

Innovative Power Engineering at its best!



DISCONNECTORS

FOR RAILWAY AND TRAM APPLICATIONS



RABS SERIES OF OUTDOOR DISCONNECTORS FOR RAILWAYS AND TRAMS

1 pole version 15 kV 16.7 Hz, 25 kV 50 Hz 1600 A
1+1 pole version 15 kV 16.7 Hz, 25 kV 50 Hz 1600 A
2 poles version 15 kV 16.7 Hz, 25 kV 50 Hz 1600 A

ABOUT US

Hughes Power System is a Swedish manufacturer of environmentally friendly equipment for electrification and automation of mass transport and electrical distribution systems. Very high quality standards together with innovative approach result in an advanced range of products, aiming to improve network quality by minimizing the number and duration of faults.

Our product portfolio includes:

- Reclosers
- Vacuum interrupter switches
- Disconnectors
- Motor drives
- Voltage transformers
- D/C power supplies

With its more than 30 years expertise in research, development, manufacturing, marketing and sales the company operates in many countries though cooperation with local partners. As we move towards our goal of being a world class advanced technological company in electrical utility products, we guarantee our commitment to the well known Swedish standards of reliability, safety and quality.

The majority of Hughes Power System's products are designed and built in Sweden.



DISCONNECTORS FOR RAILWAYS AND TRAMS

GENERAL DESCRIPTION



High quality mechanical parts



Low life cycle cost



High level of insulation



Innovative design



Silicone insulators



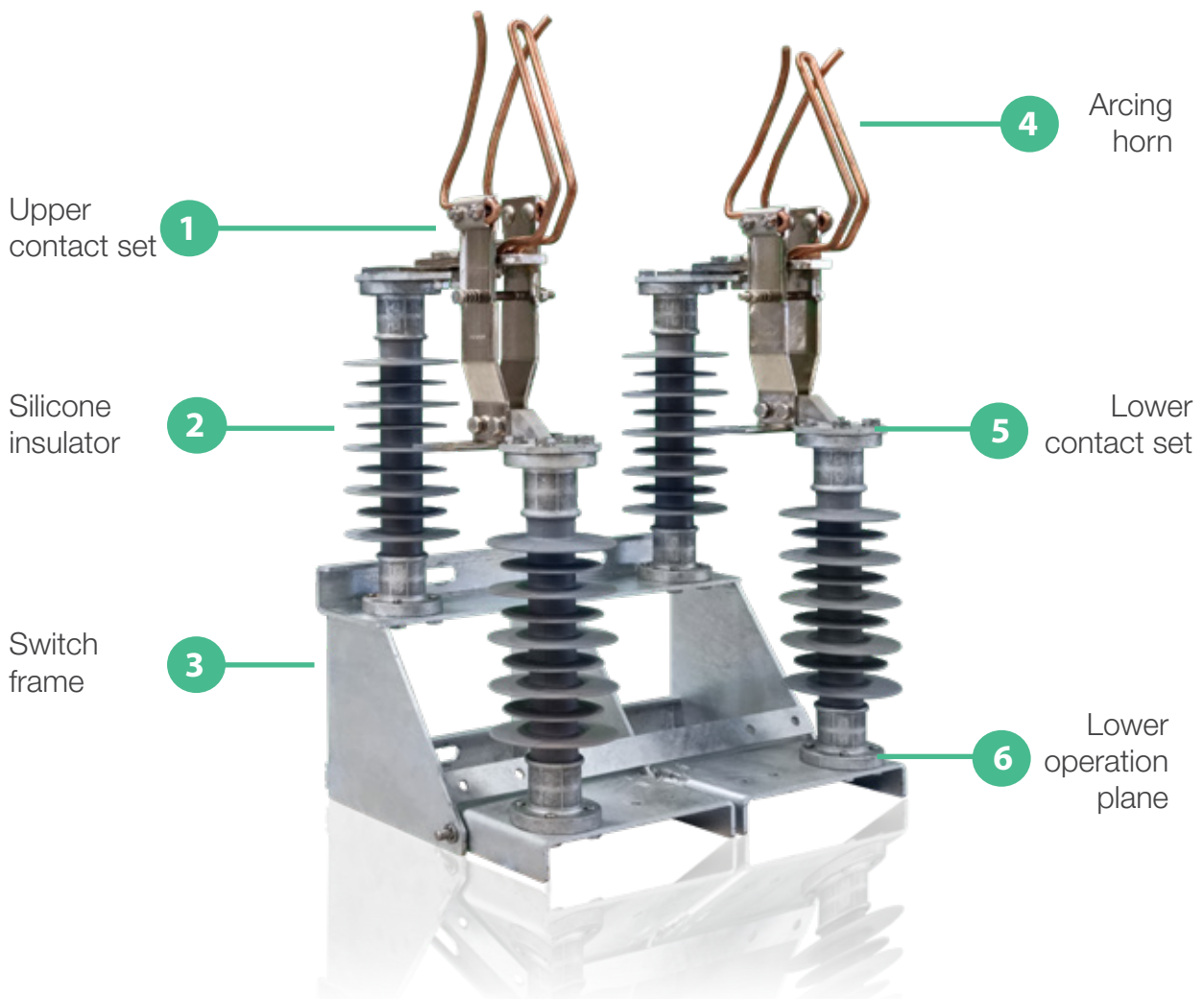
Easy to remote control

RABS series of disconnectors were especially developed for railway, light rail and tram applications.

The models range for railways includes 1 pole, 1+1 pole and 2 pole versions for: 15 kV - 16.7 and 25 kV - 50 Hz. The tram DC version is made with 1 pole and for 750 – 3500 V.

The mechanical parts are made of the highest-grade stainless steel, qualified hot dip galvanizing and nickel-plated high-grade copper to prevent corrosion.

