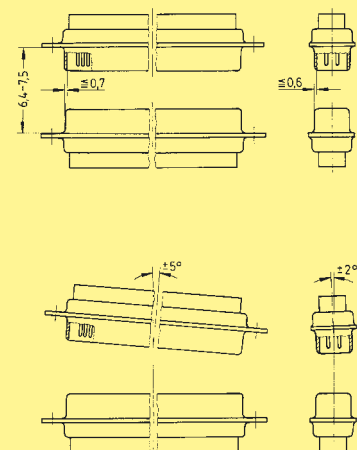
① Turned contacts
② Stamped contacts

Contact arrangement View from termination side



M = Male connector
F = Female connector

Mating conditions as per DIN 41 652



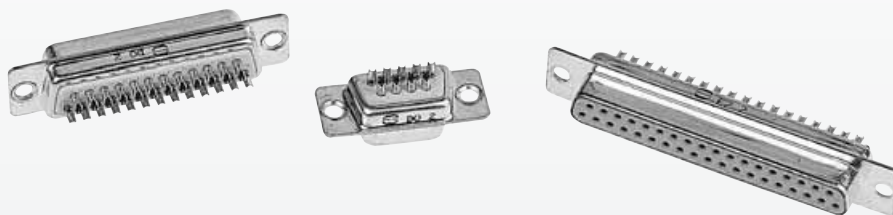
¹⁾ Performance level 3, 50 mating cycles, no gas test

Performance level 2 as per CECC 75 301-802, 250 mating cycles, 4 days 4 mixed gas test – IEC 60 512

Performance level 1 as per CECC 75 301-802, 500 mating cycles, 10 days 4 mixed gas test – IEC 60 512

Number of contacts

9–50

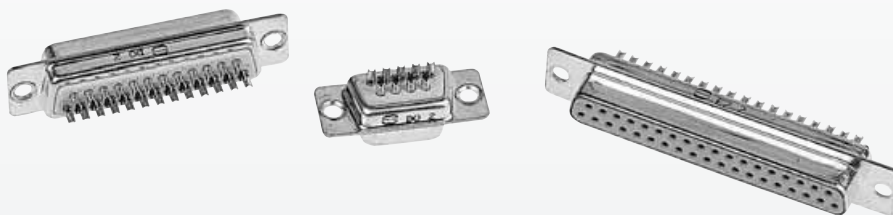


Solder buckets

Identification	No. of contacts	Part No.	
Performance levels Explanations see page 09.09 Other performance levels on request		Performance level 3	Performance level 2
Male connector metal shell with dimples		turned contacts 9 09 67 009 5604 15 09 67 015 5604 25 09 67 025 5604 37 09 67 037 5604 50 09 67 050 5604 ¹⁾ stamped contacts 9 09 67 209 5604 15 09 67 215 5604 25 09 67 225 5604 37 09 67 237 5604 50 09 67 250 5604 ¹⁾	turned contacts 09 67 009 5615 09 67 015 5615 09 67 025 5615 09 67 037 5615 09 67 050 5615 stamped contacts 09 67 209 5615 09 67 215 5615 09 67 225 5615 09 67 237 5615 09 67 250 5615 ¹⁾
Female connector metal shell		turned contacts 9 09 67 009 4704 15 09 67 015 4704 25 09 67 025 4704 37 09 67 037 4704 50 09 67 050 4704 ¹⁾ stamped contacts 9 09 67 209 4704 15 09 67 215 4704 25 09 67 225 4704 37 09 67 237 4704 50 09 67 250 4704 ¹⁾	turned contacts 09 67 009 4715 09 67 015 4715 09 67 025 4715 09 67 037 4715 09 67 050 4715 stamped contacts 09 67 209 4715 09 67 215 4715 09 67 225 4715 09 67 237 4715 09 67 250 4715 ¹⁾

