



TECHNICAL SPECIFICATION

NCEM C62-315

June 2022

Box for Current Transformer

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1. Application field

This specification applies to the boxes for the installation of current transformers used for energy metering where electricity is supplied in low voltage by CEM.

These boxes are referred to briefly as "CTI".

2. Rated values

- Rated voltage: 1 kV
- Number of phases: 3

The rated currents are:

200 A, 400 A, 600 A,

corresponding to the maximum rated currents of current transformers which can be installed.

3. Conditions of installation

CTI's shall be located close to the customer main switchboard, so that the equipment is in an easily accessible position from the floor.

Attached figures give indications on the layout of CTI's. These examples are not restrictive in terms of the number of outgoing.

4. Constructive features

4.1 Generalities

The boxes shall be designed and constructed in such a way as to ensure, in normal use, the correct operation of the equipment installed inside and to ensure the necessary safety conditions.

4.2 Types of boxes

For the purpose of this section, the following types of boxes are considered:

- Type CTI 252 - Box for current transformer, $I_n \leq 200A$, where the incoming and outgoing connector is in insulated cables;
- Type CTI 302 - Box for current transformer, $I_n \leq 400A$, where the incoming and outgoing connector is in insulated conductors or cables;
- Type CTI 352 - Box for current transformer, $I_n \leq 600A$, where the incoming and outgoing connector is in insulated conductors or cables;

The boxes shall comply with those indicated in attached figures, considering that the

indicated dimensions are understood as minimum.

The door, hinges and sealing system shall be of the type indicated in the attached figures.

Type of Box	Enclosure		
	Width	Height	Depth
CTI 252	250	500	190
CTI 302	300	500	190
CTI 352	350	500	190

4.3 Constitution

The CTI's are made up of two distinct parts:

- a) Enclosure, intended to ensure protection of the equipment installed therein;
- b) Installation plate equipped with the necessary equipment for the installation of the current transformers, and which attaches to the enclosure in a removable way.

4.4 Enclosure

- Materials

The enclosure of the box shall be made of metal sheet, polyester or other suitable material. In case of galvanized sheet steel, it is required a minimum 1.5 mm thickness and a galvanizing thickness not less than 20 μm .

- Protection against corrosion

The enclosure should be protected against corrosion by observing the following:

- A zinc-rich primer coating (zinc powder or zinc chromate), a wash-primer coating and a finish enamel coating should be applied successively to the carefully cleaned and degreased sheet. A coating of finish marine type enamel shall be applied (Transocean Marine Paint, Hammer-Tone finish, color 916-05, or equivalent type from another manufacturer, but of similar color).

The hinges, screws, nuts and washers should preferably be of stainless material or be effectively protected against corrosion by galvanizing and passivation.

- Opening for passage of electrical conduits

The opening for passage of electrical conduits should be painted, immediately after its execution, with a coat of primer of the type used in the painting of the boxes.

The passage of the conduits will be carried out:

- a) For tube, nozzles or stoppers are used with suitable cross-section of the tube, and are in thermoplastic material;
- b) For multicore cable, glands of adequate diameter are used;
- c) For single core cable, glands of suitable diameter are used and applied on a bakelite plate, fixed by an appropriate device to the respective CTI;
- d) For copper bar from CPS, bakelite plate are used as busbar support and with opening for passage of neutral and protective conductors, fixed by device appropriate to the respective CPS.

- Installation plate

The installation plate should have the shape and dimensions indicated in the attached figures. The plate is constructed of bakelite with a minimum 5 mm thickness.

- Apparatus

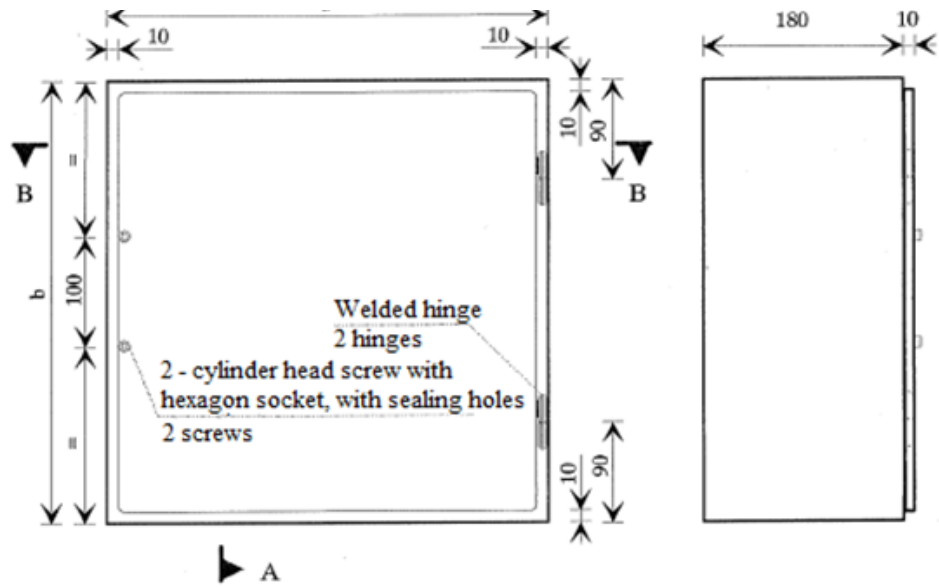
The apparatus required the installation of current transformers should be as shown in the attached figures.

- Electrical equipment

The CTI's are intended to contain the measurement transformers to be supplied by CEM, namely the low voltage current transformers to be used with electric energy meters.

