

Parameters	Values
Highest voltage for equipment	24 up to 25 kV
Power frequency test voltage, 1 min.	50 up to 55 kV
Lighting impulse test voltage	up to 125 kV
Rated primary current	10 - 3 200 A
Rated short-time thermal current	2 - 100 kA/1s
Reconnectable (primary till 400-800 A)	primary or secondary

Description

The TPU 6x.xx transformers are cast in epoxy resin and designed for insulation voltages up to 25 kV. The 24 kV version has the same dimensions as the 25 kV. For certain types of panels there is a need for extra long creepage distance on the transformers. For this purpose you can order current transformers with „ribs on the top“.

The transformers are manufactured in conformity with dimensions stated hereunder. The TPU 6x.xx transformers are designed as single-turn or multi-turn versions, with one transformer ratio or with double ratio having the possibility to be reconnectable on the primary or on the secondary side. The number of secondary windings (from 1 to 6 – max. 12 secondary terminals - 2 rows), depends on the combination of the technical parameters (such as the accuracy class, burden, short-circuit current, overcurrent factor...) and the transformer dimensions size.

When agreed between the manufacturer and the customer the TPU transformers can be provided with the voltage indication system. For this purpose, however, it is necessary to know in what insulation level the transformers shall operate. The secondary windings are used for measurement or protection purposes, or for special use (testing winding, „X“ class windings). One terminal of each secondary winding used and one terminal of short-circuited and not used winding have to be earthed during the transformer operation. The secondary windings are lead out into a cast-type secondary terminal box with plastic cover. The terminal cover is sealable. The terminals are provided with M5 screws for the termination and with throughgoing holes for direct earthing (first row of secondary terminals).

Technical data

The transformer can be mounted in any position. The transformer body is fixed by using four screws. Earth clamp M8 is on the transformer base plate.

Rated primary voltages

24 kV; 25 kV

Rated primary currents

10; 15; 20; 25; 30; 40; 50; 60; 75; 100; 150; 200; 300; 400; 500; 600; 750; 1 000; 1 250; 1 500; 2 000; 2 500; 3 000 and 3 200 A; primary reconnectable modification max till 400-800 A. Other primary currents can also be agreed upon with the customer.

Rated secondary currents

5 A; 1 A, others on request (possibility to combine different values in one transformer)

Accuracy classes

0.2; 0.2S; 0.5; 0.5S; 1; 3; 5; 5P10; 5P15; 5P20; 10P10; 10P15; 10P20; others on request.

Rated frequency

50 Hz or 60 Hz, others on request

The transformers are designed and manufactured in conformity with the following standards and recommendations: IEC, VDE, IEEE, BS, GOST and CSN, others on request.

Cantilever strength

5 kN

Permissible torques for screw connections		
M5	max 3.5 Nm	min 2.8 Nm
M8	max 20 Nm	min 16 Nm
M12	max 70 Nm	min 56 Nm

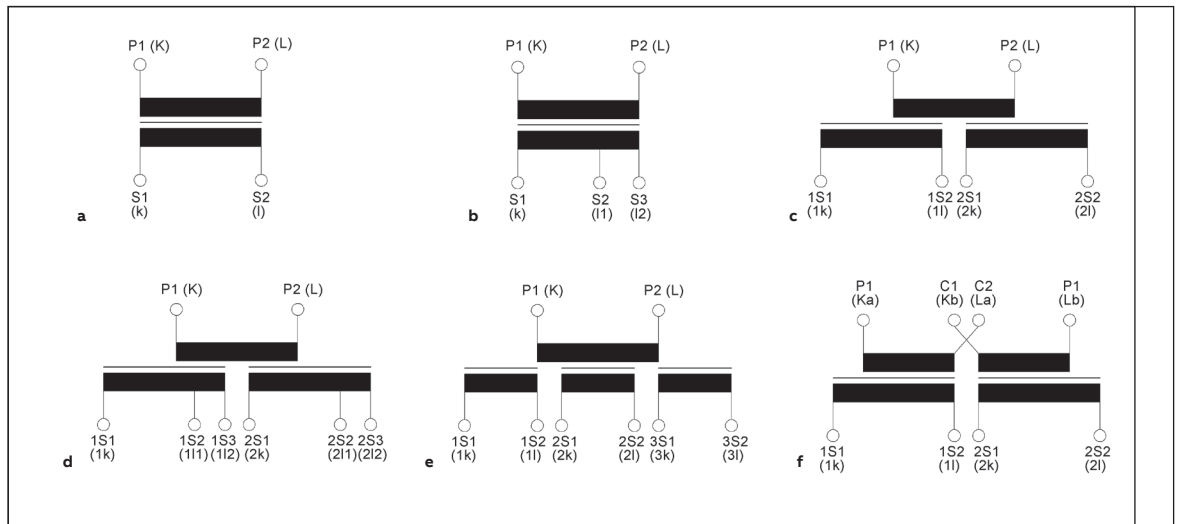
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01 Marking of current transformer outlets - example

