FAST MOVING TECHNOLOGY

STÄUBLI

MULTILAM plugs
Main catalog

Powerline | Industrial connectors

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 applications, 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 advantages

Stäubli MULTILAM plugs are produced from gold or nickel-plated brass. A recess serves as a seat for the freely movable MULTILAM contact cage. The spring action of the louvers provides constant pressure in mated condition while guaranteeing excellent electrical properties. Our MULTILAM plugs are equipped with two different types of MULTILAM: twisted or straight.

They are optimally suitable for use in the following areas of application:

- Machine construction & integrators
- Medical technology
- Automotive industry
- Measurement technology
- Instruction & education
- Lighting technology
- Research & laboratory

Contents

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		

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.

Copyright

RoHS ready

Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

INTRODUCTION

Stäubli MULTILAM plugs

Stäubli MULTILAM plugs are machined from brass, and are gold- or nickel-plated. A recess serves as a seat for the freely movable MULTILAM contact cage. It is punched from rigid hard-drawn copper alloy sheet, rolled and formed so that the louvers bulge outward. The spring action of the louvers provides constant pressure in the mated condition. Our MULTILAM plugs are fitted with two different types of MULTILAM. The outstanding electrical characteristics of MULTILAM connectors are: high current-carrying capacity, minimal contact resistance, low self-heating.

Solid metal pins make Stäubli MULTILAM plugs extremely rugged and crushproof. They are also highly resistant to vibration in the mated condition.

straight

Traditional, straight form, a proven Stäubli design with very good electrical and mechanical properties for a plug connection.

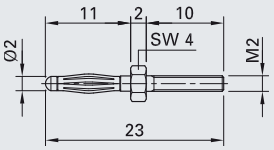
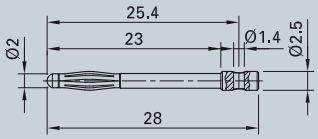
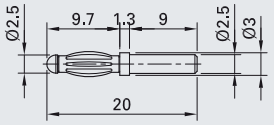
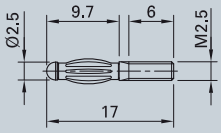
twisted

"Twisted" form with even better electrical and mechanical properties for a plug connection.

Technical data

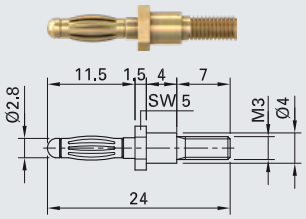
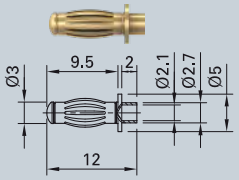
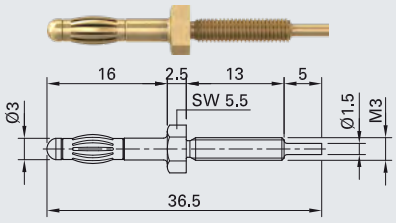
	MULTILAM version "straight" 					MULTILAM version "twisted" 
Nominal-Ø	Ø 2 mm	Ø 2.5 mm	Ø 2.8 mm	Ø 3 mm	Ø 4 mm	Ø 4 mm
Max. rated current	25 A	25 A	25 A	30 A	50 A	50 A
Contact resistance, gold-plated version	0.4 mΩ	0.5 mΩ	0.5 mΩ	0.5 mΩ	0.3 mΩ	0.2 mΩ
Contact resistance, nickel-plated version	2 mΩ	–	–	–	0.8 mΩ	0.4 mΩ
Upper temperature limit	150 °C					150 °C

Ø 2 mm – Ø 2.5 mm

Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.1100	SA200	2	M2	CuZn, Au	~4	150	25	0.4	p. 16	
22.1102	SA200N	2	M2	CuZn, Ni	~4	150	25	2	p. 16	 
22.6303	SA203	2	Soldering	CuZn, Ni	~4	150	25	2		 
22.5118	SA2,5	2.5		CuZn, Au	~6	150	25	0.5		 
22.5117	SA2,5-G	2.5	M2,5	CuZn, Au	~6	150	25	0.5		 