Together with our existing motor drives it provides a complete solution for automation and remote control of the railway and tram electrical networks.



The disconnector consists of the following elements:

- Arcing horns and pre-arcing horns made of copper or stainless steel;
- Contact set made out of nickel plated high grade copper;
- Silicone insulators;
- Switch frame made out of specified silicone content steel for best hot dip galvanizing;

Advantages and Options:

- Flexible installation with single or double pole frame;
- Optional switch position indicator for connection to SCADA system;
- Optional earthing switch;
- Optional directional changer for operation;
- Optional rod insulator;
- Standard and custom-made operating rod system;

DISCONNECTORS FOR RAILWAYS AND TRAMS

TECHNICAL DATA



DISCONNECTORS FOR TRAINS

1-pole	1x2-pole, 2-pole
15 or 25 kV	15 or 25 kV
16.7 or 50 Hz	16.7 or 50 Hz
1600A line current	1600 A line current



DISCONNECTORS FOR TRAM LIGHT RAIL

1-pole

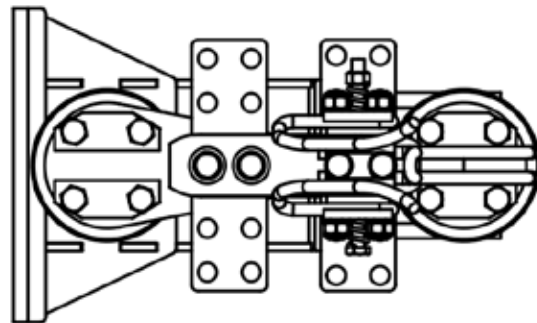
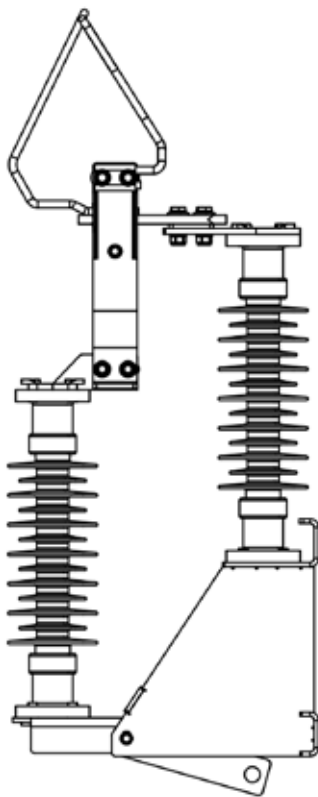
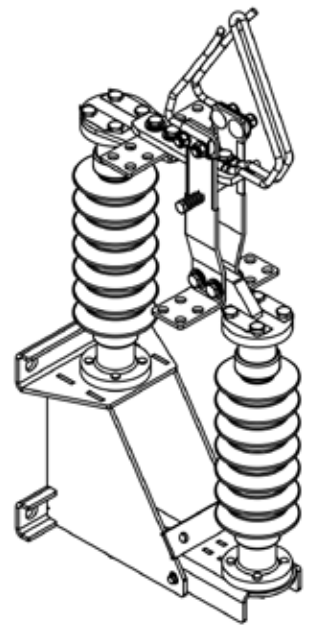
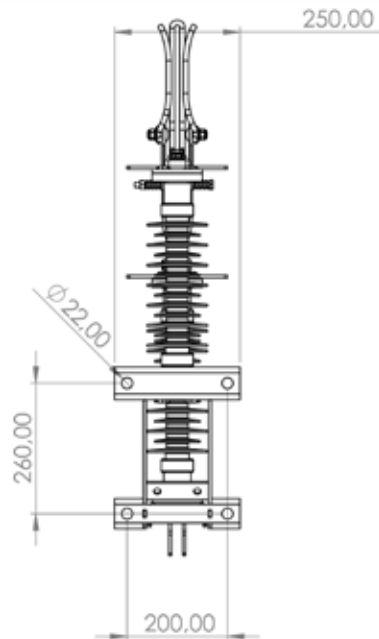
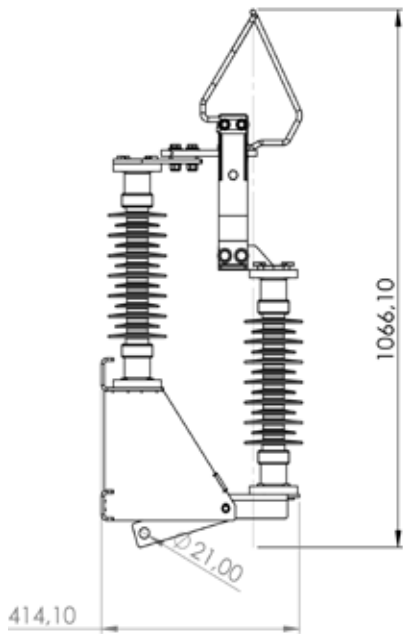
750 – 3500 VDC