Compartments for Current Transformers

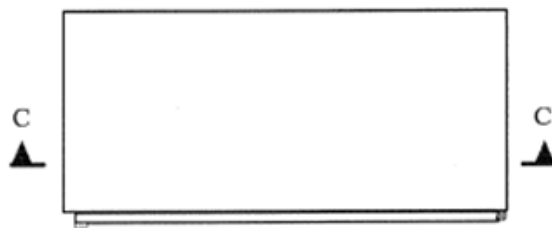
Enclosure
(dimensions in mm)



A

Front View

Side View



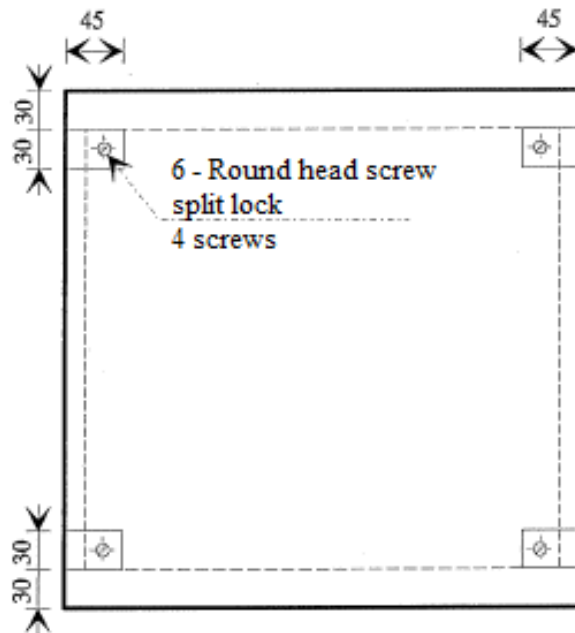
C

C

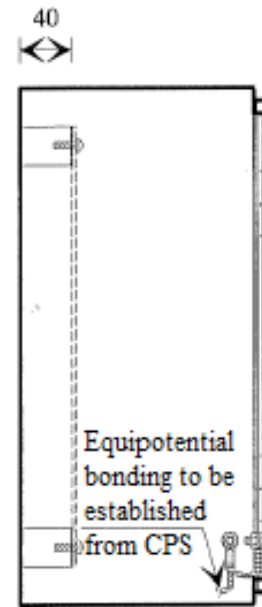
Top View

	a	b
CTI 252	250	500
CTI 302	300	500
CTI 352	350	500

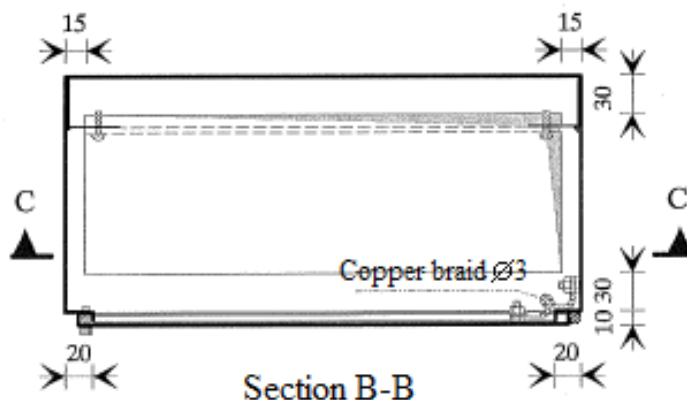
Enclosure
(dimensions in mm)



Section C-C



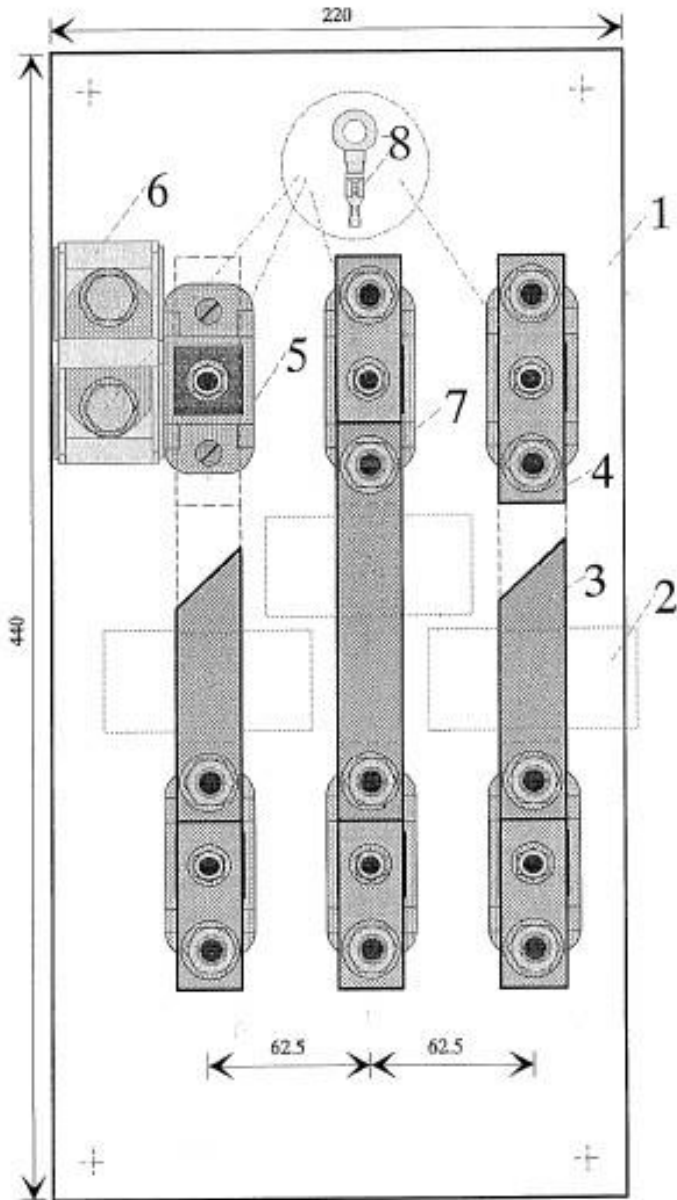
Section A-A



Section B-B

Type CTI 252

Apparatus
(dimensions in mm)



