

Ring Main Unit



RMSYS
12-24kV 630A

Generalities

RMSYS is a monobloc switchboard with stainless steel tank containing all the live parts and switching functions. The switchboard includes inside three position rotary switch-disconnectors for the line, and vacuum circuit breaker or fuses for the transformers. The equipment is mounted on a frame full of curtain panels. A safety valve ensures safety in case of failure to overpressure of the container, in accordance with the Standard IEC 60694. In the structure is derived rooms, one for each line, for the cable installation.

Employment

The RMSYS switchboard is designed for use in secondary distribution networks, public or private, with voltages up to 24kV. The switchboard is also suitable to protect and shunt station feeders with three position rotary switch disconnector (in manual or motorized version); bind together switch-disconnector function and earthing switch function.

Electric characteristics of the switchboard

Rated voltage	kV	12	24	
Rated power-frequency withstand voltage 50Hz 1Min (kV r.m.s.)	kV	28 (42)*	50 (65)*	
Rated lightning impulse withstand voltage (peak value)	kV	75 (95)*	125 (125)*	
Rated current	A	630	630	
Short-time withstand current (rms)	kA	20 – 3s 25 – 1s	16 – 3s 20 – 3s	
Making capacity	kA	50 62,5	40 50	
Breaking capacity	Mainly active load	A	630	630
	Earth leakage fault	A	95	95
	No load cables	A	30	30
	No load transformers	A	16	16

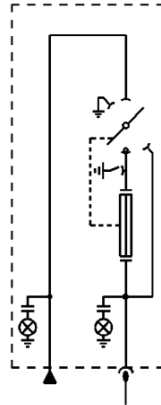
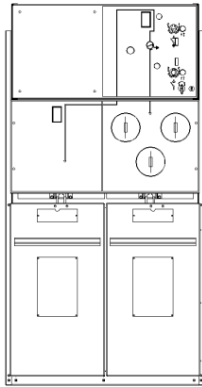
* Data for the Russian market in accordance with rules Gost

Switchboard configuration

Typical diagrams	
A – F	1 Cable connection + 1 Transformer feeder combined fuse-switch
I – I – F	2 Incoming/Outgoing switch + 1 Transformer feeder combined fuse-switch
I – I – I – F	3 Incoming/Outgoing + 1 Transformer feeder combined fuse-switch
I – F – I – F	2 Incoming/Outgoing + 2 Transformer feeder combined fuse-switch
A – VL	1 Cable connection + 1 Line feeder 630 A - Vacuum circuit breaker
I – I – VL	2 Incoming/Outgoing + 1 Line feeder 630 A - Vacuum circuit breaker
I – I – I – VL	3 Incoming/Outgoing + 1 Line feeder 630 A - Vacuum circuit breaker
I – V – I – VL	2 Incoming/Outgoing + 2 Line feeder 630 A - Vacuum circuit breaker
A – VP	1 Cable connection + 1 Transformer feeder combined with vacuum circuit breaker
I – I – VP	2 Incoming/Outgoing switch + 1 Transformer feeder combined with vacuum circuit breaker
I – I – I – VP	3 Incoming/Outgoing + 1 Transformer feeder combined with vacuum circuit breaker
I – V – I – VP	2 Incoming/Outgoing + 2 Transformer feeder combined with vacuum circuit breaker

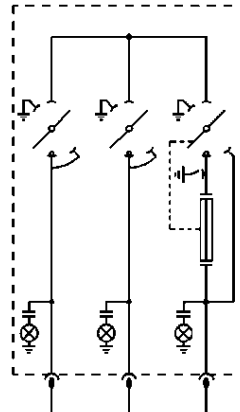
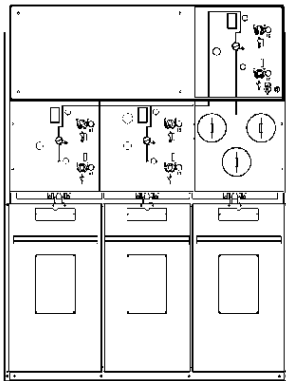
Typical diagrams – with fuse transformer protection

