



# **TECHNICAL SPECIFICATION**

**NCEM C62-316**

**June 2022**

**Compartment for Current  
Transformer**

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## 1. Application field

This specification sets requirements for the indoor metallic switchboards with compartments for the installation of current transformers used for energy metering where electricity is supplied in low voltage by CEM.

These compartments are referred to briefly as "CPTI".

## 2. Rated values

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

The rated currents are:

200 A, 600 A, 800 A, 1000 A, 1500 A, 2000 A, 2500 A,  
corresponding to the maximum rated currents of current transformers, which can be installed.

## 3. Constructive features

### 3.1 Generalities

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

### 3.2 Types of compartments

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

- Type CPTI 22 – Compartment for current transformers,  $I_n \leq 200A$ , in which the connector is in insulated cables;
- Type CPTI 62 – Compartment for current transformers,  $I_n \leq 600A$ , in which the connector is in insulated conductors or cables;
- Type CPTI 80 – Compartment for current transformers,  $I_n = 800A$ , in which the connector is in copper bar;
- Type CPTI 100 – Compartment for current transformers,  $I_n = 1000A$ , in which the connector is in copper bar;
- Type CPTI 150 – Compartment for current transformers,  $I_n = 1500A$ , in which the connector is in copper bar;
- Type CPTI 200 – Compartment for current transformers,  $I_n = 2000A$ , in

- which the connector is in copper bar;
- Type CPTI 250 – Compartment for current transformers,  $I_n=2500A$ , in which the connector is in copper bar;

Type of Compartment	Enclosure		
	Width	Height	Depth
CPTI 22	350	400	190
CPTI 62	350	500	190
CPTI 80	400	350	190
CPTI 100	500	350	190
CPTI 150	450	350	230
CPTI 200	500	350	230
CPTI 250	500	400	230

The compartments shall comply with the 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.

### 3.3 Constitution

The compartments are made up of two distinct parts:

- Enclosure, intended to ensure protection of the equipment installed therein;
- Apparatus, necessary for the installation of the current transformers.

### 3.4 Enclosure

- Materials

The enclosure of the compartments shall be constructed of galvanized sheet steel with a minimum 1.5 mm thickness and a plating thickness of not less than 20  $\mu\text{m}$ .

- 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 compartments;
  - d) For copper bar, a bakelite plate is used as busbar support, fixed a device appropriate to the respective CPS.
- Apparatus

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

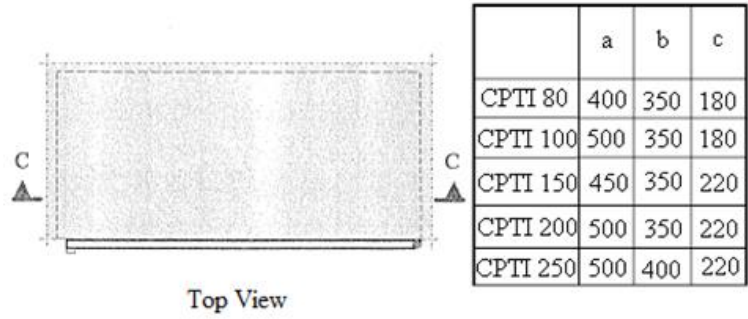
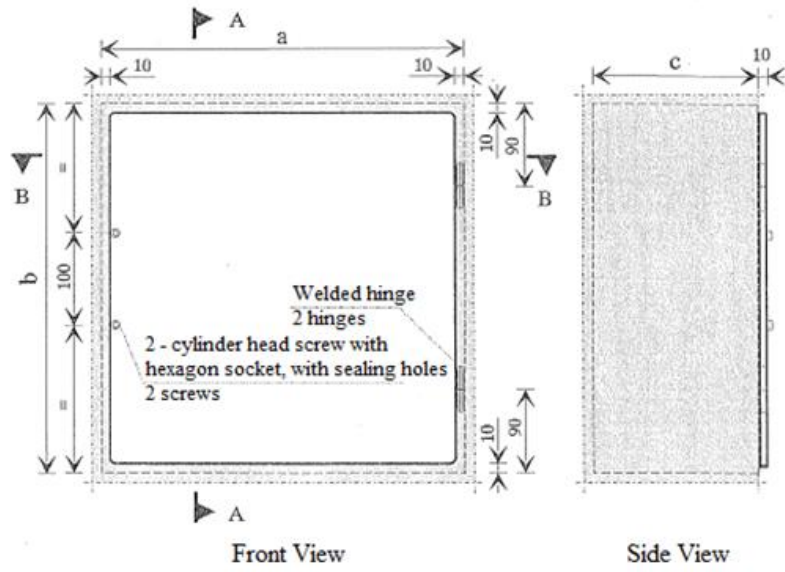
- Electrical equipment

The compartments 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 transformer

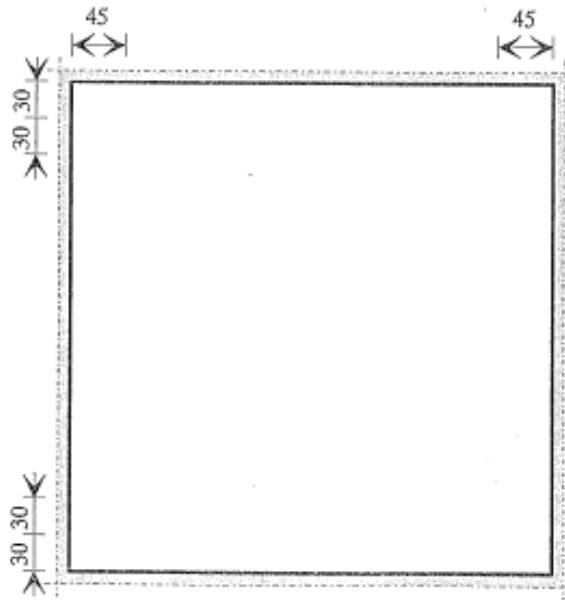
Enclosure

Compartment without installation plate  
(dimensions in mm)

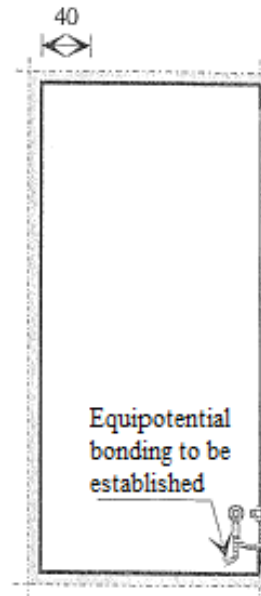


# Enclosure

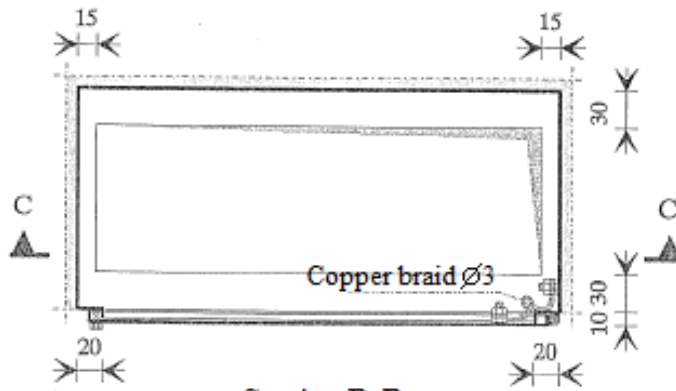
Compartment without installation plate  
(dimensions in mm)