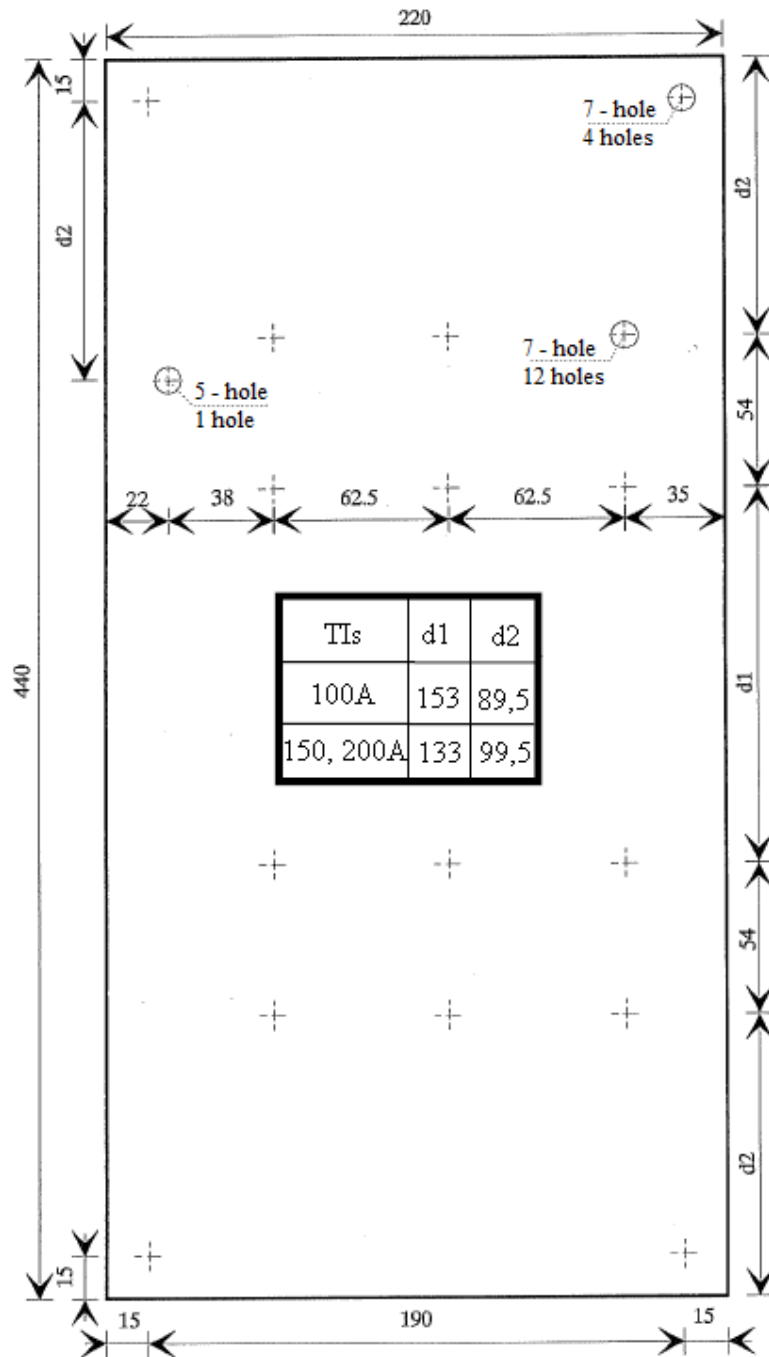
Type CTI 252

Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
1	1	Installation plate	5 mm thickness bakelite	
3	2	Current transformer	100/5 A 150/5 A 200/5 A	NCEM C42-301 (provided by CEM)
3	3	Primary busbar of CT	Cu 25x5	Tinned
3	4	Connection busbar of CT	Cu 25x5	Tinned
3	5	Low voltage Insulator	Porcelain Insulator	"MEM – 10BM"
1	6	Neutral connection terminal	Isolated terminal	"IZUMI – BA811S"
12	7	Hexagonal headed screw M10x30 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Zinc and passivated
4	8	Connection terminal	Copper	For connection of conductors of voltage meter

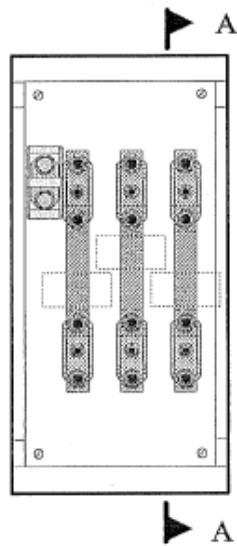
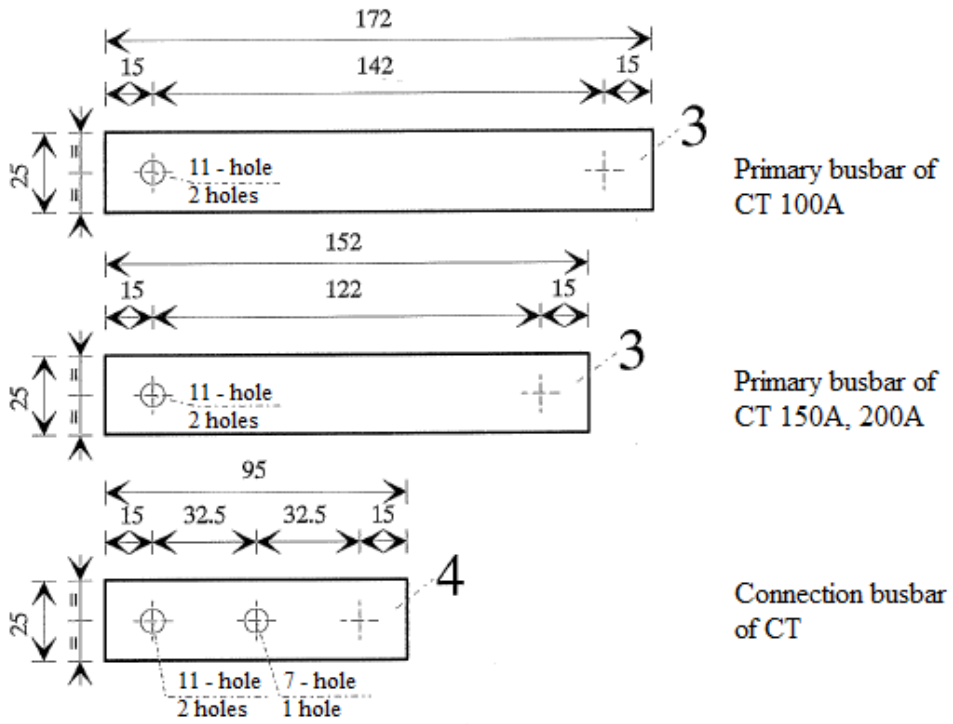
Type CTI 252

