

Safety instructions

1. Always consider transformer as a part of the circuit to which it is connected, and do not touch the leads and terminals or other parts of the transformer unless they are known to be grounded.
2. Always ground the metallic bases of instrument transformer.
3. Always ground one secondary terminal of the transformer. When the secondary of transformer is interconnected, there should be only one grounded point to prevent accidental paralleling with system grounding wire. In case of disconnection from the ground, the grounding screw has to be removed from the secondary terminal.

One should earth:

- a) the star point of the scheme of connections „Y”,
- b) the joint point of two transformers of the scheme of connections „V”,
- c) one of two joint points of Holmgren's scheme,
- d) start point of both „Y” in the differential longitudinal scheme.

If the transformers supply electricity meters it is recommended that the earthing point should be from the side of the flow of the electric energy. Ground terminal can be optionally chosen from each secondary winding in compliance with principles of scheme of connection. This connection can be done by screwing in the ground screw into an optional whole of the winding terminal (if it is possible).

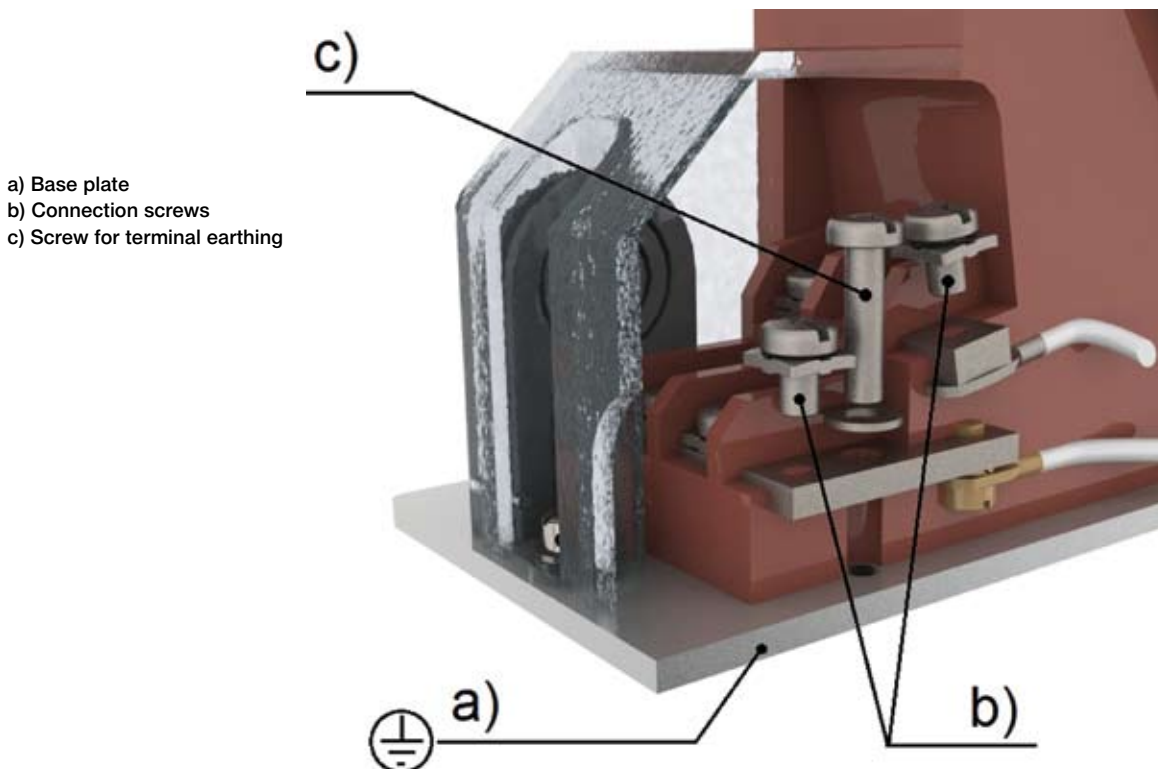
Recommended order of installing of the transformer in the current circuit:

- 1) bars to the transformer,
- 2) the transformer with bars to the base.
4. Always short-circuit the secondary of the current transformer, which is not currently in use to prevent secondary voltages which may be hazardous to personnel or damaging to the transformer's secondary. The secondary like this must be additionally grounded.
5. In case of the current transformer with voltage indication (coupling electrode included) is secondary terminal box equipped with PE terminal, which is connected with earthing screw to the base plate, which must be generally earthed. Connection between secondary terminal and base plate is shown on the picture "Crosssection of single line terminal box".



