

Indoor disconnectors ITr and earthing switches ES

single- and three-pole design
rated voltage 12, 25 and 38.5 kV
rated current 630 – 6300 A



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ISO 9001
ISO 14001
BUREAU VERITAS
Certification



Indoor disconnectors and earthing switches

Disconnectors are intended to be used for no-load medium voltage devices, earthing switches are intended to be used as protection during works on the disconnected parts.

The disconnectors and earthing switches meet the requirements of the EN 62271-1 and EN 62271-102 standards.

All parts and frames made of steel are galvanized and chromate coated.

The drive shafts are seated in bronze bearings and this is why the material as such cannot be subjected to corrosion.

All parts of the current carrying path are made of drawn electrolytical copper and are silver coated (10 µm coat).

The corrosion-free compression springs supply an adequate pressure for the operation of making contacts.

The control of disconnectors and earthing switches occurs through the following:

- SHA or DK hand operated drives (for disconnectors mounted on the front wall), adaptor for „D“ type drive, with an extension part (in case of necessity, for disconnectors mounted to the side wall)
- motor operated drives of types LM, UM and VM.

In case when the disconnector is equipped with earthing switch there is to be additional drive mechanism for the control of the earthing switch.

Under normal operating conditions the disconnectors and earthing switches are maintenance-free, with the first maintenance free period of 10 years.

Technical data

Type of disconnector	Rated voltage Ur [kV]	Rated current Ir [A]	Rated short-time current I _k [kA]	Rated peak withstand current I _p [kA]
ITr 12-630/20 (/25)	12	630	20 (25)	50 (63)
ITr 12-1600/40 (/50)	12	1600	40 (50)	100 (125)
ITr 12-2500/40 (/50)	12	2500	40 (50)	100 (125)
ITr 12-3150/50 (/63)	12	3150	50 (/63)	125 (/160)
ITr 12-4000/50 (/63)	12	4000	50 (/63)	125 (/160)
ITr 25-630/20 (/25)	25	630	20 (25)	50 (63)
ITr 25-1250/31,5	25	1250	31,5	80
ITr 25-1600/40 (/50)	25	1600	40 (50)	100 (125)
ITr 25-2500/31,5 (/40)	25	2500	31,5 (40)	80 (100)
ITr 25-3150/50	25	3150	50	125
ITr 25-4000/50	25	4000	50	125
ITr 38,5-630/20 (/25)	38,5	630	20 (25)	50 (63)
ITr 38,5-1250/31,5	38,5	1250	31,5	80
ITr 38,5-1600/40	38,5	1600	40	100
ITr 38,5-2500/40	38,5	2500	40	100

The disconnectors can also be delivered for higher current levels, on request.

Type of earthing switch	Rated voltage Ur [kV]	Rated short-time current I _k [kA]	Rated peak withstand current I _p [kA]
ES 12/25	12	25	63
ES 12/31,5	12	31,5	80
ES 25/25	25	25	63
ES 25/31,5	25	31,5	80
ES 38,5/25	38,5	25	63
ES 38,5/31,5	38,5	31,5	80

Withstand voltages

Rated voltage	kV	12	25	38.5
Rated short-time withstand power frequency voltage / 1min.				
against the earth, across the poles and between disconnected contacts	kV	28	50	80
across the isolating distance	kV	32	60	90
Rated lightning pulse withstand voltage				
against the earth, across the poles and between disconnected contacts	kV	75	125	180
across the isolating distance	kV	85	145	210

