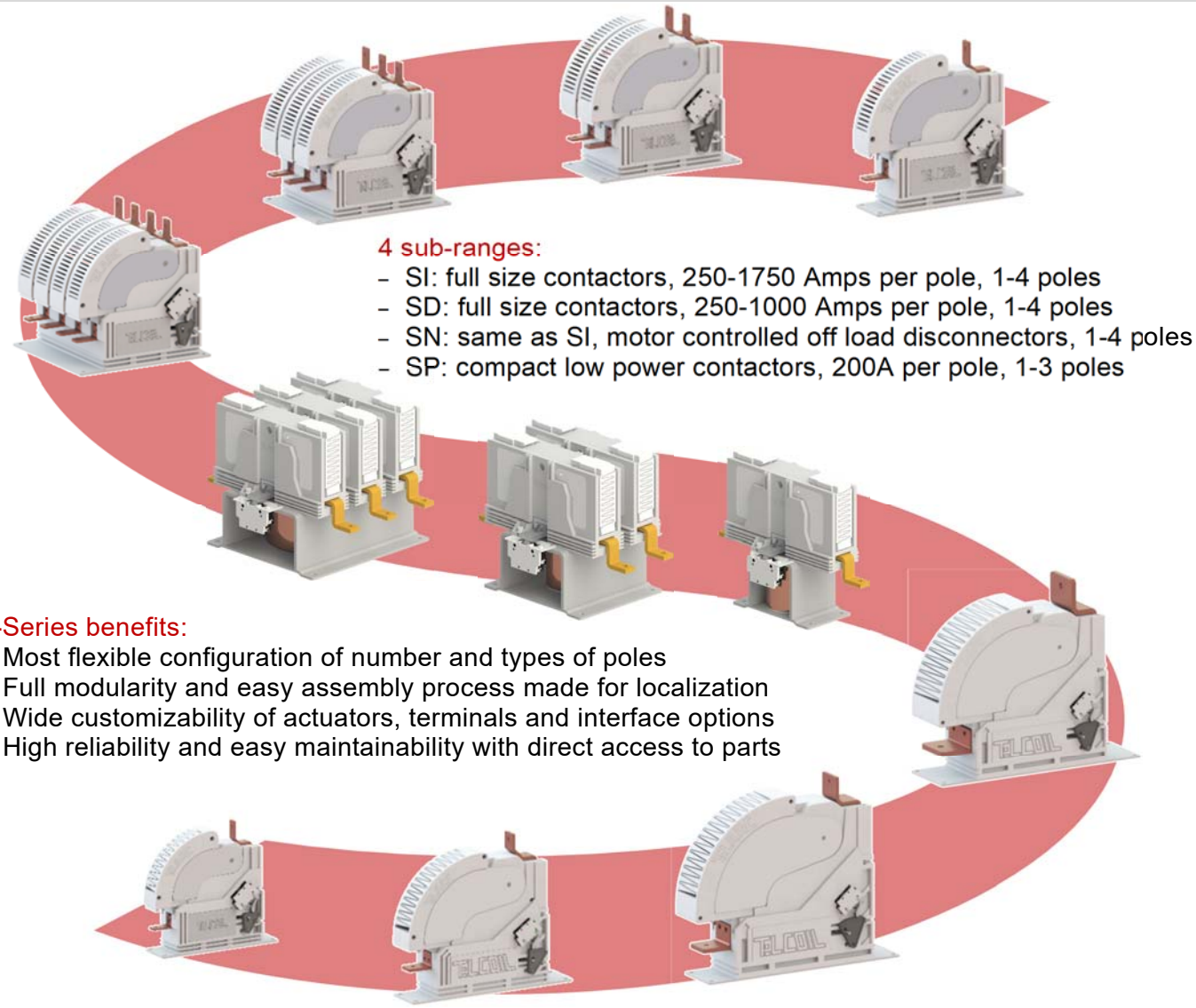
SP-PANORAMA

S-Series Contactors & Disconnectors

S-series contactors and disconnectors are globally the most complete range of devices for AC and DC current switching. Flexibly configurable in thousands of versions, they fit a wide variety of applications and offer highest performances to suit virtually any specification



4 sub-ranges:
- SI: full size contactors, 250-1750 Amps per pole, 1-4 poles
- SD: full size contactors, 250-1000 Amps per pole, 1-4 poles
- SN: same as SI, motor controlled off load disconnectors, 1-4 poles
- SP: compact low power contactors, 200A per pole, 1-3 poles

S-Series benefits:
- Most flexible configuration of number and types of poles
- Full modularity and easy assembly process made for localization
- Wide customizability of actuators, terminals and interface options
- High reliability and easy maintainability with direct access to parts

