Outdoor disconnectors

Notes

- for switching the external medium voltage lines to the values of rated power.
- for OVE air arc chutes, OJC vacuum arc chutes
- **in compliance with:** EN 60 265-1
- **insulators:** epoxy
- **work position:** horizontal, vertical
- **mounting:** basic pole, twin pole, edged mast, lattice pole
- **pylon height:** 9; 10,5; 12; 13,5; 16,5; 18 m
- **control:** manual (control lever lockable in both end positions)
  electromotive (electromotive drive of the MPUO type) - provided with pull rod with the possibility of remote control.
- guide frame meets all requirements for dimensioning of the carrying frame in accordance with Czech and Slovak technical standard.
- disconnectors are weather resistant and the functionality is guaranted for up to 20mm of ice accrection.

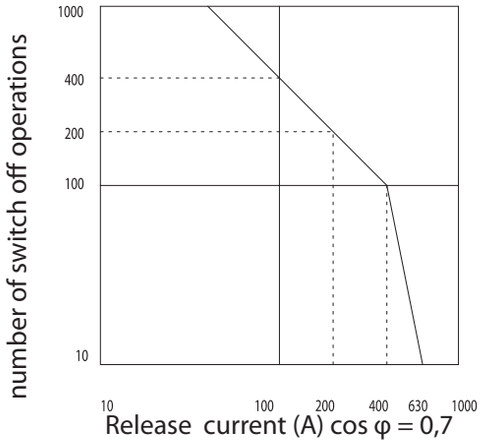
TECHNICAL DATA	OJC 25	OVE 25
Rated voltage U	25kV	25kV
Rated current I	400A	400A
Rated frequency f	50Hz	50Hz
Rated short term withstand current I_k by short circuit time tk	16kA / 1s	16kA / 1s
Rated dynamic withstand current I_p	40kA	40kA
Rated release current of active load I_1	400A	400A
Rated release current of closed circuit I_{2a}	400A	400A
Release current of non-loaded transformer I_3	4A	4A
Rated release current of non loaded cable line I_{4a}	16A	16A
Rated release current of non loaded wire line I_{4b}	15A	15A
Rated short circuit switching current I_{ma}	10kA	10kA
Rated grounding switching off current I_{6a}	50A	50A
Rated release current of non loaded cable and wire line in case of grounding I_{6b}	28A	28A
Number of cycles ON/OFF	3 000	see graph under table
Surface route	775mm; 3,1cm/kV	775mm; 3,1cm/kV
Degree of polution	II - IV	II - IV
Mechanical lifetime	3000 cycles	3000 cycles
Maximum vertical angle of the line	30°	30°
Maximum horizontal angle of the line	10°	10°
Weight	80kg	80kg
Lifetime	30 years	30 years

PPN - version for installation under load

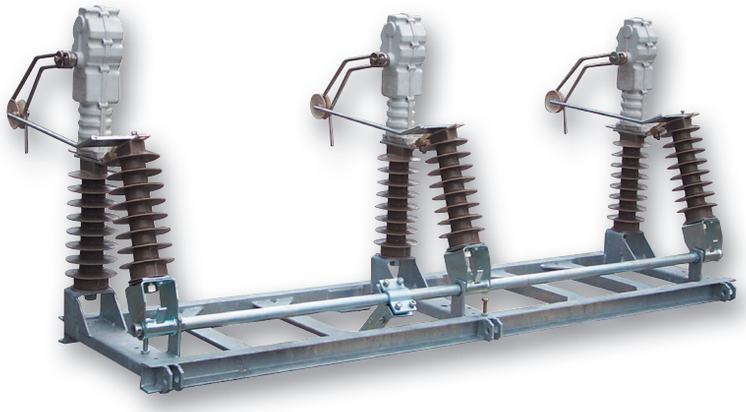
Section switches and disconnecting elements for works under voltage are used in order to disconnect or unplug sections, incoming lines of the HV external or aerial cable line or of transformer feeder line of 25 kV and 38,5 kV and their technical design and construction enable repairs, inspections, maintenance or replacement of units without any power supply breaking.

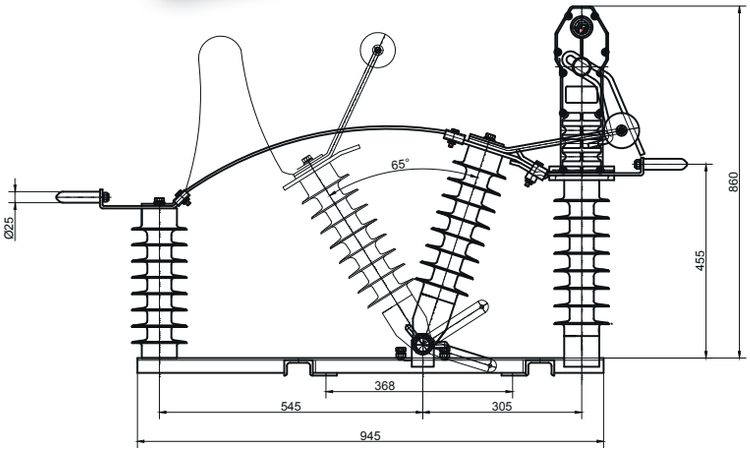
This solution is based on the fact the line is anchored on an independent console. The instrument is equipped with connecting bolts with special brackets, which may be detached or attached by means of an insulated bar. During repairs, inspections, maintenance and instrument replacement (section switches and disconnecting elements) the line is bridged over (by-passed) and by means of the insulated bar brackets are detached from the platform determined for works under load. The instrument is no more under load and all required works may be done.

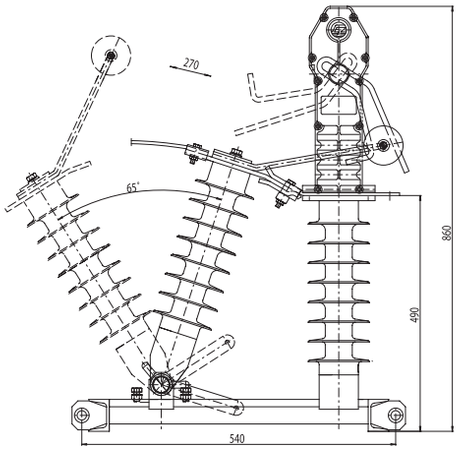
Switching ability of OVE 25



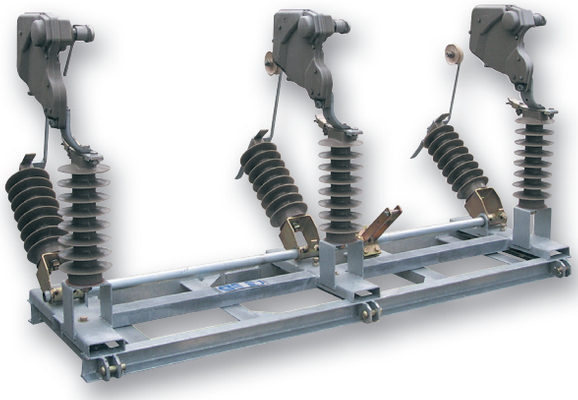
OJC 25/400

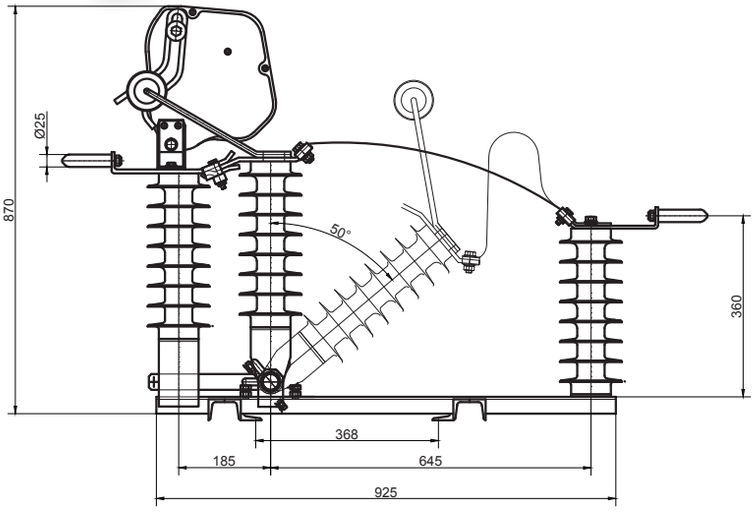


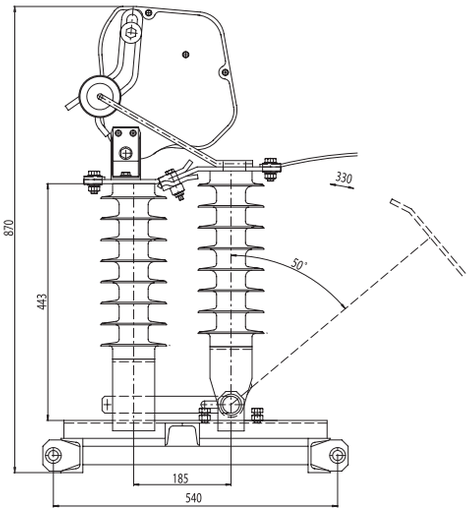




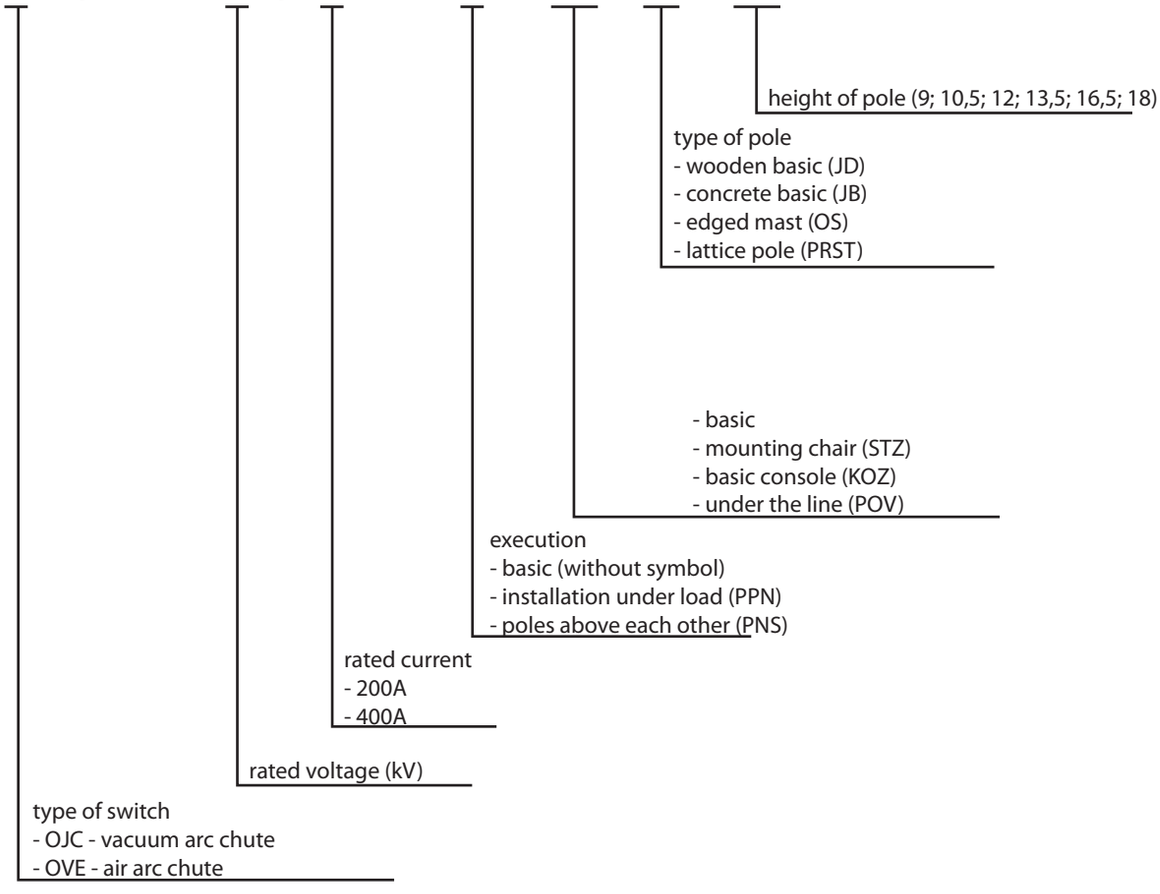
OVE 25/400







OJC / OVE - 25 / XXX - XXX - XXX - XX - XX

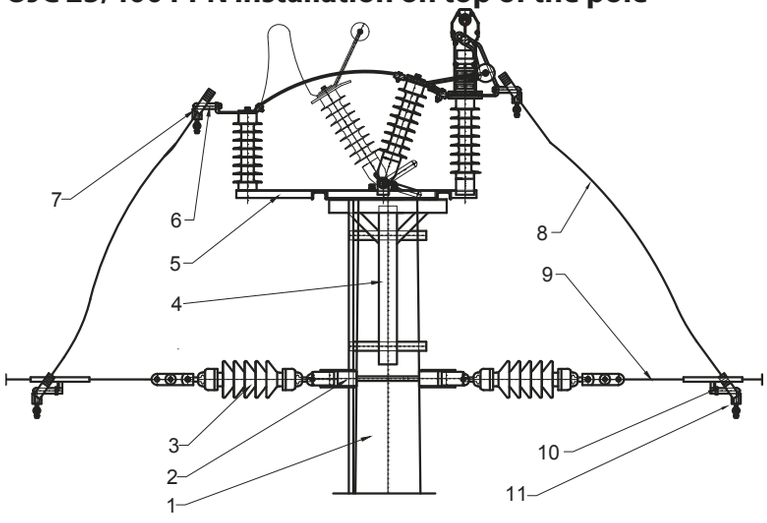


example of designation

OJC - 25 / 400 - PPN - KOZ - BS - 10,5

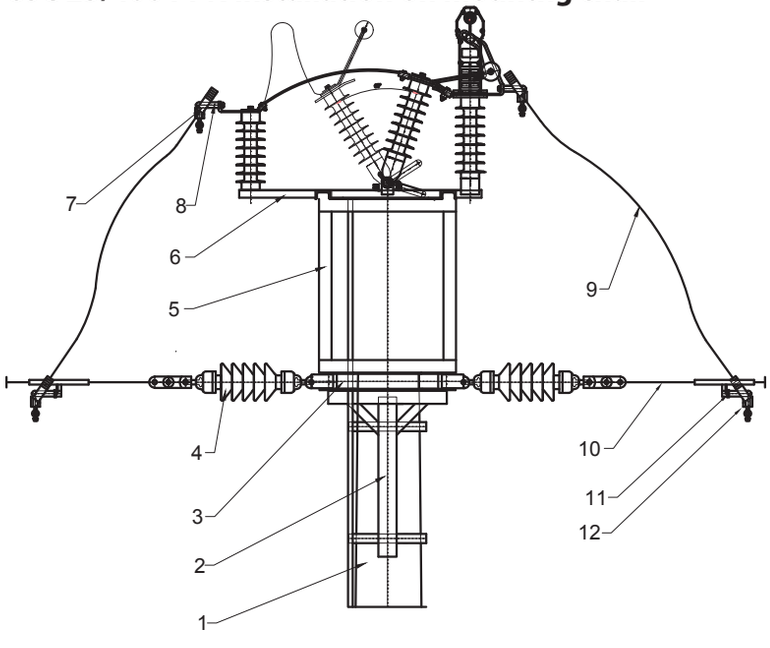
OJC 25/400 PPN installation on top of the pole

