

Charging Contacts

Nano⁺ & Enduro⁺



CONDUCTIX
wampfler



Robust design for high charging cycles

The **Nano+** and **Enduro+** product lines are compact and modular charging contacts for use with different load conditions or performance parameters of mobile consumers, such as AGVs, mobile robots, AMRs, industrial vehicles, forklifts, pallet shuttles or other mobile units with energy storage.

For the optimal use of individual vehicles or fleets, the selection of the storage system and the required charging infrastructure play an important role in order to be able to operate the systems as efficiently as possible in terms of payload, range, service life and availability.

Reliable functioning over many charging processes is the key here and requires experience in contact technology, component manufacture and other aspects.

As an established partner in the field of energy supply, we spare you the expense of in-house development, enable simple scalability for series production and offer security of supply thanks to global availability.

Nano+ and **Enduro+** charging contacts offer high current density, contact quality and service life, enabling safe operation in a wide range of applications.

Compared to contactless charging solutions, charging contacts are electromechanical solutions that are easy to understand and maintain in terms of function and mode of operation. In addition to shorter downtimes, the contacts are more efficient as no energy is required for the resonant circuit and coils. In addition, the contacts themselves do not emit any HF signals (EMC influence) and the critical heating of metal parts in the field of eddy currents does not occur.



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Nano+

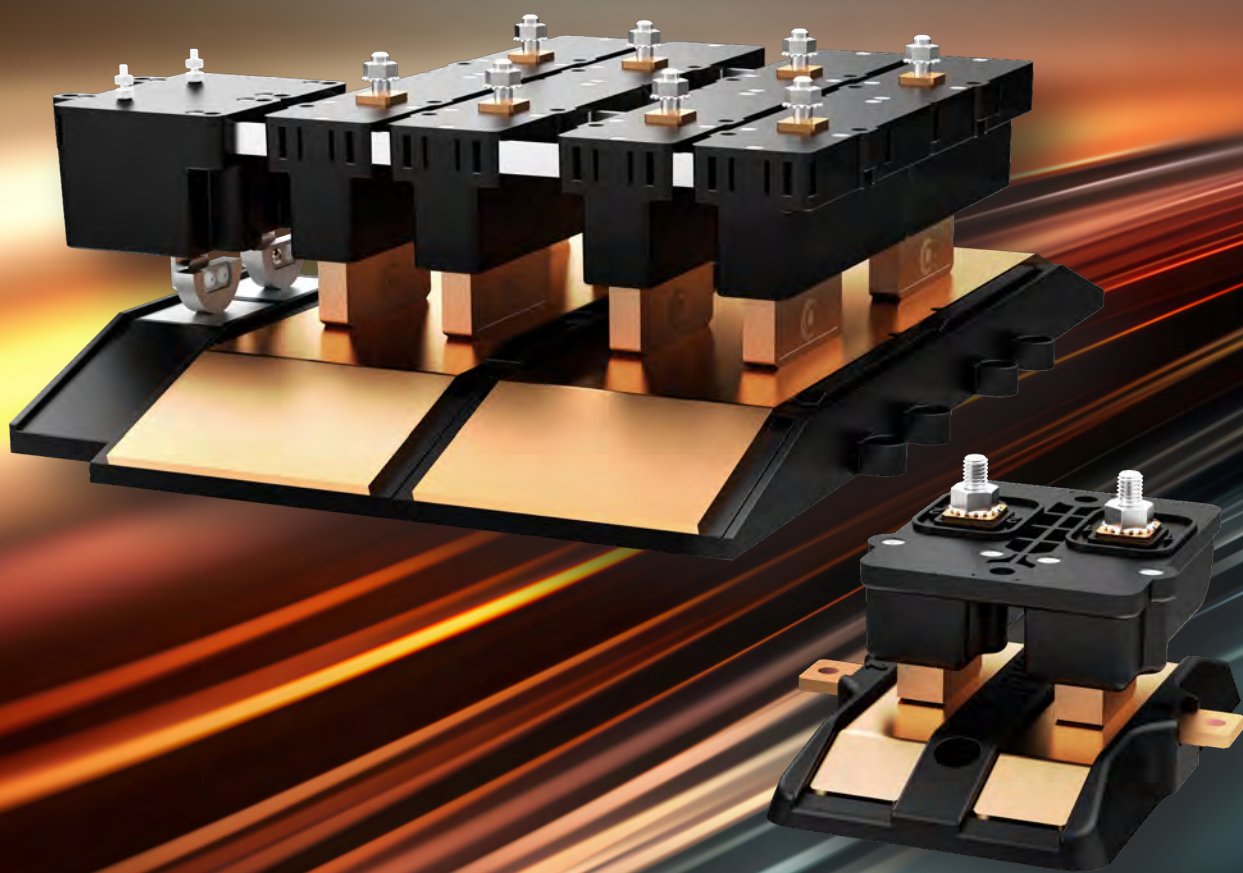
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Enduro+

