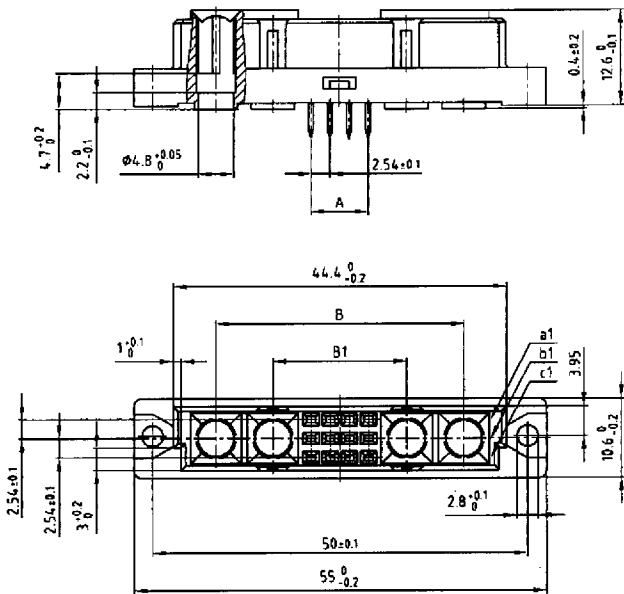


Female connector  
mini type M  
– two-sided spring –

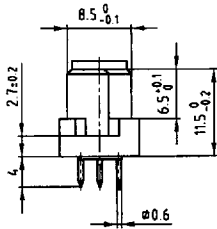
PCB-hole patterns see pages 210/211



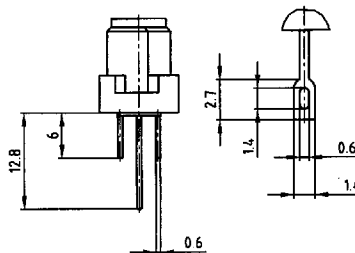
No. of pos.	A ± 0,1	B ± 0,1	B <sub>1</sub> ± 0,1
30 + 2	9 x 2,54 = 22,86	13 x 2,54 = 33,02	-
12 + 4	3 x 2,54 = 7,62	13 x 2,54 = 33,02	7 x 2,54 = 17,78

