Indoor disconnectors

Notes

contacting switching devices securing the safe disconnecting distance in accordance with requirements determined for the disconnecting switches by a technical standard in OFF position

- used for visible disconnection of electric device after disconnection of performance switches 12kV a 25kV.
- used for disconnection of the sections, whole networks, machines and devices for the purposes of repairs, revisions etc.
- they replace the types OM and OMZ
- can be assembled into cells of internal distributions, ambient temperature from -5°C up to 40°C altitude up to 1000 m
- can be assembled in horizontal or vertical position

Comply with EN 60 271-102
Degree of protection: IP 00 (EN 60 529)

- Insulators: epoxy, porcelain
- current conducting parts: Cu galvanically silvered
- busbars: Cu, Al
- possibility to produce the version for heavy climatic conditions
- control: - manual or electromotive

TYPE DESIGNATION

OMI (OMZI) XX / XXXX - XX - XX - X - XX

- XX: disconnecting switch type (OMI - without earther, OMZI with earther)
- XX: rated voltage (kV): 12kV, 25 KV
- XXXX: rated current (A): 400, 630, 1250, 1600, 2000, 3150*, 4000* (* = only OMI, OMZI 12kV)
- XX: number of poles (1 = single-pole, 2 = two-pole, 3 = three-pole)
- XX: earther (0 - without earther (OMI) or earther on lower contacts (OMZI), 1 = without shaft, switching off by means of a switching-off bar, 2 = earther on the upper contacts).
- X: drive type (RP = manual, EP = electromotive)
- X: drive location (P = right, L = left)
- XX: accessories (BLM = locking solenoid)

DESIGNATION EXAMPLES:

Example 1: OMI 25 / 1250 30 EPU L
- Disconnecting switch for 22 kV, 1250 A, three pole, EPU drive (The project designer shall specify the supply voltage and emergency control mode).

Example 2: OMI 12 / 630 30 RP1 L BLM
- Disconnecting switch for 12 kV, 630 A, three pole, manual drive located in the left and provided with locking solenoid. (The project designer shall specify the rated voltage of the BLM locking solenoid and supporting bearing location mode).

Example 3: OMZI 12 / 3150 30 EPU P
- Disconnecting switch for 12 kV, 3150 A, three pole, EPU drive for main knives located in the left, the EPU drive for earthing knives located in the right (The project designer shall specify the supply voltage, number and length of handling bar ESPA 415.3. The standard length of the handling bar is 3000 mm).

Example 4: OMZI 25 / 400 32 ETMP L
- Disconnecting switch for 22 kV, 400 A, three pole, ETMP drive for main knives located in the left, the ETPM drive for earthing knives located in the right (The project designer shall specify the supply voltage, number and length of handling bar ESPA 415.3. The standard length of the handling bar is 3000 mm).

TECHNICAL DATA

Rated voltage, kV	Rated voltage, kV with the atmospheric pulse, kV		Rated 1 min. short-term holding AC voltage of the industrial frequency, kV	
	Against the earth, between poles and disconnected contacts	In the disconnecting route	Against the earth, between poles and disconnected contacts	In the disconnecting route
12	75	85	28	32
25	125	145	50	60

Without the earther

Type designation	Rated voltage, kV	Rated current, A	Nom. short-term current 1 s, kA	Nom. dynamic current, kA	Weight*, kg
OMI 12/400-30	12	400	16	40	20
OMI 12/630-30	12	630	25	63	23
OMI 12/1250-30	12	1250	40	100	51
OMI 12/1600-30	12	1600	40	100	82
OMI 12/2000-30	12	2000	50	125	115
OMI 12/3150-30	12	3150	60	150	130
OMI 12/4000-30	12	4000	80	200	190
OMI 25/400-30	25	400	16	40	36
OMI 25/630-30	25	630	25	63	39
OMI 25/1250-30	25	1250	40	100	71
OMI 25/1600-30	25	1600	50	125	110
OMI 25/2000-30	25	2000	50	125	155

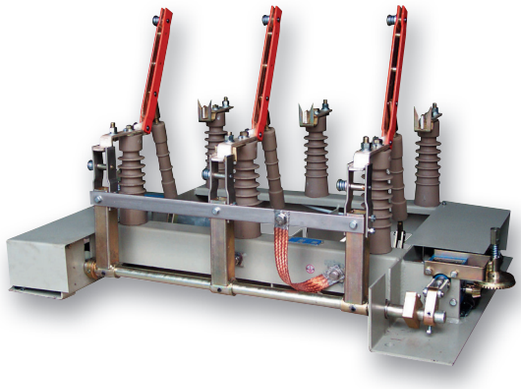
* Weight of the basic version without accessories

With the earther

Type designation	Rated voltage, kV	Rated current, A	Nom. short-term current 1 s, kA	Nom. dynamic current, kA	Weight*, kg
OMZI 12/400-30	12	400	16	40	27
OMZI 12/630-30	12	630	25	63	29
OMZI 12/1250-30	12	1250	40	100	60
OMZI 12/1600-30	12	1600	40	100	95
OMZI 12/2000-30	12	2000	50	125	160
OMZI 12/3150-30	12	3150	60	150	170
OMZI 12/4000-30	12	4000	60	150	230
OMZI 25/400-30	25	400	16	40	42
OMZI 25/630-30	25	630	25	63	44
OMZI 25/1250-30	25	1250	40	100	80
OMZI 25/1600-30	25	1600	50	125	135
OMZI 25/2000-30	25	2000	50	125	180

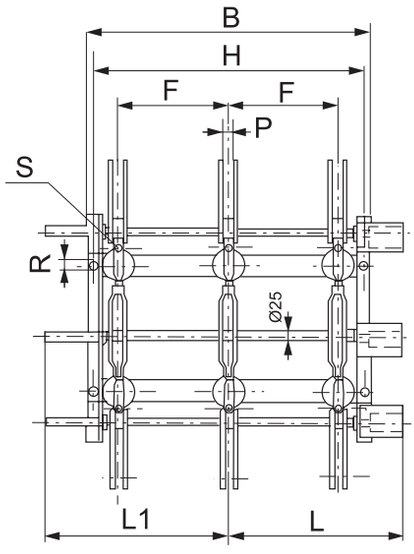
* Weight of the basic version without accessories

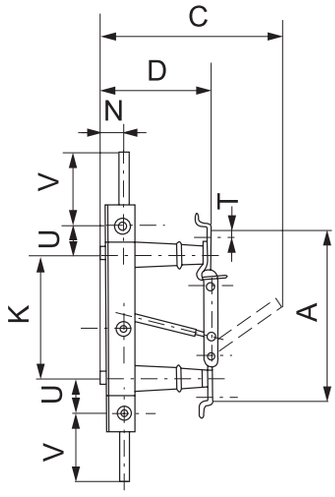
OMZI 25/400-30 with ETMP



DIMENSIONAL LAYOUTS

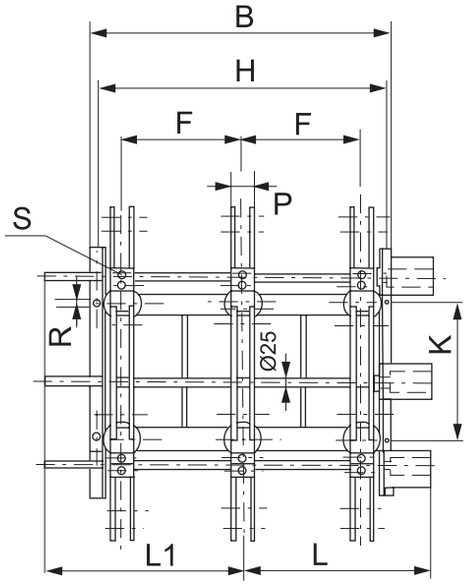
Three-pole disconnecting switches 400 and 630 A

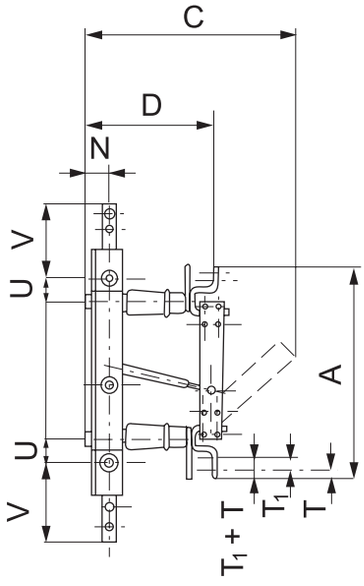




Type	kg	A	B	C	D	F	H	K	L	L1	N	P	R	S	T	V	U
OMI 12/400-30	30	484	600	430	255	200	560	320	415	475	76	32	Ø18	M12	15	-	-
OMI 12/630-30	35	506	600	430	255	200	560	320	415	475	76	40	Ø18	M16	25	-	-
OMI 25/400-30	40	584	810	630	335	300	770	420	520	560	76	32	Ø18	M12	15	-	-
OMI 25/630-30	45	606	810	630	335	300	770	420	520	560	76	40	Ø18	M16	25	-	-
OMZI 12/400-30(32)	48	484	600	430	255	200	560	320	415	475	76	32	Ø18	M12	15	165	110
OMZI 12/630-30(32)	50	506	600	430	255	200	560	320	415	475	76	40	Ø18	M16	25	165	110
OMZI 25/400-30(32)	64	584	810	630	335	300	770	420	520	560	76	32	Ø18	M12	15	260	160
OMZI 25/630-30(32)	66	606	810	630	335	300	770	420	520	560	76	40	Ø18	M16	25	260	160

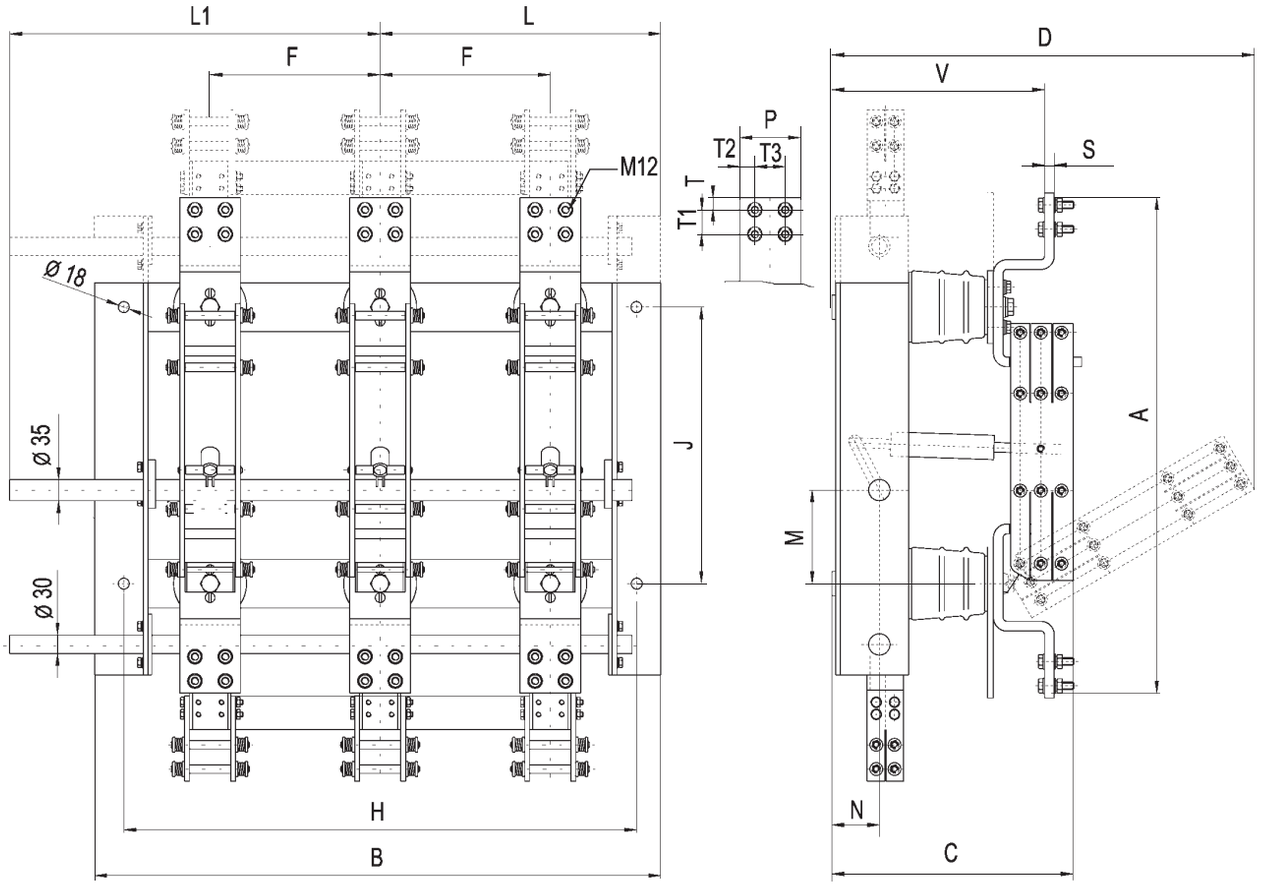
Three-pole disconnecting switches 1250 A





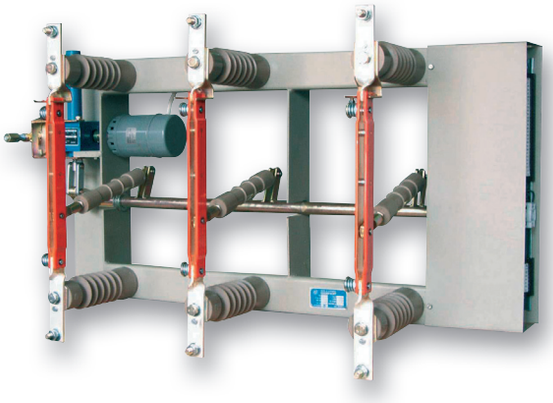
Type	kg	A	B	C	D	F	H	K	N	P	R	S	T	T1	U	V	L	L1
OMI 12/1250-30	80	600	600	540	321	200	560	320	76	60	Ø18	M12	20	40	-	-	415	475
OMI 25/1250-30	90	715	810	710	401	300	770	420	76	60	Ø18	M12	20	40	-	-	520	560
OMZI 12/1250-30(32)	110	600	600	540	321	200	560	320	76	60	Ø18	M12	20	40	110	220	415	475
OMZI 25/1250-30(32)	130	715	810	710	411	300	770	420	76	60	Ø18	M12	20	40	160	300	520	560

Three-pole disconnecting switches 2000 A, 3150 A

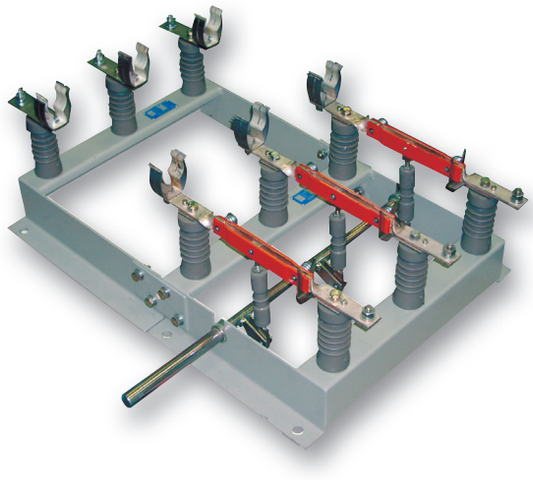


Type	kg	A	B	C	D	F	H	J	L	L1	M	V	S	P	T	T1	T2	T3	N
OMI 12/2000-30	102	810	924	360	610	280	844	455	540	655	154	345	10	100	20	40	25	50	94
OMI 25/2000-30	132	930	1120	479	760	350	1040	555	640	855	230	425	10	100	20	40	25	50	94
OMZI 12/2000-30(32)	112	810	924	360	610	280	844	455	540	655	154	355	10	100	20	40	25	50	94
OMZI 25/2000-30(32)	152	930	1120	479	760	350	1040	555	640	855	230	435	10	100	20	40	25	50	94
OMZI 12/3150-30	143	840	924	410	650	280	844	455	540	655	154	345	10	100	20	40	25	50	94