Section C-C



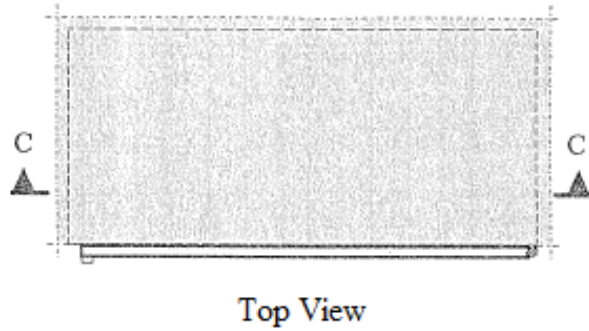
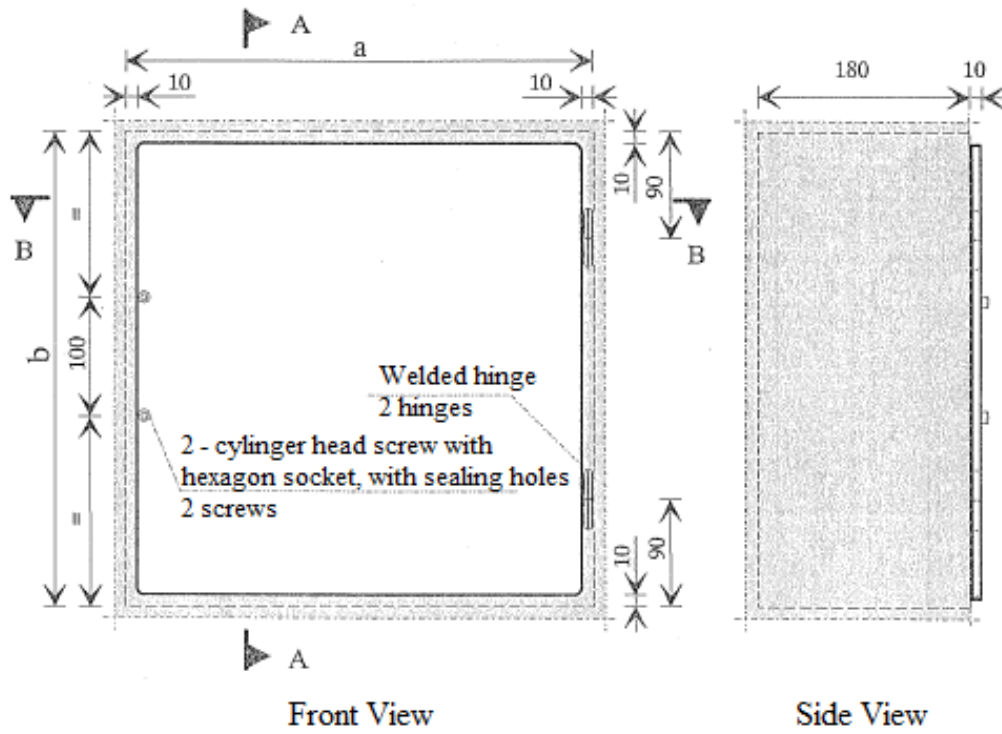
Section A-A



Section B-B

# Enclosure

Compartment with installation plate  
(dimensions in mm)

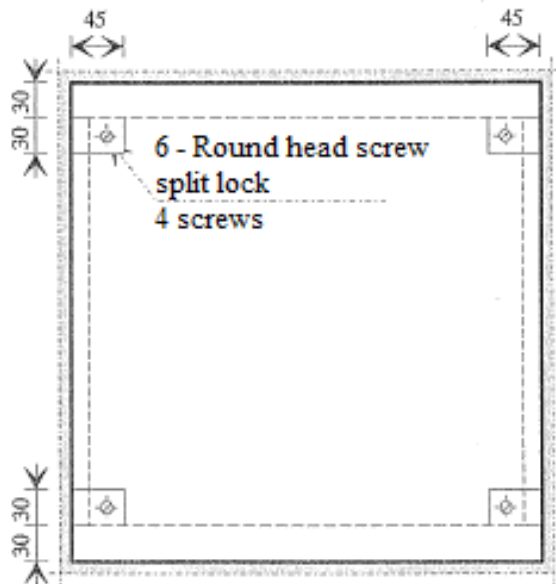


	a	b
CPTI 22	350	400
CPTI 62	350	500

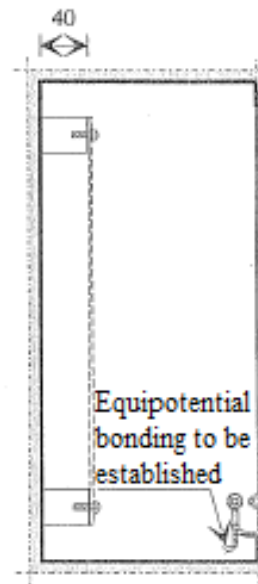


# Enclosure

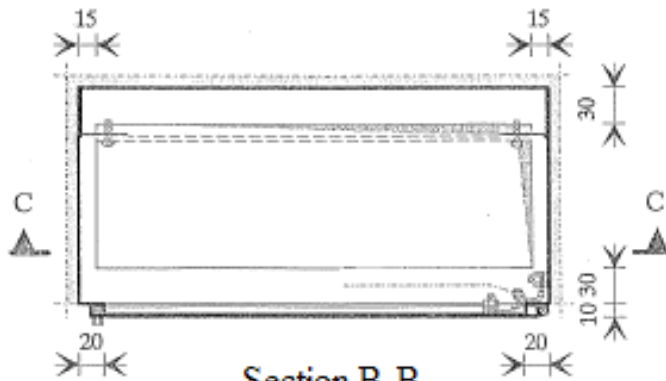
Compartment with installation plate  
(dimensions in mm)



