



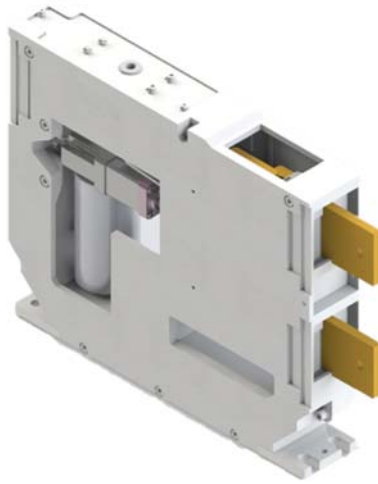
TELAAC

TS-PANORAMA

T-Switches Range



TL Contactors



TS disconnectors



TP Contactors

TELARC's multipurpose DC and AC current switches for multiple application

Rolling Stock



Energy generation



Substation equipment



Industrial application

TS General Characteristics

TS is a range of high power disconnectors suitable for both AC and DC current in application up to 3600Vdc.

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

TS disconnectors are driven by a maintenance free motor with integrated gearbox. They can have up to 3 main poles, which can be configured either as Normally Open or as Change Over contacts

TS disconnectors are designed with a single size body to fit two different thermal current capabilities so that 800A and 1500A versions have different dimension of busbars (thickness) but same overall dimensions.

The pole is designed in order to accept different electrical connections. This allows easy use of the disconnector inside cubicles with limited space for cables.

The pole has a long mechanical life (250000 operations) and has no flexible braid connection, hence no special maintenance is required except the use of grease on the contacts clamps.

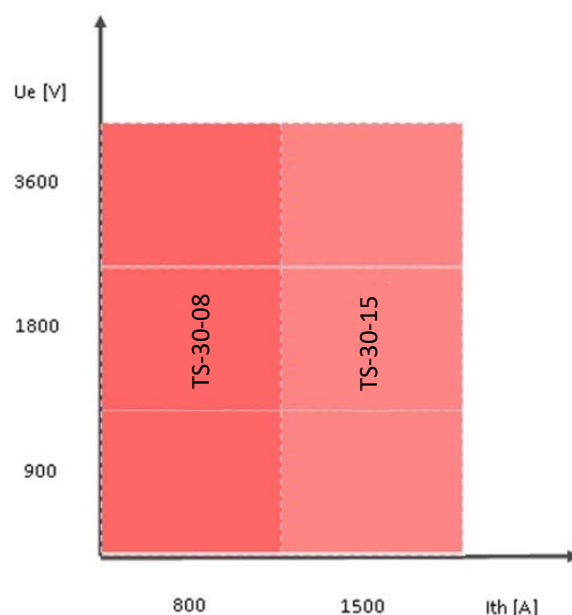
The contacts clamps can withstand a 100kA short circuit current (50ms).

Multipole versions are activated by a single motor with a low closing power consumption and a limited operation time (3sec at nominal voltage) for both opening and closing operations.

TS series can be equipped with standard auxiliary contacts or with an optional auxiliary "side" pole (TSK) with high current capability up to 300A (3000V) with NO+NC contacts.

TS models can be equipped with additional on board mounted relays incorporating the control logic

The mounting orientation can be in any direction without prescriptions.



TS Models

TS-Disconnectors follow a „talking“ Part Number System to differentiate between its versions:

Main digits					Configuration digits					TS DISCONNECTORS PART NUMBERING SYSTEM						
Series	Poles	Nom. Volt.	Th. Curr.	Term.	Act volt	Mtg. Pos.	Aux cts	Aux fast.	Version							
TS	1	10	08	E	A	H	0	C	0##	The P/N for TS disconnectors has 15 digits: 8 main digits + 7 config digits						
	2	20	15	T	B	V	1	F	XXX							
	3	30		Y	C		2			Identifies standard / special version						
				C	D		3			"0##" = standard version, ## = revision index						
				S	E		4			"XXX" = special version, dedicated docs apply						
				F	F					Indicates type of aux tips (Silver/Gold) & fastening (Screw/FastOn)						
										"C" = Silver / Screw						
										"F" = Silver / FastOn						
										Indicates number of aux contacts blocks (1NO+1NC each)						
										Indicates mounting orientation						
						H	base plate horizontal			V	base plate vertical					
						Indicates actuation voltage +25% / -30%										
					A	24Vdc	C	48Vdc	E	110Vdc	Rectified AC supply to be controlled on DC side					
					B	36Vdc	D	72Vdc	F	220Vdc						
					Indicates terminals configuration and type of poles: E+T+C+S = NO poles, Y+F = CO poles											
					E	T	Y	C	S	F						
					Indicates thermal current of each pole (@ 40°C)											
					08= 800A			15= 1500A								
					Indicates nominal voltage of poles											
					10	750V nom, 1000V max			20	1500V nom, 2000V max			30	3000V nom, 3600V max		
					Indicates number of main Normally Open (NO) or Change Over (CO) poles											

The main digits identify:

1. number of poles, either Normally Open or Change Over type
2. nominal voltage
3. thermal current (size of busbars)
4. connection interface (shape and orientation of busbars – NO or CO Poles)