Number of contacts

9-50



Solder buckets

Identification

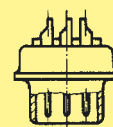
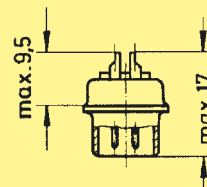
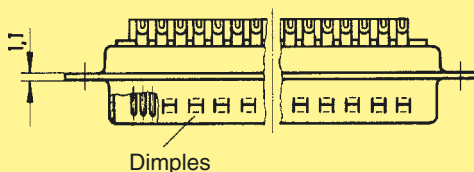
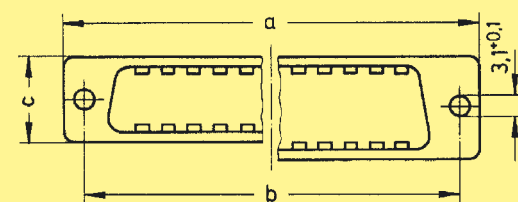
Drawing

Dimensions in mm

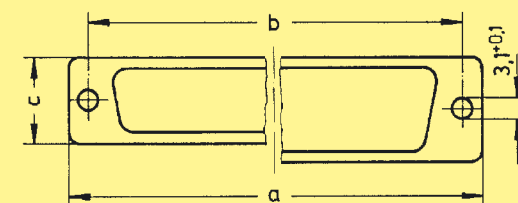
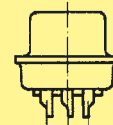
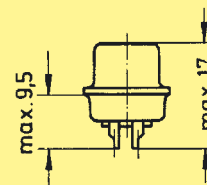
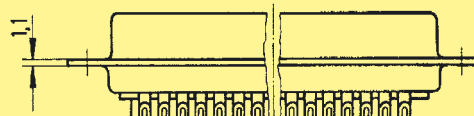
Male connector

9-37

50



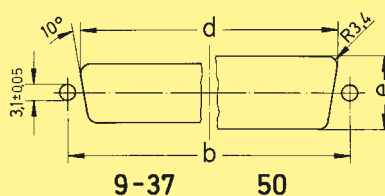
Female connector



9-37

50

	a	b ± 0.13	c
9	30.9	25.0	12.5
15	39.2	33.3	12.5
25	53.1	47.0	12.5
37	69.4	63.5	12.5
50	67.0	61.1	15.4

Panel cut out
for front/rear mountValues are taken from the
CECC 75 301-802

Front mount

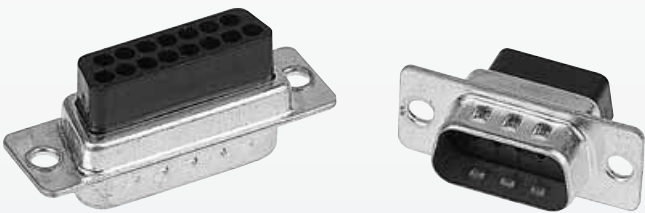
Rear mount

	b ± 0.13	d ± 0.2	e ± 0.2
9	25.0	22.2	12.3
15	33.3	30.5	12.3
25	47.0	44.3	12.3
37	63.5	60.7	12.3
50	61.1	58.3	15.1

	b ± 0.13	d ± 0.2	e ± 0.2
9	25.0	20.5	11.4
15	33.3	28.8	11.4
25	47.0	42.5	11.4
37	63.5	59.1	11.4
50	61.1	56.3	14.1

Number of contacts

9-50



Crimp terminal

Identification	No. of contacts	Part No.
Male connector Order contacts separately metal shell with dimples	9	09 67 009 5601
	15	09 67 015 5601
	25	09 67 025 5601
	37	09 67 037 5601
	50	09 67 050 5601
Female connector Order contacts separately metal shell	9	09 67 009 4701
	15	09 67 015 4701
	25	09 67 025 4701
	37	09 67 037 4701
	50	09 67 050 4701

Male connector

Female connector

Panel cut out for front/rear mount

Values are taken from the CECC 75 301-802

9-37 50

1.3

Dimples

9-37 50

9-37 50

1.3

9-37 50

9-37 50

10°

31±0.05

d

e

9-37 50

	b±0.13	d±0.2	e±0.2
9	25.0	22.2	12.3
15	33.3	30.5	12.3
25	47.0	44.3	12.3
37	63.5	60.7	12.3
50	61.1	58.3	15.1