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General Notes

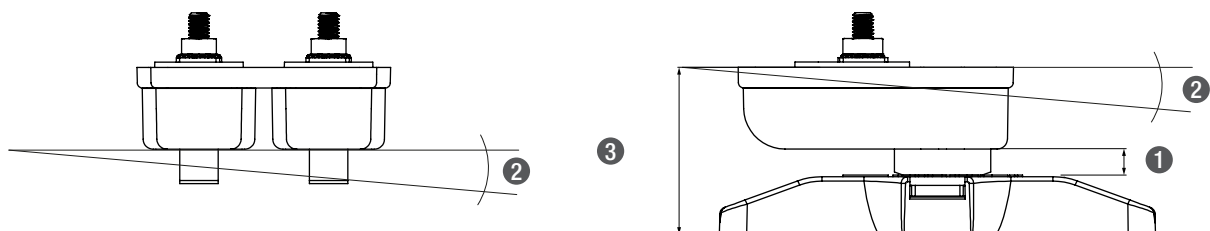
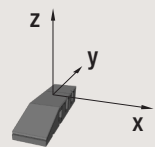
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System Overview

Technical Data

	Nano+	Enduro+		
Application				
Rated current	25 A 50 A 75 A	100 A 200 A 300 A 400 A 600 A		
Max. Current/contact	25 A 50 A 75 A	100 A		
Nominal voltage	48 VAC/60 VDC			
Duty cycle	100 %			
Opt. auxiliary contact		Available		
Operating temperature	-30 °C...+130°C	-30° C...+120° C		
Protection class	IP00			
Installation position	any (floor, wall or overhead mounting)			
Lateral offset (x)	+/- 5 mm	+/- 15 mm (W = 37.5 mm)		
Longitudinal offset (y)	+/- 28 mm (25 A) +/- 22 mm (50 A) +/- 17 mm (75 A)	+/- 15 mm		
Height offset (z) ①	+/- 1 – 5 mm	+/- 2 – 18 mm		
Angular offset ②	Pick up 5°	Pick up 5°		
Installation height ③	48.1 mm	89,4 mm		
Max. Traversing speed	1.5 m/s			
Spring force per contact	Typ [A]	25 50 75	Typ [A]	100
	min. contact stroke 1 mm [N]	29 32 32	min. contact stroke 2 mm [N]	50
	max. contact stroke 5 mm [N]	46 81 91	max. contact stroke 18 mm [N]	91
Inspection interval	20.000 cycles			
Life cycles	1.000.000			



- ① Preload/mounting position with 4 mm (Nano+) or 18 mm (Enduro+) contact stroke
- ② Max. lateral inclination or ground slope in the direction of travel
- ③ Distance to the lower edge of the vehicle (nominal value)

Note: The components are designed for use in the extra-low and safety extra-low voltage range. For use with higher voltages, additional measures for protection against contact and contact with dangerous voltages must be taken into account in the risk assessment.

Nano⁺

Description



The Nano⁺ charging contact series is specially designed for serial applications in the rated current range up to 75 A and a high number of load cycles and can be integrated easily and flexibly. The components meet the requirements of UL 583 and have been tested in endurance tests up to 1,000,000 (1 million) load cycles.

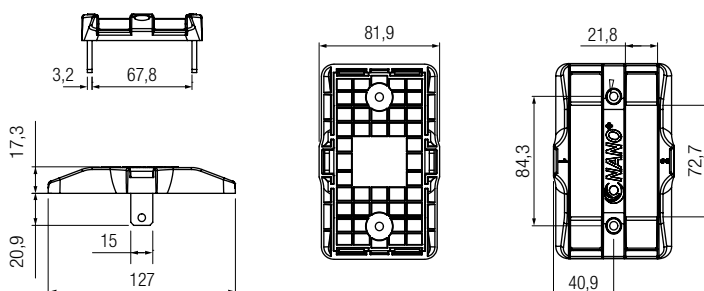
Note: As with all charging contacts, the charging plate or the charging contacts can be fitted to the vehicle.