Designed to Railway Standards but suitable for multiple application


Rolling stock


Substation equipment

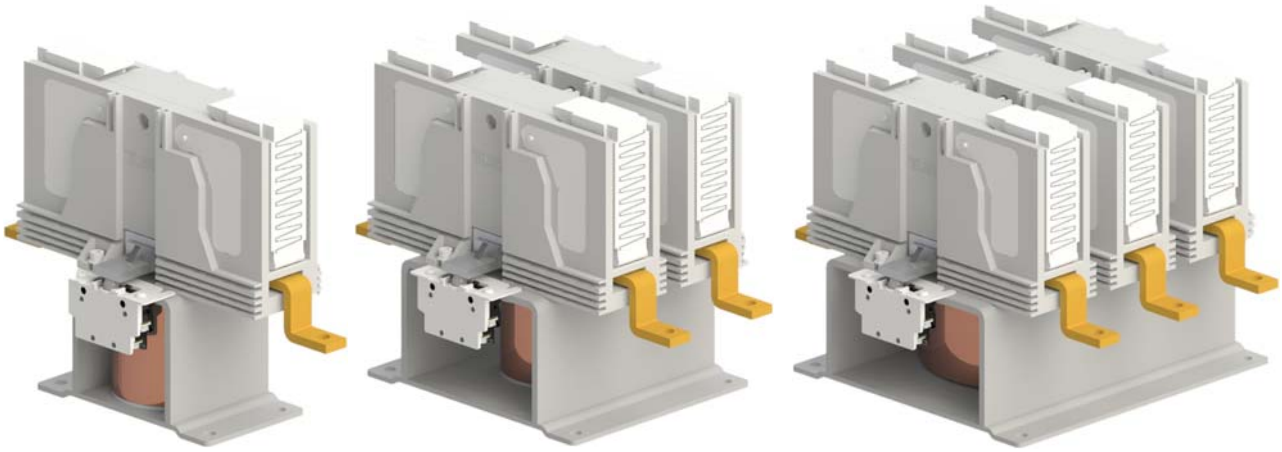

Energy generation


Industrial application

SP General Characteristics

SP is the S-Series sub-range of modular, small power, compact contactors for DC current in application up to 3600Vdc, and AC currents up to 690V.

Designed to Railway Standards, SP models can be used in multiple applications, from Rolling Stock systems, to Rail Wayside, as well as inside Energy Conversion equipment and Industrial Power control applications.



SP Contactors are based on a standardized contactor pole, with double rotational interruption in air (2x17mm), and 2 opposite facing arc chutes. 1-2-3 poles versions are available.

3 different types of arc chutes are fitted to differentiate the poles for the different DC voltage applications (900/1800/3600V)

The main pole has a thermal current of 300A and is suitable for all light duty (auxiliary) power control services on board of vehicles or on fixed installations.

The arc blow out system is based on permanent magnets working on each arc chute. In DC currents, SP contactors are not bidirectional.

The coil is fitted to the fixing base and mechanically holds the poles without additional container parts. It is differentiated in width and length depending on the number of poles. The coil covers the full battery voltage range +25%/-30% of all typical control voltages (24/36/48/72/110/220 Vdc)

A dedicated coil is available to drive the NC single pole version.

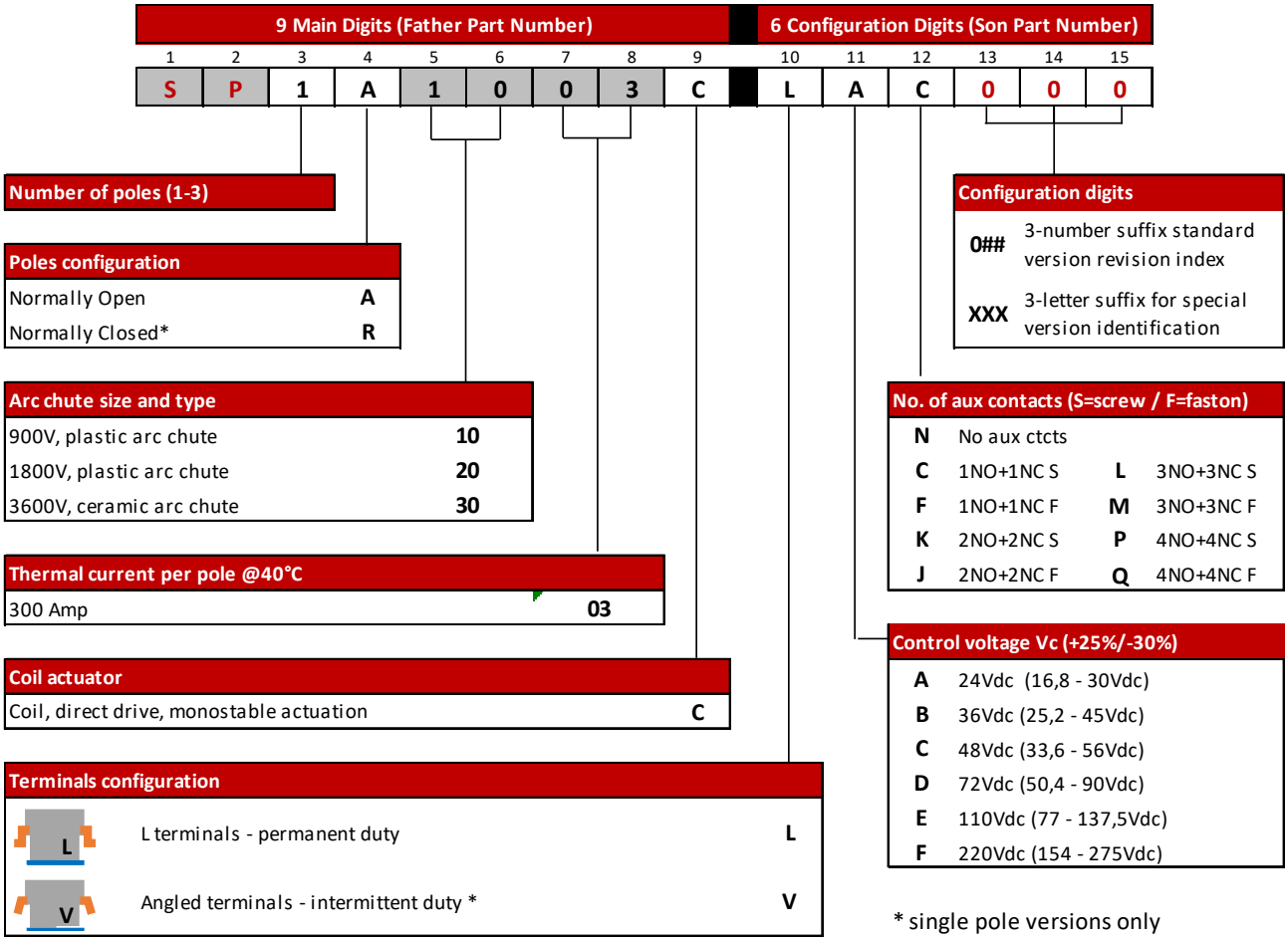
The mounting orientation can be horizontal or vertical, without spring or setting differentiation