A - F



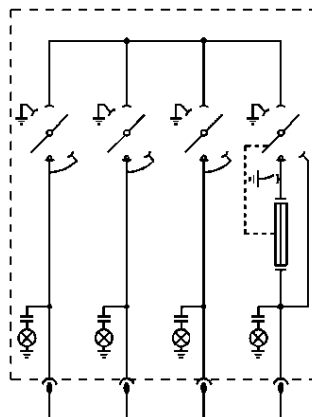
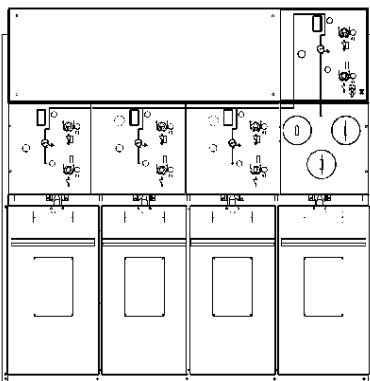
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Height: 1600mm
Depth: 800mm

I - I - F



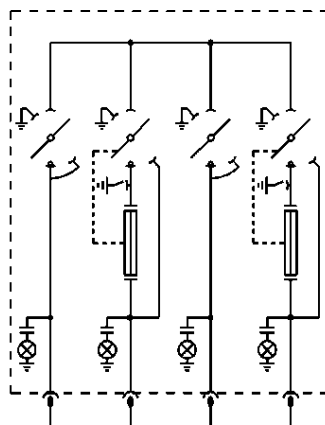
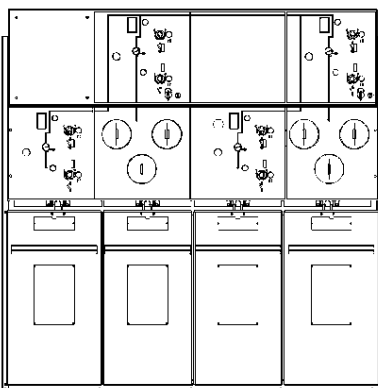
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Depth: 800mm

I - I - I - F

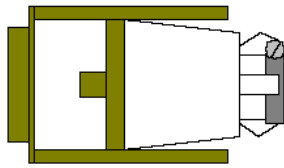


Width: 1595mm
Height: 1600mm
Depth: 800mm

I - F - I - F



Width: 1595mm
Height: 1600mm
Depth: 800mm



Fuse holder



Fuse-link



Fuse adapter

RMSYS are designed and tested for fuse-links according to IEC 60282-1.

The dimensions of the fuse-links have to be in accordance with IEC 60282-1, Annex D.

The fuse-links must be type I with terminal diameter equal to + 45 mm and body length (D) equal to 442 mm.

The dimensions of the fuse-links can also be in accordance with DIN 43625 and the length of the fuse canister is based on the use of fuse-links with length 442 mm.

For installation of shorter fuses, (<24kV) a fuse adapter will be needed.

RMSYS are designed for fuse-links with striker, must be of type "Medium" with an energy of 1 J and a travel of minimum 20 mm. The start force of the striker should be minimum 40 N.

Please note: When inserting the fuse-link into the canister, the striker-pin must always face outwards against the fuse holder.

1600 kVA is the maximum size of distribution transformer which can be fed from a RMSYS switch-fuse module.

For higher rated transformers, we recommend our vacuum circuit-breaker module with CT's and protection relay.

The below table shows fuse-links for use in RMSYS.

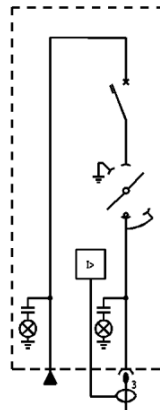
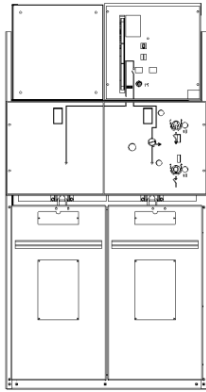
In order to find the correct fuse-link compared to the transformer rating in kVA, please see the selection table.