Section C-C



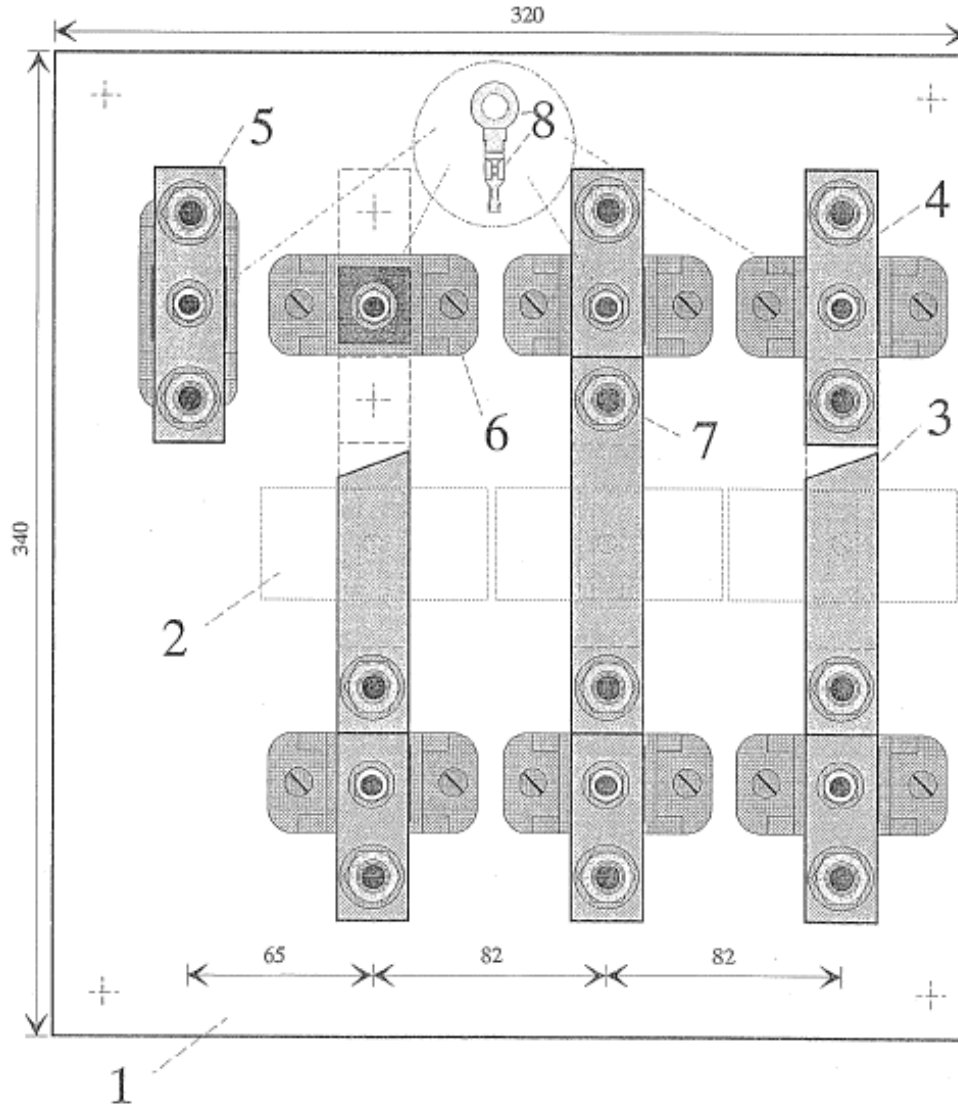
Section A-A



Section B-B

# Apparatus for Type CPTI 22

Presentation  
(dimensions in mm)



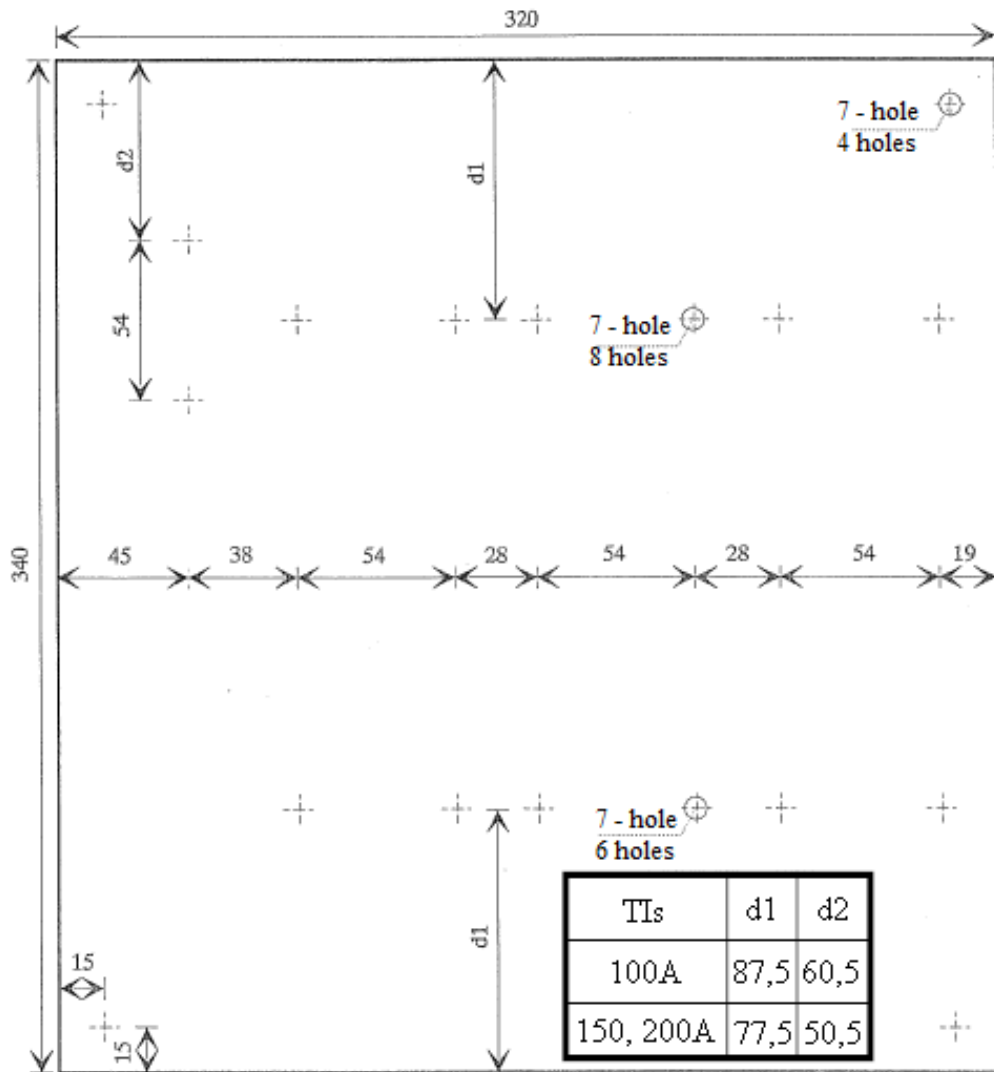
## Apparatus for Type CPTI 22

### 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
6	4	Connection busbar of CT	■ Cu 25x5	Tinned
1	5	Connection busbar of neutral conductor	■ Cu 25x5	Tinned
7	6	Low voltage insulator	Porcelain insulator "MEM – 10BM"	
14	7	Hexagonal headed screw M10x35 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	8	Connection terminal	Copper	For connection of conductors of voltage meter

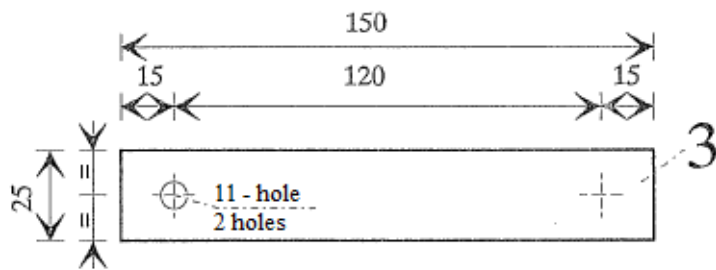
# Apparatus for Type CPTI 22

Installation plate  
(dimensions in mm)