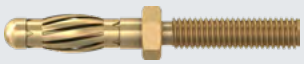
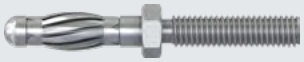
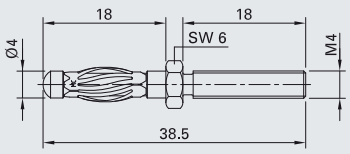
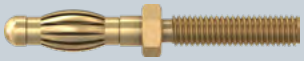
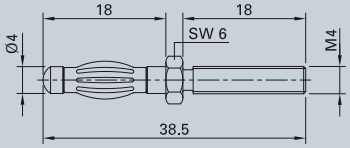
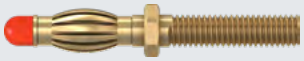
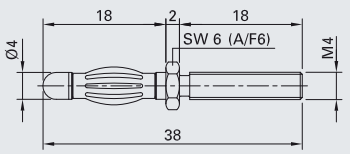
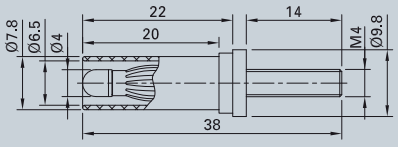
[1] According to connecting method and cross section

Ø 2.8 mm – Ø 3 mm

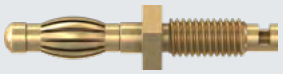
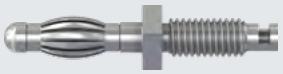
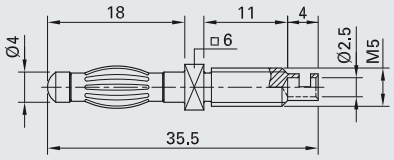
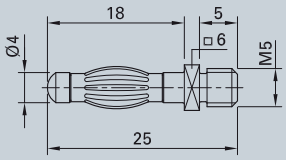
Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.5107	SA2,8	2.8	M3	CuZn, Au	~3	150	25	0.5	p. 16	
22.1110	SA300	3	Soldering	CuZn, Au	~5	150	30	0.5		
22.1111	SA301	3	M3	CuZn, Au	~2.5	150	30	0.5	p. 16	

[1] According to connecting method and cross section

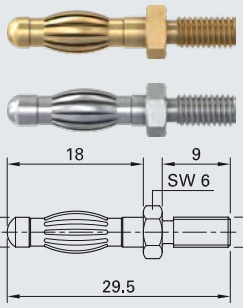
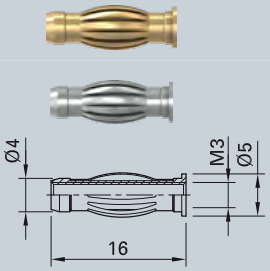
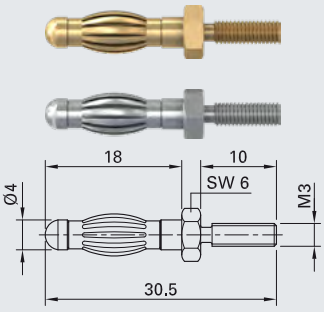
Ø 4 mm

Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.1050	SA400	4	M4	CuZn, Au	~10	150	50	0.2	p. 17	
22.1078	SA400N	4	M4	CuZn, Ni	~10	150	50	0.4	p. 17	 
22.1070	SA400-B	4	M4	CuZn, Au	~5	150	50	0.3	p. 17	 
24.5062	SA400-V	4	M4	CuZn, Au	~12	80	50	0.3	p. 17	 
24.0117-*[2]	SA400-VI	4	M4	CuZn, Au	~12	80	32	0.3	p. 17	  * Couleurs 21 22 23 24 25 26 27 28 29 Isolation: PA

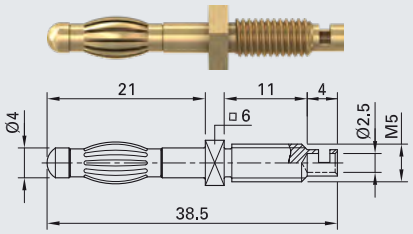
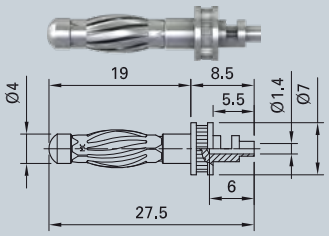
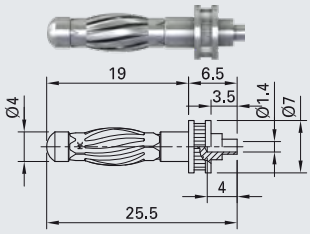
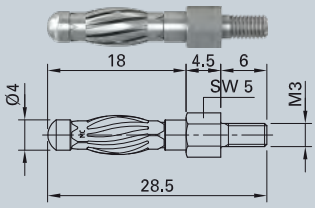
[1] According to connecting method and cross section
[2] Add the desired colour code instead of "*".

Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.1051	SA401	4	M5/ Soldering	CuZn, Au	~5	150	50	0.3	p. 16	
22.1091	SA401N	4	M5/ Soldering	CuZn, Ni	~5	150	50	0.8	p. 16	 
22.1052	SA402	4	M5	CuZn, Au	~5	150	50	0.3	p. 16	 

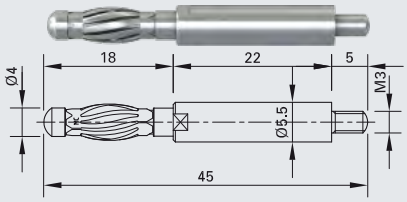
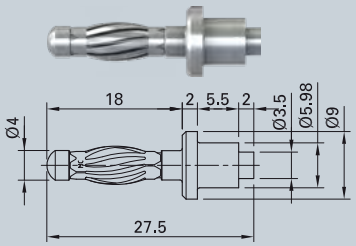
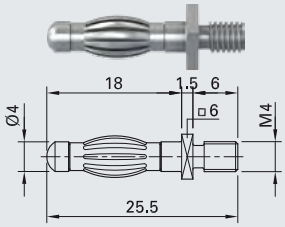
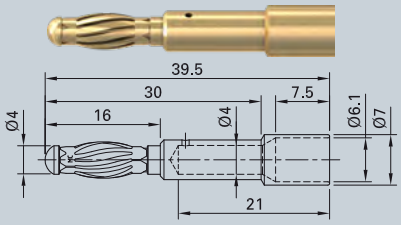
[1] According to connecting method and cross section

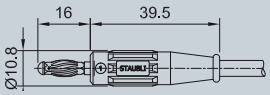
Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.1053	SA403	4	M4	CuZn, Au	~5	150	50	0.3	p. 17	
22.1076	SA403N	4	M4	CuZn, Ni	~5	150	50	0.8	p. 17	
22.1054	SA404	4	M3	CuZn, Au	~8	150	50	0.3		
22.6012	SA404N	4	M3	CuZn, Ni	~12	150	50	0.8		
22.1055	SA405	4	M3	CuZn, Au	~5	150	50	0.3	p. 17	
22.6016	SA405N	4	M3	CuZn, Ni	~5	150	50	0.8	p. 17	

[1] According to connecting method and cross section

Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.6205	SA479	4	M5/ Soldering	CuZn, Au	~5	150	50	0.3	p. 16	
22.1081	SA481	4	Soldering	CuZn, Ni	~10	150	50	0.4		
22.1082	SA482	4	Soldering	CuZn, Ni	~10	150	50	0.4		
22.1083	SA483	4	M3	CuZn, Ni	~10	150	50	0.4	p. 17	

[1] According to connecting method and cross section

Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	Assembly material, order separately	
		mm			N	°C	A	mΩ		
22.1084	SA484	4	M3	CuZn, Ni	~10	150	50	0.4	p. 17	
22.1085	SA485	4		CuZn, Ni	~10	150	50	0.4		
22.1086	SA486	4	M4	CuZn, Ni	~5	150	50	0.8	p. 17	
22.1049	LS460-P	4	Crimping	CuZn, Au	~10	150	50	0.2		



Anti-kink sleeve T-POAG-6, TPE,
conductor cross section 6 mm², **Order No. 15.5004-***

