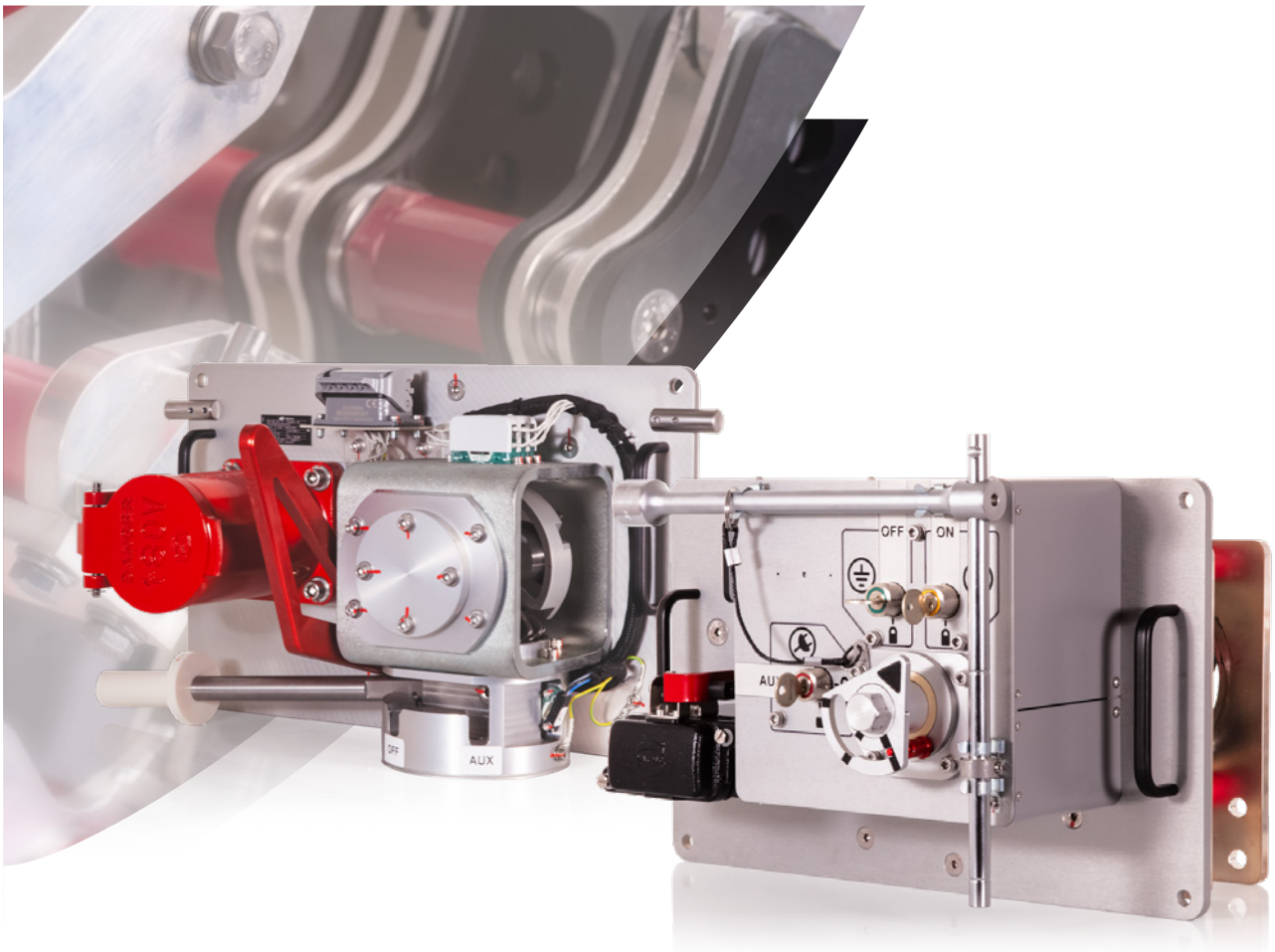
ELECTRICAL
SAFETY
SOLUTIONS

Sécheron

SELECTOR AND EARTHING DEVICE FOR DC EMU

Type **SED09.10, SED18.15**

RAIL VEHICLES

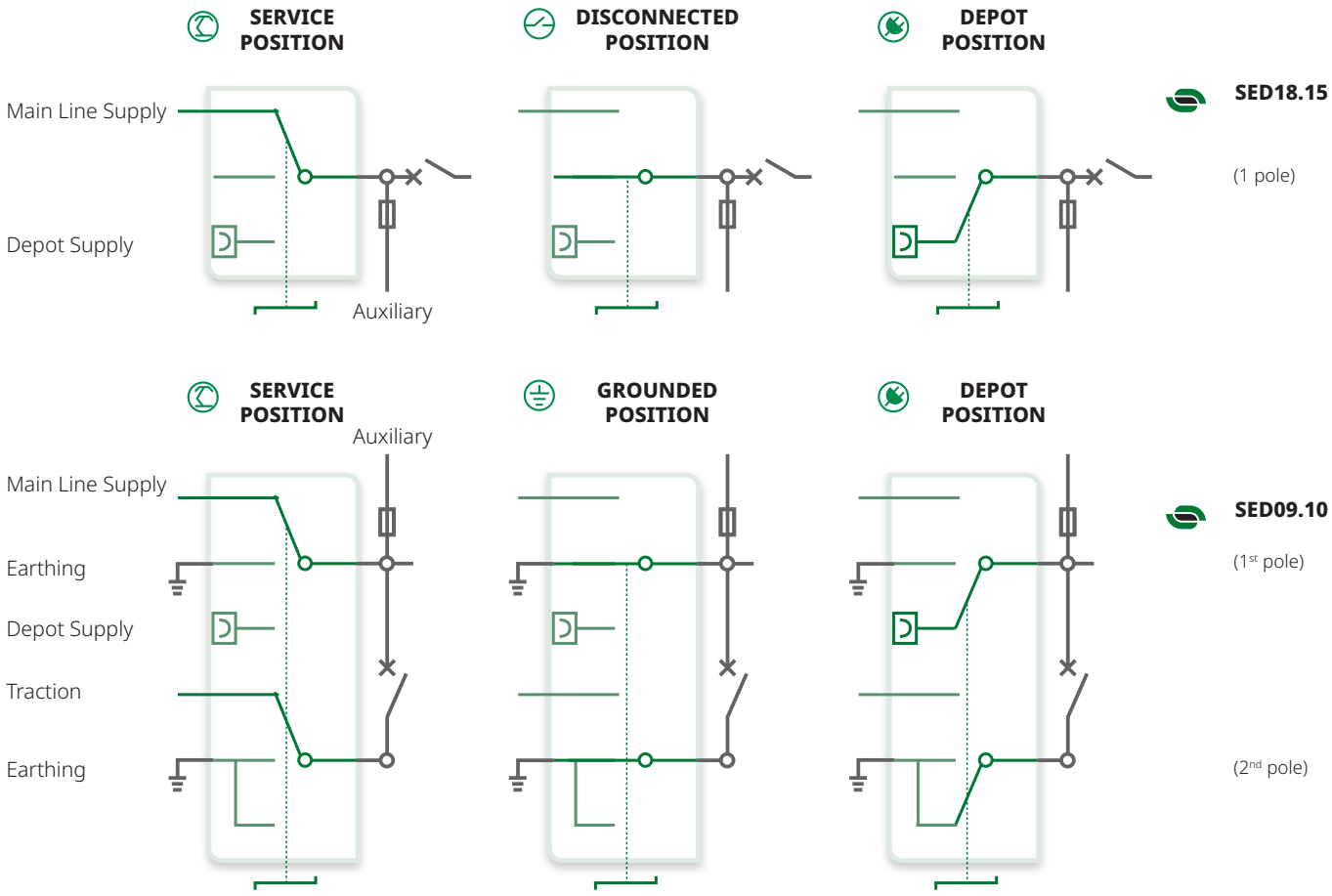


GENERAL INFORMATION

The Selector and Earthing Device type **SED09.10**, **SED18.15**, is used on metro vehicles and DC EMUs. Its main function is to select manually the power supply for the vehicle's medium-voltage electrical circuits, either from the third rail/catenary for service operations or from the depot power supply via a socket for testing purposes. A third position is also available to ground or to disconnect the vehicle's medium voltage circuits for safe access to these circuits for maintenance purposes.