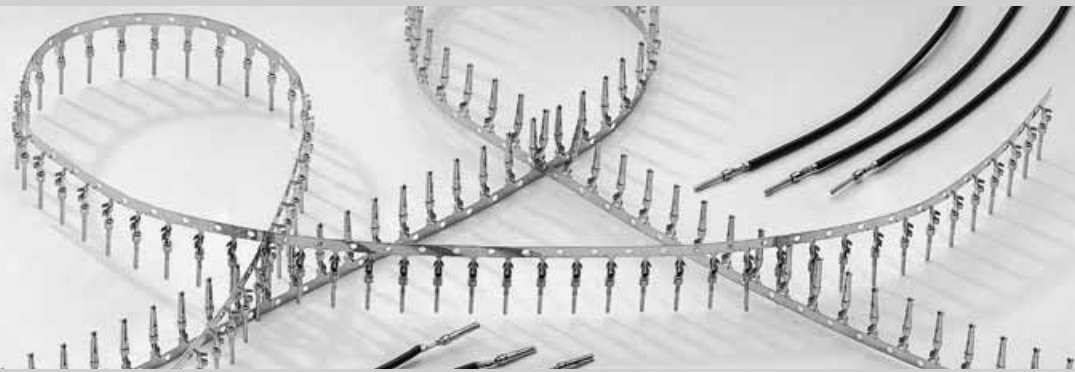
	b±0.13	d±0.2	e±0.2
9	25.0	20.5	11.4
15	33.3	28.8	11.4
25	47.0	42.5	11.4
37	63.5	59.1	11.4
50	61.1	56.3	14.1

	a	b±0.13	c
9	30.9	25.0	12.5
15	39.2	33.3	12.5
25	53.1	47.0	12.5
37	69.4	63.5	12.5
50	67.0	61.1	15.4

Dimensions in mm

Crimp contacts see page 09.13

Mating conditions see page 09.09



Crimp contacts

Identification	Wire gauge (mm ²)	Part No.	
		stamped male contacts	stamped female contacts
		Performance level 1*	Performance level 1*
Individual contacts	AWG 24-20 0.21-0.52	61 03 000 0083	61 03 000 0085
500 pieces/reel		61 03 000 0082	61 03 000 0084
10 000 pieces/reel		61 03 000 0186	61 03 000 0187
Individual contacts	AWG 28-24 0.08-0.21	61 03 000 0087	61 03 000 0089
500 pieces/reel		61 03 000 0086	61 03 000 0088
Identification	Wire gauge (mm ²)	Part No.	
		turned male contacts	turned female contacts
		Performance level 1*	Performance level 1*
Individual contacts	AWG 22-18 0.33-0.82	61 03 000 0112	61 03 000 0113
	AWG 22-20 0.33-0.52	61 03 000 0073	61 03 000 0074
	AWG 26-22 0.13-0.33	61 03 000 0094	61 03 000 0096
	AWG 28-24 0.08-0.21	61 03 000 0078	61 03 000 0080

* Performance level 1 as per CECC 75 301-802, 500 mating cycles, 10 days 4 mixed gas test – IEC 60 512



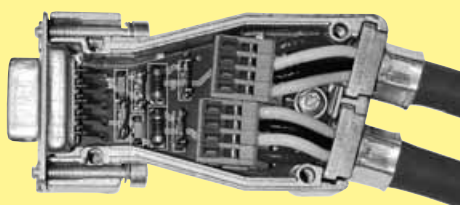
InduCom 9 – Industrial bus interface system

Identification

Part no.

General information

MVB Interface



66 63 009 5013

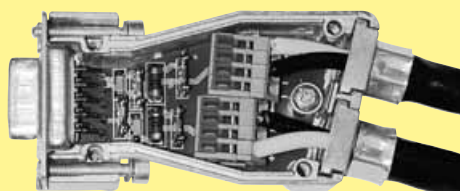
MVB backbone interface set

The Multifunctional Vehicle Bus (MVB) backbone interface is specially designed for communication cables in Train Control Networks (TCN). With this interface it is possible to realise a T-bus structure with MVB-cable with which you can disconnect the bus interface from the control unit without any interruption of the complete bus communication. On the PCB you will have load resistors and test capacitors which can be activated with solder bridges. The wires are terminated with the proven vibration resistant cage clamp technology. These MVB interface set is approved for use with 2 types of cables (**Nexans 459 530 50 and 459 110 19**).

