



heavy | mate[®] Q

- Compact design
- Even in a metal housing
- Rated voltage up to 690 V
- Numbers of contacts: 5 + PE, 4/2 + PE, 7 + PE, 8 + PE, 12 + PE, 17 + PE

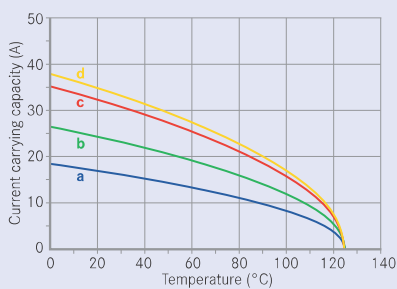


Approvals, Testhouse	Characteristics	Approval-Number
UL 	In preparation	In preparation
CSA 	In preparation	In preparation

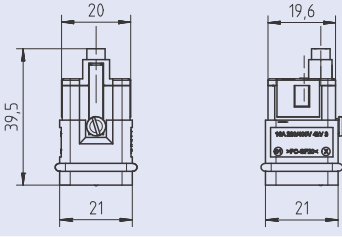

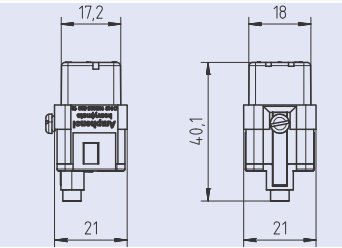

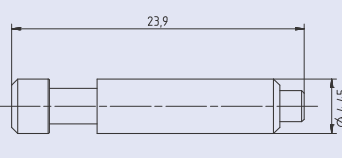

heavy|mate® Q Characteristics contact inserts 5 + PE

General Characteristics	Standard	Value
Number of contacts		5 + PE
Termination technique		crimp
Wire gauge		0.5 – 4.0 mm ² (AWG 20-12)
Flammability	UL94	V-0
Electrical Characteristics		
Rated voltage	IEC 60664-1	400 V (conductor – conductor) 230 V (conductor – earth)
Pollution degree	IEC 60664-1	3
Installation (overvoltage) category	IEC 60664-1	3
Material group	IEC 60664-1	3b
Rated impulse withstand voltage	IEC 60664-1	6 kV
Current carrying capacity	IEC 60512-5-2	see derating curves
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		
Mechanical operation	IEC 60512-9-1	≥500 mating cycles
Materials		
Insert		PC
Colour insert		grey
Contacts		Cu-alloy
Contact plating		Ag (silver) / Au (gold)

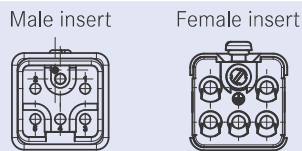
Derating Curves



Curve	Wire gauge
a	1.0 mm ²
b	1.5 mm ²
c	2.5 mm ²
d	4.0 mm ²

Description	Part Number	Drawing	Figure
Contact insert 5 +PE (Please order contacts separately)			
Male insert	C146 10A005 500 12		
Female insert	C146 10B005 500 12		
Coding element			
Coding element	N17 045 000 1		

Contact arrangement

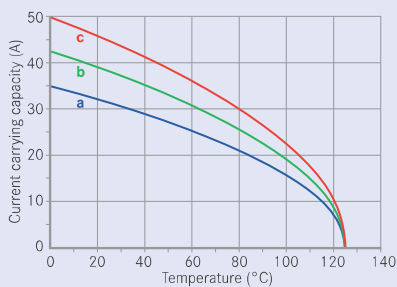


Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned 2.5 mm crimp contacts single contact						
silver plating	0.5 mm ²	20	100	VN01 025 0035 1C	VN02 025 0035 1C	
	0.75 – 1.0 mm ²	18	100	VN01 025 0036 1C	VN02 025 0036 1C	
	1.5 mm ²	16	100	VN01 025 0037 1C	VN02 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	0.5 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	

heavy|mate® Q Characteristics contact inserts 4/2 + PE

General Characteristics	Standard	Value
Number of contacts		4/2 + PE
Termination technique		crimp
Wire gauge		1.5 – 6.0 mm ² (AWG 16-10)
Flammability	UL94	V-0
Electrical Characteristics		
Rated voltage	IEC 60664-1	Power: 400 V (Leiter - Erde) 690 V (Leiter - Leiter) Signal: 250 V
Pollution degree	IEC 60664-1	3
Installation (overvoltage) category	IEC 60664-1	3
Material group	IEC 60664-1	3b
Rated impulse withstand voltage	IEC 60664-1	6 kV / 4 kV
Current carrying capacity	IEC 60512-5-2	see derating curves
Contact resistance	IEC 60512-2-1	≤ 5 mΩ
Insulation resistance	IEC 60512-3-1	≥ 10 ¹² 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		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Insert		PC
Colour insert		grey
Contacts		Cu-alloy
Contact plating		Ag (silver)