* Colours
21 22 24

[1] According to connecting method and cross section

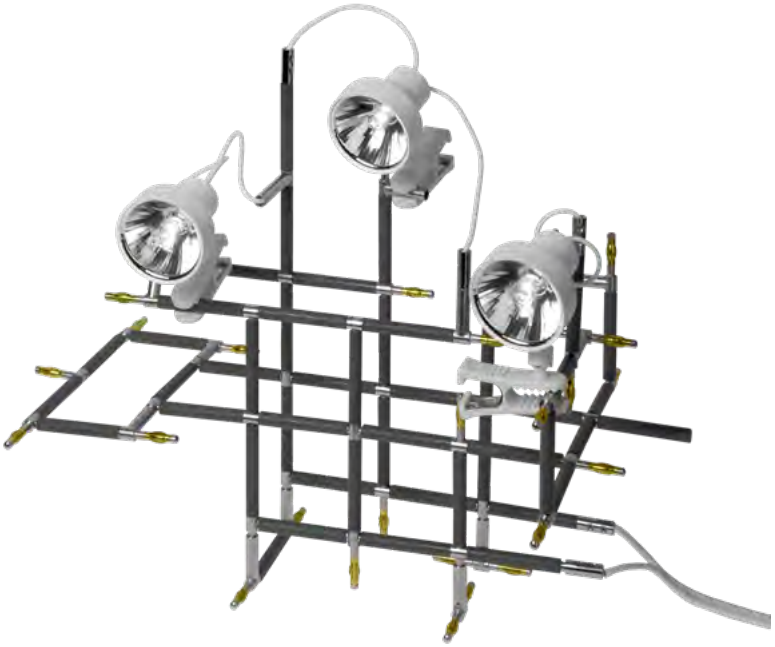
MA

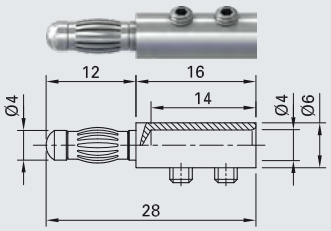
Assembly instructions MA163

www.staubli.com/electrical

1-pole connectors

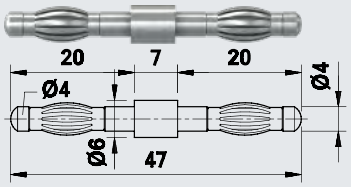
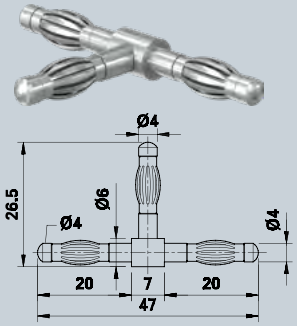
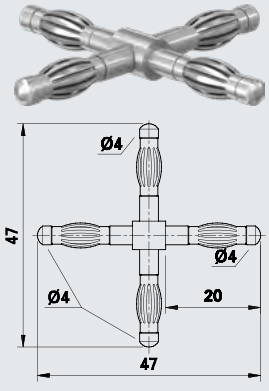
Connectors type SL4F/... Ø 4 mm are suitable for halogen low voltage lighting systems with Ø 4 mm tubular conductors.



Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	
		mm			N	°C	A	mΩ	
13.0003	SL4F/G	4	Screw connection	CuZn, Ni	~10	150	50	0.8	

Connecting plug, suitable as power feed from the transformer. Can also be used (in pairs) with cable as a flexible corner connector.

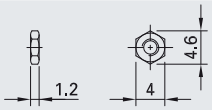
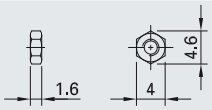
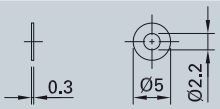
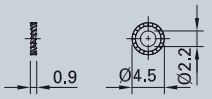
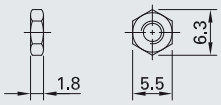
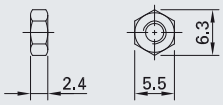
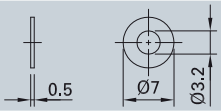
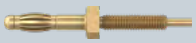
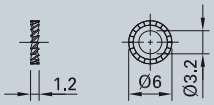
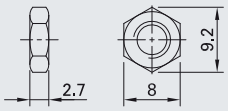
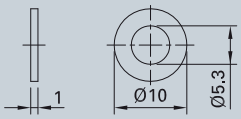
[1] According to connecting method and cross section

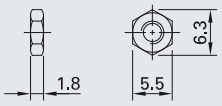
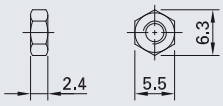
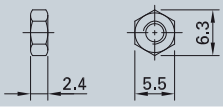
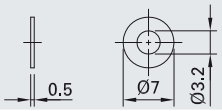
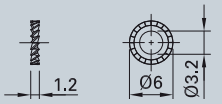
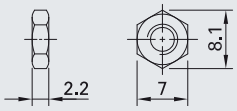
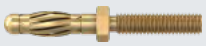
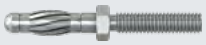
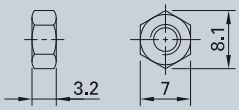
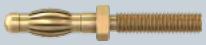
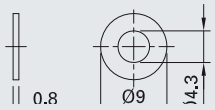
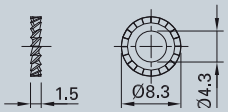
Order No.	Type	Nominal-Ø	Type of termination	Metal parts/ plating	Withdrawal force	Max. temperature	Rated current[1]	Contact resistance	
		mm			N	°C	A	mΩ	
13.0001	SL4F/2	4		CuZn, Ni	~12	150	50	0.8	
In-line coupling plug, suitable for making extensions in lighting systems.									
13.0004	SL4F/3	4		CuZn, Ni	~5	150	50	0.8	
T-plug, suitable as a T-distributor or as a connector for low voltage halogen spots.									
13.0005	SL4F/4	4		CuZn, Ni	~5	150	50	0.8	
Cross-plug, suitable as in lighting systems.									