SP poles are designed for easy connection by cable or busbars. Two different terminal shapes (Z or V) are available alternatively.

Up to 4 IP67 sealed snap action auxiliary contacts blocks (each containing 1NO+1NC contacts) can be fitted to the side of the coil assembly.

SP Part Number selection

SP-Contactors follow a „talking“ Part Number System to differentiate between its versions:



* single pole versions only

Filter Precharging Application

As a standard, the V shape is available as single pole only, for cable connection, and is equipped with an intermittent duty coil for filter precharge application on railway traction or auxiliary converters.

Main digits

1. number and type of poles (NO/NC),
2. nominal voltage (type of arc-chutes),
3. thermal current (300A)
4. actuator type (Coil)

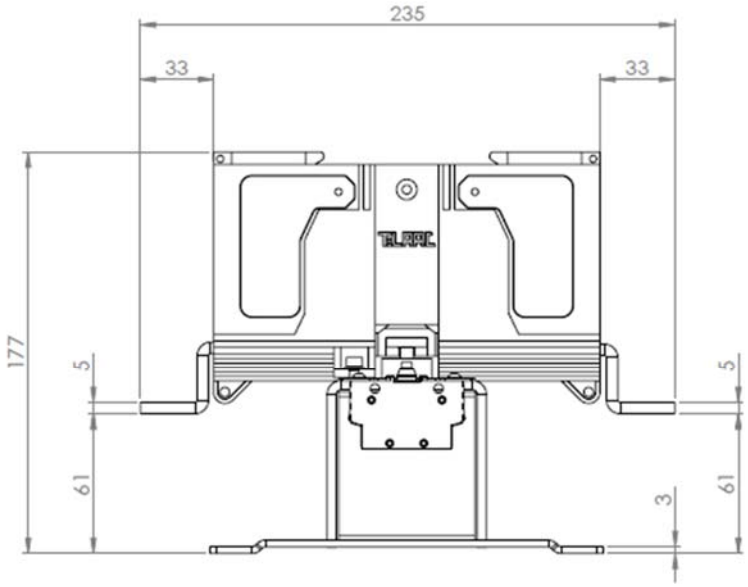
Config digits

5. Terminal configuration (L or V terminals, V for 1p precharge application)
6. Control Voltage (coil voltage)
7. Number and terminal type of auxiliary contacts blocks (each 1NO+1NC IP67 sealed)
8. Standard / special versions (customized arrangements)