Base Plate Nano⁺

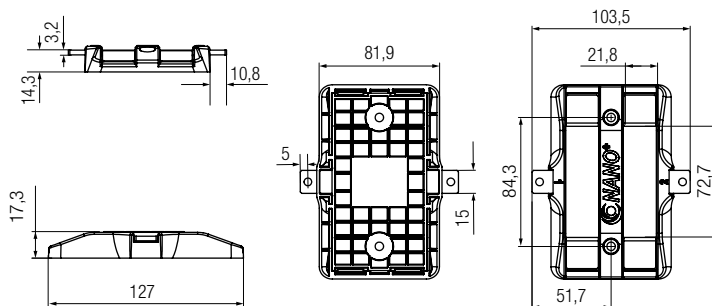
The base plates are chamfered on both sides in the direction of travel and are available in two connection variants. Connection on the underside or lateral connection lugs for screw fastening (M6x1.0 / tightening torque 5.7 Nm). Fastened using M5 round-head screws.

The plate is used for all 3 charging contacts (25, 50 and 75 A).

Base Plate for Nano⁺ with connections on the underside



Base Plate for Nano⁺ with side connections



Design	Connections on the underside	Lateral connections
Rated current	75 A (100 % duty cycle)	
Dimensions	127 x 81,9 x 17,3 mm (L x W x H)	
Part No.	XA-CCB075A2BW0	XA-CCB075A2SW0

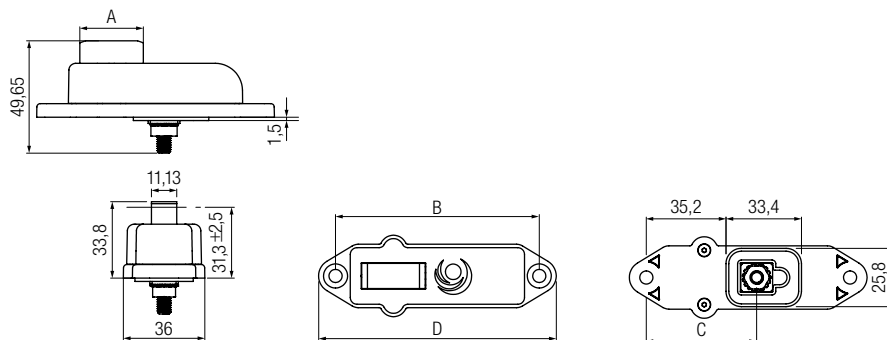
Nano⁺

Current Collector Nano⁺

The Nano + contacts are available as 1 and 2-pole versions with 25, 50 and 75 A rated current. They are surface-mounted. The cable connection is made via a connection bolt on the rear.

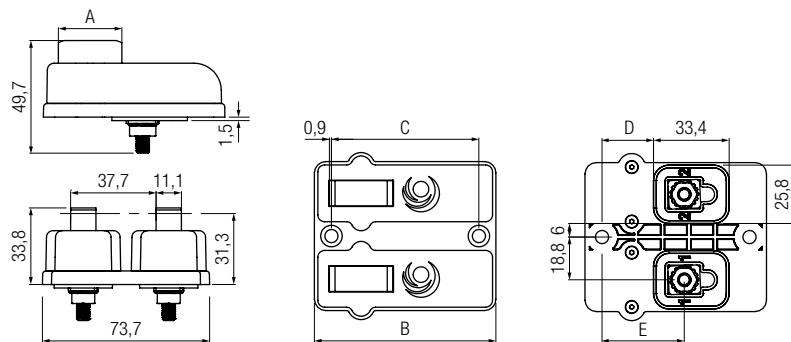
Installation: using 2 x 5 mm screws, e.g. DIN 912 (max. 1.2 Nm)
Connection bolt for nut M6 (max. 5.7 Nm)

1-pole version



Rated current	25	50	75
Brush length [A]	16,5	28,0	39,5
[B]	77,6	90,0	100,0
[C]	36,8	48,8	59,5
[D]	92,46	104,9	115,0
Part No.	XA-CCC025A1W0	XA-CCC050A1W0	XA-CCC075A1W0

2-pole version



Rated current	25	50	75
Brush length [A]	16,5	28,0	39,5
[B]	67,9	80,0	91,3
[C]	36,8	65,0	75,0
[D]	10,5	22,7	33,4
[E]	24,0	36,3	47,0
Part No.	XA-CCC025A2W0	XA-CCC050A2W0	XA-CCC075A2W0

Installation situation Nano⁺



Note:

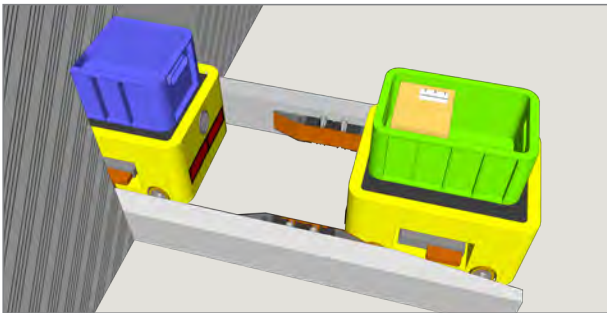
Nominal installation dimension: 48.1 mm with nominal preload of the spring
 Connection/fastening: (not included in scope of delivery)
 Connection lug: M6 x 1.0 (5.7 Nm)
 Mounting plate: M5 cylinder head screw

Enduro⁺

Description

The Enduro⁺ series was developed for applications with higher rated currents from 100 to 600 A. The modular design of the system allows flexible integration into the respective application.