[1] According to connecting method and cross section

ACCESSORIES

Assembly material

Order No.	Type	Designation	Material	DIN	Illustration	To fit MULTILAM plugs
22.6601	MU0,5D/M2	Nut	Brass, gold plated	439		 **SA200**
22.6501	MU0,8D/M2	Nut	Brass, gold plated	934		
22.6503	U/M2	U-Washer	Brass, gold plated	125		 **SA200N**
22.6530	FS/M2	Serrated lock washer	Spring bronze	6798		
22.6605	MU0,5D/M3	Nut	Brass, gold plated	439		 **SA2,8**
22.6505	MU0,8D/M3	Nut	Brass, gold plated	934		
22.6507	U/M3	U-Washer	Brass, gold plated	125		 **SA301**
22.6532	FS/M3	Serrated lock washer	Spring bronze	6798		
22.6613	MU0,5D/M5	Nut	Brass, gold plated	439		 **SA401**  **SA401N**
22.6515	U/M5	U-Washer	Brass, gold plated	125		 **SA402**  **SA402-H**  **SA479**

Order No.	Type	Designation	Material	DIN	Illustration	To fit MULTILAM plugs
22.6605	MU0,5D/M3	Nut	Brass, gold plated	439		 **SA405**
22.6505	MU0,8D/M3	Nut	Brass, gold plated	934		
22.6606	MU0,5D/M3N	Nut	Brass, nickel plated	934		 **SA405N**
22.6522	MU0,8D/M3N	Nut	Brass, nickel plated	934		
22.6507	U/M3	U-Washer	Brass, gold plated	125		 **SA483**
22.6532	FS/M3	Serrated lock washer	Spring bronze	6798		 **SA484**
22.6609	MU0,5D/M4	Nut	Brass, gold plated	439		 **SA400**  **SA400N**
22.6509	MU0,8D/M4	Nut	Brass, gold plated	934		 **SA400-B**  **SA403**
22.6511	U/M4	U-Washer	Brass, gold plated	125		 **SA403N**  **SA400-V**
22.6533	FS/M4	Serrated lock washer	Spring bronze	6798		 **SA400-VI**  **SA486**

APPENDIX

Customized designs

A speciality of Stäubli is to develop individual solutions for special contact requirements in collaboration with the customer. Just ask us. We shall be pleased to advise you.

Examples:

Technical information

Rated current (IEC 61984)

Assigned current which the connector can carry continuously (without interruption) and simultaneously through all its wired contacts with the largest specified conductor, at an ambient temperature of 20 °C, without the upper limiting temperature being exceeded.

Protection against electric shock for unenclosed connectors

Protection against electric shock is provided by the customer by the enclosure of the equipment in which the connector is mounted. Or its use is limited to very low voltage (SELV – safety extra low voltage).

Gold plating

Gold has good electrical conductivity and affords unexcelled corrosion protection. Contact resistance is low and constant. A nickel or copper layer is applied as a diffusion barrier.

Nickel plating

In cases where electrical specifications are less demanding, nickel-plated contact elements are used. This process is also frequently used to provide a diffusion barrier prior to gold plating.

Stäubli MULTILAMs

are special contact elements developed by Stäubli with outstanding electrical and mechanical properties. The MULTILAM form a contact cage inserted between two contact surfaces.

The MULTILAMs contact the two surfaces at a large number of points, each of which acts as a “bridge” for passage of current.

Most of the Stäubli MULTILAMs are made of hard-drawn copper alloy and are gold-plated. They have high current-carrying capacity in continuous and intermittent operation and perform very reliably over a broad temperature range.

For detailed information, refer to the catalogue: **MULTILAM Technical Overview**.

Contact resistance

is the resistance occuring at the point of contact between two surfaces. Its value is calculated with the measured voltage drop and the rated current in new condition. The technical data here stated are mean values.

Withdrawal force

is the force required to pull out a connector without influence of a locking or a coupling device. The withdrawal force is determined in a polished steel socket.

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Sorted by type

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