Attention: Terminal PE must be always earthed, this is hold generally, even if the base plate is removed. In case of disassembling the base plate, producer doesn't warranting the earthing.



Przekrój puszki zacisków wtórnych




Technical details

The technical details for each individual transformer are mentioned on the rating plate fastened on the transformer. Values mentioned on the rating plate must not be exceeded. Markings used on the rating plate are as follows:

Example of outdoor current transformer label 74x62 mm

ABB			SN: 1YMP011TPO00005
Type: TPO 73.11			
Order No.:340056#10	f:50Hz	Amb.T.:40°C	
1250//1/1/1/1 A/A/A/A/A ext.120%			
1S1-1S2	1250//1 A/A cl.PX Rct<50hm;Ek>165V;		
2S1-2S2	1250//1 A/A 10VA cl.10P10		
3S1-3S2	1250//1 A/A 15VA cl.0.2 FS5		
4S1-4S2	1250//1 A/A cl.PX Rct<50hm;Ek>165V;		
36/70/170kV	Ith:16kA/3s Idyn:40kA	t.cl.E	
IEC 60044-1	Made by ABB	2011	

Where:

Parameters	Description
1YMP011TPO00005	serial number
	serial number barcode EFN 128
340056#10	order number
TPO 73.11	transformer type code
50 Hz	rated frequency
40°C	ambient temperature
1250//1/1/1/1 A	rated transformation ratio
120%	extended primary current
1S1-1S2	terminal marking for core number 1
2S1-2S2	terminal marking for core number 2
3S1-3S2	terminal marking for core number 3
4S1-4S2	terminal marking for core number 4
10 VA, 15 VA	rated output
0.2S, 10P, PX	accuracy classes
FS5, 10	instrument security factor (FS), accuracy limit factor (ALF)
36/70/170 kV	rated insulation level (highest voltage for equipment / power-frequency withstand voltage / rated lightning-impulse voltage)
IEC 60044-1	referred standard(s)
16 kA/3 s 40 kA	rated short-time thermal current (thermal time) / rated dynamic current
2011	year of production
E	temperature class

Mounting

Following information is general and some details can differentiate according to type and variants of transformers. It is necessary to combine it with other technical and marketing specifications like catalogues, dimensional drawings and rating plate for specific transformer type.

Indoor current transformers

The mounting position of the indoor transformer can be freely chosen. The transformer is fixed using the mounting base with four screws M10 and washers. Fastening must be done on a smooth surface.

There is a M8 screw for earthing the transformer on the base plate.

Outdoor current transformers

The mounting position of the outdoor transformer is only horizontal. The other position can be agreed with the supplier. The transformer is fixed using two profiles with M12 screws. Fastening must be done on a smooth surface.

There is a M12 screw for grounding of current transformer.

Primary connection

Primary terminals of the current transformer are made of copper and they are silver or tin plated. There are M12 screws used for fastening of primary conductor to the terminal. For primary reconnectable transformers the ratio can be reconnected by changing position of the links fixed by M12 (outdoor) or M8 (indoor) screws without removing already fitted primary conductors.

Maximum allowed torques for screw connections of current transformers:

Screw	Max. torque [Nm]	Min. torque [Nm]
M5	3.5	2.8
M6	4	3
M8	20	16
M10	35	20
M12	70	56

Maximum allowed cantilever strength is: Current transformers 5000 N.