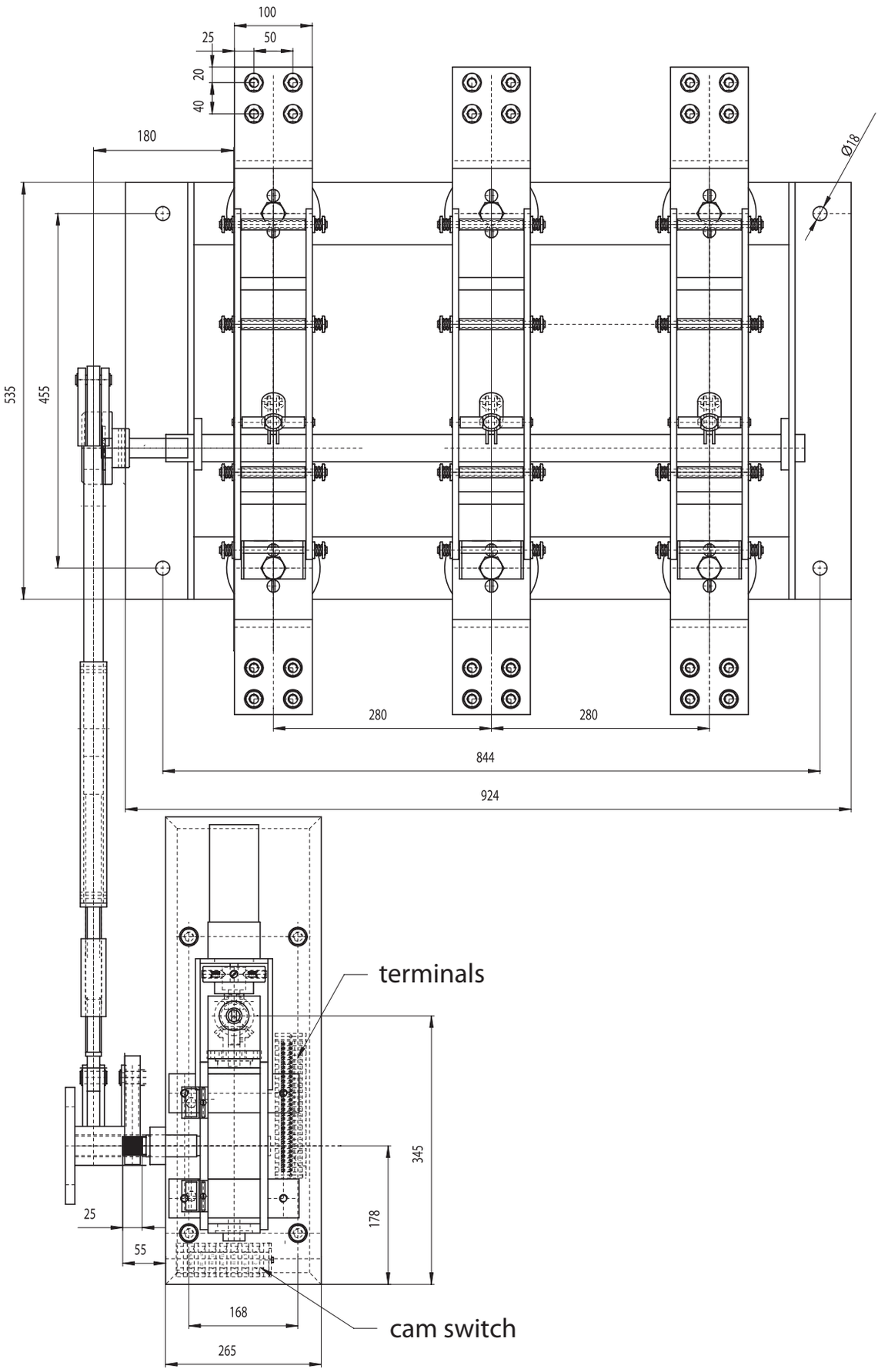
OMI 25/400-30 with ETMP

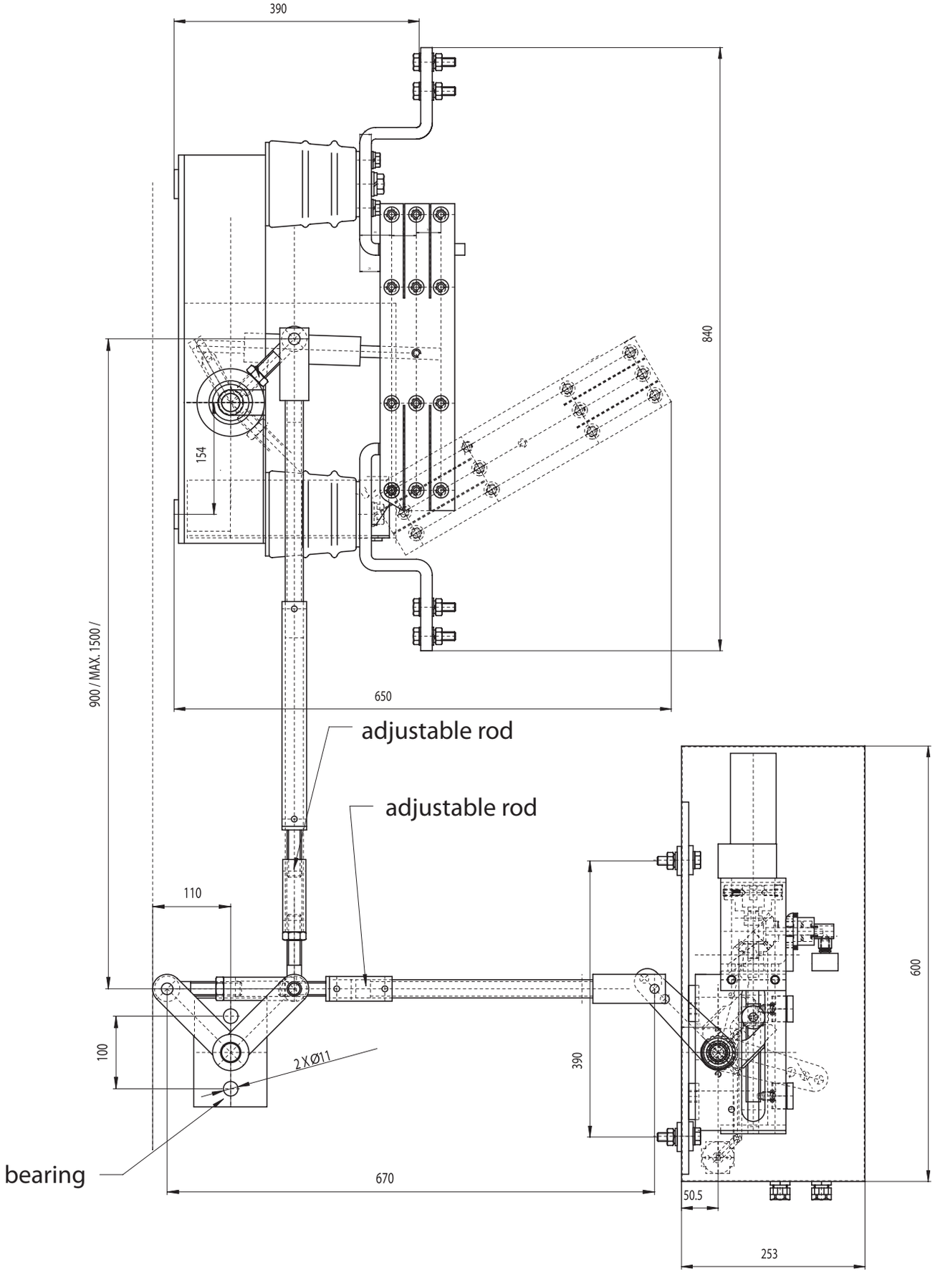


OMI with fuse base

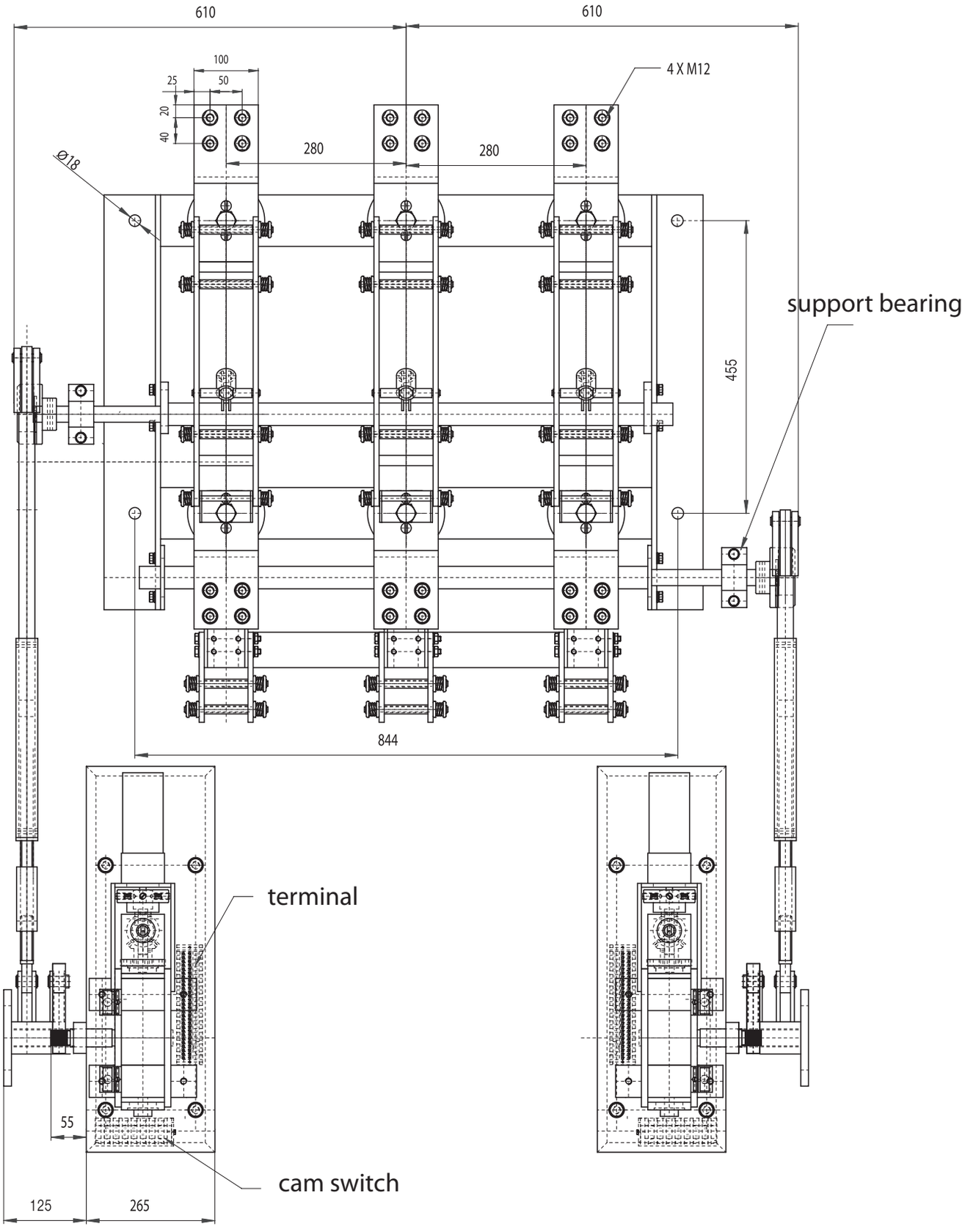


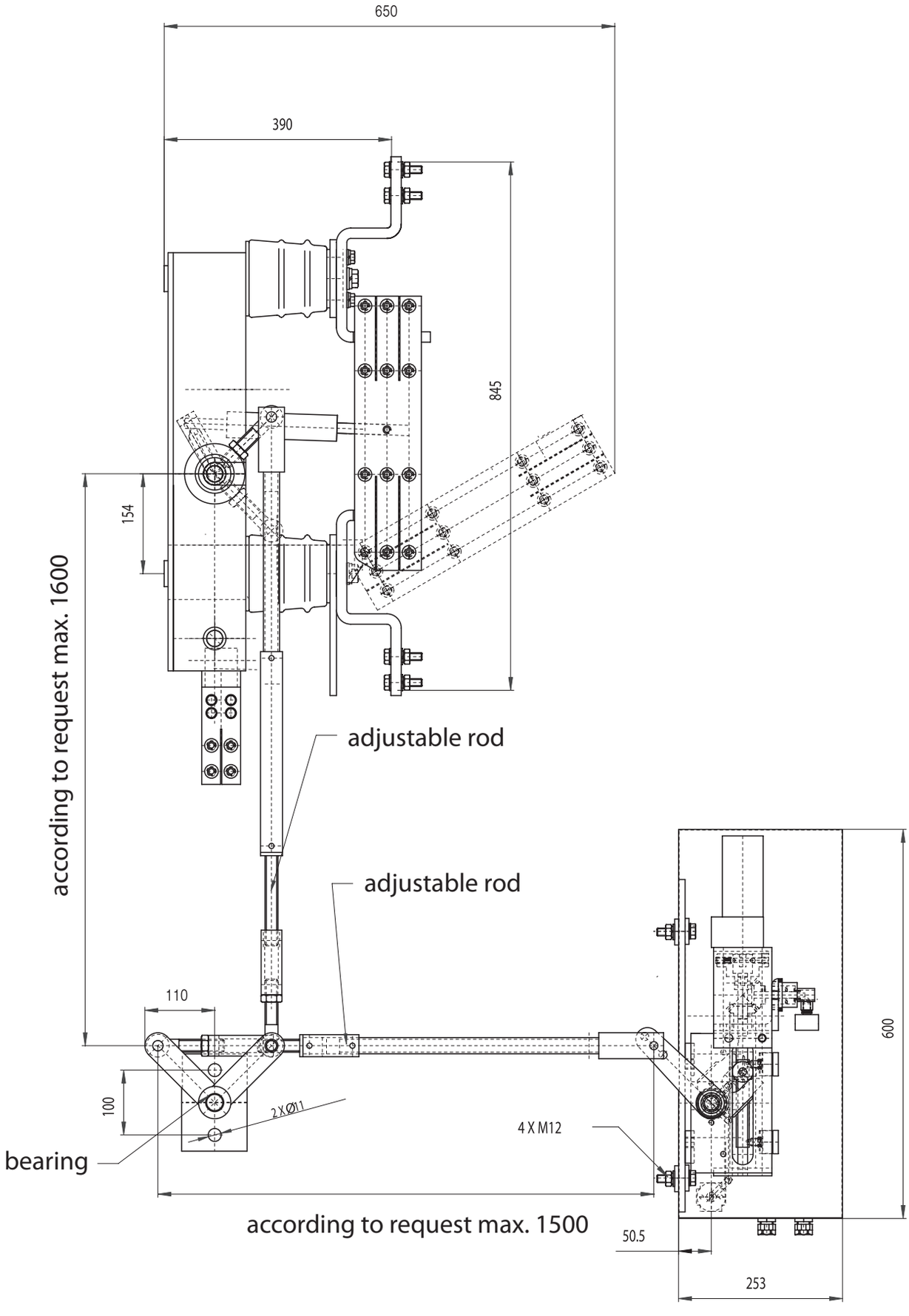
Three-pole disconnecting switches 400 and 630 A with the ETMP drive with emergency control by means of the switching-off bar ESPA 415.3



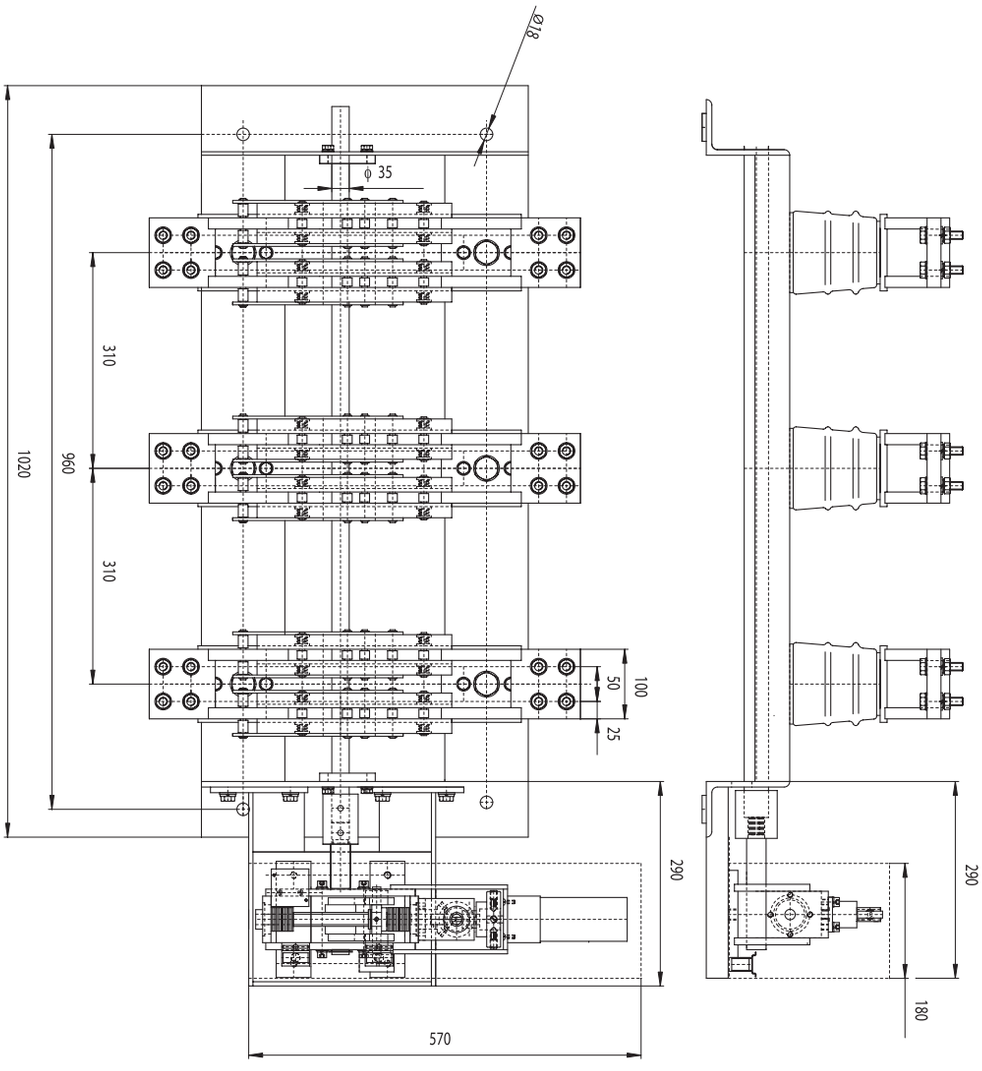

390
840
154
900 / MAX. 1500 /
650
adjustable rod
adjustable rod
110
100
2XØ11
390
600
bearing
670
50.5
253

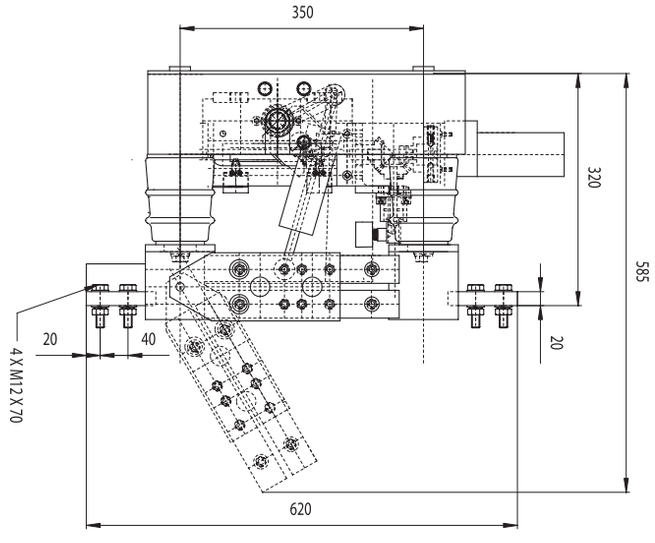
Disconnecting switch OMZI 12/3150 - 30L with EPU




650
390
845
154
according to request max. 1600
adjustable rod
adjustable rod
110
100
2XØ11
bearing
4 X M12
600
according to request max. 1500
50.5
253

Disconnecting swith OMI 12/4000 - 30L with EPU on frame





- contacting switching devices which secure the safe disconnecting distance in accordance with requirements determined for the disconnecting switches by a technical standard in OFF position
- they serve to disconnect the electric device after disconnection of performance switches visibly
- they disconnect the sections, whole networks, machines and devices for the purposes of repairs, revisions etc.
- they are assembled into the internal switching rooms

- meet: EN 60 271-102
- rated frequency: 50 Hz
- protection mode: IP 00 (EN 60 529)
- insulators: epoxy (surface route: 775 mm)
- current conducting parts: Cu
- bus bars: Cu, Al
- control: manual, electromotive

TECHNICAL DATA

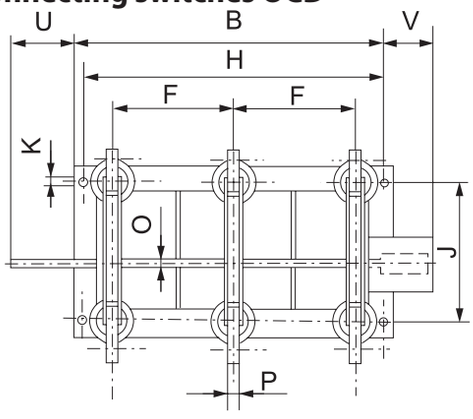
Rated voltage, kV	Rated voltage with the atmospheric pulse, kV		Rated 1 min. short-term holding AC voltage of the industrial frequency, kV	
	Against the earth, between poles and disconnected contacts	In the disconnecting route	Against the earth, between poles and disconnected contacts	In the disconnecting route
38,5	180	210	80	90

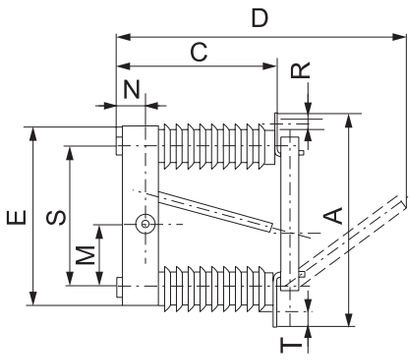
Type designation	Rated voltage, kV	Rated current, A	Nom. short-term current 1 s, kA	Nom. dynamic current, kA
OCD/OCDZ 38,5/400-30	38,5	400	16	40
OCD/OCDZ 38,5/630-30	38,5	630	25	63
OCD/OCDZ 38,5/1250-30	38,5	1250	25	63
OCD/OCDZ 38,5/1600-30	38,5	1600	25	63