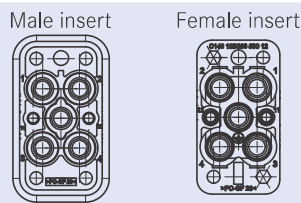
Derating Curves



Curve	Wire gauge
a	2.5 mm ²
b	4 mm ²
c	6 mm ²

Description	Part Number	Drawing	Figure
Contact insert 4/2 +PE (Please order contacts separately)			
Male insert	C146 10A006 500 12		
Female insert	C146 10B006 500 12		

Contact arrangement

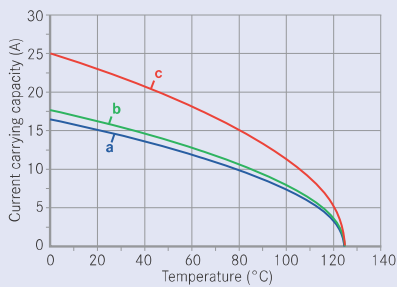


Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned 4 mm crimp contacts single contact						
silver plating	1,5 mm ²	16	100	VN01 040 0010 1C	VN02 040 0010 1C	
	2,5 mm ²	14	100	VN01 040 0011 1C	VN02 040 0011 1C	
	4 mm ²	12	100	VN01 040 0012 1C	VN02 040 0012 1C	
	6 mm ²	10	100	VN01 040 0013 1C	VN02 040 0013 1C	
Turned 1.6 mm crimp contacts single contact						
silver plating	0,14 - 0,37 mm ²	26-22	100	VN01 016 0024 1C	VN02 016 0024 1C	
	0,5 mm ²	20	100	VN01 016 0025 1C	VN02 016 0025 1C	
	0,75 - 1,0 mm ²	20-16	100	VN01 016 0026 1C	VN02 016 0026 1C	
	1,5 mm ²	16-15	100	VN01 016 0027 1C	VN02 016 0027 1C	
	2,5 mm ²	14	100	VN01 016 0028 1C	VN02 016 0028 1C	

heavy|mate® Q Characteristics contact inserts 7 + PE

General Characteristics	Standard	Value
Number of contacts		7 + PE
Termination technique		crimp
Wire gauge		0.14 – 2.5mm ² (AWG 26-14)
Flammability	UL94	V-0
Electrical Characteristics		
Rated voltage	IEC 60664-1	400V
Pollution degree	IEC 60664-1	3
Installation (overvoltage) category	IEC 60664-1	3
Material group	IEC 60664-1	3b
Rated impulse withstand voltage	IEC 60664-1	6.0 kV
Current carrying capacity	IEC 60512-5-2	see derating curves
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		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Insert		PC
Colour insert		grey
Contacts		Cu-alloy
Contact plating		Ag (silver) /Au (gold)

Derating Curves



Curve	Wire gauge
a	0.75 mm ²
b	1.5 mm ²
c	2.5 mm ²

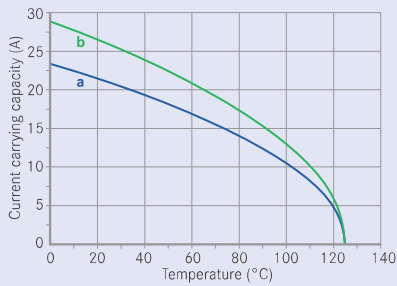
Description	Part Number	Drawing	Figure
Contact insert 7 +PE (Please order contacts separately)			
Male insert	C146 10A007 500 12		
Female insert	C146 10B007 500 12		
Coding element			
Male insert	N17 059 000 1		
Female insert	N17 059 000 2		
Contact arrangement			
Male insert		Female insert	

Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned 1.6 mm crimp contacts single contact						
silver plating	0.14 - 0.37 mm ²	26-22	100	VN01 016 0024 1C	VN02 016 0024 1C	
	0.5 mm ²	20	100	VN01 016 0025 1C	VN02 016 0025 1C	
	0.75 - 1.0 mm ²	20-16	100	VN01 016 0026 1C	VN02 016 0026 1C	
	1.5 mm ²	16-15	100	VN01 016 0027 1C	VN02 016 0027 1C	
	2.5 mm ²	14	100	VN01 016 0028 1C	VN02 016 0028 1C	
gold plating	0.14 - 0.37 mm ²	26-22	100	VN01 016 0024 2C	VN02 016 0024 2C	
	0.5 mm ²	20	100	VN01 016 0025 2C	VN02 016 0025 2C	
	0.75 - 1.0 mm ²	20-16	100	VN01 016 0026 2C	VN02 016 0026 2C	
	1.5 mm ²	16-15	100	VN01 016 0027 2C	VN02 016 0027 2C	
	2.5 mm ²	14	100	VN01 016 0028 2C	VN02 016 0028 2C	