SP Technical Data

SP			SP1A1003	SP1A2003	SP1A3003	SP2A1003	SP2A2003	SP2A3003	SP3A1003	SP3A2003	SP3A3003	SP1R1003
Rated operational voltage DC		[Vdc]	900	1800	3600	900	1800	3600	900	1800	3600	900
Rated operational voltage AC		[Vdc]	1000	1500	690	1000	1500	690	1000	1500	690	-
Rated insulation voltage		[V]	3600									
Rated impulse withstand voltage		[kV]	25									
Free air thermal current @40°C		[A]	300									
Free air therm. curr. poles in parallel		[A]	-			550			800			
Breaking current DC 900V		[A]	300	-	-	300	-	-	300	-	-	40
Breaking current DC 1800V		[A]	-	250	-	-	250	-	-	250	-	15
Breaking current DC 3600V		[A]	-	-	120	-	-	120	-	-	120	5
Breaking current DC poles in series 900V		[A]	-	-	-	500	-	-	-	-	-	60
Breaking current DC poles in series 1800V		[A]	-	-	-	-	400	-	-	-	-	30
Breaking current DC poles in series 3600V		[A]	-	-	-	-	-	200	-	-	-	10
Breaking current AC 1000V		[A]	400									50
Breaking current AC 1500V		[A]	250									40
Breaking current AC 3ph max 690V		[A]	-	-	-	-	-	-	500	600	700	-
Short time withstand current 20ms		[kA]	2,5									
Short time withstand current poles in parallel		[kA]	-	-	-	4,5	4,5	4,5	7	7	7	-
Making capacity		[kA]	1,5									
Making capacity poles in parallel		[kA]	-	-	-	2,5	2,5	3,5	3,5	3,5	3,5	-
Electrical life endurance @breaking current values		cycles	8000									
Critical current @Ue		[A]	0									
Control coil	Coil voltage range C-type	[Vdc]	24/36/48/72/110/220									
	Closing power	[W]	30			45			60			40
	Holding power	[W]	30			45			60			40
	Maximum cycling frequency	['/min]	12									
Closing time (pole opening for NC)		[msec]	100									
Opening time (pole closing for NC)		[msec]	40									
Overvoltage category EN 50124-1			PD3/OV3									
Component cat / Operation frequency			A2/C3									
Shock & vibration			EN 61373 cat.1B									
Mechanical life		[cycles]	2mio cycles									
Operational temperature (IEC 50125-1)		[°C]	-40°C +70°C									
Storage temperature		[°C]	-50°C +85°C									
Operational altditude		[m asl]	<2000 m asl									
Hi Pot test main poles to ground & grounded aux [50Hz 1min]		[V]	7000									
Hi Pot test between open poles [50Hz, 1min]		[V]	7000									
Hi Pot test coil and aux to ground [50Hz, 1min]		[V]	1500									
Weight range(depends on arc chute/terminals)		[kg]	1,8			3,2			4,8			2

SP 1 pole NO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177
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61
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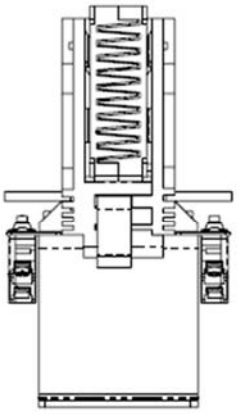
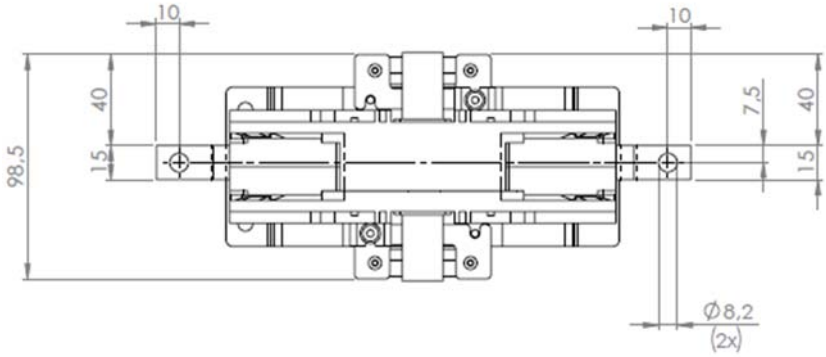
61

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7,5
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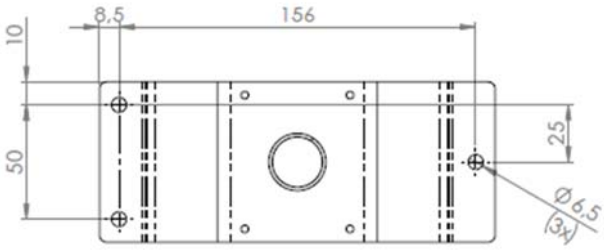
Ø8,2
(2x)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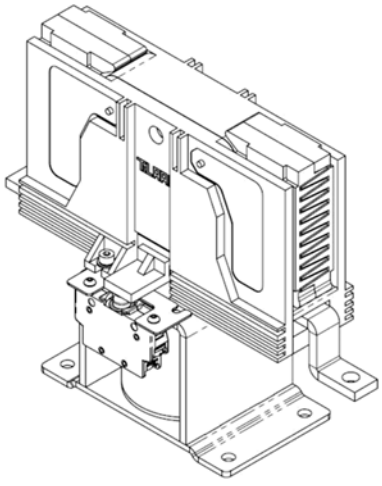
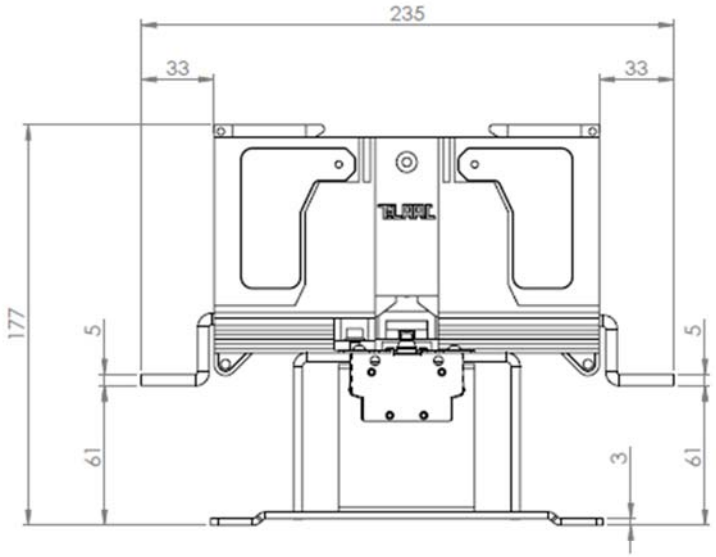
(3x)