Typical applications include industrial vehicles, transfer cars, mobile racking systems, amusement rides and similar applications.



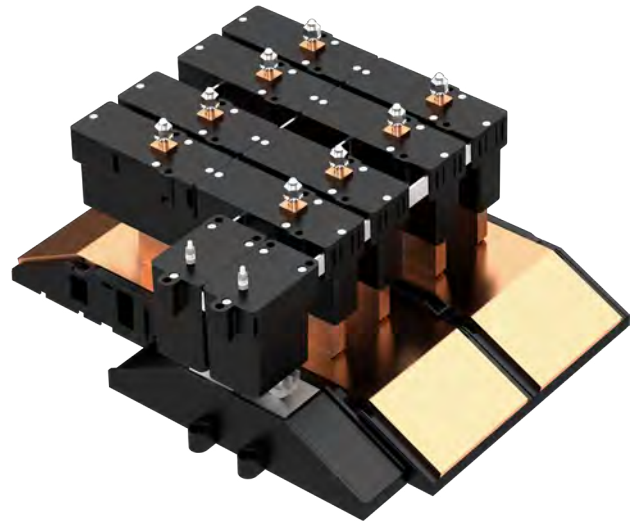
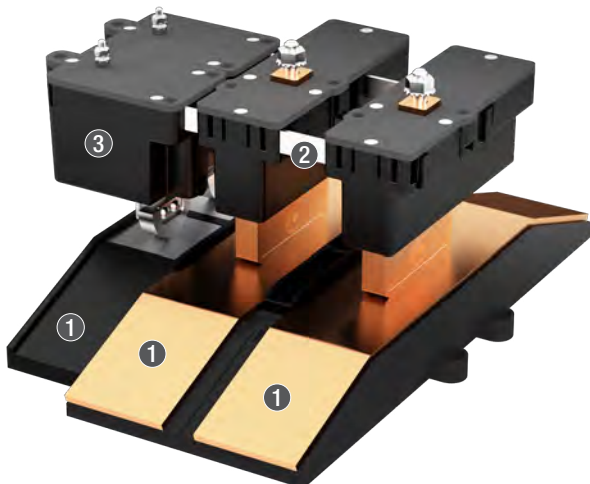
For entry and exit, the contacts are available with a ramp on one side or ramps on both sides.

Flexibility in charging technology

The wide range of applications requires a high degree of flexibility.

Enduro⁺ components can be arranged next to and or behind each other and allow optimal customization with the use of standard components.

All parts are compatible with each other and designed for rough use and up to 1,000,000 mechanical/electrical load cycles.



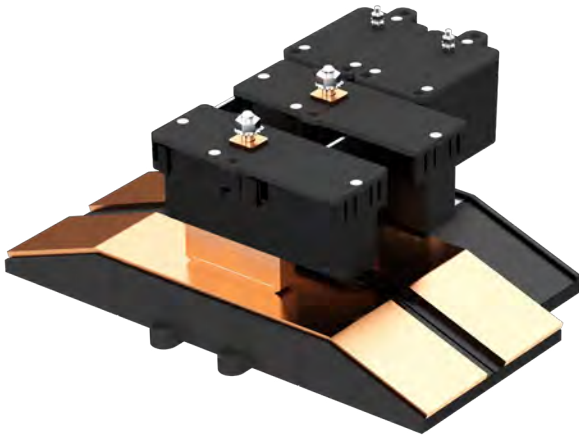
Features and advantages

- Dual length of the charging base plates for higher currents due to charging contacts arranged in series or simply to increase the tolerance for load-dependent stopping distances.
- Double charging contact width of the charging base plates for parallel arrangement of the contacts at higher currents or to increase lateral tolerances.
- Various basic designs: chamfered edges on both sides for passing over the base plates, a chamfered edge on one side for top loading points or without chamfered edges for e.g. flush installation with active contact infeed.
- Choice of different connection options: connection on the underside of the loading base plate, connection on the front side (with chamfered edge on one side or without chamfered edge), contact lugs on both sides or both on one side of the loading base plate.
- Auxiliary contact for customer-side control or communication (e.g. CAN bus). The AUX contacts are always 2-pole.