- a Single-core design
- b Single-core design, reconnectable on the secondary side
- c Double-core design
- d Double-core design, reconnectable on the secondary side
- e Three-core design
- f Double-core design, reconnectable on the primary side

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02 Secondary terminal box (2 secondaries and voltage indicator)

Code designation - TPU current transformers

TPU	x	x	.	x	x
voltage	current		dimension		primary terminals
6...up to 25 kV	0... to 600 A multiturn 3...to 1 250 A singleturn 4...to 1 500 A singleturn 5...to 2 000 A singleturn 6...to 2 500 A singleturn 7...to 3 000 A singleturn 8...to 3 200 A singleturn		1..short 178 mm, DIN 2..long 178 mm, DIN		1..no pr.rec., no ribs /40x80mm, 80x80mm/ 2..prim. rec., no ribs /40x80mm, 80x80mm/ 3..no pr.rec., with ribs /60x68mm, 80x80mm/ 4..prim. rec., with ribs /40x80mm, 80x80mm/ 5..no pr.rec., with ribs /40x80mm, 80x80mm/



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01

Standartized insulation levels of TPU 6x.xx transformers

- 24/50/125 kV
- 25/50/125 kV
- 25/55/125 kV



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02

Standardized transformers

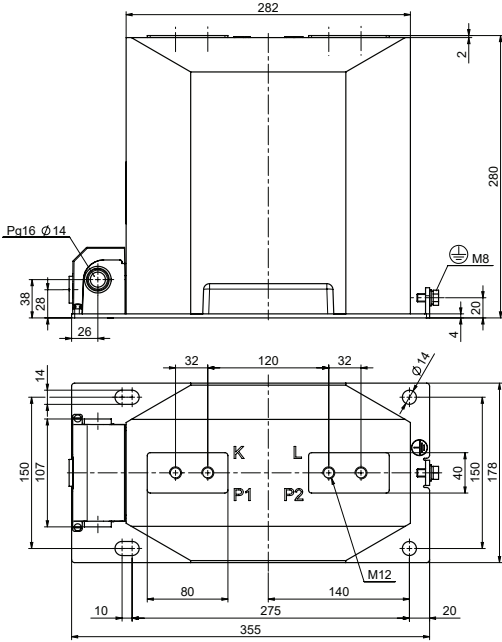
Type	I _{thn} /dyn [kA]	Ratio [A]	Burden [VA]	Class	FS/ALF
60.11	6.3/16	20//5	10	5P	15
60.11	6.3/16	20//5	20	5P	10
60.11	6.3/16	20//5/5	15/15	0.5/5P	FS5/10
60.11	12.5/31.5	20//5	10	5P	15
60.21	12.5/31.5	20//5/5	15/15	0.5/5P	FS5/5
60.21	16/40	20//5	15	5P	15
60.21	16/40	20//5/5	10/10	0.5/10P	FS5/10
60.11	6.3/16	30//5	15	5P	15
60.11	6.3/16	30//5	20	5P	10
60.11	6.3/16	30//5/5	15/15	0.5/5P	FS5/15
60.11	12.5/31.5	30//5	10	5P	15
60.11	12.5/31.5	30//5	20	5P	10
60.21	12.5/31.5	30//5/5	15/15	0.5/5P	FS5/10
60.21	25/63	30//5	10	5P	15
60.21	25/63	30//5	15	5P	10
60.21	25/63	30//5/5	10/10	0.5/5P	FS5/10
60.11	6.3/16	50//5	15	5P	15
60.11	6.3/16	50//5	30	5P	10
60.11	6.3/16	50//5/5	15/15	0.5/5P	FS5/10
60.11	16/40	50//5	10	5P	15
60.11	16/40	50//5	30	5P	10
60.21	16/40	50//5/5	15/15	0.5/5P	FS5/15
60.11	31.5/80	50//5	10	5P	15
60.21	31.5/80	50//5	30	5P	10
60.21	31.5/80	50//5/5	15/15	0.5/5P	FS5/10
60.11	16/40	100//5	15	5P	15
60.11	16/40	100//5/5	15/15	0.5/5P	FS5/15
60.11	31.5/80	100//5	15	5P	15
60.11	31.5/80	100//5/5	15/15	0.5/5P	FS5/10
60.11	31.5/63	200//5	15	5P	15
60.11	31.5/63	200//5	30	5P	15
60.11	31.5/63	200//5/5	15/15	0.5/5P	FS5/15
60.11	40/100	200//5	15	5P	15
60.11	40/100	200//5	30	5P	10
60.11	40/100	200//5/5	15/15	0.5/5P	FS5/10
60.11	31.5/80	300//5	15	5P	15
60.11	31.5/80	300//5	30	5P	10