SP 2 poles NO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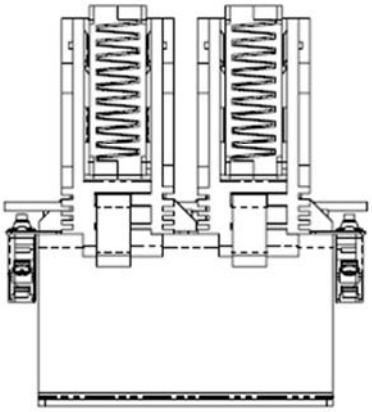

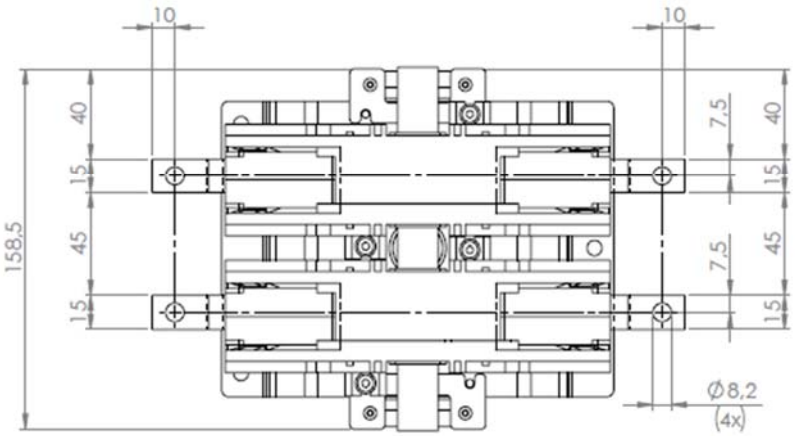
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7,5
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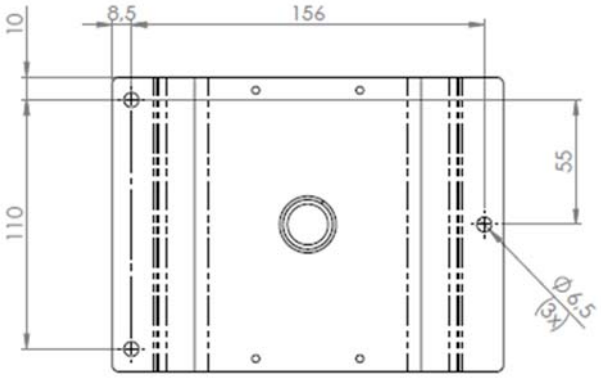
Ø8,2
(4x)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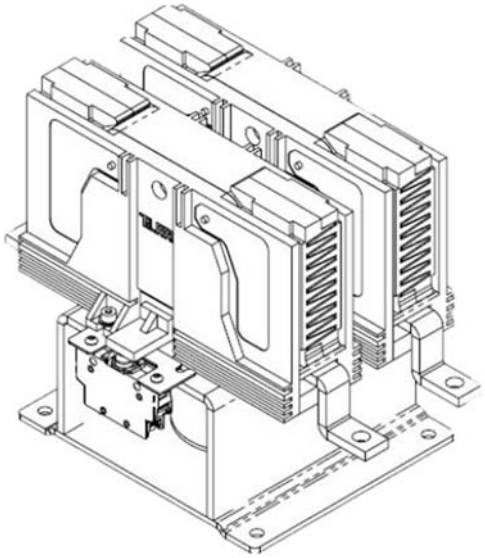
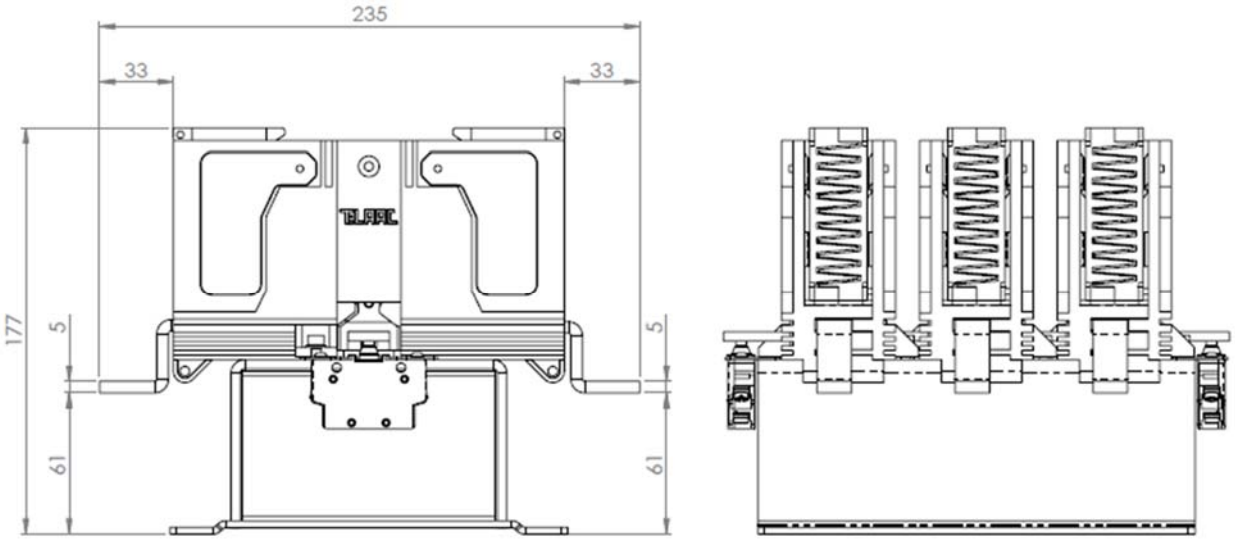