Type designation	Weight* without the earther, kg	Weight* with the earther, kg
OCD/OCDZ 38,5/400-30	62	83
OCD/OCDZ 38,5/630-30	65	85
OCD/OCDZ 38,5/1250-30	73	90
OCD/OCDZ 38,5/1600-30	76	100

* Weight of the basic version without accessories

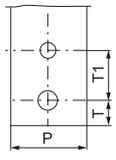
Three-pole disconnecting switches OCD



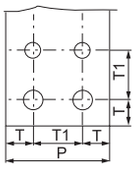


I_n=400 A, 630 A

I_n=1250 A

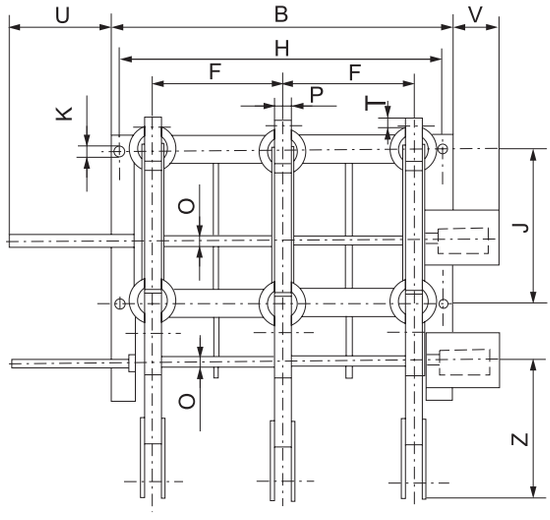


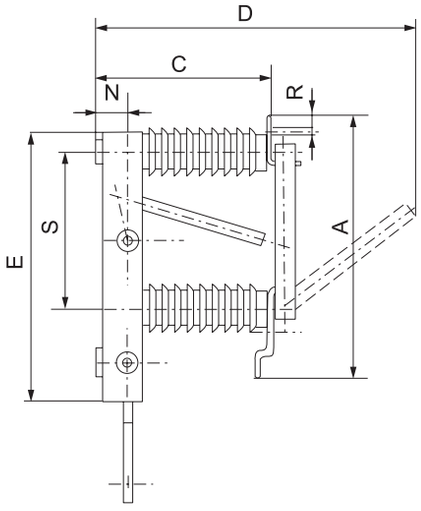
I_n=1600 A



Type	kg	A	B	C	D	E	F	H	J	K	M	N	O	P	R	S	U	V	T	T1
OCD 38,5/400-30	72	770	1160	453	920	600	450	1120	500	Ø18	160	73	Ø25	40	M12	500	187	115	20	-
OCD 38,5/630-30	75	770	1160	453	920	600	450	1120	500	Ø18	160	73	Ø25	40	M12	500	187	115	20	-
OCD 38,5/1250-30	83	830	1160	455	920	600	450	1120	500	Ø18	160	73	Ø25	60	M12	500	187	115	20	40
OCD 38,5/1600-30	86	830	1160	455	920	600	450	1120	500	Ø18	160	73	Ø25	80	M12	500	187	115	20	40

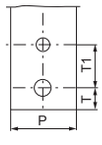
Three-pole disconnecting switches OCDZ



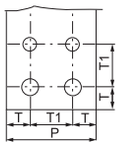


I_n=400 A, 630 A

I_n=1250 A

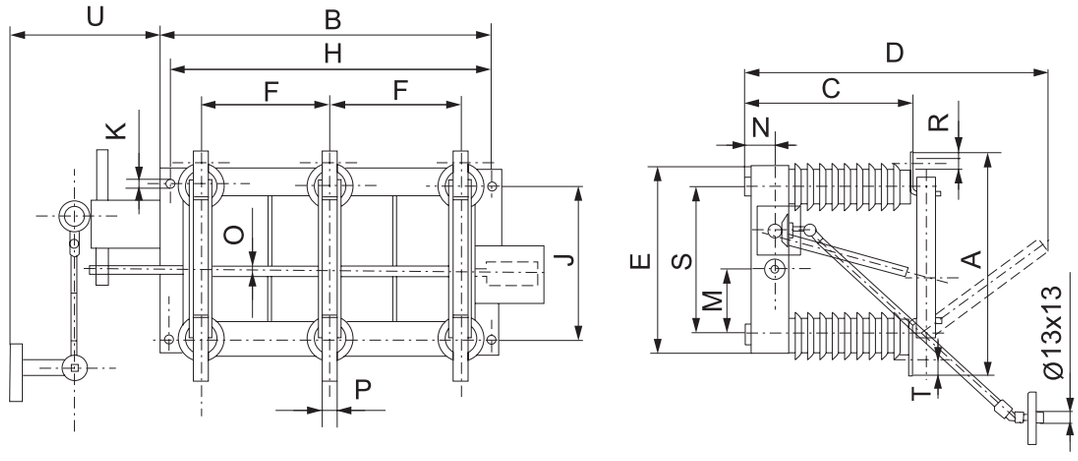


I_n=1600 A



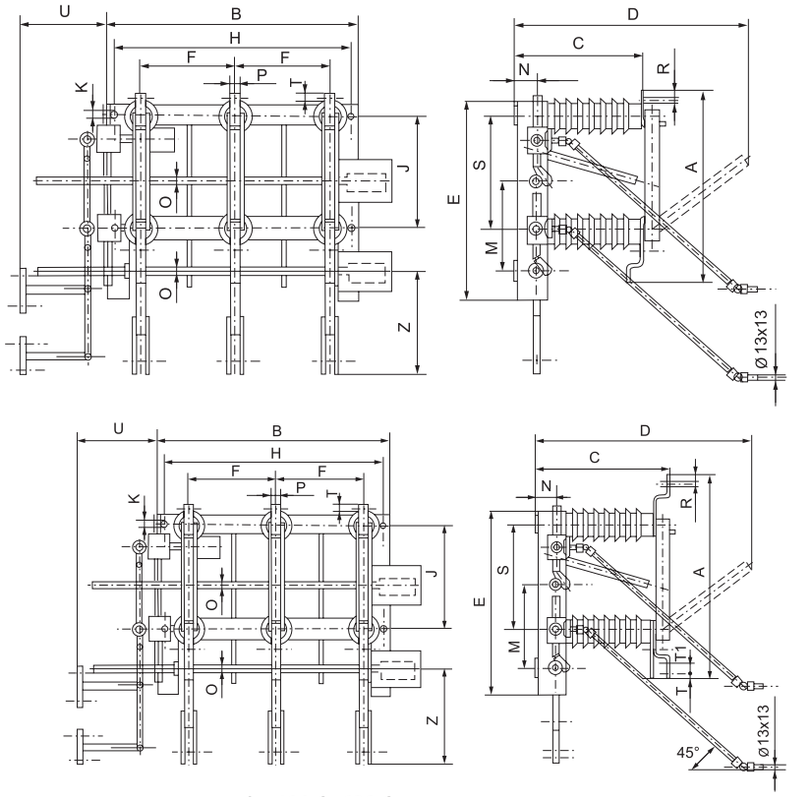
Type	kg	A	B	C	D	E	F	H	J	K	N	O	P	R	S	U	V	Z	T	T1
OCDZ 38,5/400-30	83	830	1160	453	920	840	450	1120	500	Ø18	73	Ø25	40	M12	500	187	115	365	20	-
OCDZ 38,5/630-30	85	830	1160	453	920	840	450	1120	500	Ø18	73	Ø25	40	M12	500	187	115	365	20	-
OCDZ 38,5/1250-30	90	860	1160	541	920	840	450	1120	500	Ø18	73	Ø25	60	M12	500	187	115	-	20	40
OCDZ 38,5/1600-30	100	860	1160	541	920	840	450	1120	500	Ø18	73	Ø25	80	M12	500	187	115	-	20	40

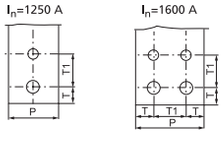
Three-pole disconnecting switches OCD with the ETMP drive



Type	kg	A	B	C	D	E	F	H	J	K	M	N	O	P	R	S	U	T	T1
OCD 38,5/400-30	72	770	1380	453	920	600	450	1120	500	Ø18	160	73	Ø25	40	M12	500	65	20	40
OCD 38,5/630-30	75	770	1380	453	920	600	450	1120	500	Ø18	160	73	Ø25	40	M12	500	65	20	40
OCD 38,5/1250-30	83	830	1380	453	920	600	450	1120	500	Ø18	160	73	Ø25	60	M12	500	65	20	40
OCD 38,5/1600-30	86	830	1380	453	920	600	450	1120	500	Ø18	160	73	Ø25	60	M12	500	65	20	40

Three-pole disconnecting switches OCDZ with the ETMP drive





I_n=400 A, 630 A

Type	kg	A	B	C	D	E	F	H	J	K	M	N	O	P	R	S	U	T	T1	T2	Z
OCDZ 38,5/400-30	83	830	1380	453	920	840	450	1120	500	Ø18	160	73	Ø25	40	M12	500	65	20	-	-	365
OCDZ 38,5/630-30	85	830	1380	453	920	840	450	1120	500	Ø18	160	73	Ø25	40	M12	500	65	20	-	-	365
OCDZ 38,5/1250-30	90	860	1380	541	920	840	450	1120	500	Ø18	160	74	Ø25	60	M12	500	65	20	40	-	365
OCDZ 38,5/1600-30	100	860	1380	541	920	840	450	1120	500	Ø18	160	74	Ø25	60	M12	500	65	20	40	20	365

- they are used to switch on and off the electric circuit without power output to disconnect certain sections of line of the switching room and distributors.
- **they meet:** O 1010, OM 1020, OM 1949 - EN 60 947-3
- **protection mode:** IP 00 (EN 60 529)
- **control**: - manual - by means of the switching off bar
  - manualy operated *
  - electromotive * - 230 V AC
  - 3 x 400 V AC

* OM 1020, OM 1040 only

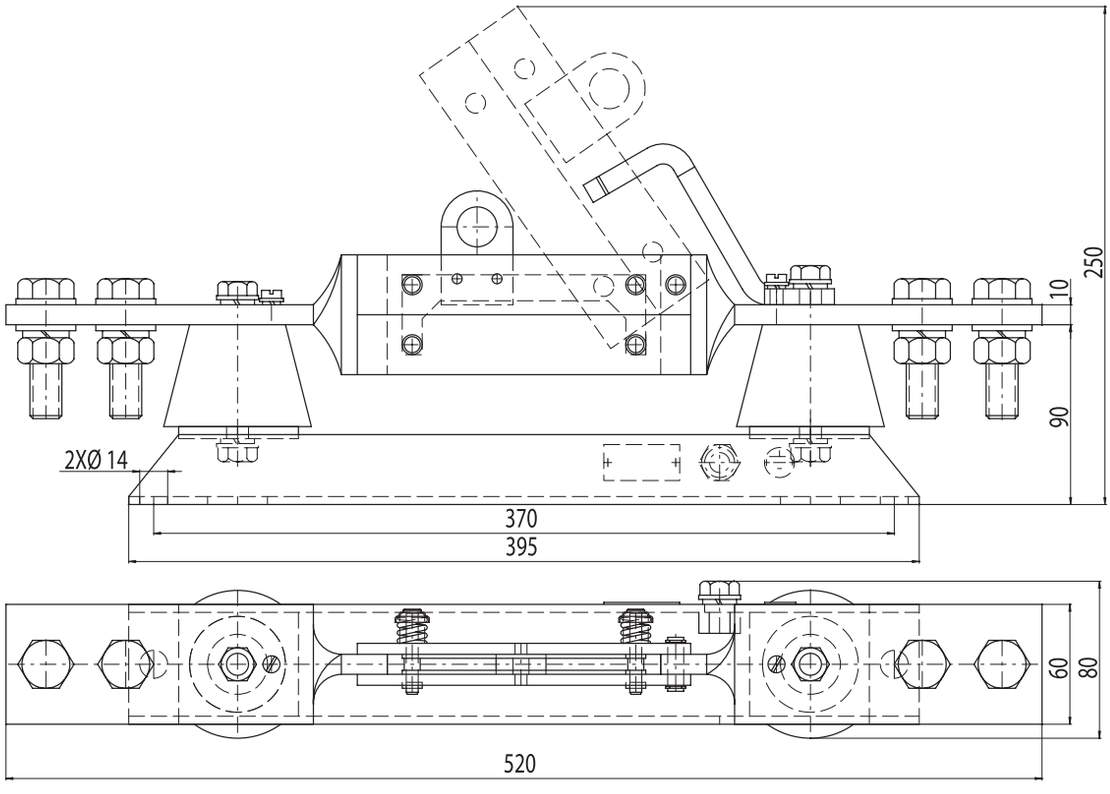
TECHNICAL DATA

Type designation	Rated voltage, V	Rated current, A	Nom. short-term current 1 s, kA	Nom. dynamic current, kA	Weight*, kg
O 1010	1000	1000	40	20	17
OM 1020	1000	2000	84	40	21
OM 1040	1000	4000	140	63	26

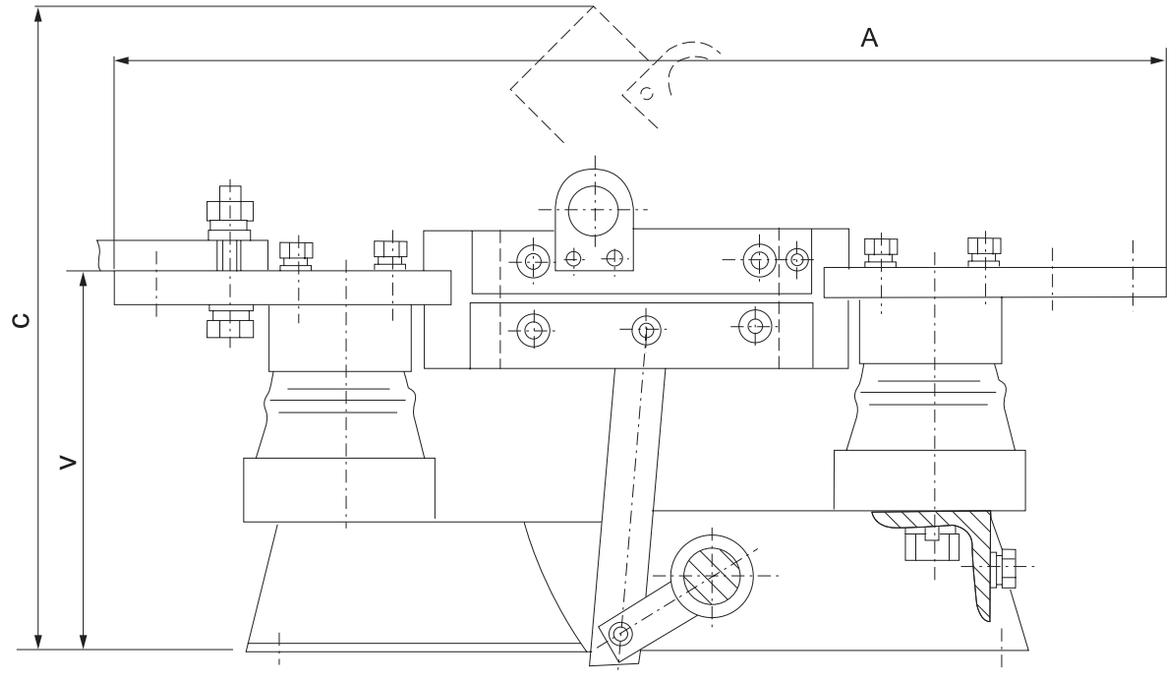
* Weight of the basic version without accessories