Installation plate
(dimensions in mm)

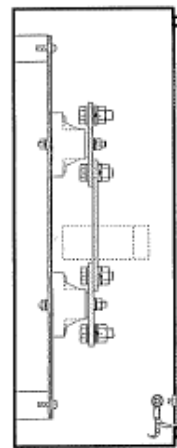


Type CTI 252

Detail
(dimensions in mm)



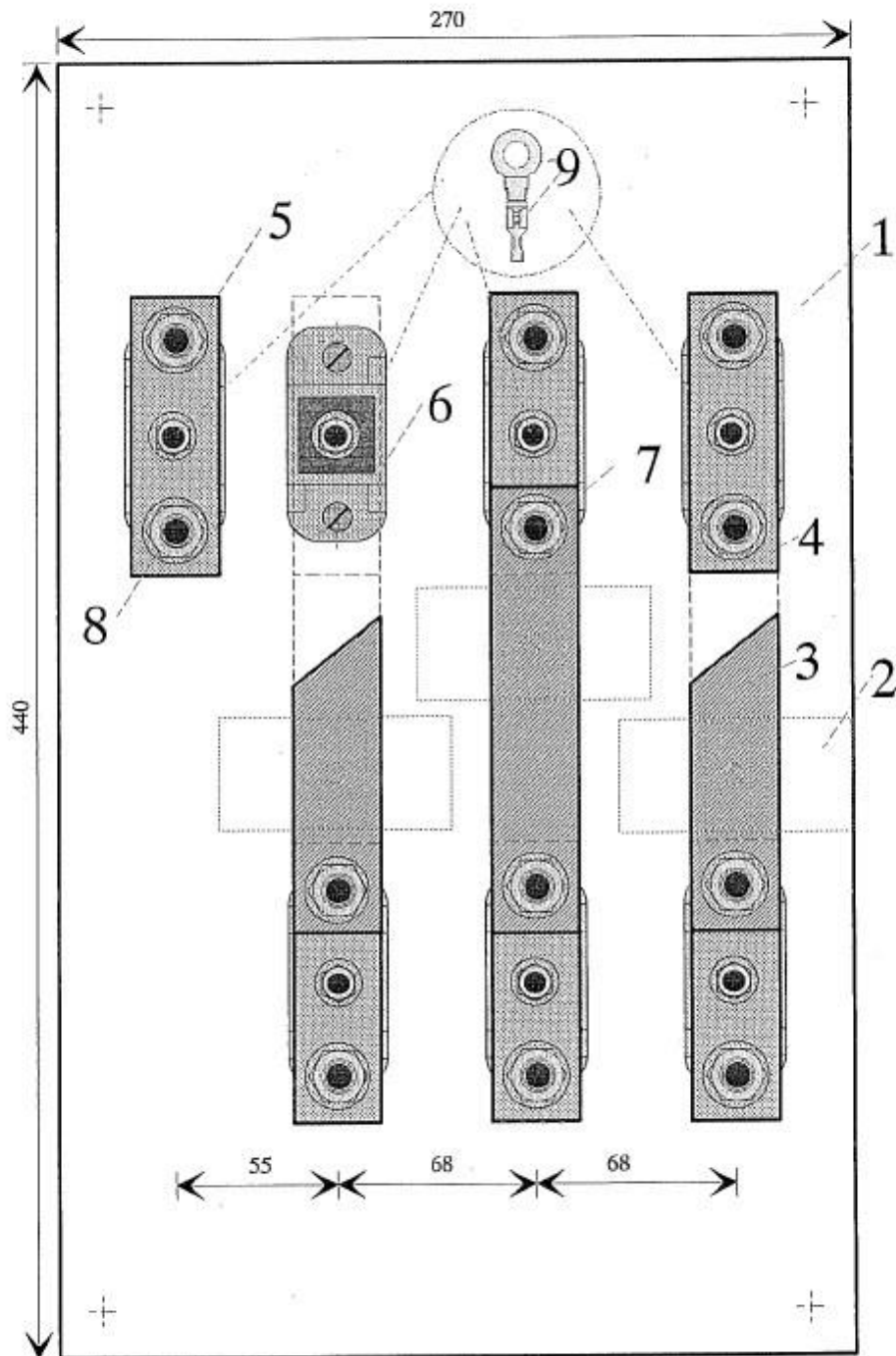
Interior View



Section A-A

Type CTI 302

Apparatus
(dimensions in mm)



