



heavy | mate[®] E

- Rated voltage 500 V
- Rated current 16 A ... 22 A
- Termination: screw, crimp, tension spring
- Numbers of contacts: 6, 10, 16, 24, 48



Approvals, Testhouse	Characteristics	Approval-Number
SEV	400 V, 16 A	
UL	600 V, 16 A	E 63093
CSA	600 V, 16 A	48932

In general approvals refer to representative versions of the connector series. Extent and specification of tests upon request.

General information

- Contact inserts without crimp contacts.
- Connectors series heavy|mate® E may be engaged or disengaged when live but without electrical load. If these connectors are mated or unmated under load, the load shall be reduced to 10 % of the rated current.
- Crimping tools and processing instructions see separate catalogue „Tools“.
- Low and high profile housings are usable.
- If wire ferrule are used, screw terminals without wire protection are preferred.

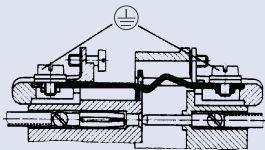


No standard for this series, but:

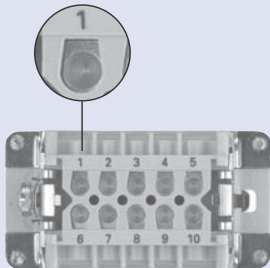
Interchangeable with other products
 a) contact insert to contact insert 6, 10, 16, 24 contacts
 b) contact insert to housing 6, 10, 16, 24 contacts

Housings are designed according to DIN EN 175 301 - 801

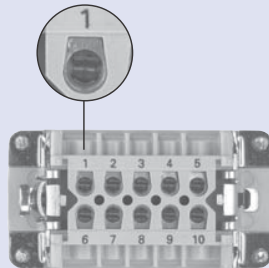
First-to-mate last-to-break protective ground contact



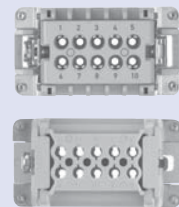
Contact inserts for screw termination, screw termination with wire protection and for crimp termination