1 – pole
2 – line carrier
3 – aerial insulator
4 – carrier cross
5 – frame of device
6 – connecting bolt
7 – bracket CDB
8 – insulated wire
9 – AlFe line
10 – bracket RDB
11 – bracket CDB

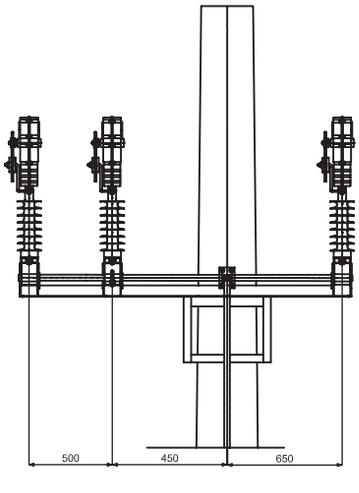


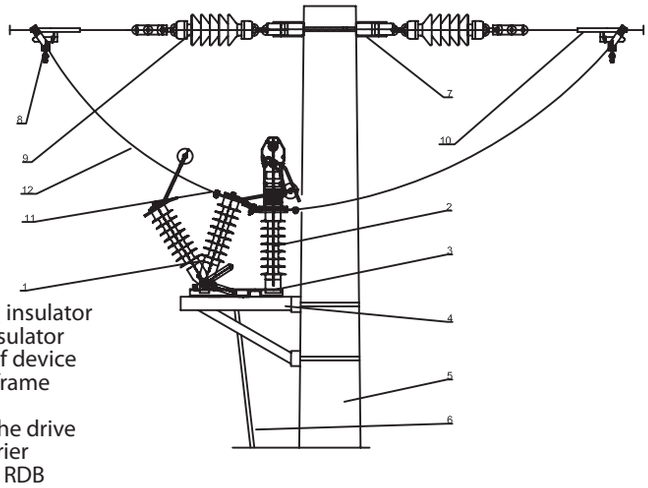
OJC 25/400 PPN installation on mountng chair

1 – pole
2 – carrier cross
3 – frame of line
4 – aerial insulator
5 – mounting chair PPN
6 – frame of device
7 – bracket CDB
8 – connecting bolt
9 – insulated wire
10 – AlFe line
11 – bracket RDB
11 – bracket CDB



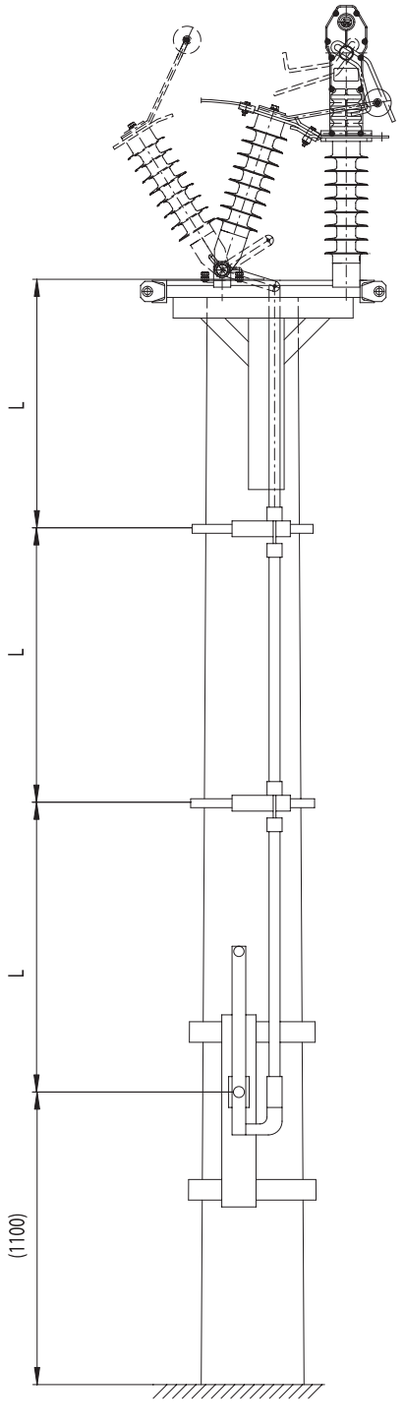
OJC 25/400 - PPN - with floating input under the line



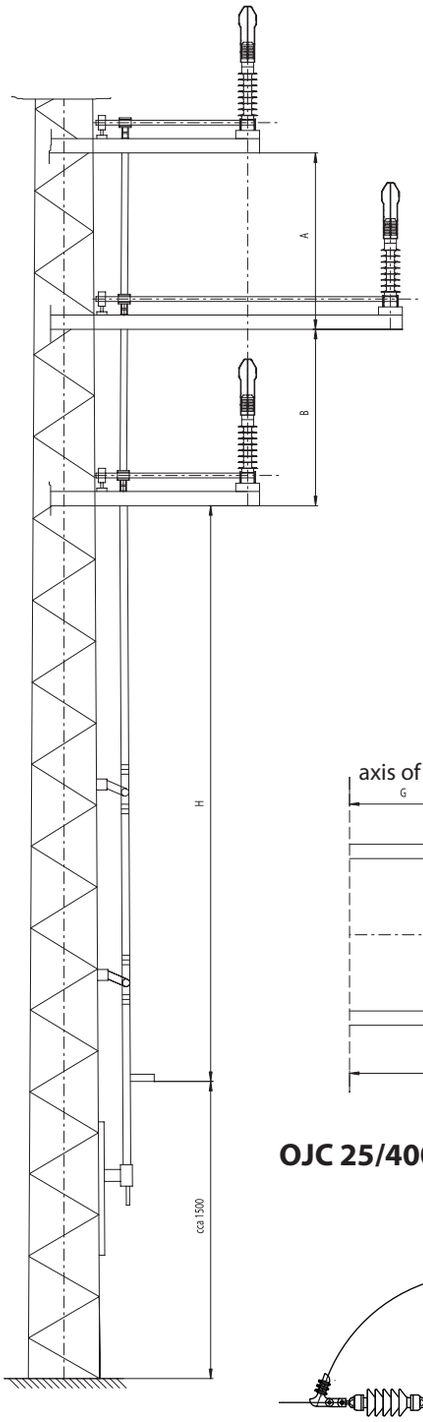


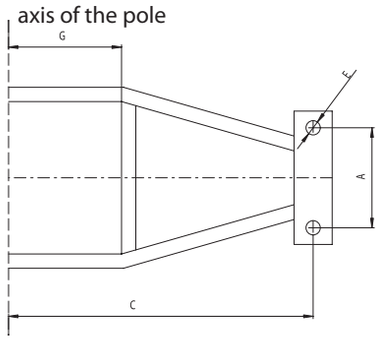
1 – floating insulator
2 – fixed insulator
3 – frame of device
4 – carrier frame
5 – pole
6 – rod of the drive
7 – line carrier
8 – bracket RDB
9 – aerial insulator
10 – bracket CDB
11 – cable eye
12 – insulated wire

OJC 25/400 JB

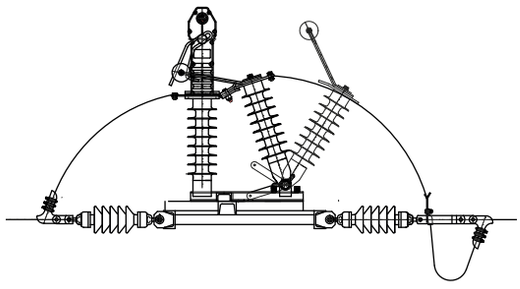


OJC 25/400 poles above each other PR ST

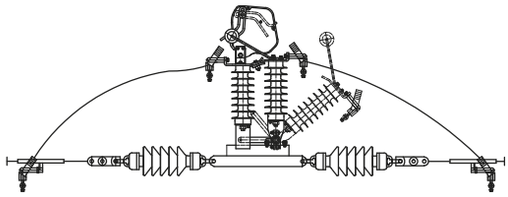




OJC 25/400 poles above each other

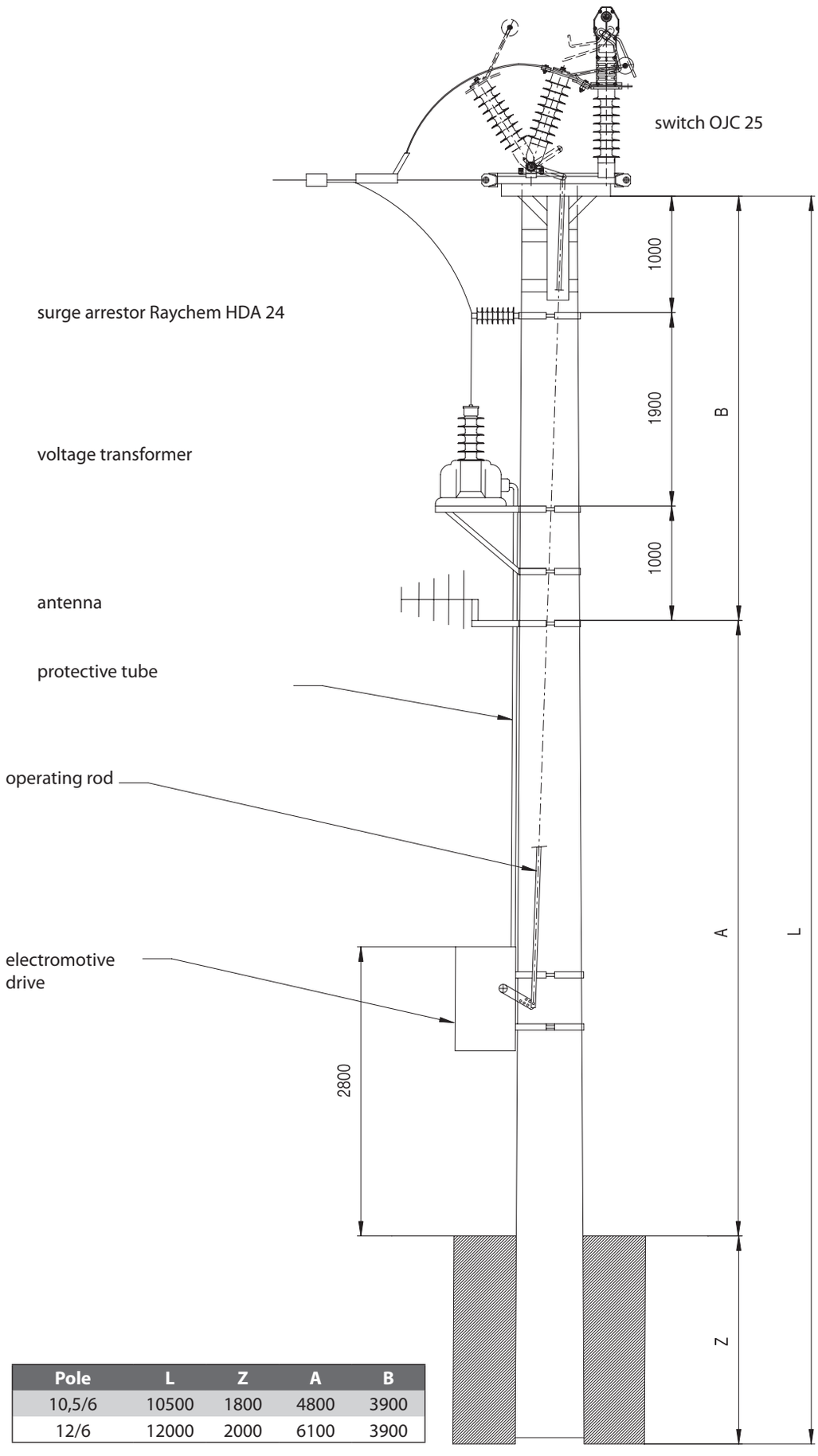


OVE 25/400 poles above each other



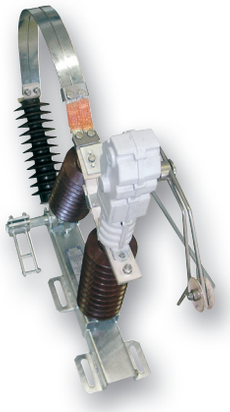
L - according to customer request

Example of remote controlled switch



Pole	L	Z	A	B
10,5/6	10500	1800	4800	3900
12/6	12000	2000	6100	3900

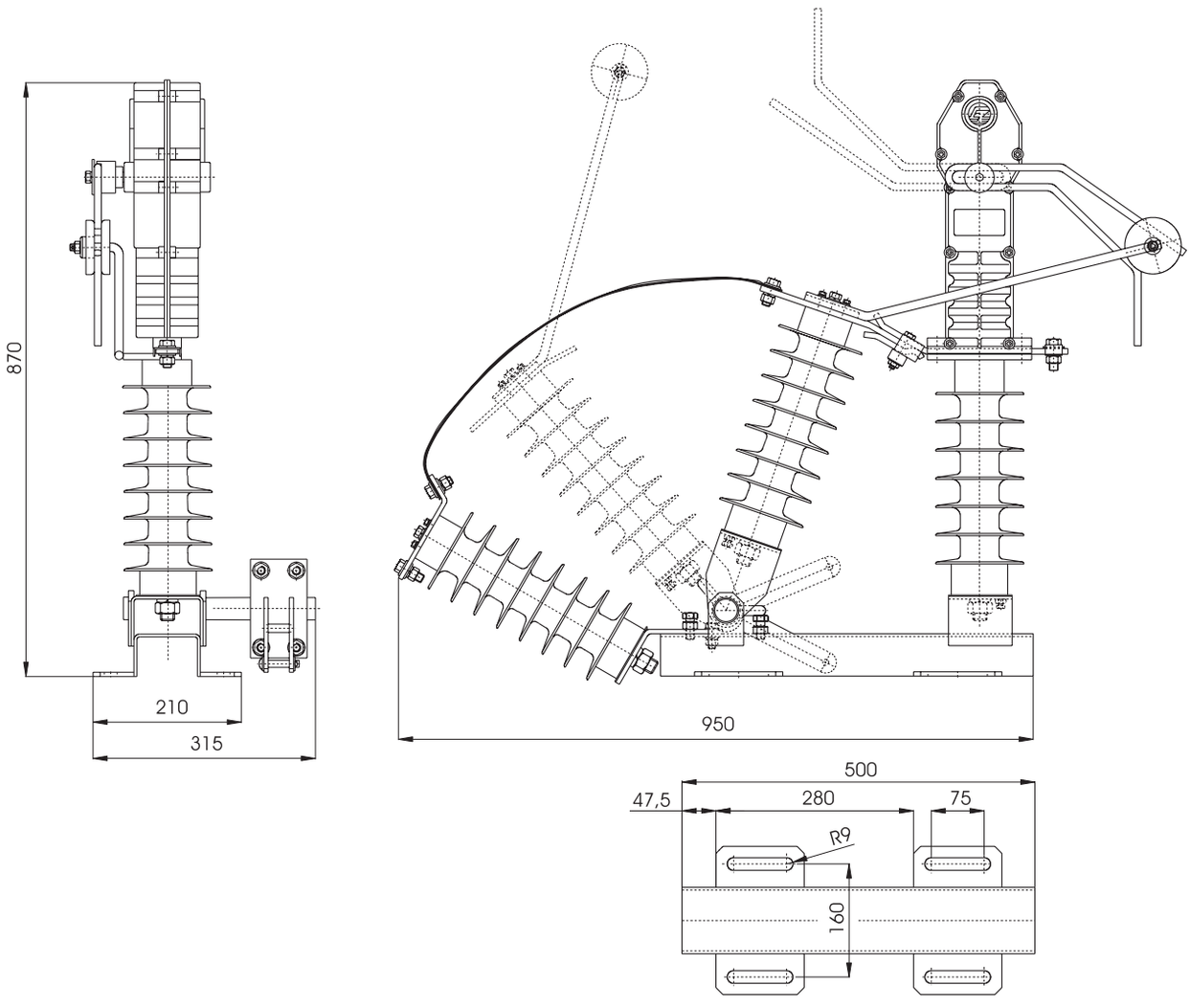
- for switching the external medium voltage lines to the values of rated power
- in compliance with: EN 60 265-1
- disconnectors are weather resistant and the functionality is guaranteed for up to 20mm of ice accrection.
- UJC-Ž - switch disconnector
- UJC-Ž-U - switch disconnector with grounding switch