Type	I _{thn} /dyn [kA]	Ratio [A]	Burden [VA]	Class	FS/ALF
60.11	31.5/80	300//5/5	15/15	0.5/5P	FS5/15
60.11	50/125	300//5	15	5P	15
60.11	50/125	300//5	30	5P	10
60.11	50/125	300//5/5	15/15	0.5/5P	FS5/15
60.11	40/100	400//5	30	5P	15
60.11	40/100	400//5/5	15/15	0.5/5P	FS5/15
60.11	50/125	400//5	15	5P	15
60.11	50/125	400//5/5	15/15	0.5/5P	FS5/15
60.11	50/125	500//5	30	5P	10
60.11	50/125	500//5/5	15/15	0.5/5P	FS5/15
60.11	50/125	600//5	30	5P	10
60.11	50/125	600//5/5	15/15	0.5/5P	FS10/15
63.11	50/125	750//5	15	5P	15
63.11	50/125	750//5	30	5P	10
63.11	50/125	750//5/5	15/15	0.5/5P	FS5/10
63.11	63/160	1 000//5	10	5P	20
63.11	63/160	1 000//5	20	5P	15
63.11	63/160	1 000//5	30	5P	10
63.11	63/160	1 000//5/5	15/15	0.5/5P	FS5/10
63.11	63/160	1 250//5	15	5P	15
63.11	63/160	1 250//5	30	5P	10
63.11	63/160	1 250//5/5	15/15	0.5/5P	FS5/15
64.11	63/160	1 500//5	15	5P	15
64.11	63/160	1 500//5	30	5P	10
64.11	63/160	1 500//5/5	15/15	0.5/5P	FS5/15
65.11	80/200	2 000//5	15	5P	20
65.11	80/200	2 000//5	30	5P	15
65.11	80/200	2 000//5/5	15/15	0.5/5P	FS5/15
66.11	100/250	2 500//5	15	5P	20
66.11	100/250	2 500//5	30	5P	15
66.11	100/250	2 500//5/5	30/30	0.5/5P	FS5/15
67.11	100/250	3 000//5	15	5P	15
67.11	100/250	3 000//5	30	5P	20
67.11	100/250	3 000//5/5	30/30	0.5/5P	FS5/15
68.11	100/250	3 200//5	15	5P	15
68.11	100/250	3 200//5	30	5P	20
68.11	100/250	3 200//5/5	30/30	0.5/5P	FS5/15

Dimensional Drawings

TPU 60.11
TPU 63.11

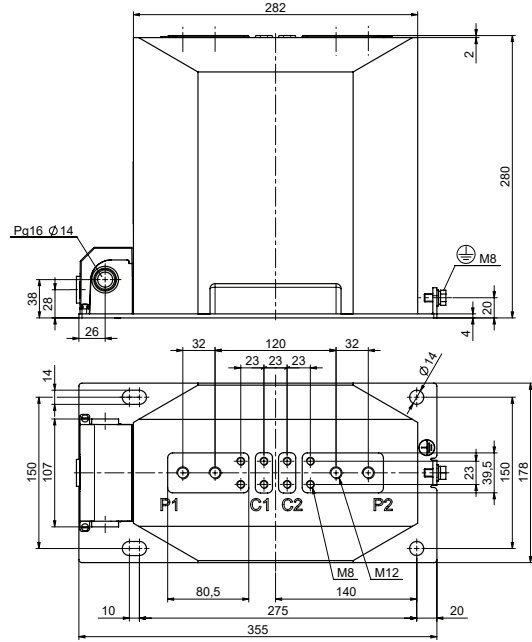
Weight: 31-35 kg
Creepage distance: 270 mm



