

Connectors for multi-couplings

DuraDock multi

EN



STÄUBLI ELECTRICAL CONNECTORS Connections for Life



Stäubli, as the international technology leader, offers innovative mechatronics solutions in its four divisions: Electrical Connectors, Fluid Connectors, Robotics, and Textile. At Stäubli Electrical Connectors, we develop advanced connection solutions based on the reliable MULTILAM contact technology.

We create connections for life – and our customers are at the center of these connections. We are convinced that solid and stable partnerships directly contribute to our mutual success. We take on the needs of our partners and deal with the most extraordinary challenges. As a result, we always create, sell and

support reliable and long-lasting products for markets with the highest productivity and safety requirements in close cooperation with our customers.

Together for reliable and safe connections

We know that you entrust us with the functionality of your applications and we work hard to ensure this every single day. Thanks to our high level of expertise, our extensive experience and the multiple successful co-operation with our partners, numerous new developments have originated at Stäubli Electrical Connectors and subsequently have become worldwide standards. This includes our MC4 connector portfolio for which we are today the global market

leader in photovoltaic. As the Stäubli original, the MC4 represents the result of our constant quest for innovation, quality and safety.

Further examples are the CombITac modular connector system or the Quick Charging Connector (QCC) for automatic charging systems.

We ensure connections for life together with our long-standing customers in a wide range of industries from renewable energies, power transmission and distribution and E-mobility to industrial automation applica-

tions, railway and welding automation, test and measurement and medical devices.

Thus, developing reliable, efficient and safe solutions based on our proven MULTILAM contact technology, which guarantees a high service lifetime in addition to highly efficient power transmission.

Applications and benefits



Stäubli's multipole connectors are used in docking systems, tool changers, and in manually or automatically operated multi-couplings.

Our solutions are ideal for a wide range of standard industrial applications, as well as other highly demanding applications where reliability is of the essence.

- Unparalleled contact reliability thanks to MULTILAM advanced contact technology
- Robust, reliable and user-friendly – up to 1 million mating cycles
- High current-carrying capacity with minimal contact resistance for a long lifespan

- Many possible combinations to work with almost any application, from data transmission to high-current applications
- Our standard program covers cable cross-sections of up to 50 mm² (AWG 1/0), currents up to 200 A and up to 72 poles

General information

Colour code

For those items available in various colours, replace the asterisk "*" with the appropriate colour code.

20	green-yellow	26	violet
21	black	27	brown
22	red	28	grey
23	blue	29	white
24	yellow	33	transparent
25	green		

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RoHS

European Directive 2011/65/EU incl. all related amendments (e.g. Delegated Directive (EU) 2015/863)

For further information please follow the link below

www.staubli.com/de/en/electrical-connectors/downloads/certificates/material-compliance.html

Symbols



Accessories or special tools exist for this product

www.staubli.com/electrical



The assembly instruction MA000 is available for this product

www.staubli.com/electrical

Changes / Provisos

All data, illustrations and drawings in the catalogue have been carefully checked. They are in accordance with our experience to date, but no responsibility can be accepted for errors.

We also reserve the right to make modifications for design and safety reasons. When designing equipment incorporating our components, it is therefore advisable not to rely solely on the data in the catalogue but to consult us to make sure this information is up to date. We shall be pleased to advise you.

UNLIMITED POSSIBILITIES FOR CONTACT SOLUTIONS
MULTILAM Technology



MULTILAM are specially formed and resilient contact elements. All Stäubli Electrical Connectors products benefit from the unique and outstanding performance of the MULTILAM Technology.

Thanks to their constant spring pressure, MULTILAM louvers ensure continuous contact with the contact surface, resulting in a constantly low contact resistance.

MULTILAM Technology allows to find solutions for connectors within the severest constraints and in certain products for up to 1 million mating cycles.

This makes the MULTILAM Technology the best choice for applications with demanding requirements:

- Reliable and longlife operation due to constantly high performance
- Safe operation under highest environmental demands on temperature, vibration and shock
- Particularly suitable for high current connectors, but also for data and signal contacts as well as for high voltage connections
- Automated solutions with a high number of mating cycles



INTRODUCTION
Technical data

The contacts are equipped with a crimping sleeve. In the unplugged condition the complete socket and pin parts are longitudinally waterproof over the contacts. The use of plastic housings eliminates the need for earthing, thus simplifying the work of assembly.