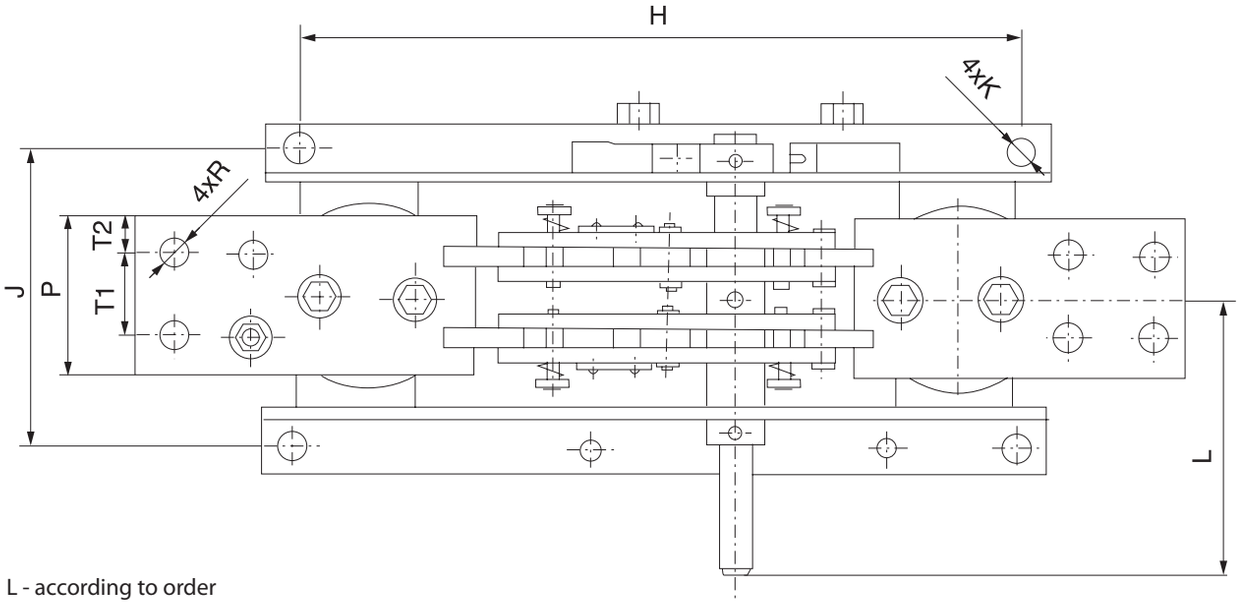
DIMENSIONAL LAYOUTS

Disconnecting switch O 1010



Disconnecting switches OM 1020, OM 1040 manualy operated

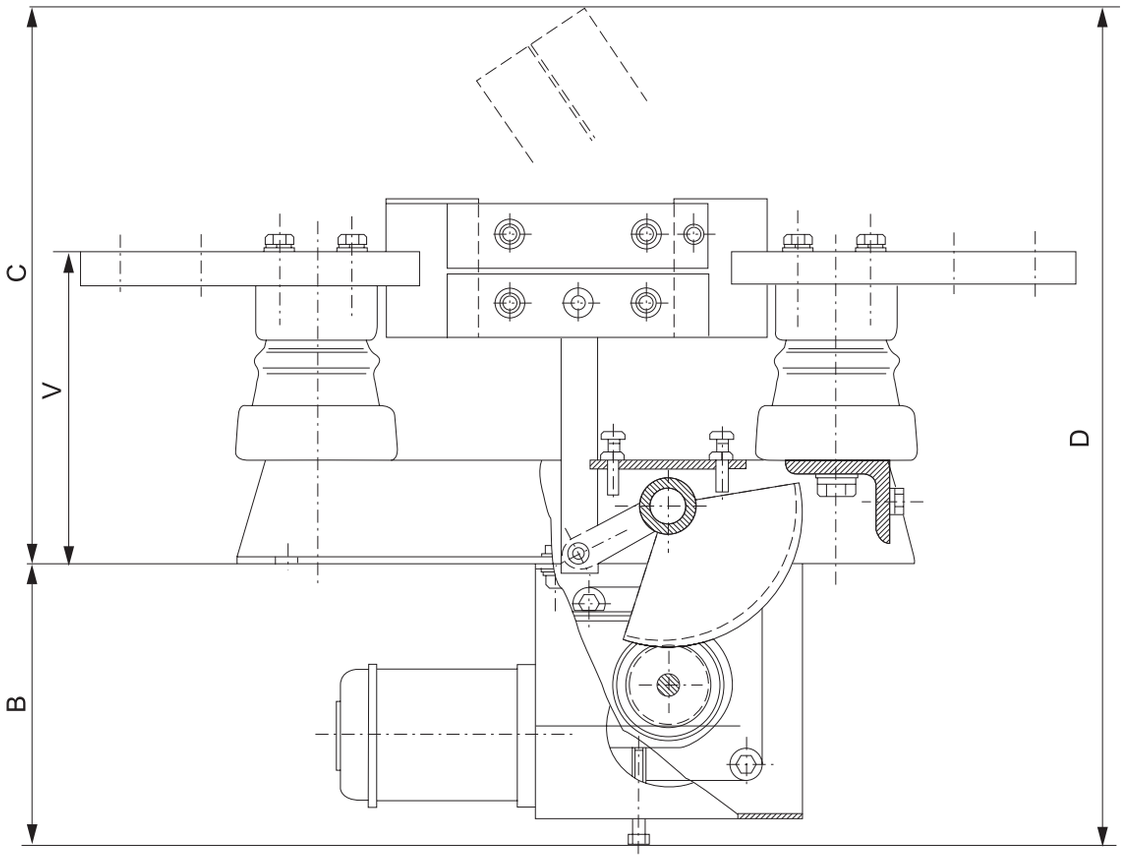


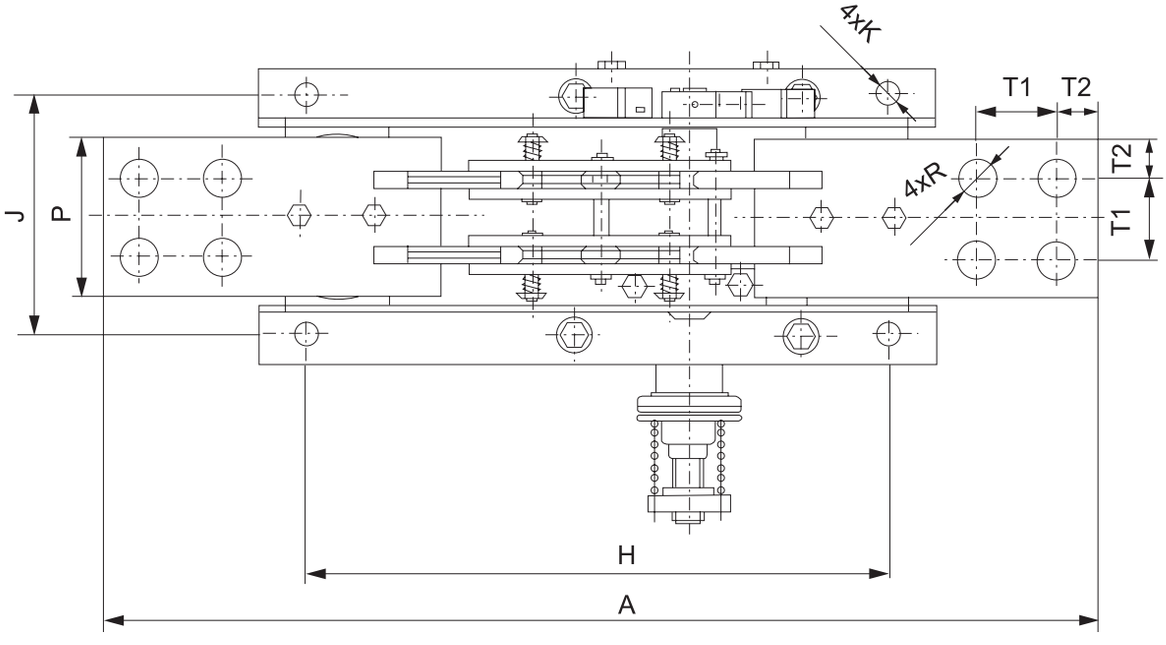


L - according to order

Type	A	C	H	J	K	P	R	T1	T2	V
OM 1020 R	540	320	370	150	Ø14	80	Ø14	40	20	193
OM 1040 R	628	346	370	150	Ø14	100	Ø23	50	25	194

Disconnecting switches OM 1020, OM 1040 with electromotive drive





Type	A	B	C	D	H	J	K	P	T1	T2	V
OM 1020 R	540	170	320	490	370	150	Ø14	80	40	20	193
OM 1040 R	628	174	346	520	370	150	Ø14	100	50	25	194

Disconnecting switches "O"

- they are used to switch on and off the electric circuit without power output to disconnect certain sections of line of the switching room
- **they meet:** EN 60 947-3
- **protection mode:** IP 00 (EN 60 529)
- **version:** - single-pole
  - two-pole
  - three-pole
- **control:** - manual
  - electromotive

TECHNICAL DATA

Type designation	Rated voltage, V	Rated current, A	Nom. dynamic current, kA	Nom. short-term current 1 s, kA	Weight*, kg
O - 41	1000	400	50	15	3,5
O - 61	1000	600	75	20	4
O - 101	1000	1000	80	40	6
O - 201	1000	2000	80	40	9
O - 301	1000	3000	90	45	12
O - 43	1000	400	50	15	9
O - 63	1000	600	75	20	10
O - 103	1000	1000	80	40	21
O - 203	1000	2000	80	40	34
O - 303	1000	3000	90	45	45

* Weight of the basic version without accessories

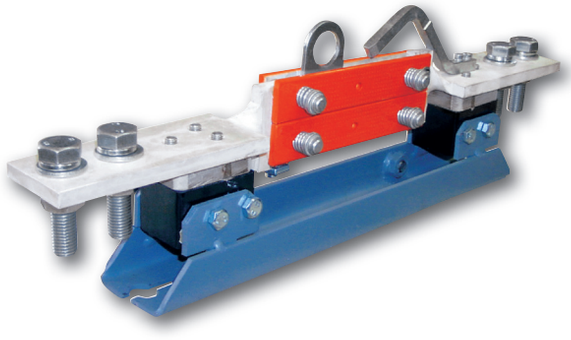
TYPE DESIGNATION

O - XXX PX

- PX – mechanical version
- XXX – number of poles (single-pole, two-pole, three-pole)
- XX – rated current (4=400 A, 6=600 A, 10=1000 A, 20=2000 A, 30=3000A)
- O – disconnecting switch type

Ordering data:

- disconnecting switch type
- rated voltage
- rated current
- mechanical version
- number of pieces
- rated voltage of the electric drive
  (24V DC; 110V DC; 220V DC; 230V AC, 3x400V AC)

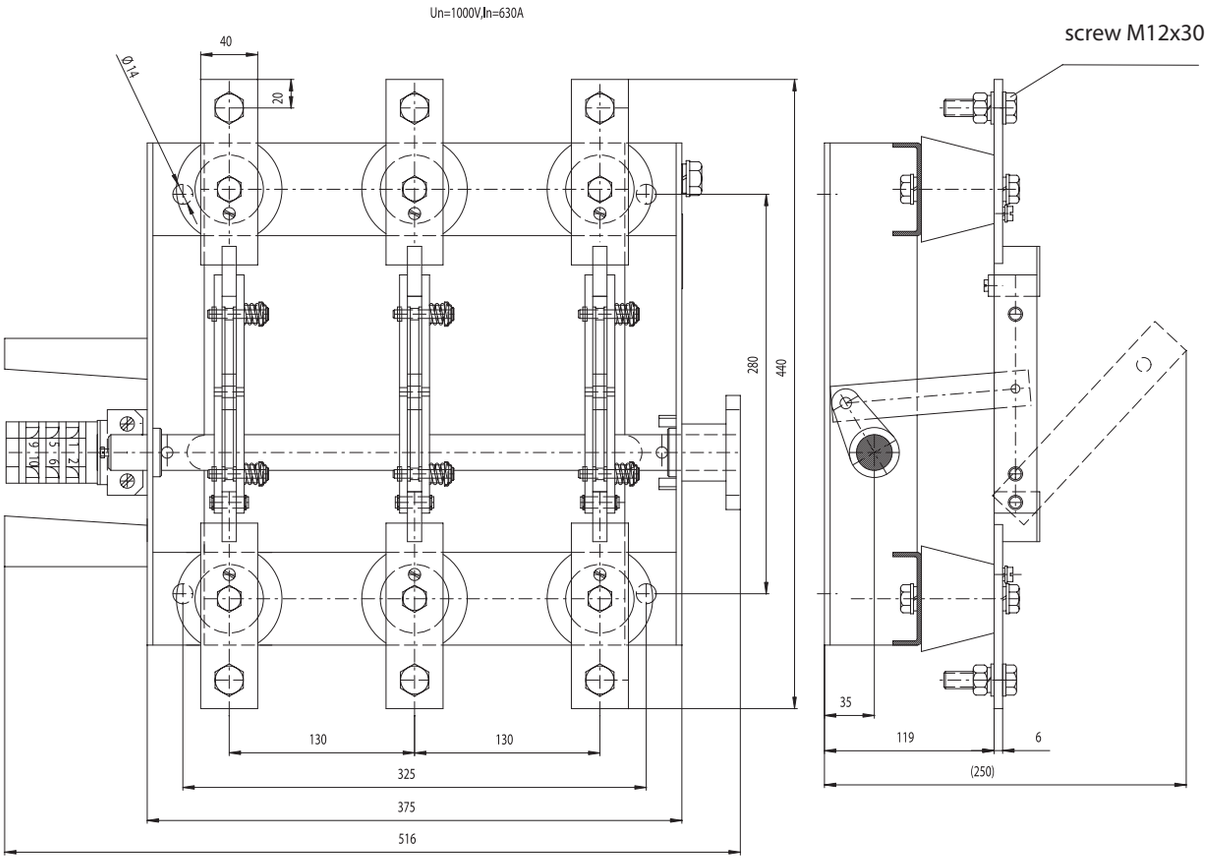


Overview of versions:

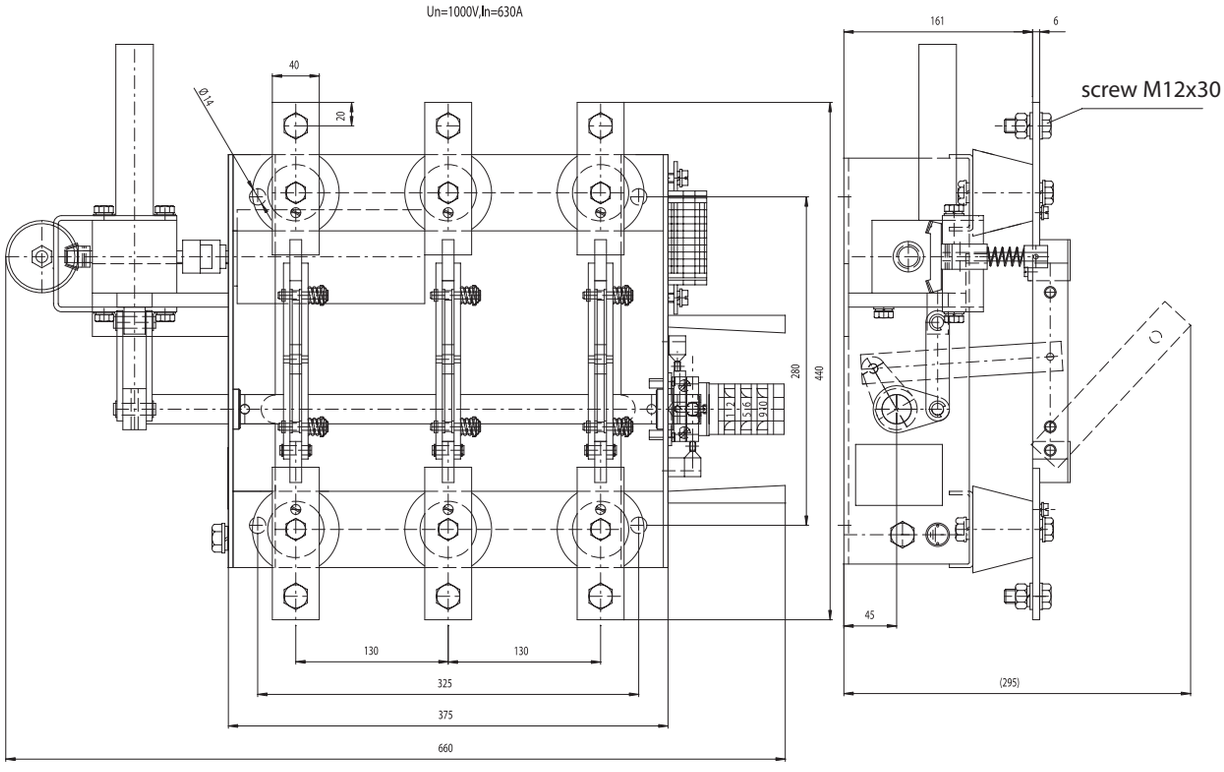
Type	Version	Description and accessories
O - 41, O - 61, O - 101, O - 201, O - 301		
	P 0	Basic version
O - 42, O - 62, O - 102, O - 202, O - 302		
	P 0	Basic version
O - 43, O - 63		
	P 1	Basic version and switching-off lever with eye
	P 8	Basic configuration - disconnecting bar with an eye and signal contacts
O - 103, O - 203, O - 303		
	P 1	Basic version and switching-off lever with eye
	P 8	Basic configuration - disconnecting bar with an eye and signal contacts

Note: The disconnecting switch shaft (to fasten the control accessories) is led to the right. This side is to be determined so that the bearing is down with the vertical position of the disconnecting switch. The signal contacts for the disconnecting switches of the „O" type are produced and delivered in the version 3/3 i. e. 3 ON and three OFF signal contacts.

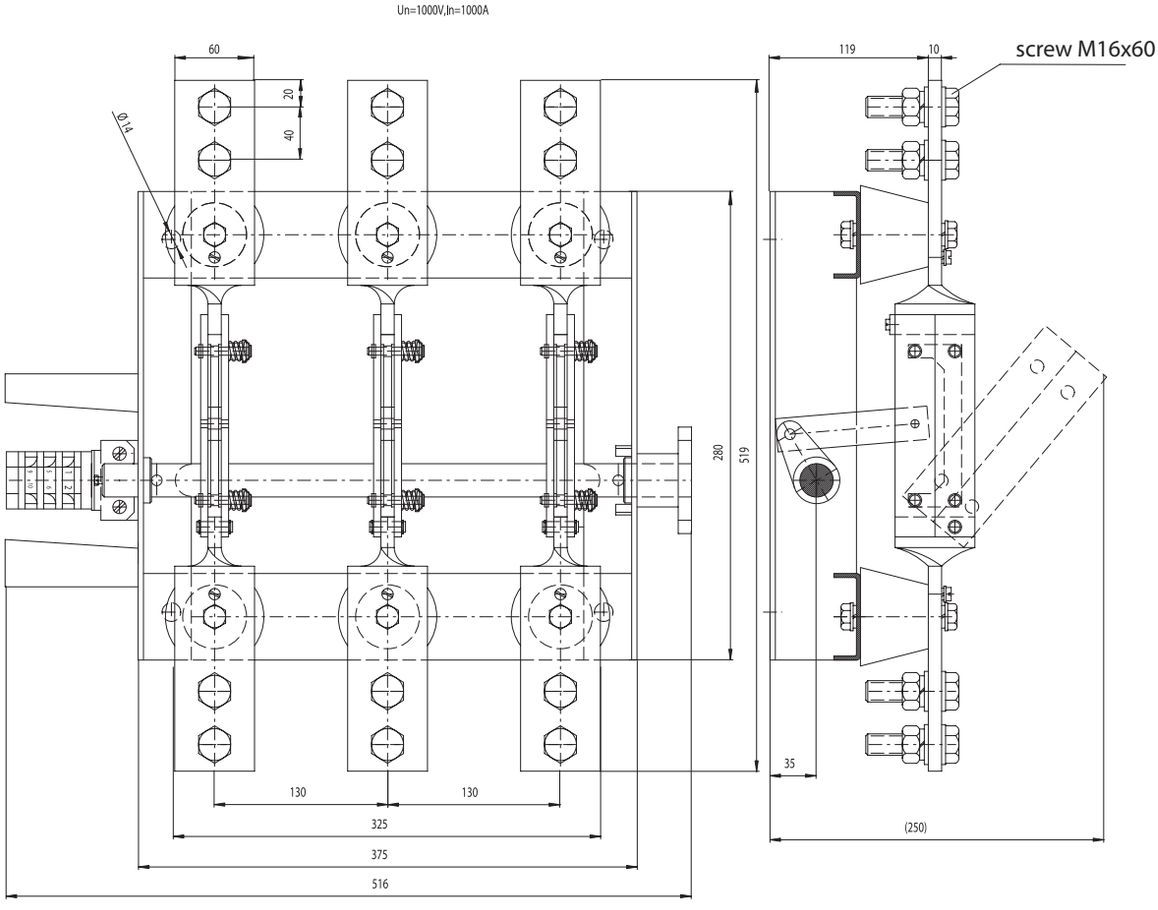
Three-pole disconnecting switch O - 63 R



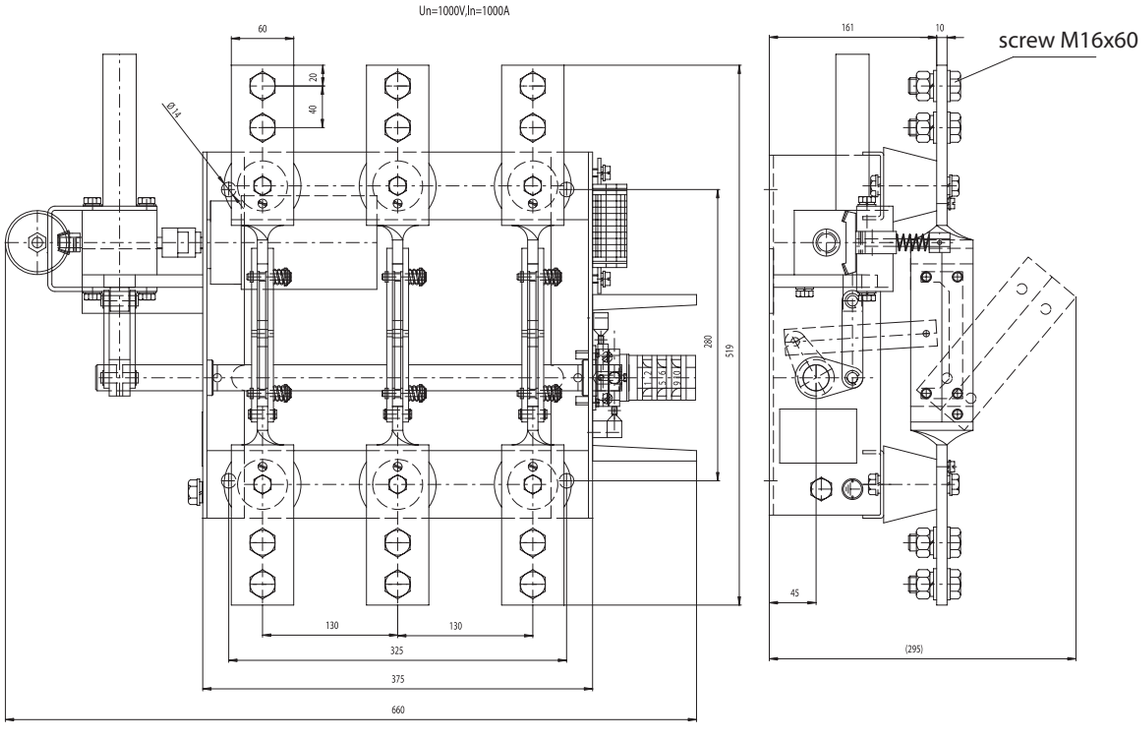
Three-pole disconnecting switch O - 63 with ETMP