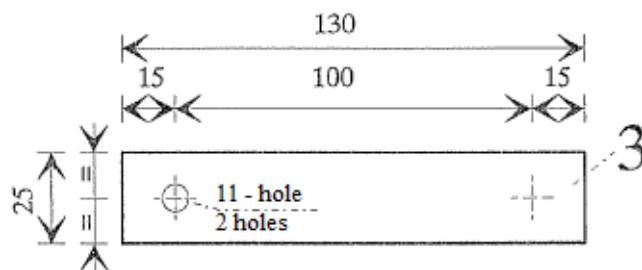


Apparatus for Type CPTI 22

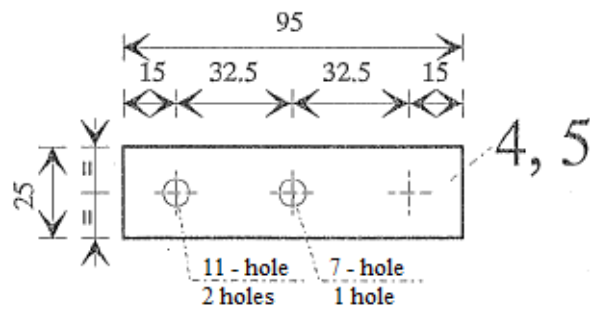
Detail  
(dimensions in mm)



Primary busbar  
for CT 100A



Primary busbar  
for CT 150A, 200A

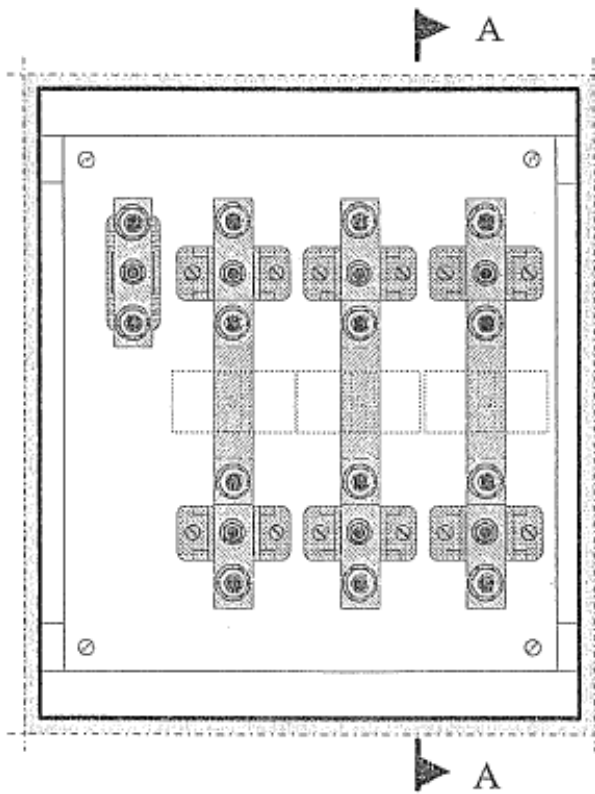


Connection busbar, for  
CT 100A, 150A, 200A

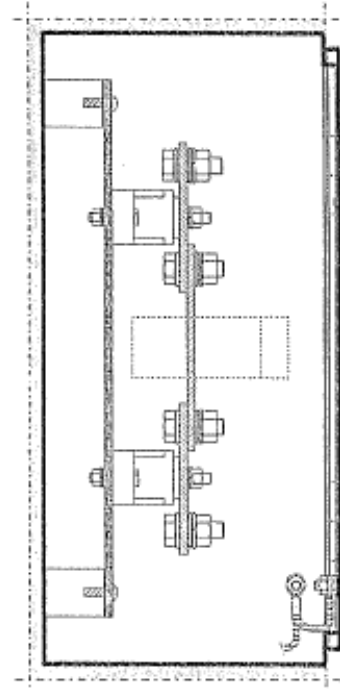
Connectin busbar of  
neutral conductor

Apparatus for Type CPTI 22

Detail  
(dimensions in mm)



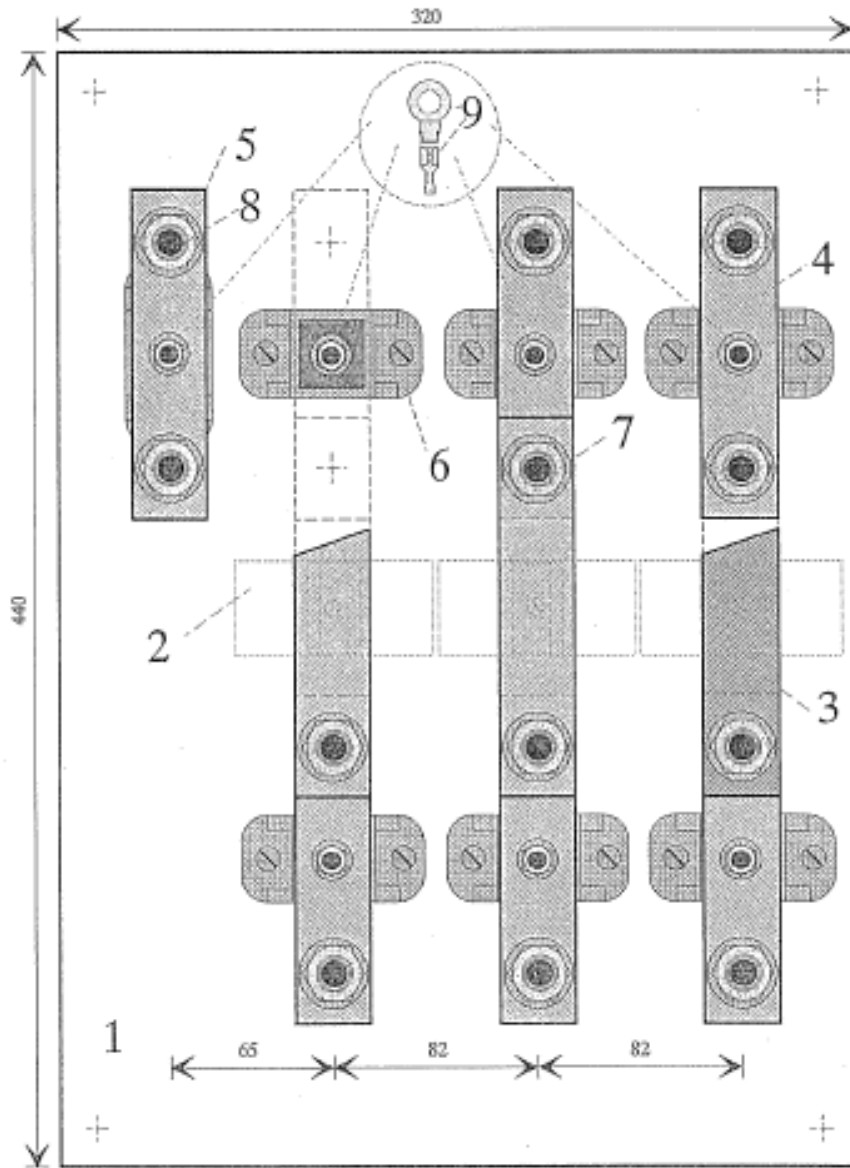
Interior View



Section A-A

Apparatus for Type CPTI 62

Presentation  
(dimensions in mm)