This device can be delivered with one or two poles and project specific HV connector.
Device human interface could be adapted for specific requirements: Device with removable handle, key interlocking and mechanical interlocking of HV connection or device very easy to operate with single hand only

APPLICATIONS, TYPICAL EXAMPLE



MAIN FEATURES

- Change-over and disconnector 3 positions :
  - Service | supply from 3rd rail or catenary
  - Depot | supply from depot
  - Maintenance | earthing
- Manually operated with fixed or removable handle
- Indoor installation
- 1 pole or 2 poles
- Rated voltage: 900 V_{DC} (**SED09.xx**) or 1,800 V_{DC} (**SED18.xx**)
- Rated thermal current of main circuit: 1,000 A (**SEDxx.10**), 1,500 A (**SEDxx.15**)
- Rated thermal current for depot power supply: 500 A*
- Key or/and electrically interlocked
- Compliant to standards: IEC 60077-1/-2 ; IEC 60850 / EN 50163 ; EN 50125-1 / IEC 62498-1 ; EN / IEC 60529 ; EC 60497-1 / EN 50124-1 ; EN / IEC 61373 ; EN 45545

* (depends on the selected depot connector - Project specific)

MAIN BENEFITS

- Compact size and sturdy structure
- Simple and robust design, easy to operate
- Full Modbox® integration
- Strong load capability
- Configurable - i.e. one or two poles, removable handle, key interlocking, different type of HV connections...
- Device status visualy indicated by control elements positions
- Electrical signal confirmation of device locked position and locked status

DATA FOR PRODUCT SELECTION

	Symbol	Unit	SED 09.10	SED 18.15
MAIN HIGH VOLTAGE CIRCUIT				
Rated operational voltage	U_r	[V]	900	1,800
Conventional free air thermal current (1)	I_{th}	[A]	1,000	1,500
Peak and rated short-time withstand current DC:	$\hat{I}_{cw}$	[kA_{DC}]	30	
	I_{cw}	[kA_{DC}]	30	
	t	[s]	0.1	
Rated insulation voltage	U_{Nm}	[kV]	1.2	2.0
Overvoltage category				
- Pole-Pole			OV4	
- Pole-Earth			OV3	
Rated power-frequency withstand voltage (2)	U_a	[kV_{rms}]	5.5	
Rated impulse withstand voltage (1.2/50 µs)	U_{Ni}	[kV]	12	

(1) At Tamb = +40°C. • (2) At 50 Hz during 1 minute: Pole-Pole; main circuit-earth.

LOW VOLTAGE AUXILIARY CIRCUIT

Control circuit

Type of operation			Manual type of operation
Nominal Supply voltage	U_n	[VDC]	24, 36, 48/50, 72, 110
Range of voltage			[0.7-1.25] U_n

OPERATING CONDITIONS

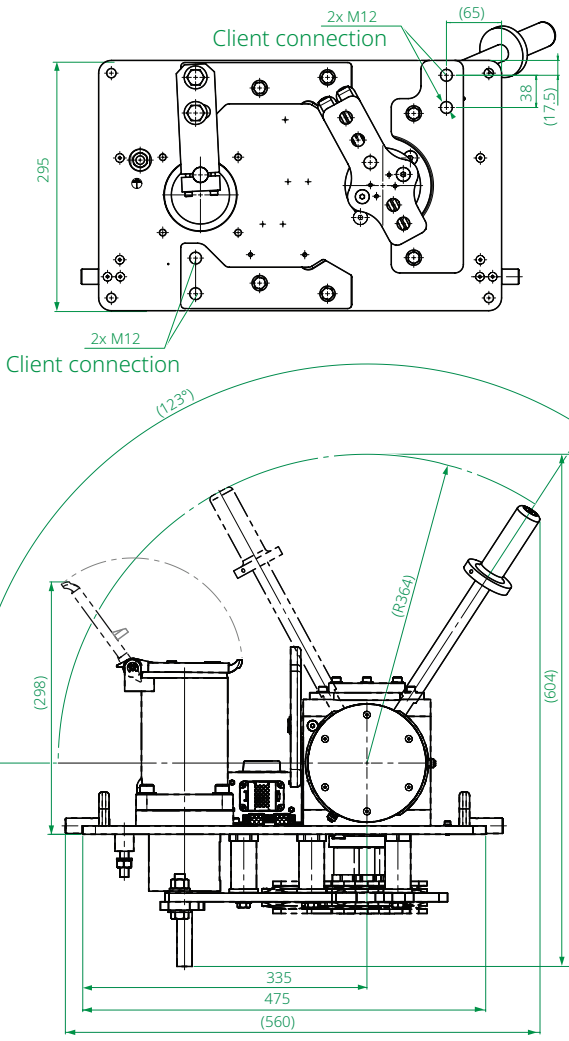
Installation			Indoor
Altitude		[m]	< 2,000 (3)
Working ambient temperature			
- Electric operation	T_{amb}	[°C]	-40 to +70 (-50 to +70 in option)
- Manual operation	T_{amb}	[°C]	-25 to +70
Humidity			Classe TX According to EN/IEC 62498-1/EN 50125-1
Pollution degree			PD3A
Minimum mechanical durability	N	Cycles	≤ 400,000
Protection index:			
- HV part			IP00 (4)
- LV part			IP00 (4)
- Tightness between LV and HV parts when installed			IP00 (4)