Screw termination



Screw termination with wire protection



Crimp termination

Range of housings

Size E6	Size E10	Size E16
Size E24	Size E48	

heavy|mate® E Characteristics contact inserts

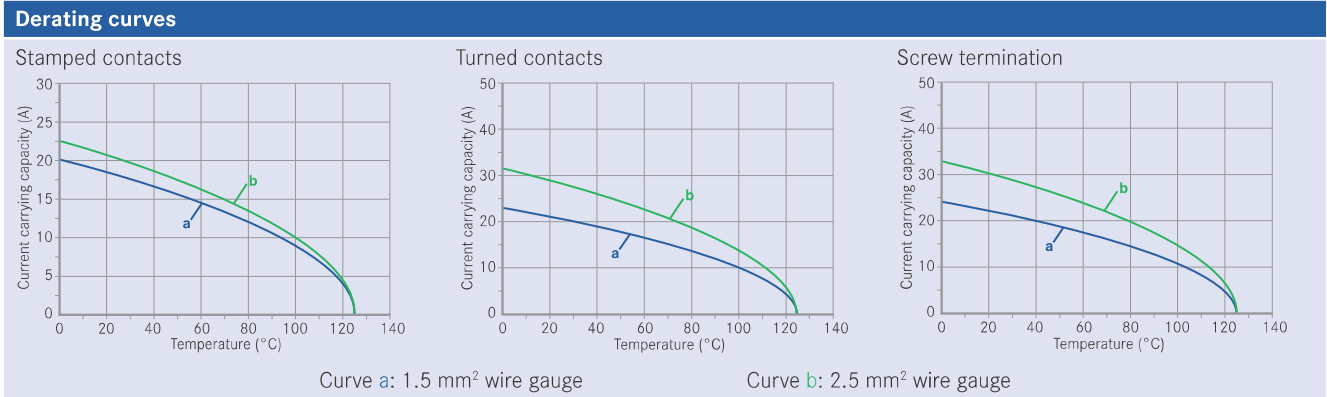
General Characteristics	Standard	Value				
Number of contacts		6 + ☉	10 + ☉	16 + ☉	24 + ☉	48 + ☉
Termination technique		crimp / screw / tension spring / push-in				
Wire gauge		0.5 - 4 mm ²				
Flammability	UL 94	V-0				
Electrical Characteristics						
Rated voltage	IEC 60664-1	max. 500 V (600 V UL / CSA ¹⁾)				
Pollution degree	IEC 60664-1	3				
Material group	IEC 60664-1	III b				
Installation (overvoltage) category	IEC 60664-1	III				
Rated impulse withstand voltage	IEC 60664-1	6,0 kV				
Current carrying capacity	IEC 60512-5-2	see derating curves				
Rated current T _{amp} = 40 °C		22 A	19 A	19 A	18 A	18 A
Contact resistance	IEC 60512-2-1	< 5 mΩ				
Insulation resistance	IEC 60512-3-1	≥ 10 ¹⁰ Ω				
Climatical Characteristics						
Climatic category	IEC 60068-1	40 / 125 / 21				
Upper temperature	IEC 60512-11-9	+ 125 °C				
Lower temperature	IEC 60512-11-10	- 40 °C				
Mechanical Characteristics						
IP-degree of protection pin insert ²⁾	IEC 60529	unmated IP00			mated IP20	
IP-degree of protection socket insert ²⁾	IEC 60529	unmated IP20			mated IP20	
Weight:						
male insert crimp (for stamped contacts)		33 g	39 g	45 g	55 g	110 g
female insert crimp (for stamped contacts)		33 g	39 g	49 g	62 g	124 g
male insert screw		43 g	57 g	78 g	105 g	210 g
female insert screw		43 g	57 g	78 g	106 g	212 g
Mechanical operation	IEC 60512-9-1	> 500 mating cycles				
Materials						
Insert		PC GV (Polycarbonat)				
Colour insert		grey				
Screw contacts		CuZn (brass)				
Contact plating		Ag (silver) / Au (gold)				

Description	Part Number	Drawing	Figure
Screw termination			
Male insert for screw termination	C146 10A006 002 1		
Male insert with wire protection for screw termination	C146 10A006 102 1		
Female insert for screw termination	C146 10B006 002 1		
Female insert with wire protection for screw termination	C146 10B006 102 1		
Tension spring			
Male insert with Tension spring	C146 10A006 400 1		
Female insert with Tension spring	C146 10B006 400 1		
Push-in			
Male insert with push-in connection	C146 10A006 600 1		
Female insert with push-in connection	C146 10B006 600 1		

Description	Part Number	Drawing	Figure
Stamped crimp contacts (Please order contacts separately, see page 58)			
Male insert for stamped crimp contacts	C146 10A006 000 1		
Female insert for stamped crimp contacts	C146 10B006 000 1		

Turned crimp contacts (Please order contacts separately, see page 58)			
Male insert for turned crimp contacts	C146 10A006 500 1		
Female insert for turned crimp contacts	C146 10B006 500 1		

Pin layout		Assembly instruction	
Male insert	Female insert	Panel cut out (insert)	