2500 - 4500 A line current

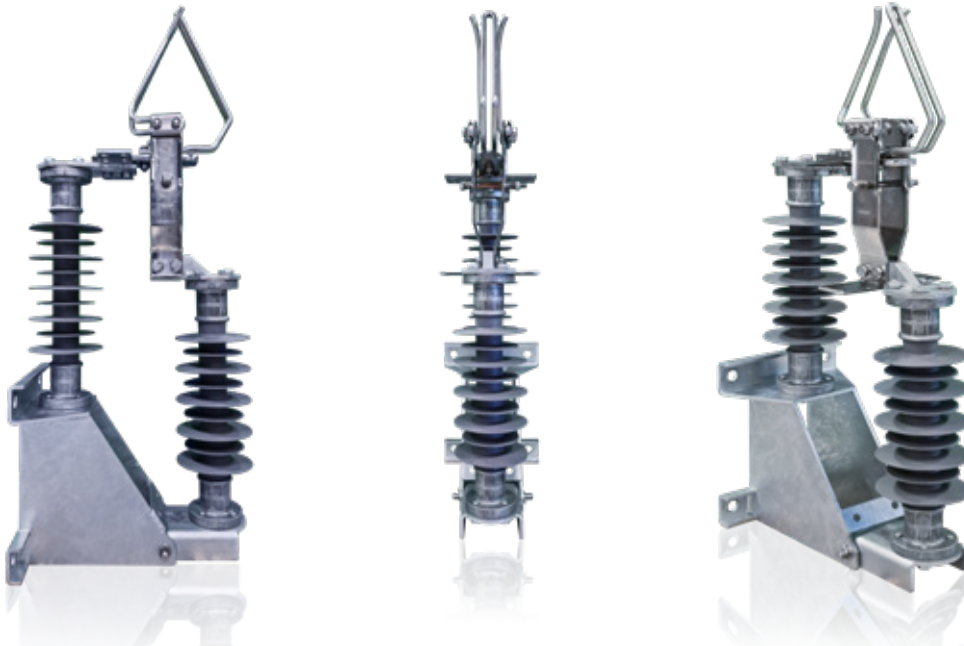
optional integrated ground switch

DISCONNECTORS FOR RAILWAYS AND TRAMS

1 POLE DISCONNECTOR FOR TRAINS



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		DATE: 2022-04-19	HUGHES
SURFACE FINISH:		Revision: PR2	
TOLERANCES:		Title: 14 kV Airbreak Switch Single Pole	
LINEAR:		Part No: TFV-ABS-0000	
ANGULAR:		DWG NO: TFV-ABS-0000	
A3	FINISH:		
	MATERIAL:		
SCALE: 1:10			
DO NOT SCALE DRAWING	WEIGHT:		SHEET 1 OF 1

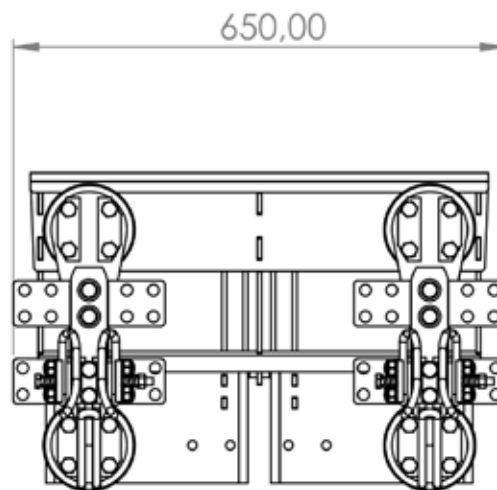
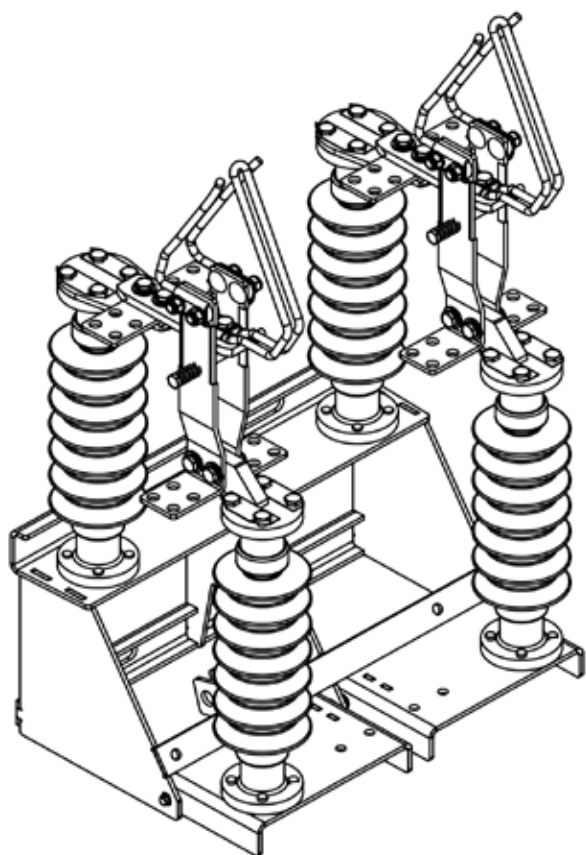
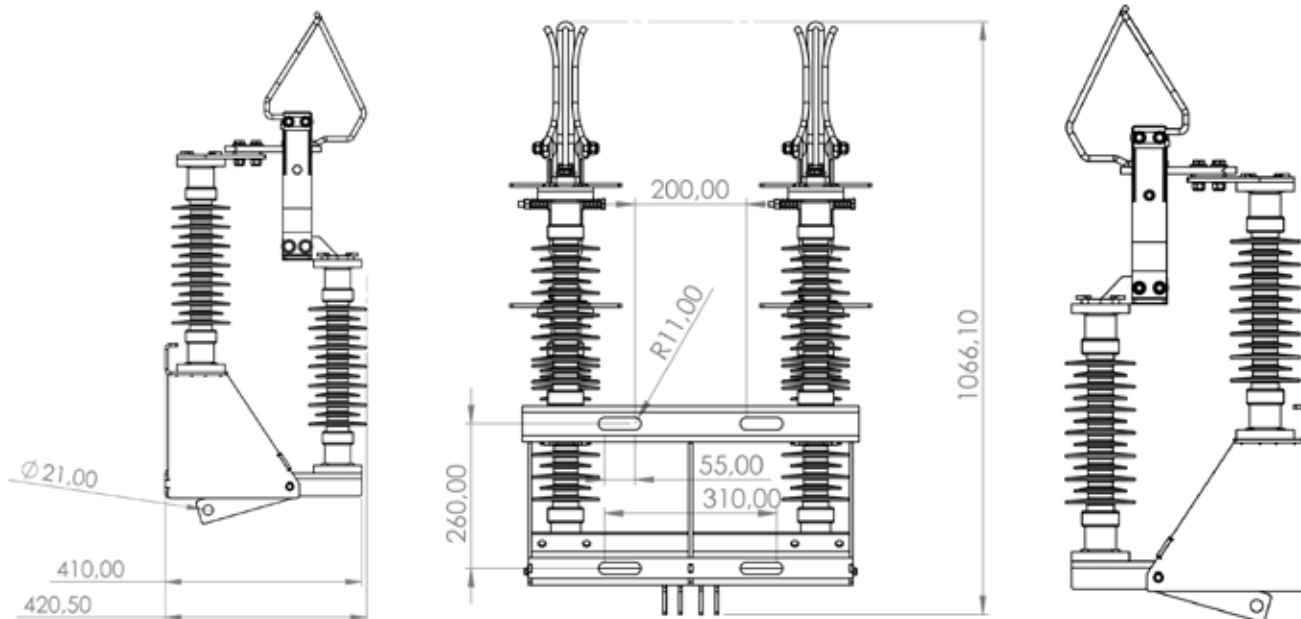