## Apparatus for Type CPTI 62

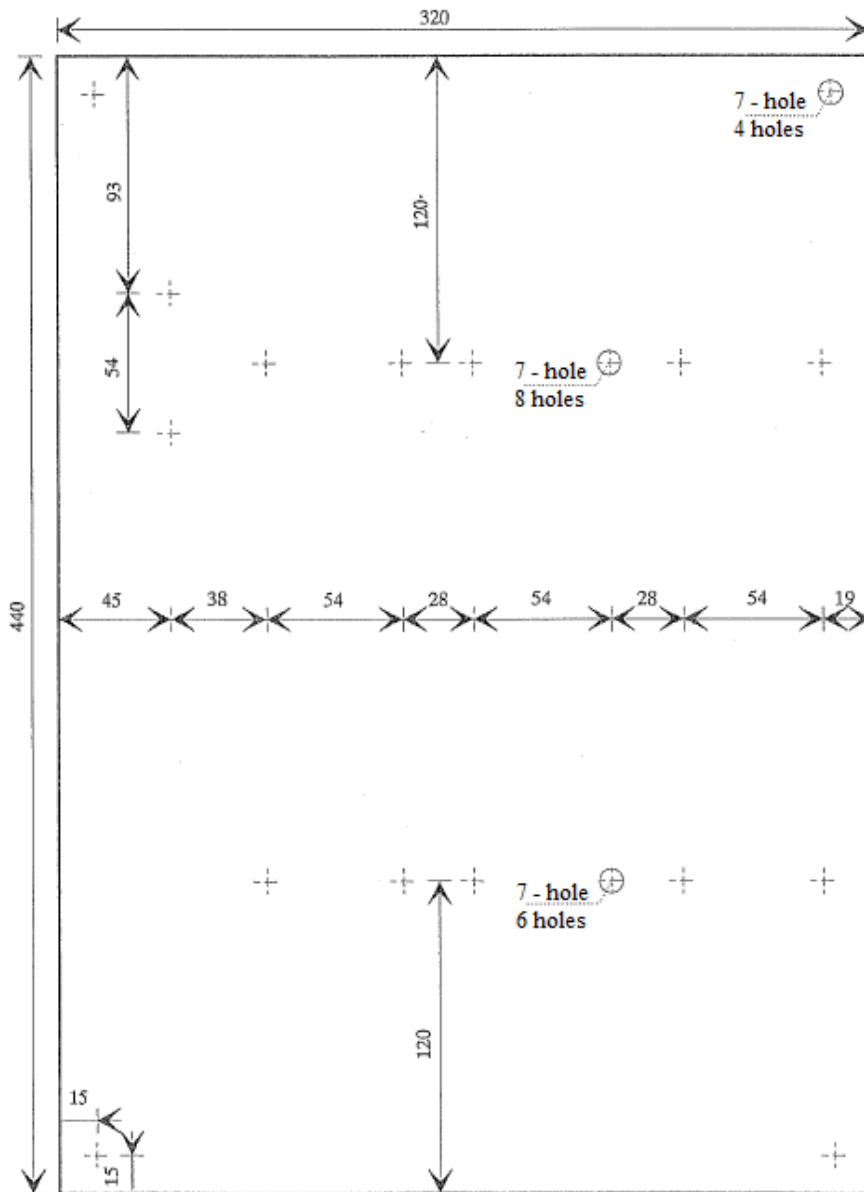
### Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
1	1	Installation plate	5 mm thickness bakelite	
3	2	Current transformer	250/5 A 300/5 A 400/5 A 500/5 A 600/5 A	NCEM C42-301 (provided by CEM)
3	3	Primary busbar of CT	■ Cu 30x10	Tinned
6	4	Connection busbar of CT	■ Cu 30x10	Tinned
1	5	Connection busbar of neutral conductor	■ Cu 30x5	Tinned
7	6	Low voltage insulator	Porcelain insulator "MEM – 10BM"	
12	7	Hexagonal headed screw M12x50 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
2	8	Hexagonal headed screw M12x40 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	9	Connection terminal	Copper	For connection of conductors of voltage meter



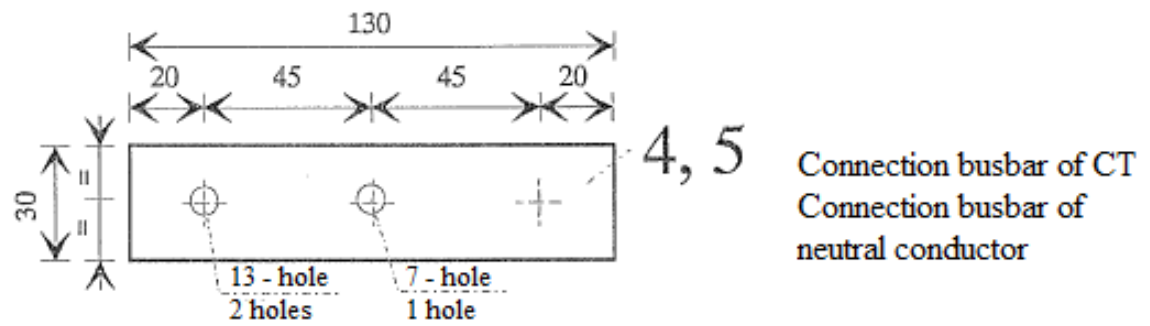
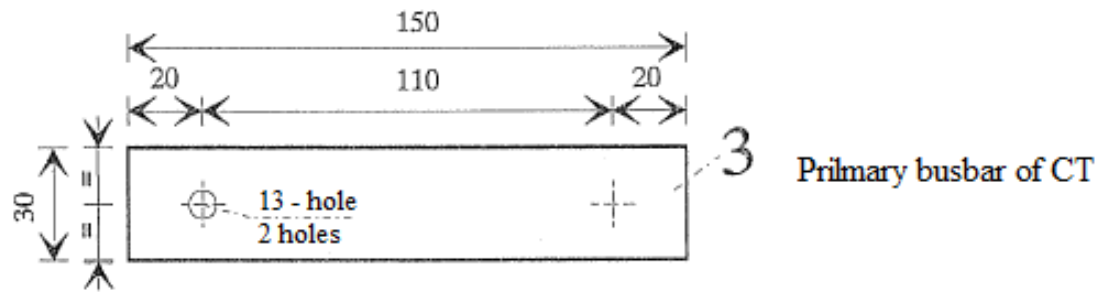
Apparatus for Type CPTI 62