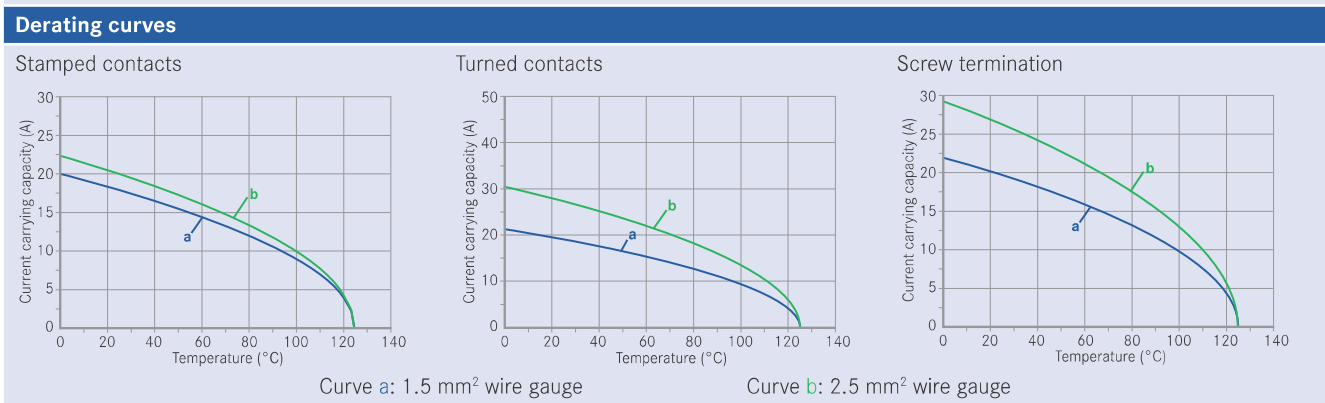


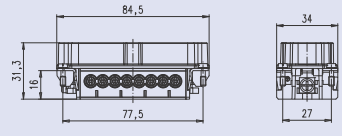

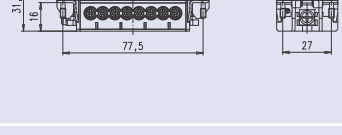

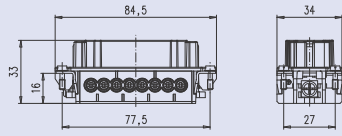

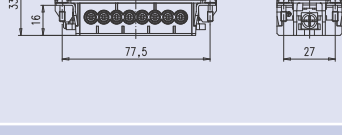

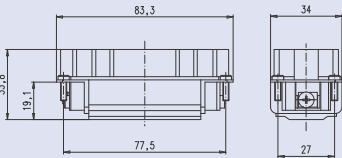

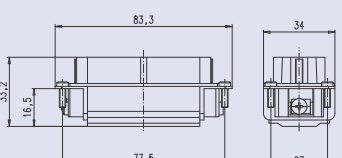

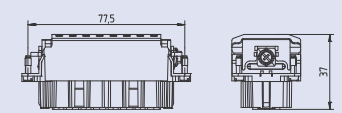

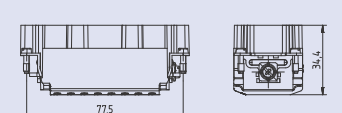
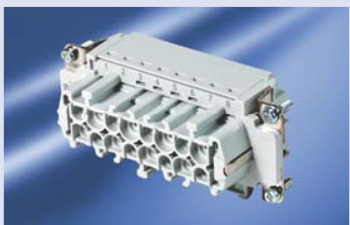
Description	Part Number	Drawing	Figure
Screw termination			
Male insert for screw termination	C146 10A010 002 1		
Male insert with wire protection for screw termination	C146 10A010 102 1		
Female insert for screw termination	C146 10B010 002 1		
Female insert with wire protection for screw termination	C146 10B010 102 1		
Tension spring			
Male insert with Tension spring	C146 10A010 400 1		
Female insert with Tension spring	C146 10B010 400 1		
Push-in			
Male insert with push-in connection	C146 10A010 600 1		
Female insert with push-in connection	C146 10B010 600 1		

Description	Part Number	Drawing	Figure
Stamped crimp contacts (Please order contacts separately, see page 58)			
Male insert for stamped crimp contacts	C146 10A010 000 1		
Female insert for stamped crimp contacts	C146 10B010 000 1		

Turned crimp contacts (Please order contacts separately, see page 58)			
Male insert for turned crimp contacts	C146 10A010 500 1		
Female insert for turned crimp contacts	C146 10B010 500 1		