- 1 Chamfered Edges
- 2 Spacer
- 3 Auxiliary contact (contact pair galvanically isolated)

Enduro⁺

Configuration



Configuration example Enduro⁺

100 A, 2-pole with auxiliary contact and chamfered edge on both sides (connection of the charging plate on the underside)

Part No. Base plate: XA-MCB 100SBT-P1

Part No. Charging contact: XA-MCC 100ST-P1

Part No. Auxiliary contact: XA-MCCP

Part No. configuration

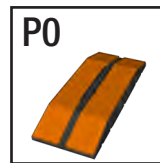
XA - MCB X XXX X X X PX



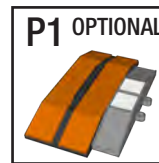
Cannot be combined

D or S with W | P0 | P1 | P2

R with T



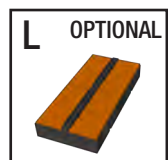
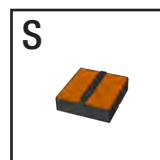
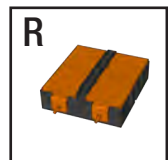
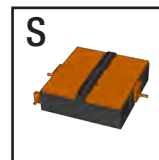
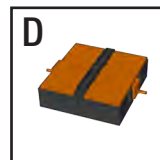
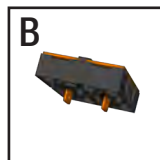
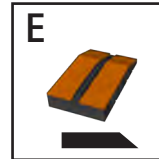
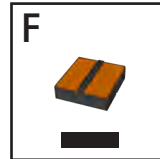
P0 = no AUX contact



