

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.10 Crimp- and plug connectors as well as insulating sleeves and terminal blocks

Function of crimp- and plug connectors is to realize an electrical connection which can be separated and reconstituted again. Also in this product field druseidt offers a wide range of DIN-certified as well as products in special design. Such products are complemented by the delivering of different terminal blocks, insulating sleeves and housings.

The uninsulated tabs and receptacles consisting out of brass are suitable for the following temperature range: uncoated up to + 90° C, tin-plated up to + 100° C, silver-plated up to + 110° C, connectors consisting out of nickel-plated steel up to + 250° C. The crimping operations are carried out with special dies for uninsulated open barrel terminals which realize the contact and insulation crimping in one step. To guarantee a perfect and corrosion resistant crimp-connection it is important to pay attention of the right tool selecting. Recommended crimping tools as well as detailed technical information are contained on catalogue pages 154-157 resp. inside of the technical appendix.

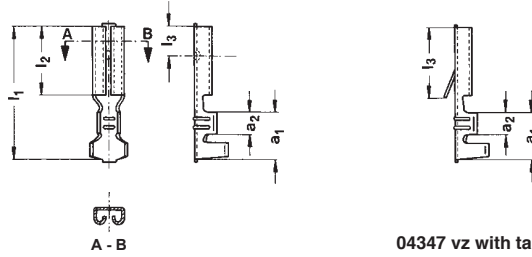
Please notice, that all crimping operations will be done only with the right tools resp. suitable compression dies.

Crimping design:  
Double crimp  
for open barrel terminals



### Receptacles 2,8 mm

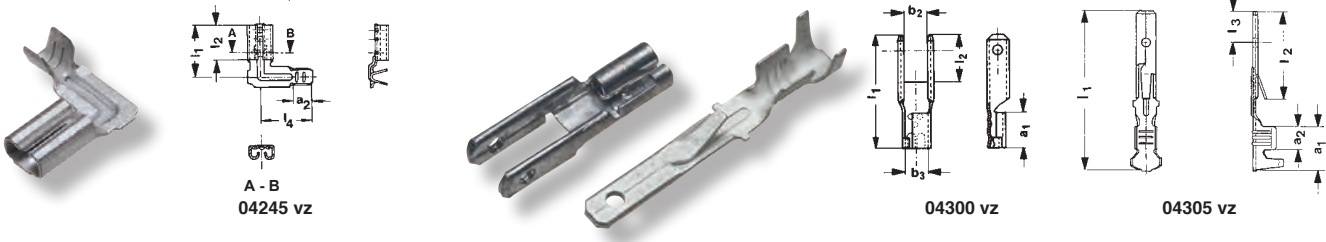
Material: brass  
Surface: uncoated or tinned



Part-No.		cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm					locking point	weight kg/‰ pcs.	crimping-tools/page no.
uncoated	tinned				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	a <sub>1</sub>	a <sub>2</sub>			
<b>design DIN 46247 part 1</b>												
-	04351 vz	0,1 - 0,25	0,8	-	14	6,3	3,3	5	2	x	0,20	pages no. 153, 155-159
04360	04360 vz	0,5 - 1	0,5	A 2,8-1				5,5	2,5	x	0,23	
04361	04361 vz	0,5 - 1	0,8	B 2,8-1				5,5	2,5	x	0,23	
<b>design DIN 46330 part 2 design A</b>												
-	04356 vz	0,5 - 1	0,5	-	12,5	5	3,3	5	2,8	x	0,25	
-	04358 vz	0,5 - 1	0,8	A 2,8-1				5,5	2,5	x	0,25	
<b>design DIN 46340 part 1 with tabs</b>												
-	04347 vz	0,5 - 1	0,5	A 2,8-1	14	6,3	5,6	5,5	2,5	-	0,24	

### Tab connectors 2,8 mm

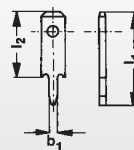
Material: brass  
Surface: tinned



Part-No.	cross-section mm <sup>2</sup>	tab-thickness mm	dimensions mm									weight kg/‰ pcs.	crimping-tools/page no.
			L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	a <sub>1</sub>	a <sub>2</sub>	b <sub>2</sub>	b <sub>3</sub>			
<b>Flat tab receptacles in flag type design</b>													
04245 vz	0,5 - 1	0,5	9,35	5	-	7,2	-	2,5	-	-	0,27	pages no. 153, 155-159	
<b>Multiple tabs</b>													
04300 vz	-	0,8	16	6,7	-	-	5	-	3,2	3,1	0,56		
<b>Flat tab connector with additional tab to engage in housings</b>													
04305 vz	0,5 - 1	0,8	22,5	12,7	2,2	-	6	3,2	-	-	0,42		

### Tabs 2,8 mm

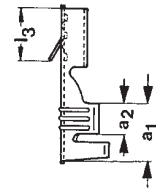
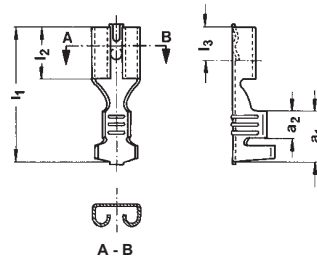
for soldering into PC-boards  
Material: brass  
Surface: tinned



Part-No.	tab-thickness mm	dimensions mm			weight kg/‰ pcs.
		b <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>	
04428 vz	0,8	0,9	10,5	6,5	0,14

### Receptacles 4,8 mm

Material: brass  
Surface: uncoated or tinned

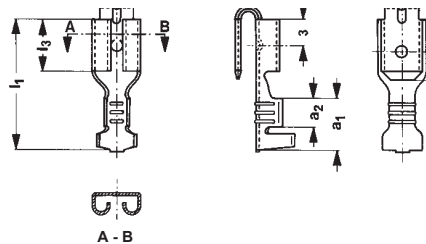


04296 vz with add. tab to engage in housings

Part-No.		cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm					locking point	weight kg/‰ pcs.	crimping-tools/page no.	
uncoated	tinned				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	a <sub>1</sub>	a <sub>2</sub>				
<b>design DIN 46247 part 2</b>													
	04285	04285 vz	0,5 - 1	0,5	-	15,6	6	3,8	6	3,4	x	0,50	pages no. 153, 155-159
	04287	04287 vz		0,8	4,8 - 1						x	0,50	
	-	04292 vz	1,5 - 2,5	0,8	4,8 - 2,5						x	0,54	
<b>design with tabs to engage in housings</b>													
	-	04296 vz	0,5 - 1	0,8	-	15,8	6	5,5	6	3,4	-	0,50	

### Multiple receptacles 4,8 mm

Material: brass  
Surface: tinned



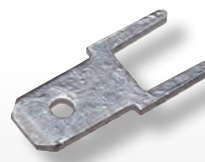
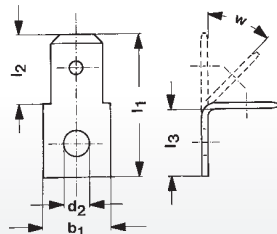
Part-No.	cross-section mm <sup>2</sup>	tab-thickness mm	dimensions mm						locking point	weight kg/‰ pcs.	crimping-tools/page no.
			L1	L2	L3	a1	a2				
11720 vz	0,5 - 1	0,8	15,6	7	6	6	3,4	x	0,68	pages no. 153, 155-159	
11725 vz	1,5 - 2,5	0,8	15,6	7	6	6	3,4	x	0,70		

### Tabs 4,8 mm

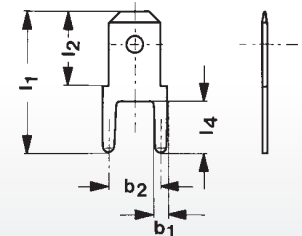
Material: brass  
Surface: tinned



04332 vz



04340 vz



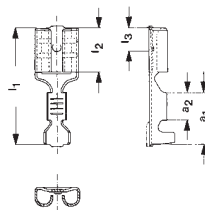
Part-No.	tab-thickness mm	dimensions mm								weight kg/‰ pcs.
		b <sub>1</sub>	b <sub>2</sub>	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	w	
<b>for screwing</b>										
04332 vz	0,8	6,5	-	4,3	17,5	7	7,5	-	45°	0,60
<b>for soldering into PC-boards</b>										
04340 vz	0,8	1,2	5	-	13,5	7	-	5	-	0,38

### Receptacles 6,3 mm

DIN 46247 part 3 with locking point

Material: brass or steel

Surface: uncoated, tinned or nickel plated



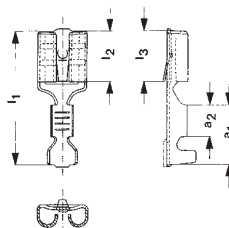
brass uncoated	Part-No.		cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm					weight kg/‰ pcs.	crimping-tools/page no.
	brass tinned	steel nickel plated				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	a <sub>1</sub>	a <sub>2</sub>		
04870	04870 vz	04872	0,5 - 1	0,8	6,3 - 1	19,2	7,4	4	8,5	4,5	0,75	pages no. 153, 155-159
04875	04875 vz	04877	0,75 - 1,5		-						0,89	
04878	04878 vz	04880	1,5 - 2,5		6,3 - 2,5						0,92	
04883	04883 vz	04885	4 - 6		6,3 - 6						0,98	

### Receptacles 6,3 mm

DIN 46340 part 3 with tabs to engage into housings

Material: brass

Surface: uncoated or tinned



uncoated	Part-No.		cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm					weight kg/‰ pcs.	crimping-tools/page no.
	tinned					L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	a <sub>1</sub>	a <sub>2</sub>		
04886	04886 vz		0,5 - 1	0,8	A 6,3 - 1	19,2	7,4	7	8,5	4,5	0,70	pages no. 153, 155-159
04888	04888 vz		1,5 - 2,5		A 6,3 - 2,5						0,78	
04890	04890 vz		4 - 6		A 6,3 - 6						0,88	
04892	04892 vz		0,5 - 1	0,8	B 6,3 - 1	19,2	7,4	7	8,5	4,5	0,70	
04894	04894 vz		1,5 - 2,5		B 6,3 - 2,5						0,78	
04896	04896 vz		4 - 6		B 6,3 - 6						0,88	

DIN type B Part-No. 04892-96 with additional locking point

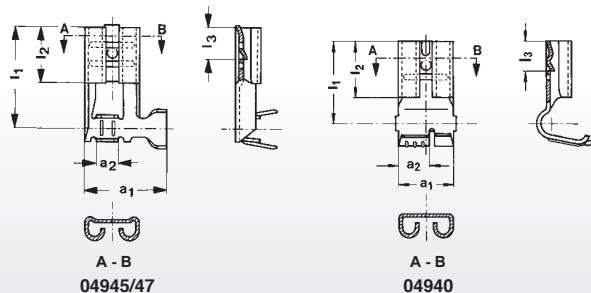
### Receptacles 6,3 mm

DIN 46346 part 3 design A + B

Flag type

Material: brass

Surface: uncoated or tinned



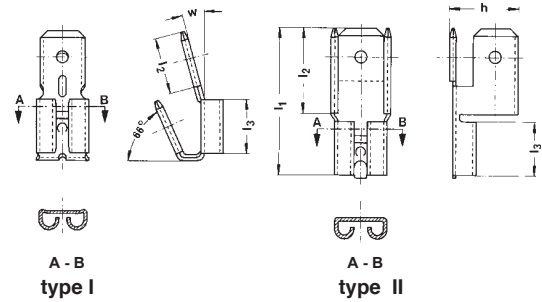
uncoated	Part-No.		cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm					locking point	weight kg/‰ pcs.	crimping-tools/page no.
	tinned					L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	a <sub>1</sub>	a <sub>2</sub>			
04945	04945 vz		0,5 - 1	0,8	A 6,3 - 1	12,5	7,4	4	11	3,5	x	0,81	30480 page no. 155
04947	04947 vz		1,5 - 2,5		A 6,3 - 2,5	13,85					x	0,84	on request
04940	04940 vz		0,5 - 1,5	0,8	B 6,3 - 1,5	11	7,4	4	7,5	4	x	0,84	30481 page no. 155

### Multiple tabs 6,3 mm

Dimensions in the tab sector DIN 46244 part 1

Material: brass

Surface: uncoated or tinned



Part-No.		type	tab-thickness mm	dimensions mm					locking point	weight kg/‰ pcs.
uncoated	tinned			L1	L2	L3	h	w		
04585*	04585 vz*	I	0,8	-	8	7,5	-	15°	-	1,14
04588	-	II		20,5	12	7,4	9,6	-	x	1,85

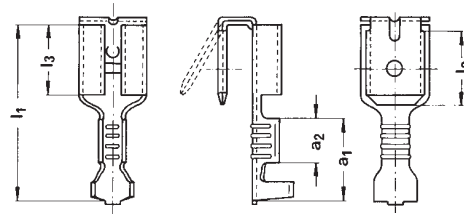
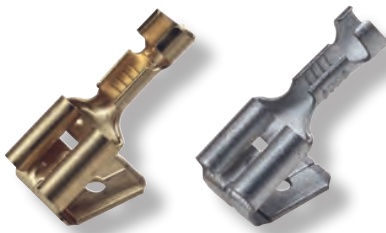
Part.-No. 04585/04585 vz = design in accordance with DIN 46347

### Multiple tabs 6,3 mm

DIN 46345 part 1

Material: brass

Surface: uncoated or tinned

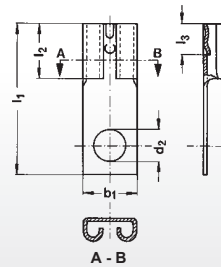


Part-No.		cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm						weight kg/‰ pcs.	crimping-tools/page no.
uncoated	tinned				L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	a <sub>1</sub>	a <sub>2</sub>	w		
04605	04605 vz	0,5 - 1	0,8	6,3 - 1	20	8	7,4	8,8	4,7	30°	1,12	pages no. 153, 155-159
04607	04607 vz	1,5 - 2,5		6,3 - 2,5							1,14	

### Receptacles 6,3 mm

Material: brass

Surface: tinned



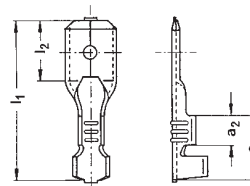
Part-No.	tab-thickness mm	d <sub>2</sub>	dimensions mm				locking point	weight kg/‰ pcs.
			L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>		
04980 vz	0,8	3,1	20,5	7,5	4	-	7,5	0,84
04982 vz		4,3						0,83

**Tabs 6,3 mm**

DIN 46248 part 3, design A

Material: brass

Surface: tinned



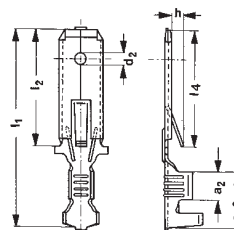
Part-No.	cross-section mm <sup>2</sup>	tab-thickness mm	DIN-size	dimensions mm				weight kg/‰ pcs.	crimping-tools/page no.
				L <sub>1</sub>	L <sub>2</sub>	a <sub>1</sub>	a <sub>2</sub>		
04790 vz	0,5 - 1	0,8	A 6,3 - 1	20	8,8	8,5	4,6	0,58	pages no.
04792 vz	1,5 - 2,5		A 6,3 - 2,5					0,66	153, 155-159

**Tabs 6,3 mm**

with tabs to engage into housings

Material: brass

Surface: tinned



Part-No.	cross-section mm <sup>2</sup>	tab-thickness mm	dimensions mm							weight kg/‰ pcs.	crimping-tools/page no.
			d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>4</sub>	a <sub>1</sub>	a <sub>2</sub>	h		
04801 vz	0,5 - 1	0,8	-	28	16	15,5	8,2	4	2,6	0,83	pages no. 153, 155-159
04802 vz	1,5 - 2,5		1,65							0,92	
04804 vz	4 - 6		1,65							1,01	

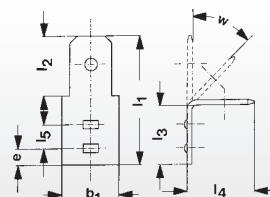
**Tabs 6,3 mm**

for welding connection

Dimensions in the tab sector DIN 46244 part 1

Material: steel

Surface: nickel plated



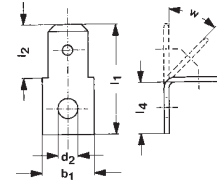
Part-No.	tab-thickness mm	dimensions mm									weight kg/‰ pcs.	
		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	b <sub>1</sub>	b <sub>2</sub>	e	h		w
04538	0,8	19	8	9,5	9,5	3,5	8	6	2,5	-	45°	0,89
04540				7,7	10,3						90°	0,89

**Tabs 6,3 mm**

Dimensions in the tab sector DIN 46244 part 1

Material: brass

Surface: uncoated or tinned



Part-No.		type	tab-thickness mm	dimensions mm						weight kg/‰ pcs.
uncoated	tinned			d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>4</sub>	b <sub>1</sub>	w	
-	04686*	I	0,8	-	19	8	-	8	-	0,91
-	04630 vz**			4,3			-		-	0,86
-	04632 vz			5,3			-		-	0,80
-	04637 vz	II	0,8	3,2	19	8	8	8	45°	0,85
-	04645 vz			4,1			8			0,85
-	04651 vz**			4,3			8,5			0,85
04660	04660 vz			5,3			8			0,80

\* Part-No. 04686 = material steel nickel plated

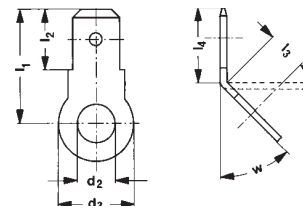
\*\* Part-No. 04630 vz und 04651 vz = design nach DIN 46342 Teil 1 design A+B

**Tabs 6,3 mm**

Dimensions in the tab sector DIN 46244 part 1

Material: brass

Surface: tinned



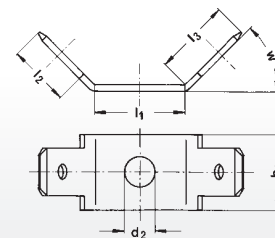
Part-No.	tab-thickness mm	d <sub>2</sub>	d <sub>3</sub>	L <sub>1</sub>	dimensions mm				w	weight kg/‰ pcs.
					L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>			
04707 vz	0,8	6,3	17	18,5	8	8,5	10	45°	1,70	
04710 vz		8,4							1,58	
04711 vz		10,5							1,33	

**Tabs 6,3 mm**

Dimensions in the tab sector DIN 46244 part 1

Material: brass or steel

Surface: tinned or nickel plated



Part-No.	tab-thickness mm	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	dimensions mm				w	weight kg/‰ pcs.
					L <sub>3</sub>	L <sub>4</sub>	b <sub>1</sub>			
04515 vz	0,8	4,3	12	8	9,95	-	10	45°	1,60	
04518 vz		5,2				-			1,53	
11915*	0,8	4,2	12	8	9,95	8	10	45°	1,49	