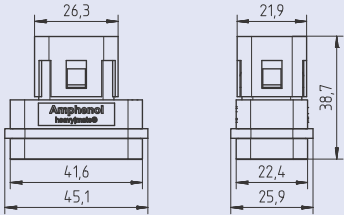

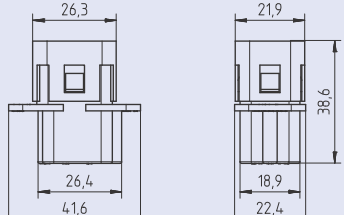


heavy|mate® Q Characteristics contact inserts 8 + PE

General Characteristics	Standard	Value
Number of contacts		8 + PE
Termination technique		crimp
Wire gauge		0.5 – 4.0 mm ² (AWG 20-12)
Flammability	UL94	V-0
Electrical Characteristics		
Rated voltage	IEC 60664-1	500 V
Pollution degree	IEC 60664-1	3
Installation (overvoltage) category	IEC 60664-1	3
Material group	IEC 60664-1	3b
Rated impulse withstand voltage	IEC 60664-1	6 kV
Current carrying capacity	IEC 60512-5-2	see derating curves
Contact resistance	IEC 60512-2-1	≤ 5 mΩ
Insulation resistance	IEC 60512-3-1	≥ 10 ¹² 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		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Insert		PC
Colour insert		grey
Contacts		Cu-alloy
Contact plating		Ag (silver) /Au (gold)

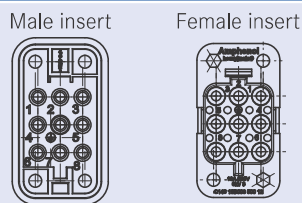
Derating Curves



Curve	Wire gauge
a	1.5 mm ²
b	2.5 mm ²

Description	Part Number	Drawing	Figure
Contact insert 8 +PE (Please order contacts separately)			
Male insert	C146 10A008 500 12		
Female insert	C146 10B008 500 12		
Coding element			
Coding element	N17 045 000 1		

Contact arrangement



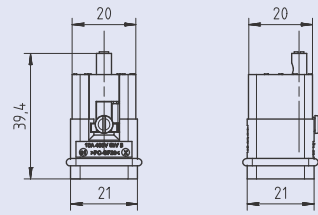

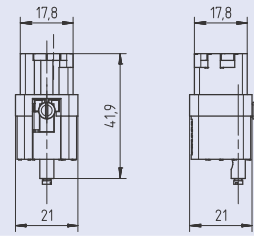


Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned 2.5 mm crimp contacts single contact						
silver plating	0.5 mm ²	20	100	VN01 025 0035 1C	VN02 025 0035 1C	
	0.75 – 1.0 mm ²	18	100	VN01 025 0036 1C	VN02 025 0036 1C	
	1.5 mm ²	16	100	VN01 025 0037 1C	VN02 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	0.5 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	

heavy|mate® Q Characteristics contact inserts 12 + PE

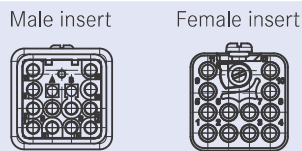
General Characteristics	Standard	Value
Number of contacts		12 + PE
Termination technique		crimp
Wire gauge		0.14 – 2.5 mm ² (AWG 26-14)
Flammability	UL94	V-0
Electrical Characteristics		
Rated voltage	IEC 60664-1	400 V
Pollution degree	IEC 60664-1	3
Installation (overvoltage) category	IEC 60664-1	3
Material group	IEC 60664-1	3b
Rated impulse withstand voltage	IEC 60664-1	6 kV
Current carrying capacity	IEC 60512-5-2	see derating curves
Contact resistance	IEC 60512-2-1	≤ 5 mΩ
Insulation resistance	IEC 60512-3-1	≥ 10 ¹² 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		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Insert		PC
Colour insert		grey
Contacts		Cu-alloy
Contact plating		Ag (silver) / Au (gold)

Derating Curves

In preparation

Description	Part Number	Drawing	Figure
Contact insert 12 +PE (Please order contacts separately)			
Male insert	C146 10A012 500 12		
Female insert	C146 10B012 500 12		
Coding element			
Coding element	N17 028 000 1		