Primary reconnectable transformers

Primary Connection

Low ratio

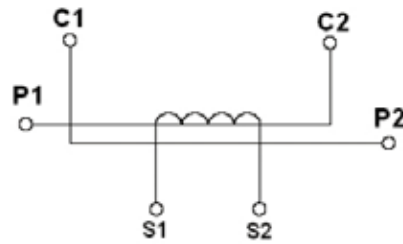
$$I_{pn} = I_p$$

C1 connected to C2

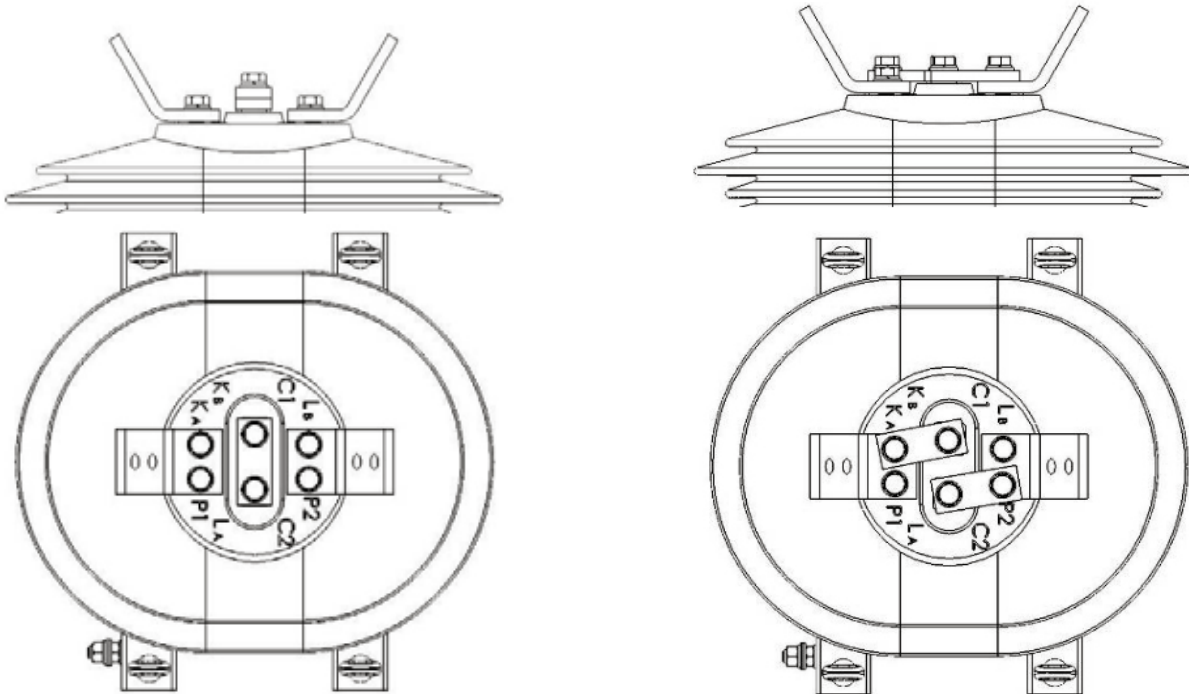
High ratio

$$I_{pn} = 2 \times I_p$$

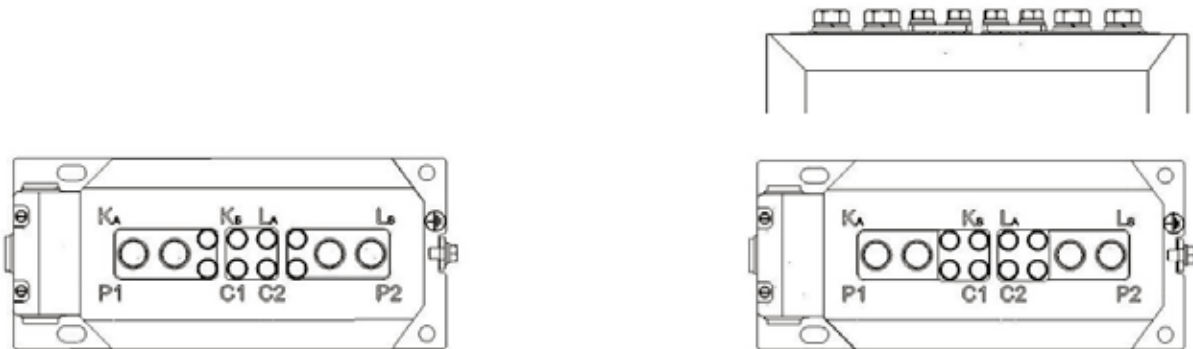
P1 connected to C1
and P2 connected to C2



TPO



TPU



In case of Bus CT, there must be always connected CT shielding to the primary bar. Connection must be done via wire 2,5 mm². One example of ISZ 17 shielding connection is described on the picture