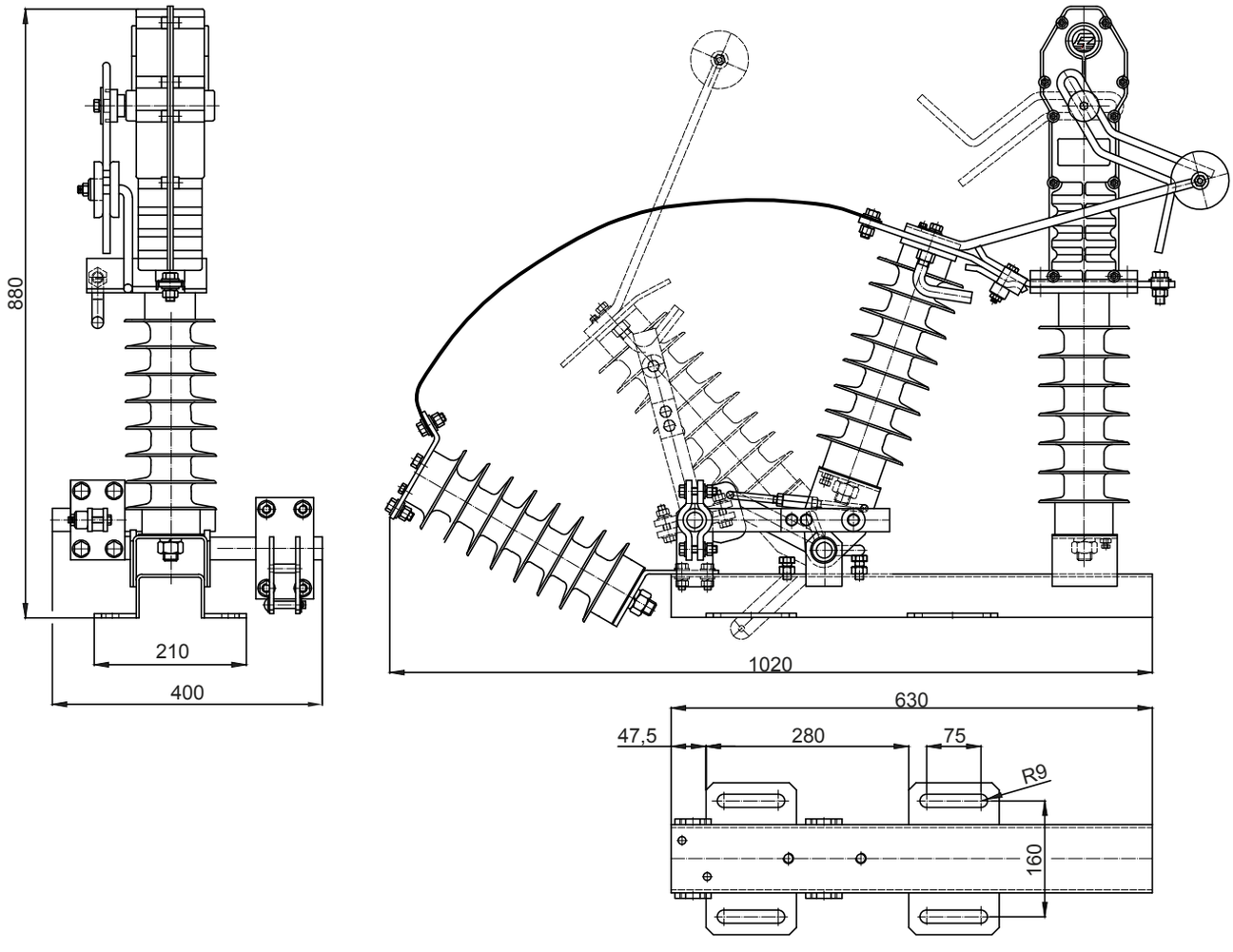
TECHNICAL DATA

Rated voltage	25 kV, 38,5 kV
Rated current	400 A, 630 A, 1000 A
Rated dynamic current	40 kA
Rated short term current 1 s	16 kA
Capacitative release current	10 A
Release current of a non-loaded transformer	10 A
Maximum current induced at make	10 kA
Rated release current	400 A, 630 A, 1000 A
Mechanical durability	3000 ON/OFF cycles
Durability	30 years
Weight	32, 40 kg

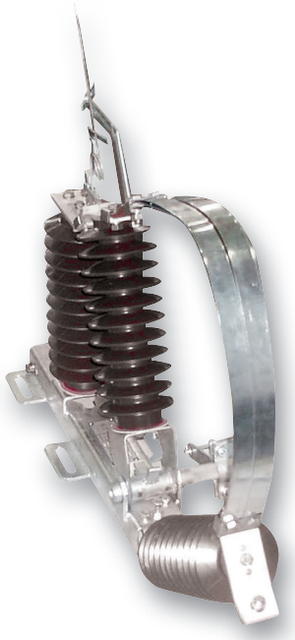
Switch disconnector OJC - Ž 38,5/400 - 10



Switch disconnector OJC - Ž - U



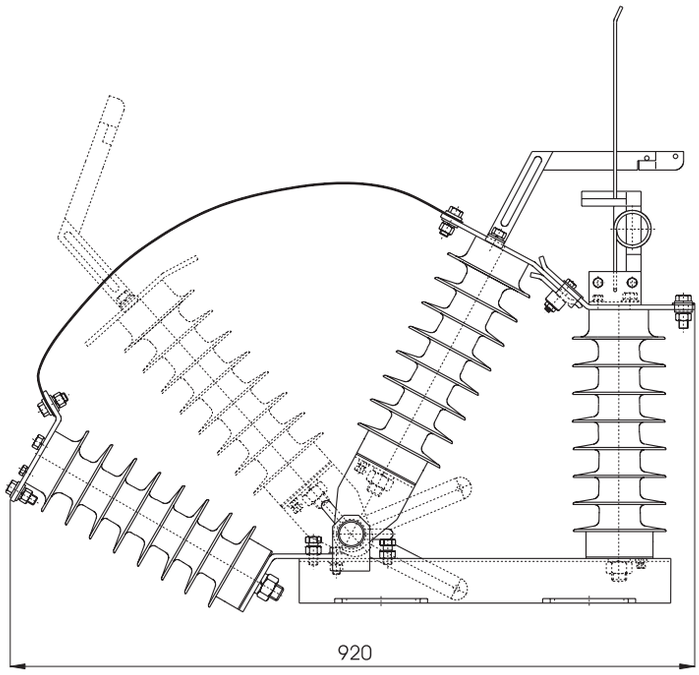
- for switching the external medium voltage lines to the values of rated tripping current
- in compliance with: EN 60 265-1
- UVE-Ž - disconnecting switch
- UVE-Ž-U - disconnecting switch with grounding switch
- UVE-Ž-UI - disconnecting switch with insulated grounding switch
- disconnectors are weather resistant and the functionality is guaranted for up to 20mm of ice accrection.

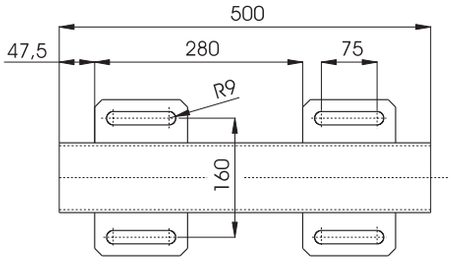


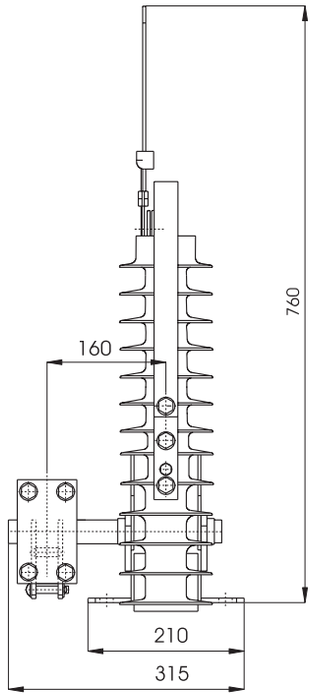
TECHNICAL DATA

Rated voltage	25 kV, 38,5 kV
Rated current	400 A, 630 A, 1000 A, 2000 A
Release current	33 A
Maximum wire section	120 mm
Weight	25 kg, 33 kg
Rated dynamic current	40 kA
Rated thermal current 1 s	16 kA
Durability	30 years