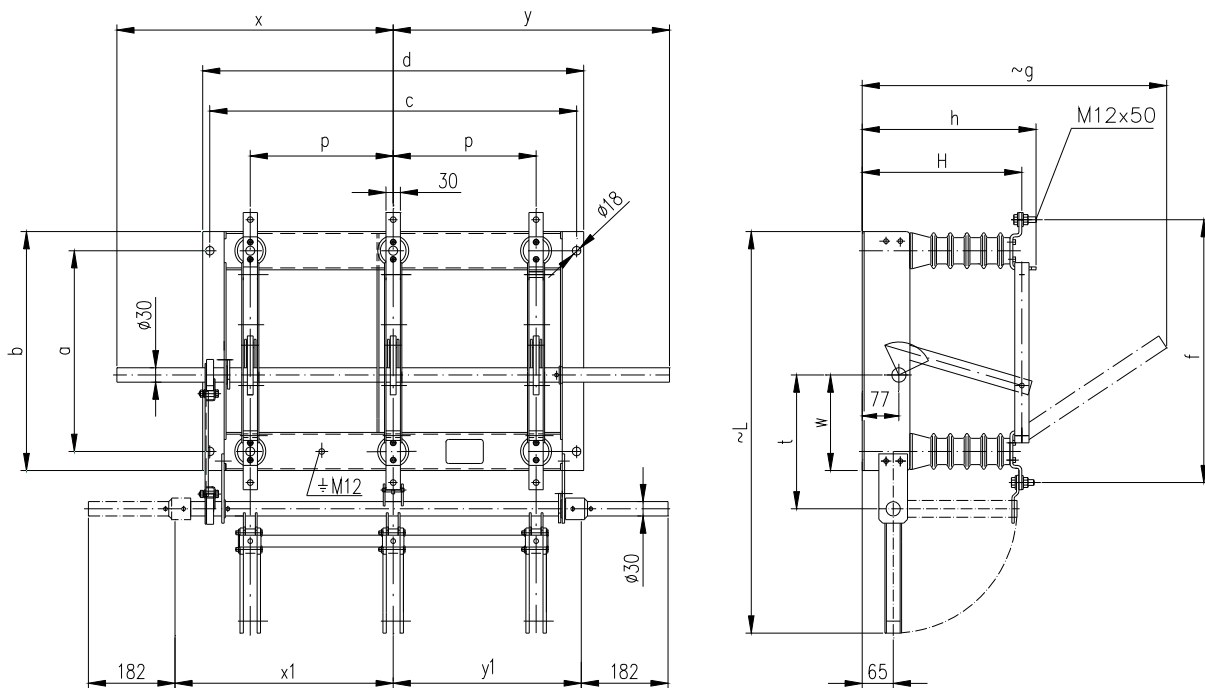
Supplementary equipment to the disconnectors and earthing switches

Additional switch Used for all types of disconnectors and earthing switches, with a highest number of 16 contacts. In order to indicate the switching position, the disconnectors with built-in earthing switches can be equipped with additional switches. The basic setup of switches can be modified without the necessity to disassemble the disconnector, by using special tools (such as when changing the contacts from making to breaking, or changeover contact etc.).

Interlocking magnet Available for the voltage 24 V, 60 V, 110 V and 220 V DC or 110 V and 230 V AC. Function of the blocking magnet has to be blocked by the additional switch.

Motor and hand operated - drive see drives catalogue

Three-pole indoor disconnectors ITr ...-630/xx – rated current 630 A



Without earthing switch

U [kV]	I _r [A]	p [mm]	part nr.	a [mm]	b [mm]	c [mm]	d [mm]	f [mm]	≈ g [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight [kg]
12	630	200	731 42000	320	390	560	590	450	485	285	255	145	480	480	32
12	630	210	731 42100	320	390	560	590	450	485	285	255	145	480	480	34
25	630	275	731 52000	420	500	720	750	550	641	365	335	200	555	555	41
25	630	300	731 52100	420	500	770	800	550	641	365	335	200	580	580	44
38,5	630	400	731 70000	520	610	1040	1070	650	865	485	455	205	715	715	63
38,5	630	420	731 70100	520	610	1080	1110	650	865	485	455	205	735	735	67