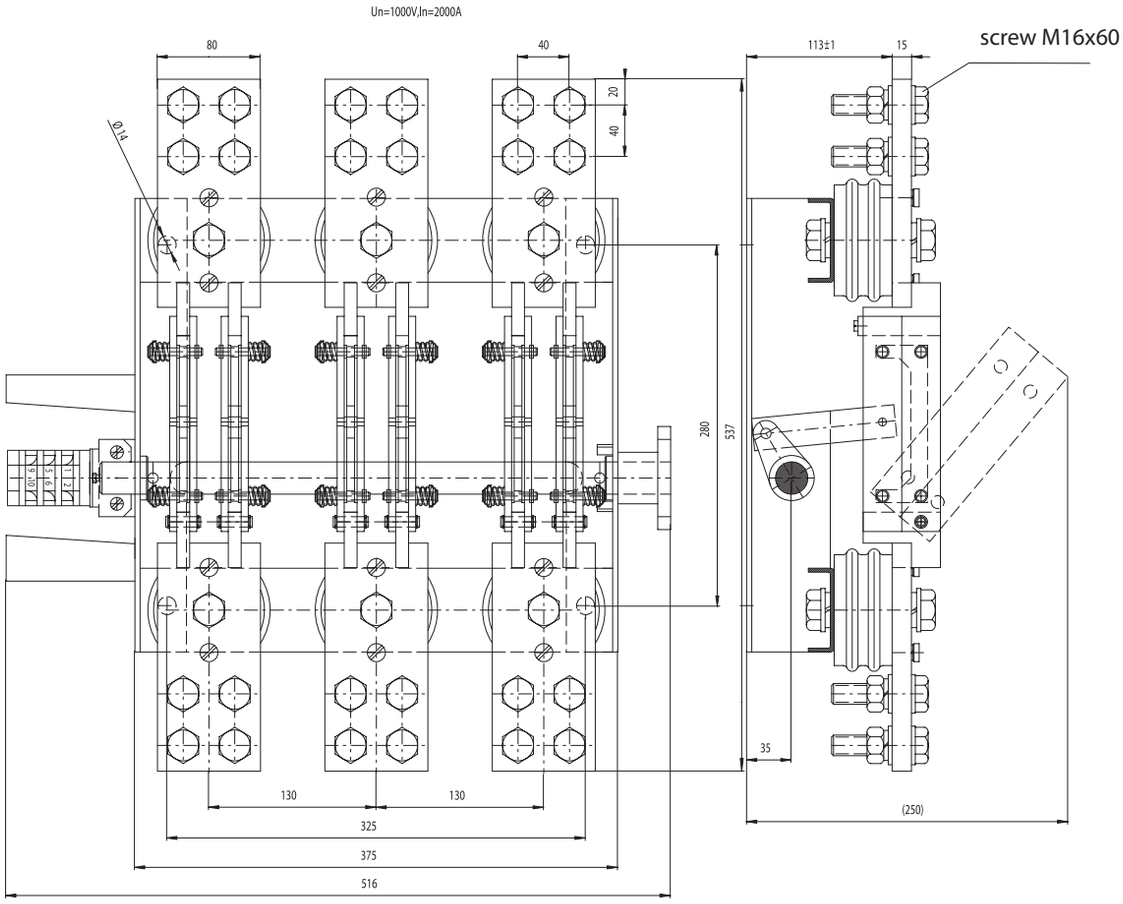
Three-pole disconnecting switch O - 103 R



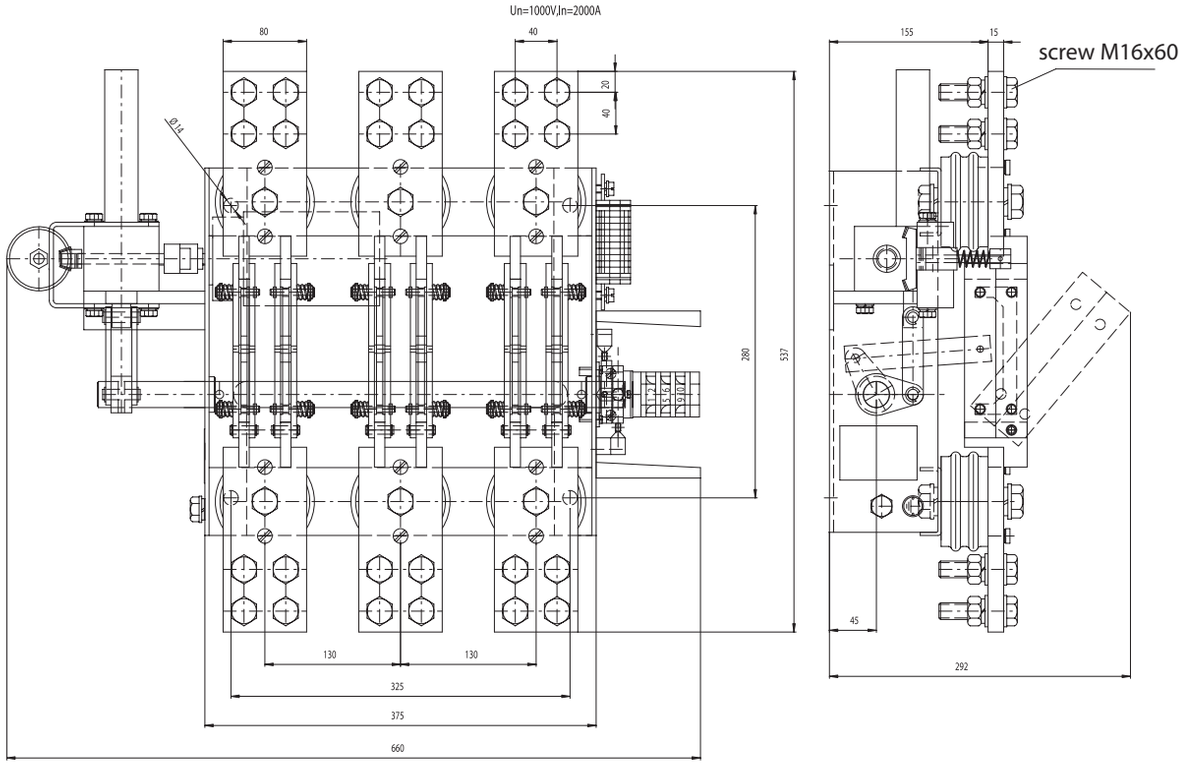
Three-pole disconnecting switch O - 103 with ETMP



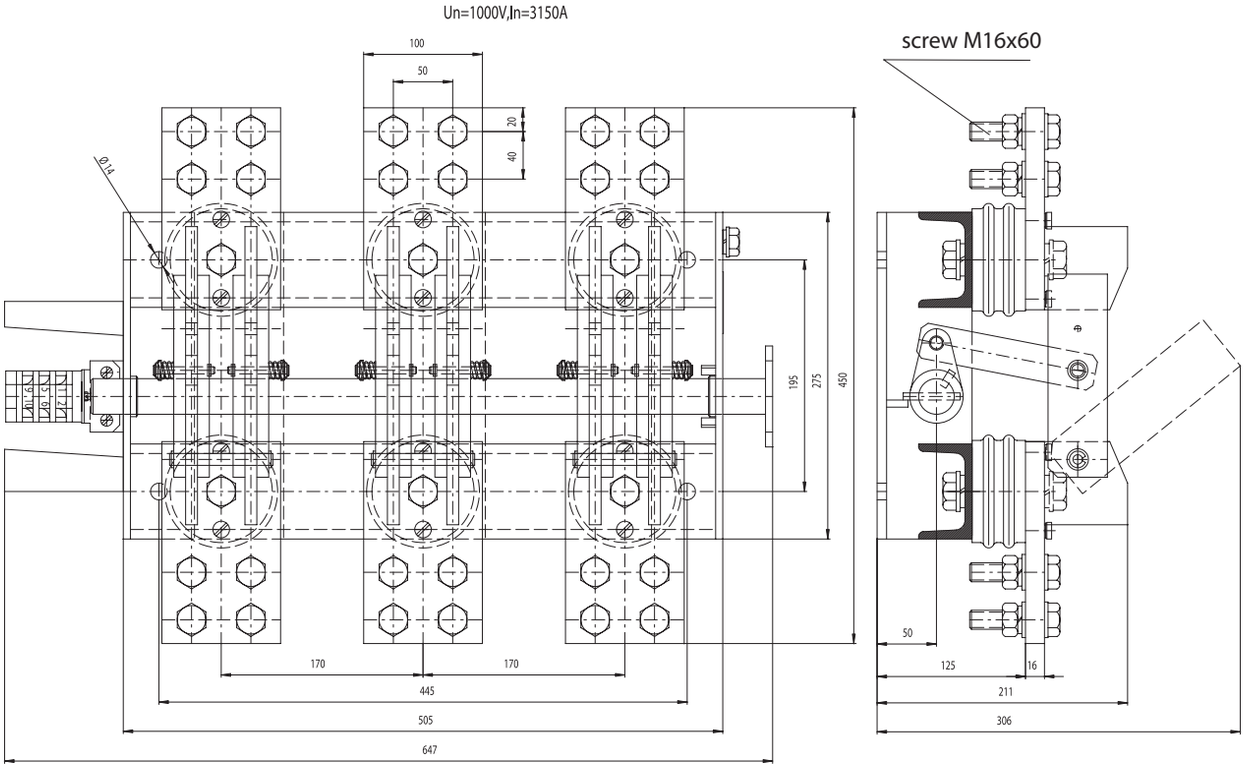
Three-pole disconnecting switch O - 203 R



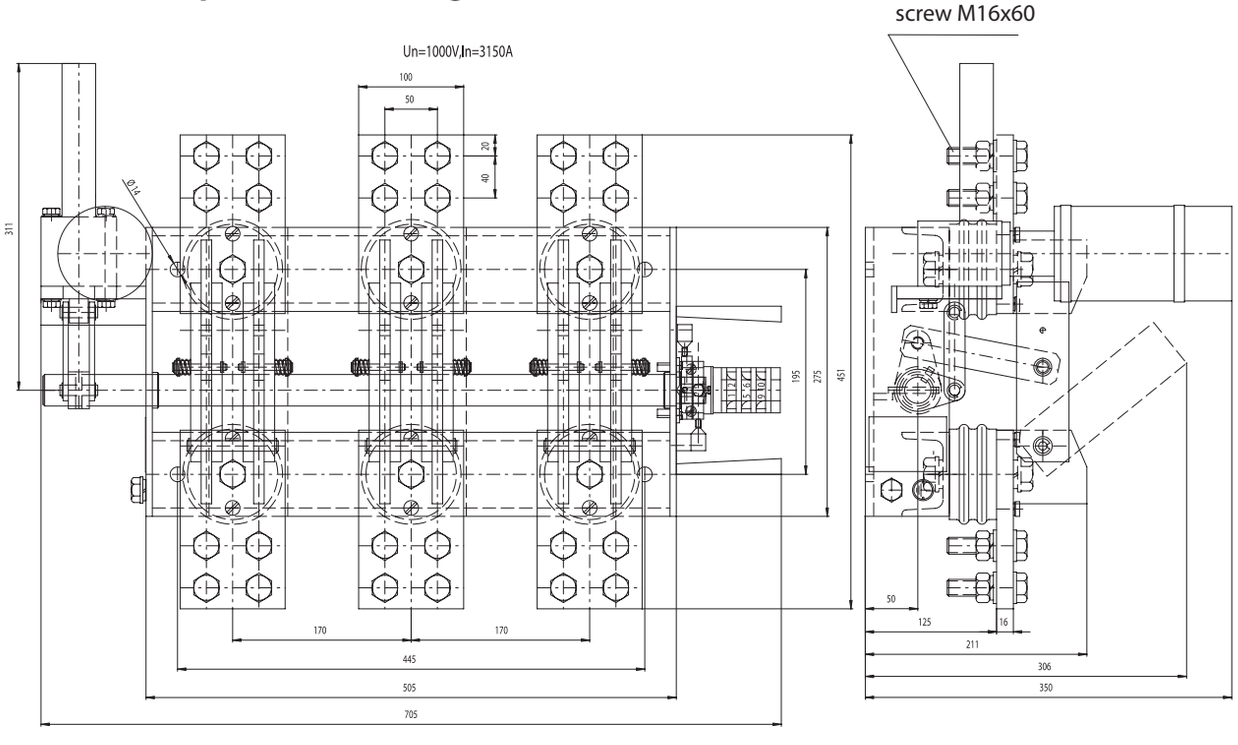
Three-pole disconnecting switch O - 203 with ETMP