Components of the MVB interface set:

- 1 metal housing with 2 cable entries
- 2 hexagonal screws with UNC 4-40 threads
- 1 PCB with 9 way D-Sub male connector and cage clamps
- 2 crimp flanges for the MVB cable
- 2 crimp ferrules for the MVB cable
- 1 blanking piece

WTB Interface



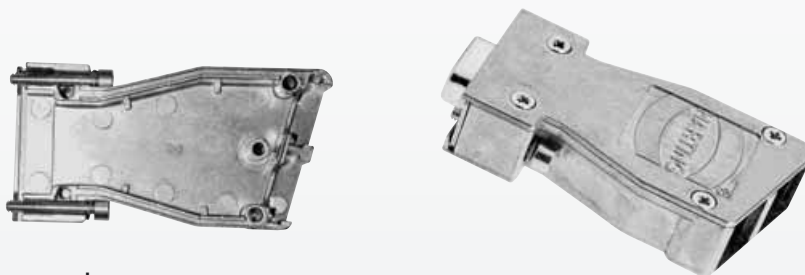
66 63 009 5014

WTB backbone interface set

The Wired Train Bus (WTB) backbone interface is specially designed for backbone cables in Train Control Networks (TCN). With this interface it is possible to realise a T-bus structure with WTB-cable with which you can disconnect the bus interface from the control unit without any interruption of the complete bus communication. On the PCB you will have load resistors and test capacitors which can be activated with solder bridges. The wires are terminated with the proven vibration resistant cage clamp technology. These MVB interface set is approved for use with 1 type of cable (**HEW 15 366**).

Components of the MVB interface set:

- 1 metal housing with 2 cable entries
- 2 hexagonal screws with UNC 4-40 threads
- 1 PCB with 9 way D-Sub male connector and cage clamps
- 2 crimp flanges for the WTB cable
- 2 crimp ferrules for the WTB cable
- 1 blanking piece



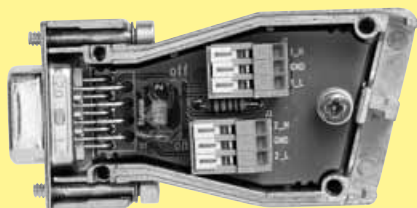
InduCom 9 – Industrial bus interface system

Identification

Part no.

General information

CAN Interface



66 63 009 6016

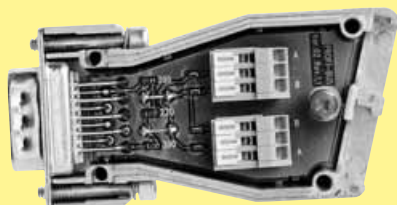
The Controller Area Network (CAN)-Interface is specially designed for usage in trains. With this interface it is possible to realise a T-bus structure with which you can disconnect the bus interface from the control unit without any interruption of the complete bus communication. On the PCB you will have a load resistor which can be activated with the switch.

This interface set is approved for use with 2 types of cables (Nexans 459 530 50 and 459 110 19).

Components of the interface set:

- 1 metal housing with 2 cable entries
- 2 hexagonal screws with UNC 4-40 threads
- 1 PCB with 9 way D-Sub female connector and 2 cage clamps
- 1 blanking piece
- 2 crimp flanges
- 2 crimp ferrules

Profibus Interface



66 63 009 6004

The Profibus Interface is specially designed for usage in trains and in challenging engineering applications.

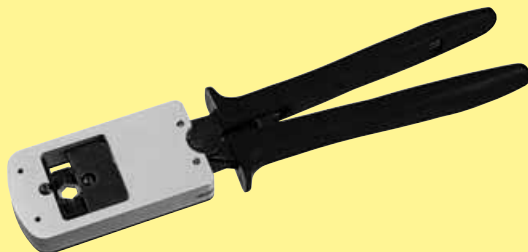
On the PCB you will have SMD parts which can be activated with solder bridges.