Installation plate  
(dimensions in mm)



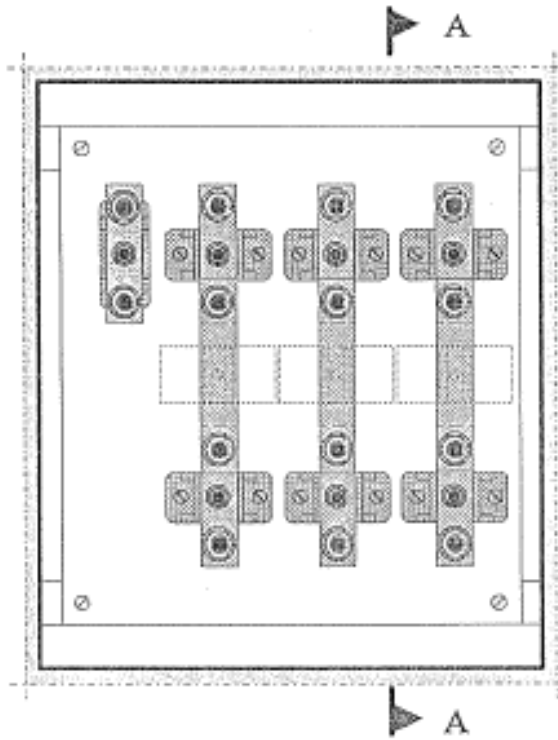
Apparatus for Type CPTI 62

Detail  
(dimensions in mm)

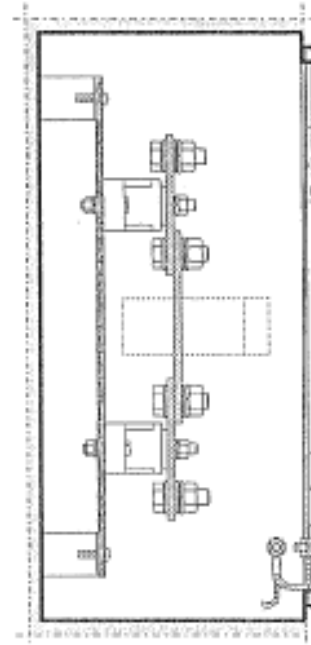


# Apparatus for Type CPTI 62

Detail  
(dimensions in mm)



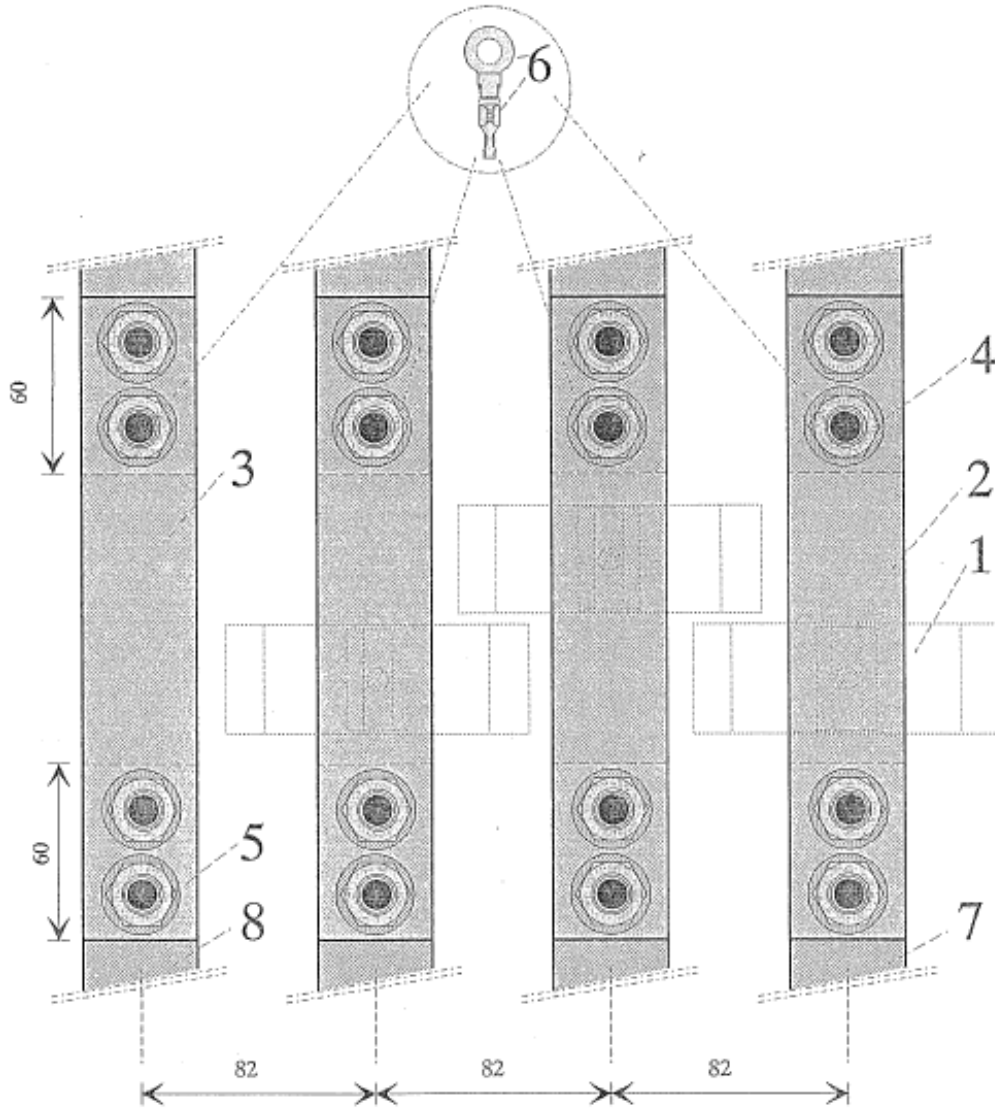
Interior View



Section A-A

Apparatus for Type CPTI 80

Presentation  
(dimensions in mm)



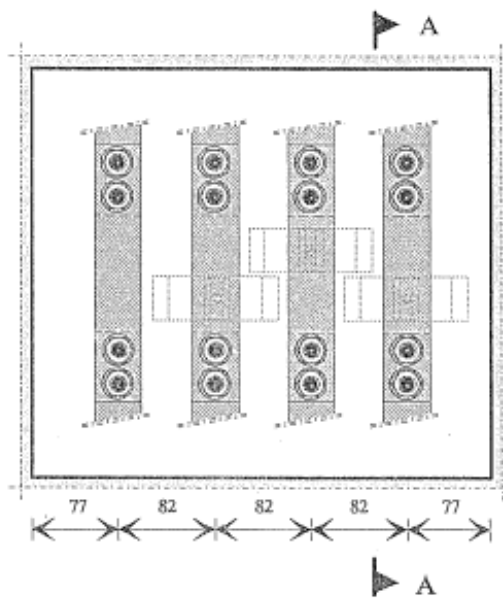
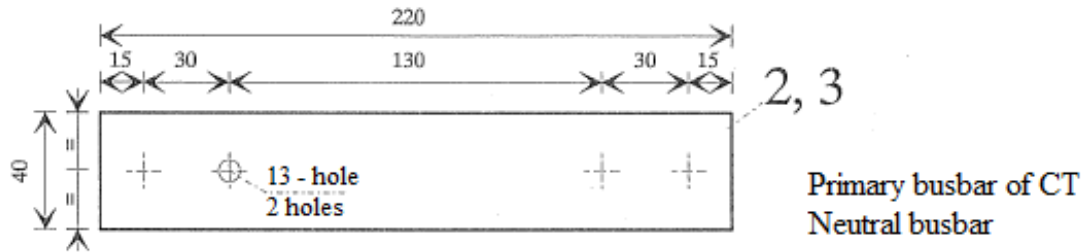
## Apparatus for Type CPTI 80