Three-pole disconnecting switch O - 303 R

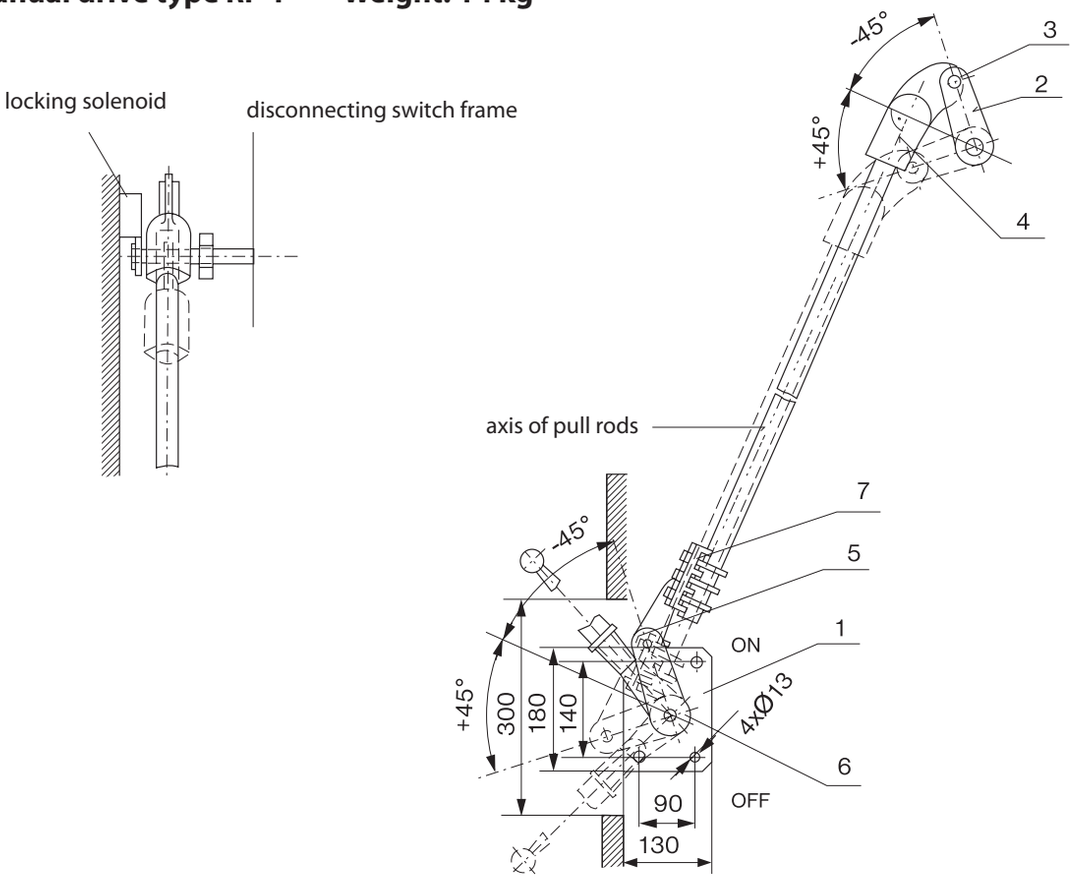


Three-pole disconnecting switch O - 303 with ETMP

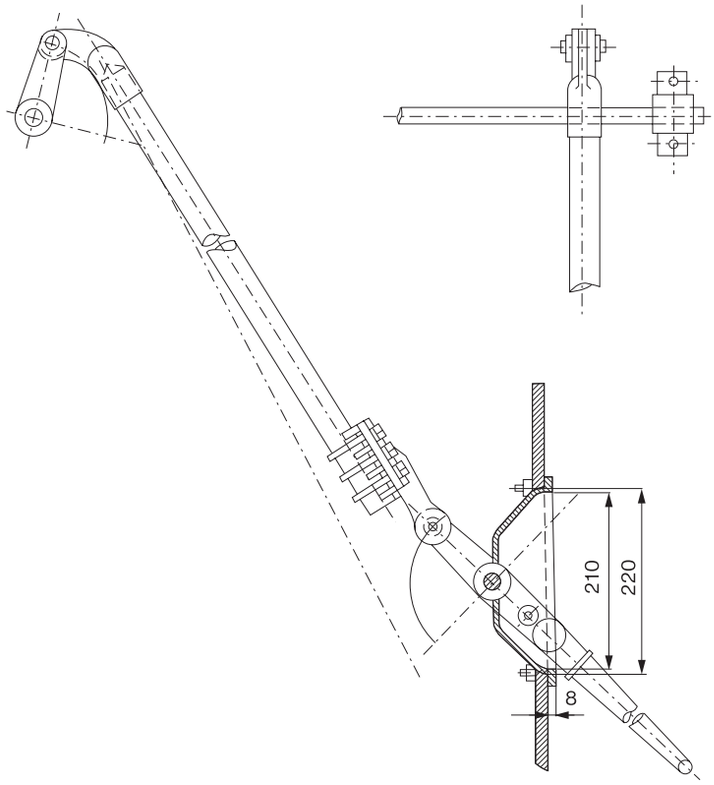


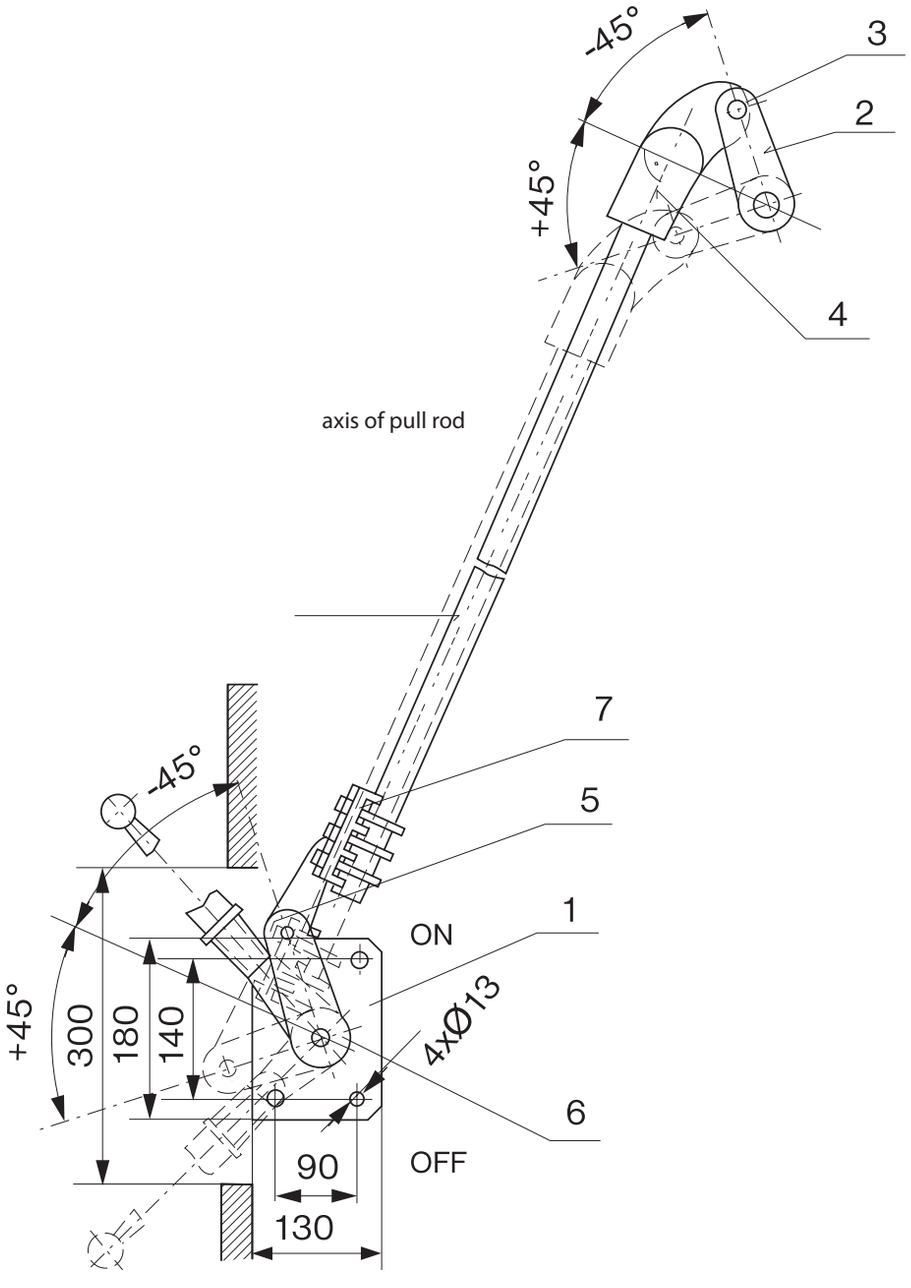
Manual drives for the disconnecting switches of the OMI, OMZI, OCD and OCDZ type

Manual drive type RP 1 Weight: 14 kg



Manual drive type RP 3 Weight: 13 kg



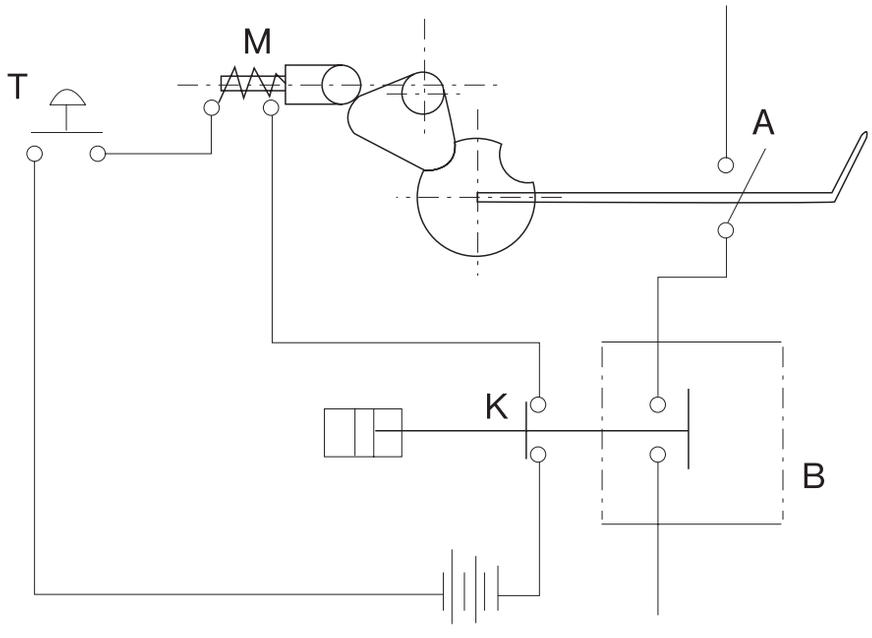

-45°
+45°
3
2
4
axis of pull rod
7
5
1
ON
4xØ13
6
OFF
-45°
+45°
300
180
140
90
130

LOCKING SOLENOIDS

for the OMI, OMZI, OCD and OCDZ disconnecting switches
- electromagnetic locking of the manual drives in both end positions (disconnecting switches without voltage)
- for short-term load
- rated values of the locking solenoid voltage of the BLM types:
  DC voltages: 24, 48, 60, 110, 220 V
  AC voltages: 110, 220 V
- Weight: 4 kg

Function of the locking solenoid

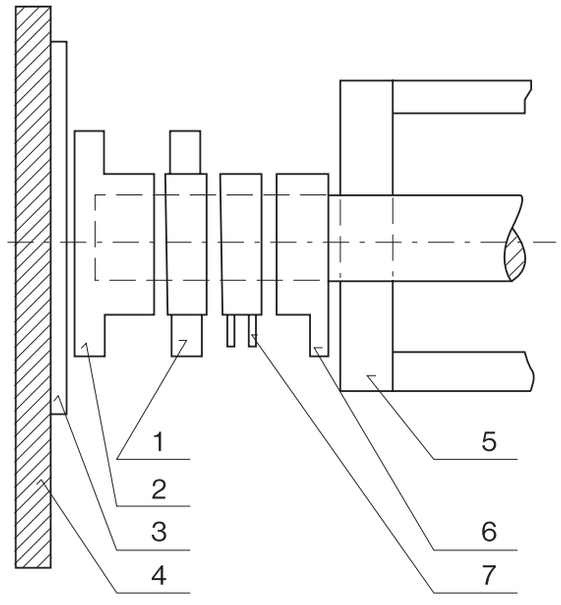
With the manual drive, the electromagnetic locking of the disconnecting switch does not allow to switch-off the disconnecting switch when the performance switch incorporated behind this disconnecting switch is ON and it does not allow to switch-on the disconnecting switch with switched-on performance switch too. So, the electric solenoid locks both end positions of the disconnecting switch (ON/OFF). After switching-off the B performance switch the K auxiliary contact connects the M electric solenoid coil current circuit. This unlocks the drive of the A disconnecting switch. The T push-button is incorporated into the electric solenoid coil circuit close to the lever drive to prevent from the M electric solenoid coil with the B switched-off switch being under voltage permanently.



Assembly

In principle, the BLM is assembled onto the cell wall. Before assembling the disconnecting switch into the cell, the locking cam is to be assembled first so that it is fastened to the free shaft end where it is locked.
NOTE:
The locking magnet is delivered as independent accessories of the disconnecting switch with the manual drive inclusive of the locking cam. The project designer of the switching room shall determine include its location and fastening in the documentation. The locking solenoid shall be assembled vertically so that the locking segment shall join the cam by gravity and the barrier shall not prevent from free movement of the segment.
The locking electric solenoids BLM are designed for short-term load.

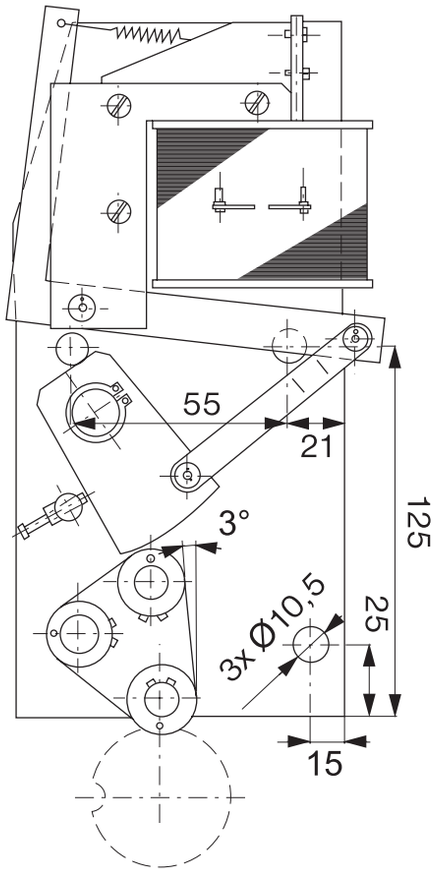
Arrangement of accessories when using the BLM with lever drive



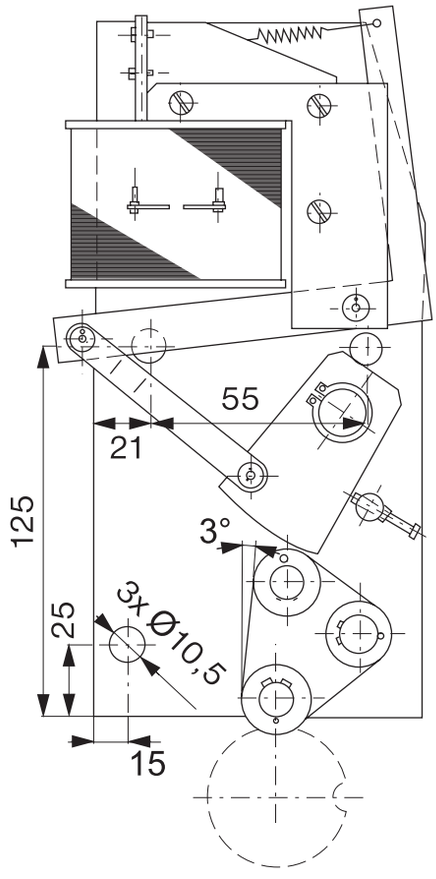
1 – supporting bearing E 8554
2 – cam BLM
3 – frame BLM D 0733
4 – cell wall
5 - disconnecting switch frame
6 – control lever E 2745 for the center lines
7 – control lever for manual drive E 1226

Assembly of the locking solenoid

left



right



EPU electromotive drive

The EPU electromotive drive is designed to control the disconnecting switches for the internal assembly up to 4000 A. The EPU electromotive drive may be produced in two versions:
- located on the disconnecting switch frame
- located out of frame in free cell space

In the version on the disconnecting switch frame it does not include the reversing and signalling elements i. e. necessary control signalling circuits shall be located in the cell distributors. The emergency control is performed by means of the ESPA handling bar. In the cases of re-construction of the switching rooms with disconnecting switches with pressure-air drive or replacement of old manual or electromotive drives it is possible to locate the drive out of the device frame. In such case, the drive is located in the metal sheet or plastic material case. The output shaft of the drive may be led to the right or to the left depending on the device version. Fastening of the drive is performed by four screws M 12. The output lever of the drive with the output shaft of the drive are provided with grooves whereby the adjustment of the end positions of the device in various positions of the drive against the location of the device is allowed. The emergency control is performed by a crank.

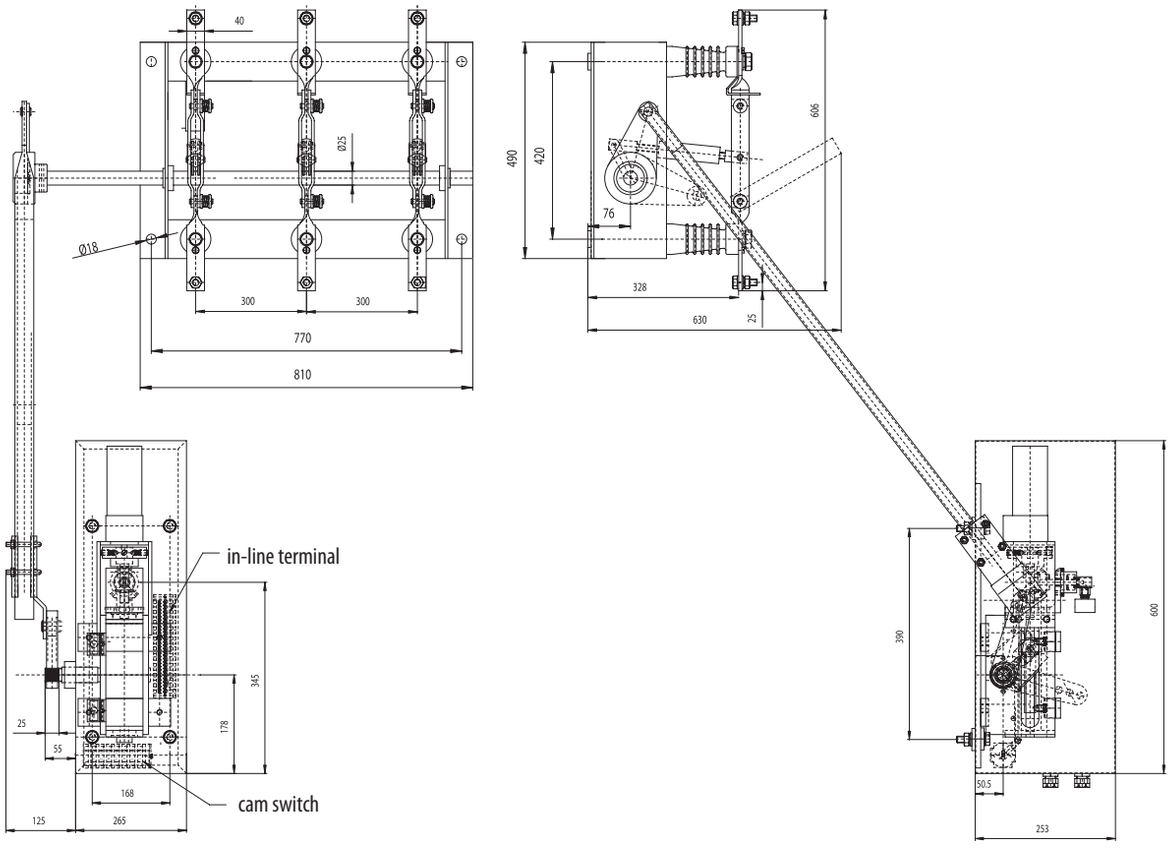
Drive description

The drive is fastened on the base by means of which the drive is fastened to the carrying structure of the cell. The transmission is created by the gearing of cylindrical gears Schmachtl, parts of which is an electric motor for different control voltages. The nut transmits the linear movement through the link to be the rotary one. The output shaft is ended by fine grooving.
The terminal switches are used with independent switching-on and switching-off contacts. They are adjustable in both horizontal and vertical directions.