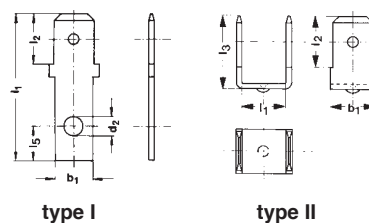
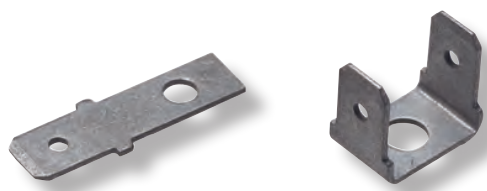
\* Part-No. 11915 = material steel nickel plated

**Tabs 6,3 mm**

Dimensions in the tab sector DIN 46244 part 1

Material: brass or steel

Surface: tinned or nickel plated



Part-No. tinned	type	tab-thickness mm	dimensions mm						weight kg/‰ pcs.
			d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>5</sub>	b <sub>1</sub>	
04850 vz	I	0,8	3,1	23,2	8	5,5	5,5	6	0,92
04527*	II		-	7,2	8	11,5	-	7	1,30

\* Part-No. 04527 material steel nickel plated, with weld point instead of drilling (contrary to photo)

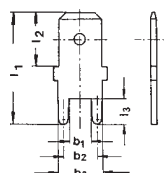
**Tabs 6,3 mm**

for soldering into PC boards

Dimensions in the tab sector DIN 46244 part 1

Material: brass S

surface: tinned



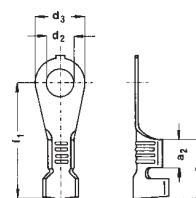
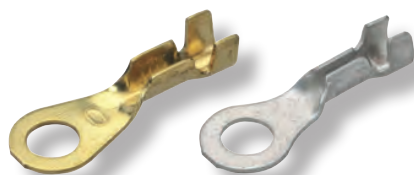
Part-No. tinned	tab-thickness mm	dimensions mm						weight kg/‰ pcs.
		L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	
04721 vz	0,8	16,5	8	4	3,5	5	6,4	0,65

**Ring terminals 0,5-6 mm<sup>2</sup>**

in acc. with DIN 46225 design A

Material: brass

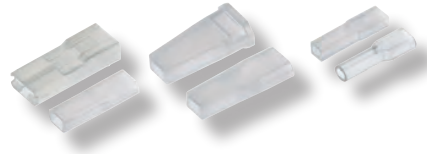
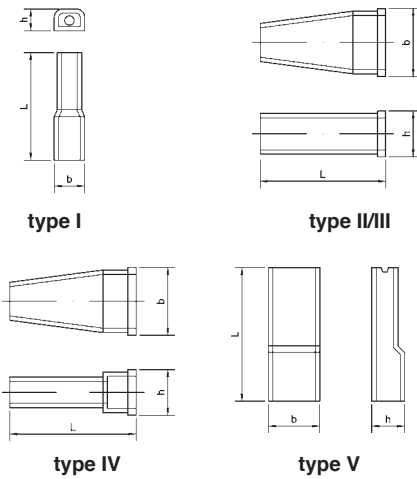
Surface: uncoated or tinned



Part-No. uncoated	Part-No. tinned	cross-section mm <sup>2</sup>	DIN Größe	dimensions mm					weight kg/‰ pcs.	crimping-tools/page no.
				a <sub>1</sub>	a <sub>2</sub>	d <sub>2</sub>	d <sub>3</sub>	L <sub>1</sub>		
04058	04058 vz	0,5 - 1	A4 - 1	9	4,5	4,3	8	17	0,73	12230 page no. 156/157
04060	04060 vz		A5 - 1			5,3	9,5	17,5	0,73	
04063	04063 vz		A6 - 1			6,5	12	22	1,00	
04070	04070 vz	1,5 - 2,5	A4 - 2,5	9	4,5	4,3	8	18,3	0,85	
04072	04072 vz		A5 - 2,5			5,3	9,5	17,5	0,87	
04074	04074 vz		A6 - 2,5			6,5	12	22	1,10	
-	04076 vz		A8 - 2,5			8,4	14	21	1,15	
-	04080 vz	4 - 6	A4 - 6	11	4,5	4,3	8	21,3	1,70	
-	04083 vz		A5 - 6			5,3	9,5	20,5	2,15	
-	04085 vz		A6 - 6			6,5	12	25	2,10	



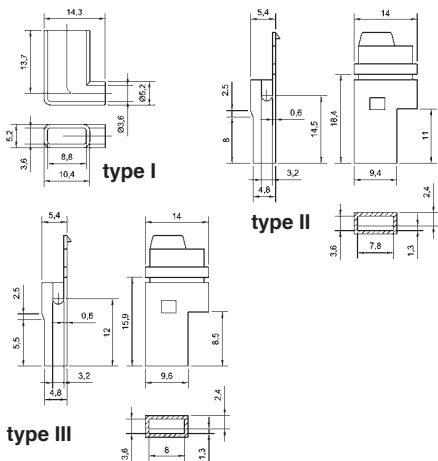
**Insulating sleeves 2,8/4,8/6,3 mm**  
for tabs and receptacles



Part-No.	type	application	cable-Ø max. mm	dimensions mm			material
				L	b	h	
03696	I	receptacles 2,8 mm	2,5	19,5	5,5	3,5	PE
03697			2,8				soft PVC
03699	II	receptacles 4,8 mm	3,2	21	8	4,5	PE
03703	III	receptacles 6,3 mm	3,2	25	9,5	5	PE
03707	IV	tabs 6,3 mm	3,2	23	12,5	8,5	PE
03708	V	receptacles 6,3 mm	3,6	24	9,3	8	PA

Nature colour is standard. Other colours on request. By using a combination of type III and IV you get a fully insulated connection consisting of receptacle and tab. Part-No. 03708 suitable for application after crimping.

**Insulation sleeves 6,3 mm**  
for flag type receptacles

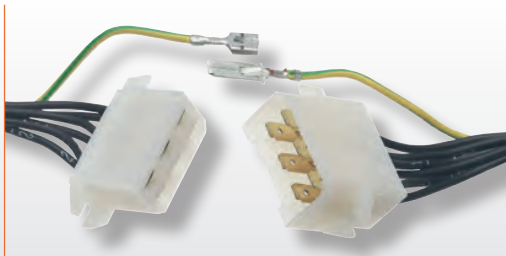


Part-No.	type	application	cable-Ø max. mm	material	colour
03709	I	receptacles flag type 6,3 mm	3,6	soft PVC	black
03710	II		3,2	PE	nature
03711	III		3,2	PE	nature

By using part-no. 03710/03711 it's possible to mount them after crimping.

**Housings/Couplings**

for tabs and receptacles 6,3 mm  
Material: PA nature, self-extinguishing to UL 94, V-2



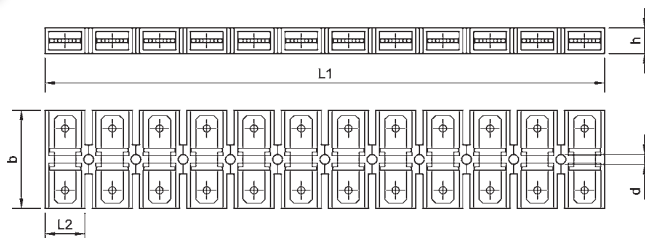
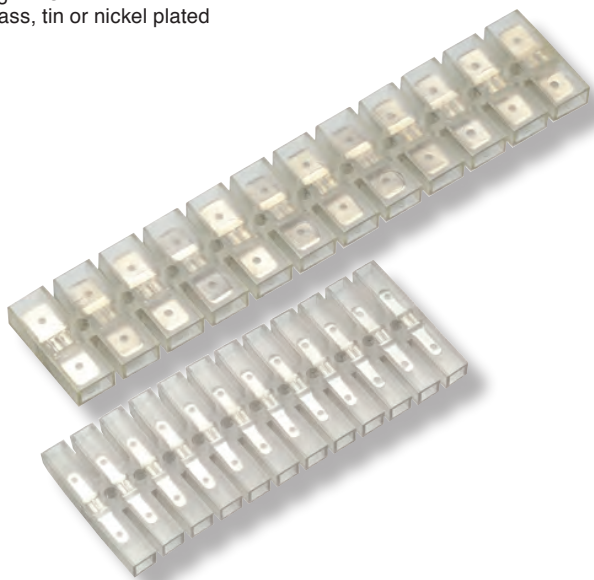
Part-No.	pole-no.	application	rated voltage	length mm	width mm	height mm	weight kg/% pcs.
03715	2	tab part	400 V	13	15,2	32	0,25
03716	2	receptacle part		19	13	19	0,17
03717	4	tab part	400 V	28	17	32	0,38
03718	4	receptacle part		35,8	15,5	24	0,40
03719	6	tab part	400 V	48	19	32	0,65
03720	6	receptacle part		48	17,5	24	0,56
03721	8	tab part	400 V	49	25	32	0,74
03722	8	receptacle part		37,5	16,2	24	0,57

Rated voltage in accordance with DIN VDE 0110 pollution degree 2. Tabs and receptacles are arrested by their index lobes. The form of the case makes it impossible to plug the two halves together incorrectly. The pole identifiers are located on the plug openings for the metal parts.

### Tab-connectors

Moulding: PVC/PA

Tabs: brass, tin or nickel plated



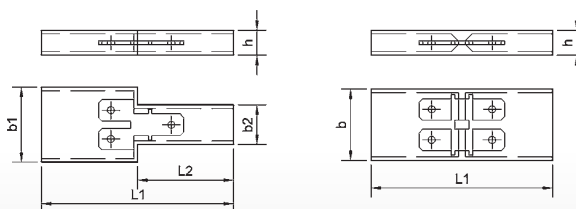
Part-No.	tab connection mm	pole-no.	material	dimensions mm					weight kg/% pcs.
				b	h	L <sub>1</sub>	L <sub>2</sub>	d	
03750	2,8 x 0,8	1	PVC	35	5,5	7,5	-	2,8	0,20
03751		12				88	7,5		1,60
03752	4,8 x 0,8	1	PVC	28	7	12	-	3,2	0,25
03753		12				142	12		2,80
03754	6,3 x 0,8	1	PVC	28	7	12	-	3,2	0,30
03755		12				142	12		3,20
03756	2 x 2,8 x 0,8/	1	PA	46	7,5	10	-	3,1	0,25
03757	1 x 6,3 x 0,8	12				147,5	12,5		2,85

By using connectors 03750/51 and 03756/57 the receptacles are fully insulated. Part-No. 03756/57 offer the possibility to use 4 receptacles 2,8 x 0,8 mm or 2 receptacles 6,3 x 0,8 mm on each pole. It's possible to cut the 12-pole connectors. Rated current 2,8 mm = 6 A, 4,8 mm = 16 A, 6,3 mm = 25 A. Rated Voltage 03750/51 = 250 V with insulating base acc. to DIN EN 60664-1, pollution degree 2. 03752-57 = 400 V with insulating base acc. to DIN EN 60664-1, pollution degree 3.

### Tab-connectors

Moulding: PVC

Tabs: brass, nickel coated



03764

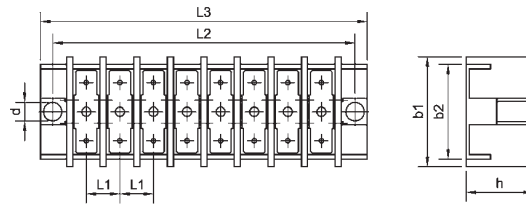
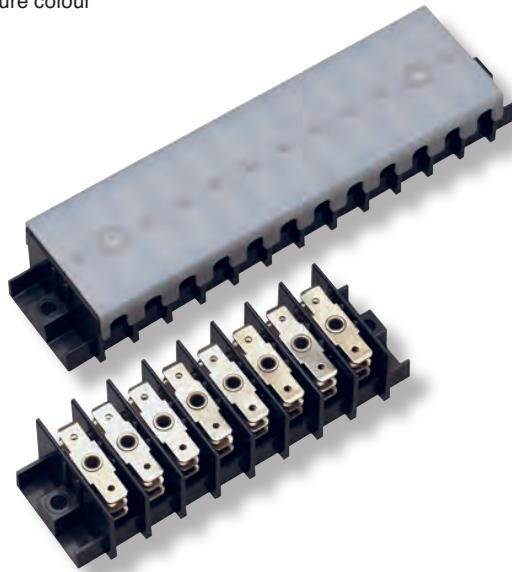
03765

Part-No.	tab connection mm	pole-no.	cable cross-section	dimensions mm					weight kg/% Stck
				b <sub>1</sub>	b <sub>2</sub>	h	L <sub>1</sub>	L <sub>2</sub>	
03764	1/2 x 6,3 x 0,8	1	up to 6 mm <sup>2</sup>	21	12	7,5	54	27	0,60
03765	2 x 6,3 x 0,8	1	up to 6 mm <sup>2</sup>	20	-	7	51	-	0,65

By using this parts the receptacles are fully insulated. Rated voltage 400 V acc. to DIN EN 60664-1, pollution degree 2.

**Multi-point tab-connectors**

Moulding: PC, self extinguishing to UL 94, V-0  
 Tabs: brass, nickel plated  
 Cover: PA nature colour

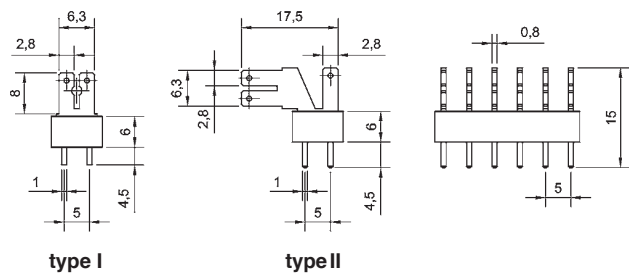
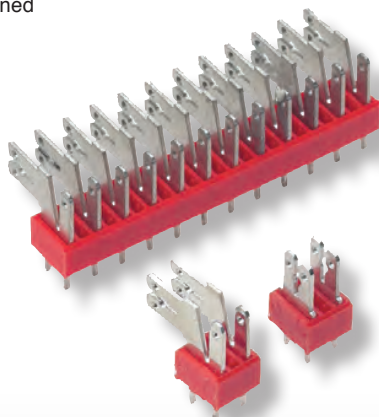


Part-No. tab connector	Part-No. cover	tab connection	pole-no.	dimensions mm								weight kg/% pcs.
				b <sub>1</sub>	b <sub>2</sub>	d	h	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>		
03785	03775	3 x 6,3 x 0,8	3	36	31	4,5	22	11	44	52	3,07	
03786	03776		4						55	63	4,06	
03787	03777		5						66	74	5,06	
03788	03778		6						77	85	6,05	
03789	03779		8						99	107	8,03	
03790	03780		10						121	129	10,01	
03791	03781		12						143	151	11,94	
03783	securing pins for covers											

Standard design 1 pole with 6 tabs 6,3 x 0,8 mm in parallel arrangement, other designs or pole numbers on request: Rated voltage by pollution degree 2 over voltage category III = 200 V Rated current max. 25 A

**Tab connectors 2,8 / 6,3 x 0,8 mm**

for soldering into PC-boards  
 Moulding: PA, self extinguishing to UL 94, V-0  
 Tabs: brass, tinned

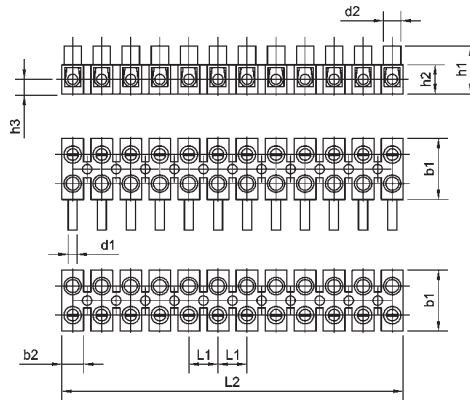
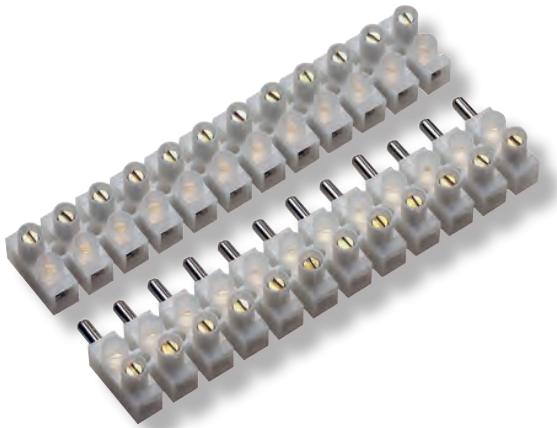


Part-No.	type	pole-no.	rated voltage	length mm	width mm	weight kg/% pcs.
13435	I	2	320/630 V	8,5	9,5	0,15
13436		6		28,5		0,50
13437		12		58,5		0,95
13438	II	2	320/630 V	8,5	9,5	0,22
13439		6		28,5		0,65
13440		12		58,5		1,30

Type I each pole suitable for 2 pcs. uninsulated tabs 2,8 x 0,8 mm or 1 pcs. 6 x 0,8 mm. Type II each pole 1 pcs. uninsulated tabs 2,8 x 0,8 mm and 2 pcs. 2,8 x 0,8 mm or 1 pcs. 6,3 x 0,8 mm. Rated voltage 320 V by pollution degree 2/3 and overvoltage category III, resp. 630 V by pollution degree 2 and overvoltage category II. On request we deliver tab connectors with other pole-no. or with screen 7,5 or 10 mm.