Single-pole disconnecting switch UVE - Ž 25/400 - 10

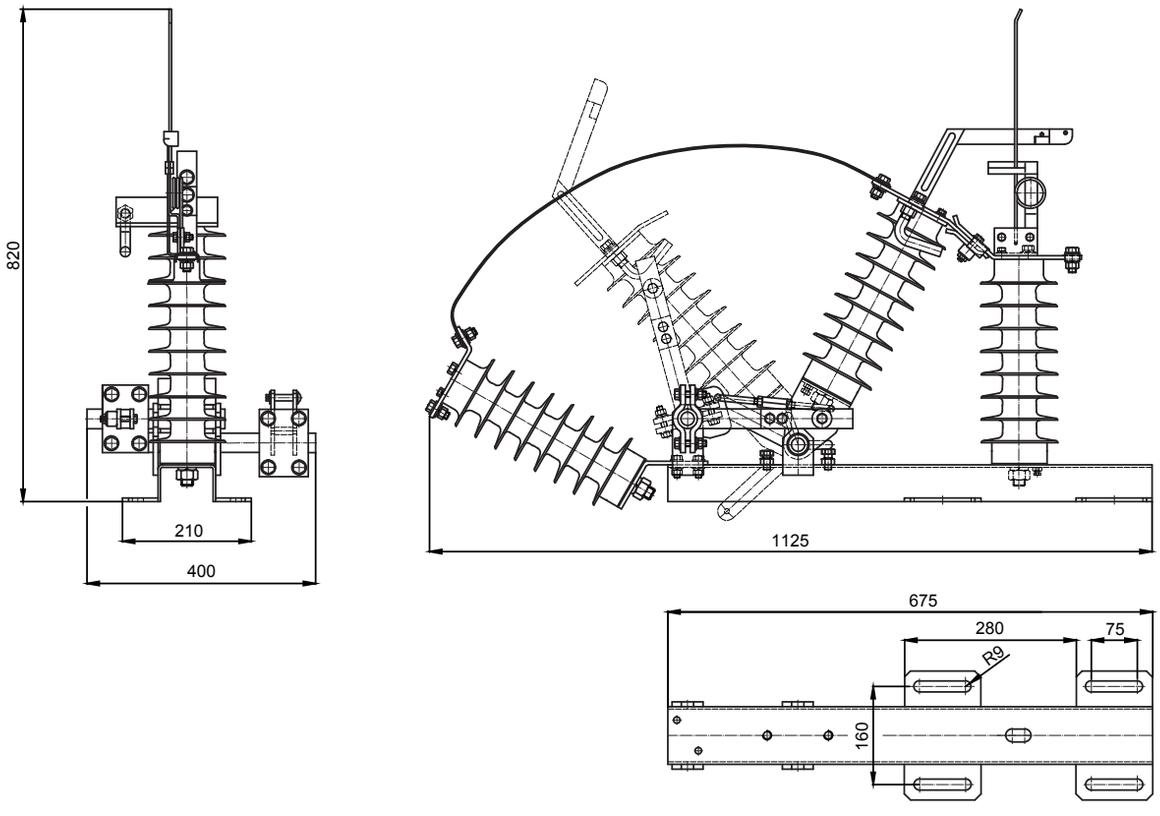




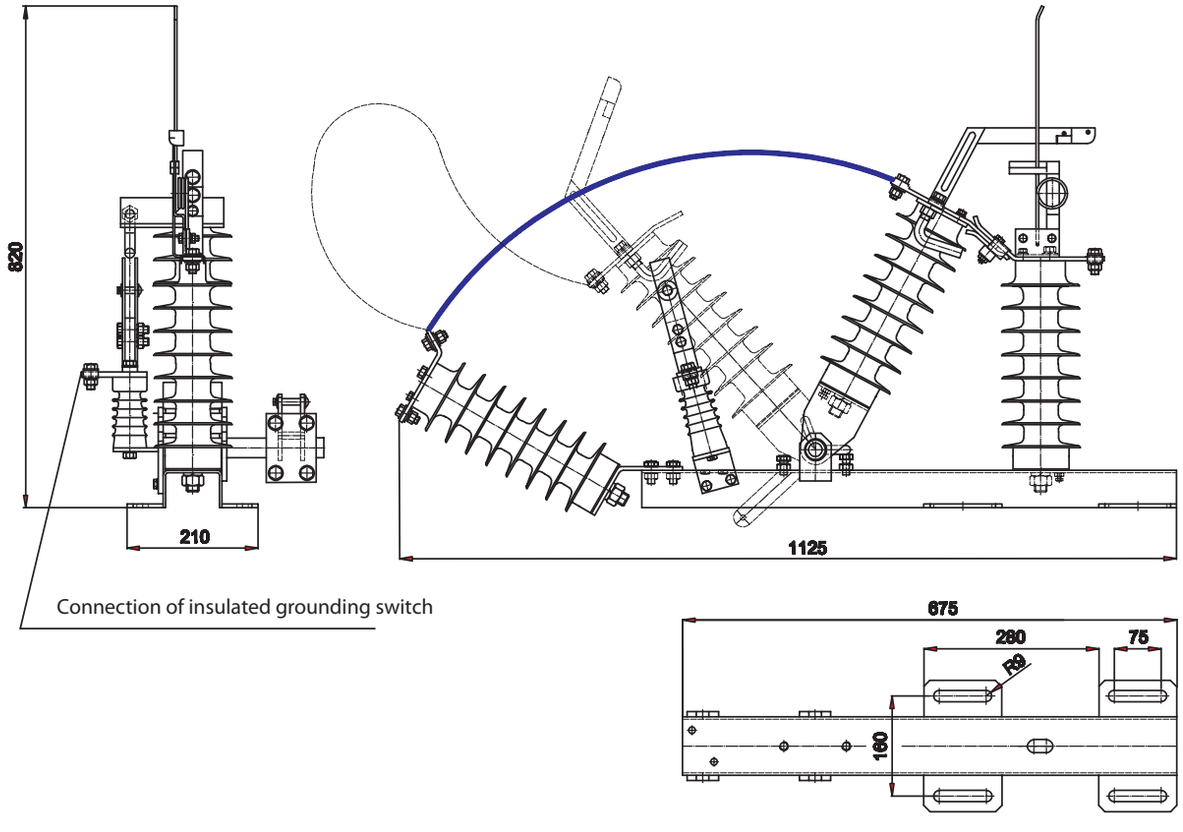


Winch on the left

Disconnecting switch UVE - Ž - U



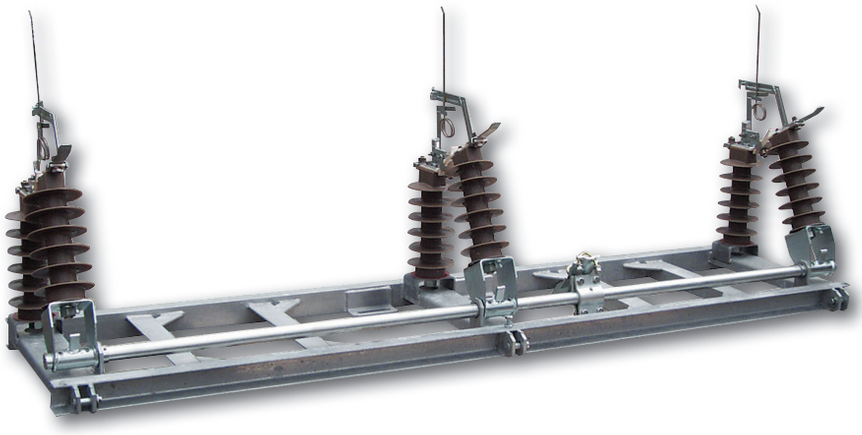
Disconnecting switch UVE - Ž - UI

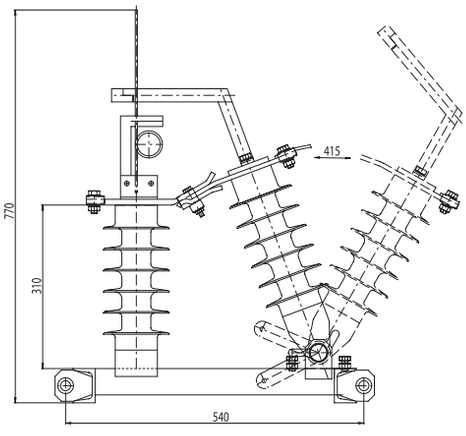


- for switching-on or switching-off the section, external aerial and cable lines of medium voltage or connections to transformers of medium/low voltages
- **in compliance with:** STN EN 60 265-1
- **insulators:** epoxy
- **work position:** horizontal
  vertical
- **mounting:** BS, DS, double BS, edged mast, tower
- **pylon height:** 9; 10,5; 12 m
- **control:** - manual (control lever lockable in both end positions) – by means of a pull rod
  - electromotive (electromotive drive of the MPUO type) – provided with pull rod with the possibility of remote control
- guide frame meets all requirements for dimensioning of the carrying frame in accordance with Czech and Slovak technical standard.
- disconnectors are weather resistant and the functionality is guaranted for up to 20mm of ice accrection.

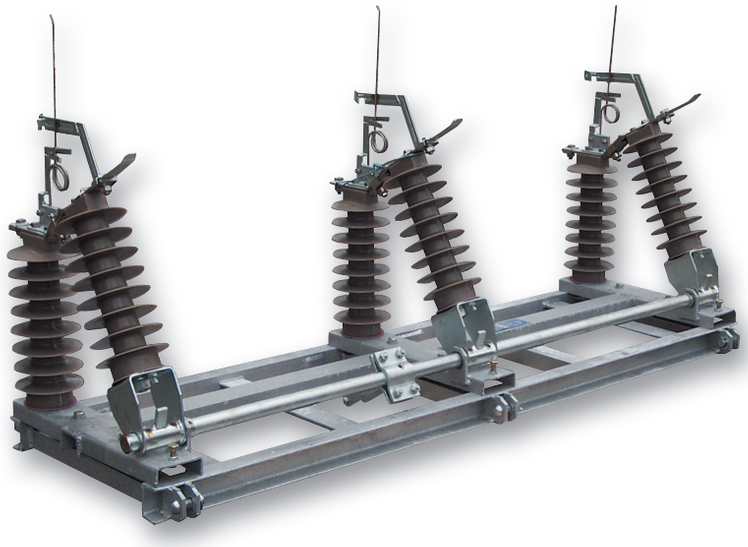
TECHNICAL DATA	UVE (I) 25	UE 6	UVE (I) 38,5
Rated voltage U	25kV	25kV	38,5kV
Rated current I	400A	400A	400A
Rated frequency f	50Hz	50Hz	50Hz
Rated short term withstand current I_k by time of short circuit t_k	16kA / 1s	16kA / 1s	16kA / 1s
Rated dynamic withstand current I_p	40kA	40kA	40kA
Rated release current of active load I_1	20A	31,5A	15A
Rated release current of closed circuit I_{2a}	20A	31,5A	15A
Rated release current of non loaded transformer I_3	5A		4A
Rated release current of non loaded cable line I_{4a}	10A		10A
Rated release current of non loaded wire line I_{4b}	10A		15A
Rated short circuit switching current I_{ma}	10kA		3,15kA
Rated grounding switching off current I_{6a}	40A		15A
Rated release current of non loaded cable and wire line in case of grounding I_{6b}	17A		17,3A
Surface route	775mm, 3,1cm/kV	625mm, 2,5cm/kV	
Degree of polution	II - IV	II - III	
Maximum vertical angle of line	30°	30°	30°
Maximum horizontal angle of line	10°	10°	10°
Lifetime	30 years	30 years	30 years

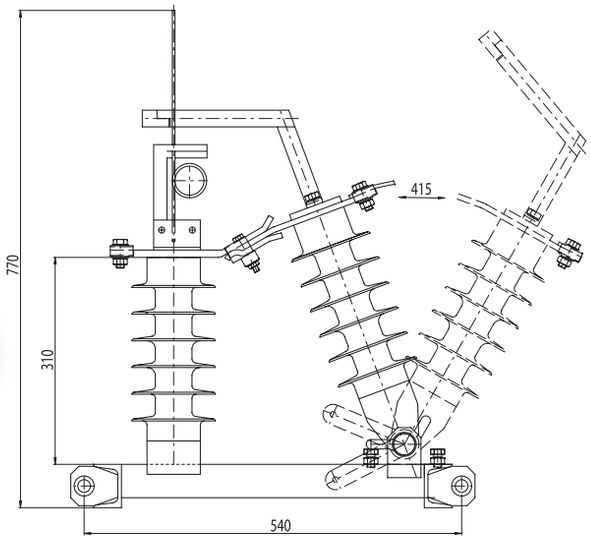
UE 6



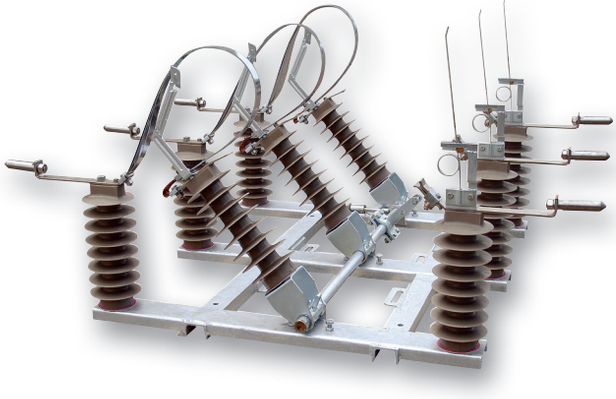


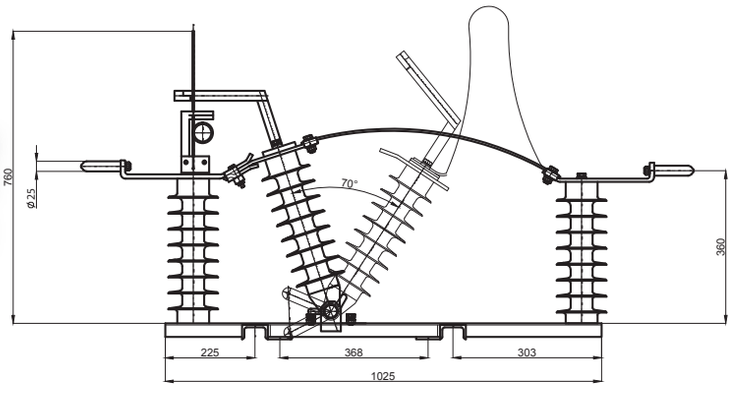
UVE



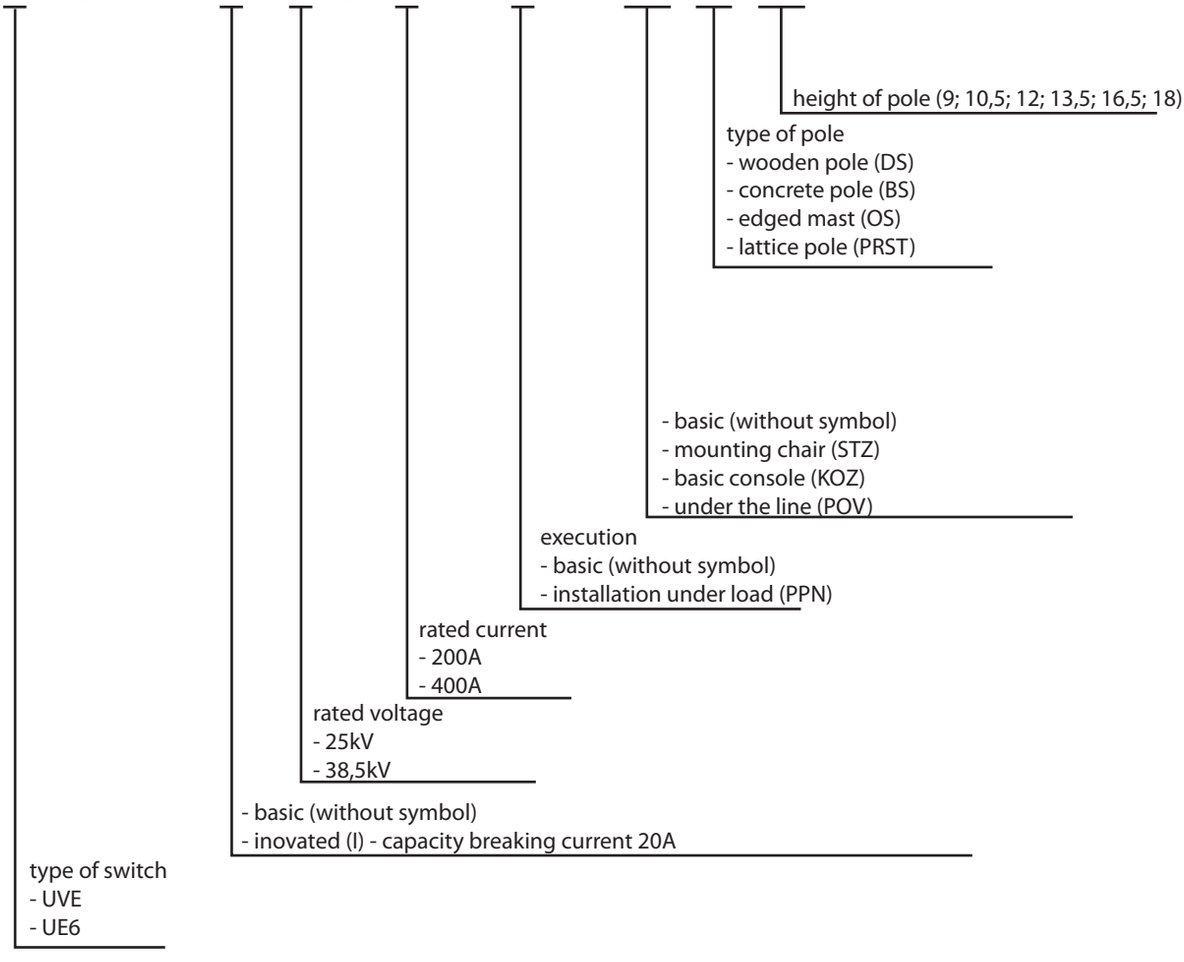


UVE PPN





UVE / UE 6 - X - XX / XXX - XXX - XXX - X - XX

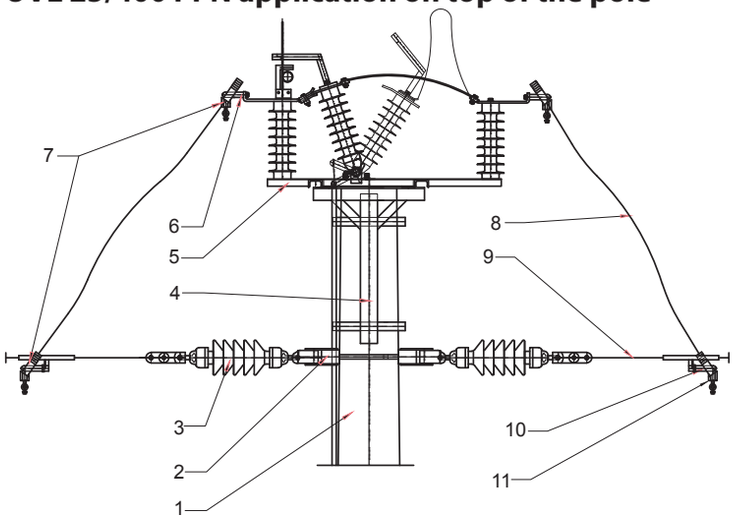


example of ordering

UVE - 25 / 400 - PPN - STZ - BS - 10,5

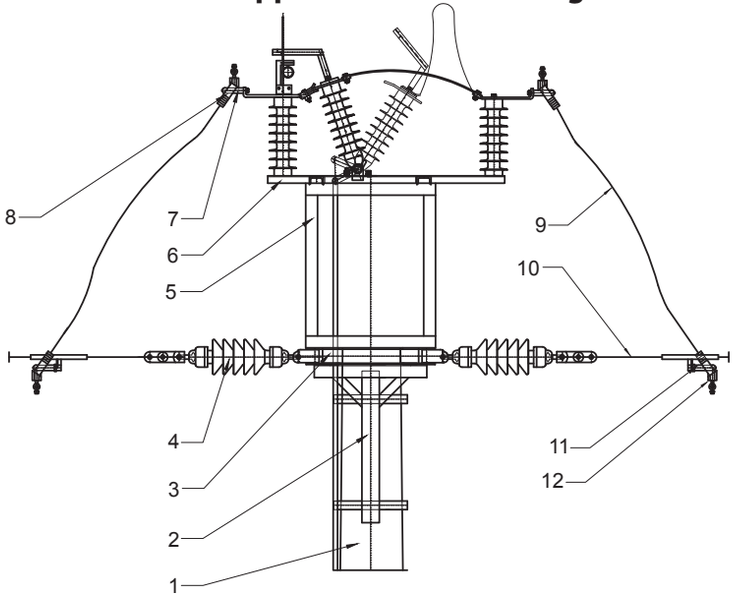
UVE 25/400 PPN application on top of the pole