The wires are assembled with the proven vibration resistant cage clamp technology.

Components of the interface set:

- 1 metal housing with 2 cable entries
- 2 hexagonal screws with UNC 4-40 threads
- 1 PCB with 9 way D-Sub female connector and 2 cage clamps
- 1 blanking piece

Tools

Identification	Part No	Drawing																				
Hexagonal head screwdriver for hoods with hexagonal screws	61 03 600 0021																					
Crimp tool for flange and ferrule	61 03 600 0020																					
Inserts for crimp tool	61 03 000 0179 61 03 000 0180 61 03 000 0098 61 03 000 0099 61 03 000 0100 61 03 000 0101 61 03 000 0102 61 03 000 0103 61 03 000 0104 61 03 000 0105 61 03 000 0174 61 03 000 0172 61 03 000 0168 61 03 000 0169 61 03 000 0175 61 03 000 0176 61 03 000 0177 61 03 000 0178 61 03 000 0173	<table><tr><th>Width of hexagonal nut [mm]</th></tr><tr><td>5.0</td></tr><tr><td>5.5</td></tr><tr><td>6.0</td></tr><tr><td>6.5</td></tr><tr><td>7.0</td></tr><tr><td>7.5</td></tr><tr><td>8.0</td></tr><tr><td>8.5</td></tr><tr><td>9.0</td></tr><tr><td>9.5</td></tr><tr><td>10.0</td></tr><tr><td>10.5</td></tr><tr><td>11.0</td></tr><tr><td>11.5</td></tr><tr><td>12.0</td></tr><tr><td>12.5</td></tr><tr><td>13.0</td></tr><tr><td>13.5</td></tr><tr><td>14.0</td></tr></table>	Width of hexagonal nut [mm]	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0
Width of hexagonal nut [mm]																						
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12.5																						
13.0																						
13.5																						
14.0																						
Mounting tool for flange for D-Sub hoods (9-37 contacts) for D-Sub hoods (50 contacts)	61 03 600 0017 61 03 600 0018																					
Insertion and removal tool for contacts	09 99 000 0171																					

Tools

Identification	Part No	Drawing																											
Crimp tool for turned male and female contacts AWG 28-18 8 indent crimp in acc. to MIL 22 520/2-01	61 03 600 0022	 <table border="1"> <thead> <tr> <th>Part No. contact</th><th>Part No. locator</th><th>Crimp tool selection no.</th></tr> </thead> <tbody> <tr> <td>61 03 000 0112</td><td>61 03 600 0024</td><td>7</td></tr> <tr> <td>61 03 000 0113</td><td>61 03 600 0024</td><td>7</td></tr> <tr> <td>61 03 000 0073</td><td>61 03 600 0023</td><td>7</td></tr> <tr> <td>61 03 000 0074</td><td>61 03 600 0023</td><td>7</td></tr> <tr> <td>61 03 000 0094</td><td>61 03 600 0023</td><td>7</td></tr> <tr> <td>61 03 000 0096</td><td>61 03 600 0023</td><td>7</td></tr> <tr> <td>61 03 000 0078</td><td>61 03 600 0023</td><td>7</td></tr> <tr> <td>61 03 000 0080</td><td>61 03 600 0023</td><td>7</td></tr> </tbody> </table>	Part No. contact	Part No. locator	Crimp tool selection no.	61 03 000 0112	61 03 600 0024	7	61 03 000 0113	61 03 600 0024	7	61 03 000 0073	61 03 600 0023	7	61 03 000 0074	61 03 600 0023	7	61 03 000 0094	61 03 600 0023	7	61 03 000 0096	61 03 600 0023	7	61 03 000 0078	61 03 600 0023	7	61 03 000 0080	61 03 600 0023	7
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61 03 000 0112	61 03 600 0024	7																											
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61 03 000 0096	61 03 600 0023	7																											
61 03 000 0078	61 03 600 0023	7																											
61 03 000 0080	61 03 600 0023	7																											
Locator for crimp tool Details see table	61 03 600 0023 61 03 600 0024																												
Crimp tool for stamped contacts AWG 28-20	09 99 000 0175																												