### Characteristics

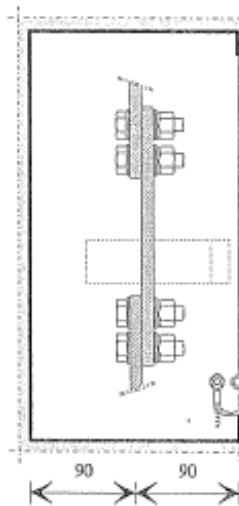
Quant.	Pos.	Designation	Characteristics	Observation
3	1	Current transformer	800/5 A	NCEM C42-301 (provided by CEM)
3	2	Primary busbar of CT	■ Cu 40x10	Tinned
1	3	Neutral busbar	■ Cu 40x5	Tinned
6	4	Hexagonal headed screw M12x50 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
2	5	Hexagonal headed screw M12x40 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	6	Connection terminal	Copper	For connection of conductors of voltage meter
6	7	Connection busbar (phases)	■ Cu 40x10	Tinned
2	8	Connection busbar (neutral)	■ Cu 40x5	Tinned

Apparatus for Type CPTI 80

Detail  
(dimensions in mm)



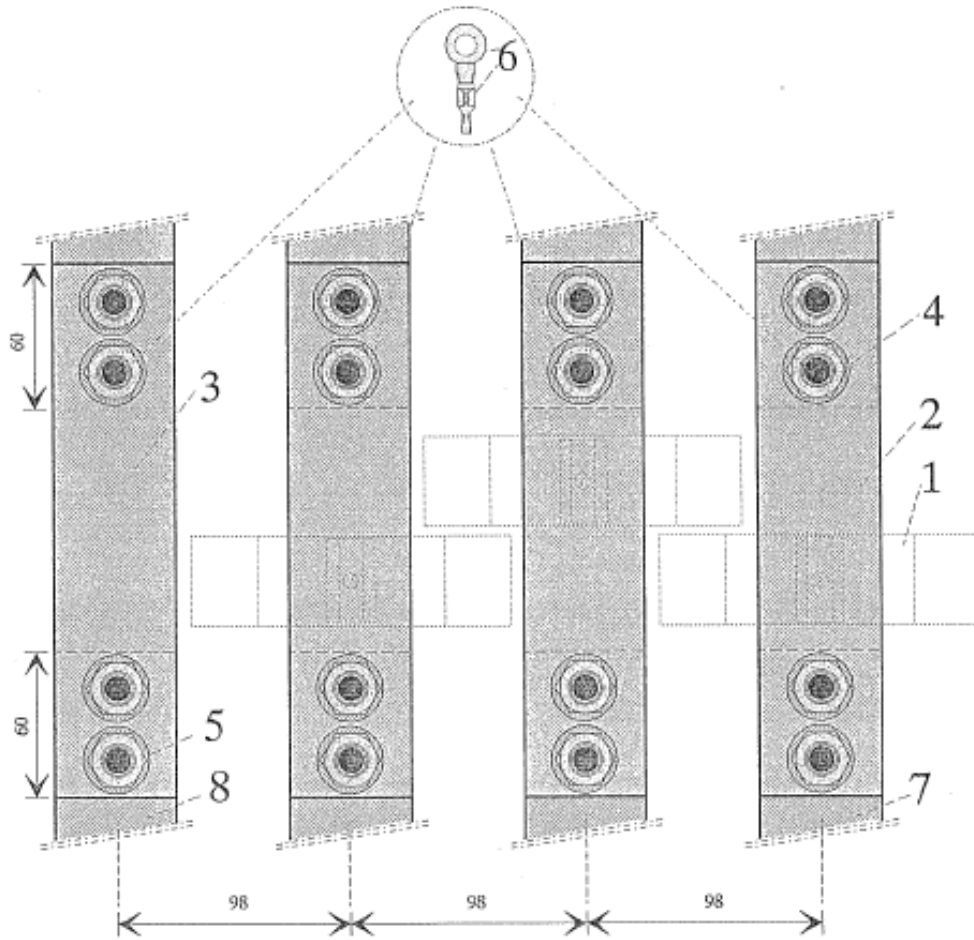
Interior View



Section A-A

# Apparatus for Type CPTI 100

Presentation  
(dimensions in mm)



## Apparatus for Type CPTI 100

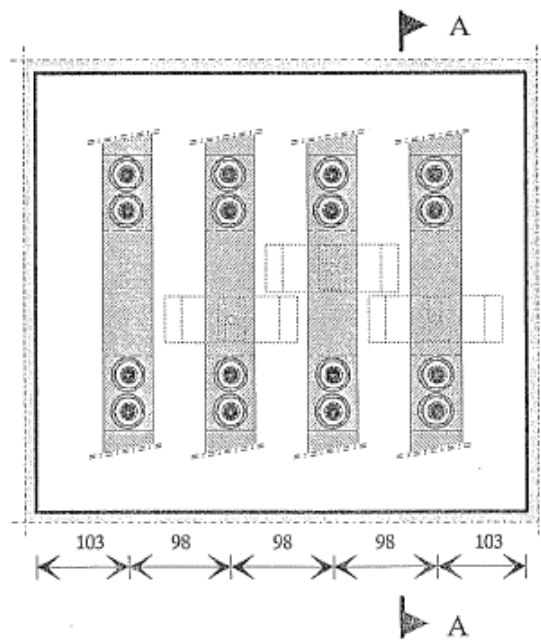
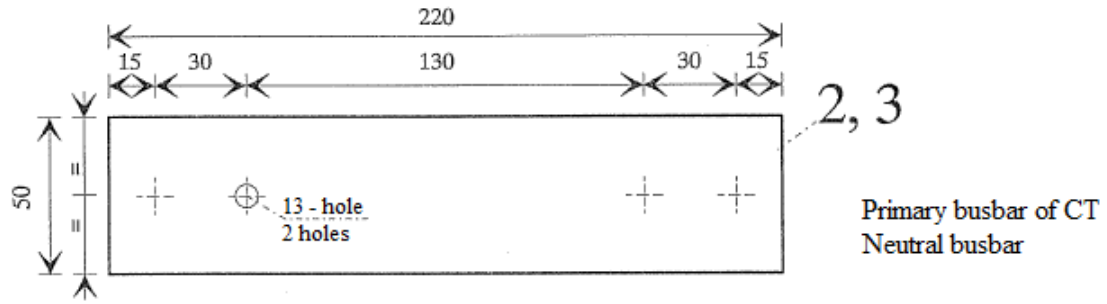
### Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
3	1	Current transformer	1000/5 A	NCEM C42-301 (provided by CEM)
3	2	Primary busbar of CT	Cu 50x10	Tinned
1	3	Neutral busbar	Cu 50x5	Tinned
6	4	Hexagonal headed screw M12x50 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
2	5	Hexagonal headed screw M12x40 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	6	Connection terminal	Copper	For connection of conductors of voltage meter
6	7	Connection busbar (phases)	Cu 50x10	Tinned
2	8	Connection busbar (neutral)	Cu 50x5	Tinned