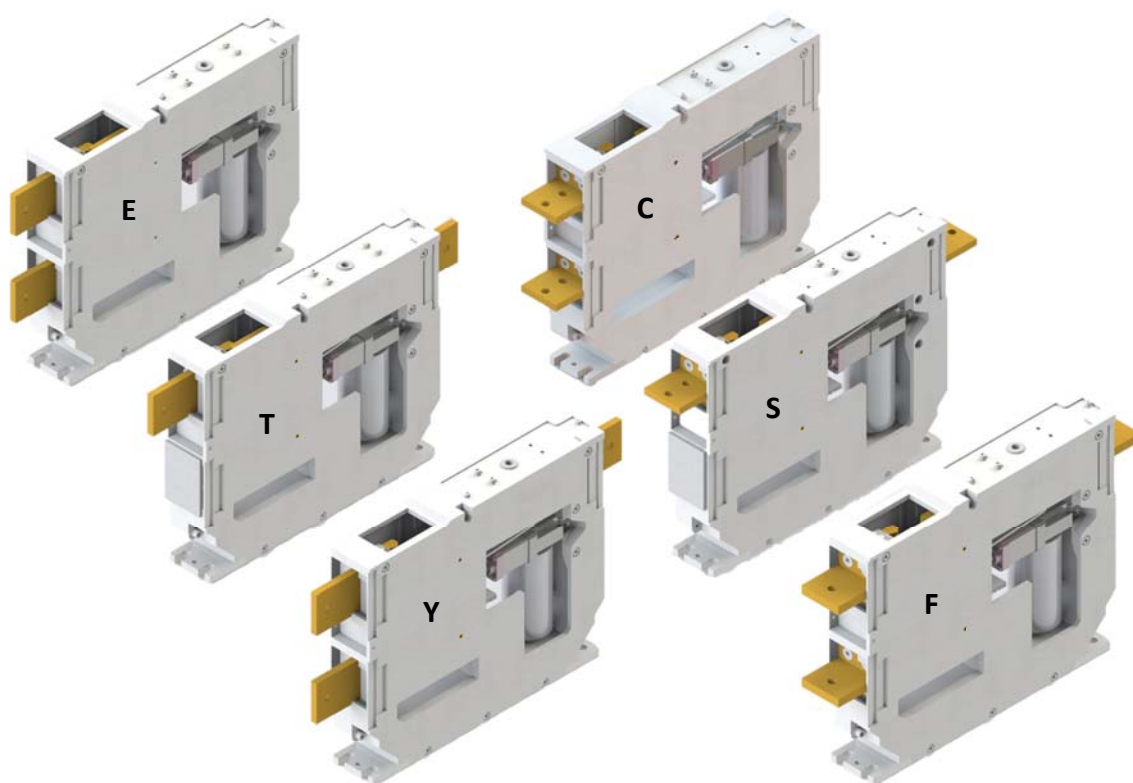
TS P/N & Docs

The configuration digit are used to define

1. Control voltage (motor)
2. Installation orientation of the base plate (any TS can be mounted H or V without prescriptions)
3. Auxiliary contacts number (1NO+1NC blocks)
4. Auxiliary contacts type (tip material and fastening)
5. Standard / special versions (e.g. for auxiliary harnessing, special interface arrangements, etc)

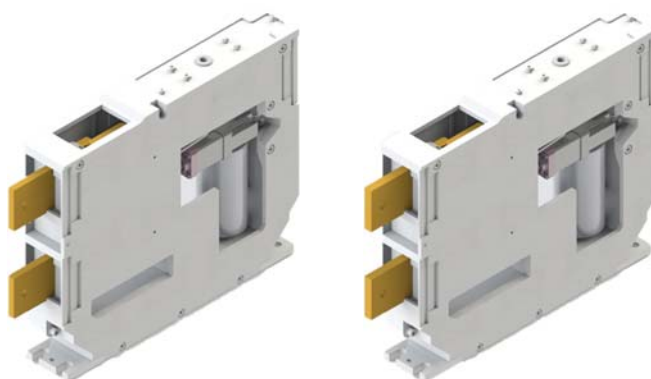
TS disconnectors product documentation is released and updated online at www.telarc.it and includes:

1. A Product Chart PC for every applicable combination of main digits (standard version), including all technical details, drawings, configuration information and spares part numbers.
2. A Product Specification PS for every special version released (full part number)
3. A Validation Report VR, including all details of type tests carried out on TS range disconnectors
4. A Product Manual PM, with detailed installation and maintenance instructions