### Plug-in terminal strips with wire protection

Moulding: PA, self-extinguishing to UL 94, V-2  
 Terminal body: brass, nickel coated  
 Wire protector: Sn-bronze-tinned  
 Screws: zinc plated steel, blue passivated

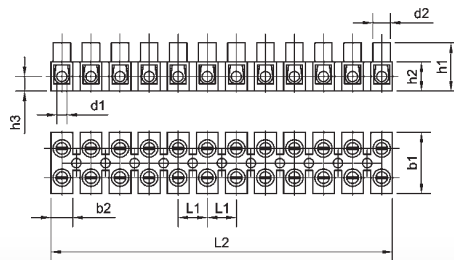
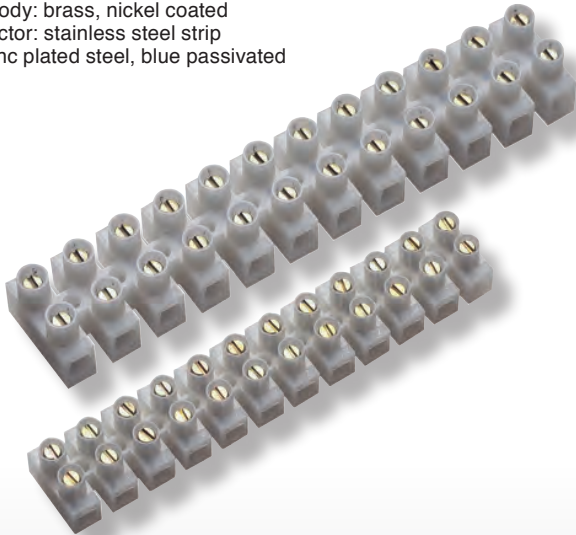


Part-No. plug	Part-No. socket	cross-section range mm <sup>2</sup>	pole-no.	rated-current	dimensions mm									weight kg/% pcs.	
					b <sub>1</sub>	b <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	d <sub>1</sub>	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	plug	socket
11990	11995	bis 2,5	2	6 A	16	7,25	12	7	3	2,8	5	8	15	0,50	0,40
11991	11996		3										23	0,70	0,50
11992	11997		4										31	0,90	0,70
11993	11998		6										47	1,40	1,10
11994	11999		12										94	2,70	2,10

Low profile design. Ideal for installations in which simple closing and opening of circuits is necessary (however without voltage applied). It's possible to cut the connectors or to deliver different pole no. on request. Rated voltage 160 V by pollution degree 2/3 and overvoltage category III resp. 320 V by pollution degree 2 and overvoltage category II.

### Socket terminal strips with wire protection

Moulding: PA, self-extinguishing to UL 94, V-2  
 Terminal body: brass, nickel coated  
 Wire protector: stainless steel strip  
 Screws: zinc plated steel, blue passivated



Part-No.	cross-section range mm <sup>2</sup>	pole-no.	rated-current	dimensions mm									weight kg/% pcs.	
				b <sub>1</sub>	b <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	d <sub>1</sub>	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	kg	pcs.
12002	bis 2,5	1	17,5 A	16	6	12	7	3	2,8	5	-	7	0,20	
12004		12									8	94	2,10	
12010	bis 4	1	24 A	21	6,5	16	9,7	4,9	3,4	6	-	8	0,30	
12011		12									10	117	3,60	
12012	bis 6	1	32 A	22	8	18,5	11,2	5,4	4,1	6,8	-	9	0,40	
12013		12									11,5	135	5,20	

It's possible to cut the 12-pole connectors. On request it is possible to deliver connectors with different pole-no. or designs without wire protection. Rated voltage for the different designs on request.

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.11 Universal conductor terminals, earth- and neutral bars as well as insulators

In this chapter of the catalogue some universal conductor terminals and accessories for switch-box- and plant builders are described. Druseidt delivers clamps for screwless mounting of leadings, supple- and bus-bars as well as different kinds of earthing-bars resp. earthing material or insulators.

More electrical installation material such as machined bus- and supple-bars, bus-bar supports or flexible braided connectors, are listed in our further special catalogues or in the internet under [www.druseidt.de](http://www.druseidt.de)

We offer a wide range of electrical accessories for switching cabinets and similar application. Please ask for our special catalogues.



### Joint clamps 2,5-35 mm<sup>2</sup>

Material: brass  
Surface: uncoated



Part-No.	cross-section mm <sup>2</sup>	size	connecting thread	weight kg/% pcs.
02580	2,5 - 25	M5-25	M5	4,40
02581		M6-25	M6	4,30
02578	4 - 35	M8-35	M8	7,15

### Joint clamps 6-300 mm<sup>2</sup>

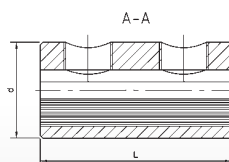
Material: brass  
Surface: uncoated



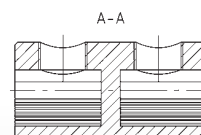
Part-No.	cross-section mm <sup>2</sup>	size	connecting thread	weight kg/% pcs.
02583	6 - 70	M10	M10	18,90
02589	10 - 95	M10-47	M10	33,50
02584		M12	M12	32,90
02587	16 - 150	M12-52	M12	43,10
02585		M16	M16	42,20
02588	16 - 300	M16-60	M16	56,40
02586		M20	M20	55,80

### Screwing connectors 0,6/1 kV

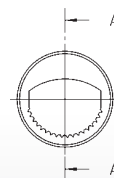
with tin plated brass shear off heads bolts  
Material: high strength aluminium alloy, tinned



03576



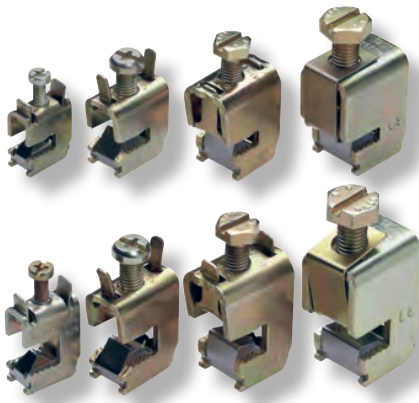
03575



Part-No.	cross-sectional area mm <sup>2</sup>							dimensions mm		screws	weight kg/% pcs.
	aluminium				copper			L	d		
	rm	sm	re	se	rm	sm	re				
03575	25-120	50-120	25-120	25-150	25- 70	25- 95	16-35	70	26,5	M16 x 1	11,70
03576	150-300	150-300	150-300	150-300	150-185	150-185	-	110	38	M22 x 1,5	44,20

Part-No. 03575 with separator.

## Universal conductor terminals 1,5-120 mm<sup>2</sup> with captive screws



Part-No.	type	cross-section mm <sup>2</sup>	current load max.	compartment B x H mm	weight kg/% pcs.
10545	I	1,5 - 16	180 A	7,5 x 7,5	2,1
10546		4 - 35	270 A	10,5 x 11	4,6
10547		16 - 70	400 A	14 x 14	7,1
10548		16 - 120	440 A	17 x 15	10,8
10549	II	1,5 - 16	180 A	7,5 x 7,5	2,3
10550		4 - 35	270 A	10,5 x 11	4,7
10551		16 - 70	400 A	14 x 14	7,4
10552		16 - 120	440 A	17 x 15	11,0

**Type I:** For bus bar-thickness 5 mm      **Type II:** For bus bar-thickness 10 mm

This universal conductor terminals are suitable for connecting copper conductors to bus bars with thickness 5 or 10 mm without drilling.

## Brace Terminals



Part-No.	type	cross-section mm <sup>2</sup>	for use with		current load max.	compartment B x H	weight kg/% pcs.
			supple-bars mm	massive-bars mm			
10565	I	95 - 185	-	-	500 A	30 x 25 mm	23,7
10566		150 - 300	-	-	600 A	32 x 25 mm	37,1
10568	II	-	5x24x1 bis 10x24x1	30 x 25	750 A	30 x 25 mm	25,0
10569		-	5x24x1 bis 10x32x1	32 x 25	800 A	32 x 25 mm	37,1
10571	III	150 - 300	-	-	630 A	30 x 25 mm	33,6
10572		-	5x24x1 bis 10x24x1	30 x 25	630 A	30 x 25 mm	39,6

**Type I:** For connecting round conductors with bus bars 20 x 5 up to 30 x 10 mm without drilling.

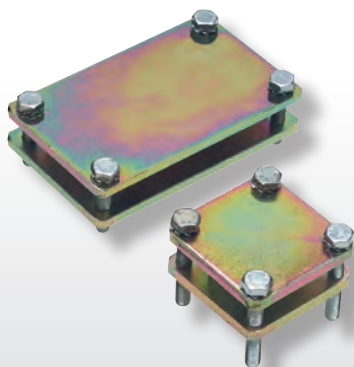
**Type II:** For connecting insulated supple bars and solid bars with bus bars 20 x 5 up to 30 x 10 mm without drilling.

**Type III:** For switch gear connection with latch 30 mm width and drilling M12 and round- or flat connectors.

The jaw type terminals enable the bus bar to be gripped completely and conductors to be connected without drilling. By using aluminium connectors the connection is not maintenance free and must be inspected from time to time.

## Bus bar connectors

Material: St37K, zinc- and chrome plated



Part-No.	dimensions mm		screws	weight kg/% pcs.
	compartment L x B	external dimensions L <sub>1</sub> x B <sub>1</sub>		
02220	18 x 18	35 x 39	M 6 x 25	11,00
02221	33 x 33	50 x 50	M 6 x 40	22,00
02222	35 x 53	57 x 75	M 6 x 30	29,00
02223	41 x 41	60 x 60	M 6 x 50	32,00
02224	42 x 64	60 x 85	M 6 x 30	36,00
02225	53 x 53	75 x 75	M 6 x 50	50,00
02226	42 x 82	63 x 103	M 6 x 30	45,00
02227	64 x 64	80 x 80	M 6 x 50	54,00
02228	82 x 82	120 x 120	M 10 x 50	139,00
02229	102 x 102	140 x 140	M 12 x 80	320,00

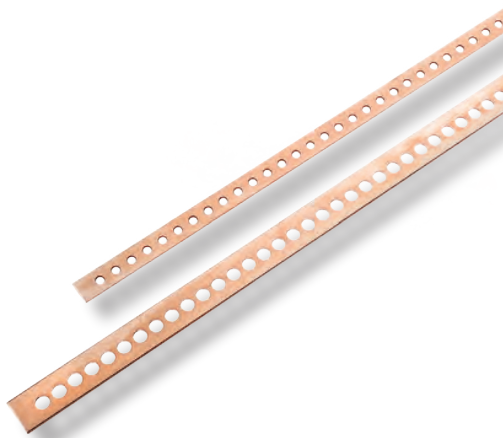
Bus bar connectors for connecting bus bars and supple bars.

## Earth and neutral bus bars

We manufacture and deliver earth and neutral bus bars consisting out of copper or brass with coated as well as uncoated surfaces.

Our standardized delivery program is completed by the manufacturing of designs according to clients wishes or drawings. We deliver up to a length of ca. 4 m with special hole pattern, threads or special coatings.

### Punched E-copper bars in customized design



We manufacture punched E-copper bars with and without screw threads beginning in a width from 15 mm and a thickness of 3 mm with coated or uncoated surface. We deliver bars coordinated with your application whether with round or slot holes, or with a hole combination of round and slot holes in different dimensions. Additionally to the delivery of mass produced articles we deliver individual items shortly and to a favourable price.

### Earth and neutral bus bars

with and without screws  
Length: 1000 mm  
Material: brass



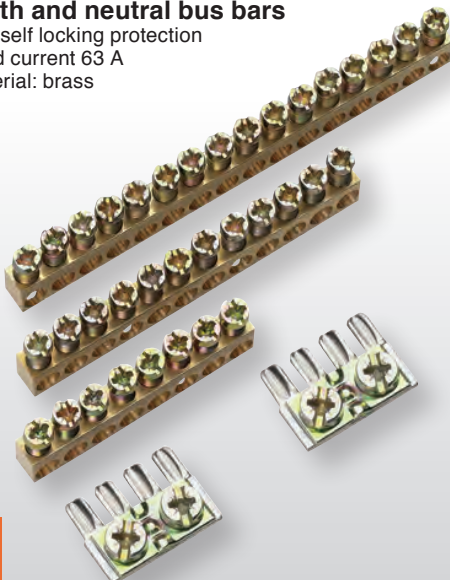
Part-No.				dimensions mm B x S	connections	distance hole to hole	weight kg/% pcs.
type I	type II	type III	type IV				
02700	02715	02730	02745	10 x 2	62 x M 5	16	14,0
02701	02716	02731	02746		90 x M 5	11	12,0
02702	02717	02732	02747	12 x 3	83 x M 4	12	26,0
02703	02718	02733	02748		64 x M 5	15,5	29,0
02704	02719	02734	02749		58 x M 6	17	27,0
02705	02720	02735	02750	15 x 3	105 x M 4	9,5	36,0
02706	02721	02736	02751		86 x M 5	11,5	35,0
02707	02722	02737	02752		50 x M 5	20	37,0
02708	02723	02738	02753		50 x M 6	20	36,0
02709	02724	02739	02754	15 x 4	42 x M 8	24	45,0
02710	02725	02740	02755	25 x 5	31 x M10	34	98,0

Type I = bus bar brass uncoated, without screws  
Type II = bus bar brass nickel uncoated, without screws  
Type III = bus bar brass uncoated, with screws  
Type IV = bus bar brass nickel coated, with screws

Steel-screws DIN 84 not mounted are standard.  
On request it is possible to deliver a mounted design or with screws made out of brass.

### Earth and neutral bus bars

with self locking protection  
rated current 63 A  
Material: brass



Part-No.	cross-section mm <sup>2</sup>	no. of clamping units	dimensions mm			weight kg/% pcs.
			height	width	length	
10535	10	8	9	6,5	51,5	2,5
10536		12			77,5	3,7
10537		16			103,5	5,8
10538		24			155,0	8,1
10539		151			1000,0	43,0
10541	35	Connection terminal for Part-No. 10535-10539				0,3



### Earth and neutral bus-bars with connection clamps

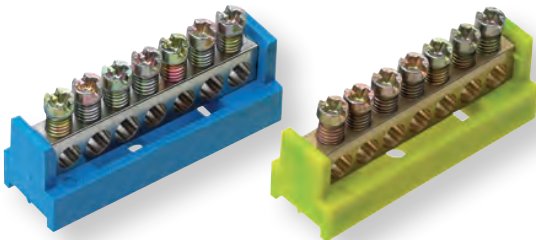
with self locking protection  
rated current 63 A  
Material: brass tinned



Part-No.	no. of clamping units		dimensions mm			weight kg/% pcs.
	incoming 25 mm <sup>2</sup>	outgoing 10 mm <sup>2</sup>	height	width	length	
10526	without clamps	6	9	6,5	61,5	2,8
10527	1 clamp	12	9	6,5	124,0	6,1
10528	2 clamps	18	9	6,5	186,5	9,4
10529	3 clamps	24	9	6,5	249,0	12,9
10531	4 clamps	30	9	6,5	311,5	16,4
10532	5 clamps	36	9	6,5	374,0	19,4
10533	without clamps	96	9	6,5	1000,0	48,0
10544	connection terminal for part-No. 10533					0,3

### Insulated earth and neutral terminals

rated current 63 A



Part-No.	cross-section mm <sup>2</sup>	Klemmstellen	colour	weight kg/% pcs.
For flat bars 12 x 2 mm				
10555	10	7	blue (neutral)	2,8
10556			yellow/green (earth wire)	
For click bars				
10557	10	7	blue (neutral)	2,8
10558			yellow/green (earth wire)	

### Terminal supports

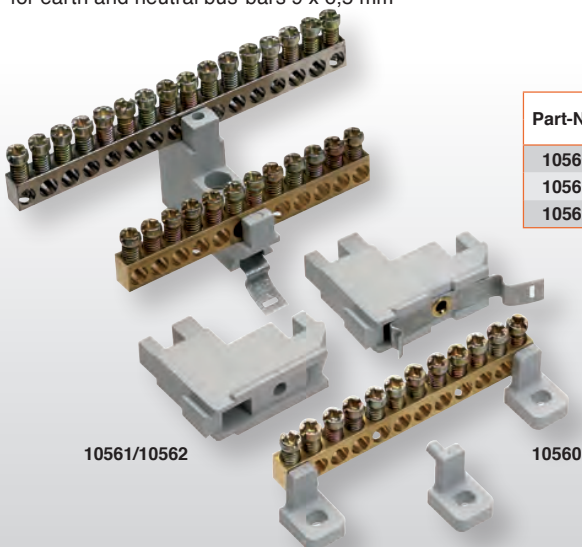
for earth and neutral bus-bars



Part-No.	description	weight kg/% pcs.
02763	Terminal support with movable socket top for bars from 6 x 6 up to 10 x 2 or 15 x 4 mm. Measurement voltage: 500 V AC (VDE 0110 Gr. C).	1,6

### Terminal supports

for earth and neutral bus-bars 9 x 6,5 mm

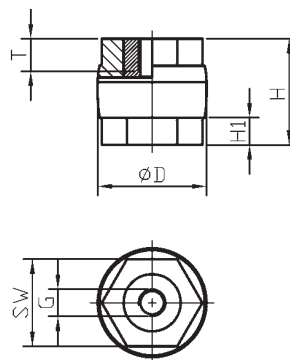


Part-No.	mounting	weight kg/% pcs.
10560	screw connection	0,1
10561	screw connection	0,7
10562	snap connection	0,8

## Standoff insulators made out of polyester resin material

in doubled hexagonal design  
with threaded steel inserts  
for indoor application

The supports described here are made of a glass fibre reinforced unsaturated polyester resin. The special characteristic is a doubled hexagonal design. So a hexagonal area is fixed at the top as well as at the bottom of the insulator. Therefore it is quick and easy to install or remove the insulators even under cramped conditions. This keeps installation costs down to a minimum.



Part-No.	dimensions mm		dimensions mm				PS/kV	BWS/kV	F/kN	Z/kN	weight kg/% pcs.
	D	H	G	SW	T	H <sub>1</sub>					
03068 S	30	30	M 6	24	8	9,5	5	0,75	3	6	5,70
03069 S			M 8								5,40
03070 S	30	40	M 6		10	10	5	1,00	4	8	7,30
03071 S	35	30	M 6	30	8	10	5	0,75	4	7	6,50
03072 S			M 8						5	8	6,10
03073 S	40	40	M 8	32	12	10,5	5	1,00	6	11	13,00
03074 S			M 10		11						12,10
03075 S			M 12		10						11,20
03080 S	40	50	M 8	32	12	10,5	10	1,50	5		16,50
13080 S			M 10		15					11	16,50
03081 S			M 12		13				7		13,80
13081 S	40	60	M 8	32	12	11	10	1,50	4		16,90
13082 S			M 10		15					11	17,60
03078 S	50	40	M 10	41	11	13	5	1,00	8		16,50
03079 S			M 12		10				10	13	16,50
13083 S	50	50	M 12	41	13	13,5	10	1,50	8		20,00
03084 S	50	60	M 10		15				6	13	24,10
03085 S			M 12		18				7		24,70
13084 S	60	60	M 12	50	18	18,5	10	1,50	9	15	32,30
13085 S			M 16		17				12	17	32,80

F = rated load on upper insulator edge  
Z = tensile force

PS = testing voltage  
BWS = operating voltage

### Technical data of the material

Density	DIN 53479	1,75 g/cm <sup>3</sup>
Flexural Resistance	DIN 53452/ISO R 178	120 N/mm <sup>2</sup>
Impact Resistance	DIN 53455/ISO R 527	70 N/mm <sup>2</sup>
Impact Value	DIN 53453/ISO R 179	45 KJ/m <sup>2</sup>
Long Term/Operational Temperature	VDE 0304, Teil 21/IEC 216	+ 130 °C
Rod Behaviour	VDE 0304, Teil 3	Stufe BH 2 ≤ 10
Behaviour in case of fire	UL 94	V-0
Surface Resistance	DIN 53482	10 <sup>13</sup> Ω
Throughout Resistance Dielectric	DIN 53482	10 <sup>14</sup> Ω . cm
Loss Factor	DIN 53483	< 0,02 tan /50 Hz
Deposit Tracking	DIN IEC 112/VDE 0303 Teil 1	CT 600
Water Absorption	DIN 53495	< 50 mg/1 d
Colour	-	brown

The values in the table have been determined with our own standards based on DIN 53451 and combined with the standards for the respective materials for test purposes.