Type RABS1S-15 and RABS1S-25

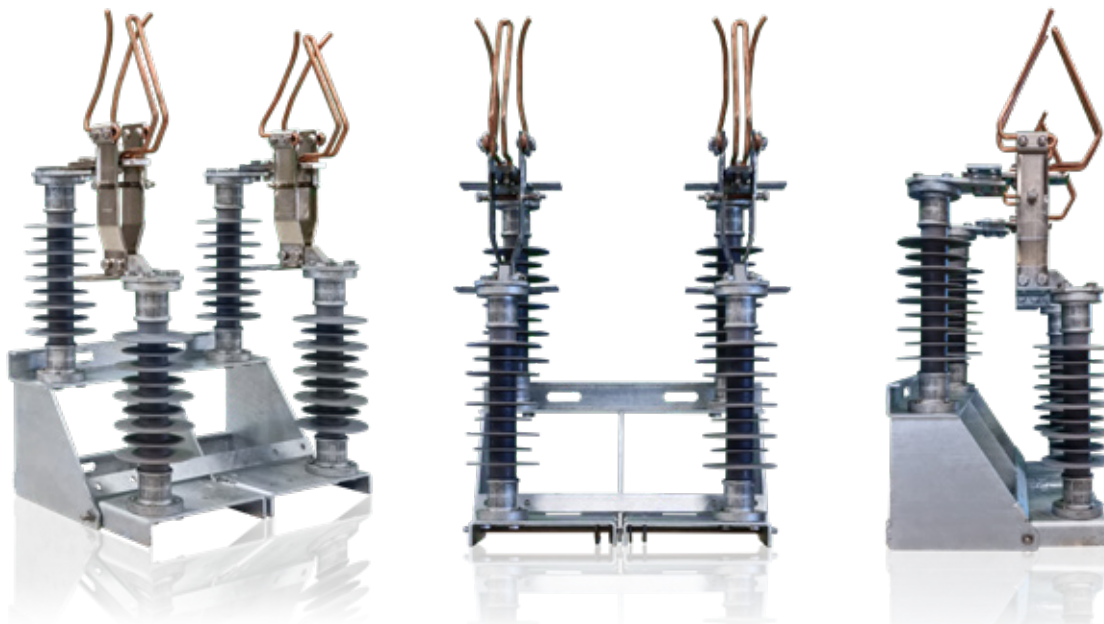
Nominal voltage	U_n	15kV	25kV
Rated current	I_n	1600A	1600A
Rated insulation level	U_{Nm}	17.5kV	27.5kV
Rated impulse voltage	U_{Ni}	170kV	250kV
Short-duration power-frequency test level	U_a	80kV	95kV
Rated frequency (A.C.)	f_r	16.7Hz	50Hz
Rated transformer breaking current	I_3	9A	9A
Rated cable-charging breaking current	I_{4a}	6A	6A
Rated short-time withstand current	I_k	32kA	32kA
Rated duration of short-circuit current	t_k	1s	1s
Rated peak withstand current	I_p	93kA	93kA
Rated short-circuit making current	I_{ma}	16kA	16kA
Creepage distance approx.	S	765	1100
Opening distance	L	310	480
Insulator type		silicone	silicone
Weight	kg	28.5	35
Endurance class		2	2
Over voltage class		OV4	OV4
Test: DIN EN 50152-2:2012, 50124-1: 2017			

DISCONNECTORS FOR RAILWAYS AND TRAMS

1+1 POLE DISCONNECTOR FOR TRAINS



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS		DATE: 2022-04-19	HUGHES
SURFACE FINISH:		Revision: PR2	
TOLERANCES:		Title: 14 kV Airbreak Switch Double Pole	
LINEAR:		Part No: Tfv-ABD-0000	
ANGULAR:		DWG. NO: Tfv-ABD-0000	
A3	FINISH:		
	MATERIAL:		
SCALE: 1:10			
DO NOT SCALE DRAWING	WEIGHT:	SHEET 1 OF 1	