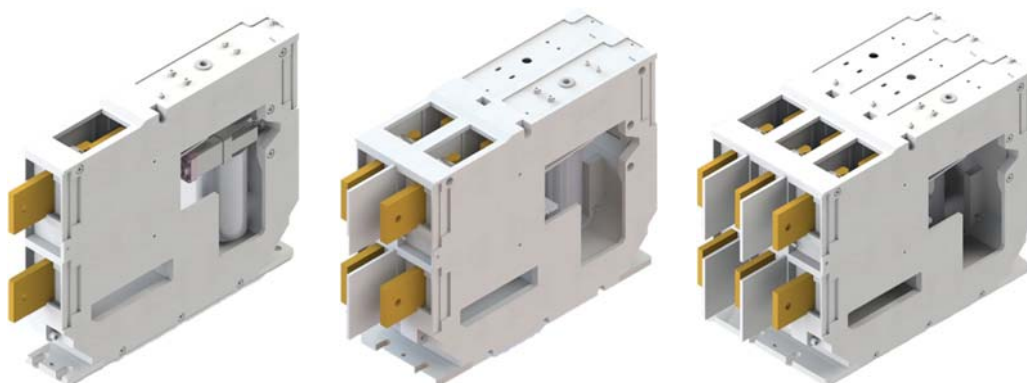


E-Terminals
T-Terminals
Y-Terminals
C-Terminals
S-Terminals
F-Terminals

800A
1500A
Busbars



1, 2, 3
poles

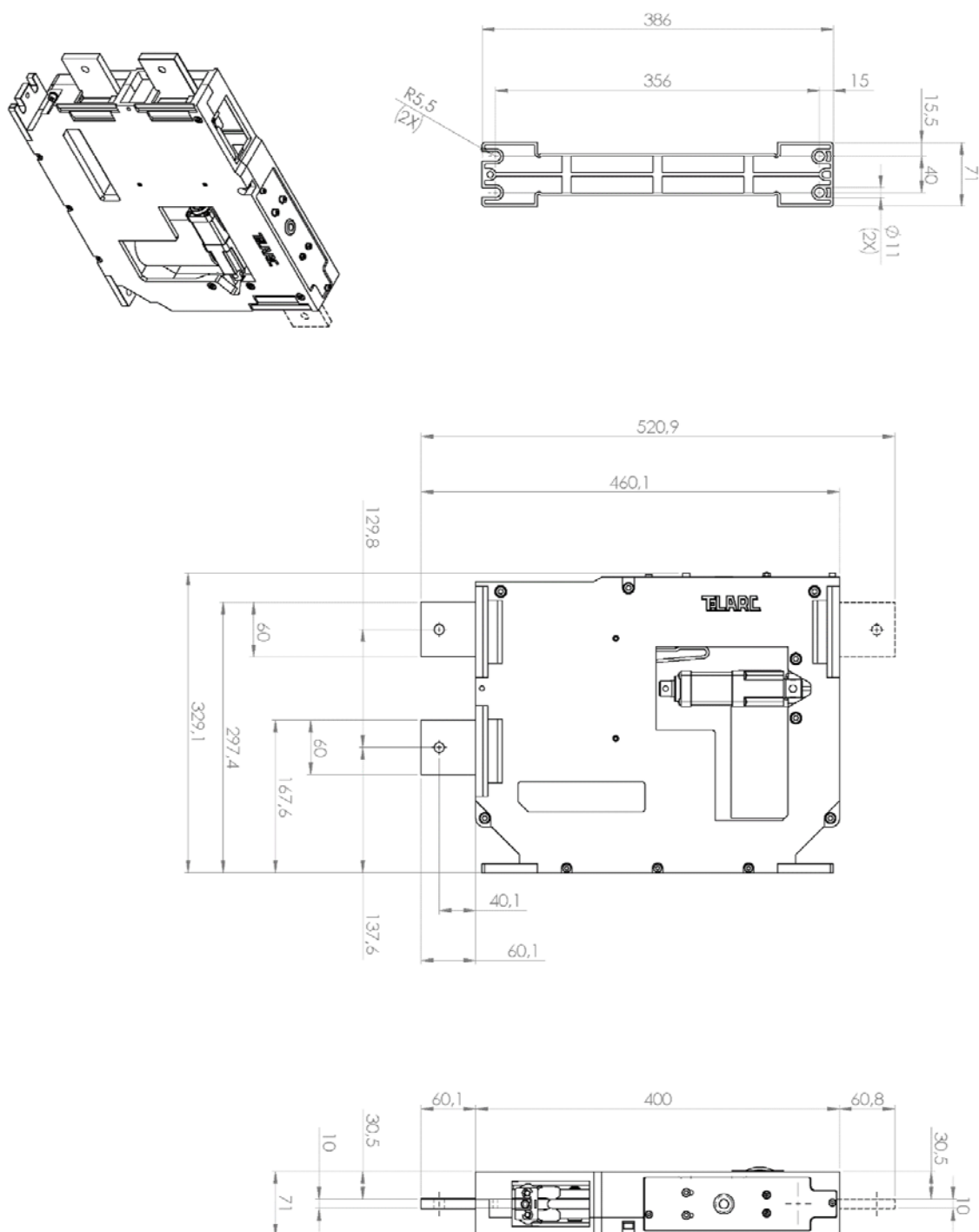