P1 = 1 pair AUX contacts



P2 = 2 pair AUX contacts

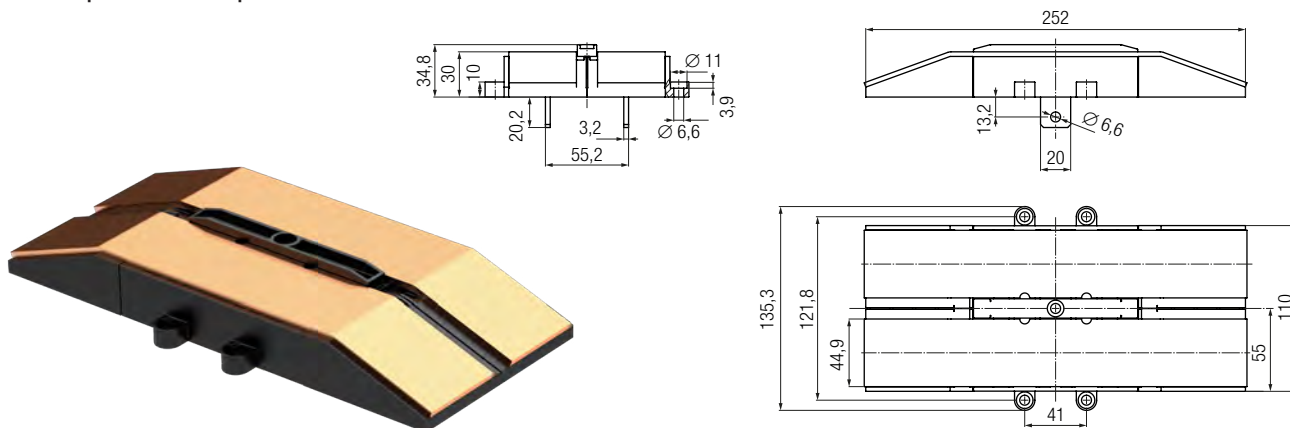


B (both) = W + L

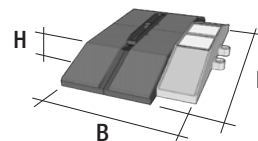
Enduro⁺

Preferred configurations for base plates | 2-pole

Base plate Enduro⁺ 2-pole



Part No.: XA-MCB 100SBT-P0



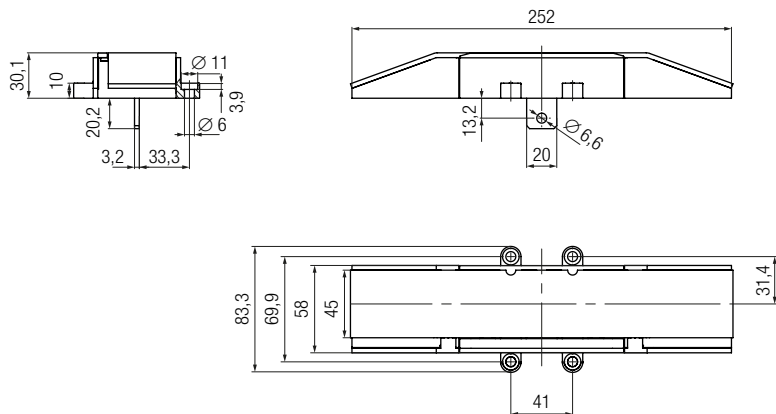
Part No.	# of poles	Rated current [A]	Design	Connection	Chamfered edge	Aux	L [mm]	B [mm]	H [mm]
XA-MCB 100SBT-P0	2	100	S	B	T	P0	252,0	135,5	34,8
XA-MCB 100SST-P0				S	T				
XA-MCB 100SDT-P0				D	T				
XA-MCB 100SBF-P0				B	F				
XA-MCB 100SDF-P0				D	F	P1	252	176	
XA-MCB 100SRE-P0				R	E				
XA-MCB 100SRE-P1				R	E				
XA-MCB 100SBT-P1				B	T	P1	252	176	
XA-MCB200LBT-P0	2	200	L	B		P0	364,0	135,5	34,8
XA-MCB200WBT-P0			W	B		P1	254,0	239,5	

Enduro⁺

Preferred configurations for base plates | 1-pole

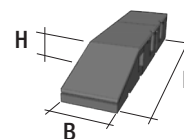
If larger distances between the poles, individual positioning or a spatially offset arrangement are required, individual contacts are used. The rated current can be increased accordingly by connecting the contacts in parallel.

Base plate Enduro⁺ 1-pole



Part No.: XA-MCB SP100SST

Note: The “SP” (Single Pole) in the order code addition indicates the single-pole version

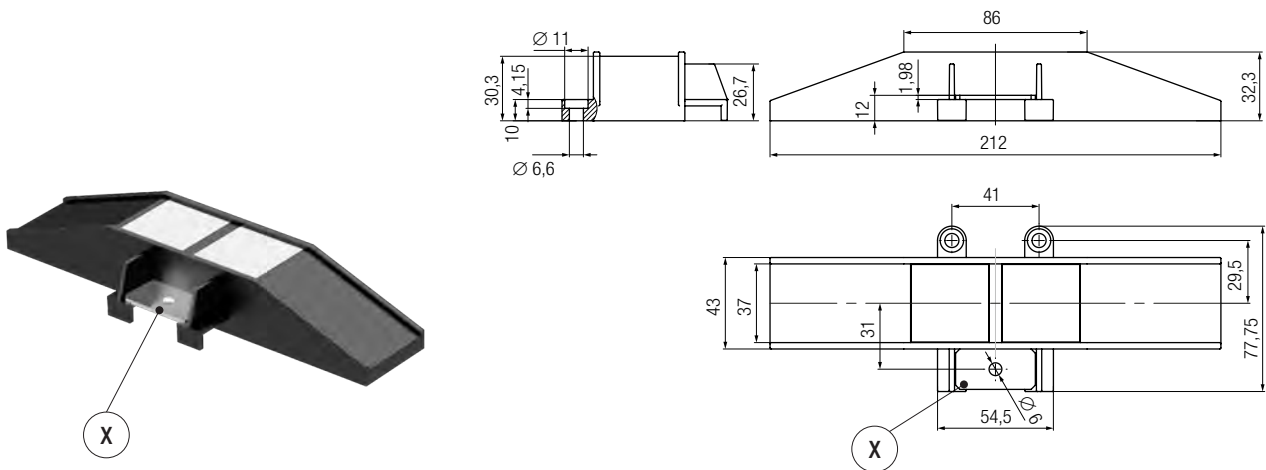


Part No.	# of poles	Rated current [A]	Design	Connection	Chamfered edge	Pilot	L [mm]	B [mm]	H [mm]
XA-MCB SP100SBT-P0	1	100	S	B	T		252	83,3	30,1
XA-MCB SP100SST-P0				S	T				
XA-MCB SP100SBF-P0				B	F		110		
XA-MCB SP100SSF-P0				S	F				
XA-MCB SP100SRE-P0				R	E		198,2		
XA-MCB SP200LBT-P0	1	200	L	B	T		364	83,3	30,1
XA-MCB SP200WBT-P0			W	B	T		254	135,5	
XA-MCB SP200WST-P0				S	T		254	135,5	
XA-MCB SP200WRE-P0				R	E		198,2	135,5	

Enduro⁺

Base plate auxiliary for Enduro⁺

The contacts of the auxiliary contacts are galvanically isolated in the middle (2 separate poles) for the auxiliary pick-up with 2 contacts arranged in series.