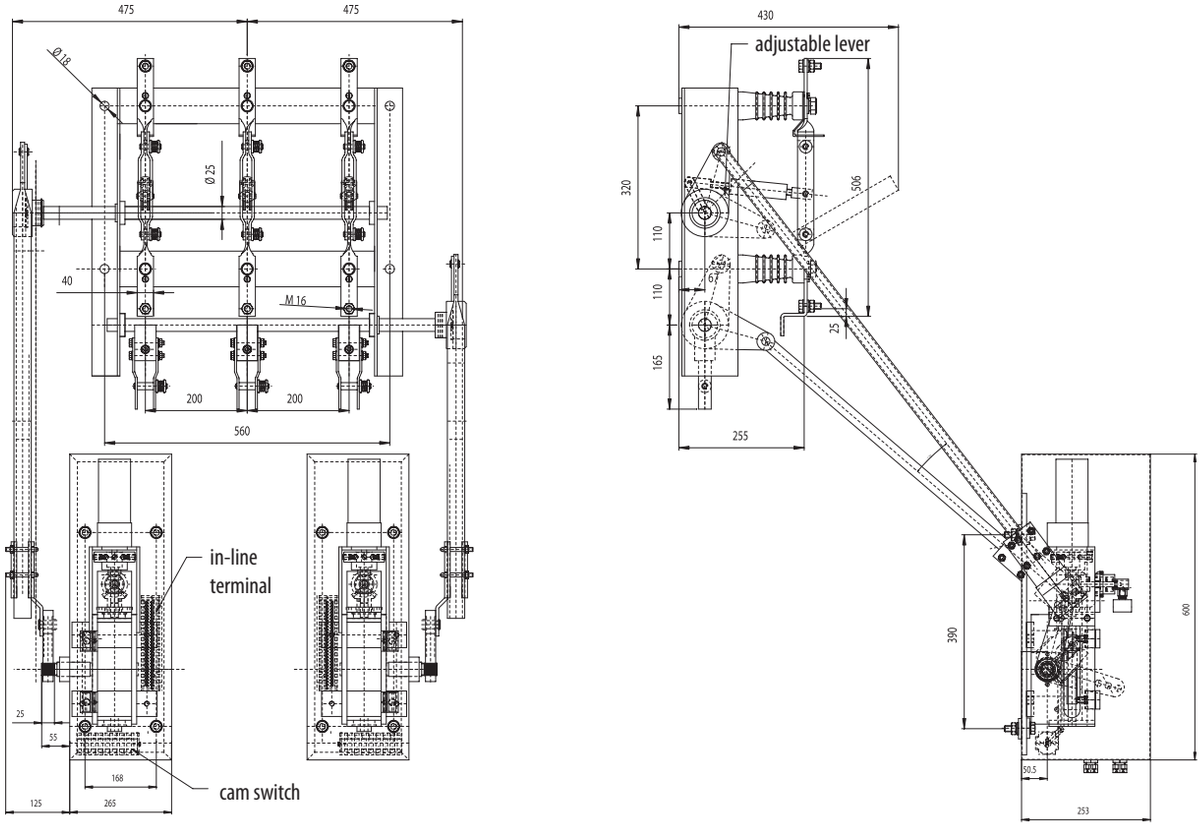
Drive parameters

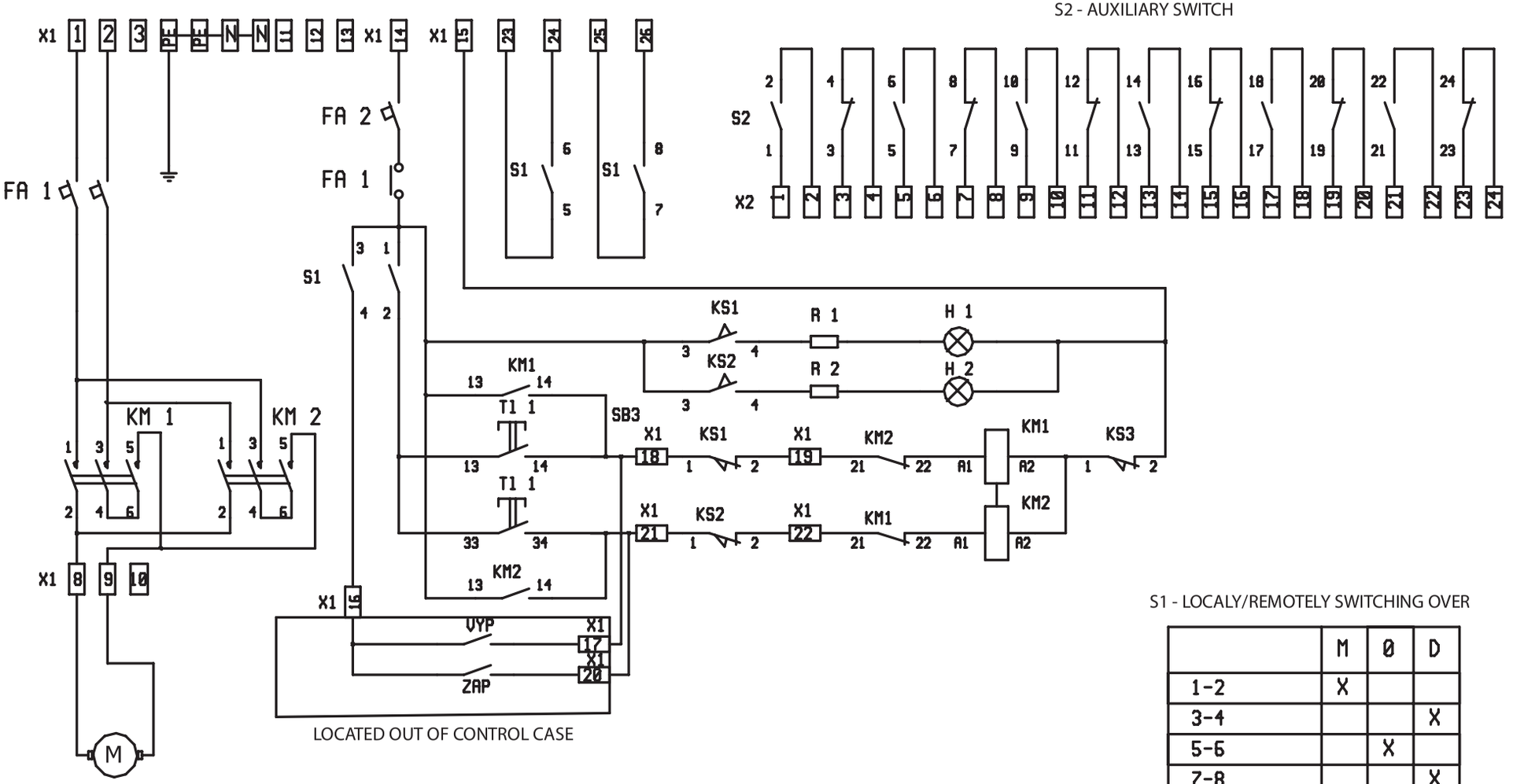
Output moment:	400 Nm
Run period:	4 - 8 seconds
Control voltage:	24, 110, 220 V DC, 230 V AC
Weight:	28 kg
Operation voltage:	24, 220 V DC, 230V AC

Three-pole disconnecting switch OMI 25/630 – 30 L with EPU



Three-pole disconnecting switch OMZI 12 / 630 - 30 L with EPU





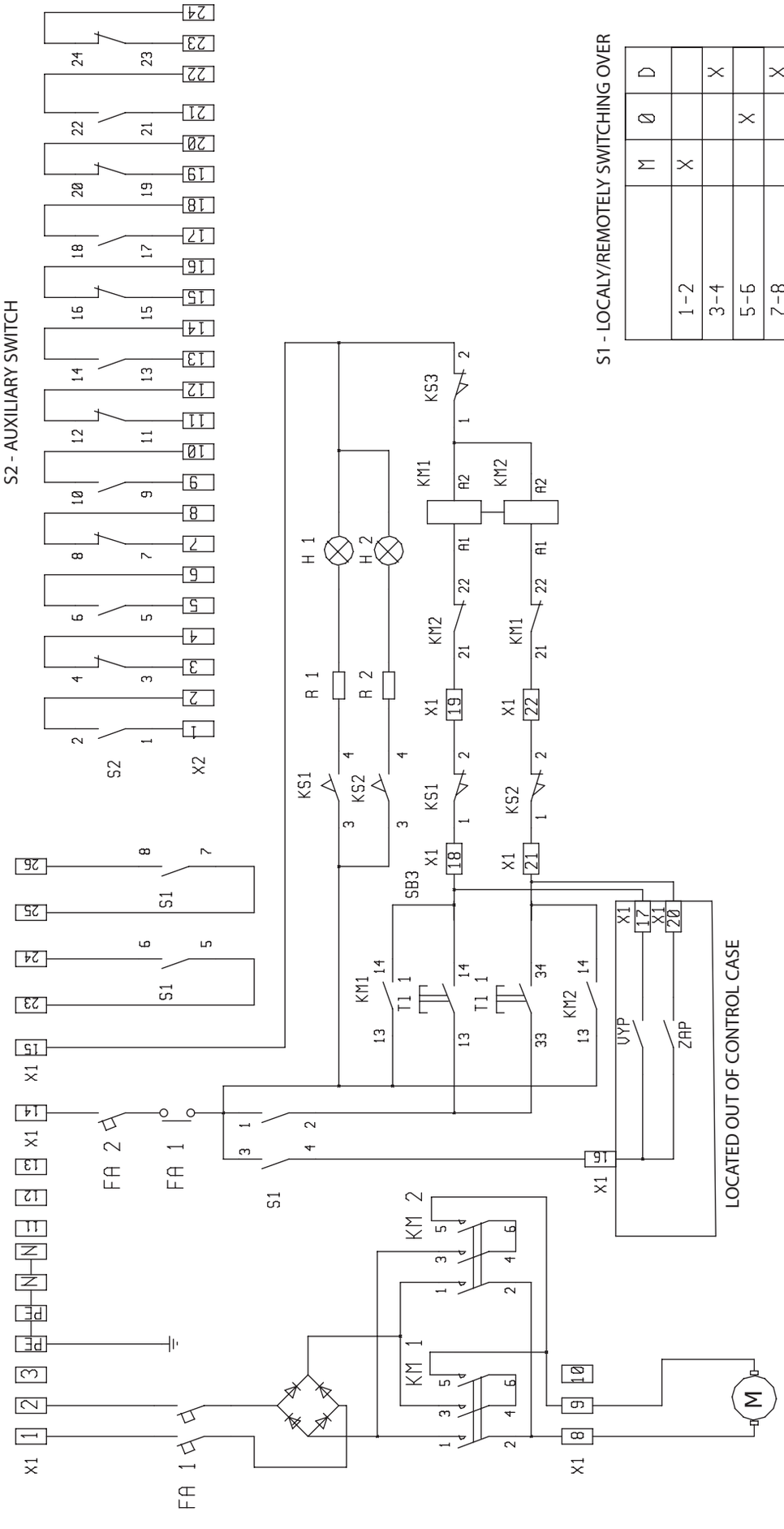
S2 - AUXILIARY SWITCH

S1 - LOCALY/REMOTELY SWITCHING OVER

	M	0	D
1-2	X		
3-4			X
5-6		X	
7-8			X

Supply voltage 24 V DC, 220V DC
Control voltage 24 V (110 V DC, 230 V AC/DC)
Motor GR 63 x 55 + PLG 52

E 19 086


S2 - AUXILIARY SWITCH
S1 - LOCALY/REMOTELY SWITCHING OVER
1-2
3-4
5-6
7-8
M
Ø
D
E 19 087
Supply voltage 24 V DC, 220V DC
Control voltage 24 V (110 V DC, 230 V AC/DC)
Motor GR 63 x 55 + PLG 52
LOCATED OUT OF CONTROL CASE
FA 1
FA 2
KM 1
KM 2
KS1
KS2
KS3
KM1
KM2
SB3
H 1
H 2
R 1
R 2
T1
VYP
ZAP
S1
S2
X1
X2
M

2. Electromotive drive ETMP

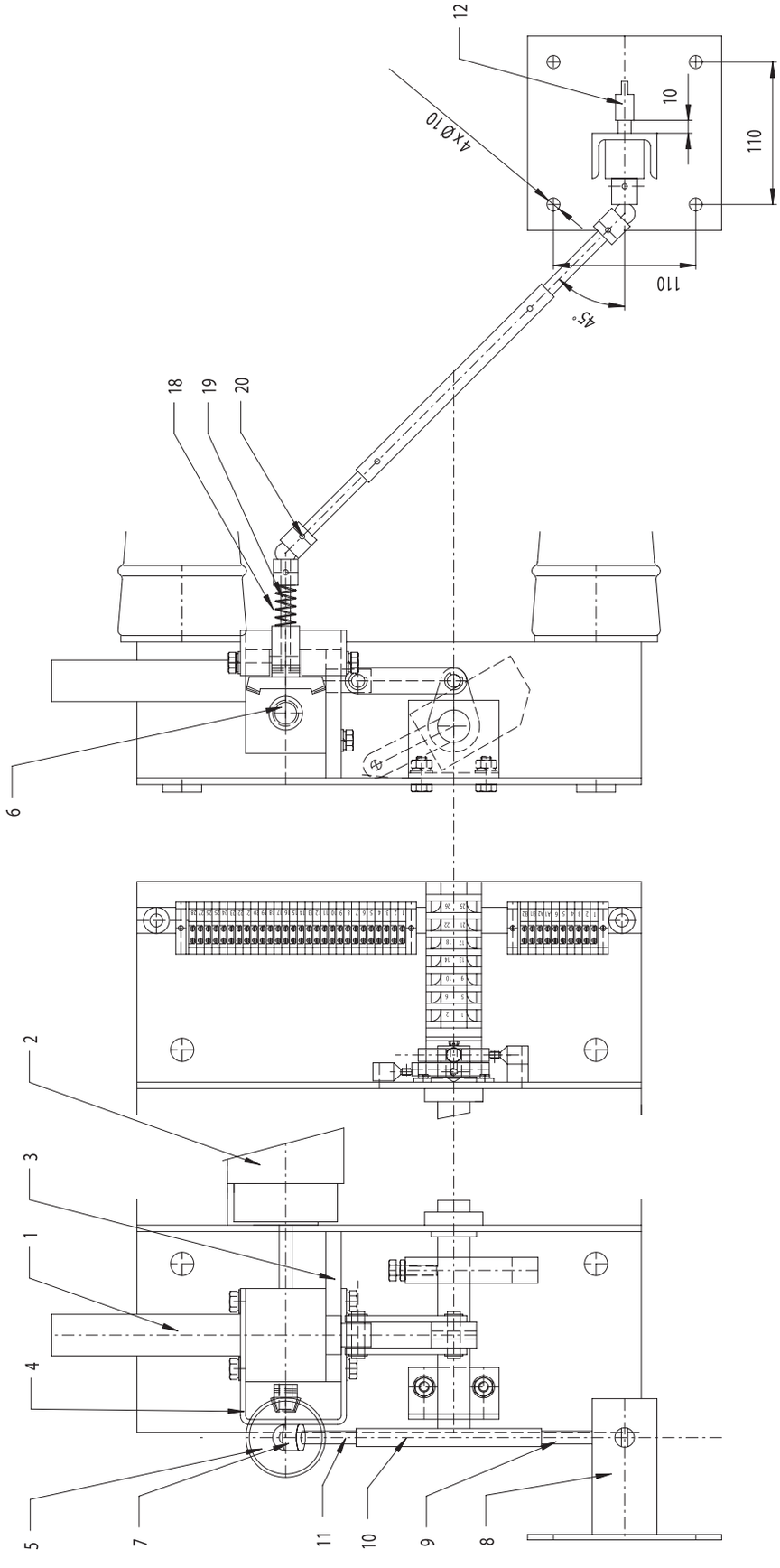
Drive type	Rated supply voltage, V	Rated power output, W	Rated current, A	Usage	Weight*, kg
ETMP-P0*	24 DC	200	8,5	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	12
ETMP-P1	24 DC	200	8,5	12, 25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	12
ETMP-P2*	230 AC	150	2,5	12, 25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	10
ETMP-P3	230 AC	150	2,5	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	10
ETMP-P4*	230 AC	300	3,5	12, 25 kV/2000 A Three-pole disconnecting switches	10
ETMP-P5	230 AC	300	3,5	12, 25 kV/2000 A Three-pole disconnecting switches	10
ETMP-P6*	110 DC	200	2,5	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	10
ETMP-P7	110 DC	200	2,5	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	10
ETMP-P8*	220 DC	200	2,0	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	10
ETMP-P9	220 DC	200	2,0	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	10
ETMP-P10*	3 x 400 AC	180	0,8	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	12
ETMP-P11	3 x 400 AC	180	0,8	12,25,38,5 kV/400,630,1250 A Three-pole disconnecting switches	12

* with emergency control led into the wall (page G 31). Others with the emergency control by means of handling bar ESPA 415.3

Regulation to project the emergency control

The producer requires to follow this regulation by the project designer and the user to assure the correct function of the emergency control of the disconnecting switches.
When failing to follow the determined procedures and regulations, the producer will not be responsible for any failures of the emergency handling with the disconnecting switches.
Emergency control using the joint aspects
1. Emergency control with the ETMP drives
The ETMP drive is designed so that the electric motor provided with the gearbox is located on the disconnecting switch frame. The emergency control of the ETMP drive is solved through the sprung bevel wheels by means of joint couplings and pull rod led onto the wall or cell door. The ETMP drive is produced for the control voltages of 24, 110, 220 V DC; 230, 3 x 400 V AC. The emergency control consists of the joint holder 8 (possibility of width modification so that the „B" point will be followed), pipes (10), bars (9) and superstructure of the bevel wheels (5), (6). The bevel wheels are not in operation during the motive driving, they are in operation during the emergency switching-off only (Figure on the page G 34).
The emergency control process is performed as follows: the operator puts the handling crank into the shaft of the emergency control, press it approximately 10 mm down (toothed wheels are engaged) and then he/she rotates the crank. To open or to close the device, minimum 70 revolutions of the crank are necessary. To operate the emergency control, it is necessary, from the project point of view, to follow:
a) solid angle of the pull rod inclination of max. 45° given by the work area of the joint couplings (Figure on the page G 31).
b) the alignment of the emergency control drive axis with the emergency control shaft axis (Figure on the page G 31).
c) that the emergency control shaft 12 shall be ejected minimum 10 mm when assembling the pull rod (so that the toothed wheel (7) may be engaged with the toothed wheel (6) in the emergency control shaft by pressing the crank).
2. Emergency control by means of the switching-off bar ESPA 415.3 (Figure on the page G 35).
The emergency control is performed by inserting the switching-off bar provided with special terminal (universal cardan with the adapter OK 19) into the shaft (4) which is connected with the gearbox shaft by means of special cogged wheels (2), (3).

Electromotive drive ETMP



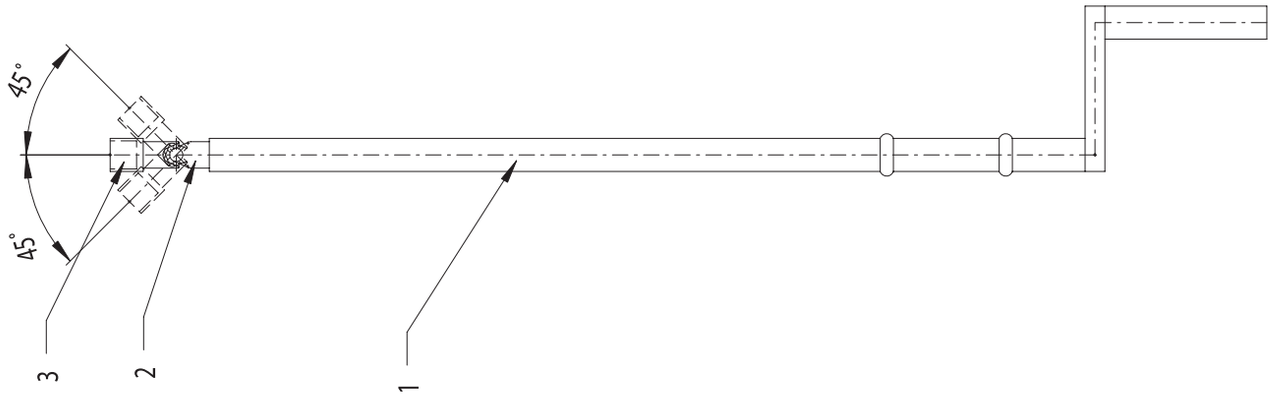
Assembly (ETMP electromotive drive on the page G 32)

1. After fastening the device in the cell, fasten the joint holder (8) onto the cell wall or cell console. The bar (9) - maximum inclination angle of the control bar of 45° - shall be connected with the upper joint (7) and the lower joint by pins. Insert the pipe (10) into the bar (9) and join them with pins by means of the pre-drilled holes. Drill the other pipe end with the bar to required pull rod length. After drilling of the necessary pull rod length, the control shaft (12) shall be ejected approximately 10 mm. After joining the last connection by pins, verify the operation of the emergency control. If the pull rod is too long, cut off the bar. Shifting the lever into the control shaft (12) and pressing approximately 10 mm the toothed wheel (5) will be engaged with the toothed wheel (6). Following handling of the lever, the device will be opened or closed. After finishing this procedure, the spring (18) will disengage the toothed wheel i. e. the emergency control is out of operation with the motive control.

2. After finishing the adjusting works, attach the individual control and signalling wires to the series terminal boards.
A) Attach the terminal strips 1 up to 6 on the terminal board X1 are designed to interconnect the electric motor control voltage
B) The electric motor reversing terminal switches are led to the terminal strips A, A1, B and B1 on the terminal board X1.
C) The signalling change-over switch S 10 N consisting of 6 ON and 6 OFF positions and 2 switching units of the intermediate position.

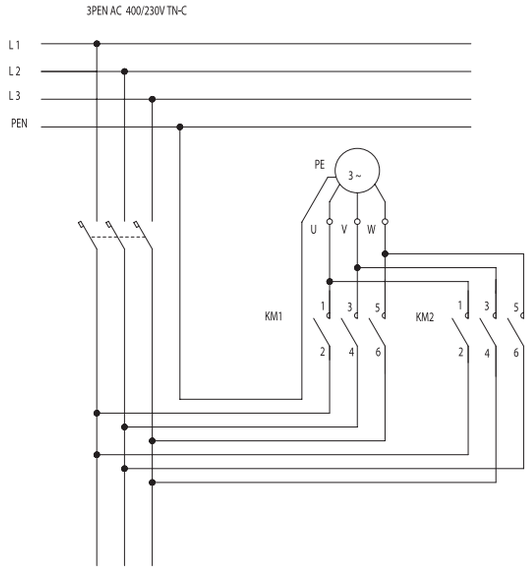
3. Before testing electrically it is recommended to put the contacts into the intermediate position and verify the electric motor rotation sense and correct operation of the terminal switches. Then, the device is ready to be operated .