TS Data Sheet

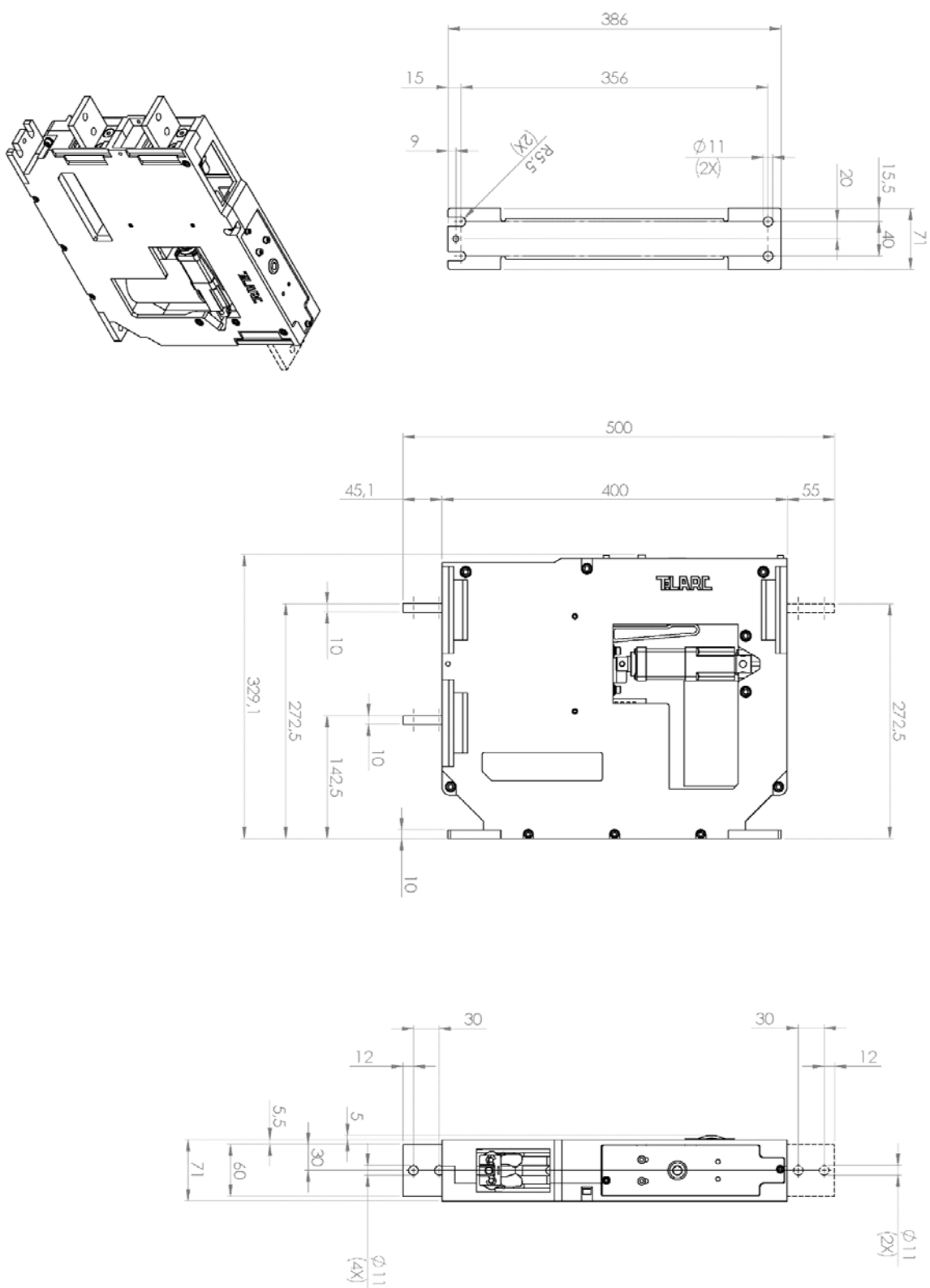
TS technical data are listed according to series-parallel combinations of voltage and current versions