Pin layout		Assembly instruction	
Male insert	Female insert	Panel cut out (insert)	

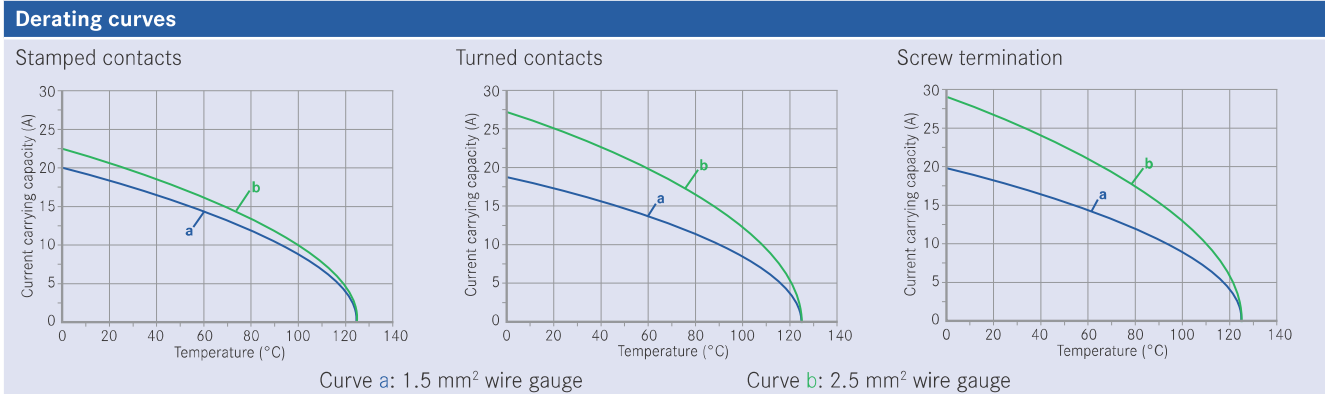


Description	Part Number	Drawing	Figure
Screw termination			
Male insert for screw termination	C146 10A016 002 1		
Male insert with wire protection for screw termination	C146 10A016 102 1		
Female insert for screw termination	C146 10B016 002 1		
Female insert with wire protection for screw termination	C146 10B016 102 1		
Tension spring			
Male insert with Tension spring	C146 10A016 400 1		
Female insert with Tension spring	C146 10B016 400 1		
Push-in			
Male insert with push-in connection	C146 10A016 600 1		
Female insert with push-in connection	C146 10B016 600 1		

Description	Part Number	Drawing	Figure
Stamped crimp contacts (Please order contacts separately, see page 58)			
Male insert for stamped crimp contacts	C146 10A016 000 1		
Female insert for stamped crimp contacts	C146 10B016 000 1		

Turned crimp contacts (Please order contacts separately, see page 58)			
Male insert for turned crimp contacts	C146 10A016 500 1		
Female insert for turned crimp contacts	C146 10B016 500 1		

Pin layout		Assembly instruction
Male insert	Female insert	Panel cut out (insert)