Drawing n.	Polarity
44615000	P1 to secondary terminal
44615010	P2 to secondary terminal

TPU 60.12

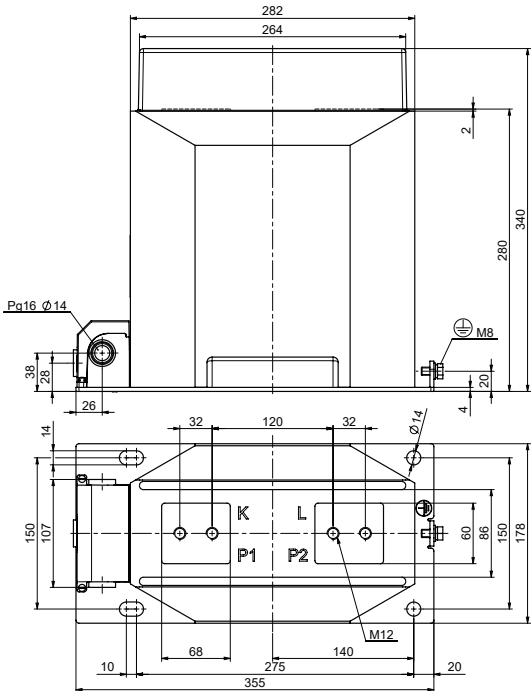
Weight: 31-35 kg
Creepage distance: 282 mm



Drawing n.	Polarity
44615020	P1 to secondary terminal
44615030	P2 to secondary terminal

TPU 60.13
TPU 63.13

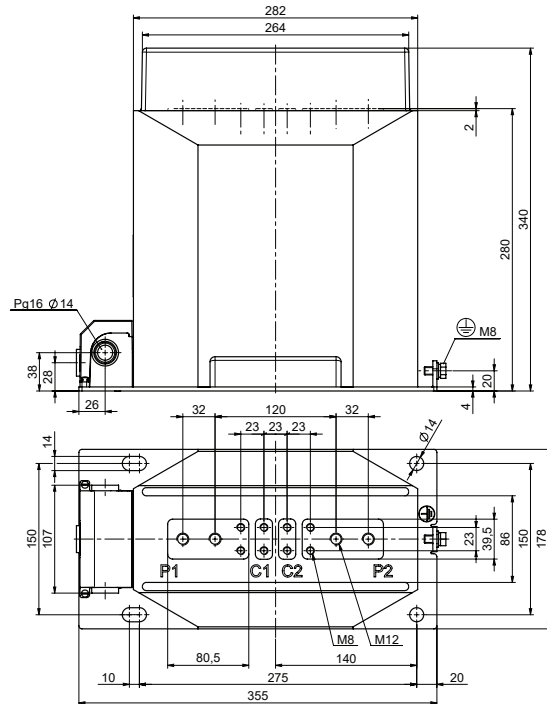
Weight: 31-35 kg
Creepage distance: 280 mm



Drawing n.	Polarity
44615040	P1 to secondary terminal
44615050	P2 to secondary terminal

TPU 60.14

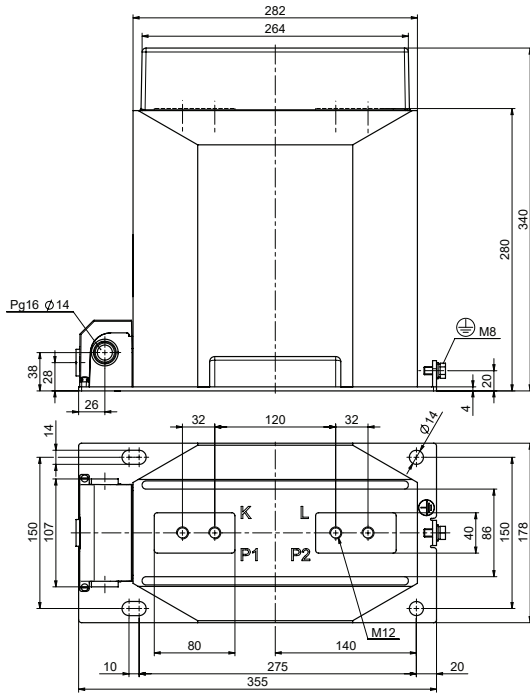
Weight: 31-35 kg
Creepage distance: 282 mm