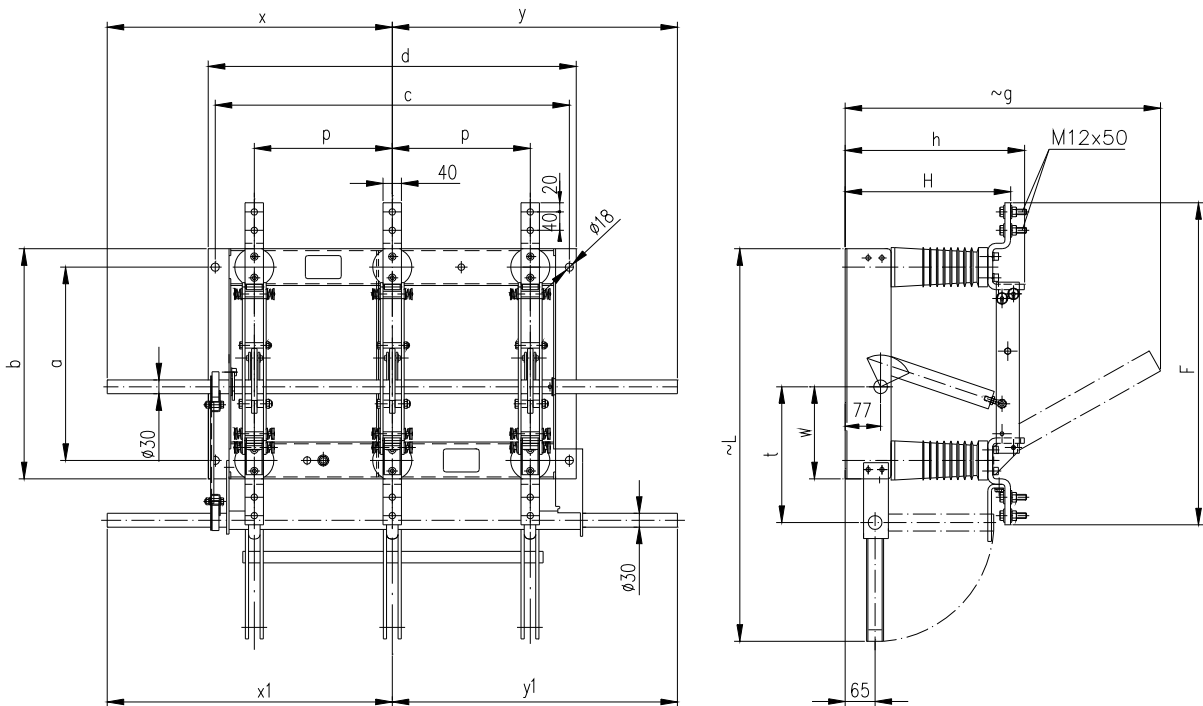
With earthing switch mounted below – UEV

U [kV]	I _r [A]	p [mm]	part nr.	≈ L [mm]	t [mm]	x ₁ [mm]	y ₁ [mm]	weight [kg]
12	630	200	731 42011	650	225	340	295	41
12	630	210	731 42111	650	225	340	295	44
25	630	275	731 52011	840	280	415	370	55
25	630	300	731 52111	840	280	440	395	59
38,5	630	400	731 70011	1070	285	575	530	83
38,5	630	420	731 70111	1070	285	595	550	88

for missing measures see table above

Disconnectors with earthing switch mounted above – OEV and disconnectors with another phase spacing of poles are available on request.

**Three-pole indoor disconnectors ITr ...-1250/xx and ITr ...-1600/xx
– rated current 1250 and 1600 A**



Without earthing switch

U [kV]	I _r [A]	p [mm]	part nr.	a [mm]	b [mm]	c [mm]	d [mm]	F [mm]	≈ g [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight [kg]
12	1600	200	731 72000	320	390	560	590	600	516	310	280	145	480	480	32
12	1600	210	731 72100	320	390	560	590	600	516	310	280	145	480	480	34
25	1600	275	731 82000	420	500	720	750	700	682	390	360	200	565	565	50
25	1600	300	731 82100	420	500	770	800	700	682	390	360	200	590	590	53
38,5	1600	400	731 92000	520	610	1080	1100	800	920	510	480	230	735	735	75
38,5	1600	420	731 92100	520	610	1080	1100	800	920	510	480	230	735	735	75