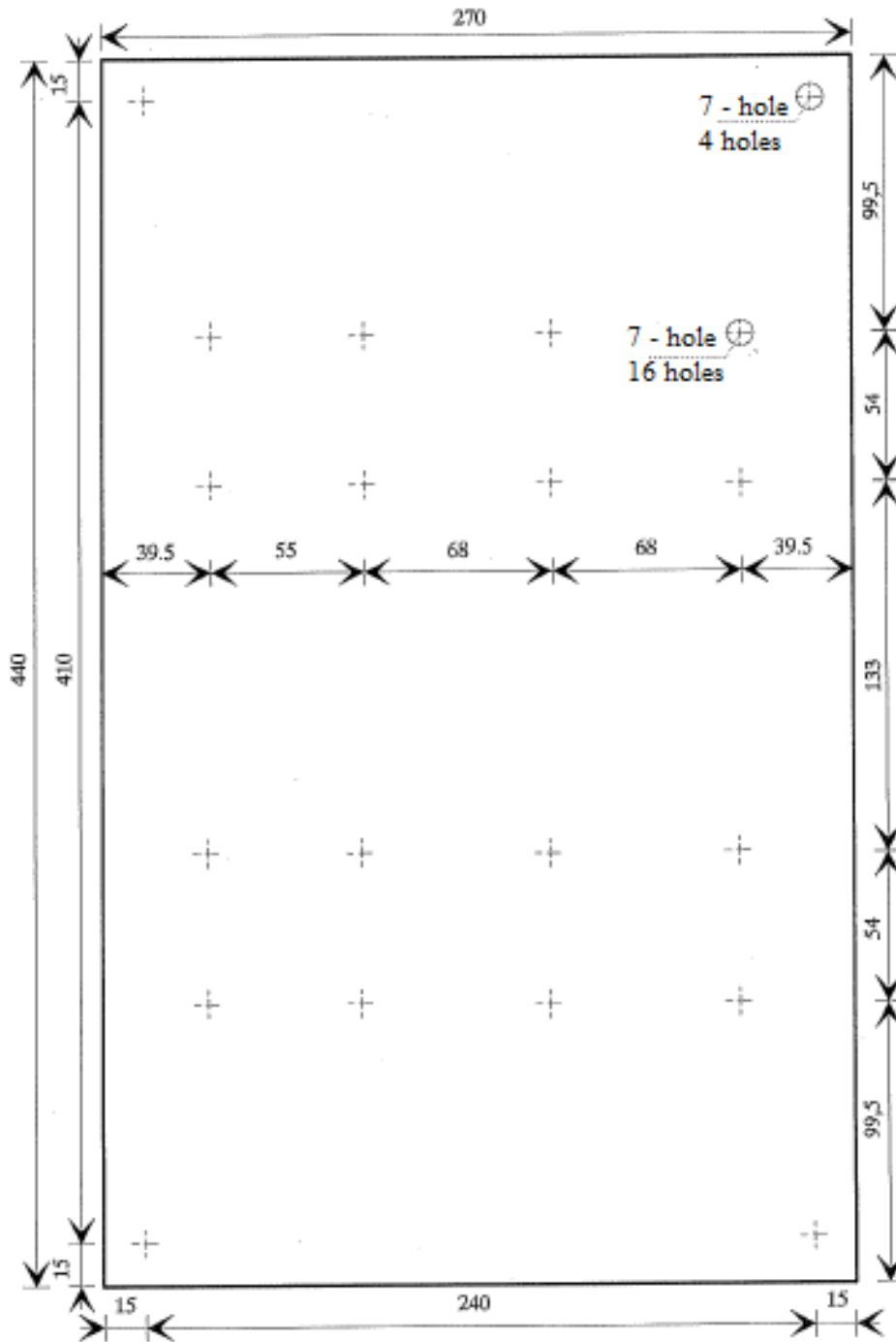
Type CTI 302

Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
1	1	Installation plate	5 mm thickness	
3	2	Current transformer	300/5 A 400/5 A	NCEM C42-301 (provided by
3	3	Primary busbar of CT	Cu 30x10	Tinned
3	4	Connection busbar of CT	Cu 30x10	Tinned
1	5	Neutral connection busbar	Cu 30x5	Tinned
4	6	Low voltage Insulator	Porcelain Insulator	"MEM – 10BM"
12	7	Hexagonal headed screw M10x40 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Zinc and passivated
2	8	Hexagonal headed screw M10x30 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Zinc and passivated
4	9	Connection terminal	Copper	For connection of conductors of

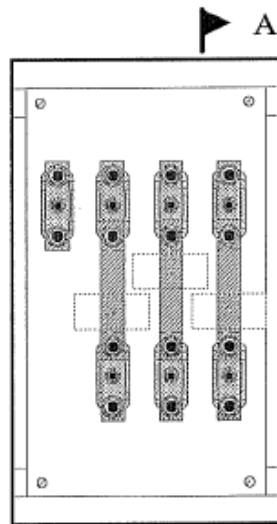
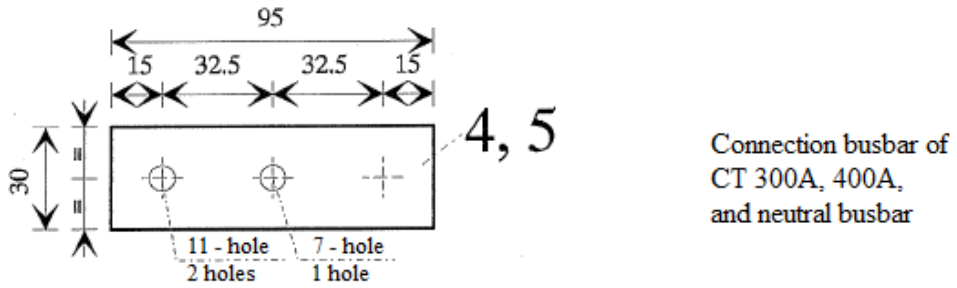
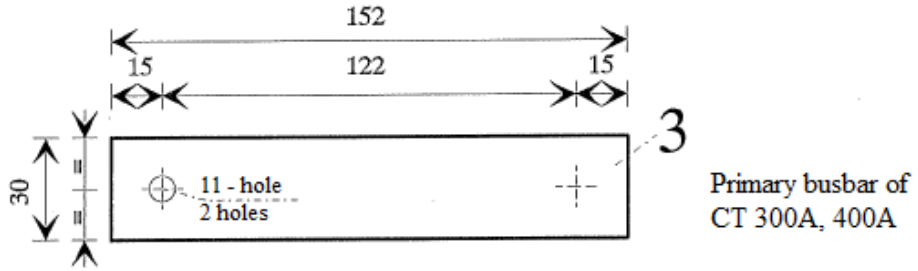
Type CTI 302

Installation plate
(dimensions in mm)

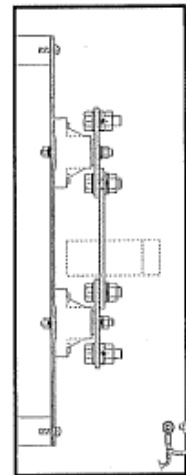


Type CTI 302

Detail
(dimensions in mm)