TS TECHNICAL DATA CHART				pole size	pole connection		TS-1-30	TS-2-30	TS-3-30	
Main electrical characteristics of each main pole or combination of poles	Rated Operational Voltage				Ue	3600			V	
	Rated insulation voltage				Ui	4800			V	
	Rated impulse withstand voltage				Uimp	25			kV	
	Free air thermal current @40°C	-08	none / series	Ith	800			A		
		-15		Ith	1500			A		
			-08	parallel	Ith	-	1600	2400	A	
			-15		Ith	-	3000	4500	A	
	Rated short-time withstand current			none / series	Icw/ 50ms	100			kA	
parallel				-		180	270	kA		
Other mechanical and control characteristics	Overvoltage category EN50124-1					PD3/OV3				
	Component category/ Operational frequency					A4/C3				
	Shock and vibration					EN 61373 cat.1B				
	Mechanical endurance					250000			cycles	
	Closing Power consumption					30			W	
	Holding Power consumption					0			W	
	Mechanical operation time [open -close]					3-3			sec	
	Weight (E or C Terminals)					11	20	30	kg	
	Weight (S or T Terminals)					13	24	36	kg	
	Operational Temperature (IEC50125-1)					-40°C +75°C			°C	
	Storage Temperature					-50°C + 85°C			°C	
	Operational altitude					<2000			m	
Routine testing	Operation tolerance @20°C ambient					70%-125% Uc				
	Assembly verification					100%				
	Hi Pot test main poles to ground & grounded aux [50Hz 1min]					10000			V	
	Hi Pot test between open poles [50Hz, 1min]					7900			V	
	Hi Pot test coil and aux to ground [50Hz, 1min]					1500			V	

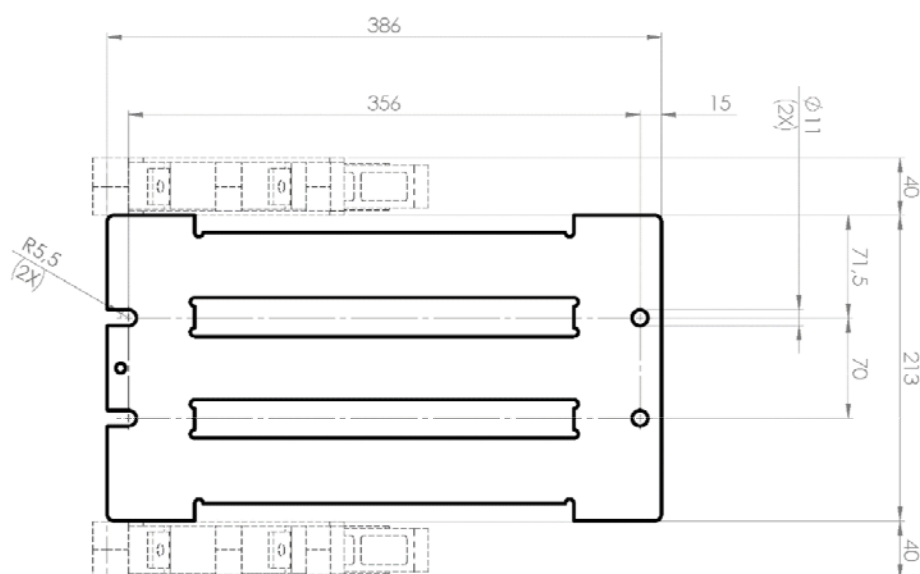
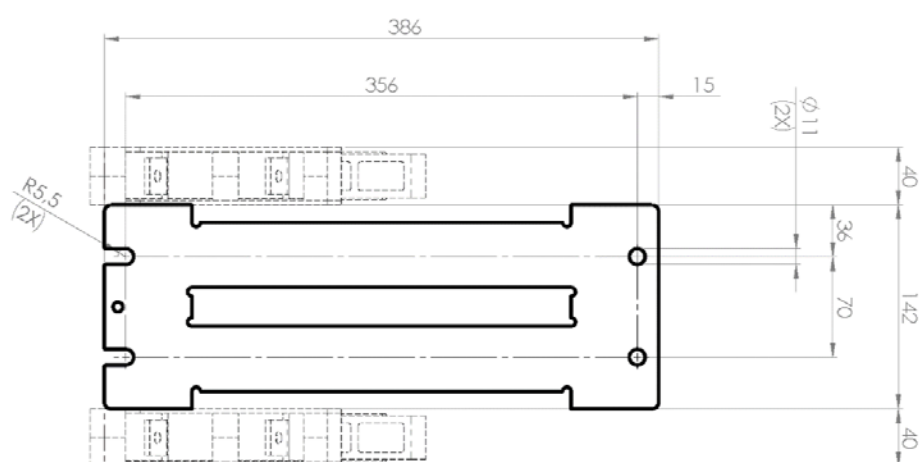
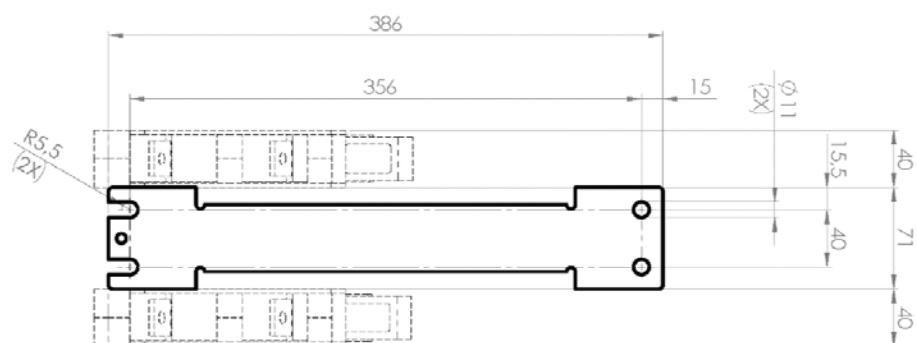
TS T/E/Y single pole drawing