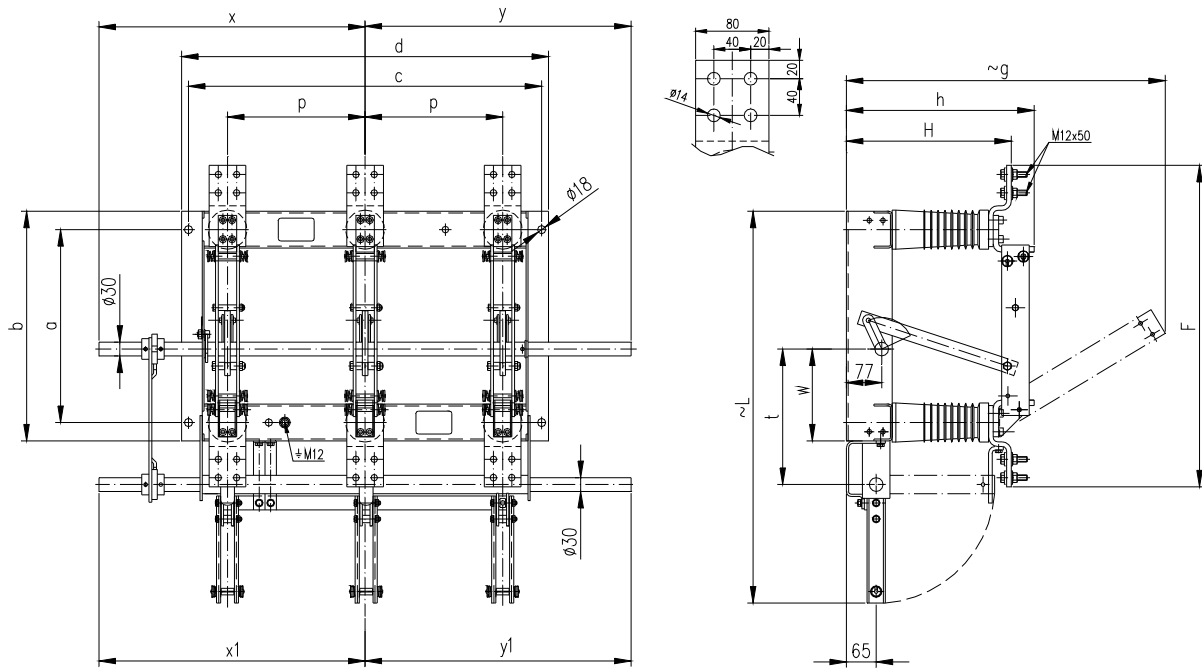
With earthing switch mounted below – UEV

U [kV]	I _r [A]	p [mm]	part nr.	≈ L [mm]	t [mm]	x ₁ [mm]	y ₁ [mm]	weight [kg]
12	1600	200	731 72011	650	225	500	500	41
12	1600	210	731 72111	650	225	510	510	44
25	1600	275	731 82011	840	280	565	565	63
25	1600	300	731 82111	840	280	590	590	67
38,5	1600	400	731 92011	1070	295	735	735	92
38,5	1600	420	731 92111	1070	295	735	735	92

for missing measures
see table above

Disconnectors with earthing switch mounted above – OEV and disconnectors with another phase spacing of poles are available on request.