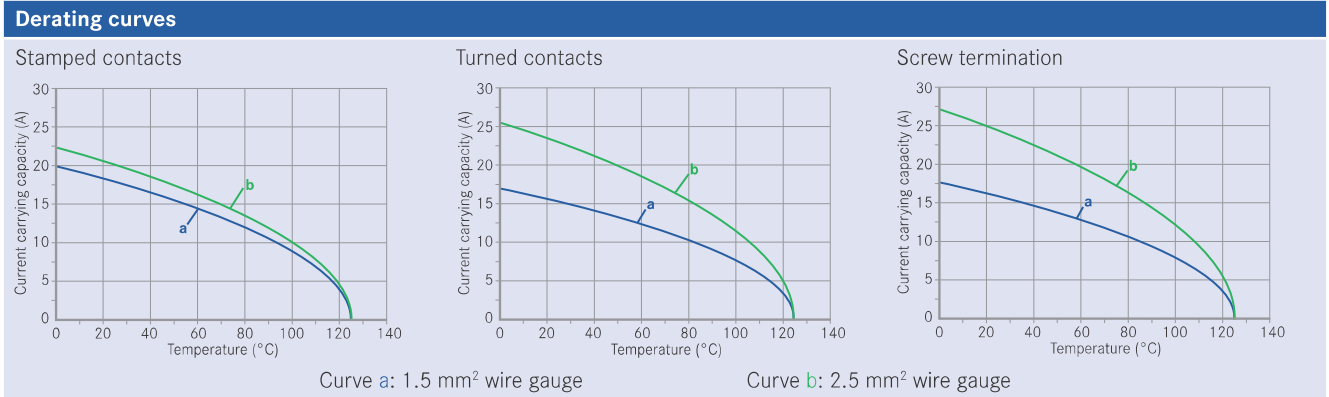


Description	Part Number	Drawing	Figure
Screw termination			
Male insert for screw termination	C146 10A024 002 1		
Male insert with wire protection for screw termination	C146 10A024 102 1		
Female insert for screw termination	C146 10B024 002 1		
Female insert with wire protection for screw termination	C146 10B024 102 1		
Tension spring			
Male insert with Tension spring	C146 10A024 400 1		
Female insert with Tension spring	C146 10B024 400 1		
Push-in			
Male insert with push-in connection	C146 10A024 600 1		
Female insert with push-in connection	C146 10B024 600 1		

Description	Part Number	Drawing	Figure
Stamped crimp contacts (Please order contacts separately, see page 58)			
Male insert for stamped crimp contacts	C146 10A024 000 1		
Female insert for stamped crimp contacts	C146 10B024 000 1		

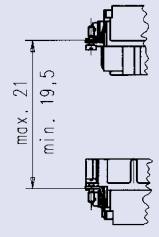
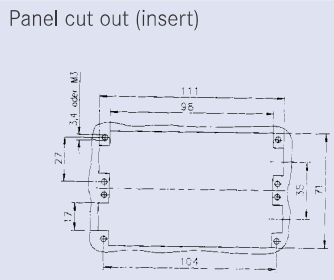
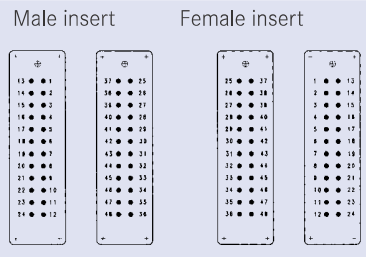
Turned crimp contacts (Please order contacts separately, see page 58)			
Male insert for turned crimp contacts	C146 10A024 500 1		
Female insert for turned crimp contacts	C146 10B024 500 1		

Pin layout		Assembly instruction	
Male insert	Female insert	Panel cut out (insert)	

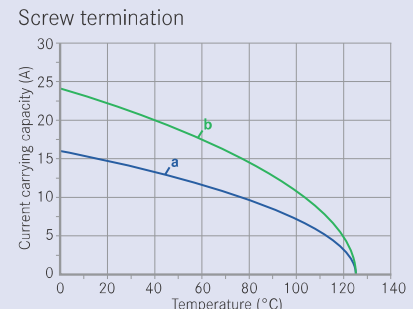
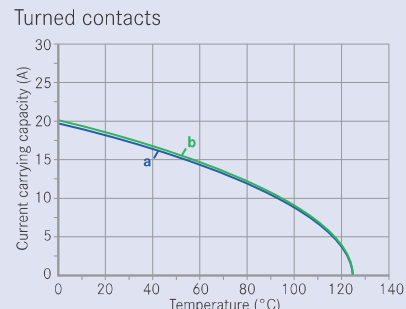
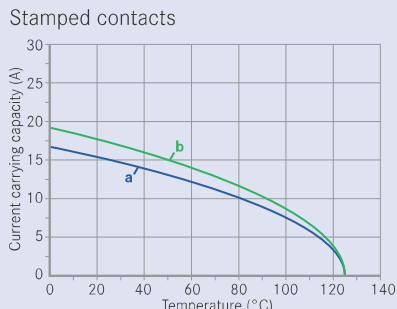