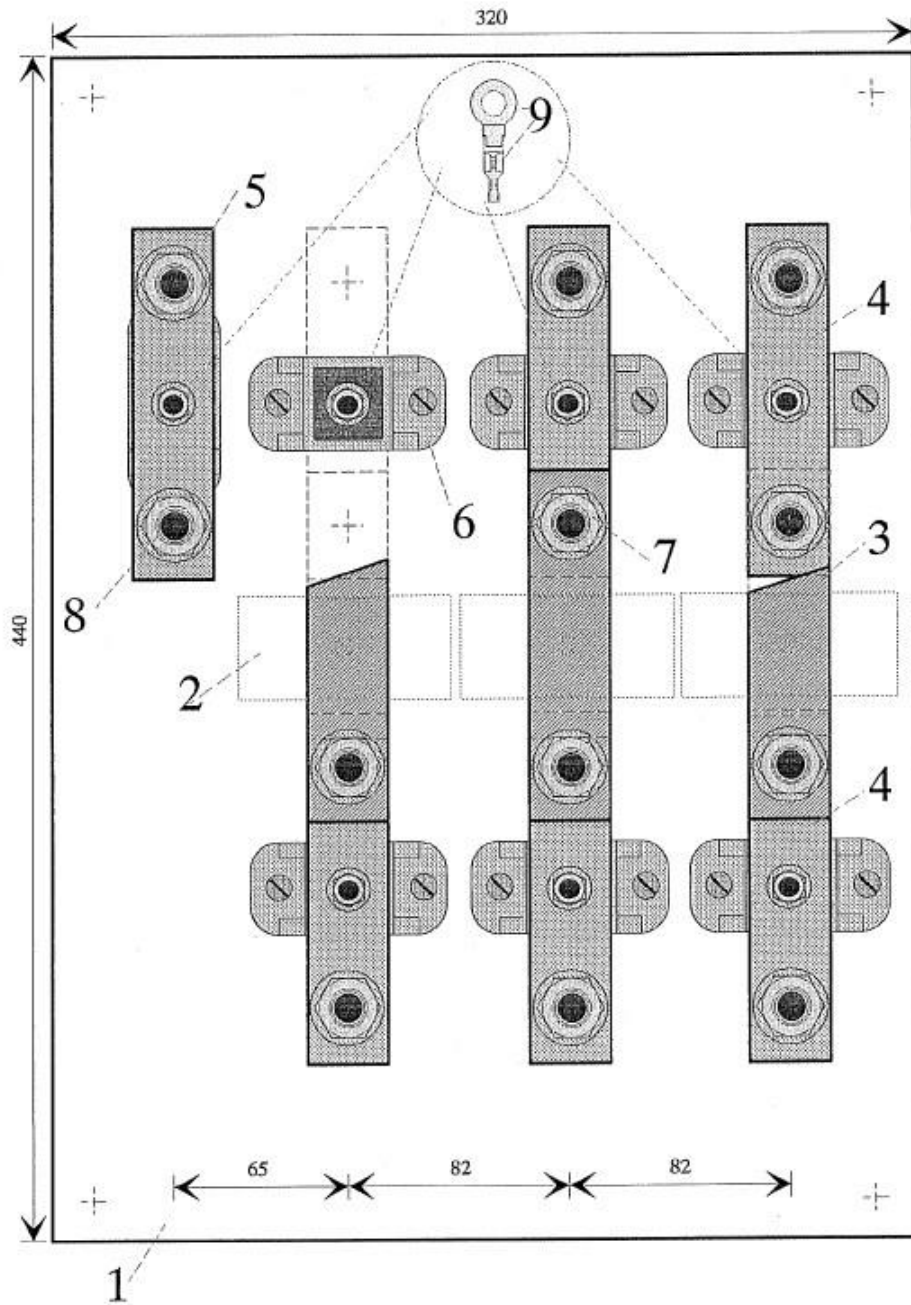
Interior View



Section A-A

Type CTI 352

Apparatus
(dimensions in mm)