TS S/C/F single pole drawing



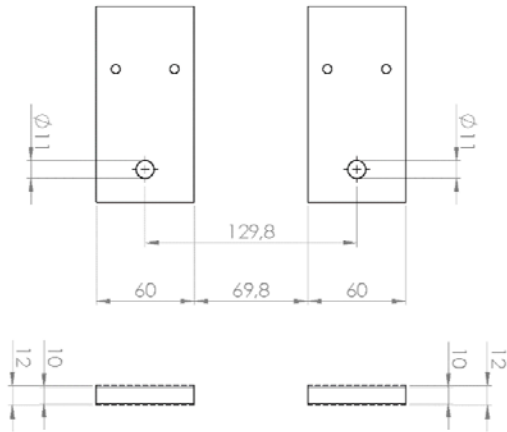
TS fixing base & overall width (bottom view)



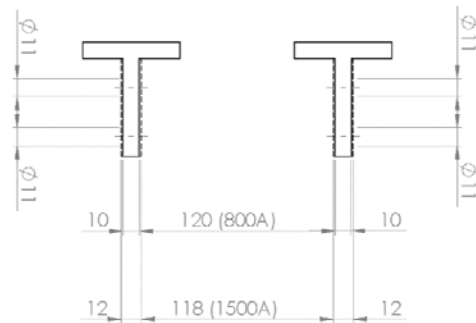
TS Terminals Sizes (side view)