Three-pole indoor disconnectors ITr ...-2500/xx – rated current 2500 A



Without earthing switch

U [kV]	I _r [A]	p [mm]	part nr.	a [mm]	b [mm]	c [mm]	d [mm]	F [mm]	≈ g [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight [kg]
12	2500	200	736 14000	320	390	560	590	600	532	330	280	145	480	480	37
12	2500	210	736 14100	320	390	560	590	600	532	330	280	145	480	480	39
25	2500	300	736 24000	420	500	770	800	700	695	410	360	200	590	590	59

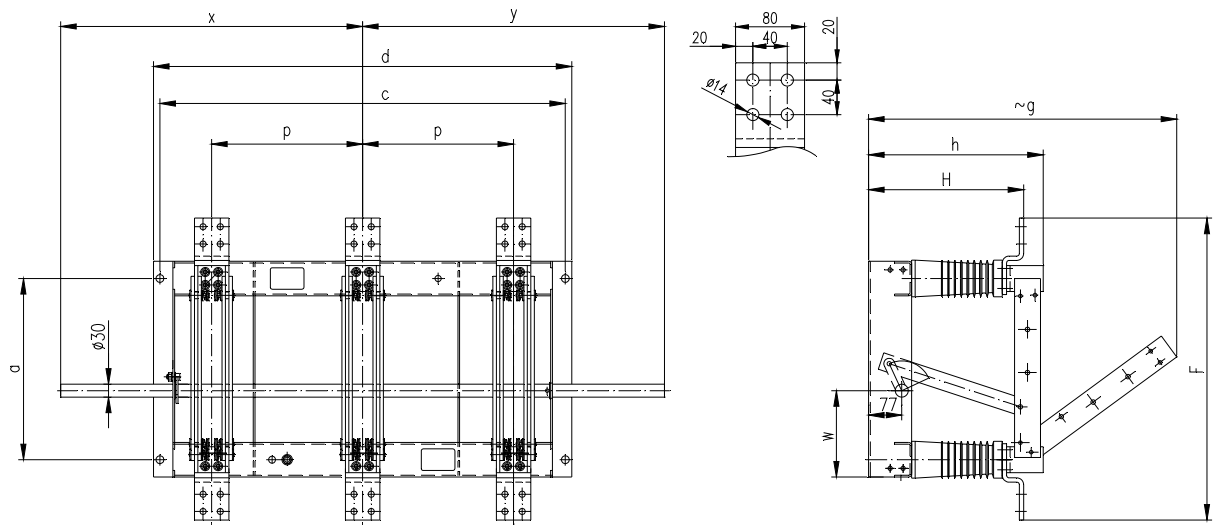
With earthing switch mounted below – UEV

U [kV]	I _r [A]	p [mm]	part nr.	≈ L [mm]	t [mm]	x ₁ [mm]	y ₁ [mm]	weight [kg]
12	2500	200	736 14011	673	245	500	500	58
12	2500	210	736 14111	673	245	510	510	58
25	2500	300	736 24011	853	295	590	590	73

for missing measures see table above

Disconnectors with earthing switch mounted above – OEV and disconnectors with another phase spacing of poles are available on request.