Description	Part Number	Drawing	Figure
Screw termination			
Male insert for screw termination	C146 10A024 002 1 + C146 10A024 002 1		
Male insert with wire protection for screw termination	C146 10A024 102 1 + C146 10A024 102 1		
Female insert for screw termination	C146 10B024 002 1 + C146 10B024 002 1		
Female insert with wire protection for screw termination	C146 10B024 102 1 + C146 10B024 102 1		
Stamped crimp contacts (Please order contacts separately, see page 58)			
Male insert for stamped crimp contacts	C146 10A024 000 1 + C146 10A024 005 1		
Female insert for stamped crimp contacts	C146 10B024 000 1 + C146 10B024 005 1		
Turned crimp contacts (Please order contacts separately, see page 58)			
Male insert for turned crimp contacts	C146 10A024 500 1 + C146 10A024 505 1		
Female insert for turned crimp contacts	C146 10B024 500 1 + C146 10B024 505 1		

Pin layout **Assembly instruction**



Derating curves



Curve a: 1.5 mm² wire gauge

Curve b: 2.5 mm² wire gauge

Large range of wire gauges

N01 025 0001 1

N01 025 0010 1



Gas-tight (coldwelding)

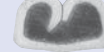
0,5

1,0

1,5

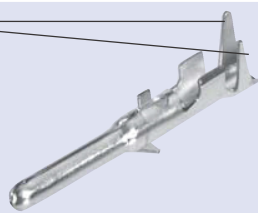
1,5

2,5



Stamped crimp contacts with insulation crimp, to absorb mechanical stress from the crimped connection

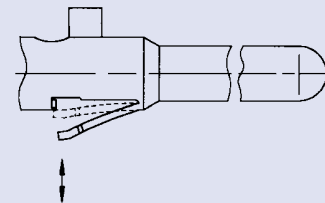
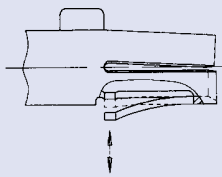
Insulation grip



Mechanical retention spring stop on female and male contact

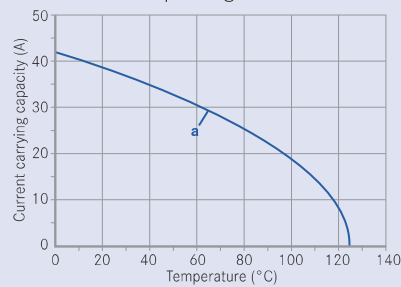
Female contact

Male contact



High current carrying capacity


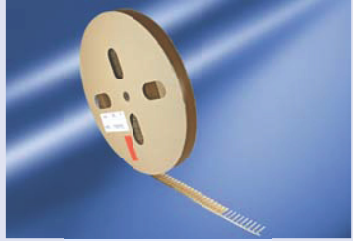
Example single contact



Curve a: 2.5 mm² wire gauge

Stamped crimp contacts		
Electrical Characteristics		
Contact resistance	IEC 60512-2-1	< 5 m Ω
Mechanical Characteristics		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Male contact		Cu Zn (brass)
Female contact		Cu Sn (tin bronze)
Contact plating		Ag (silver) / Au (gold)
Turned crimp contacts		
Electrical Characteristics		
Contact resistance	IEC 60512-2-1	≤ 5 m Ω
Climatical Characteristics		
Upper temperature	IEC 60512-11-9	+ 125 °C
Lower temperature	IEC 60512-11-10	- 40 °C
Mechanical Characteristics		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Male contact		Cu Zn (brass)
Female contact		Cu Zn (brass)
Contact plating		Ag (silver) / Au (gold)