Y and F terminals combine respectively E/T and C/S terminals

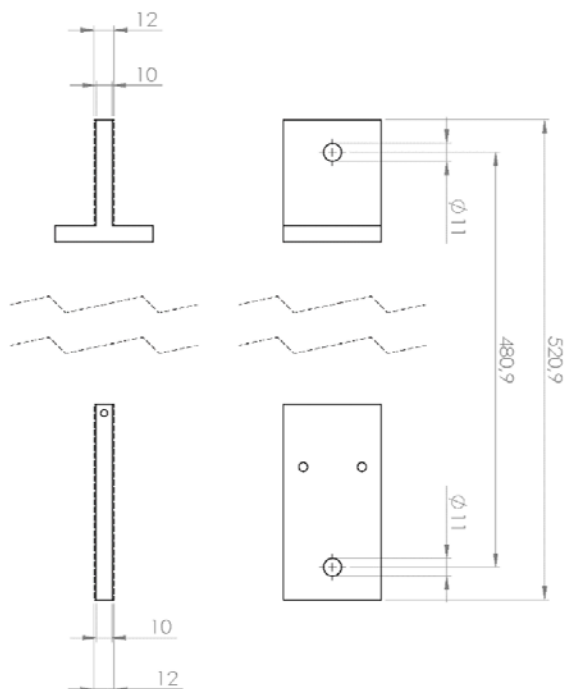
E-Terminals



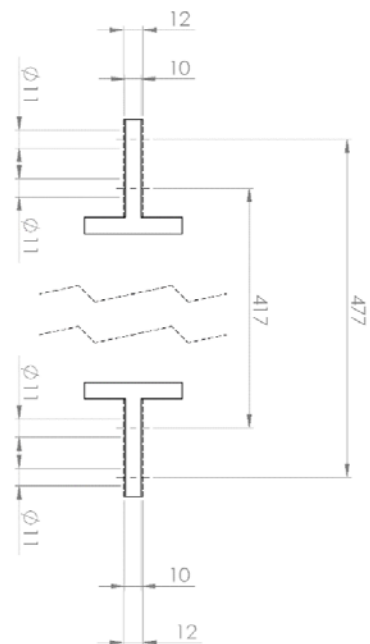
C-Terminals



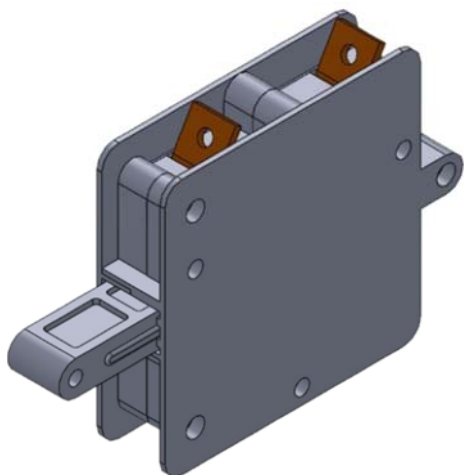
T-Terminals



S-Terminals



TSK Pole



TSK optional contact pair:

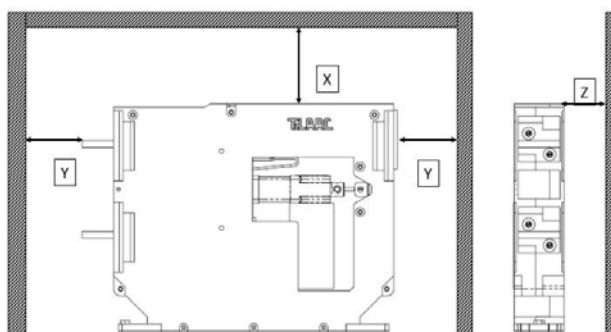
The TSK pole is driven by the same mechanism of the main TS disconnecter. The NO+NC contacts allow a CO configuration by connecting the terminals on one of the sides.

Up to two TSK poles can be fixed to any TS unit, one on each side of the disconnecter.

TSK Electrical Data			
Rated Operational Voltage	U_e	3600	Vdc/Vac
Number / types of contacts		1NO + 1NC	bistable
Rated insulation voltage	U_i	4800	Vdc
Rated impulse withstand voltage	U_{imp}	25	kV
Conventional free air thermal current @40°C	I_e	300	Amps
Rated short-time withstand current	I_{cw}	5	kAmps

TS insulating distances

Installation drawing:



mm	To metal (grounded) parts	To insulated parts
X	50	40
Y	80	50
Z	30	30

Fixing plate insulation shall be adopted to safeguard creepage to ground when needed, depending on connection polarity adopted.

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



Via E. Fermi 50, 20090 Trezzano sul Naviglio (Milano) – Italy
Phone/Fax +39.02.4969.9540 – email: info@telarc.it
www.telarc.it