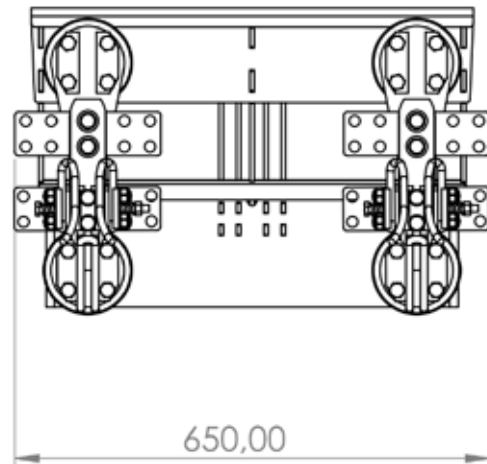
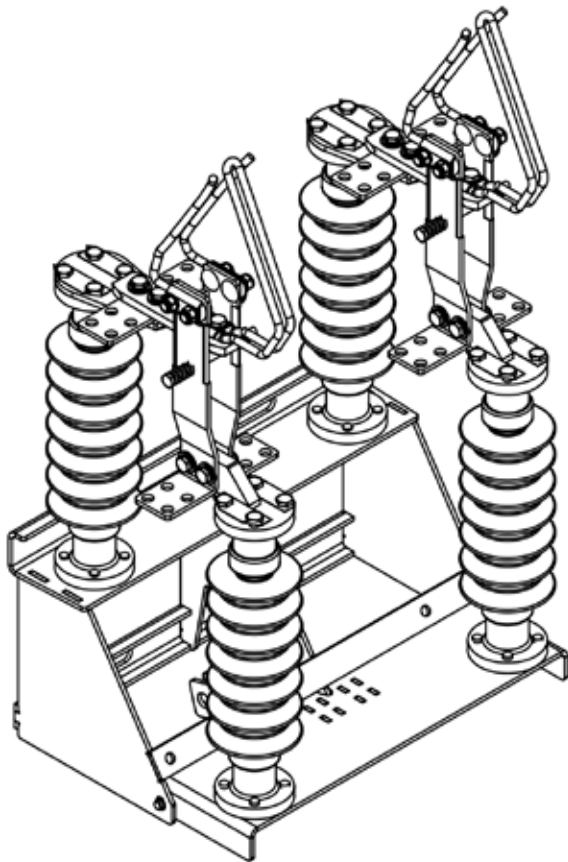
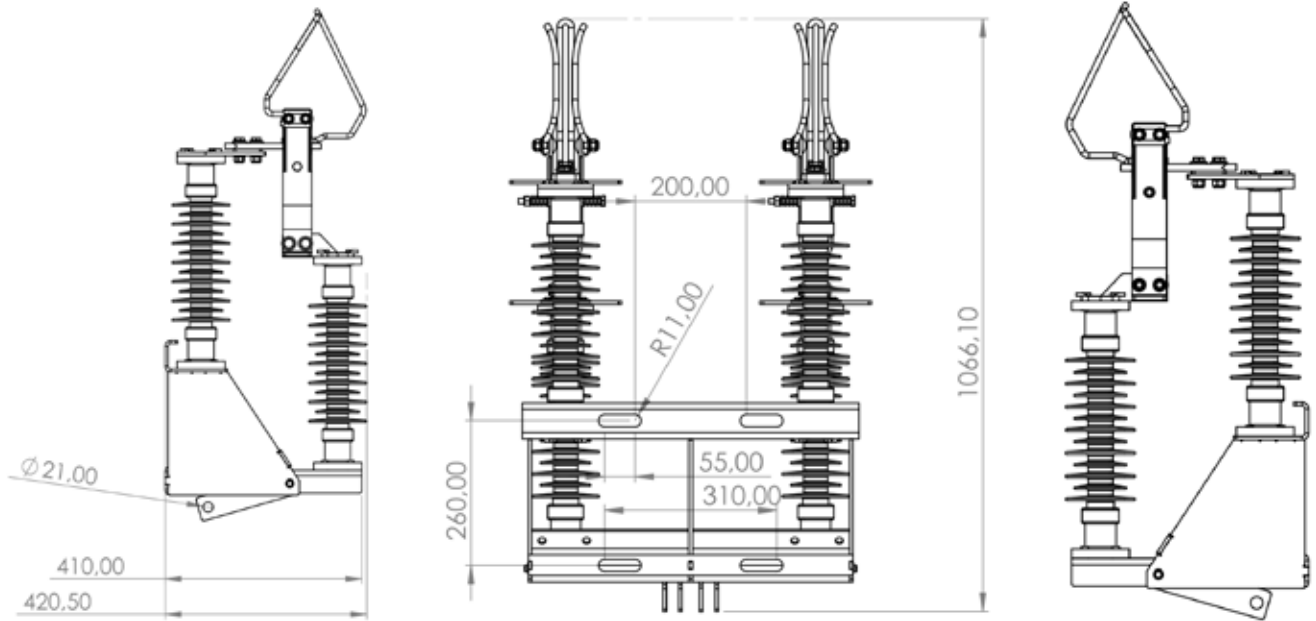