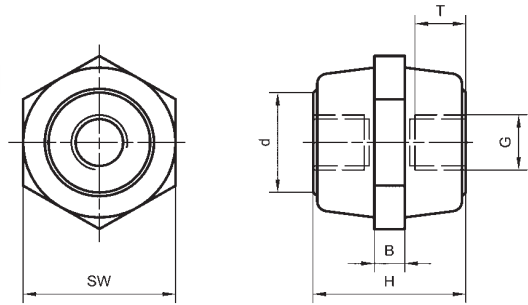
## Standoff insulators made out of polyester resin material

with spanner flat  
for indoor application

Standoff insulators manufactures out of a glass fibre reinforced unsaturated polyester resin (UPE). The characteristic of the material is in accordance with DIN Typee 803. The compound is free of halogen with an excellent behaviour in case of fire (UL 94 V-0) and a very good strength of shape.

### Technical data of the material

Strength of shape	ISO 75	> 250 °C
Behaviour in case of fire	UL 94	Class V-0 by 3,2 mm
Density	ISO 1183	1,75 g/cm <sup>3</sup>
Special throughout resistance	IEC 60093	10 <sup>12</sup> Ohm
Dielectric strength	IEC 60243	20 kV/mm
Deposit tracking	IEC 60112	CTI 600
Inserts	steel zinc coated	
Colour	brown	
Temperature range	- 40 °C up to +130 °C	



Part-No.	dimensions mm		dimensions mm				Md/Nm	F/kN	Z/kN	D/kN	BWS/kV	PWS/kV	weight kg/% pcs.
	H	SW	G	T	d	B							
06135	18	15	M 4	4,5	11	-	3	1,0	2	12	1,0	5	0,70
06138	20	20	M 5	5,5	14	5	5	1,3	3	20	1,0	5	1,20
06139	25	25	M 5	5,5	16	6	15	1,5	3	20	1,0	10	2,40
06140			M 6	8			15	1,5	5	35			2,40
06143	30	30	M 6	8	20	6	20	2,5	6	45	1,0	15	3,80
06144			M 8	10			40	3,0	12	60			5,40
06147	35	30	M 6	8	20	6	20	2,0	6	45	1,0	15	4,50
06148			M 8	10			40	3,5	12	60			6,00
06149			M10	11			50	4,0	16	75			7,00
06150	35	40	M 8	10	28	8	40	4,0	14	70	1,0	15	6,40
06151			M10	11			50	4,5	16	80			7,00
06152	40	30	M 6	8	20	6	20	1,5	6	45	2,0	20	5,00
06153			M 8	10			40	3,0	12	60			6,60
06156	40	40	M 8	10	28	10	50	5,0	14	90	2,0	20	10,00
06157			M10	11			90	8,0	20	100			12,20
06158			M12	12,5			100	10,0	22	120			13,50
06161	40	50	M10	11,5	32	8	120	12,5	23	140	2,0	20	16,00
06162			M12	18			200	12,5	28	180			17,00
06165	50	40	M 8	10	28	10	50	5,0	14	90	3,0	25	12,00
06166			M10	11,5			90	5,0	20	100			14,00
06167			M12	18			100	6,0	22	120			16,00
06170	50	50	M10	11,5	32	10	120	10,0	23	140	3,0	25	20,00
06171			M12	18			200	10,0	28	180			21,50
06174	60	40	M 8	10	28	8	50	4,0	14	90	3,0	25	14,00
06175			M10	11,5			90	6,0	20	100			16,00
06176			M12	18			120	6,0	20	100			18,00
06178	60	50	M10	11,5	32	10	120	9,0	23	140	3,0	25	23,00
06179			M12	18			180	11,0	28	180			25,00
06182	60	60	M12	18	40	10	200	12,0	28	220	3,0	25	33,00
06183			M16	20			300	15,0	32	240			35,00
06184			M20	20			300	16,0	37	240			38,60
06185	80	60	M10	11,5	40	12	200	11,0	32	220	3,0	25	41,00
06186			M12	18			300	15,0	37	240			43,00
06187			M16	21			300	15,0	37	240			45,00

Part No. 06135 Cylindrical design without spanner flat

SW = wrench size

T = usable thread depth

F = rated load limit on upper insulator edge

PWS = testing voltage (AC)

Z = tensile force

D = compressive force

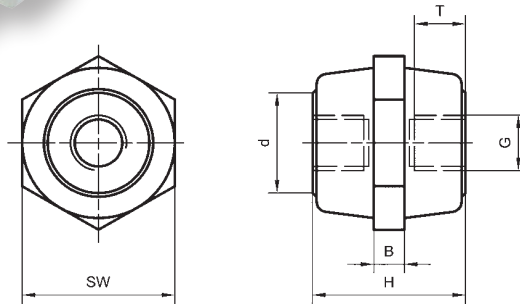
Md/Nm = max. permissible tightening torque

**Standoff insulators made out of Polyamide**  
with spanner flat for indoor applications

Standoff insulators manufactured out of reinforced, flame protected and heat stabilized Polyamide. The compound is free of halogen and Phosphor. The material can be converted efficiently and is characterized by his excellent values for tensile strength (Z) and the rated load limit on the upper insulator edge (F). The differences to the design made out of glass fibre reinforced unsaturated polyester resin are basically in the values for the behaviour in case of fire (class V2 to V-0) and the temperature range - 25° C up to + 120° C to - 40° C up to + 130° C.

**technical data**

Behaviour in case of fire	UL 94	Class V2
Density	ISO 1183	1,36 g/cm³
Dielectric strength	IEC 60243-1	30 kV/mm
Deposit tracking	IEC 60112	CTI 475
Colour	nature	
Inserts	steel zinc coated	
Temperature range	- 25° C up to + 120° C	



Part-No.	H	SW	dimensions mm				Md/Nm	F/kN	Z/kN	D/kN	BWS/kV	PWS/kV	weight kg/% pcs.					
			G	T	d	B												
06100	18	15	M 4	4,5	11	3	3,3	1,0	2	12	1,0	5	0,60					
06102	25	25	M 5	5,5	16	6	15	2,0	3,0	20	1,0	10	2,00					
06103			M 6	8										15	2,0	5,0	35	2,00
06105	30	30	M 6	8	20	6	20	3,0	6,0	45	1,0	15	3,00					
06106			M 8	10										40	4,0	12,0	60	5,00
06109	35	30	M 6	8	20	6	20	5,0	6,0	45	1,0	15	5,00					
06110			M 8	10										40	5,0	12,0	60	6,00
06111			M10	11										50	5,0	16,0	75	6,00
06112	35	40	M 8	10	28	8	40	4,0	14,0	70	1,0	15	6,50					
06113			M10	11										50	4,5	16,0	80	6,70
06114	40	30	M 6	8	20	6	20	1,5	6,0	45	2,0	20	7,40					
06114/8			M 8	10										40	5,0	12,0	60	7,80
06115	40	40	M 8	10	28	8	50	7,0	14,0	90	2,0	20	8,00					
06116			M10	14										95	10,0	28,0	100	10,00
06117			M12	12,5										100	12,0	30,0	120	10,00
06120	50	40	M 8	10	28	8	50	5,0	14,0	90	3,0	25	10,00					
06121			M10	14										90	5,0	20,0	100	12,00
06122			M12	18										100	6,0	22,0	120	14,00
06125	50	50	M10	14	38	10	120	10,0	23,0	140	3,0	25	18,00					
06126			M12	18										160	14,0	28,0	180	19,50
06129	60	40	M 8	10	28	8	50	4,0	14,0	90	3,0	25	12,00					
06130			M10	14										90	6,0	20,0	100	14,00
06131			M12	18										120	6,0	20,0	100	14,80

SW = wrench size  
T = usable thread depth  
F = rated load limit on upper insulator edge

PWS = testing voltage (AC)  
Z = tensile force  
D = compressive force


Md/Nm = max. permissible tightening torque

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.12 High current plugs and sockets

For ambitious application in the field of high current transfer druseidt offers different possibilities for pluggable solutions. Pluggable high current connectors are dividable electrical connecting elements. When using such elements it is not allowed to make the insertion/withdrawal operation under load or voltage. All insertion/withdrawal operations must be done in the no load state. The current transfer take place by a beryllium disc, which allows to transfer relative high current by working with smaller components.

Additionally to the described components in standard design we deliver and construct various kinds of customized solutions, coordinated with the individual application. Our engineering department would be glad to support your efforts in finding optimized solutions also for application in the range of some thousand amps.

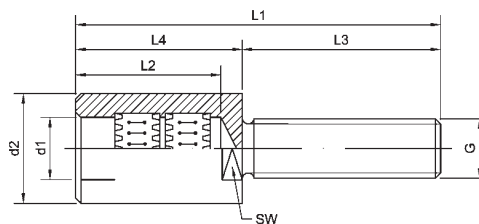


Solderless crimped pluggable connections

**Sockets 35-1500 A**

with thread connection

Material: brass silver plated



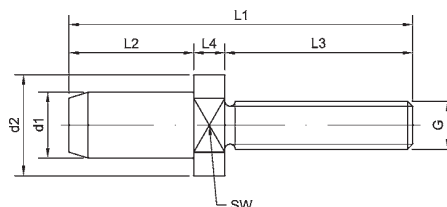
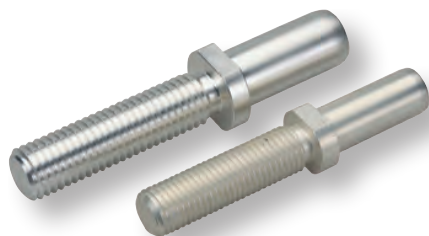
Part-No.	rated-current	dimensions mm								weight kg/% pcs.
		d <sub>1</sub>	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	Sw	G	
23810	35 A	2	5,5	36	16,5	16	20	4	M 3	0,40
23811	40 A	3	6	40	16,5	20	20	5	M 4	0,50
23812	65 A	4	7	50	19,5	25	25	6	M 5	0,90
23813	70 A	5	8,5	50	19,5	25	25	7	M 5	1,10
23814	100 A	6	10	53	19,5	28	25	8	M 6	1,50
23815	130 A	8	14	78	34	36	42	11	M 8	4,70
23816	200 A	10	16	84	34	42	42	13	M10	6,60
23817	230 A	12	18	90	34	48	42	13	M12	8,70
23818	300 A	14	20	98	38	50	48	17	M14	12,10
23819	350 A	16	22	106	38	58	48	19	M16	16,00
23820	400 A	18	25	110	42	58	52	22	M16	19,30
23821	500 A	20	28	122	42	70	52	24	M18	26,50
23822	700 A	25	38	149	62	74	75	32	M20	58,80
23823	900 A	30	42	156	62	81	75	36	M24 x 2	72,60
23824	1200 A	35	48	165	62	90	75	41	M30 x 2	105,70
23825	1500 A	40	52	180	62	105	75	46	M36 x 3	140,00

Sockets without snap-in lock. Suitable to screw into cable lugs, bus-bars, contact blocks or as socket to built into insulated housings for the slide-in rack technology. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

**Plugs 35-1500 A**

with thread connection

Material: brass silver plated



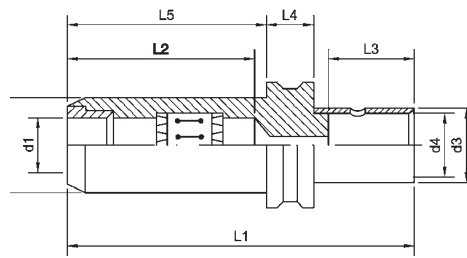
Part-No.	rated-current	dimensions mm								weight kg/% pcs.
		d <sub>1</sub>	d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	Sw	G	
23830	35 A	2	-	35,5	16,5	16	3	4	M3	0,20
23831	40 A	3	-	40	16,5	20	3,5	5	M4	0,30
23832	65 A	4	-	48,5	19,5	25	4	6	M5	0,60
23833	70 A	5	-	48,5	19,5	25	4	7	M5	0,80
23834	100 A	6	-	51,5	19,5	28	4	8	M6	1,20
23835	130 A	8	-	75	34	36	5	11	M8	3,00
23836	200 A	10	-	81	34	42	5	13	M10	5,00
23837	230 A	12	18	87	34	48	5	13	M12	7,70
23838	300 A	14	20	95	38	50	7	17	M14	11,80
23839	350 A	16	22	103	38	58	7	19	M16	16,60
23840	400 A	18	25	107	42	58	7	22	M16	19,90
23841	500 A	20	28	119	42	70	7	24	M18	26,50
23842	700 A	25	38	145	62	74	9	32	M20	49,60
23843	900 A	30	42	152	62	81	9	36	M24 x 2	73,00
23844	1200 A	35	48	162	62	90	10	41	M30 x 2	112,60
23845	1500 A	40	52	178	62	105	11	46	M36 x 3	162,30

Plugs without snap-in lock. Suitable to screw into cable lugs, bus-bars, contact-blocks or as plug built into insulated housings for the slide-in rack technology. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

**Sockets 80-300 A**

with snap-in lock and crimp connection

Material: brass, silver plated



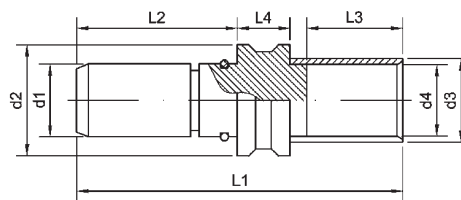
Part-No.	cross-section mm <sup>2</sup>	rated-current	dimensions mm										weight kg/% pcs.
			d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>		
23850	10	80 A	6	12	8	5	48,5	23	14	-	28	2,60	
23851	16	100 A	6	12	9	6	48,5	23	14	-	28	2,60	
23852	25	130 A	6	12	11	8	54,5	23	16	-	28	2,60	
23853	25	130 A	10	16	11	8	76	43	15	12	45	8,30	
23854	35	150 A	10	16	13	9	81	43	20	12	45	8,40	
23855	50	180 A	10	16	14,5	11	88	43	27	12	45	8,90	
23856	50	190 A	14	21	14,5	11	93	43	27	17	45	14,50	
23857	70	240 A	14	21	17	13	93	43	27	17	45	14,90	
23858	95	280 A	14	21	20	15	95	43	29	17	45	16,30	
23859	120	300 A	14	21	22	17	96	43	30	17	45	16,80	

Sockets with snap-in lock which lock automatically when connected. Plugs are inserted only so far that the ring snap-in. To release the connection, lightly turn and push-in plug, then pull-out. Crimp connection for flexible/highly flexible copper cables. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

**Plugs 80-300 A**

with snap-in lock and crimp connection

Material: brass, silver plated

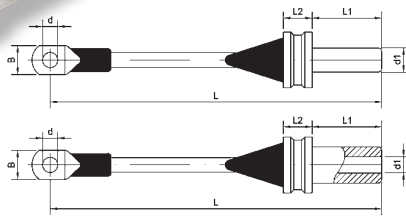
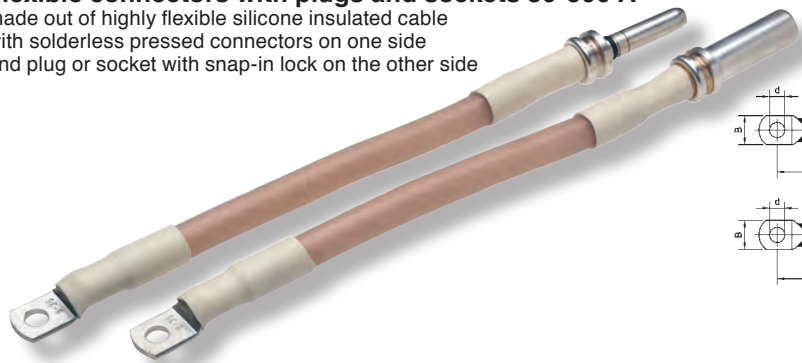


Part-No.	cross-section mm <sup>2</sup>	rated-current	dimensions mm										weight kg/% pcs.
			d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>			
23870	10	80 A	6	9	8	5	45	22	14	7	1,20		
23871	16	100 A	6	9	9	6	45	22	14	7	1,30		
23872	25	130 A	6	9	11	9	51	22	20	7	1,60		
23873	25	130 A	10	20,5	11	8	73,5	42,5	16	12	6,60		
23874	35	150 A	10	20,5	13	9	78,5	42,5	21	12	7,30		
23875	50	180 A	10	20,5	14,5	11	85,5	42,5	28	12	7,40		
23876	50	190 A	14	25	14,5	11	91	43	27	17	13,30		
23877	70	240 A	14	25	17	13	91	43	27	17	13,80		
23878	95	280 A	14	25	20	15	93	43	29	17	15,00		
23879	120	300 A	14	25	22	17	94	43	30	17	15,80		

Plugs are suitable for all sockets with snap-in lock Part-No. 23850-59. Plugs are inserted only so far that the ring snaps-in. To release the connection, lightly turn and push-in plug, then pull out. Crimp connection for flexible/highly flexible copper cables. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.

### Flexible connectors with plugs and sockets 80-300 A

made out of highly flexible silicone insulated cable with solderless pressed connectors on one side and plug or socket with snap-in lock on the other side



Part-No.		cross-section mm <sup>2</sup>	rated-current	dimensions mm					
type A	type B			d <sub>1</sub>	d	B	L	L <sub>1</sub>	L <sub>2</sub>
16320	16325	10	80 A	6	6,5	11	depending on customers requirements	22	7
16330	16335	16	100 A	6	8,5	15		22	7
16331	16336	25	130 A	6	8,5	16		22	7
16340	16345	25	130 A	10	8,5	16		42,5	12
16350	16355	35	150 A	10	8,5	17		42,5	12
16351	16356	50	180 A	10	10,5	22		42,5	12
16360	16365	50	190 A	14	10,5	22		43	17
16370	16375	70	240 A	14	10,5	25		43	17
16380	16385	95	280 A	14	13	29		43	17
16390	16395	120	300 A	14	13	31		43	17

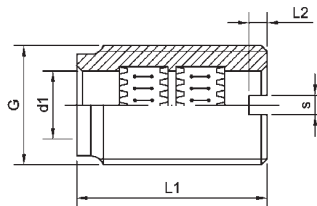
**Type A:** one side tubular cable lug and plug at the other side

**Type B:** one side tubular cable lug and socket at the other side

**Cable:** free of halogen, flame retardant with stabilized insulation (oper.temp. + 180° C). Technical datas on catalogue page 40.