1 – pole
2 – line carrier
3 – aerial insulator
4 – carrier cross
5 – frame of device
6 – connecting bolt
7 – bracket CDB
8 – insulated wire
9 – AlFe line
10 – bracket RDB
11 – bracket CDB

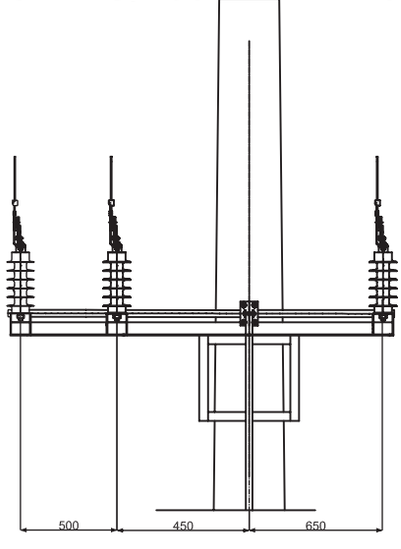


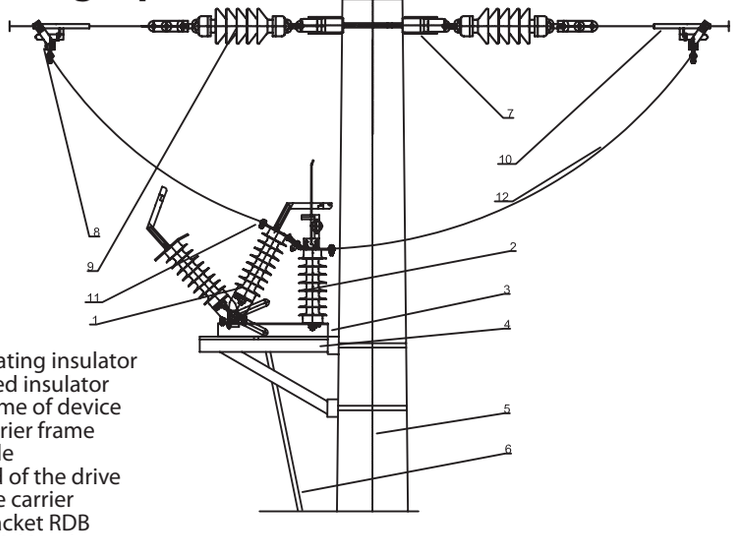
UVE 25/400 PPN application on mounting chair

1 – pole
2 – carrier cross
3 – frame of line
4 – aerial insulator
5 – mounting chair PPN
6 – frame of device
7 – connecting bolt
8 – bracket CDB
9 – insulated wire
10 – AlFe line
11 – bracket RDB
12 – bracket CDB



UVE 25/400 - PPN - with floating input under the line



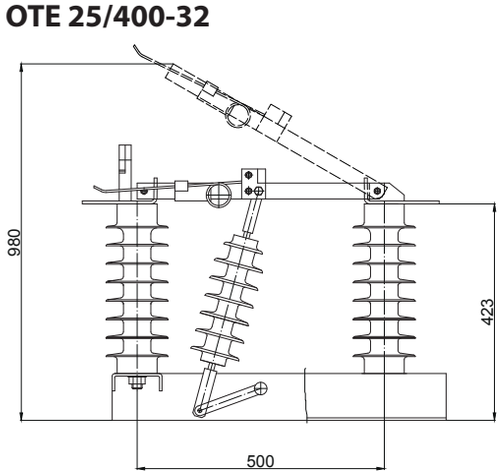


1 – floating insulator
2 – fixed insulator
3 – frame of device
4 – carrier frame
5 – pole
6 – rod of the drive
7 – line carrier
8 – bracket RDB
9 – aerial insulator
10 – bracket CDB
11 – cable eye
12 – insulated wire

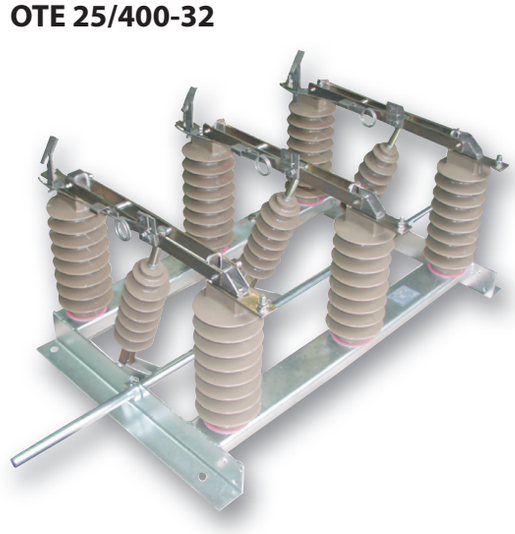
- for visible disconnection of medium voltage lines, external transformers, distribution networks
- in compliance with: EN 60 265-1
- disconnectors are weather resistant and the functionality is guaranted for up to 20mm of ice accrection.
- **control**: - manual (control lever lockable in both end positions)
- electromotive
- **the device may be equipped**: - by overvoltage arresters in on the device inlet or outlet.
- by fuse base PS 25 to use it as the short-circuit protection. Contacts of the fuse base are designed in accordance with IEC 282-1 with the cover diameter of j = 45 mm and length of D = 442 mm

TECHNICAL DATA	OTE, OTEZ
Rated voltage U	25kV
Rated current I	400A
Rated frequency f	50Hz
Rated short term withstand current I_k by time of short circuit t_k	25kA / 1s
Rated dynamic withstand current I_p	63kA
Rated release current of active load I_1	20A
Rated release current of closed circuit I_{2a}	20A
Rated release current of non loaded transformer I_3	4A
Rated release current of non loaded cable line I_{4a}	16A
Rated release current of non loaded wire line I_{4b}	15A
Rated short circuit switching current I_{ma}	8kA
Rated grounding switching off current I_{6a}	50A
Rated release current of non loaded cable and wire line in case of grounding I_{6b}	28A
Surface route	775mm, 3,1cm/kV
Degree of polution	II - IV
Mechanical lifetime	3000 cycles
Weight	80kg
Lifetime	30 years

OTE 25/400-32



OTE 25/400-32



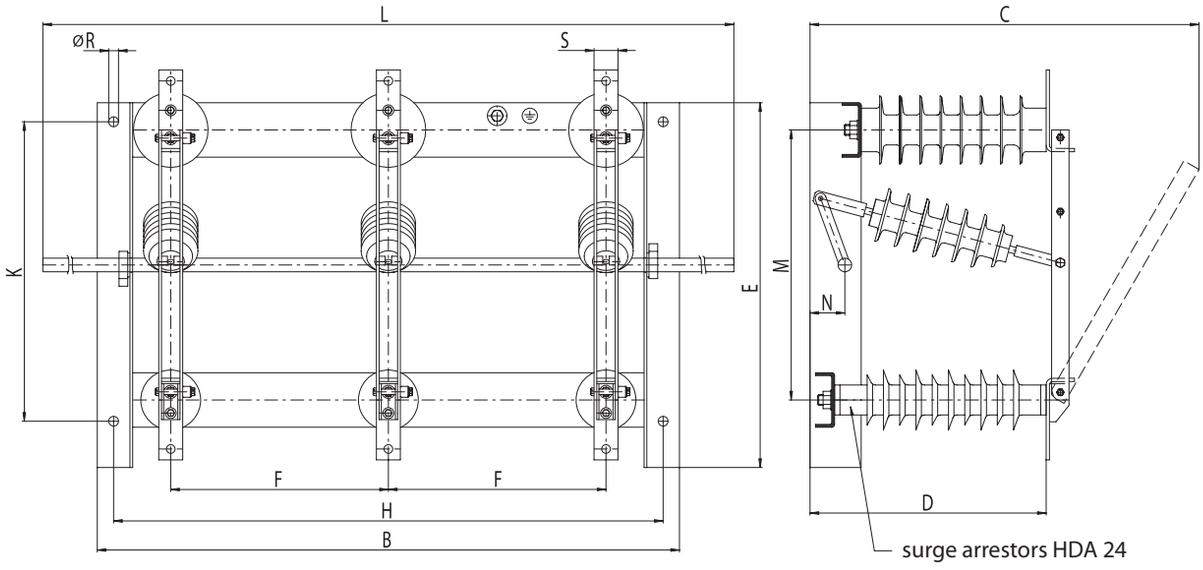
OTE - X - 25 / XXX - XXX - XXX - XXX - XX - XX

- **XX** – height of pole (9; 10,5; 12; 13,5; 16,5; 18)
- **XX** – type of pole
  - wooden pole (DS)
  - concrete pole (BS)
  - edged mast (OS)
  - lattice pole (PRSTS)
- **XXX** –
  - basic (without symbol)
  - fuse base (PS25)
- **XXX** –
  - basic (without symbol)
  - surge arrestor (HDA)
- **XXX** – execution
  - basic (without symbol)
  - installation under load (PPN)
- **XXX** – rated current
  - 400A
  - 630A
- **25** – rated voltage (kV)
- **X** –
  - basic (without symbol)
  - grounding switch (Z)
- **OTE** – type of disconnecting switch (OTE)

example of designation

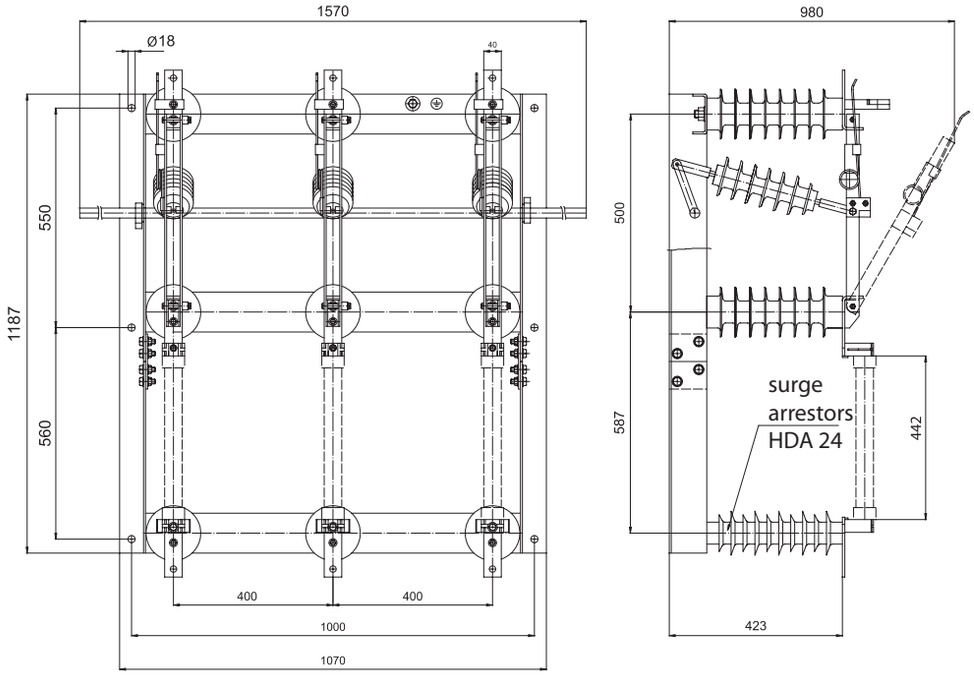
OTE - 25 / 400 - HDA - PS - 13,5

Outdoor switch OTE 25/400 - 31 with surge arrestors

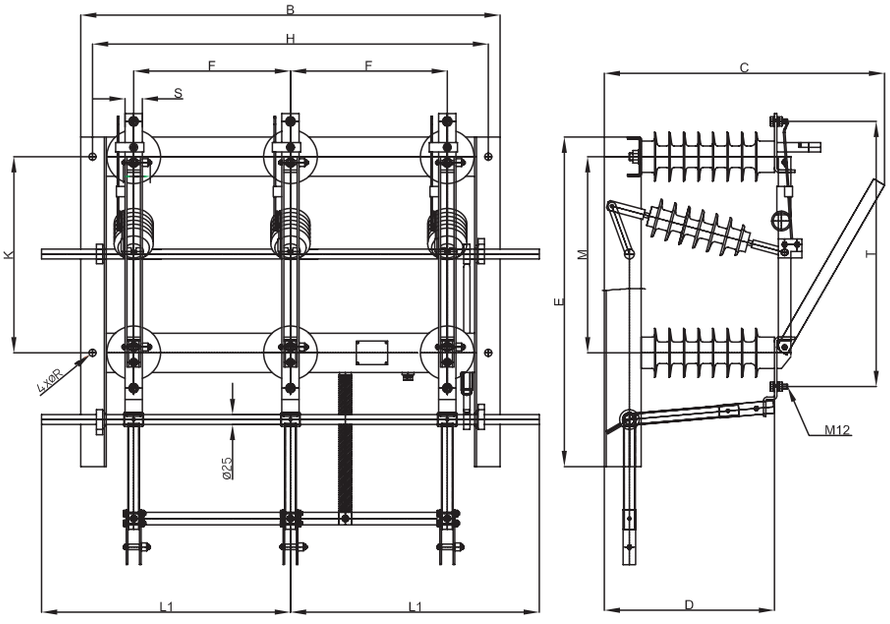


Type	kg	B	C	D	E	F	H	K	L	M	N	R	S
OTE 25/400-31	62	1070	980	423	670	400	1000	550	1300	500	60	Ø18	40
OTE 25/630-31	63	1070	980	423	670	400	1000	550	1300	500	60	Ø18	40