SP 3 poles NO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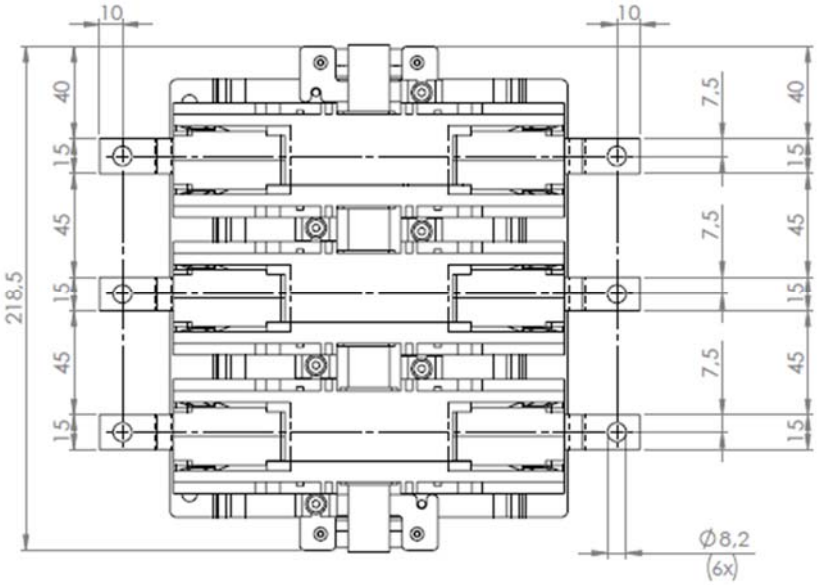
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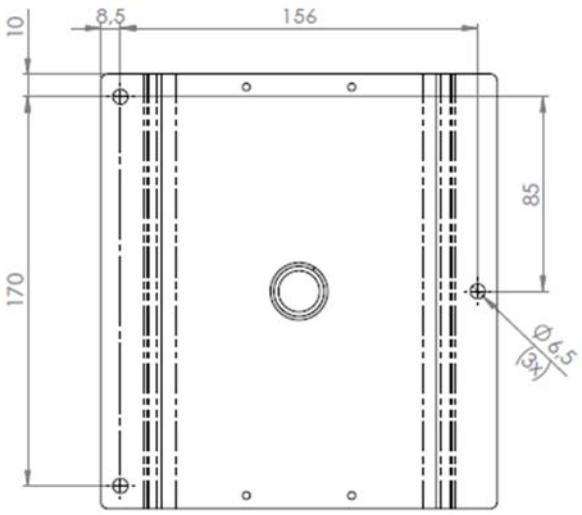
(6x)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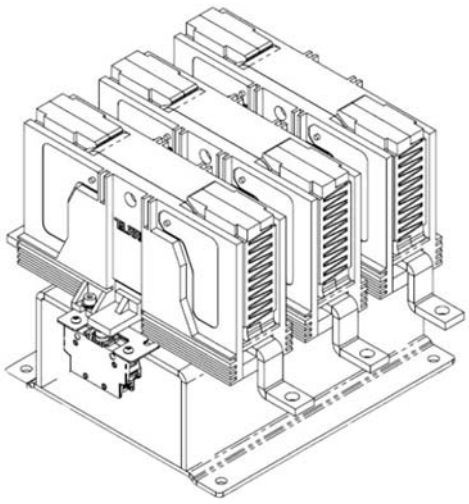
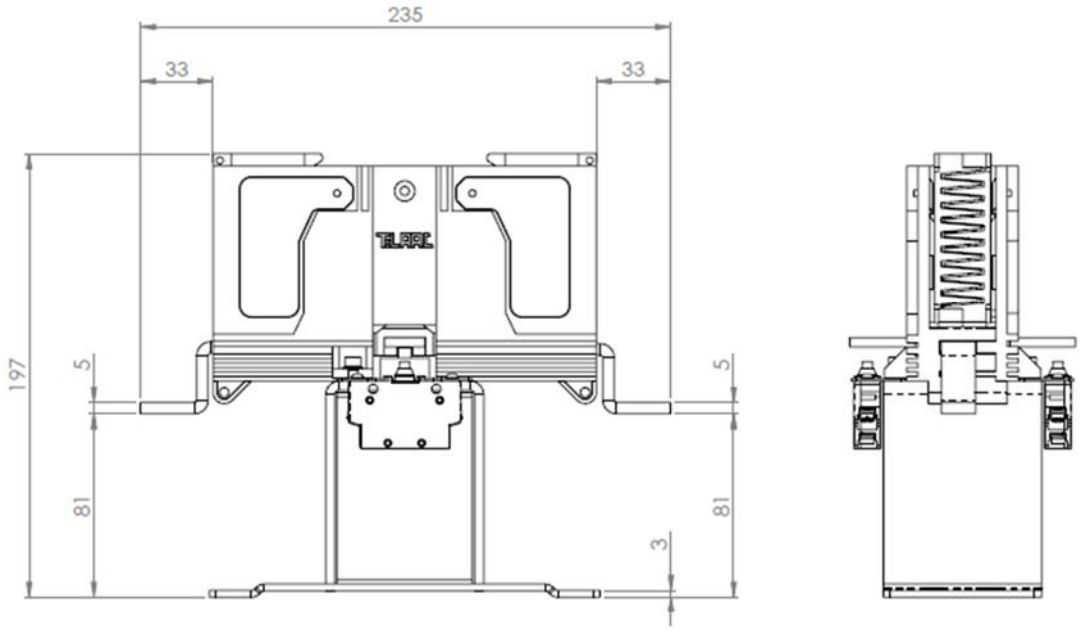