Kinds of contacts

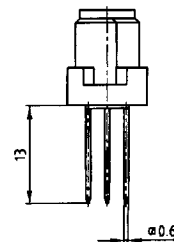
Solder pin 4 mm



Solder lug



Wire wrap

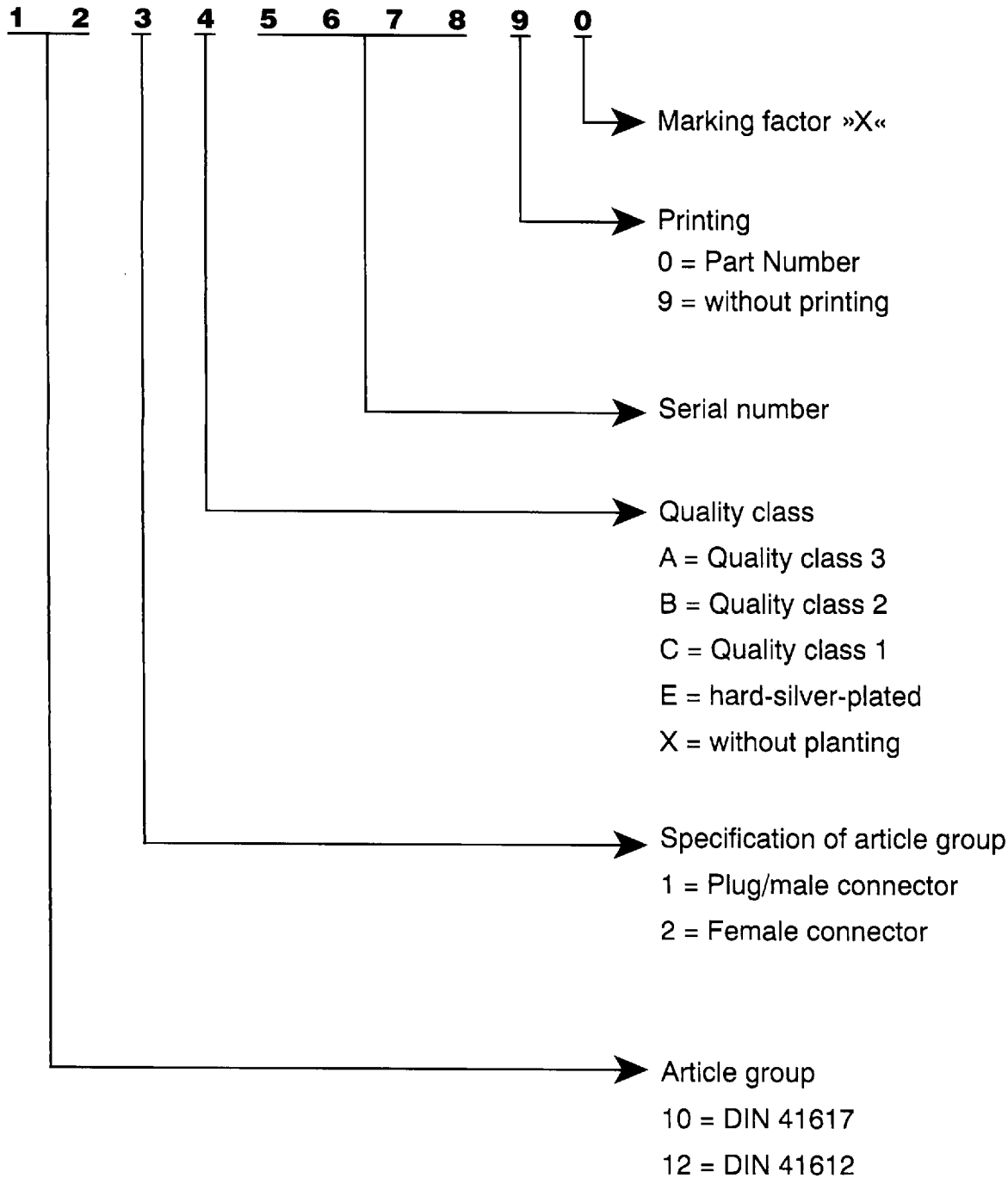


Kat 1 | 6GA

## Part numbers

No. of Pos.	Version	Female connector mini type M, two-sided spring		
		Solder pin 4 mm	Solder lug	Wire wrap
30 + 2		HM 30 + 2 F 3 P 4 a + b + c 122 A 12189 X	HM 30 + 2 F 3 L a + b + c 122 A 12229 X	HM 30 + 2 F 3 WW a + b + c 122 A 12269 X
20 + 2		HM 20 + 2 F 3 P 4 a + c 122 A 12199 X	HM 20 + 2 F 3 L a + c 122 A 12239 X	HM 20 + 2 F 3 WW a + c 122 A 12279 X
12 + 4		HM 12 + 4 F 3 P 4 a + b + c 122 A 12209 X	HM 12 + 4 F 3 L a + b + c 122 A 12249 X	HM 12 + 4 F 3 WW a + b + c 122 A 12289 X
8 + 4		HM 8 + 4 F 3 P 4 a + c 122 A 12219 X	HM 8 + 4 F 3 L a + c 122 A 12259 X	HM 8 + 4 F 3 WW a + c 122 A 12299 X

### Part Number



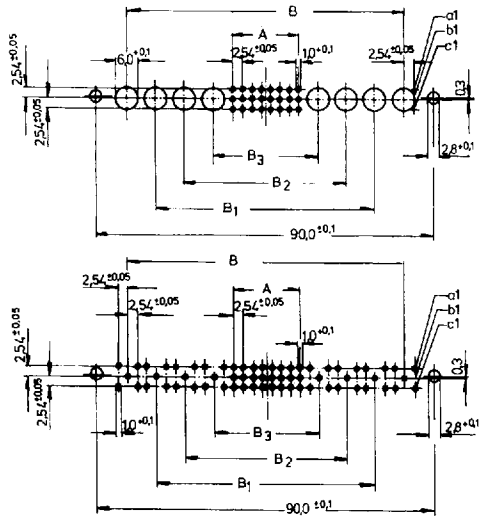
### Order example

Male connector type C 64 pos. angled solder pin without printing	
Quality class	Part Number
<b>3</b>	C 64 M 3 A a + c <b>121 A 10139 X</b>
<b>2</b>	C 64 M 2 A a + c <b>121 B 10139 X</b>
<b>1</b>	C 64 M 1 A a + c <b>121 C 10139 X</b>