(3) For >2,000 m, please contact Sécheron. • (4) Installed in IP56 encapsulation.

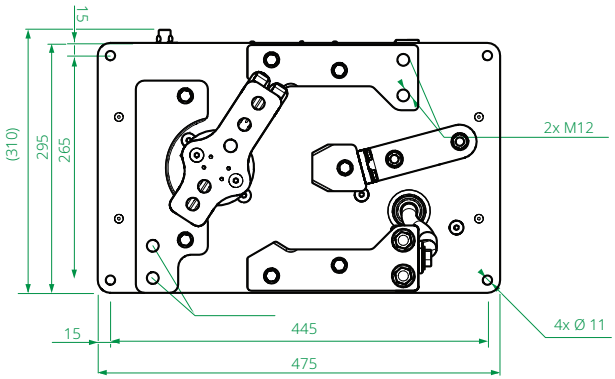
PRODUCT INTEGRATION

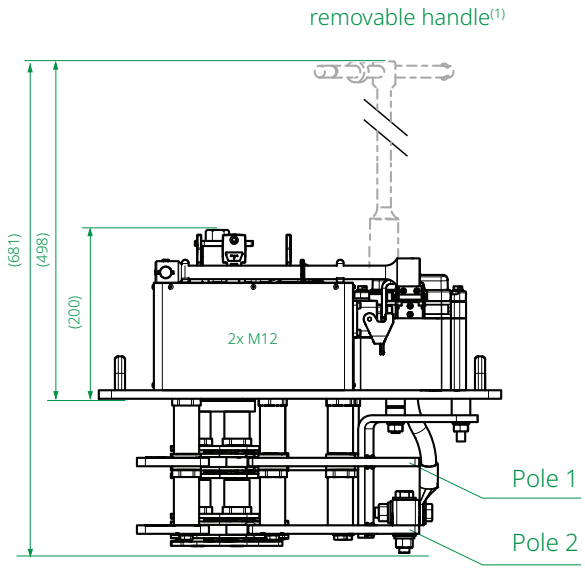
MAIN DIMENSIONS (TYPICAL PROJECT)

SED09.10
1-POLE
with fixed handle
and Cadillac HV plug



SED18.15
2-POLES
with removable handle
and harting HV plug





Dimensions are indicative. All dimensions are in mm. The maximum allowed flatness deviation of the support frame is 0.5 mm.

OPTION LIST

CUSTOMIZED DESIGN

- Sequence of selected positions :
  Service, Maintenance, Earthing, Disconnected
- One or two pole
- Key interlocking and / or electrical interlocking and / or padlock locking
- Key color for each position
- One or two keys for each position
- Ergonomics accordingly to device environment
- HV Plug for Depot position
- Number of Auxiliary switches for each position
- Gold or Silver auxiliary switch type

Sécheron

Sécheron SA
Rue du Pré-Bouvier 25
1242 Satigny - Geneva
CH-Switzerland

www.secheron.com
Tel: +41 22 739 41 11
Fax: +41 22 739 48 11
ess@secheron.com

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