Drawing n.	Polarity
44615060	P1 to secondary terminal
44615070	P2 to secondary terminal

TPU 60.15
TPU 63.15

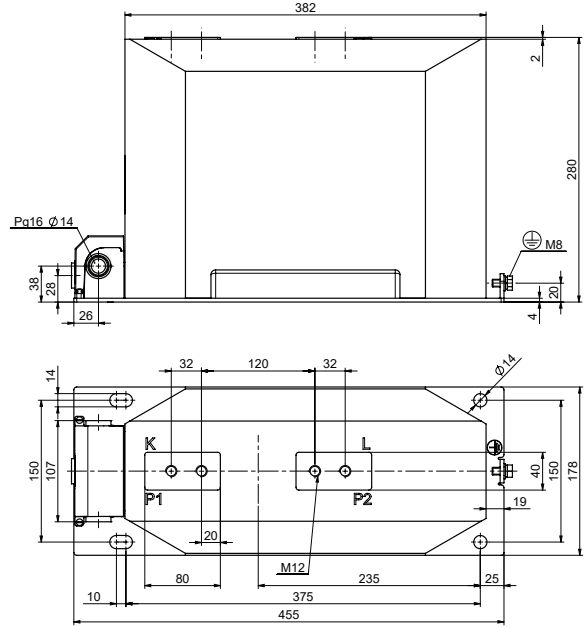
Weight: 31-35 kg
Creepage distance: 270 mm



Drawing n.	Polarity
1VL4600577R0101	P1 to secondary terminal
1VL4600577R0102	P2 to secondary terminal

TPU 60.21
TPU 63.21

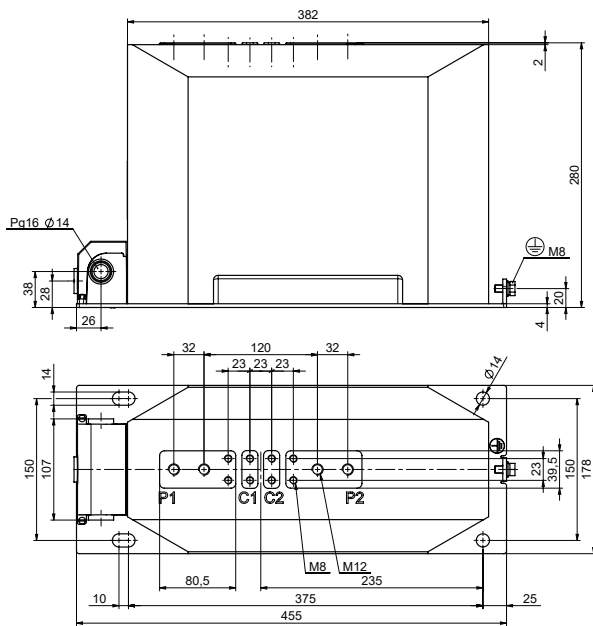
Weight: 43-49 kg
Creepage distance: 270 mm



Drawing n.	Polarity
44615080	P1 to secondary terminal
44615090	P2 to secondary terminal