Three-pole indoor disconnectors ITr ...-3150/xx – rated current 3150 A

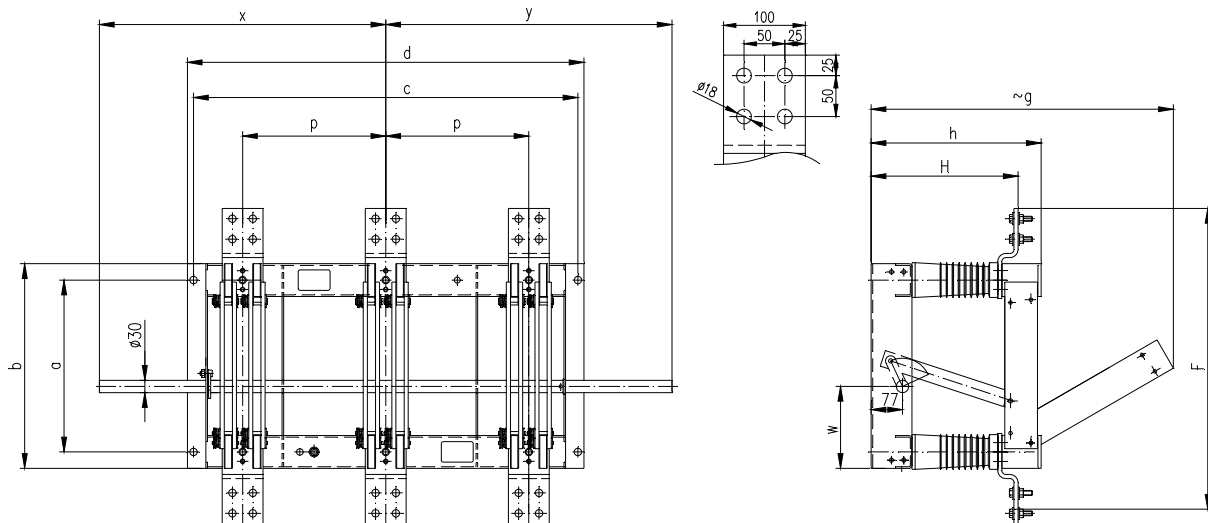


Without earthing switch

U [kV]	I _r [A]	p [mm]	part nr.	a [mm]	b [mm]	c [mm]	d [mm]	F [mm]	≈ g [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight [kg]
12	3150	280	736 44000	320	390	800	830	600	545	325	280	145	640	640	50
25	3150	350	736 54000	420	500	940	970	700	720	405	360	200	700	700	70

Disconnectors with earthing switch mounted under – UEV or above – OEV the disconnector and disconnectors with another phase spacing of poles are available on request.

Three-pole indoor disconnectors ITr ...-4000/xx – rated current 4000 A

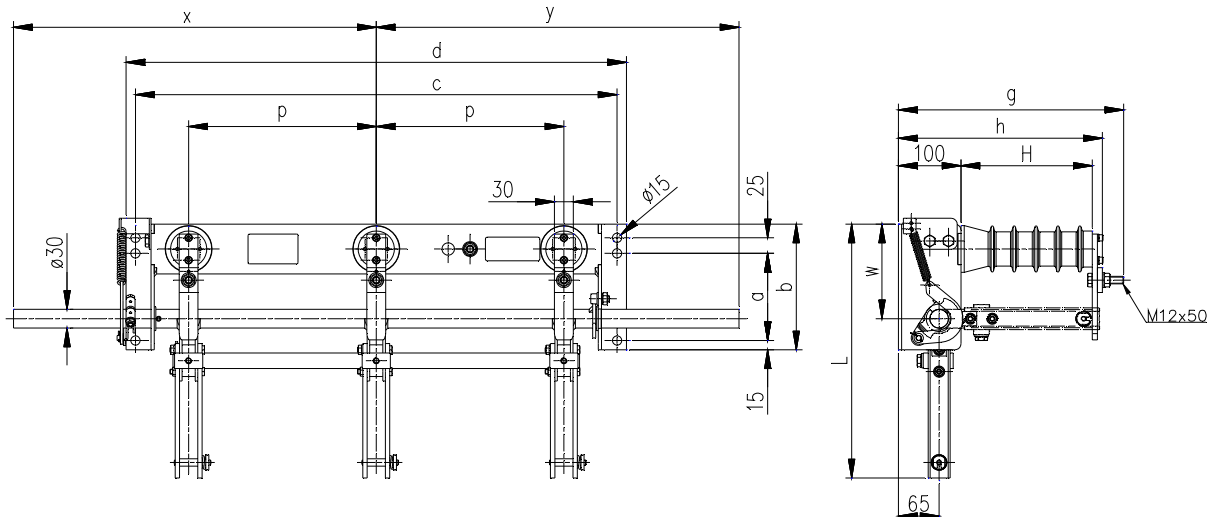


Without earthing switch

U [kV]	I _r [A]	p [mm]	part nr.	a [mm]	b [mm]	c [mm]	d [mm]	F [mm]	≈g [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight [kg]
12	4000	280	736 64000	320	390	800	830	670	575	336	280	145	640	640	55
25	4000	350	736 74000	420	500	940	970	770	740	416	360	200	700	700	75

Disconnectors with earthing switch mounted under – UEV or above – OEV the disconnector and disconnectors with another phase spacing of poles are available on request.