Table for selection of transformers protection fuses

Rated Power	V _n = 12 kV			V _n = 24 kV		
	V _e = kV			V _e = kV		
kVA	6	10	12	15	20	24
50	10	6	6	4	4	4
75	16	6	6	6	4	4
100	20	16	10	10	6	6
125	25	16	10	10	6	6
160	30	20	16	10	10	10
200	40	20	20	16	10	10
250	50	30	25	20	16	16
315	63	40	30	25	16	16
400	80	50	40	30	25	20
500	100	63	50	40	30	25
630	125	80	63	50	40	30
800	160	100	80	63	40	40
1000	***	125	100	80	63	40
1250	***	160	125	100	80	63
1600	***	***	160	***	100	80

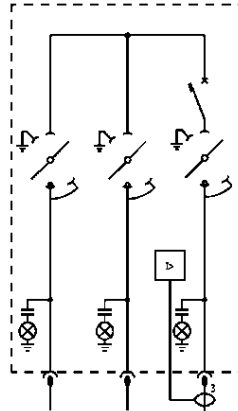
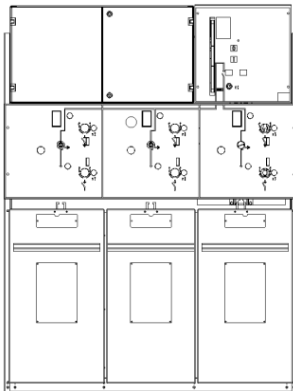
Typical diagrams – with VCB line feeder

A – VL



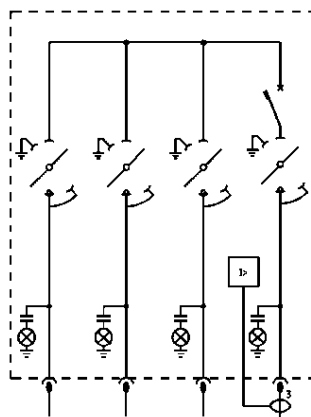
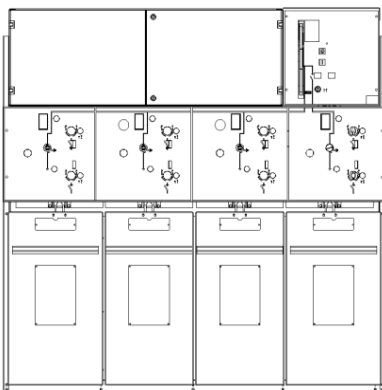
Width: 845mm
Height: 1600mm
Depth: 800mm

I – I – VL



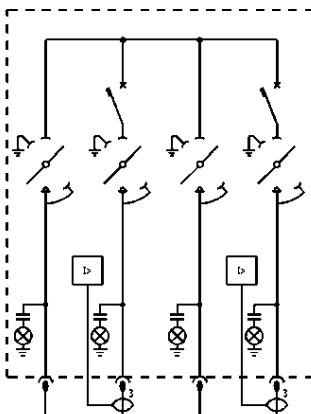
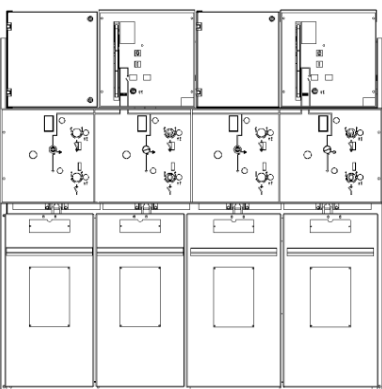
Width: 1220mm
Height: 1600mm
Depth: 800mm

I – I – I – VL



Width: 1595mm
Height: 1600mm
Depth: 800mm

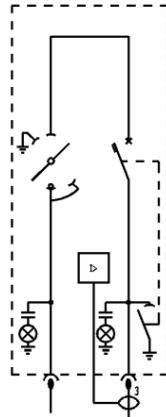
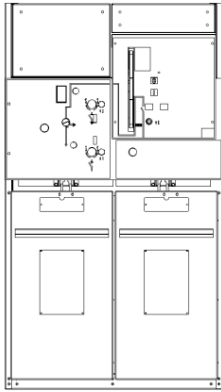
I – V – I – VL