TPU 60.22

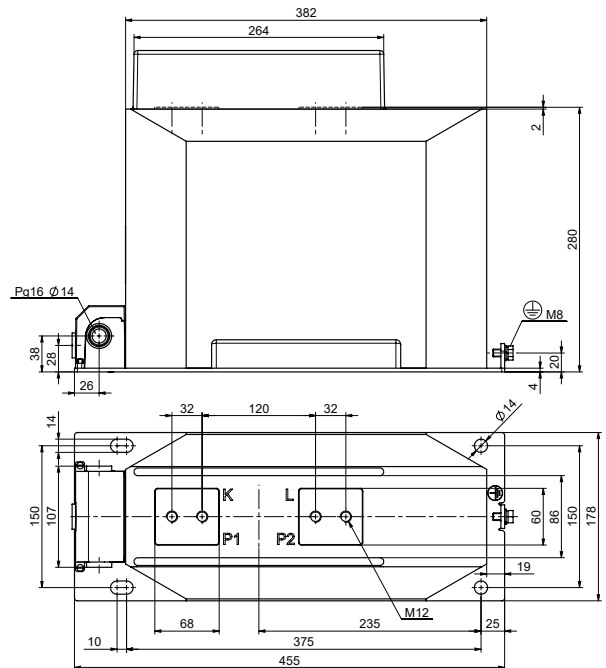
Weight: 43-49 kg
Creepage distance: 282 mm



Drawing n.	Polarity
44615100	P1 to secondary terminal
44615110	P2 to secondary terminal

TPU 60.23
TPU 63.23

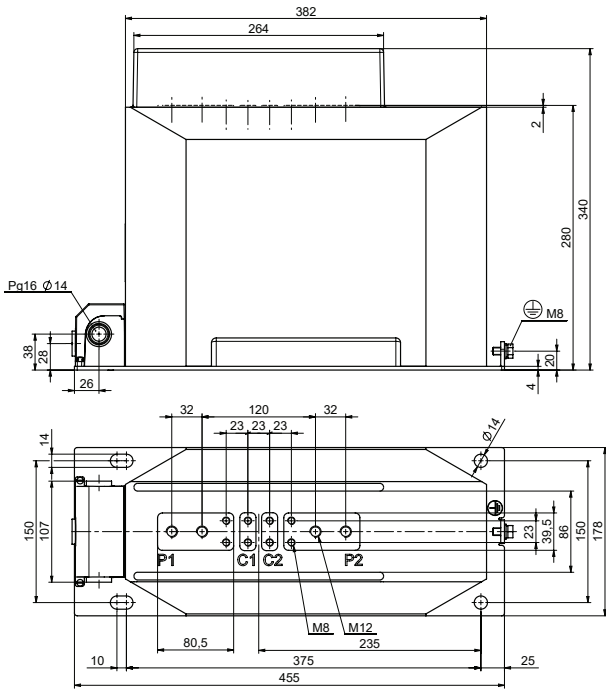
Weight: 43-49 kg
Creepage distance: 280 mm



Drawing n.	Polarity
44615120	P1 to secondary terminal
44615130	P2 to secondary terminal

TPU 60.24

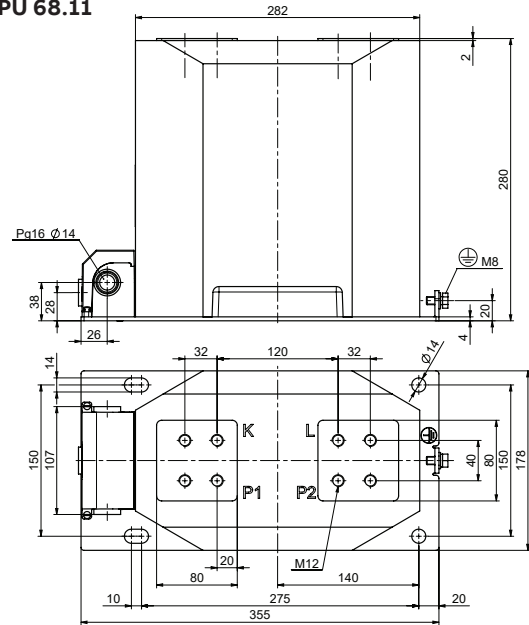
Weight: 43-49 kg
Creepage distance: 282 mm



Drawing n.	Polarity
44615140	P1 to secondary terminal
44615150	P2 to secondary terminal