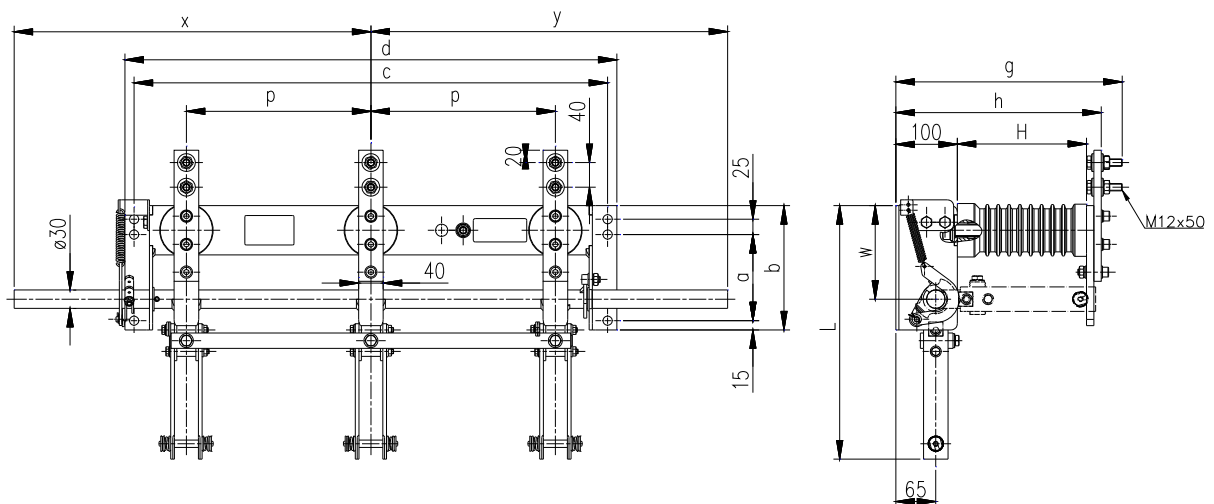
Three-pole earthing switches ES .../25 – rated short-time current 25 kA



U [kV]	I_k [kA]	p [mm]	a [mm]	b [mm]	c [mm]	d [mm]	L [mm]	$\approx g$ [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight cca [kg]
12	25	200	150	195	540	570	325	280	246	130	145	470	470	17
12	25	210	150	195	560	590	325	280	246	130	145	480	480	18
25	25	275	140	202	720	750	408	360	326	210	152	555	555	22
25	25	300	140	202	770	800	408	360	326	210	152	580	580	23
38,5	25	400	140	195	1040	1070	540	490	455	330	155	715	735	30
38,5	25	420	140	195	1080	1100	540	490	455	330	155	735	735	31

Earthing switches with another phase spacing of poles or another number of poles are available on request.

Three-pole earthing switches ES .../31,5 – rated short-time current 31,5 kA



U [kV]	I_k [kA]	p [mm]	a [mm]	b [mm]	c [mm]	d [mm]	L [mm]	$\approx g$ [mm]	h [mm]	H [mm]	w [mm]	x [mm]	y [mm]	weight cca [kg]
12	31,5	200	150	195	540	570	330	290	254	130	150	470	470	24
12	31,5	210	150	195	560	590	330	290	254	130	150	480	480	25
25	31,5	275	140	202	720	750	412	370	334	210	152	555	555	31
25	31,5	300	140	202	770	800	412	370	334	210	152	580	580	32
38,5	31,5	400	140	205	1080	1110	545	490	454	330	165	735	735	42
38,5	31,5	420	140	205	1120	1150	545	490	454	330	165	755	755	43

Earthing switches with another phase spacing of poles or another number of poles are available on request.