Contact arrangement

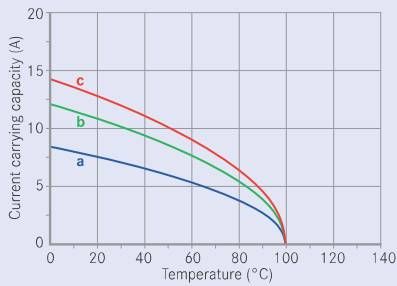


Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned 1.6 mm crimp contacts single contact						
silver plating	0.14 - 0.37 mm ²	26-22	100	VN01 016 0024 1C	VN02 016 0024 1C	
	0.5 mm ²	20	100	VN01 016 0025 1C	VN02 016 0025 1C	
	0.75 - 1.0 mm ²	20-16	100	VN01 016 0026 1C	VN02 016 0026 1C	
	1.5 mm ²	16-15	100	VN01 016 0027 1C	VN02 016 0027 1C	
	2.5 mm ²	14	100	VN01 016 0028 1C	VN02 016 0028 1C	
gold plating	0.14 - 0.37 mm ²	26-22	100	VN01 016 0024 2C	VN02 016 0024 2C	
	0.5 mm ²	20	100	VN01 016 0025 2C	VN02 016 0025 2C	
	0.75 - 1.0 mm ²	20-16	100	VN01 016 0026 2C	VN02 016 0026 2C	
	1.5 mm ²	16-15	100	VN01 016 0027 2C	VN02 016 0027 2C	
	2.5 mm ²	14	100	VN01 016 0028 2C	VN02 016 0028 2C	

heavy|mate® Q Characteristics contact inserts 17 + PE

General Characteristics	Standard	Value
Number of contacts		17 + PE
Termination technique		crimp
Wire gauge		0.14 – 2.5 mm ² (AWG 26-14)
Flammability	UL94	V-0
Electrical Characteristics		
Rated voltage	IEC 60664-1	250 V
Pollution degree	IEC 60664-1	3
Installation (overvoltage) category	IEC 60664-1	3
Material group	IEC 60664-1	3b
Rated impulse withstand voltage	IEC 60664-1	4 kV
Current carrying capacity	IEC 60512-5-2	see derating curves
Contact resistance	IEC 60512-2-1	≤ 5 mΩ
Insulation resistance	IEC 60512-3-1	≥ 10 ¹² 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		
Mechanical operation	IEC 60512-9-1	≥ 500 mating cycles
Materials		
Insert		PC
Colour insert		grey
Contacts		Cu-alloy
Contact plating		Ag (silver) /Au (gold)

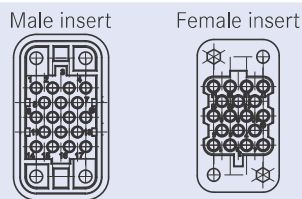
Derating Curves



Curve	Wire gauge
a	0.5 mm ²
b	1 mm ²
c	1.5 mm ²

Description	Part Number	Drawing	Figure
Contact insert 17 +PE (Please order contacts separately)			
Male insert	C146 10A017 500 12		
Female insert	C146 10B017 500 12		

Contact arrangement



Supplied as	for wire gauge	AWG	Pieces	Part Number		Figure
				Male contact	Female contact	
Turned 1.6 mm crimp contacts single contact						
silver plating	0.14 - 0.37 mm ²	26-22	100	VN01 016 0024 1C	VN02 016 0024 1C	
	0.5 mm ²	20	100	VN01 016 0025 1C	VN02 016 0025 1C	
	0.75 - 1.0 mm ²	20-16	100	VN01 016 0026 1C	VN02 016 0026 1C	
	1.5 mm ²	16-15	100	VN01 016 0027 1C	VN02 016 0027 1C	
	2.5 mm ²	14	100	VN01 016 0028 1C	VN02 016 0028 1C	
gold plating	0.14 - 0.37 mm ²	26-22	100	VN01 016 0024 2C	VN02 016 0024 2C	
	0.5 mm ²	20	100	VN01 016 0025 2C	VN02 016 0025 2C	
	0.75 - 1.0 mm ²	20-16	100	VN01 016 0026 2C	VN02 016 0026 2C	
	1.5 mm ²	16-15	100	VN01 016 0027 2C	VN02 016 0027 2C	
	2.5 mm ²	14	100	VN01 016 0028 2C	VN02 016 0028 2C	

General Characteristics	Standard	Value
Protection class housing		IP65
Locking system	DIN EN 175 301-801 (DIN 43 652)	locking levers
Salt mist resistance	IEC 60512-11-6:2002	>500h
Climatical Characteristics		
Climatic category	IEC 60068-1	40 / 125 / 21
Temperature range	IEC 60068-1	- 40 °C / + 125 °C
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		
Housings		PA 6.6
Rubber gasket		NBR
Locking lever		PA 6.6
Colour		black

Description	M	Part Number	Drawing	Figure
Hoods				
Hood top entry thermoplastic	25	C146 10R008 606 12		
Hood top entry metal		C146 10R008 550 12		
Hood side entry metal		C146 10R008 650 12		
Housings				
Housing thermoplastic		C146 10F008 001 12		
Housing metal		C146 30F008 001 12		