Operating bar ESPA



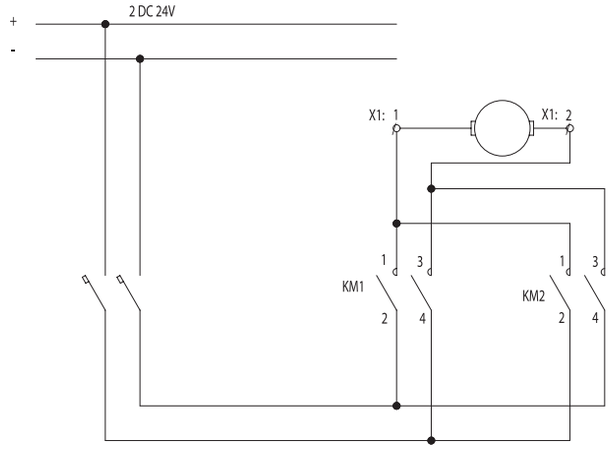
Note: The bar length in accordance with requirement of the customer. The standard length is 3000 mm.

AC drives



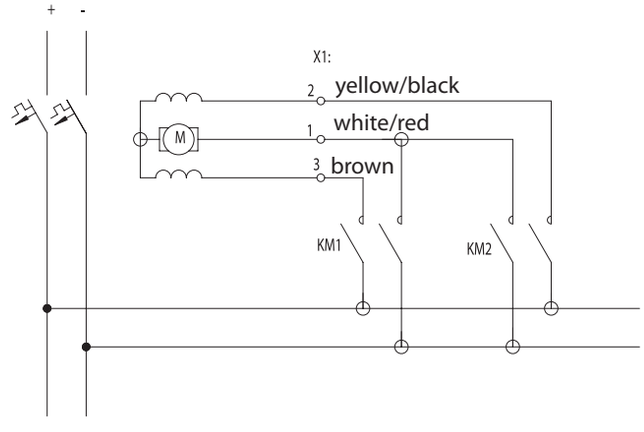
Electric motor type	ATE 63 4
Drive	ETMP
U	400/230 V
P	180W
I	0,9 A

DC drives – number of outlets: 2



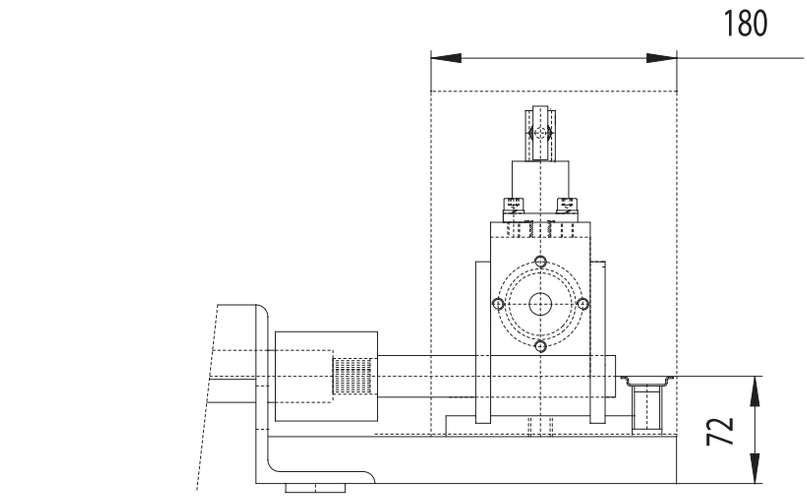
Electric motor type	P2SZ 447
Drive	ETMP
U	24 C DC
P	200 W
I	8,3 A

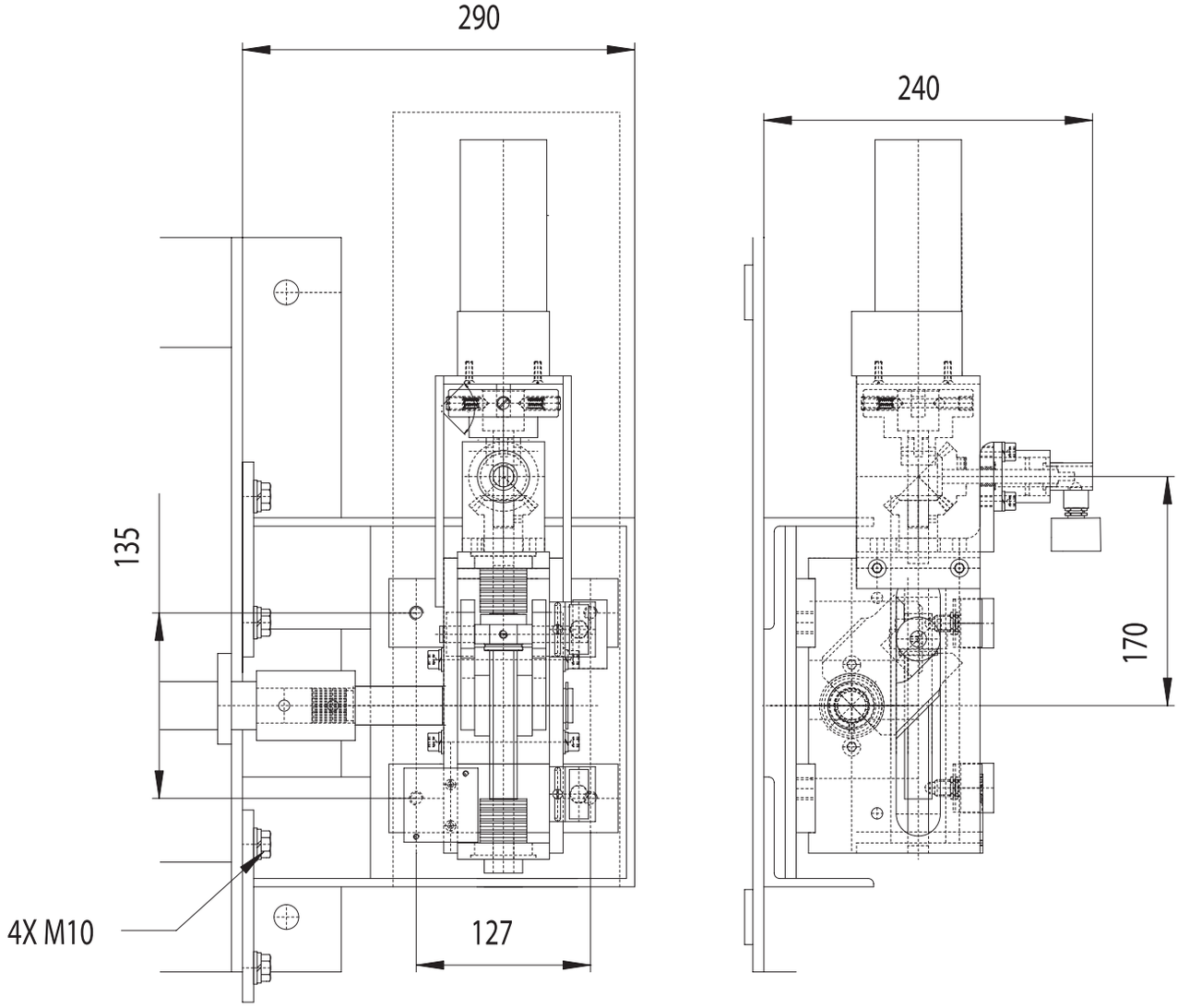
DC drives – number of outlets: 3



Electric motor type	NK3K8H - 00	
Drive	ETMP	
U	110 V DC	220 V DC
P	200W	
I	2,5 A	2 A

EPU





Internal fuse base type PS

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.

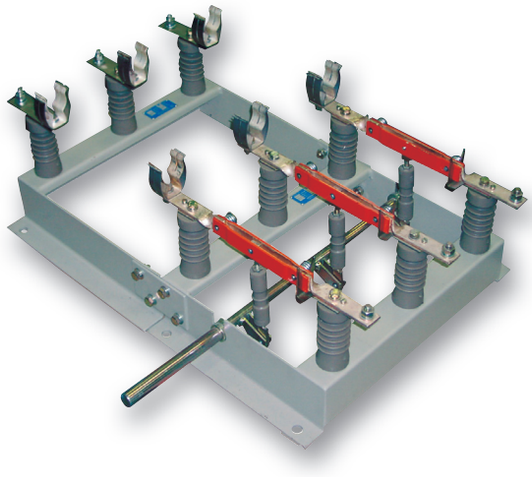
The internal fuse base PS may be provided with supporting insulators produced from cycloaliphatic resin, or with over-voltage leads-in. The basic frame is produced from stainless steel bent sheet. The current conducting path is produced from galvanically silvered electrolytic copper.

The fuse bases are designed for the fuses in accordance with IEC 282-1.
They may be produced in single-pole or three-pole version or assembled together with the disconnecting switch.

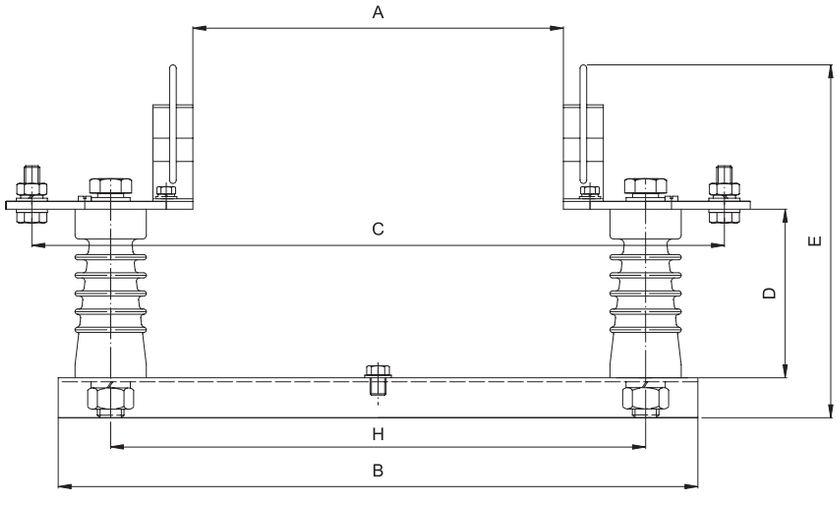
TECHNICAL DATA

Rated voltage: 12, 25 kV
Rated current: up to 100 A - for rated curent 100 A and rated voltage 24 kV it is possible to use fuse with max. dissipable power of 180 W
Type and dimension: in accordance with DIN 43625 and IEC 282-1

OMI with fuse base

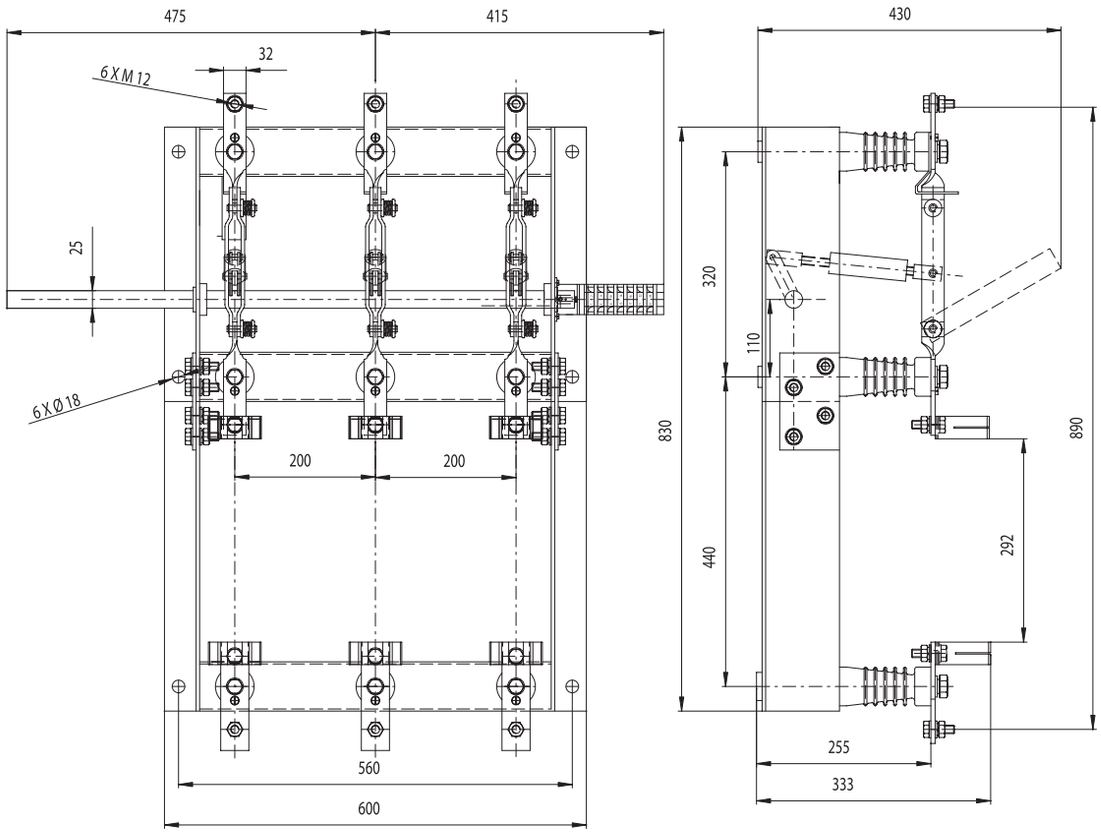


PS-E 12kV , 25kV

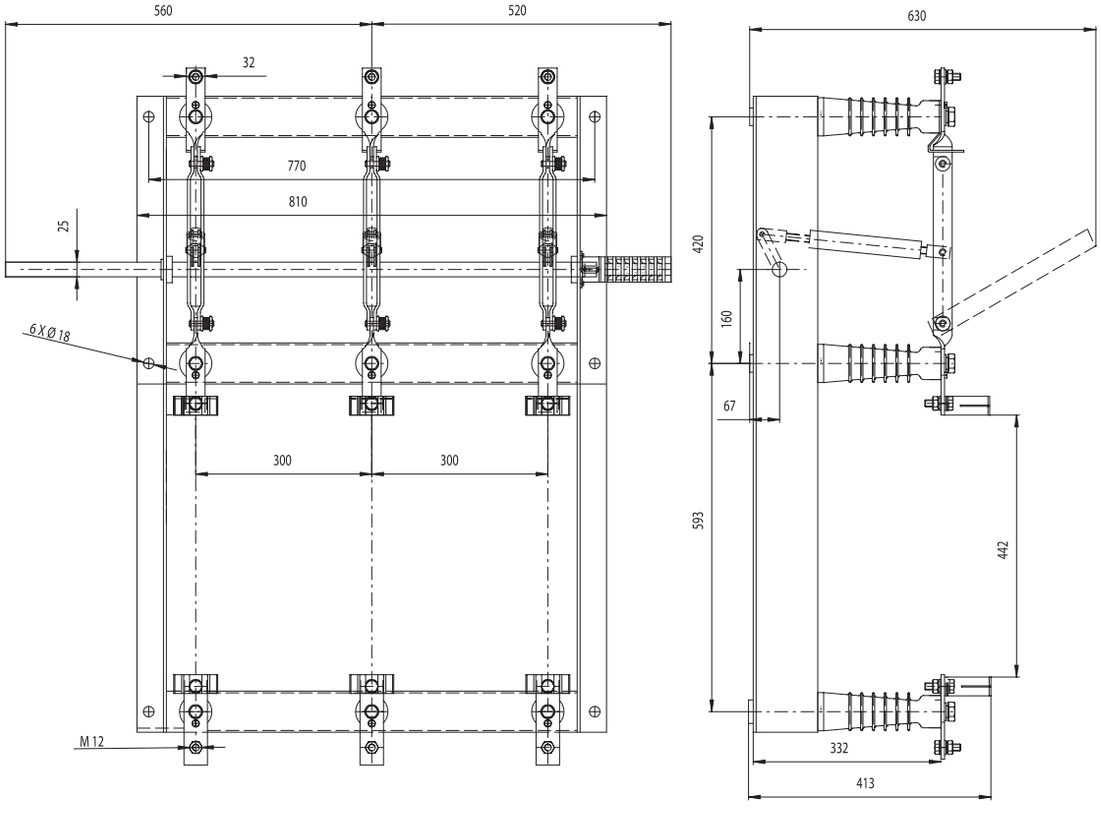


Type / Dimension	A	B	C	D	E	H
PS - E 12 kV	292	510	562	130	270	440
PS - E 25 kV	442	663	715	210	350	593

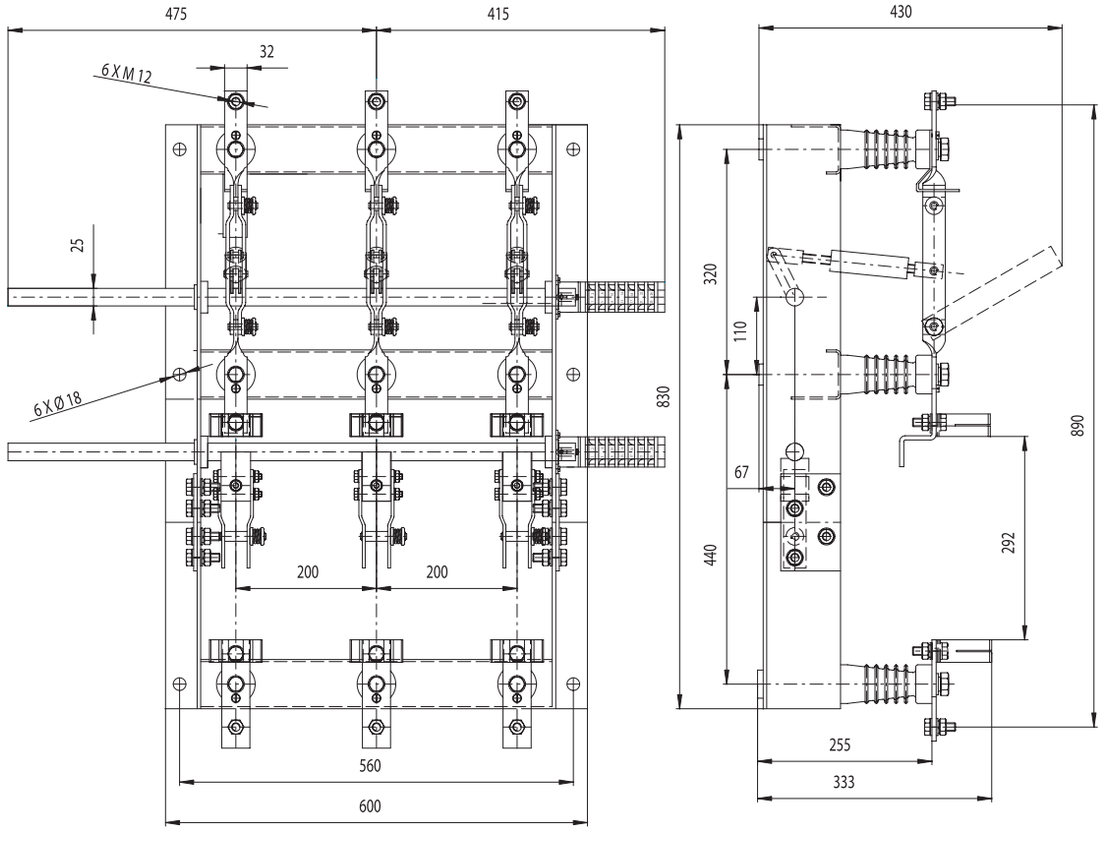
Three-pole disconnecting switch OMI 12/400 - 30 L with a fuse frame



Three-pole disconnecting switch OMI 25/400 - 30 L with a fuse frame



Three-pole disconnecting switch OMZI 12/400 - 30 L with a fuse frame



Three-pole disconnecting switch OMZI 25/400 - 30 L with a fuse frame