Outdoor switch OTE 25/400 - 32 with surge arrestors HDA 24 and fuse bases



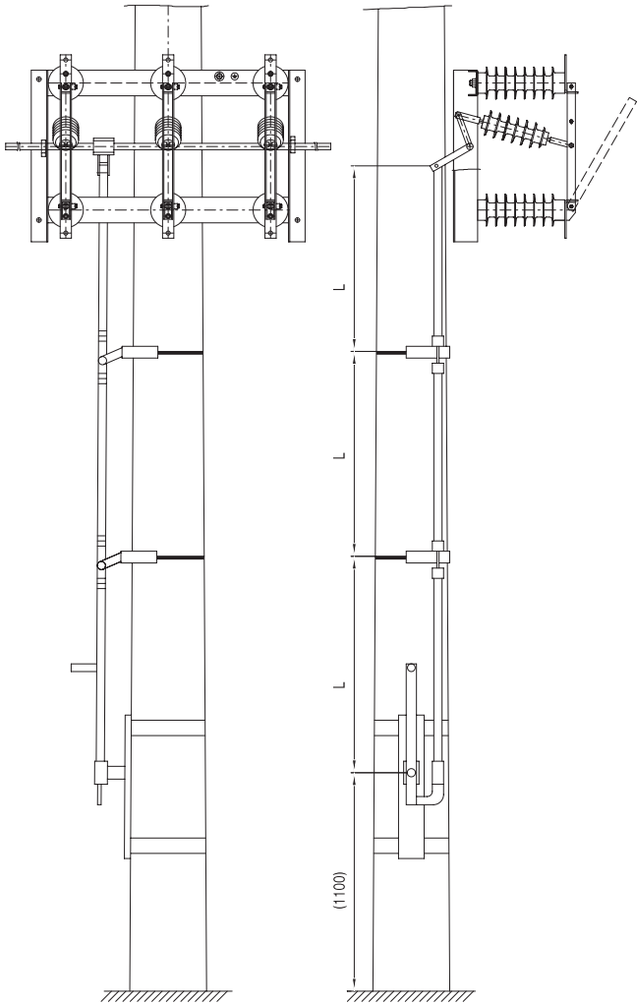
Outdoor switch OTEZ 25/630 - 32



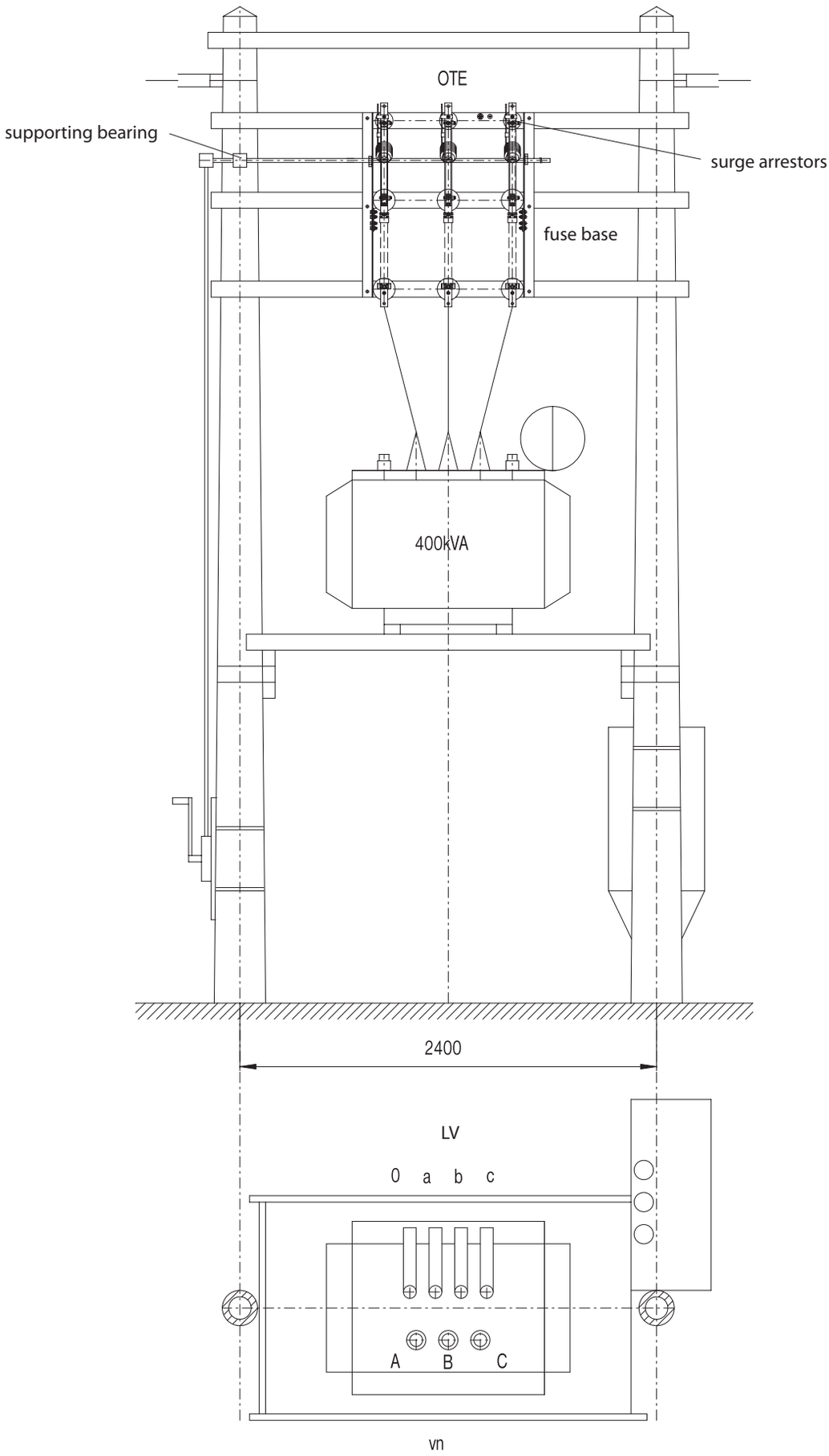
Type	kV	A	kg	B	C	D	E	F	H	K	L1	M	R	S	T
OTEZ 25/630-32	25	630	77	1060	980	423	840	400	1020	500	650	500	Ø 18	40	680

Application of OTE on concrete pole with manual operator

L - according to customers request



Application of OTE on double concrete pole with fuse base and surge arrestors



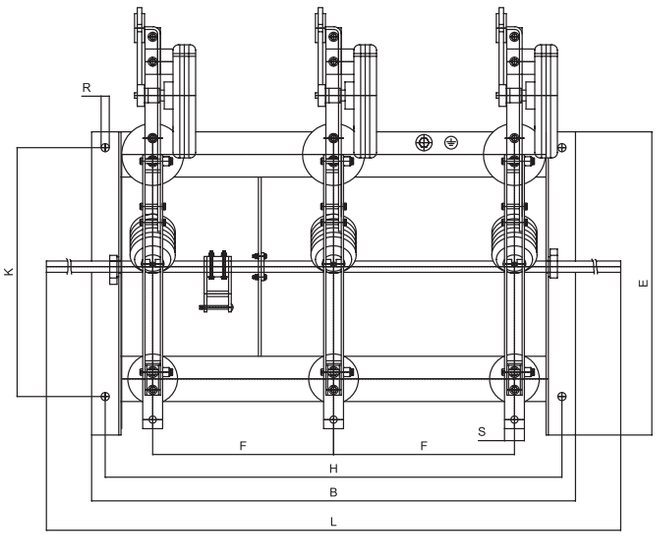
- Aimed at switching external HV lines up to the value of rated current
- Air extinguishing chambers
- In compliance with EN 60 265-1
- Epoxide insulators
- Working position - horizontal
- Mounting on – concrete pylons (9m, 10,5m, 12m)
- Lattice poles (13,5m, 15m, 16,5m, 18m, 21m, 24m)
- Control – manual (control lever lockable in both extremities) by a tie bar
- By electric motor (electric motor drive of the MPUO type)
- Possibility of an assembly performed under voltage

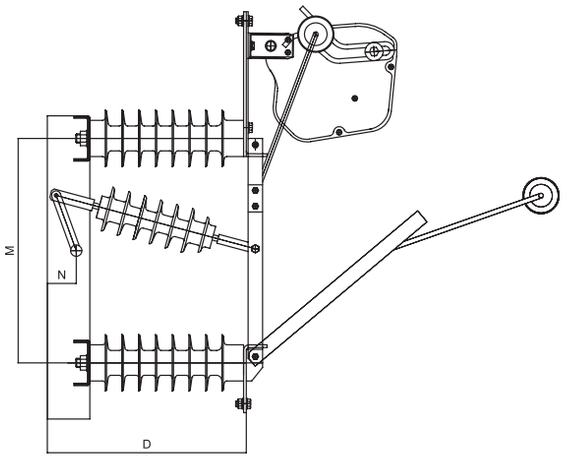
OTEK 25/400 – disconnecting switches can be equipped with over-voltage diverters on inlet or outlet parts.
OTEK 25/400 + PS 25 disconnecting switches – are equipped with the PS 25 fuse base and they can be used as a protection against short-current. Contacts of the fuse base are determined for fuses in accordance with the IEC 282-1 (STN 354720, ČSN 354720-1) with the cover diameter of 45 mm and the length of 442 mm.
- can be equipped with over-voltage diverters on inlet or outlet parts
- disconnectors are weather resistant and the functionality is guaranted for up to 20mm of ice accrection.

TECHNICAL DATA

Rated voltage	25 kV
Rated current	400 A
Rated dynamic and short-time withstand current (1s)	40/16 kA
Rated tripping current at load conditions	400 A
Rated tripping current if closed loop circuit	400 A
Rated tripping current of unloaded transformer	4 A
Rated tripping current of unloaded cable line	16 A
Rated tripping current of unloaded aerial line	17 A
Rated tripping current of earth connection	50 A
Rated tripping current of unloaded cable and aerial line under conditions of earth connection	28 A
Weight	
OTEK	75 kg
OTEK + PS 25	96 kg

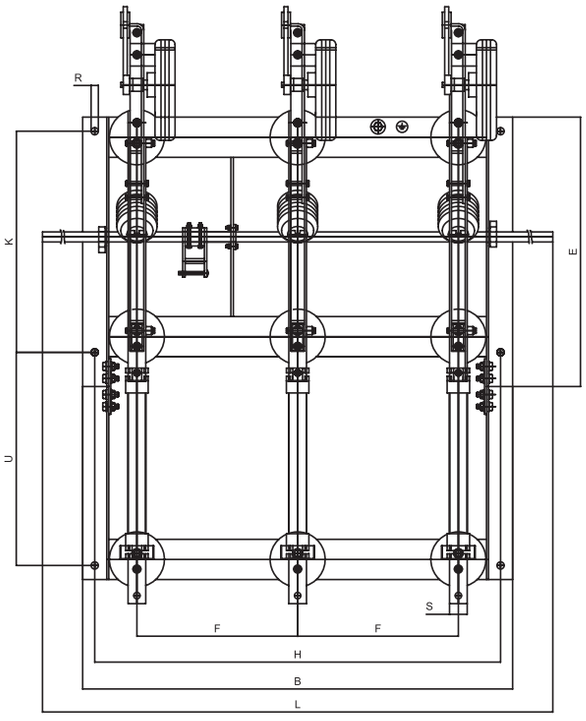
External switch disconnector OTEK 25/400 with air arc chamber

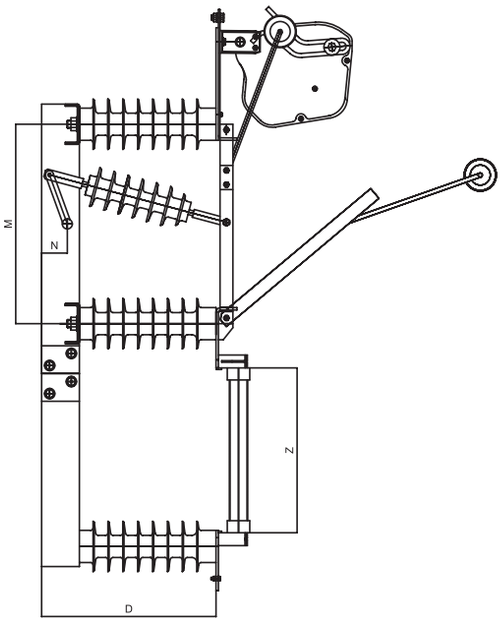




Type	kV	A	kg	B	D	E	F	H	K	L	M	R	S	N
OTEK 25/400	25	400	75	1220	423	670	500	1150	550	1400	500	Ø 18	40	60

External switch disconnector OTEK 25/400 with air arc chamber and fuse bases





Type	kV	A	kg	B	D	E	F	H	K	L	M	R	S	Z	U	N
OTEK 25/400 + PS 25	25	400	96	1220	423	670	500	1150	550	1400	500	Ø 18	40	442	560	60

Disconnecting switches OMD, OZT

- single-pole disconnecting switches for railway traction and town transport traction
- **They meet:** EN 60129, STN EN 60129 (35 4210)
  EN 60694, STN EN 60694 (354205)

- Possibility of doubled insulation
- Epoxy insulators
- **control:** manual
  electromotive - by MPŽ drive
- disconnectors are weather resistant and the functionality is guaranted for up to 20mm of ice accrection.

TECHNICAL DATA

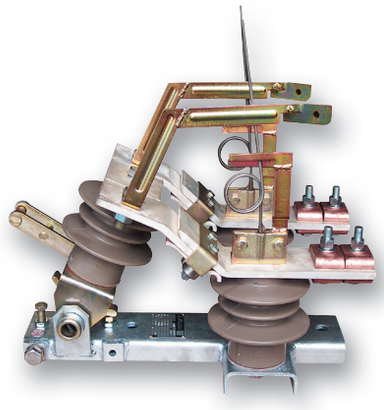
Type designation	Rated voltage, kV	Rated current, A	Rated short-term current 1 s , kA	Rated dynamic current, kA	Rated rel. current of the non-loaded transformers, A	With t, ms
OZT 3/1000	3,6	1000	31,5	80	10	2,5
OMD 3/1000	3,6	1000	31,5	80	10	7,5
OZT 3/2000	3,6	2000	40	100	10	2,5
OMD 3/2000	3,6	2000	40	100	10	7,5
OZT 3/3000	3,6	3150	50	125	10	2,5
OMD 3/3000	3,6	3150	50	125	10	7,5

Type designation	Weight without earthing device, kg	Weight with earthing device, kg
OZT 3/1000	17,5	19
OMD 3/1000	17,5	19
OZT 3/2000	18	20
OMD 3/2000	18	20
OZT 3/3000	19	21
OMD 3/3000	19	21

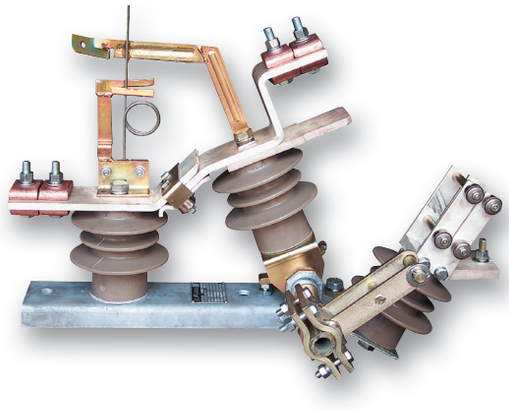
OMDI, OZTI

- parameters are the same as with OMD, OZT
- weight: 24 kg
- firm inlets
- **connecting terminal:** horizontal
  vertical