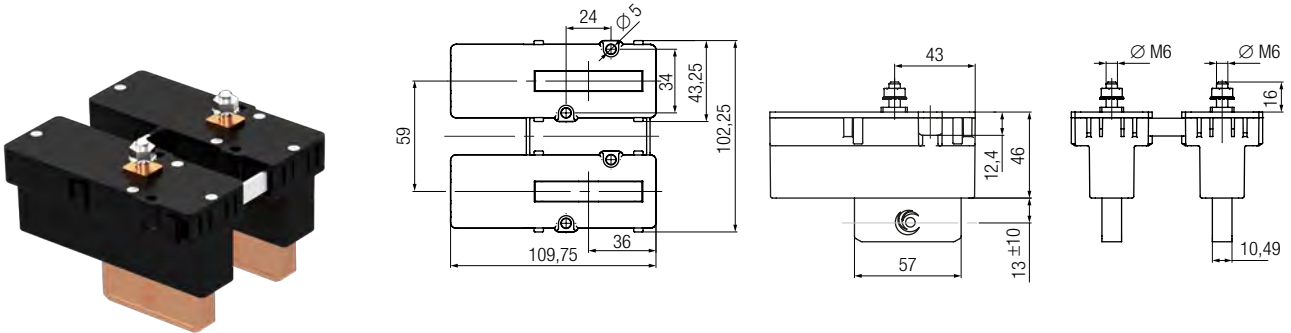


Note: Supplied with pressure plate (X). This is used for mounting without connection to a charging contact.

Part No.	# of poles	Rated current [A]	Design	Connection	chamfered edge
XA-MCBPS	1	5	Auxiliary base plate	bottom	included

Enduro⁺

Current collector Enduro⁺ | 2-pole



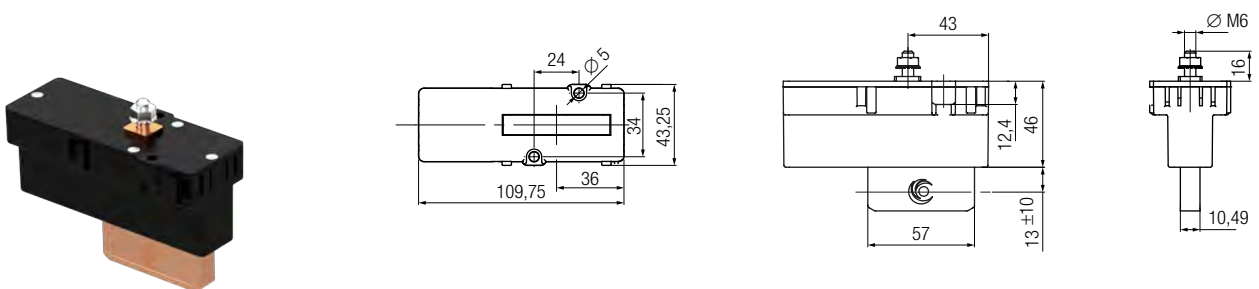
Part No.: XA-MCC-100ST-P0

Part No.	# of poles	Rated current [A]	Design	Auxiliary	L [mm]	B [mm]	H [mm]
XA-MCC100ST-P0	1	100	for FIRIT	P0	109,75	102,25	46 mm + (13,30 ±10 mm)
XA-MCC100ST-P1				P1	116,4	180,5	
XA-MCC200LT-P0		200		P0	219,7	102,2	
XA-MCC200WT-P0				P0	109,7	192,3	

200LT = 2 pairs of contacts in series
200WT = 2 contact pairs in parallel

P0 = without AUX contact
P1 = with AUX contact

Current collector Enduro⁺ | 1-pole



Bestellnummer: XA-MCCSP100T

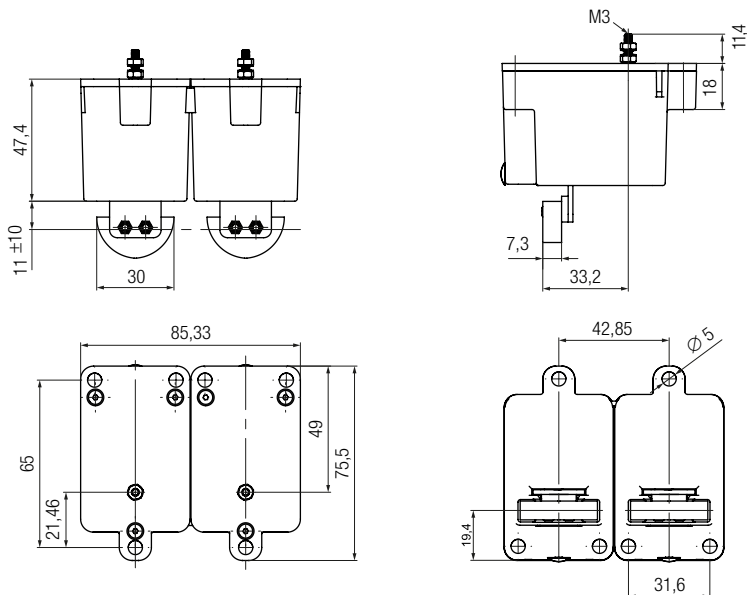
Part No.	# of poles	Rated current [A]	Design	Auxiliary	L [mm]	B [mm]	H [mm]
XA-MCCSP100T-P0	1	100	for FIRIT	-	109,75	43,25	46 mm + (13,30 ±10 mm)
XA-MCCSP200LT-P0				-	219,7	43,25	
XA-MCCSP200WT-P0		200		-	109,75		