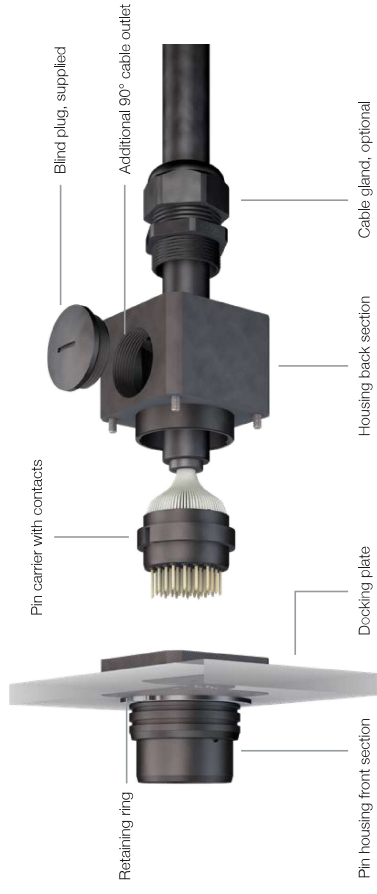
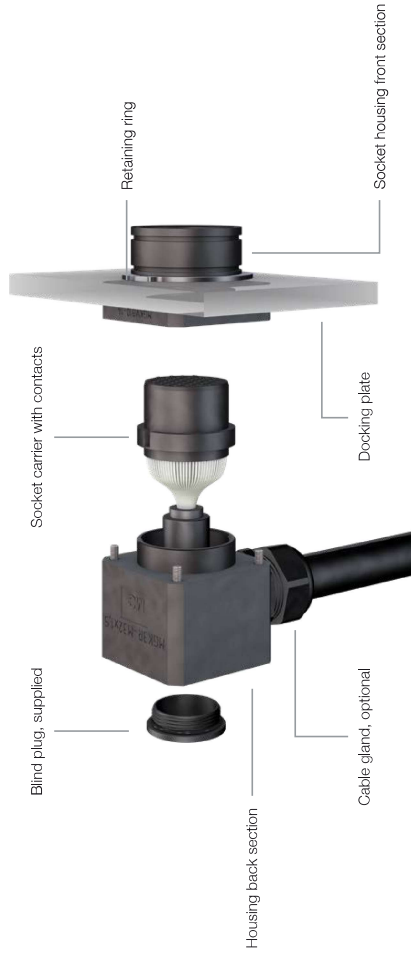
When using metal housings, the housings must be earthed using a protective conductor according to IEC 60364-4-41.

Note:
The housings may not be used as mechanical centering. For safe operation and correct alignment of plates stable guiding pins are mandatory.

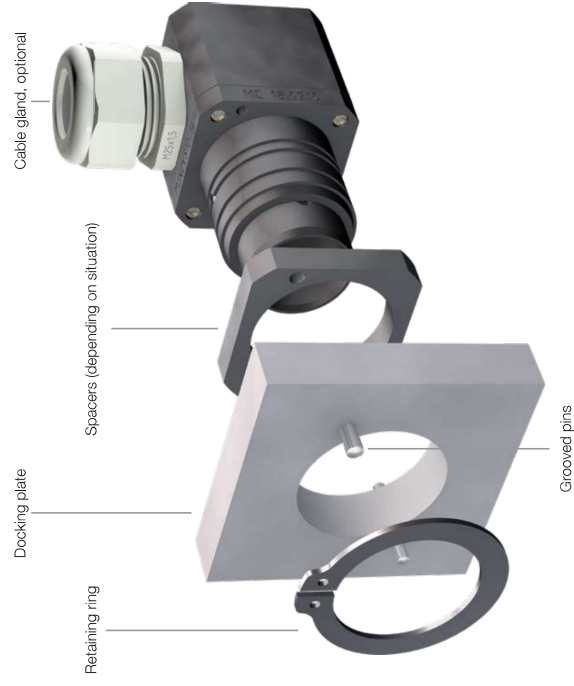
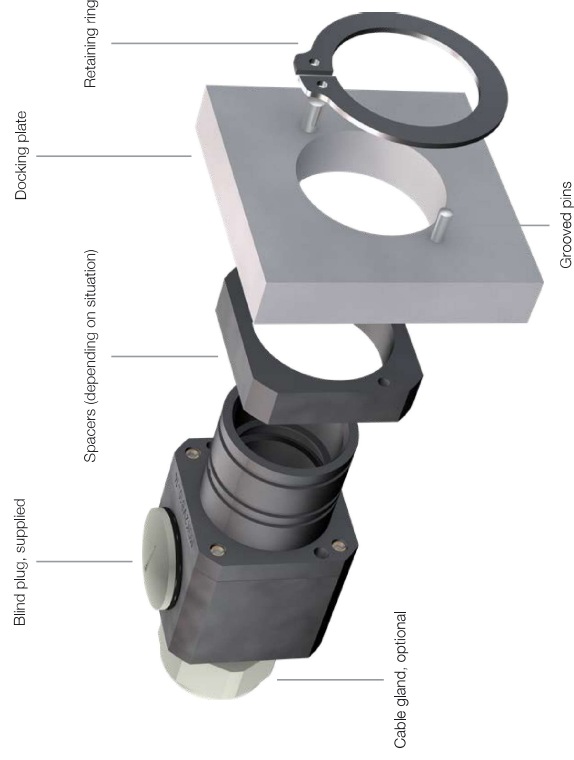
Technical data	
Contact system	MULTILAM
Rated voltage	max. 830 V
Rated current (Derating diagrams, page 95)	max. 200 A
Overvoltage category Pollution degree	CATIII 3 ¹⁾
Test voltage	0,84 kV – 3,31 kV/50 – 60 Hz/1 min.
Insulation coordination according to IEC 60664-1, DIN VDE 0110-1	4 kV: 3 V – 300 V 6 kV: 3 V – 630 V
Temperature resistance contact carriers	NBR: -30 °C...+100 °C CR: -40 °C...+100 °C SIL: -40 °C...+150 °C PK: -40 °C...+150 °C TPE: -20 °C...+90 °C
Operating temperature (Plastic housing) (Metal housing)	-10 °C...+90 °C -40 °C...+150 °C -40 °C...+80 °C
Storage temperature	
Degree of protection, mated (DIN 40050) MGK..., MGS... unmated (DIN 40050) MGA..., unmated (Socket side)	IP65 IP67 IP2X ²⁾
Safety class	II ¹⁾
Number of poles	2+PE – 70+2PE
Nominal-Ø contact	1 mm – 11 mm
Conductor cross section	0,14 mm ² – 50 mm ² 26 AWG – 1/0 AWG
Type of connection	Crimping
Contact material	CuZn alloy, silver or gold plated
Carrier material	NBR/CR/SIL/PEEK
Housing material	Metal/POM or PA
Shielding (360°)	Available (G1 – G3)
For further instructions	EN 60664-1/2008-01 DIN VDE 0627/EN 61984/2009-11 DIN VDE 0298-4/2003-08