### Sockets 65-5000 A

with external thread



Part-No.	rated-current	dimensions mm					starting torque Nm max.	BE-lams pcs.	weight kg/% pcs.
		d <sub>1</sub>	G	L <sub>1</sub>	L <sub>2</sub>	s			
23890	65 A	4	M 8 x 0,75	19,5	1,5	1,5	2,5	1	0,50
23891	70 A	5	M 10 x 1	19,5	2	1,5	5	1	0,70
23892	100 A	6	M 12 x 1	19,5	2,5	2	10	1	1,10
23893	130 A	8	M 14 x 1	34	2,5	2,5	13	1	2,10
23894	200 A	10	M 18 x 1	34	2,5	3,5	22	1	3,90
23895	230 A	12	M 20 x 1	34	3,5	3,5	30	1	4,30
23896	300 A	14	M 22 x 1	38	4	4	35	1	5,70
23897	350 A	16	M 24 x 1	38	4	4	35	1	6,30
23898	400 A	18	M 28 x 1	42	4	4	55	1	10,50
23899	500 A	20	M 30 x 1	42	5	5	65	1	11,40
23900	700 A	25	M 42 x 1,5	62	5	5	150	2	39,40
23901	900 A	30	M 48 x 1,5	62	5	5	200	2	48,60
23902	1200 A	35	M 50 x 1,5	62	5	5	220	2	42,70
23903	1500 A	40	M 55 x 1,5	62	6	6	275	2	47,20
23904	1800 A	45	M 60 x 2	62	6	6	430	2	50,20
23905	2000 A	50	M 65 x 2	62	8	7	500	2	55,80
23906	3000 A	60	M 80 x 2	86	8	8	750	3	135,70
23907	3700 A	70	M 90 x 2	86	8	8	1000	3	154,60
23908	4200 A	80	M100 x 2	86	8	8	1500	3	170,20
23909	4500 A	90	M110 x 2	86	8	8	2000	3	187,30
23910	5000 A	100	M120 x 2	86	8	8	2500	3	209,40

The sockets are suitable to screw directly into bus-bars, contact blocks, housings etc. They are slotted at one end suitable for the appropriate mounting tool. The sockets must be screwed against a fix stop or screwed into bus-bars with 2 nuts and washers. The amperages were measured at + 20° C ambient temperature and an end temperature of max. + 80° C.



# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.13 Battery clips, battery clamps and earthing tapes

druseidt delivers an assortment of different battery clips and clamps acc. to the DIN-regulation as well as in special design. The delivery of components is added by the customized manufacturing of earthing tapes, jump-loads and cable sets. We deliver also braided copper tapes or round stranded copper cables on rolls or on spools directly from our stock in Remscheid.

If you have interest in such material please be so kind and order our special catalogue no. 2, which informs you about our product range flexible connectors, leadings and ready assembled flexible high current components.



Jump-loads deliverable in normal or startsafe design

### Battery clips 40 A

with insulated handles

Material: steel sheet, nickel coated



Part-No.		current load	cable connection	length mm	weight kg/% pcs.
black	red				
13345	13346	40 A	solder-connection	80	2,5
10345	10346		crimp-connection		
10347	10348		tab-connection		

Part-No. 13345/46 standardized design for solder-connection.

Part-No. 10345/46 design for crimping with tab-connection 6,3 x 0,8 mm.

Cable cross-section max 4 mm<sup>2</sup>.

### Fully insulated battery clips 40 A

Material: steel sheet, yellow zinc coated



Part-No.		current load	cable connection	length mm	weight kg/% pcs.
black	red				
10350	10351	40 A	solder-connection	80	2,5
10352	10353		crimp-connection		
10354	10355		tab-connection		

Part-No. 10350/51 standardized design for solder-connection.

Part-No. 10352/53 design for crimping or with tab-connection 6,3 x 0,8 mm.

Cable cross-section max 4 mm<sup>2</sup>.

### Battery clips 80-600 A

with insulated handles

Material: steel sheet, zinc coated



Part-No.		current load	max. cable cross-section mm <sup>2</sup>	length mm	weight kg/% pcs.
black	red				
13347	13348	80 A	10	125	6,0
03147	03148	100 A	16	160	10,5
13349	13350	200 A	25	160	16,0
13351	13352	600 A	35	160	22,5

Cable connection crimpable or with cable lug M4 (80 A) or M6 (100-600 A).

600 A design design pole with braided copper tape.

### Fully insulated batter 80-600 A

Material: steel sheet, zinc coated



Part-No.		current load	max. cable cross-section mm <sup>2</sup>	length mm	weight kg/% pcs.
black	red				
10356	10357	80 A	10	125	6,0
13800	13801	100 A	16	160	10,5
13802	13803	200 A	25	160	16,0
13804	13805	600 A	35	160	22,5

Cable connection crimpable or with cable lug M4 (80 A) or M6 (100-600 A).

600 A design design pole with braided copper tape.

**Battery clips 750-1000 A**

with insulated handles

Material: brass casting, zinc coated 800/1000 A, uncoated 750/900 A



Part-No.		current load	max. cable cross-section mm <sup>2</sup>	length mm	weight kg/% pcs.
black	red				
13332	13333	750 A	50	180	36,00
13353	13354	800 A		150	31,00
13336	13337	900 A		165	31,00
13355	13356	1000 A		150	32,00

900/1000 A design pole connection with braided copper tape.

Cable connection with cable lug M6 or without cable lug (750 A design) with contact bolt.

**Fully insulated battery clips 750-1000 A**

Material: brass casting

Surface: uncoated



Part-No.		current load	max. cable cross-section mm <sup>2</sup>	length mm	weight kg/% pcs.
black	red				
13806	13807	750 A	50	180	36,00
13812	13813	800 A		150	31,00
13816	13817	900 A		165	31,00
13808	13809	1000 A		150	32,00

900/1000 A design pole connection with braided copper tape.

Cable connection with cable lug M6 or without cable lug (750 A design) with contact bolt.

**Fully insulated battery clips 1000 A**

with bended tip

Material: brass casting

Surface: uncoated



Part-No.		current load	max. cable cross-section mm <sup>2</sup>	length mm	weight kg/% pcs.
black	red				
13810	13811	1000 A	50	165	35,00

Pole connection with braided copper tape. Cable connection with cable lug M6.

Design with bended tip for working under cramped conditions.

**Jump-Loads 16-50 mm<sup>2</sup>**

Normal- and startsafe design

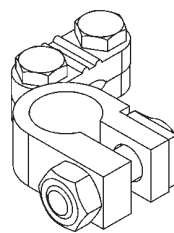
with fully insulated battery clips



Part-No.	type	cross-section	length	battery clips design
13780	I	16 mm <sup>2</sup>	2 x 3,0 m	100 A / 13800/01
13782		25 mm <sup>2</sup>	2 x 3,5 m	300 A / 13802/03
13784		35 mm <sup>2</sup>	2 x 4,5 m	500 A / 13805/05/S
13786		35 mm <sup>2</sup>	2 x 5,0 m	900 A / 13816/17
13788		50 mm <sup>2</sup>	2 x 5,0 m	900 A / 13816/17
13790	II	16 mm <sup>2</sup>	2 x 3,0 m	100 A / 13800/01
13792		25 mm <sup>2</sup>	2 x 3,5 m	300 A / 13802/03
13794		35 mm <sup>2</sup>	2 x 4,5 m	500 A / 13804/05/S

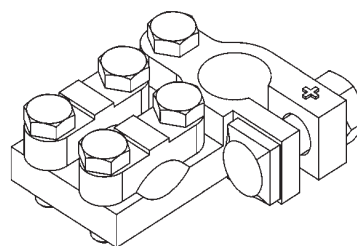
Jump-loads type I = Standard design.

Jump-loads type II = Startsafe-design equipped with an additionally circuit to protect electrical parts in the car.

**Battery clamps according to DIN 72331**


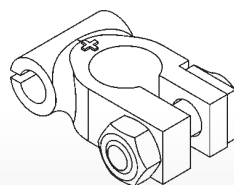
Part-No.	DIN-size	cross-section mm <sup>2</sup>	design	material	fixing screw	weight kg/‰ pcs.
03088	A	12 - 70	left +	brass tinned	M8	100,00
03089	B		right -			100,00
03090	C	12 - 70	right +	brass tinned	M8	100,00
03092	D		left -			100,00
03095*	E	50 - 120	links +	brass tinned	M8	150,00
03094	F		right -			150,00
03091*	G	50 - 120	right +	brass tinned	M8	150,00
03093	H		left -			150,00

\*Design with add. lighting cable connection.

**Battery double clamps**


Part-No.	cross-section mm <sup>2</sup>	design	material	fixing screw	weight kg/‰ Stck
03097	12 - 120	left -	brass tinned	M8	180,00
03100*		right +			180,00

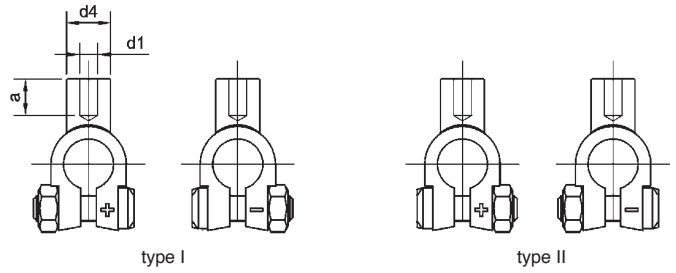
\*Design with add. lighting cable connection.

**Battery clamps according to DIN 72332**


Part-No.		cross-section mm <sup>2</sup>	connecting-Ø mm	material	fixing screw	weight kg/‰ pcs.
+ Pole	- Pole					
03108	03116	16	5,6	brass tinned	M8	80,00
03109	03117	25	6,8			80,00
03110	03118	35	8,3			80,00
03111	03119	50	9,7			80,00
03112	03120	70	11,6			80,00
03113	03121	95	13,0			80,00
03114	03122	120	15,0			80,00

### Compression battery clamps

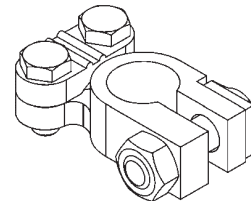
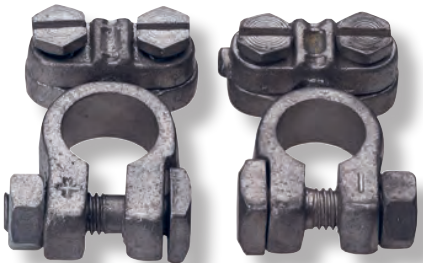
Material: brass, tin plated



Part-No.		cross-section mm <sup>2</sup>	design	dimensions mm			weight kg/% pcs.	crimping-tools/page no.
type I	type II			d <sub>1</sub>	d <sub>4</sub>	a		
10585/6	10685/6	16	+ Pole	6,0	15	16	80,00	on request
10585/7.3	10685/7.3	25	+ Pole	7,3	15	16	80,00	
10585	10685	35	+ Pole	8,5	15	16	80,00	
10586	10686	50	+ Pole	10,3	15	20	80,00	
10586/13	10686/13	70	+ Pole	13,0	20	20	100,00	
10587/14	10687/14	95	+ Pole	14,0	20	24	110,00	
10587	10687	120	+ Pole	15,0	20	24	110,00	
10595/6	10695/6	16	- Pole	6,0	15	16	80,00	
10595/7.3	10695/7.3	25	- Pole	7,3	15	16	80,00	
10595	10695	35	- Pole	8,5	15	16	80,00	
10596	10696	50	- Pole	10,3	15	20	80,00	
10596/13	10696/13	70	- Pole	13,0	20	20	100,00	
10597/14	10697/14	95	- Pole	14,0	20	24	110,00	
10597	10697	120	- Pole	15,0	20	24	110,00	

All types with fixing screw M8.

### Battery clamps



Part-No.	cross-section mm <sup>2</sup>	design	material	fixing screw	weight kg/% pcs.
10600	12 - 70	+ Pole	brass tinned	M8	68,00
10601	12 - 70	- Pole		M8	68,00

### Battery clips 25-50 A

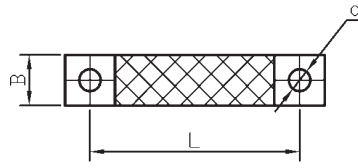
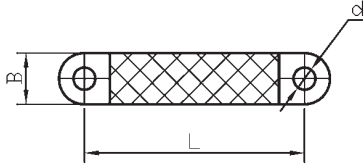
Material: steel sheet, zinc coated



Part-No.		current load	length mm	weight kg/% pcs.
+ Pole	- Pole			
03136 +	03136 -	25 A	75	1,8
03137 +	03137 -	50 A	105	3,8

With screw M4 for cable connection with or without cable lug.

**Earthing tapes similar to DIN 72333 Part 3 design A and B**



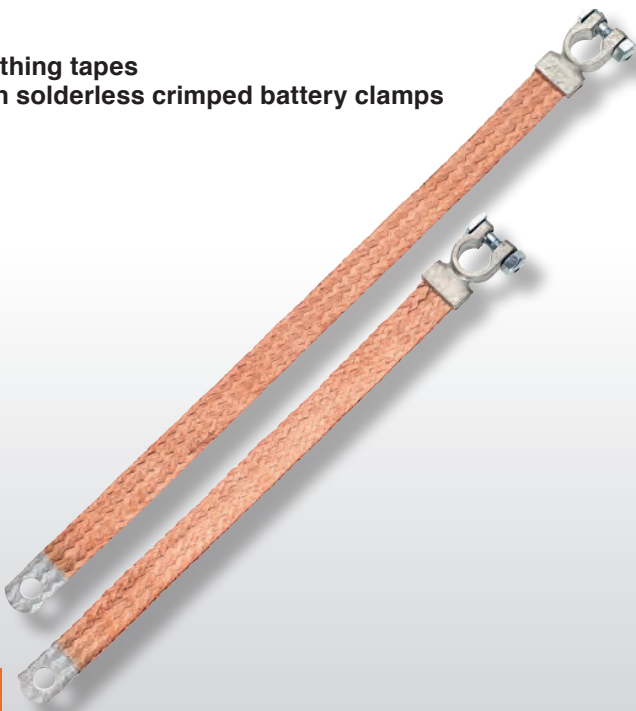
**design A1** contact areas tinned  
**design A2** contact areas with brass-tapes and additionally tinned

**Form B1** contact areas tinned  
**Form B2** contact areas with brass-tapes and additionally tinned



Part-No.		cross-section mm <sup>2</sup>	dimensions mm		
			B	d	L
15280/A1	15280/A2	4	8	Individually according to customers specification	Individually according to customers specification
15281/A1	15281/A2	6	10		
15282/A1	15282/A2	8	12		
15283/A1	15283/A2	10	14		
15284/A1	15284/A2	14	18		
15285/A1	15285/A2	16	20		
15286/A1	15286/A2	21	22		
15287/A1	15287/A2	25	22		
15288/A1	15288/A2	35	25		
15289/A1	15289/A2	50	33		
15290/A1	15290/A2	70	35		
15280/B1	15280/B2	4	8		
15281/B1	15281/B2	6	10		
15282/B1	15282/B2	8	12		
15283/B1	15283/B2	10	14		
15284/B1	15284/B2	14	18		
15285/B1	15285/B2	16	20		
15286/B1	15286/B2	21	22		
15287/B1	15287/B2	25	22		
15288/B1	15288/B2	35	25		
15289/B1	15289/B2	50	33		
15290/B1	15290/B2	70	35		

**Earthing tapes with solderless crimped battery clamps**



On request we deliver also earthing tapes with solderless crimped battery clamp on one side. The end of the other side can be tinned and punched. One of the standard designs are earthing tapes in a cross section range of 21 mm<sup>2</sup> with a clamp on one side and a hole M10 at the other side. The length can be manufactured according to clients wishes. Therefore when placing an order please specify:

- Part-No.**
- length**
- diameter of the holes**
- braided uncoated or tinned**

# 1. ELECTRICAL CONNECTION- AND INSTALLATION TECHNIQUE

## 1.14 Connectors and accessories for test bay and switch board application as well as cable ties

Additionally to our wide range of products in the field of electrical connection and installation technique, druseidt delivers a selection of accessories for test bay- and switch board application as well as cable ties. The user gets so the chance to buy a lot of products by only one supplier.

To facilitate the assignment of test accessories to the appropriate application, standard IEC/EN 61010-031 has established a number of categories which define where they can be used in the power supply network and to lay down appropriate requirements for each category.

In standard EN 61010-031 there are four different test categories, abbreviated "CAT".

As a general rule, the higher the CAT-rating, the higher the safety requirement that applies to the product. One exception is CAT I because this test category includes also measuring objects with higher voltage e. g. battery operated devices inside of cars.



### MEASUREMENT CATEGORIES ACCORDING TO IEC/EN 61010-031

#### CAT I

Applies to test objects that are not connected to the mains. Here we have no complete specific overvoltages, which are not regulated through the rules of insulation coordination. To define requirements for such application it is necessary to know the value of the possible overvoltage. In CAT I you find all test objects that cannot be assigned to CAT II to CAT IV

#### CAT II

Applies to measurements on equipment that is connected to the mains or supplied from the mains without constituting a part of the mains installation (e. g. electrical equipment between consumer load and power outlet inside of electrical devices like household appliance etc.)

#### CAT III

Applies to measurements inside the house or building installation (e. g. fixed installations at houses, contactors, protection equipment, switches, power outlets etc.)

#### CAT IV

Applies to measurements at the supply source of the installation input side. (e. g. secondary side of MV-transformers, electricity meter, connections to overhead lines etc.)