OZTI

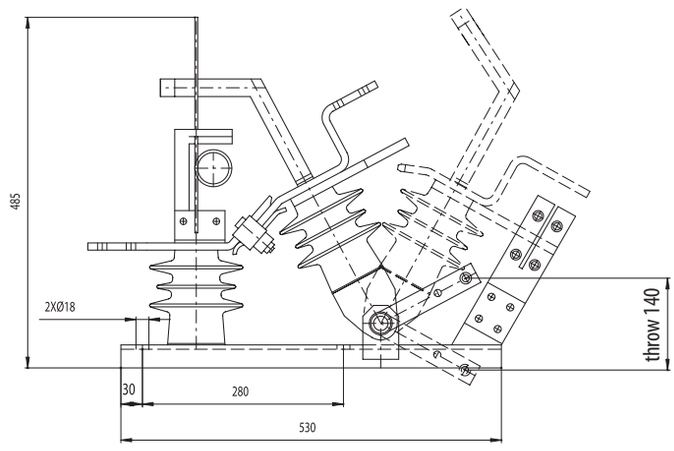


OZTZ

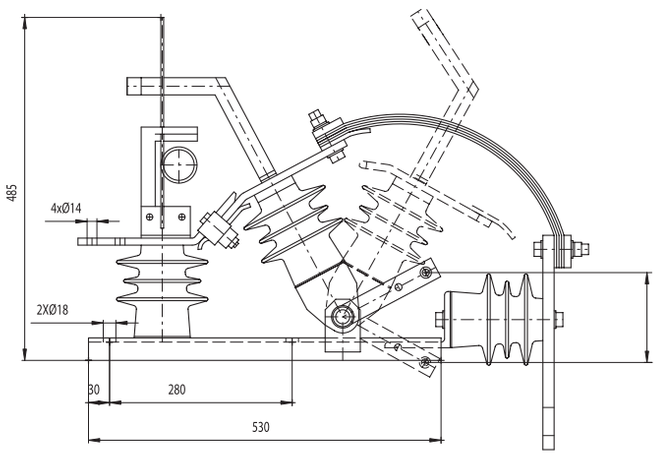


DIMENSIONAL LAYOUTS

OMDZ, OZTZ,

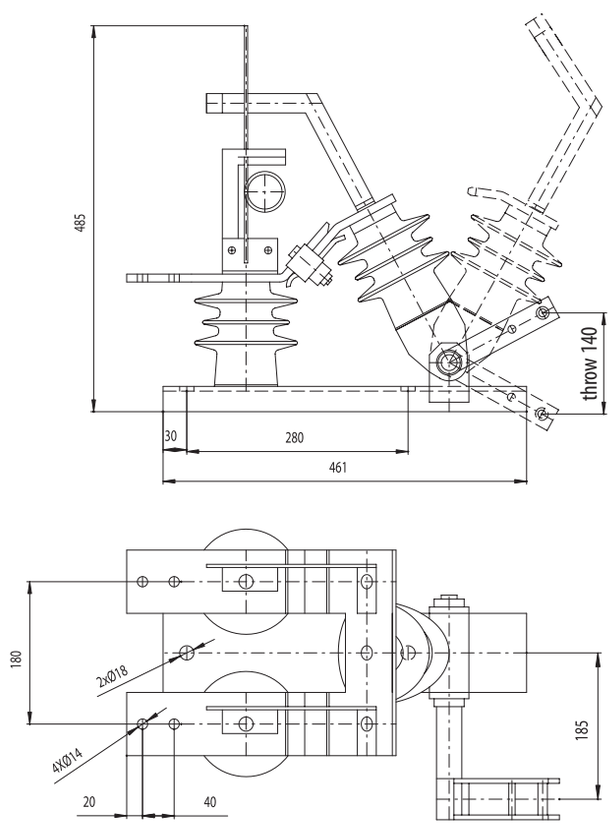


OZT - ELTRA



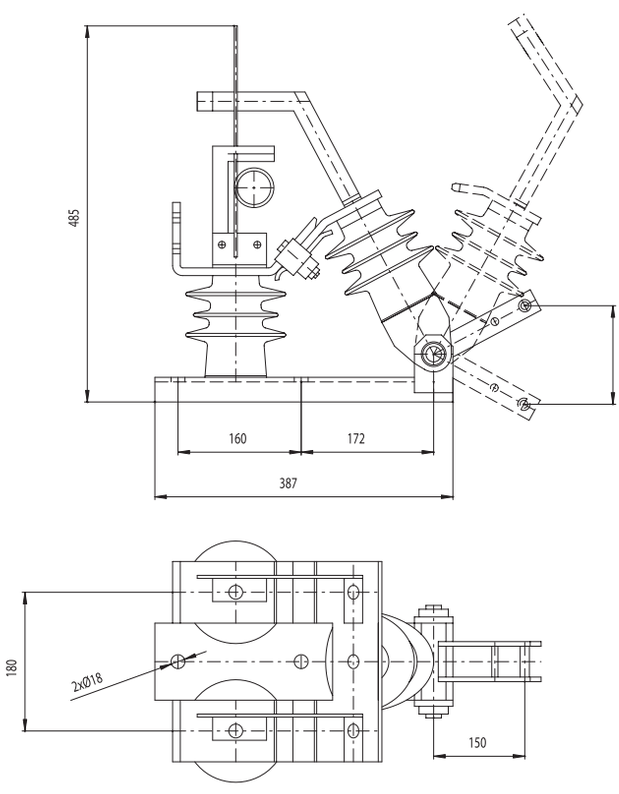
OMDI, OZTI

Control out of the disconnecting switch
(for older executions, the 2 GZ, 3 GS replacement)

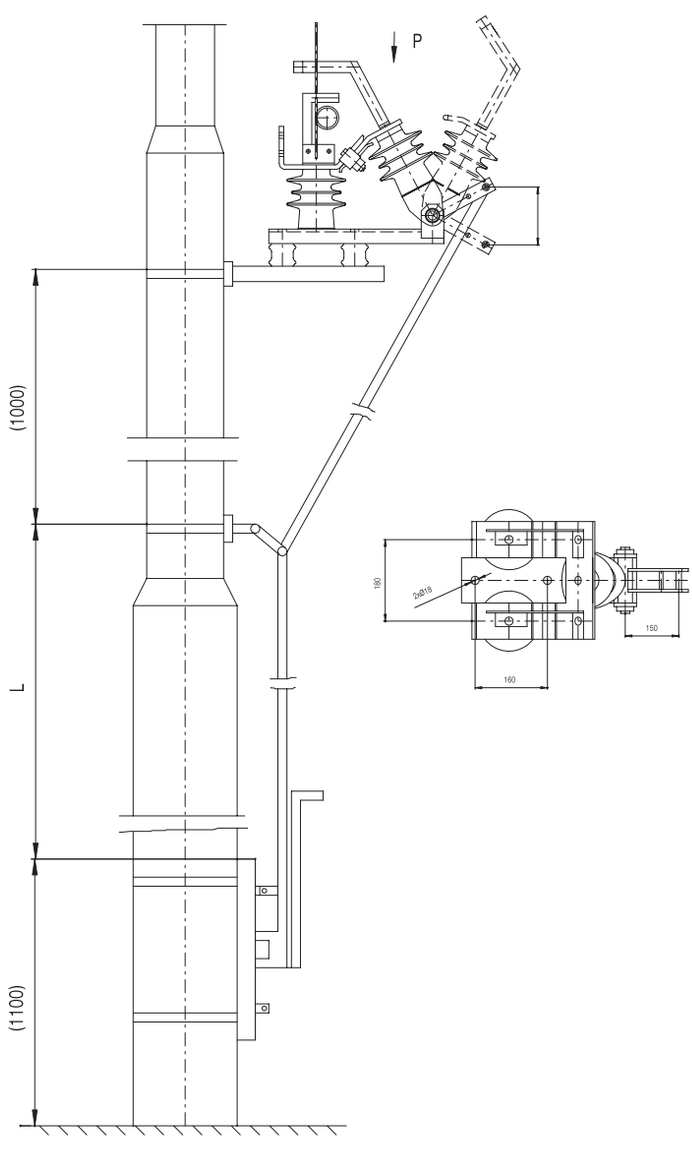


OMDI, OZTI

Control in the disconnecting switch axis

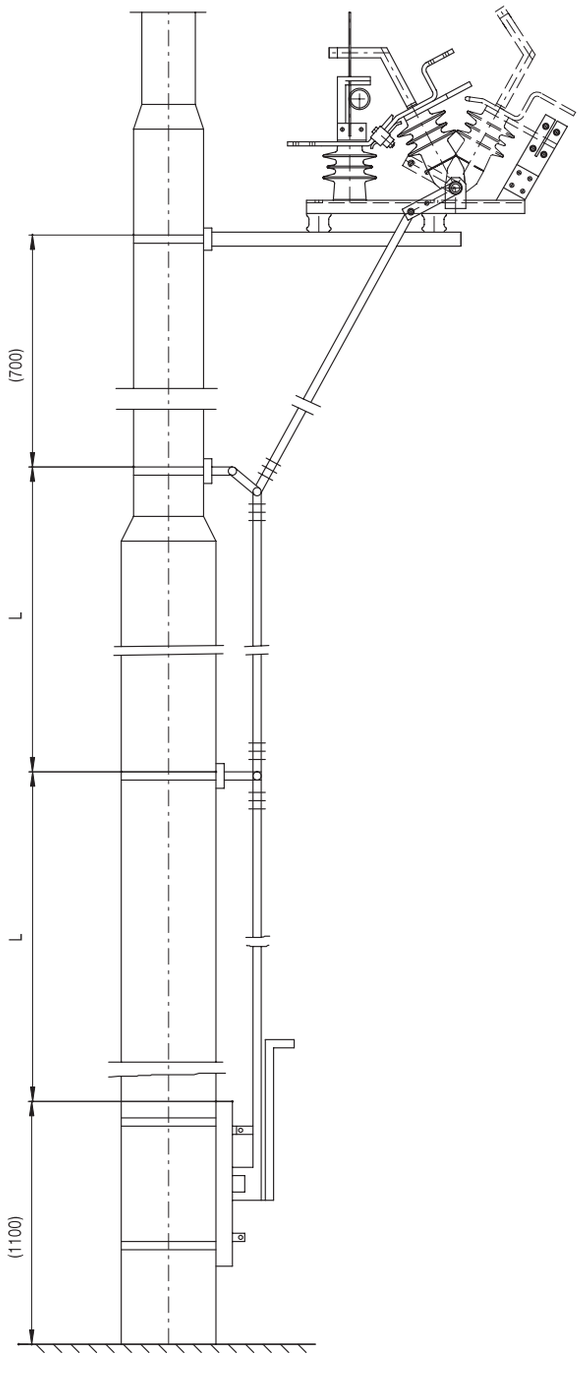


OMDI, OZTI manualy operated disconnectors



L - according to customers request

OMDZ, OZTZ manualy operated disconnectors



L - according to customers request

OZTZ disconnecting switch with MPŽ electromotive drive for railway traction

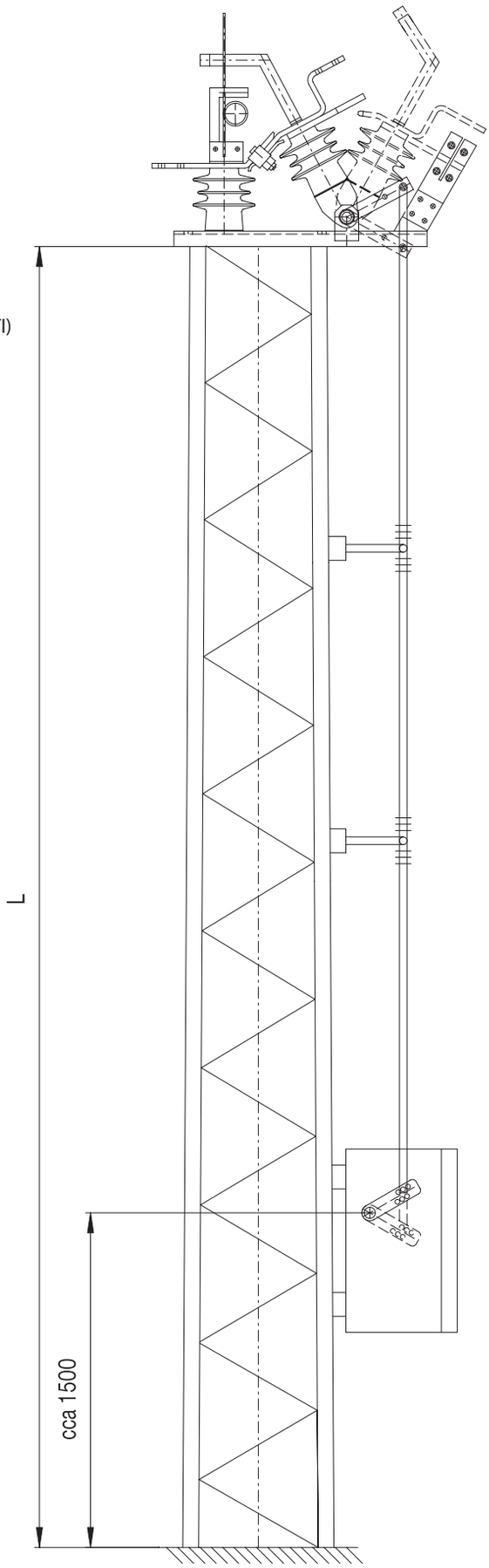
ORDERING DATA

In the order, the following data shall be stated:

- disconnecting switch type (OMD, OMDZ, OZT, OZTZ, OMDI, OZTI)
- rated voltage 3,6 kV)
- rated current (1000, 2000, 3150 A)
- connecting terminals (vertical, horizontal, A, B or C type)
- pull rod length
- drive (manual, electromotive, MPŽ), the assembly type (column or mast) shall be stated too)

Note: The disconnecting switches and drive units may be ordered separately.

L - according to the mast type
Hole for the emergency control crank
in the height of approximately 1,5 m



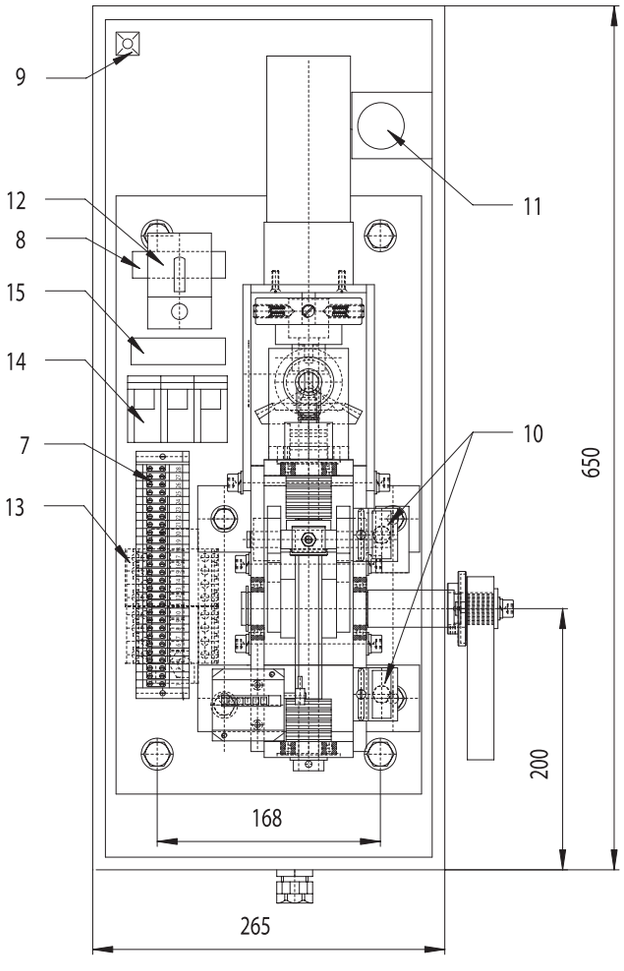
MPŽ electromotive drive
for the OMD, OZT, UVE-Ž, OJC-Ž disconnecting switch types

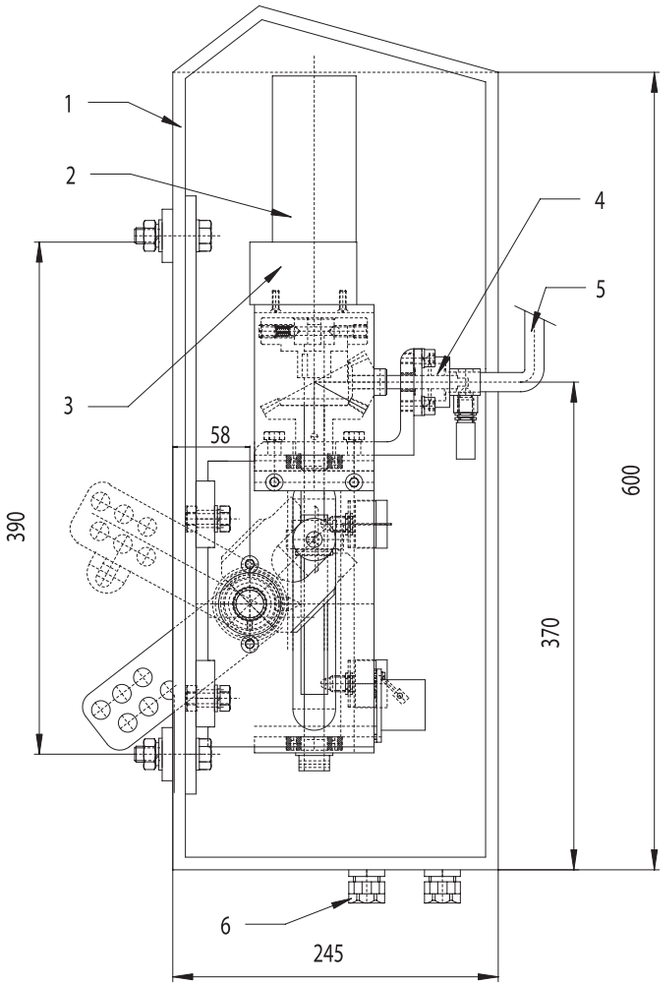
- elements on the control panel: cam switch with ON/OFF reversible position, main circuit breaker.
- other control elements: terminal switches, connecting terminal board, door switch, thermostat, heating body
- door switch:
- secures that the drive may be controlled remotely with the close door only.
- serves as a protection against accidental actuating (the ON/OFF switch is out of function with open door), it is necessary to press down the door switch by other hand.
- is solved as tilting one allowing the shutdown of the remote control even with closed door when repairing or inspecting.
- the emergency control crank is a part of the drive.