TPU 64.11
TPU 65.11
TPU 66.11
TPU 67.11
TPU 68.11

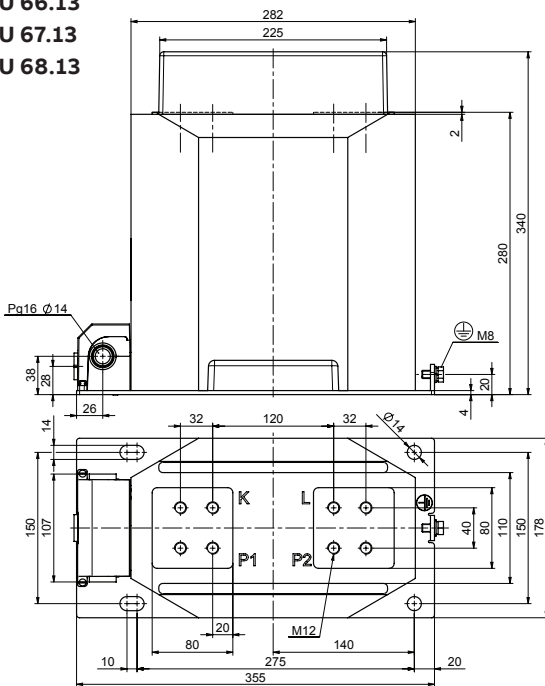
Weight: 36-41 kg
Creepage distance: 270 mm



Drawing n.	Polarity
44615160	P1 to secondary terminal
44615170	P2 to secondary terminal

TPU 64.13
TPU 65.13
TPU 66.13
TPU 67.13
TPU 68.13

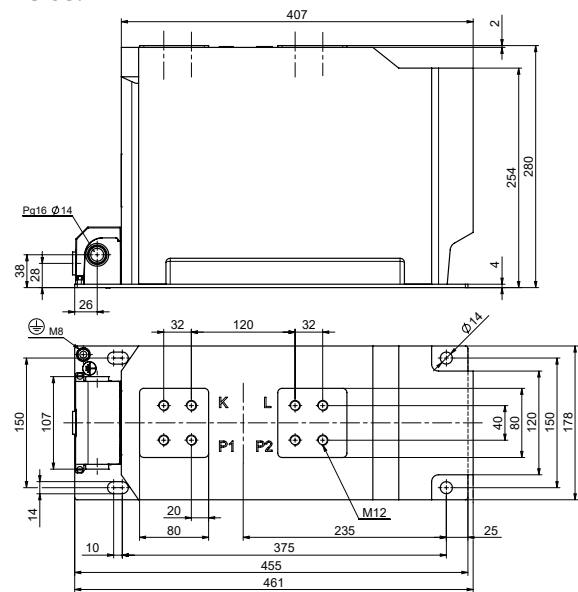
Weight: 36-41 kg
Creepage distance: 270 mm



Drawing n.	Polarity
44615180	P1 to secondary terminal
44615190	P2 to secondary terminal

TPU 64.21
TPU 65.21
TPU 66.21
TPU 67.21
TPU 68.21

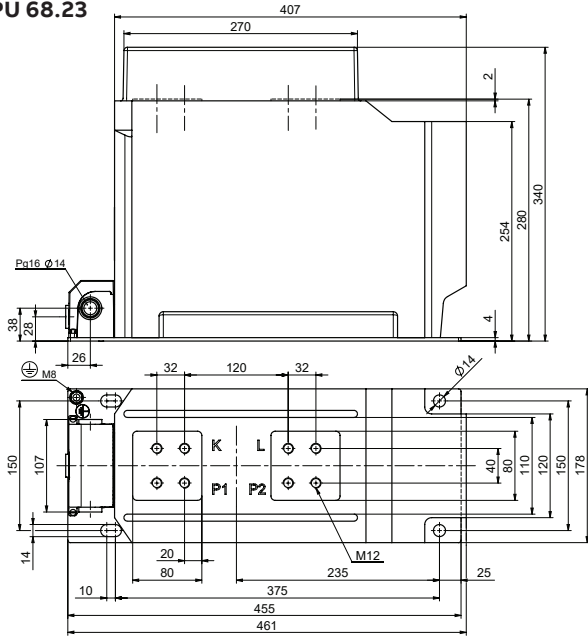
Weight: 50-57 kg
Creepage distance: 272 mm



Drawing n.	Polarity
44615200	P1 to secondary terminal
44615210	P2 to secondary terminal

TPU 64.23
TPU 65.23
TPU 66.23
TPU 67.23
TPU 68.23

Weight: 50-57 kg
 Creepage distance: 272 mm



Drawing n.	Polarity
44615220	P1 to secondary terminal
44615230	P2 to secondary terminal

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