Type RABS2S-15 and RABS2S-25

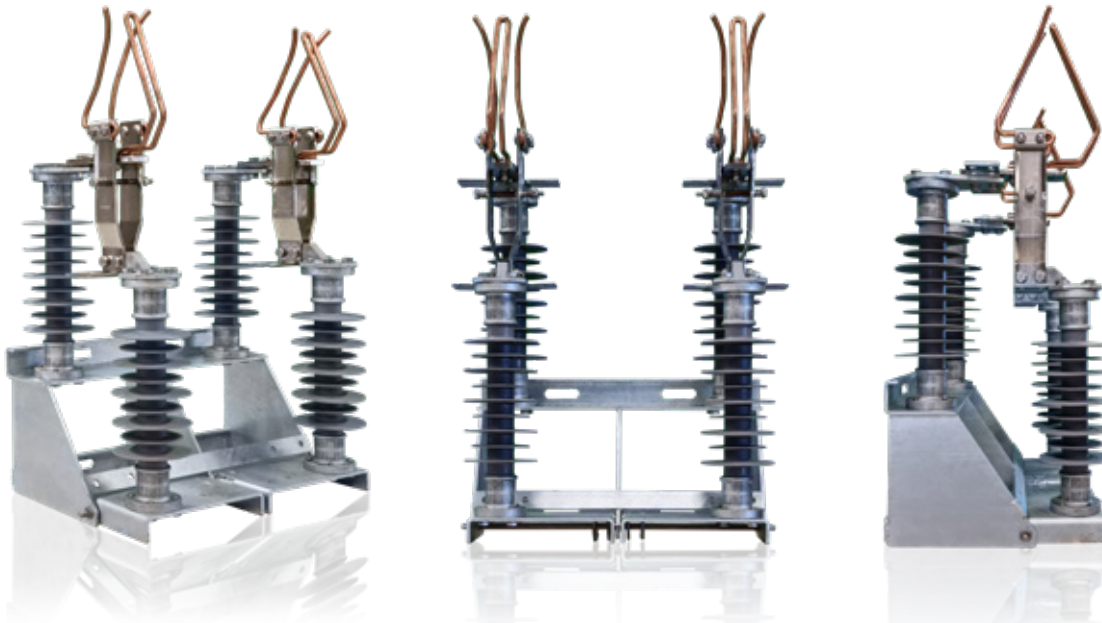
Nominal voltage	U_n	15kV	25kV
Rated current	I_n	1600A	1600A
Rated insulation level	U_{Nm}	17.5kV	27.5kV
Rated impulse voltage	U_{Ni}	170kV	250kV
Short-duration power-frequency test level	U_a	80kV	95kV
Rated frequency (A.C.)	f_r	16.7Hz	50Hz
Rated transformer breaking current	I_3	9A	9A
Rated cable-charging breaking current	I_{4a}	6A	6A
Rated short-time withstand current	I_k	32kA	32kA
Rated duration of short-circuit current	t_k	1s	1s
Rated peak withstand current	I_p	93kA	93kA
Rated short-circuit making current	I_{ma}	16kA	16kA
Creepage distance approx.	S	765	1100
Opening distance	L	310	480
Insulator type		silicone	silicone
Weight	kg	59.5	69
Endurance class		2	2
Over voltage class		OV4	OV4
Test: DIN EN 50152-2:2012, 50124-1: 2017			

DISCONNECTORS FOR RAILWAYS AND TRAMS

2 POLES DISCONNECTOR FOR TRAINS



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS		DATE: 2022-04-19	HUGHES
SURFACE FINISH:		Revision: PR2	
TOLERANCES:		Title: Airbreak Switch Double Pole, Double action	
LINEAR:		Part No: TFV-ABDD-0000	
ANGULAR:		DWG NO: TFV-ABDD-0000	
A3	FINISH:		
	MATERIAL:		
SCALE: 1:10			
DO NOT SCALE DRAWING	WEIGHT:	SHEET 1 OF 1	

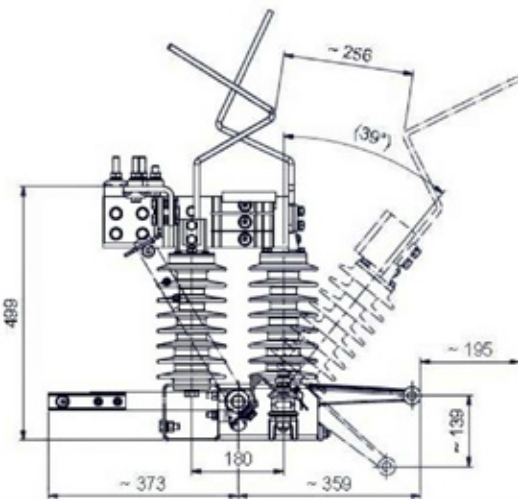
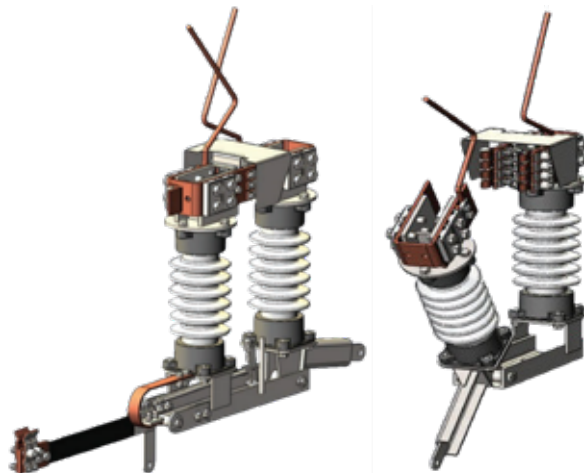
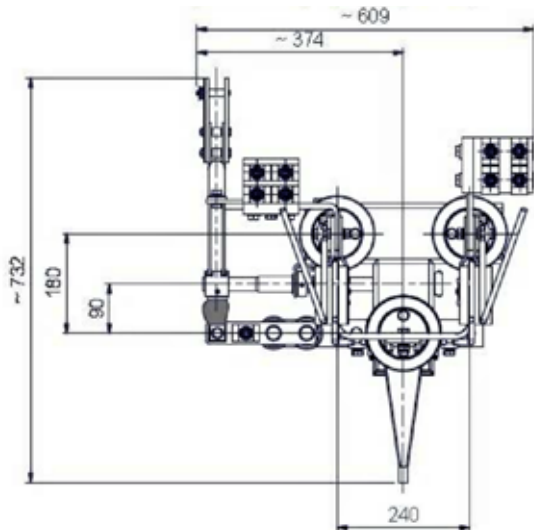
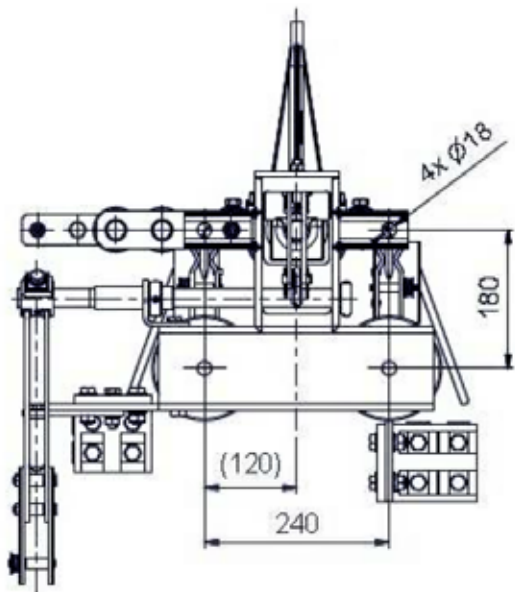
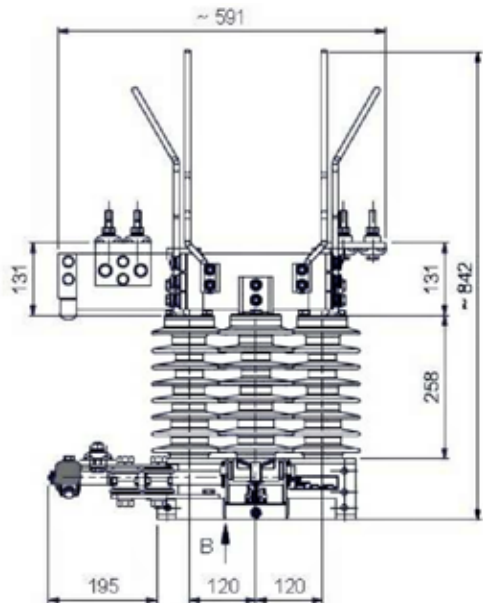