SP 1 pole NC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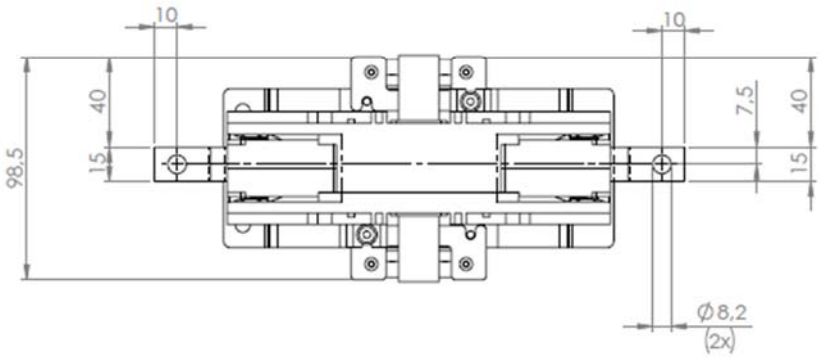
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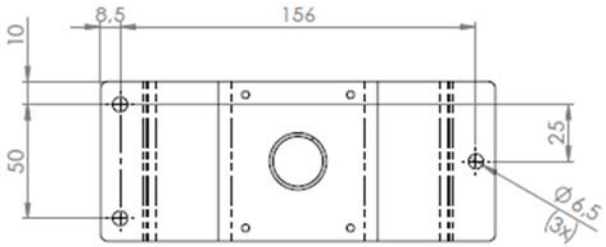
(2x)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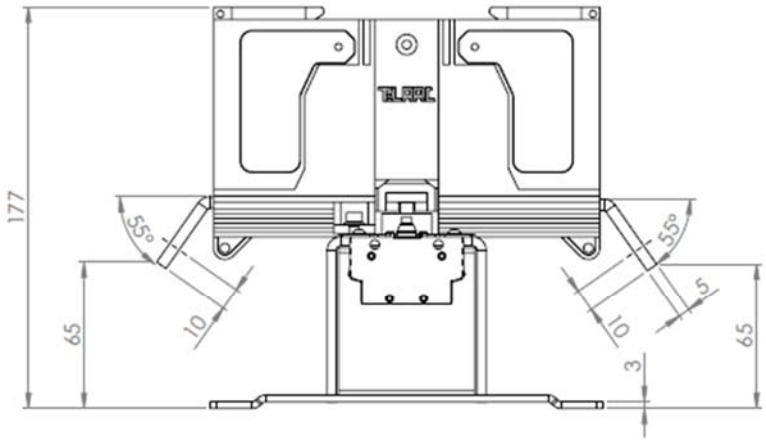
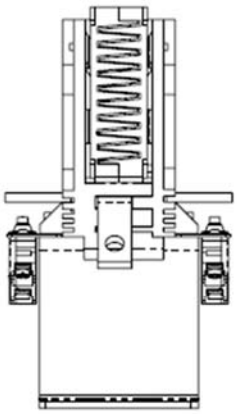
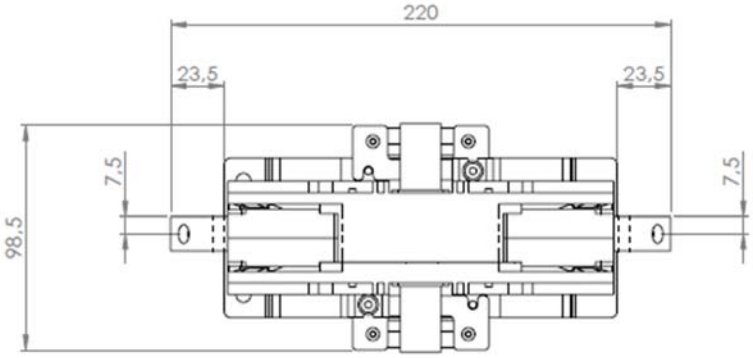
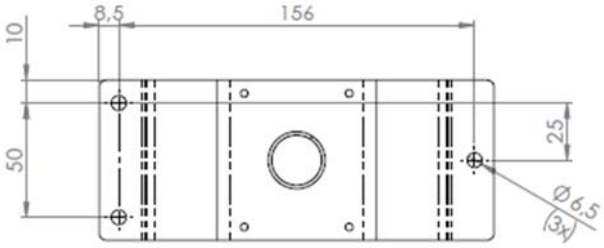
Ø6,5
(3x)