### Highly flexible connecting leads 1 mm<sup>2</sup>

with gold plated brass multilam plugs 4 mm Ø

Material of the leading: PVC

Operating temperature: -10° C up to + 70° C



Part-No.				type	flexible length	dimensions plug mm		rated current	rated voltage
black	red	blue	yellow/green			L	Ø sleeve		
24211	24220	24230	24240	LK-410-L	250 mm	55	9	19 A	30 V AC/60 V DC
24212	24221	24231	24241		500 mm				
24213	24222	24232	24242		750 mm				
24214	24223	24233	24243		1000 mm				
24215	24224	24234	24244		1500 mm				
24216	24225	24235	24245		2000 mm				

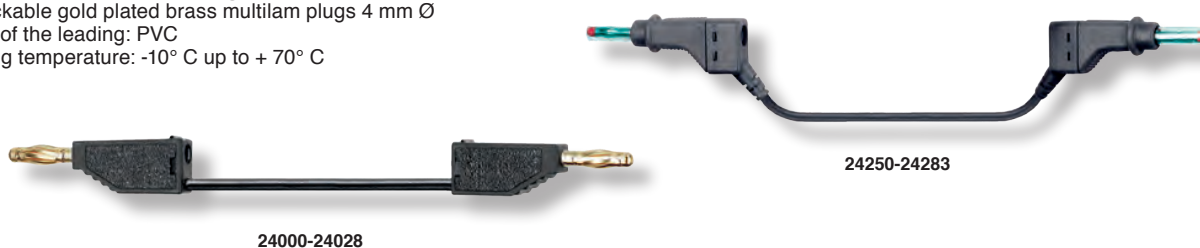
On request we deliver leadings with different colours or equipped with silicone insulation too.

### Highly flexible connecting leads 2,5 mm<sup>2</sup>

with stackable gold plated brass multilam plugs 4 mm Ø

Material of the leading: PVC

Operating temperature: -10° C up to + 70° C



Part-No.				type	flexible length	dimensions plug mm			rated current	rated voltage
black	red	blue	yellow/green			L	B	H		
24000	24008	24016	24024	LK-425-A	250 mm	47	8	15	32 A	30 V AC/60 V DC
24001	24009	24017	24025		500 mm					
24001/1	24009/1	24017/1	24025/1		750 mm					
24002	24010	24018	24026		1000 mm					
24003	24011	24019	24027		1500 mm					
24004	24012	24020	24028		2000 mm					
24250	24260	24270	24280	XZG 425	500 mm	59	14	15	32 A	600 V, CAT II
24251	24261	24271	24281		1000 mm					
24252	24262	24272	24282		1500 mm					
24253	24263	24273	24283		2000 mm					

Type LK 425-A with stackable standard multilam plug 4 mm Ø on both ends

Type XZG 425 with stackable multilam plug on both ends with protective collar and retractable sleeve to prevent accidental touching. Suitable for connecting electrical apparatus not yet equipped with safety sockets. On request we deliver leadings with different colours or equipped with silicone insulation too.

### Highly flexible connecting leads 2,5 mm<sup>2</sup>

with stackable gold plated multilam plugs 4 mm Ø

Material on the leading: PVC

Operating temperature: - 10° C up to + 70° C

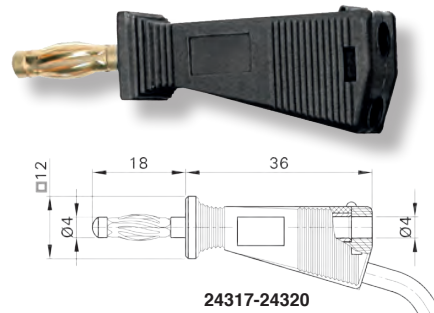
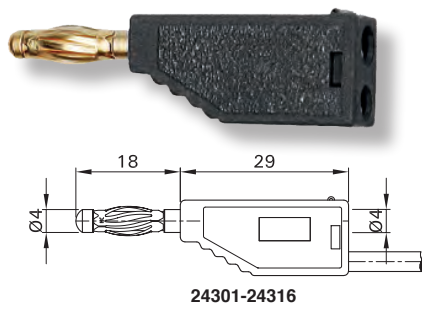


Part-No.				type	flexible length	dimensions plug mm			rated current	rated voltage
black	red	blue	yellow/green			L	B	H		
24070	24078	24086	24094	SLK 425-E	250 mm	56,3	9,5	17,7	32 A	600 V CAT III / 1000 V CAT II
24071	24079	24087	24095		500 mm					
24071/1	24079/1	24087/1	24095/1		750 mm					
24072	24080	24088	24096		1000 mm					
24073	24081	24089	24097		1500 mm					
24074	24082	24090	24098		2000 mm					

With stackable 4 mm Ø multilam plugs with rigid insulating sleeve on both ends. On request we deliver leadings with different colours or equipped with silicone insulation too.



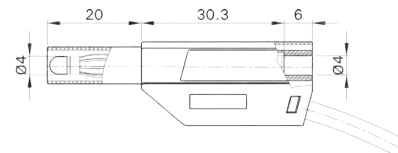
**Stackable gold plated plugs 4 mm Ø**  
with spring-loaded multilam



Part-No.				type	connection method	cross-section mm <sup>2</sup>	rated current	rated voltage
black	red	blue	yellow/green					
24301	24302	24303	24304	SLS 410	soldering	1,0	19 A	30 V AC/60 V DC
24305	24306	24307	24308	SLS 415	soldering	1,5	24 A	30 V AC/60 V DC
24309	24310	24311	24312	SLS 425-A	soldering	2,5	32 A	30 V AC/60 V DC
24313	24314	24315	24316	SLS 425-AM	screwing	2,5	32 A	30 V AC/60 V DC
24317	24318	24319	24320	SLS 425	soldering	2,5	32 A	30 V AC/60 V DC

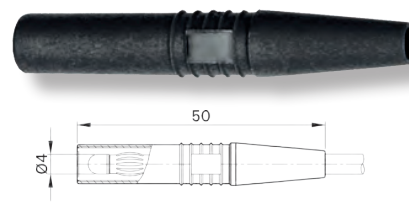
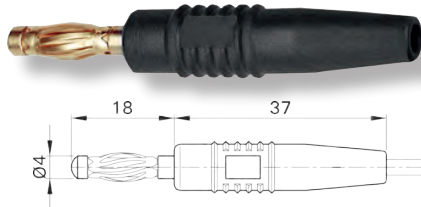
Plugs with other colours as in the table on request.

**Stackable gold plated plugs 4 mm Ø**  
with spring-loaded multilam and rigid insulating sleeve



Part-No.				type	connection method	cross-section mm <sup>2</sup>	rated current	rated voltage
black	red	blue	yellow/green					
24321	24322	24323	24324	SLS 425-SE/M	screwing	2,5	32 A	1000 V/CAT II
24325	24326	24327	24328	SLS 425-SE/Q	soldering	2,5	32 A	1000 V/CAT II

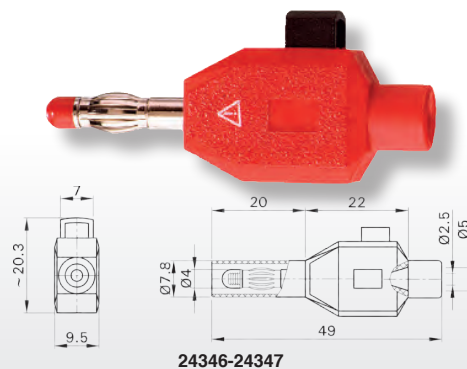
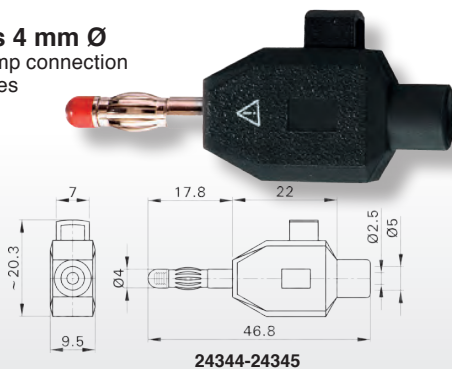
**In-line gold plated plugs 4 mm Ø**



Part-No.			type	connection method	cross-section mm <sup>2</sup>	rated current	rated voltage
black	red	blue					
24330	24331	24332	SLS 410-L	soldering	1,0	19 A	30 V AC/60 V DC
24333	24334	24335	SLS 415-L	soldering	1,5	24 A	30 V AC/60 V DC
24336	24337	24338	SLS 425-L	soldering	2,5	32 A	30 V AC/60 V DC
24340	24341	24342	SLS 425-SL	soldering	2,5	32 A	1000 V/CAT II

Plugs with spring-loaded multilam Part-No. 24340-42 in-line plug with rigid insulating sleeve .

**Clip-on plugs 4 mm Ø**  
suitable for a clamp connection with stranded wires

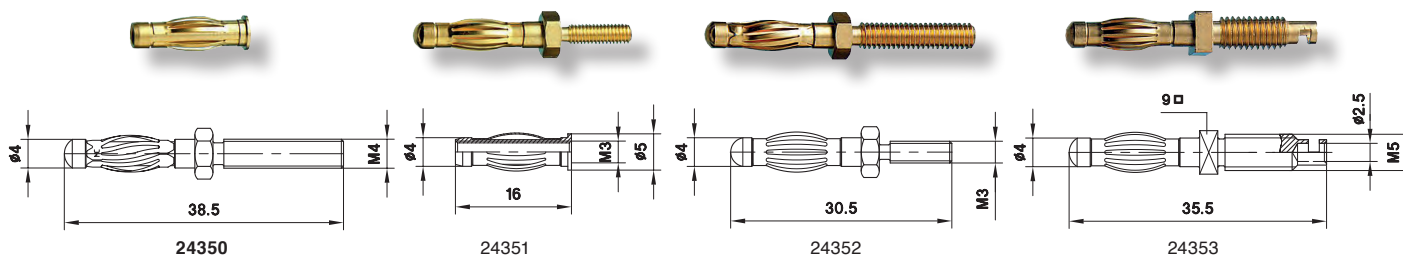


Part-No.		type	connection method	cross-section mm <sup>2</sup>	rated current	rated voltage
black	red					
24344	24345	KL S4	clamping	bis 2,5	10 A	30 V AV/60 V DC
24346	24347	SKL S4	clamping	Bis 2,5	10 A	600 V/CAT II

Please notice that during the installation of the clip-on plugs, the terminal must not be connected to the supply.

### Uninsulated multilam plugs 4 mm Ø

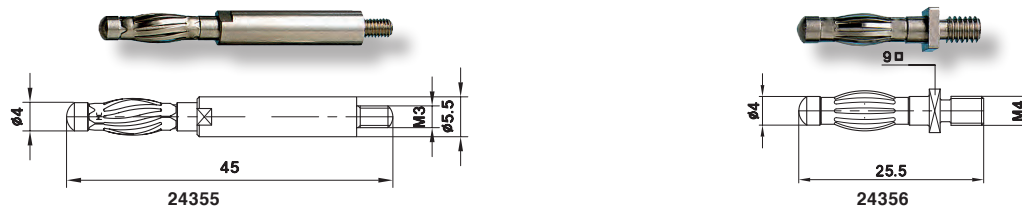
Material: brass



Part-No.	type	surface	connecting	extraction force	highest temperature limit	rated current	resistance mΩ
24350	SA 404	gold plated	M3	ca. 8 N	+ 150° C	50 A	0,3
24351	SA 405	gold plated	M3	ca. 5 N	+ 150° C	50 A	0,3
24352	SA 400	gold plated	M4	ca. 10 N	+ 150° C	50 A	0,2
24353	SA 401	gold plated	M5/solder	ca. 5 N	+ 150° C	50 A	0,3

### Uninsulated multilam plugs 4 mm Ø

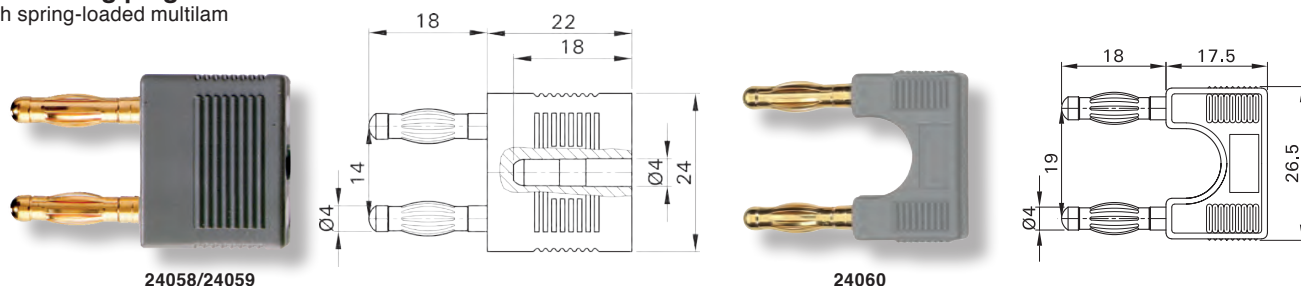
Material: brass



Part-No.	type	surface	connecting	extraction force	highest temperature limit	rated current	resistance mΩ
24355	SA 484	nickel plated	M3	ca. 10 N	+ 150° C	50 A	0,4
24356	SA 486	nickel plated	M4	ca. 5 N	+ 150° C	50 A	0,8

### Connecting plugs 4 mm Ø

with spring-loaded multilam

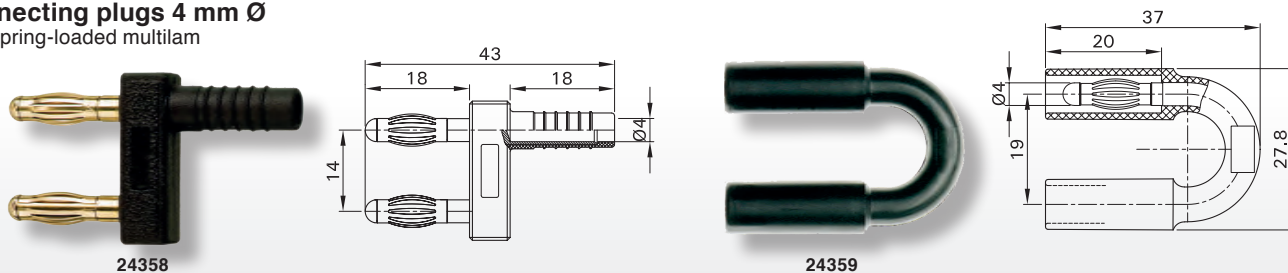


Part-No.	type	colour	surface	inserting distance	rated current	rated voltage
24058	KS4-14 L/N	grey	nickel plated	14 mm	32 A	30 V AC/60 V DC
24059	KS4-14 L/A	grey	gold plated	14 mm	32 A	30 V AC/60 V DC
24060	KS4-19 L	grey	gold plated	19 mm	32 A	30 V AC/60 V DC

Part-No. 24058-59 with rigid socket 4 mm Ø in insulator for tap connection at rear.  
 Part-No. 24060 made of brass, one piece design.

### Connecting plugs 4 mm Ø

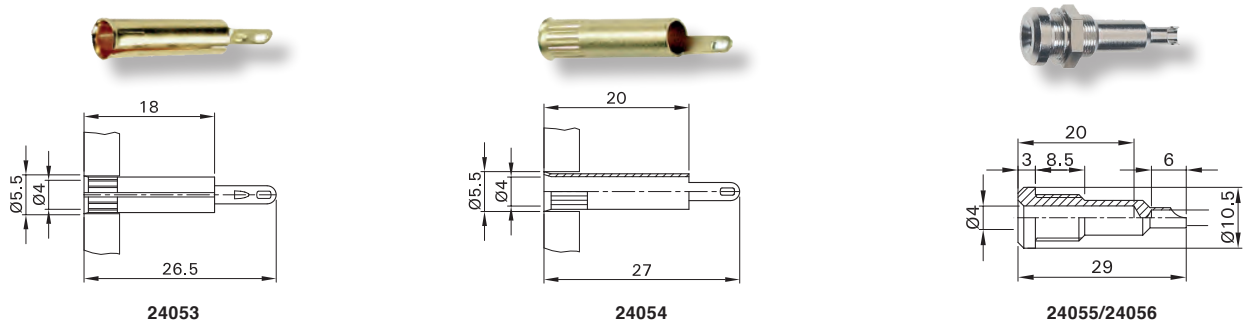
with spring-loaded multilam



Part-No.	type	colour	surface	inserting distance	rated current	rated voltage
24358	KS4-14 LA/A	black	gold plated	14 mm	32 A	30 V AC/60 V DC
24359	SKS4-19 L	black	gold plated	19 mm	32 A	1000 V/CAT II

Part-No. 24358 designed to ensure vibration-proof-contacts. Ideal for instance in the automotive field for test drives and servicing Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve  
 Part-No. 24359 plug with spring-loaded multilam and rigid insulating sleeve

**Uninsulated sockets 4 mm Ø**

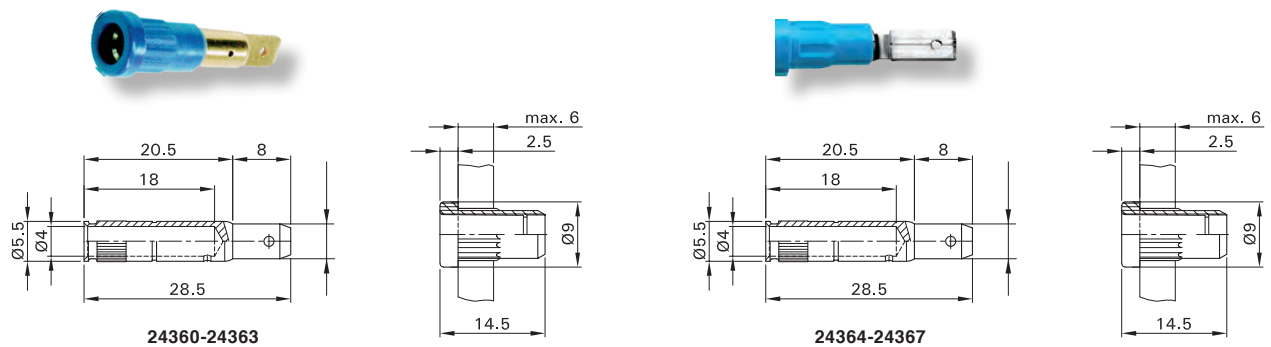


Part-No.	type	surface	connection method	necessary drilling-Ø	rated current	rated voltage
24053	LB 4	gold plated	soldering	4,8 mm	25 A	30 V AC/60 V DC
24054	LB 4 A	gold plated	soldering	4,8 mm	25 A	30 V AC/60 V DC
24055	LB 4 R	nickel plated	soldering	8,3 mm	40 A	30 V AC/60 V DC
24056	LB 4 R/A	gold plated	soldering	8,3 mm	40 A	30 V AC/60 V DC

Part-No. 24053 made out of rolled brass sheet.  
 Part-No. 24054 made out of punched brass tubing.  
 Part-No. 24055-56 machined brass. The sockets can be screw-mounted in predrilled panels.