heavy|mate® E Stamped crimp contacts

Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Stamped single contacts						
silver plating	0.5 - 1.5 mm ²	20 - 16	100	VN01 025 0001 101	VN02 025 0001 101	
	1.5 - 2.5 mm ²	16 - 14	100	VN01 025 0010 101	VN02 025 0010 101	
gold plating	0.5 - 1.5 mm ²	20 - 16	100	VN01 025 0001 102	VN02 025 0001 102	
	1.5 - 2.5 mm ²	16 - 14	100	VN01 025 0010 102	VN02 025 0010 102	
Stamped Contacts on reel for hand crimp tools						
silver plating	0.5 - 1.5 mm ²	20 - 16	200	ZN01 025 0001 1	ZN02 025 0001 1	
	1.5 - 2.5 mm ²	16 - 14	100	ZN01 025 0010 1	ZN02 025 0010 1	
gold plating	0.5 - 1.5 mm ²	20 - 16	200	ZN01 025 0001 2	ZN02 025 0001 2	
	1.5 - 2.5 mm ²	16 - 14	100	ZN01 025 0010 2	ZN02 025 0010 2	
Stamped contacts on reel for crimp machines contact feeding left hand side						
silver plating	0.5 - 1.5 mm ²	20 - 16	2000	TN01 025 0001 1	TN02 025 0001 1	
	1.5 - 2.5 mm ²	16 - 14	2000	TN01 025 0010 1	TN02 025 0010 1	
Tools for turned crimp contacts						
Description	for wire gauge	Part Number		Tool		
		Contact locator	Crimping dies			
Removal tool for contacts	-	-	-	FG 0200 146 1		
Crimping tool for stamped single contacts	0.5 - 1.5 mm ²	TA 0004 146 000 1	TA 0000 163	TA 0000		
	1.5 - 2.5 mm ²	TA 0005 146 000 3	TA 0000 141			
4-indent crimping tool for turned contacts	0.5 - 4.0 mm ²	-	-	TB 0600 146		
Further tools see catalogue "Tools"						

heavy|mate® E Turned crimp contacts

Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned crimp contacts single contact						
silver plating	0.14 - 0.37 mm ²	22 - 26	100	VN01 025 0055 1C	VN02 025 0055 1C	
	0.5 mm ²	20	100	VN01 025 0035 1C	VN02 025 0035 1C	
	0.75 - 1.0 mm ²	18	100	VN01 025 0036 1C	VN02 025 0036 1C	
	1.5 mm ²	16	100	VN01 025 0037 1C	VN02 025 0037 1C	
	2.5 mm ²	14	100	VN01 025 0038 1C	VN02 025 0038 1C	
	4.0 mm ²	12	100	VN01 025 0039 1C	VN02 025 0039 1C	
gold plating	0.14 - 0.37 mm ²	22 - 26	100	VN01 025 0055 2C	VN02 025 0055 2C	
	0.5 mm ²	20	100	VN01 025 0035 2C	VN02 025 0035 2C	
	0.75 - 1.0 mm ²	18	100	VN01 025 0036 2C	VN02 025 0036 2C	
	1.5 mm ²	16	100	VN01 025 0037 2C	VN02 025 0037 2C	
	2.5 mm ²	14	100	VN01 025 0038 2C	VN02 025 0038 2C	
	4.0 mm ²	12	100	VN01 025 0039 2C	VN02 025 0039 2C	
Tools for turned crimp contacts						
Description	for wire gauge	Part Number				
		Contact locator	Crimping dies	Tool		
Removal tool for contacts				FG 0300 146 7		
Crimping tool for stamped single contacts	0.5 - 2.5 mm ²	TA 0010 146 000 6	TA 0000 144	TA 0000		
	4 mm ²	TA 0010 146 000 7	TA 0000 124	TA 0500		
4-indent crimping tool for turned contacts				TB 0600 146		
Further tools see catalogue "Tools"						