Width: 1595mm
Height: 1600mm
Depth: 800mm

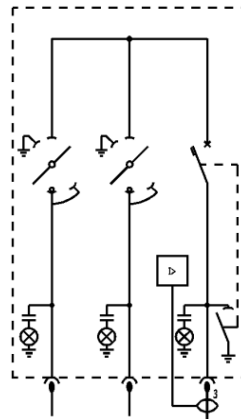
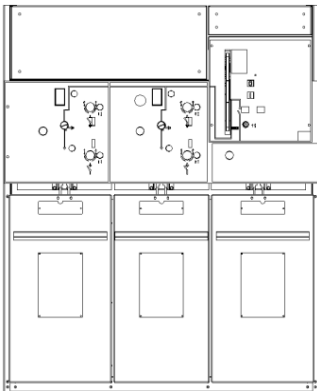
Typical diagrams – with VCB transformer protection

I – VP



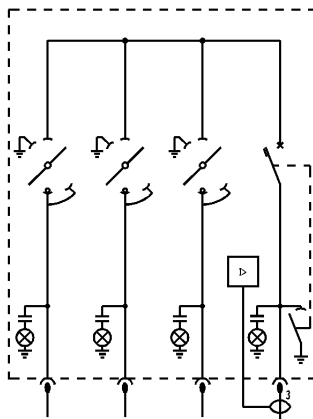
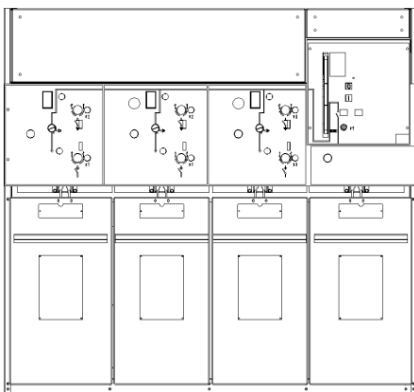
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Height: 1500mm
Depth: 800mm

I – I – VP



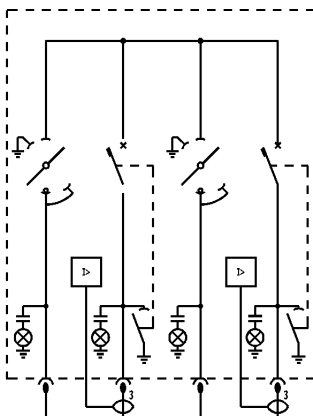
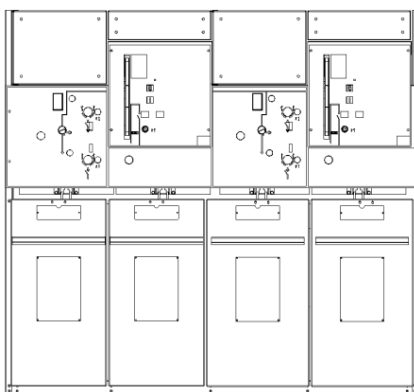
Width: 1220mm
Height: 1500mm
Depth: 800mm