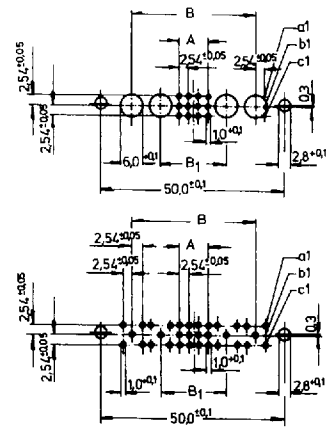
■ 9017935 0000163 041 ■

## PCB drilling details for female connectors

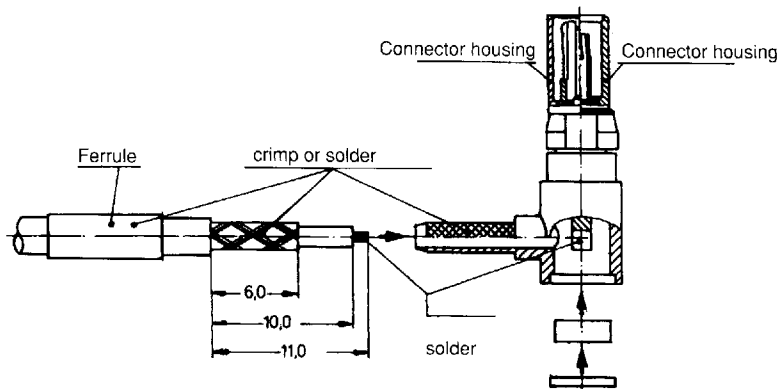
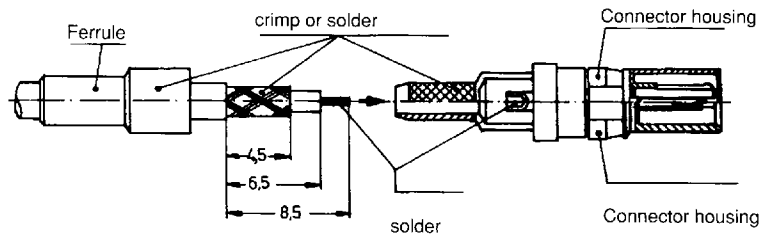
Type M



Type M/2



## Assembly information



Technical Data		DIN 41617	DIN 41617/ 41612	Type B	Type B/2	Type C	Type C/2	Type M
Initial contact resistance		≤ 15 mΩ	≤ 10 mΩ	≤ 20 mΩ	≤ 20 mΩ	≤ 20 mΩ	≤ 20 mΩ	≤ 20 mΩ
Initial insulation resistance	QUAL. CL 1	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>11</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω
	QUAL. CL 2	≥ 10 <sup>11</sup> Ω		≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω	≥ 10 <sup>12</sup> Ω
	QUAL. CL 3	≥ 10 <sup>10</sup> Ω		≥ 10 <sup>11</sup> Ω	≥ 10 <sup>11</sup> Ω	≥ 10 <sup>11</sup> Ω	≥ 10 <sup>11</sup> Ω	≥ 10 <sup>11</sup> Ω
Clearance distance	Contact/ground	≥ 1 mm	≥ 1,2 mm					
	Contact/contact	≥ 0,5 mm		≥ 1,2 mm	≥ 1,2 mm	≥ 1,2 mm	≥ 1,2 mm	≥ 1,2 mm
Creepage distance	Contact/ground	≥ 1 mm	≥ 1,2 mm					
	Contact/contact	≥ 1,0 mm		≥ 1,2 mm	≥ 1,2 mm	≥ 1,2 mm	≥ 1,2 mm	≥ 1,2 mm
Test voltage V r.m.s.	Contact/ground	900 V	1000 V	1000 V	1000 V	1000 V	1000 V	1000 V
	Contact/contact	1150 V	1550 V	1550 V	1550 V	1550 V	1550 V	1550 V
Working voltage*		250 V	250 V	250 V	250 V	250 V	250 V	250 V
Insulation group*		A	A	A	A	A	A	A
Working current **	+ 20° C	GT 1+2 = 4 A max.	4 A max.	2 A	2 A	2 A	2 A	2 A
	+ 70° C			1 A	1 A	1 A	1 A	1 A
	+ 100° C	GT 3 = 2 A max.		0,5 A	0,5 A	0,5 A	0,5 A	0,5 A
Operating temperature	Quality cl. I	-65° ... + 125° C	-65° ... + 125° C	-55° C	-55° C	-55° C	-55° C	-55° C
	Quality cl. II	-55° ... + 125° C		...	...	...	...	...
	Quality cl. III	-25° ... + 85° C		+125° C	+125° C	+125° C	+125° C	+125° C
Moulding material	PC = Polycarbonat	X	X					
	PBTP = Polyester			X	X	X	X	X
	PA = Polyamid							
Contact material								
Coding system	with coding			X	X	X	X	X
	without coding	X	X					
Flammability	PC = Polycarbonat	UL 94 V-1						
	PBTP = Polyester	UL 94 V-0						
	PA = Polyamid	UL 94 H-B						
Insertion and withdrawal forces	F max.	13p. 32 N/AU • 30 N/AG		32p 30N	16p 15N	32p 30N	16p 15N	78+2p 90 52+2p 75 60+4p 85 40+4p 70 42+6p 85 28+6p 70 24+8p 80
	F max.	21p. 33 N/AU • 46 N/AG		64p 60N	32p 30N	64p 60N	32p 30N	
	F max.	31p. 48 N/AU • 70 N/AG	31+1p 80N				96p 90N	48p 45N
Life	Quality class 1 ≥ 500 cycles	X	X	X	X	X	X	X
	Quality class 2 ≥ 400 cycles	X		X	X	X	X	X
	Quality class 3 ≥ 50 cycles	X		X	X	X	X	X
	AG	X						

\* according to SEV 50 V

\*\* Derating diagrams see page 189