- closing the case: by padlock or built-in lock of the arbitrary shape.

TECHNICAL DATA

Operational voltage	220 V DC/AC
Stroke force	3,5 kN
Operational stroke (adjustable)	maximum 190 mm
Period of closing/opening	3 - 5 s
Protection mode:	IP 54 (EN 60 529)





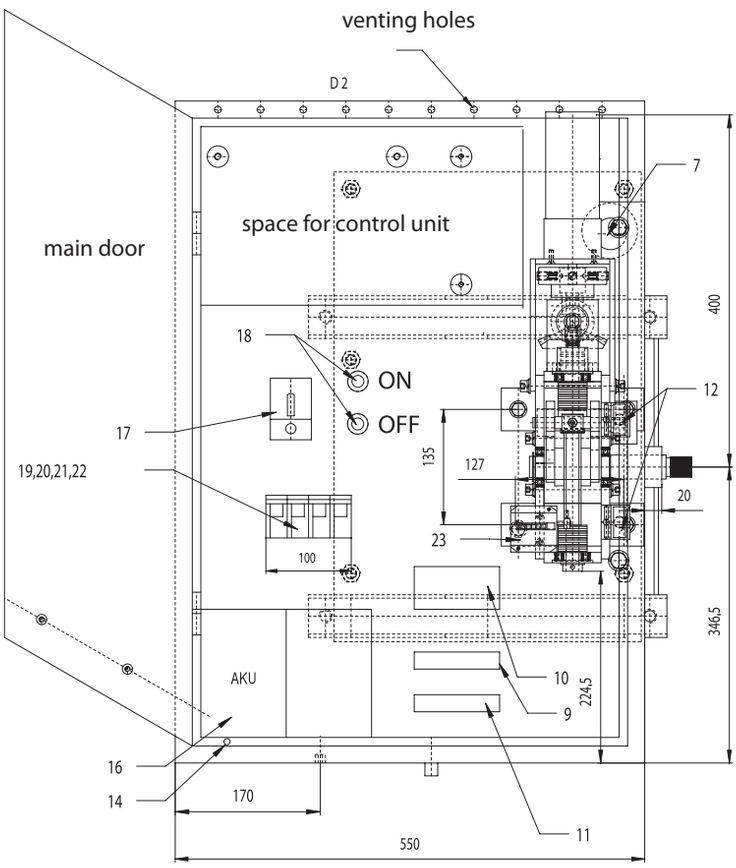
1. Drive case
2. Electromotive drive 220 V DC, AC
3. Gearbox
4. Emergency control
5. Emergency control lever
6. Sealing outlet GP GP 29x24
7. Terminal board
8. Heating body 30 W EH1
9. Thermostat of heating T
10. Terminal switch 1/1, SK1, SK2
11. Door switch 1/1 SK3
12. Cam switch with the ON/OFF reversible position SA 1
13. Relays KA1, KA2
14. Circuit breaker FA1
15. Ventilator

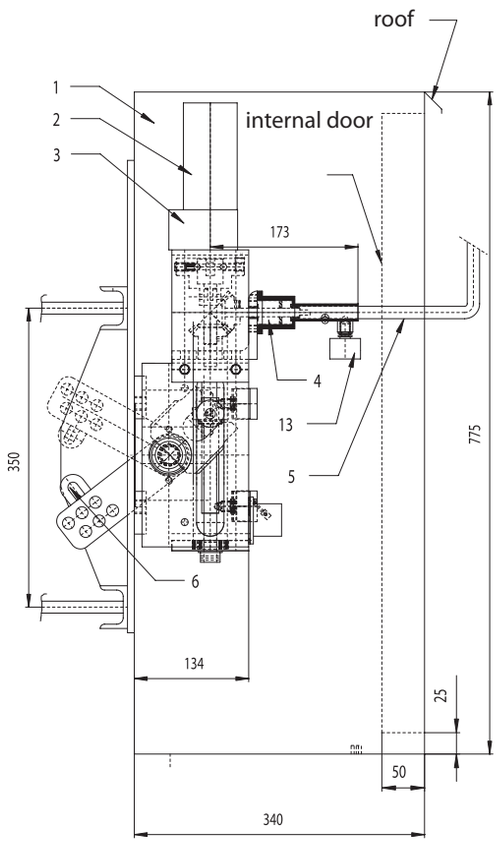
MPUO electromotive drives
for switch disconnectors OJC, OVE and section switches UE 6, UVE

- It is possible to replace the presently used manual drives by them.
- the main switch has three positions: 1. OFF
  2. Manual control
  3. Remote control (the OFF position is lockable)
- Emergency control: manual
- Possibility of remote control
- Accumulator re-charging
- Heating of the case inside space
- Control lever can be locked
- When control lever is enagaged it is not possible to control locally nor remotely

TECHNICAL DATA

Supply voltage:	57 V AC (transforming from 25 kV)
Operational voltage:	24 V DC
Operational stroke:	170 mm
Period of closing/opening:	3 - 5 s
Protection mode:	IP 54 (EN 60 529)
Tempering:	5 °C
Ambient temperature:	- 30 °C up to + 50 °C



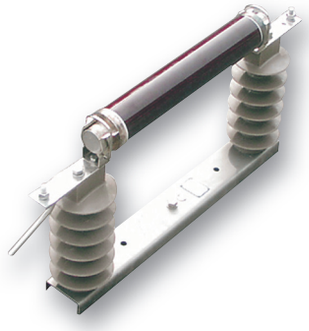


1. Drive case
2. Electromotive drive 24 V DC
3. Gearbox
4. Emergency control
5. Emergency control lever
6. Mechanical fuse
7. Sealing outlet GP 13,5 x 12
8. Terminal board
9. Heating body
10. Thermostat of heating
11. Heating fan
12. Terminal switch
13. Emergency control switch
14. Door switch
16. Accumulator 12 V, 15 Ah
17. Mode switch
18. ON/OFF push-button
19. Main circuit breaker
20. Heating breaker
21. Re-charging breaker
22. Motor breaker
23. Mechanical stroke counter

External fuse base

Type PS-E 25/100

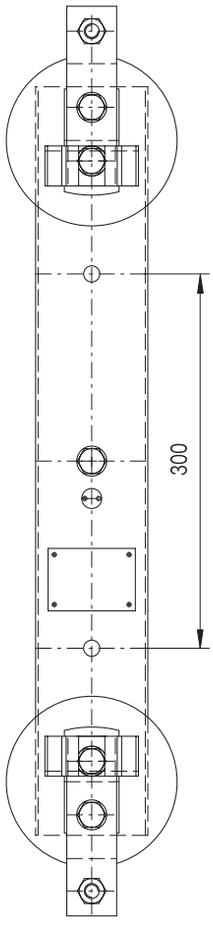
The fuse bases are designed to assemble the medium voltage fuses. They are used mainly in the transition places of aerial line to cable line or for transformer connection.
The external fuse base PS-E 25/100 may be provided with supporting insulators produced from cycloaliphatic resin, or with over-voltage leads-in. The basic frame is produced from stainless steel bent sheet. The current conducting path is produced from galvanically silvered electrolytic copper.
The fuse bases are designed for the fuses in accordance with IEC 282-1 with pid of Ø 45 mm, length D=442 mm.
They may be produced in single-pole or three-pole version.

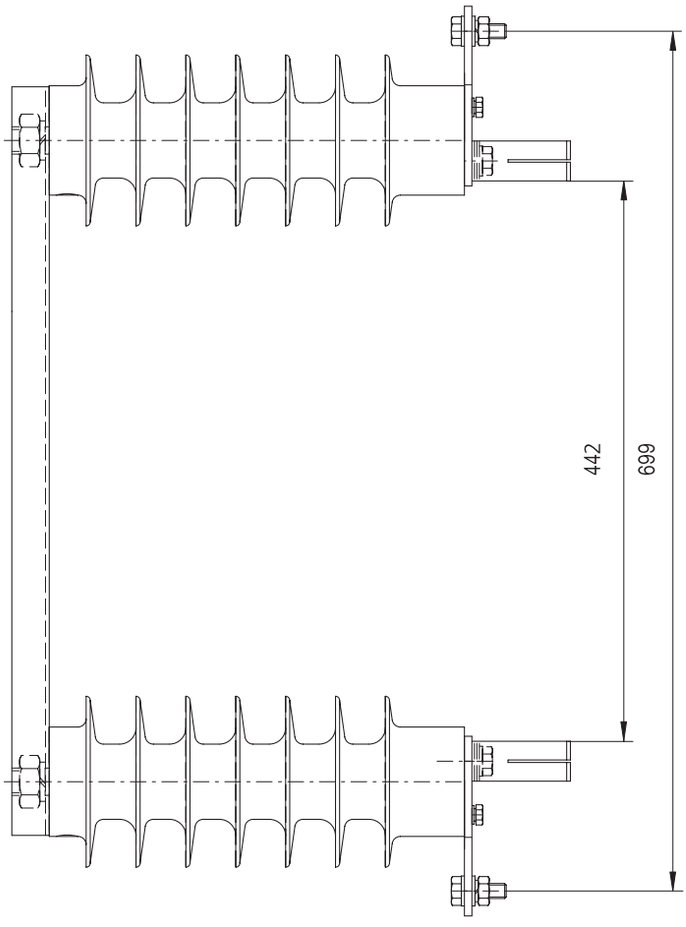


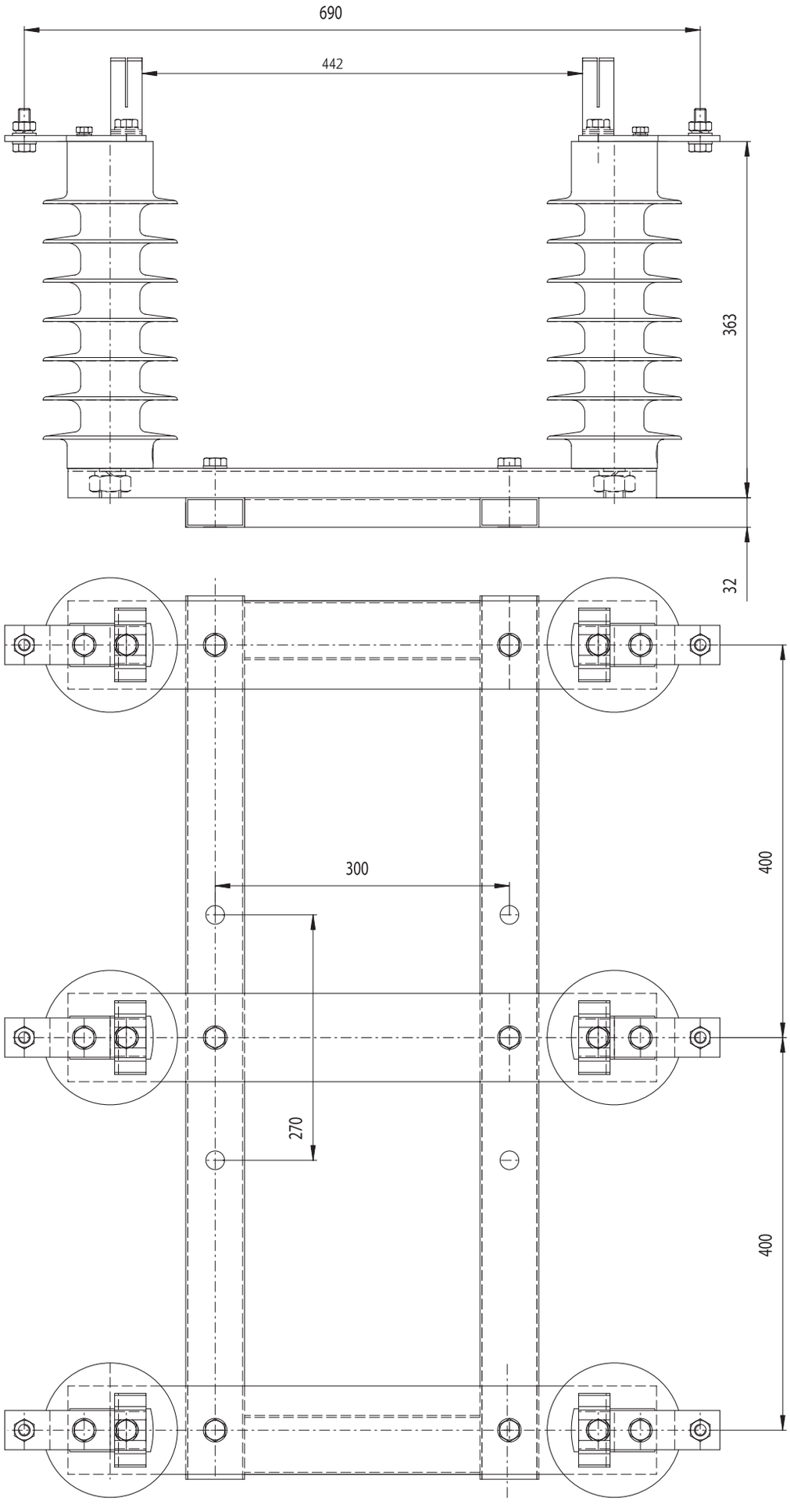
TECHNICAL DATA

Rated voltage:	25 kV
Rated current:	up to 100 A
Type and dimension:	in accordance with DIN 43625 and IEC 282-1

For rated current 100 A it is possible to use fuse with maximum dissipable power of 180 W



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