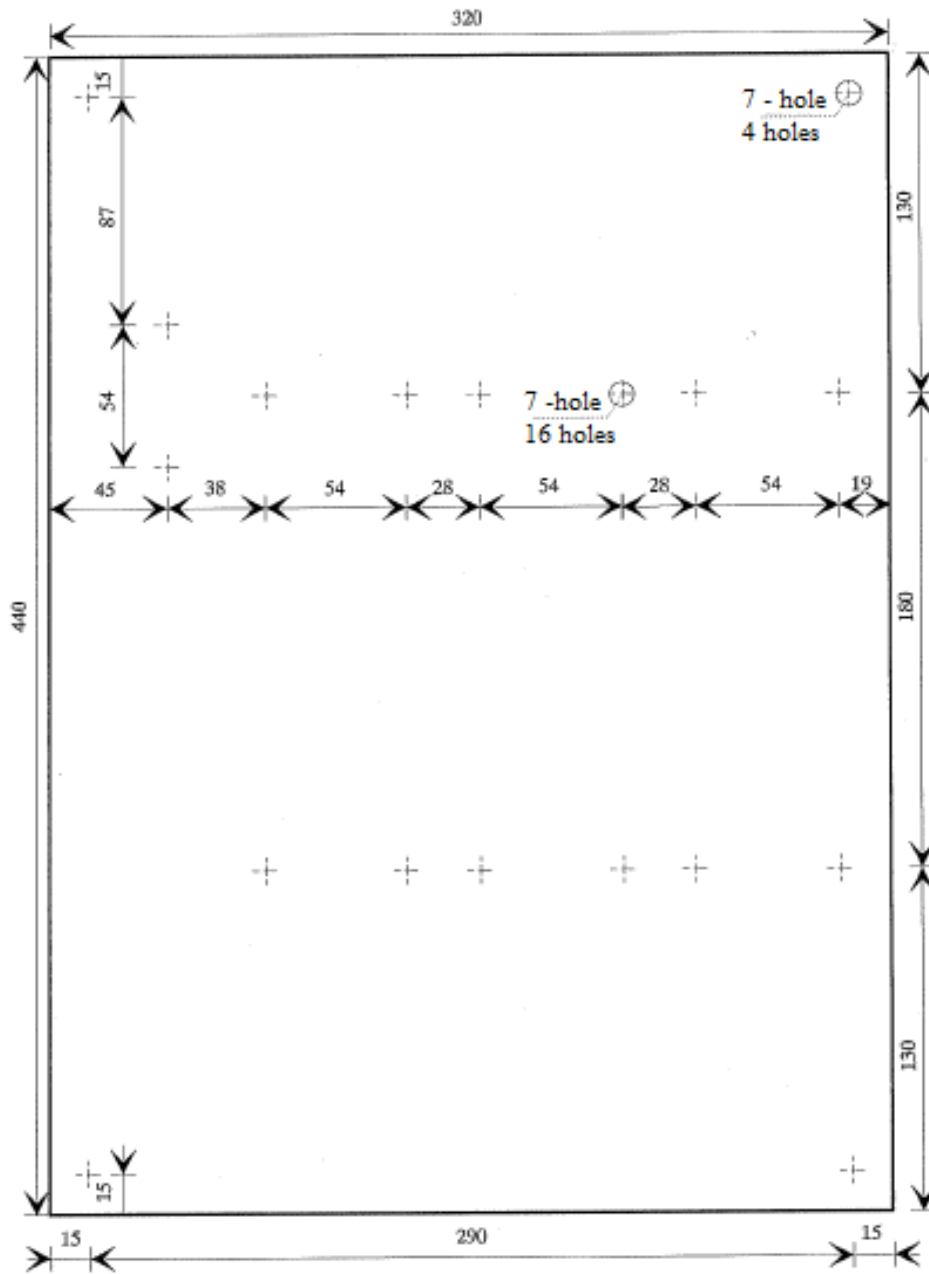
Type CTI 352

Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
1	1	Installation plate	5 mm thickness	
3	2	Current transformer	500/5 A 600/5 A	NCEM C42-301 (provided by
3	3	Primary busbar of CT	■ Cu 30x10	Tinned
3	4	Connection busbar of CT	■ Cu 30x10	Tinned
1	5	Neutral connection busbar	■ Cu 30x5	Tinned
4	6	Low voltage insulator	Porcelain insulator	"MEM – 10BM"
12	7	Hexagonal headed screw M12x45 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Zinc and passivated
2	8	Hexagonal headed screw M12x35 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Zinc and passivated
4	9	Connection terminal	Copper	For connection of conductors of

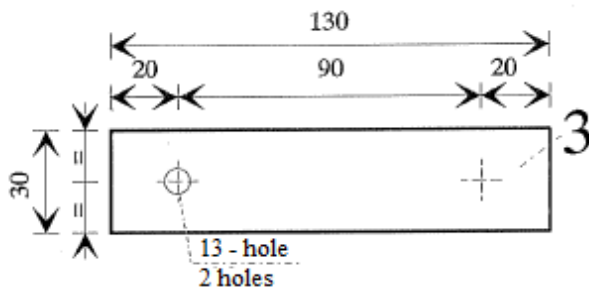
Type CTI 352

Installation plate
(dimensions in mm)

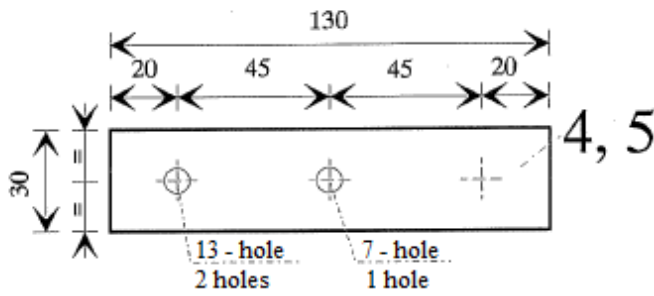


Type CTI 352

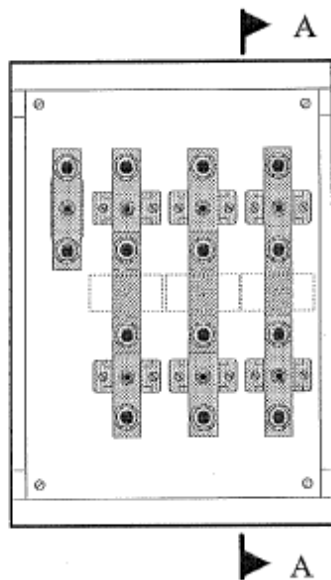
Detail
(dimensions in mm)