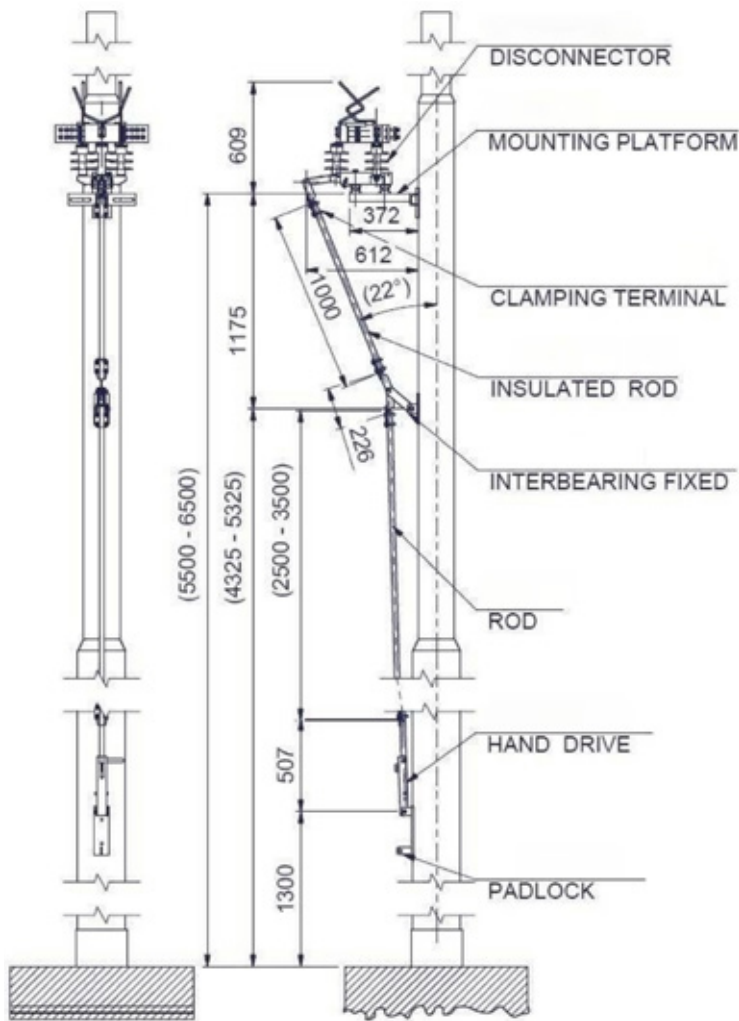
Type RABS3S-15 and RABS3S-25

Nominal voltage	U_n	15kV	25kV
Rated current	I_n	1600A	1600A
Rated insulation level	U_{Nm}	17.5kV	27.5kV
Rated impulse voltage	U_{Ni}	170kV	250kV
Short-duration power-frequency test level	U_a	80kV	95kV
Rated frequency (A.C.)	f_r	16.7Hz	50Hz
Rated transformer breaking current	I_3	9A	9A
Rated cable-charging breaking current	I_{4a}	6A	6A
Rated short-time withstand current	I_k	32kA	32kA
Rated duration of short-circuit current	t_k	1s	1s
Rated peak withstand current	I_p	93kA	93kA
Rated short-circuit making current	I_{ma}	16kA	16kA
Creepage distance approx.	S	765	1100
Opening distance	L	310	480
Insulator type		silicone	silicone
Weight	kg	59.5	69
Endurance class		2	2
Over voltage class		OV4	OV4
Test: DIN EN 50152-2:2012, 50124-1: 2017			

DISCONNECTORS FOR RAILWAYS AND TRAMS

1 POLE DISCONNECTOR FOR TRAMS





DTST-DC-3				
Rated DC voltage	kV	0.75	1.5	3.5
Lightning impulse test voltage 1,2/50 μ s, 15 pulses	kV	75	75	80
Short-time withstand AC voltage, 50 Hz, 1 minute, (in both dry and wet conditions)	kV	20	20	30
Rated current	kA	2.5 - 4.5	2.5 - 4.5	2.5 - 4.5
Rated short-time current 1s	kA	20	31,5	31,5
Stroke of the operating handle	mm	140	140	140
Weight	kg	27	29	30
Endurance class		2	2	2
Over voltage class		OV4	OV4	OV4
Optional double insulation		yes	yes	yes