¹⁾ Except PEEK (Pollution degree 2)
²⁾ Except PEEK 19,6960, 19,6958, 19,6954 & 19,6926

Assembly principle



Installation situation



Combination possibilities

Size G1



Size G2



Note:

- In case insulators do not exist with the exact pole count:
- pick an insulator with more poles than needed
- close the empty contact chambers with blind plugs (page 88).

Size G3



Size G4



Contacts for Power applications

Standard and short version

Contacts for the transmission of currents between 10 A and 36 A for cable cross sections from 0.5 mm² to 4 mm². They are mainly silver plated (Ag), or also gold plated (Au) for demanding applications and every socket is provided with the tried

and tested MULTILAM. These contacts can be used in different types of contact carriers (up to 37 poles).

Important:

Empty contact cavities must be fitted with blind plugs. If the cavities are only partly

occupied, care must be taken to distribute the contacts evenly in the carrier; this way, connectors remain longitudinally waterproof and carriers do not get deformed.

Mating cycles: max. 1,000,000



Conductor cross section ¹⁾		Nom.-Ø contact	Surface	Order No.	Type	Max. rated current ²⁾	For appropriate carrier size on page 54				Blind plug
mm²	AWG	mm				A	G1	G2	G3	G4	
0.5 – 1.5	20 – 16	2		18.9008	SP2/0,5-1,5		6+PE	15+PE	–	–	
				18.8008	BP2/0,5-1,5						
				18.9009	SP2/0,5-1,5 AU						
				18.8009	BP2/0,5-1,5 AU						
2.5	14	2		18.9010	SP2/2,5		6+PE (TPE)	–	36+PE (CR/SIL)	–	
				18.8010	BP2/2,5						
				18.9011	SP2/2,5 AU						
				18.8011	BP2/2,5 AU						
2.5 – 4	14 – 12	3		18.9014	SP3/2,5-4		–	–	13+PE	–	
				18.8014	BP3/2,5-4						
				18.9015	SP3/2,5-4 AU						
				18.8015	BP3/2,5-4 AU						

Short version

These contacts are ideal for applications with limited stroke distance (8 mm shorter in mated condition).

2.5 – 4	14 – 12	3		18.9012	SP3/2,5-4(K)		2+PE	3+PE+4 / 4+PE / 6+PE	–	
				18.8012	BP3/2,5-4(K)					
				18.9013	SP3/2,5-4(K) AU					
				18.8013	BP3/2,5-4(K) AU					

¹⁾ If the number of contacts is > 2, when selecting the conductor cross-sections observe DIN VDE 0298-4, DIN EN 60204-1 and the derating diagrams, page 95
²⁾ Dependent on conductor cross section



Assembly tools, page 86



Assembly instructions MA202

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