200LT = 2 pairs of contacts in series
200WT = 2 contact pairs in parallel

Enduro⁺

Auxiliary contact Enduro⁺

Auxiliary contact 5 A
(2 contacts arranged in series, galvanically isolated)



Part No.: XA-MCCP

Note: Tightening torque for connecting bolt: 1,1 Nm

Installation situation Enduro⁺

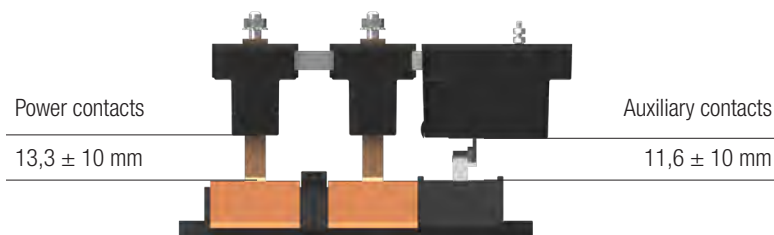
Nominal installation dimensions



Note:

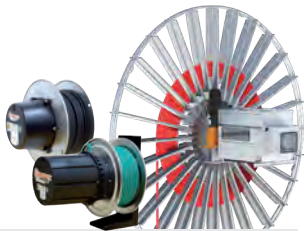
Nominal installation dimension: 89.4 mm with nominal spring preload
 Spring travel: 20 mm
 Connection/fastening: (not included)
 Connection lug: M6 x 1.0
 Fastening plate: M6 cylinder head screw

Nominal distances (mean spring travel)



Your Applications – our Solutions

The solutions we deliver for your applications are based on your specific requirements. In many cases, a combination of several different Conductix-Wampfler systems can prove advantageous. You can count on Conductix-Wampfler for hands-on engineering support together with the optimum solution to safely meet your needs.



Cable and Hose Reels

Motor driven and spring driven reels by Conductix-Wampfler provide energy, data and media over a variety of distances, in all directions, fast and safe.



Festoon Systems

Conductix-Wampfler cable trolleys can be used in virtually every industrial application. They are reliable, robust and available in an enormous variety of dimensions and designs.



Conductor Rails

Available as enclosed or multiple unipole systems, Conductix-Wampfler conductor rails reliably move people and material.



Inductive Power Transfer

The no-contact system for transferring energy. For all tasks that depend on high speeds and absolute resistance to wear.



Non-insulated Conductor Rails

Robust, non-insulated aluminum conductor rails with stainless steel cap provide the ideal basis for power supply of people movers and transit networks.



Radio Remote Controls

Safety remote control solutions customized to meet our customer needs with modern ergonomic design.



Reels, Retractors and Balancers

Available for hoses and cables, as classical reels or high-precision positioning aids for tools, we offer a complete range of reels and spring balancers.



Jib Booms

Complete with tool transporters, reels or an entire media supply system – safety and flexibility are key to the completion of difficult tasks.



Slip Ring Assemblies

Whenever things are really “moving in circles”, the proven slip ring assemblies by Conductix-Wampfler ensure the flawless transfer of energy and data. Here, everything revolves around flexibility and reliability!



Mobile Control Systems

Mobile control solutions for your plant – whether straightforward or intricate. Control and communication systems from LJU have been tried and tested in the automotive industry for decades.



ProfiDAT®

This data transfer system is a compact slotted waveguide and furthermore can be used as Grounding rail (PE) as well as positioning rail at the same time.



Charging Solutions

Whether inductive or conductive, this bundle of products offers always the perfect solution for all industrial charging tasks including the matching battery with integrated battery management system.

www.conductix.com

Conductix-Wampfler

has just one critical mission:

To provide you with energy and data transmission systems that will keep your operations up and running 24/7/365.

To contact your nearest sales office, please refer to:

www.conductix.contact