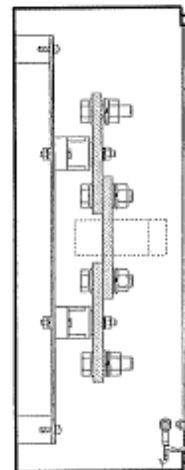
Primary busbar of
CT 500A, 600A



Connectin busbar of
CT 500A, 600A,
and neutral busbar



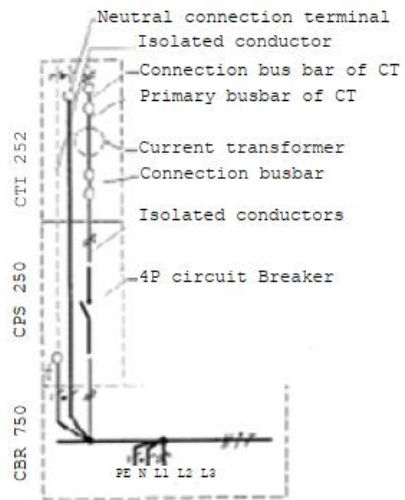
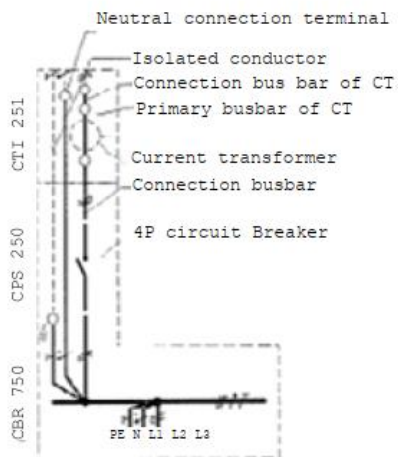
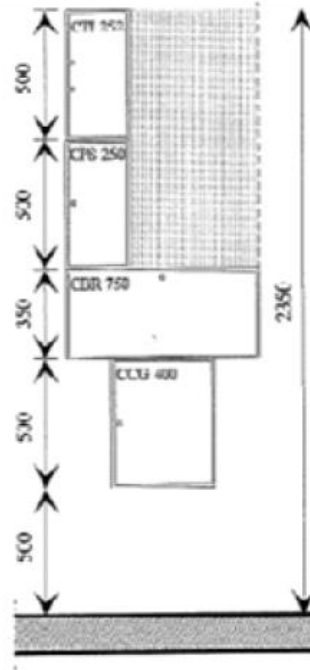
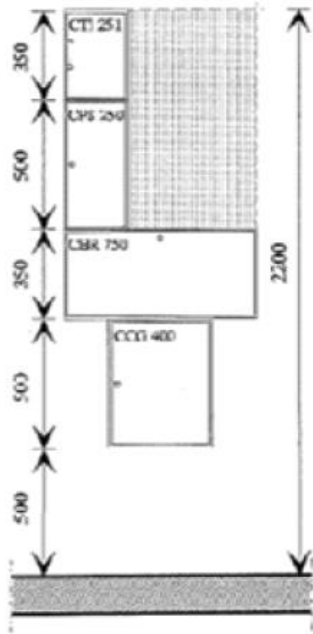
Interior View



Section A-A

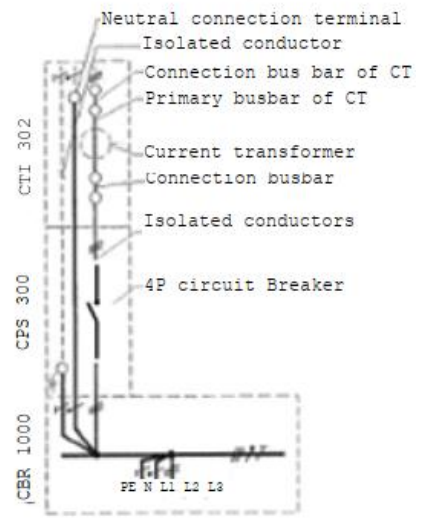
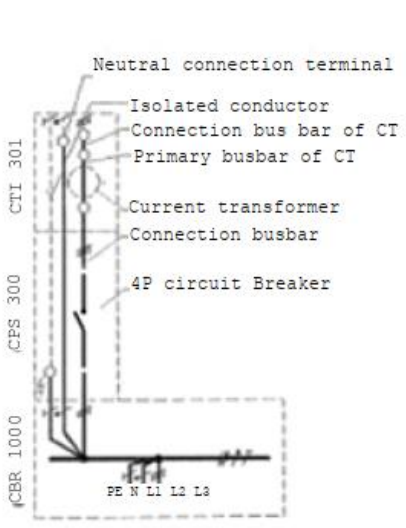
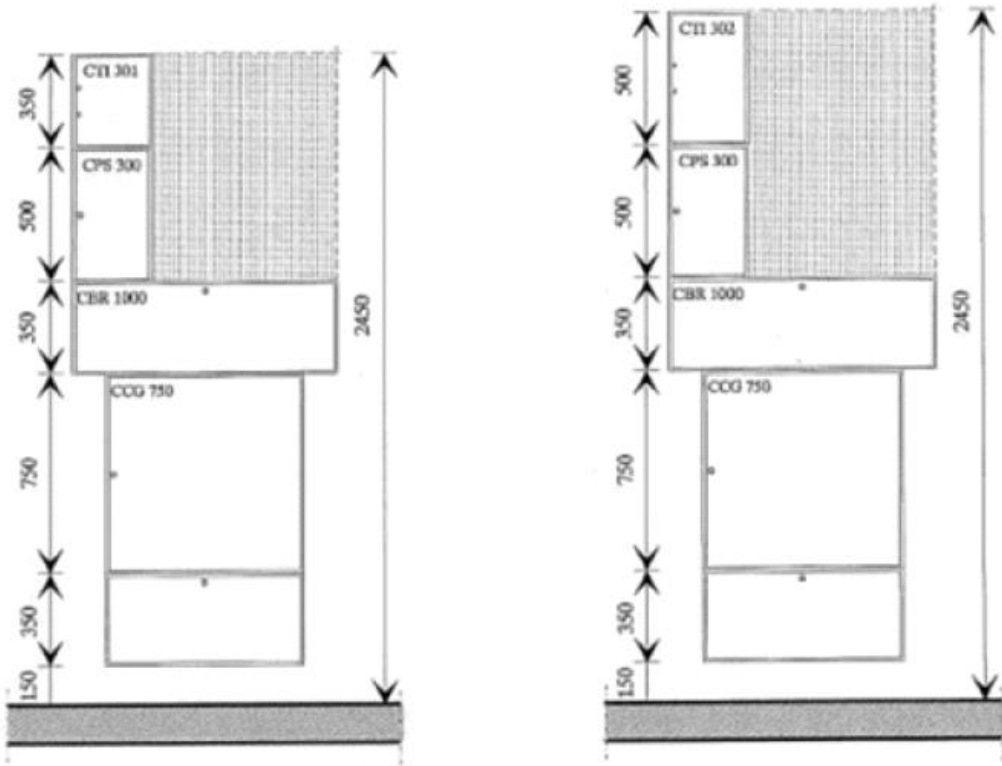
Installation examples

Type CTI 251/2 , $I \leq 200$
(dimensions in mm)



Type CTI 301/2 · I_≤400A

(dimensions in mm)



Type CTI 351/2, $I \leq 600A$
 (dimensions in mm)