**Insulated press-in sockets 4 mm Ø**

with flat connecting tab 4,8 x 0,8 mm

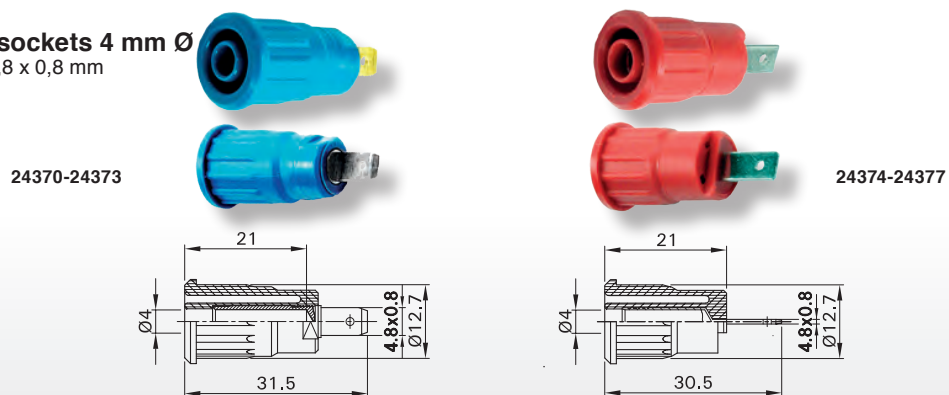


Part-No.				type	surface	necessary drilling-Ø	rated current	rated voltage
black	red	blue	yellow/green					
24360	24361	24362	24363	EB 4	gold plated	6,8 mm	25 A	30 V AC/60 V DC
24364	24365	24366	24367	EB 4-B	nickel plated	6,8 mm	25 A	30 V AC/60 V DC

Part-No. 24360-63 machined brass.  
 Part-No. 24364-67 made out of brass sheet, punched and rolled. The socket is pressed into predrilled panels of plastic, metal etc. Flat connecting tab 4,8 x 0,8 mm can be bent to 90°, once only.

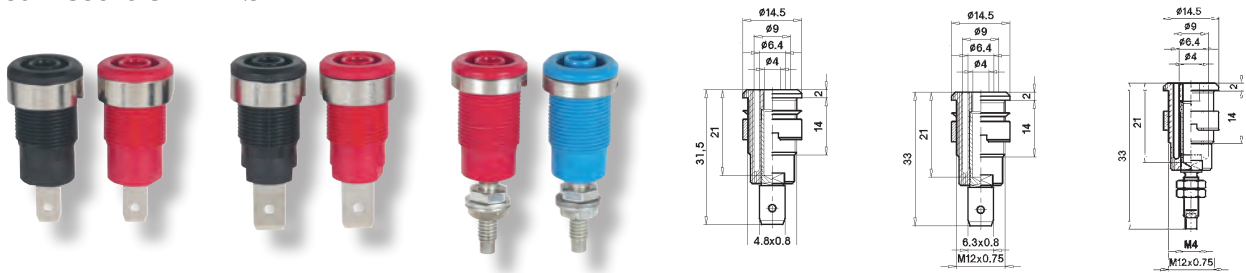
**Insulated press-in sockets 4 mm Ø**

with flat connecting tab 4,8 x 0,8 mm



Part-No.				type	surface	necessary drilling-Ø	rated current	rated voltage
black	red	blue	yellow/green					
24370	24371	24372	24373	SEB4-F	gold plated	12,2 mm	24 A	1000 V/CAT III
24374	24375	24376	24377	SEB4-F/A	nickel plated	12,2 mm	24 A	1000 V/CAT III

Part-No. 24370-73 machined brass.  
 Part-No. 24374-77 made out of brass sheet punched. Socket accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve. The socket is pressed into predrilled panels of metal, plastic etc.

**Panel-mount sockets 4 mm Ø**


Part-No.				type	surface	necessary drilling-Ø	rated current	rated voltage
black	red	blue	yellow/green					
24400	24401	24402	24403	SLB 4-F	gold plated	12,2 mm	24 A	1000 V/CAT III
12303	12304	12305	12306	SLB4-F/N-X	nickel plated	12,2 mm	24 A	1000 V/CAT III
24404	24405	24406	24407	SLB4 4-F6,3	gold plated	12,2 mm	32 A	1000 V/CAT III
12307	12308	12309	12314	SLB4 4-F6,3/N-X	nickel plated	12,2 mm	32 A	1000 V/CAT III
24408	24409	24410	24411	SLB4-G	gold plated	12,2 mm	32 A	1000 V/CAT III
12315	12316	12317	12322	SBL4-G/N-X	nickel plated	12,2 mm	32 A	1000 V/CAT III

**Special mounting tools**

24110	SS 2	Twist stop spanner
24111	SS 425	Spanner for ring nuts with M12 thread

Delivery with ring nut M12 x 0,75 mm. Part-No. 24400-24411 additionally with washer.

Part-No. 24400-03/12303-06 tab connection 4,8 x 0,8 mm.

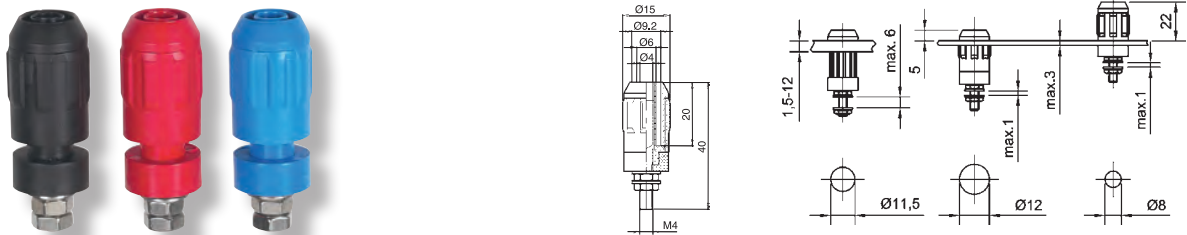
Part-No. 24404-07/12307-14 tab connection 6,3 x 0,8 mm.

Part-No. 24408-11/12315-22 connection threaded bolt M4 and soldering hole.

Part-No. 24110-11 devices for easy installation.

Part-No. 24110 is used to counter when tightening the nut with spanner Part-No. 24111.

Sockets with other colours as in the table on request.

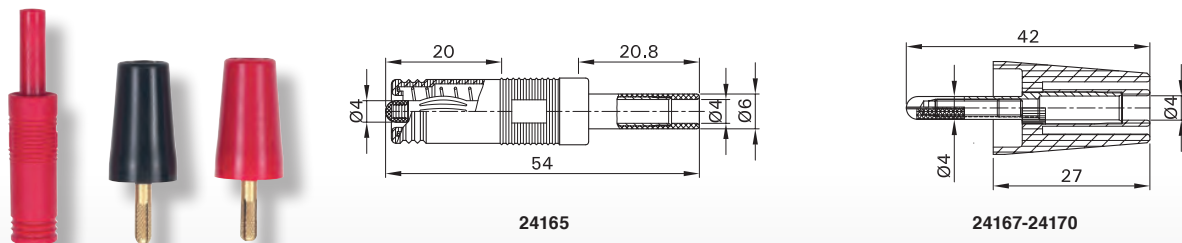
**Universal safety sockets 4 mm Ø**


Part-No.				type	surface	necessary drilling-Ø	rated current	rated voltage
black	red	blue	yellow/green					
24105	24106	24107	24108	XUB-G	nickel plated	see drawing	20 A	see text

**Accessory**

24415	24415 Protective cap to cover-up unplugged, unused sockets (Protection degree IP67)
-------	-------------------------------------------------------------------------------------

Insulated rigid sockets accepting spring-loaded plugs 4 mm Ø with rigid insulation sleeve. The sockets are surface-mounted, assembled flush or pressed into predrilled panels of plastic, metal etc. Rated voltage when surface mounted 600 V, CAT II, when assembled flush or pressed in 1000 V, CAT II. Sockets with other colours as in the table on request.

**Plug- and screw-clamping adapters 4 mm Ø**


Part-No.				type	surface	rated current	rated voltage
black	red	blue	yellow/green				
<b>Plug-adapter 4 mm Ø</b>							
-	24165	-	-	A4/4-Z	nickel plated	25 A	30 V AC/60 V DC
<b>Screw-clamping adapter 4 mm Ø</b>							
24167	24168	24169	24170	A-SLK-4	gold plated	32 A	1000 V/CAT II

Part-No. 24165 Plug adapter with spring-loaded multilam and retractable sleeve to prevent accidental contact. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.

Part-No. 24167-70 Adapter can be screw-mounted into 4 mm Ø sockets. The expandable 4 mm Ø plug of this adapter can be locked into the socket by tightening the grub screw. Assembled, the adapter offers complete touch-proof protection. Rigid socket Ø 4 mm in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves. Please notice that the terminals must not be connected to the supply during installation of the adapters.

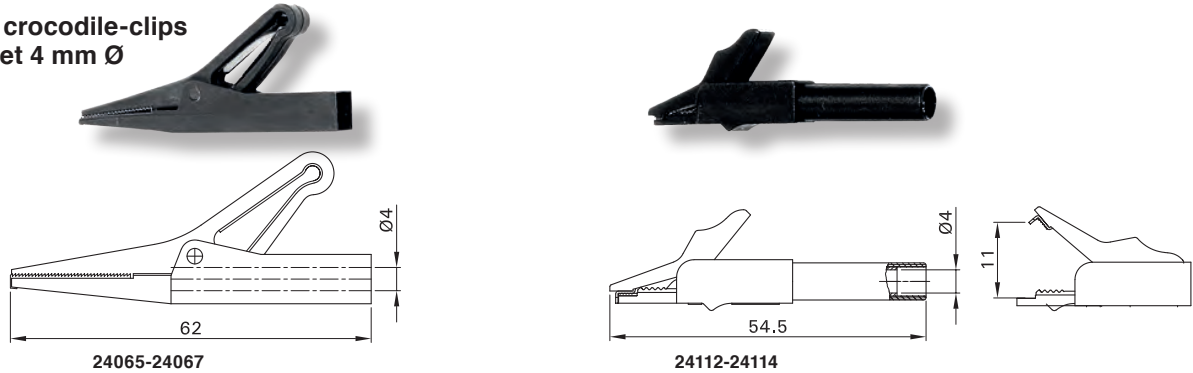
**Uninsulated crocodile-clips with socket 4 mm Ø**



Part-No.	type	material	surface	max. clamping width	rated current	rated voltage
12105	AGK 20	steel	nickel plated	5 mm	10 A	30 V AC/60 V DC

Uninsulated test clip with 4 mm rigid socket. The connection is also possible with screw clamp or soldering.

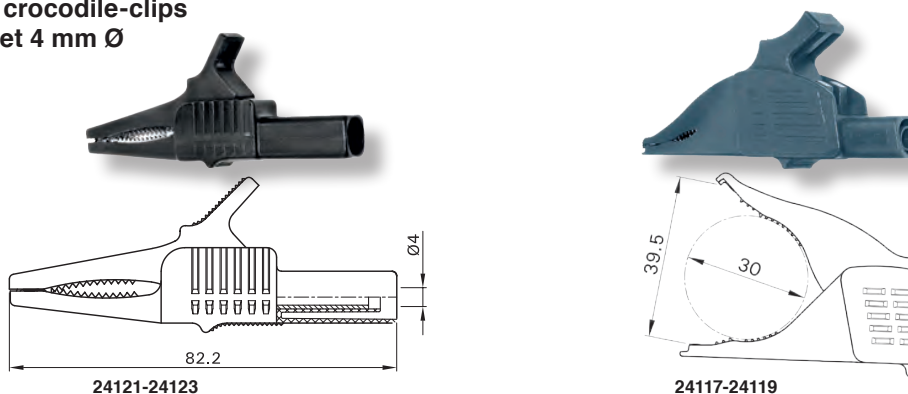
**Insulated crocodile-clips with socket 4 mm Ø**



Part-No.			type	surface	max. clamping width	rated current	rated voltage
black	red	blue					
24065	24066	24067	A-PK4	nickel plated	12 mm	10 A	30 V AC/60 V DC
24112	24113	24114	SAGK4-K	Vernickelt	11 mm	15 A	300 V / CAT II

**Part-No. 24065-67** Test clip with Ø 4 mm rigid socket and sharp toothed, pointed jaws. The upper jaw is insulated.  
**Part-No. 24112-14** small, slim crocodile clip with all-round-insulation and toothed jaws for wide grip with surface for fine wire. Rigid socket 4 mm Ø in insulator accepting spring-loaded 4 mm Ø plugs with rigid insulation sleeve.

**Insulated crocodile-clips with socket 4 mm Ø**



Part-No.				type	surface	max. clamping width	rated current	rated voltage
black	red	blue	yellow/green					
24121	24122	24123	24124	XKK-1001	nickel plated	20 mm	32 A	1000 V/CAT II
24117	24118	24119	24120	XDK-1033	nickel plated	30 mm	32 A	1000 V/CAT III

UL-listed crocodile-clips with all-round-insulation and toothed jaws for wide grip with surface for fine wire. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulation sleeve. Clips with other colours as in the table on request.

**Safety test clips with socket 4 mm Ø**



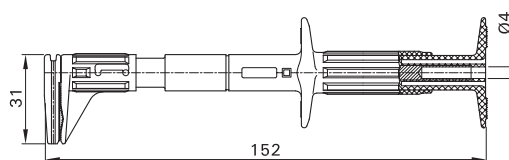
Part-No.			type	total length	max. clamping width	rated current	rated voltage
black	red	blue					
24125	24126	24127	SKPS-4	155 mm	ca. 5 mm	4 A	1000 V/CAT III

**Part-No. 24125-27** with flexible shaft and spring wire grabber made out of stainless steel for a good contact to pins and wires in accessible places. Especially suitable for measuring voltages. The shaft is silicone insulated and guarantees good heat resistance and flexibility even at low temperatures.

## Flat connection clamps

### with socket 4 mm Ø

and adjustable stop



Part-No.			type	surface	total length	max. clamping width	rated current	rated voltage
black	red	blue						
24135	24136	24137	Grip F	nickel plated	152 mm	30 mm	5 A	600 V//CAT III

Flat test clip for making quick, sure contact in voltage measurements. With adjustable stop. Rigid socket 4 mm Ø in handle accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.

## Test probes

### with socket 4 mm Ø



24150/51



24155/56

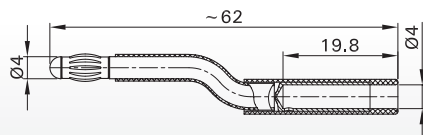
Part-No.		type	total length	tip length	rated current	rated voltage
black	red					
24150	24151	SPP4-S	122 mm	9 mm	≤1 A	1000 V/CAT II
24155	24156	SPP4-L	140 mm	18 mm	32 A	1000 V/CAT II

Part-No. 24150/51 with tapered stainless steel rigid needle. Delivery with protection cover.

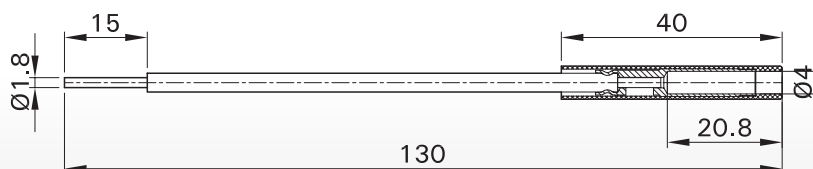
Part-No. 24155/56 Ø 4 mm test probe with spring-loaded multilam. Handle guard chamfered on both sides. Delivery with protection-cover.

## Test plugs and adapters

with socket 4 mm Ø



24172



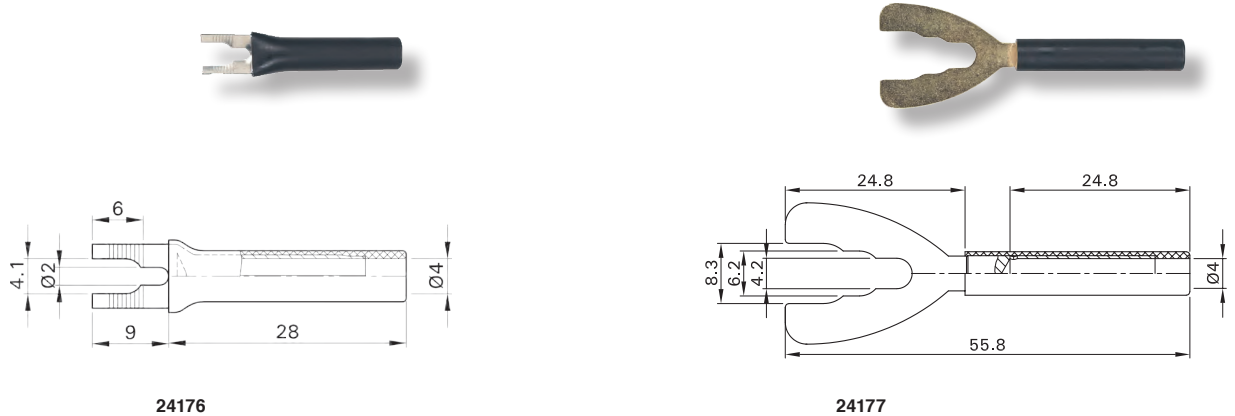
24173

Part-No.	colour	type	material	surface	rated current	rated voltage
24172	black	A-SLK4-RG	Ms	nickel plated	25 A	30 V AC/60 V DC
24173	black	A-SLK4-R	Cu	nickel plated	32 A	1000 V/CAT II

Part-No. 24172 test plug with spring loaded multilam for connecting into rail mounted terminals with sockets 4 mm Ø. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulation sleeve.

Part-No. 24173 insulated flexible copper conductor, suitable for many types of screw clamp connections, e.g. rail mounted terminals. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves. Please notice that during installation of this adapter the terminal must not be connected to the supply.

**Cable lug adapters**  
with socket 4 mm Ø



black	Part-No.		type	material	surface	rated current	rated voltage
	red	blue					
24175	24176	24176/1	B4-I/KS	Ms	nickel plated	20 A	1000 V/CAT II
24177	24178	24179	B4-I/K	Ms	gold plated	32 A	1000 V/CAT II

Cable lug adapters for permanent installation e. g. for connecting screw terminals. Rigid socket 4 mm Ø in insulator accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeves. Adapters Part-No. 24175-24176/1 the fork lug can be bent once to 90°. Please notice that during the installation of tis adapters the terminal must not be connected to the supply.