SP 1 pole- V terminals

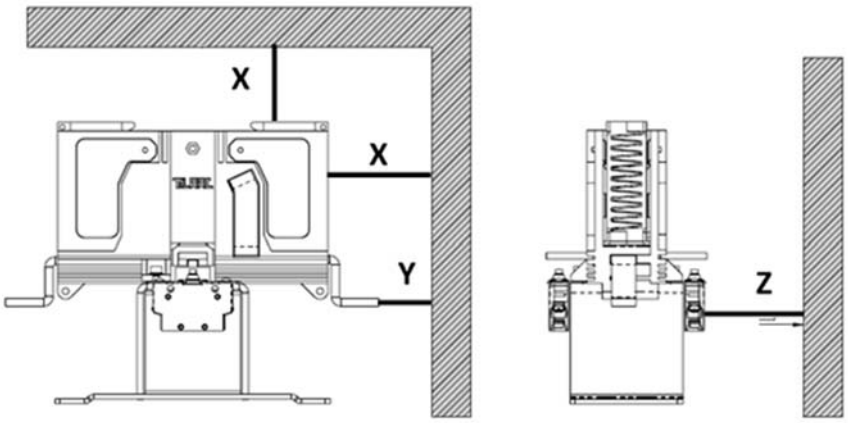






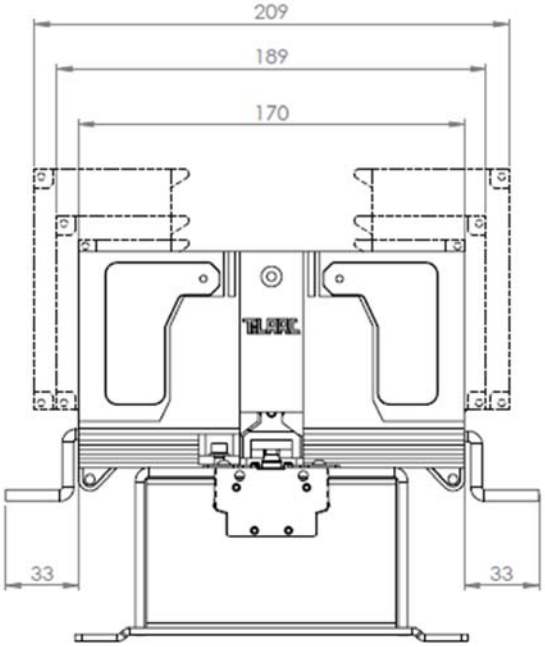


SP Installation insulating distances

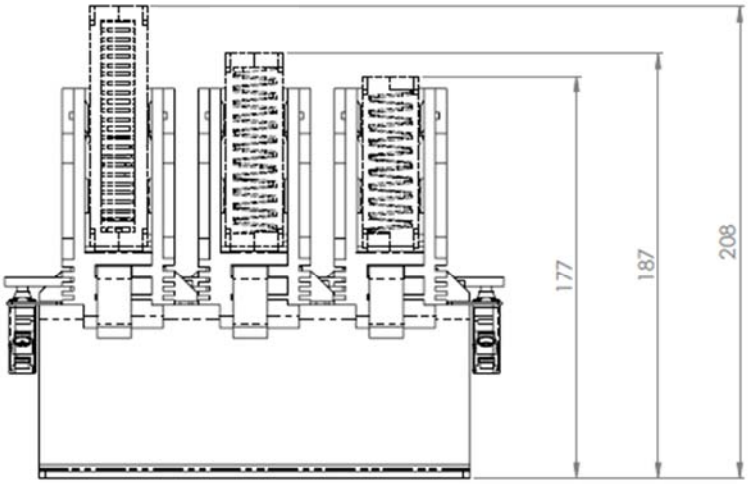


mm		Nominal Voltage (Arc chute)		
		10	**20**	**30**
Distance to metal parts	**X**	100	120	150
	Y	50	50	50
	Z	30	50	50
Distance to insulated parts	**X**	50	50	60
	Y	30	30	50
	Z	20	20	30

SP Arc Chute sizes



30 20 10



All information contained in the present document is subject to change without notice

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