DISCONNECTORS FOR RAILWAYS AND TRAMS

ACCESSORIES FOR DISCONNECTORS



MOTOR DRIVES

Model:	EOA600R
Operating voltage:	24-230V AC/DC
Frequency:	16.7, 50, 60Hz
Operating power:	250W
Mechanism:	hand crank, remote
Remote blocking	impulse controlled
Options	RTU, Fiber, TP or serial connections



VOLTAGE TRANSFORMER

Description:	1-Phase, class 3
Operating voltage:	15kV 16.7 Hz 25kV 50Hz
Mounting brackets:	- wood/concrete poles - concrete poles
Weight:	49kg



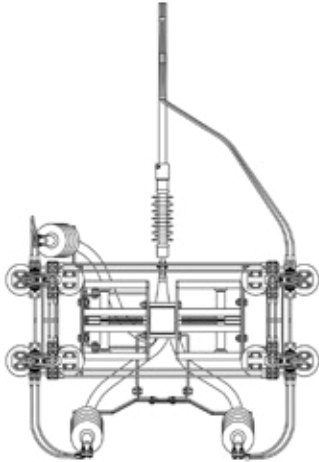
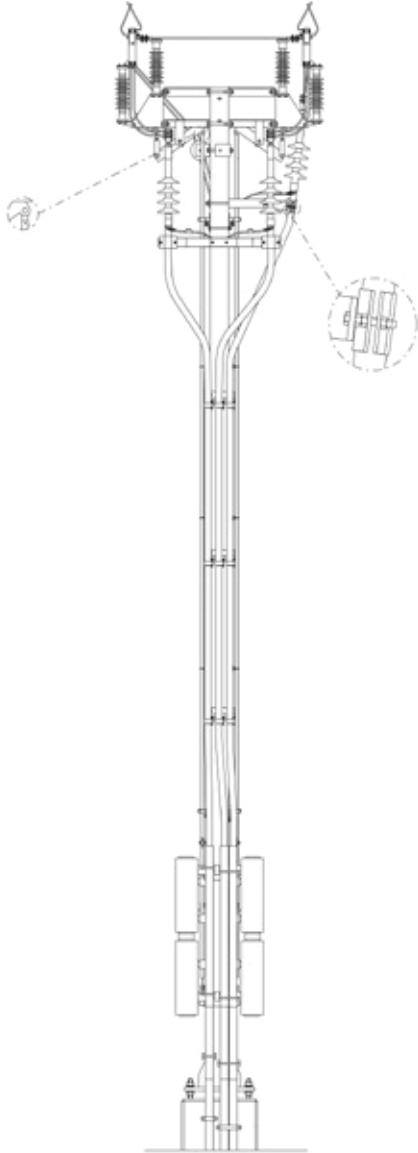
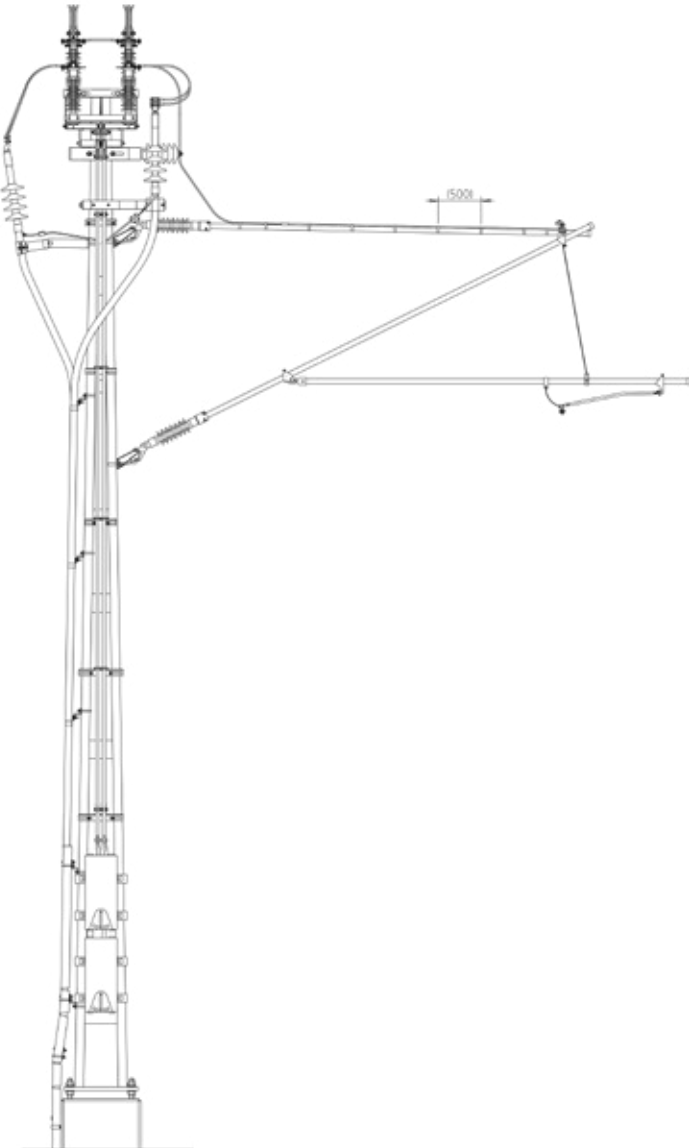
TRANSFORMERS - VOLTAGE SENSORS

Description:	DC Power supply, traction power 400 – 2100 VDC
Bushings:	Silicone
	Separate minus and positive pole
Power	250W
Operating power:	24, 48, 36, 110 VDC
Installation:	indoor and outdoor



DISCONNECTORS FOR RAILWAYS AND TRAMS

INSTALLATION DRAWINGS



Installation of the disconnector and four motor drives on one pole.



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