I – I – I – VP



Width: 1595mm
Height: 1500mm
Depth: 800mm

I – Vp – I – VP

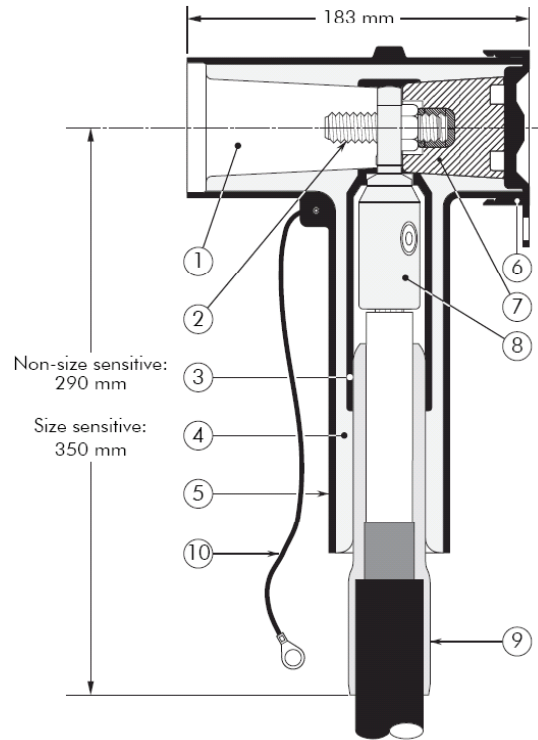


Width: 1595mm
Height: 1500mm
Depth: 800mm

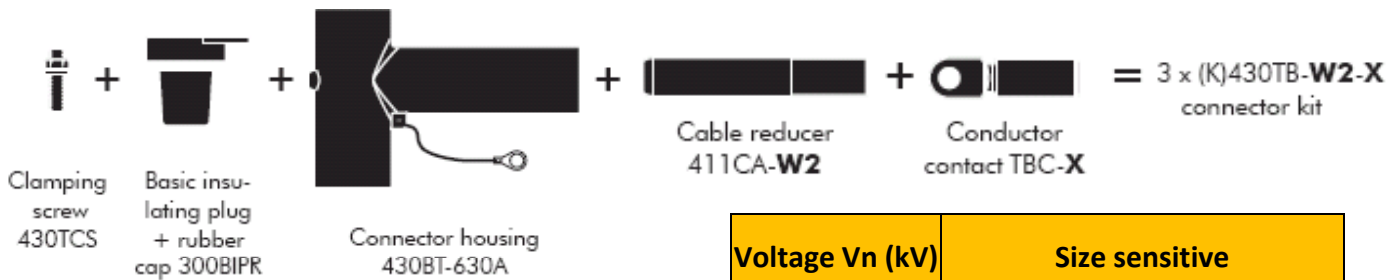
Terminal cable

Design:

- 1 – Type 430 TB – 630 A interface C as described by CENELEC EN 50180 and 50181
- 2 – Clamping screw
- 3 – Conductive EPDM insert
- 4 – Insulating EPDM layer moulded between the insert and the jacket
- 5 – Conductive EPDM jacket
- 6 – Conductive rubber cap
- 7 – Basic insulating plug (standard version without detection point)
- 8 – Conductor connector
- 9 – Cable reducer
- 10 – Earthing lead