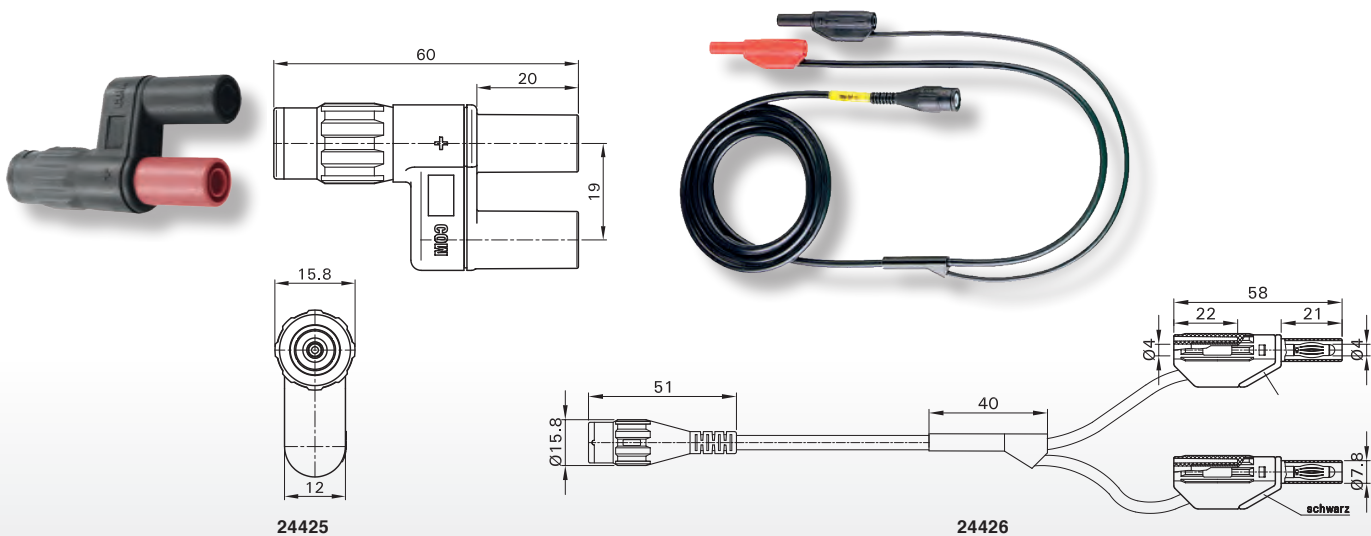
**Insulated lead couplers 4 mm Ø**



black	Part-No.		type	material	surface	rated current	rated voltage
	red	blue					
24420	24421	24422	KK4/4	Ms	gold plated	32 A	1000 V/CAT II

Insulated lead coupler. Both ends suitable for accepting spring-loaded plugs 4 mm Ø with rigid insulating sleeve.

**BNC-adapters resp. BNC adapter leads**



Part-No.	type	length	design	rated voltage
24425	XM-BB/4	60 mm	Adapter with BNC-plug and 2 sockets 4 mm Ø	1000 V/CAT II/600 V/CAT III
24426	XLAM-446/SC	1600 mm	Adapter lead with BNC-plug and 2 plugs 4 mm Ø	600 V/CAT II/300 V/CAT III

Part-No. 24425 two pole touch-protected adapters with Ø 4 mm connectors linked to the BNC system. With BNC-plug and rigid sockets 4 mm Ø.  
Part-No. 24426 highly flexible, fully shielded adapter-leads. One end with coaxial cable with touch protected BNC male connector, other end with stackable multilam plugs 4 mm Ø with rigid insulating sleeve, two-pole version.

## Binding-posts 16-400 A

### Technical information

The AC-flowing through binding posts, sockets and feed-throughs, will locally lead to a radial warming up of the sheet steel enclosure caused by eddy-currents. The following graph No. 1 shows the sheet cut-out dependent on the current intensity. It shows the temperature increase around the binding post by use of a sheet steel enclosure.

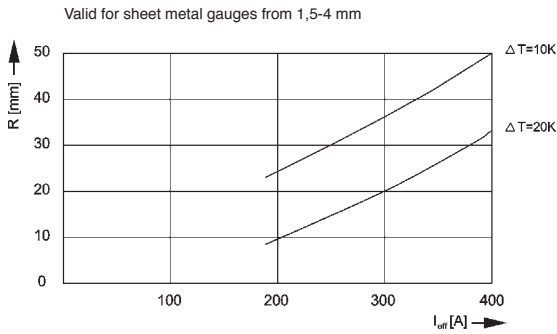


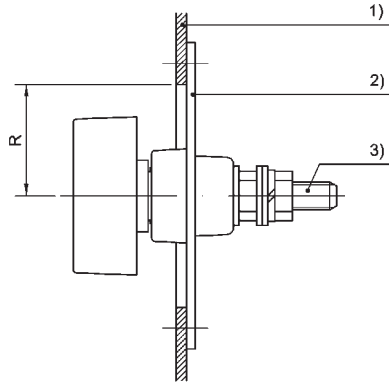
Diagram No. 1

### Example:

Current rating  $I_{eff} = 400 A$

Around the binding posts  $\Delta T = 10 K$  are permissible, therefore a radius of 50 mm around the binding posts has to be out of antimagnetic materials. Therefore a mounting has to be done according to the sketch 2.

In this figure 1) is the sheet steel enclosure, 2) a antimagnetic material and 3) the binding post.



Sketch 2

### Creepage

The permissible working voltage has to be determined acc. To VDE0110 part 1, IEC 1010 part 1, resp. IEC report 664, taking into consideration the insulating materials and the degree of pollution.

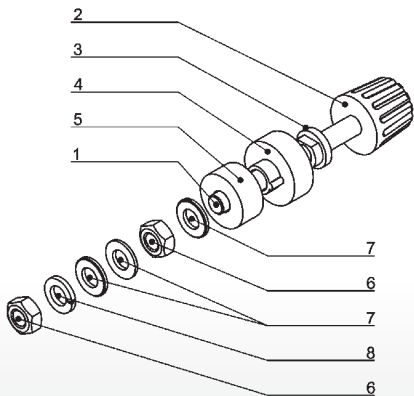
The creepage to be considered is

$$S_K = S_{k \max} - S_G$$

$S_K$  = creepage with conducting enclosure  
 $S_{k \max}$  = creepage without enclosure  
 $S_G$  = wall thickness of enclosure in mm

### Delivery

All binding posts will be delivered partly assembled with unmounted insulating sockets/rings, nuts, washers and spring washers.



1-3 mounted (bolt with insulating- and flange nut)

4 Insulating socket with torsion protection

5 Insulating ring

6 Nuts

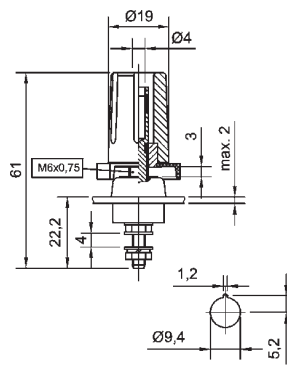
7 Washers

8 Spring washer

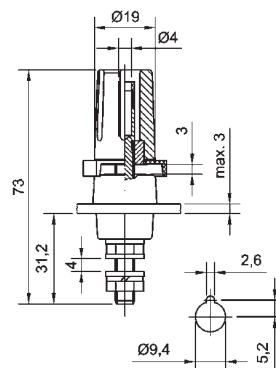


**Protected binding posts 16-63 A**

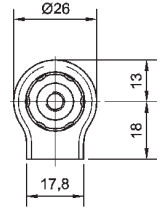
Material: brass/polycarbonate  
 Temperature stability: up to + 115° C



12270-12273



12274-12277



Part-No.	colour	current load	operating voltage	testing voltage	conducting wall thickness (S <sub>e</sub> )	creep-distance S <sub>k</sub>	tightening force
12270	black	16/32 A	1 kV	2,2 kV	2 mm	5,3 mm	1,2 Nm
12271	red						
12272	blue						
12273	yellow-green						
12274	black	32/63 A	1 kV	2,2 kV	3 mm	6,3 mm	3,0 Nm
12275	red						
12276	blue						
12277	yellow-green						

Protection against electric-shock hazards according to VDE 0100 part 410 and 723, VDE 0104, VDE 0110, VDE 0411 and VDE 0470 as well as IEC 664 and IEC 1010 is guaranteed:

- with lug connection after connecting without voltage, if suitable insulation armoured lugs are used
- with connection via 4 mm safety plug with fixed collar

**Technical data:**

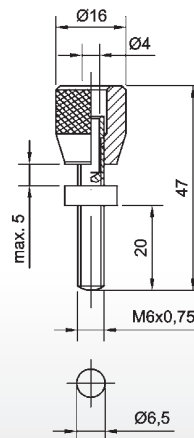
Insulation co-ordination: 4 kV/1  
 Design impact potential: 4 kV  
 Insulating material: III a  
 Insulation resistance: > 10<sup>10</sup> Ω  
 Borehole for safety plug: 4 mm Ø

**Rated-current in case of plug connection:**

Part-No. 12270 up to 12273 16 A  
 Part-No. 12274 up to 12277 32 A

**Grounding post 63 A**

Material: brass



Best-Nr.	current load	plug drilling
05460	16/63 A	4 mm Ø

Rated current by plug connection 16 A

**Binding posts 32-100 A**

Material: brass/polycarbonate


**Technical data**

Working voltage:	1 kV
Insulation co-ordination:	4 kV/1
Design impact potential:	4 kV
Testing voltage:	2,2 kV
Insulating material:	III a
Temperature stability max.:	+ 115° C
Insulation resistance:	> 10 <sup>10</sup> Ω
Borehole for safety plug:	4 mm Ø
Rated current by plug connection max.	16 A

Part-No.	colour	current load	conducting wall thickness (S <sub>0</sub> )	creep-distance S <sub>K max.</sub>	tightening force	dimensions/boreholes mm
12279	black	32 A	2 mm	5,3 mm	1,2 Nm	
12280	red					
12281	blue					
12282	yellow					
12283	green					
12284	violet					
12286	yellow/green					
12287	black	63 A	3 mm	6,3 mm	3 Nm	
12288	red					
12289	blue					
12290	yellow					
12291	green					
12292	violet					
12294	yellow/green					
12295	black	100 A	4 mm	7,5 mm	6 Nm	
12296	red					
12297	blue					
12298	yellow					
12299	green					
12300	violet					
12302	yellow/green					

**Binding posts 63-100 A**

Material: brass/polycarbonate


**Technical data**

Working voltage:	1 kV
Insulation co-ordination:	4 kV/1
Design impact potential:	4 kV
Testing voltage:	2,2 kV
Insulating material:	III a
Temperature stability max.:	+ 115° C
Insulation resistance:	> 10 <sup>10</sup> Ω
Borehole for safety plug:	4 mm Ø
Rated current by plug connection max.	16 A

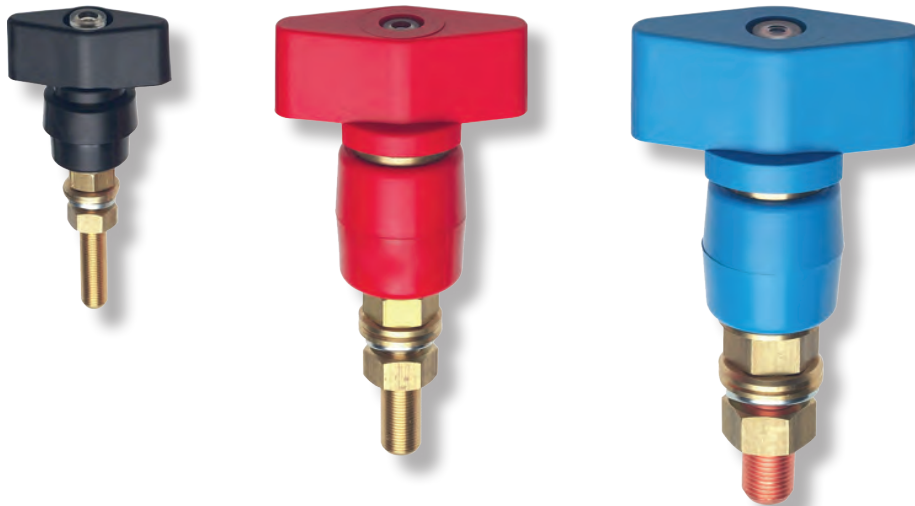
Part-No.	colour	current load	conducting wall thickness (S <sub>0</sub> )	creep-distance S <sub>K max.</sub>	tightening force	dimensions/boreholes mm
05500	black	63 A	3 mm	6,3 mm	3 Nm	
05501	red					
05502	blue					
05503	yellow					
05504	green					
05505	yellow/green					
05550	black	100 A	4 mm	7,8 mm	6 Nm	
05551	red					
05552	blue					
05553	yellow					
05554	green					
05555	yellow/green					

**Binding posts with flat clamp 63-400 A**

Material: brass or copper/polycarbonate

**Technical data**

Working voltage:	1 kV
Insulation co-ordination:	4 kV/1
Design impact potential:	4 kV
Testing voltage:	2,2 kV
Insulating material:	III a
Temperature stability max.:	+ 115° C
Insulation resistance:	> 10 <sup>10</sup> Ω
Borehole for safety plug:	4 mm Ø
Rated current by plug connection max.:	16 A



Part-No.	colour	current load	conducting wall thickness (S <sub>e</sub> )	creep-distance S <sub>K max.</sub>	tightening force	dimensions/boreholes mm
05490	black	63 A	3 mm	6,3 mm	3 Nm	
05491	red					
05492	blue					
05493	yellow					
05494	green					
05495	yellow/green					
05530	black	100 A	4 mm	7,8 mm	6 Nm	
05531	red					
05532	blue					
05533	yellow					
05534	green					
05535	yellow/green					
05540	black	100 A	4 mm	7,8 mm	6 Nm	
05541	red					
05542	blue					
05543	yellow					
05544	green					
05545	yellow/green					
05570	black	200 A	9 mm	18 mm	15,5 Nm	
05571	red					
05572	blue					
05573	yellow					
05574	green					
05575	yellow/green					
05580	black	400 A	9 mm	18 mm	30 Nm	
05581	red					
05582	blue					
05583	yellow					
05584	green					
05585	yellow/green					

**Oiltightness lead-through bolts 16-400 A**

Material: brass or copper/molded bakelite



Part-No.	colour	current load	conducting wall thickness (S <sub>0</sub> )	creep-distance S <sub>K max.</sub>	tightening force	dimensions/boreholes mm
05620	black	16 A	10 mm	16,5 mm	1,2 Nm	
05621	black	63 A	10 mm	15,5 mm	3 Nm	
05622	black	100 A	10 mm	17,5 mm	6 Nm	
05623	black	200 A	10 mm	17 mm	10 Nm	
05624	black	400 A	10 mm	18 mm	30 Nm	

Our standard type of gasket rings made out of SIL C 4400 green are free of asbestos and suitable for smooth surfaces. For rough surfaces it is possible to deliver gasket rings made of nitrilbutadiene caoutchouc (Perbunan). For proper installation, the flange washer fixed to the bolt has to be located inside the enclosure. In general, first lock the lead through bolt with the lower nut, leave a space and then make the electrical connection between the two remaining nuts.

**Technical data**

Working voltage:	1 kV
Insulation co-ordination:	5 kV/1
Design impact potential:	5 kV
Testing voltage:	3,2 kV
Insulating material:	II
Temperature stability:	bis + 100° C
Insulation resistance:	> 10 <sup>9</sup> Ω

**Lead-through bolts 63-400 A**

for switch-board application

Material: brass or copper/polycarbonate



Part-No.	colour	current load	conducting wall thickness (S <sub>G</sub> )	creep-distance S <sub>K max.</sub>	tightening force	dimensions/boreholes mm
05626	black	63 A	3 mm	6,3 mm	3 Nm	
05626/1	red					
05626/2	blue					
05627	black	100 A	4 mm	7,8 mm	6 Nm	
05627/1	red					
05627/2	blue					
05628	black	200 A	9 mm	9 mm	15,5 Nm	
05628/1	red					
05628/2	blue					
05629	black	400 A	9 mm	18 mm	30 Nm	
05629/1	red					
05629/2	blue					

For proper installation, the flange washer fixed to the bolt has to be located inside the enclosure. In general, first lock the lead through bolt with the lower nut, leave a space and then make the electrical connection between the two remaining nuts.

**Technical data**

Working voltage:	1 kV
Insulation co-ordination:	4 kV/1
Design impact potential:	4 kV
Testing voltage:	2,2 kV
Insulating material:	III a
Temperature stability:	bis + 115° C
Insulation resistance:	> 10 <sup>9</sup> Ω

### Cable ties

Material: PA 6.6 self extinguishing  
 Operating temperature: - 40° C up to + 85° C



Part-No.		bundle-Ø max. mm	length mm	width mm	tensile strength min. kg	packing pcs.
natur	black					
30039	30039/s	21	98	2,5	8,2	1000
30042	30042/s	32	135	2,6	8,2	
13230	13230/s	35	140	3,6	13	
30043	30043/s	40	160	2,9	8,2	
30044	30044/s	45	178	4,8	22	
13232	13232/s	50	200	3,6	13	
13231	13231/s	50	200	4,8	22	100
30045	30045/s	68	250	4,8	22	
30049	30049/s	79	290	4,8	22	
30050	30050/s	100	360	4,8	22	
13233	13233/s	100	365	7,8	55	
30051	30051/s	130	450	7,8	55	
30052	30052/s	158	540	7,8	55	
30053	30053/s	200	750	7,8	55	
30054	30054/s	233	780	9,0	77	

black colour = weather-proof design

### Releasable cable ties

Material: PA 6.6 self extinguishing  
 Operating temperature: - 40° C up to + 85° C



Part-No.	bundle-Ø max. mm	length mm	width mm	tensile strength min. kg	packing pcs.
13228	50	200	4,8	22,2	1000
13229	76	300	4,8	22,2	1000

The same handling as normal cable ties, but easy to release. So a lowering of costs is possible.

### Cable tie mounts

adhesive or screw mounts  
 Material: PA 6.6, self-extinguishing  
 Operating temperature: - 40° C up to + 85° C



Part-No.	length mm	width mm	height mm	cable tie width max. mm	mounting
13240	19	19	4,3	3,6	adhesive
13241	27	27	4,3	4,8	adhesive
13242	22,5	15	11	9	screwable
13243	27	27	8	4,8	

### Adjustable cable tie tool



#### Part-No. 30056

Stabilized adjustable cable tie tool suitable for cable ties up to 4,8 mm width. Easy and safety handling. The tensile strength is adjustable and the value can be inspected through a little window in the tool grip. When cables are bundled at the required strength, the excess tie tail is automatically cropped. So it is possible to prevent injuries caused through a cable tie excess.