Kit contents



Voltage Vn (kV)	Size sensitive
12	3 x 430TB - W2 - X
24	3 x K 430TB - W2 - X

Order instruction

Table W2

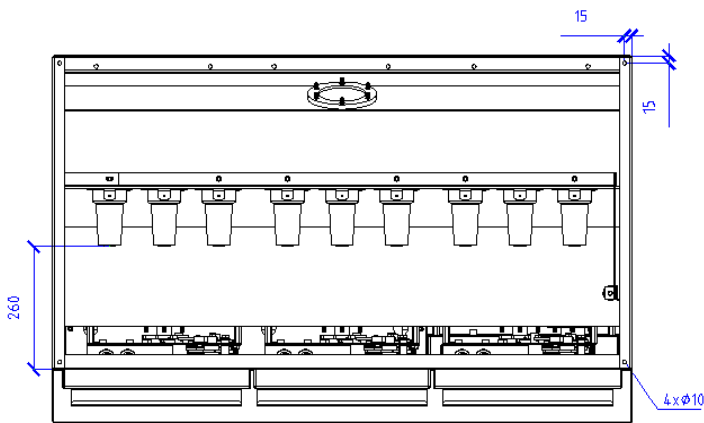
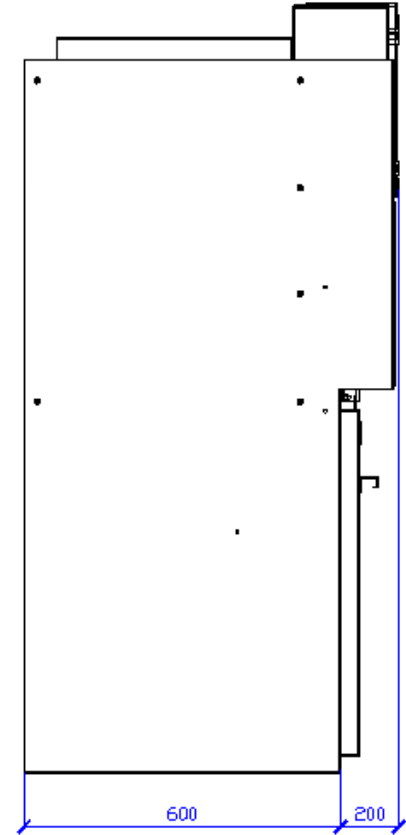
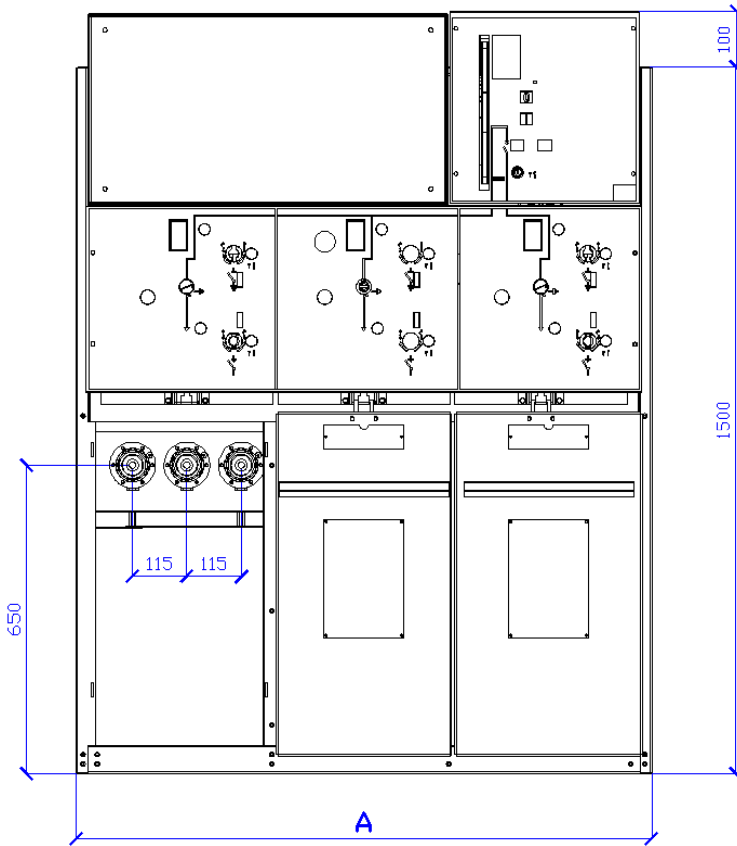
Diam. Over core insulation (mm)		W2
min.	max.	\
12,0	17,5	11
16,0	22,0	15
20,0	26,5	19
23,5	31,0	22
26,5	32,5	25
28,5	37,5	27

Table X

Conduct or size (mm ²)	Conductor	
	Alluminium	Copper
	DIN hexagonal	DIN hexagonal
35	35(K)M-10-2	35(K)M-11-2
50	50(K)M-10-2	50(K)M-11-2
70	70(K)M-10-2	70(K)M-11-2
95	95(K)M-10-2	95(K)M-11-2
120	120(K)M-10-2	120(K)M-11-2
150	150(K)M-10-2	150(K)M-11-2
185	185(K)M-10-2	185(K)M-11-2
240	240(K)M-10-2	240(K)M-11-2
300	300(K)M-10-2	300(K)M-11-2

Example:

The cable is 24kV, 150mm², compact stranded copper with a diameter over core insulation of 25.5mm.
Order 3 x K 430TB – 22 – 150(K)M – 11 – 2.



Front

Typical diagrams	A(mm)	Weight(Kg)
A - F	845	200
I - I - F	1220	420
I - I - I - F	1595	500
I - F - I - F	1595	550
A - V	845	250
I - I - V	1200	470
I - I - I - V	1595	550
I - V - I - V	1595	650

Considerando l'evoluzione di materiali e Norme, quanto riportato nel presente documento si potrà ritenere impegnativo solo dopo nostra conferma.

Due to continuous development in material and updating of Standards, date reported are not binding and subject to our revision.

Étant donné l'évolution du matériel ainsi que des Normes, les information contenues dans le présent document, ne seront considérées comme étant valable qu'après confirmation de notre part.



sarel

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