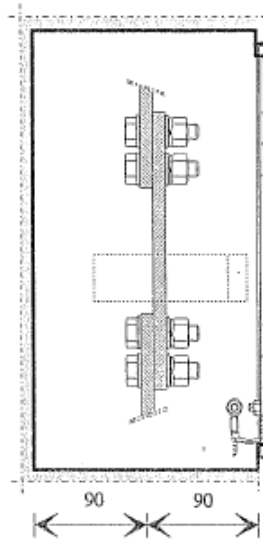


Apparatus for Type CPTI 100

Detail  
(dimensions in mm)



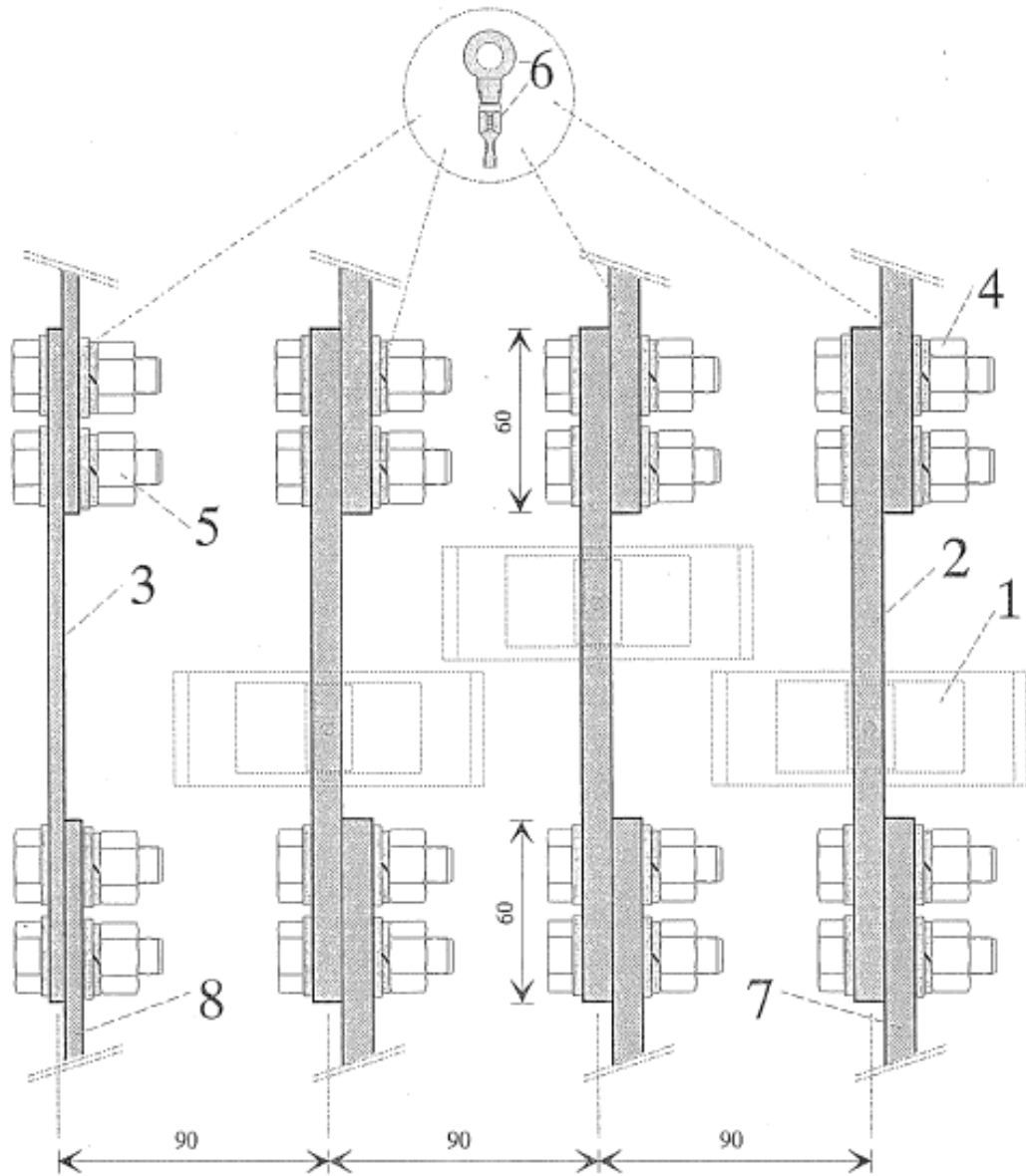
Interior View



Section A-A

Apparatus for Type CPTI 150

Presentation  
(dimensions in mm)



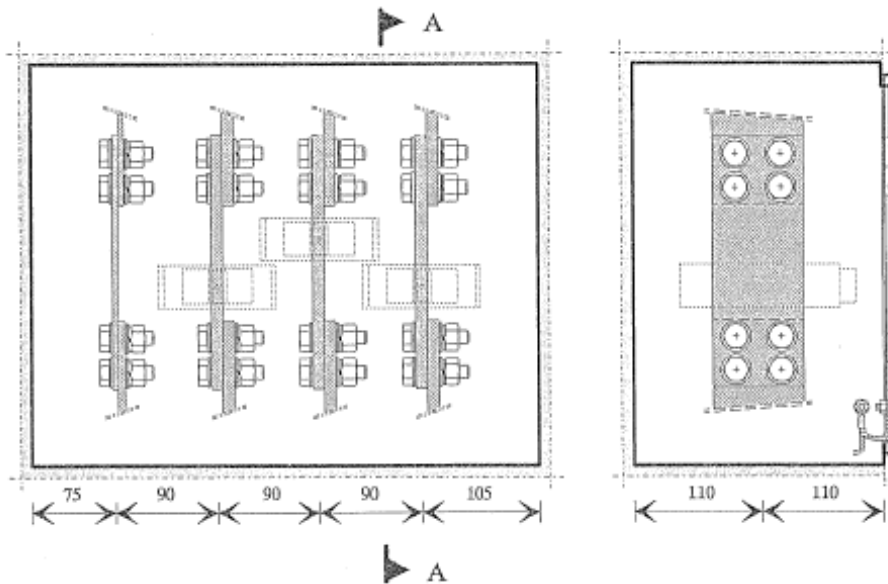
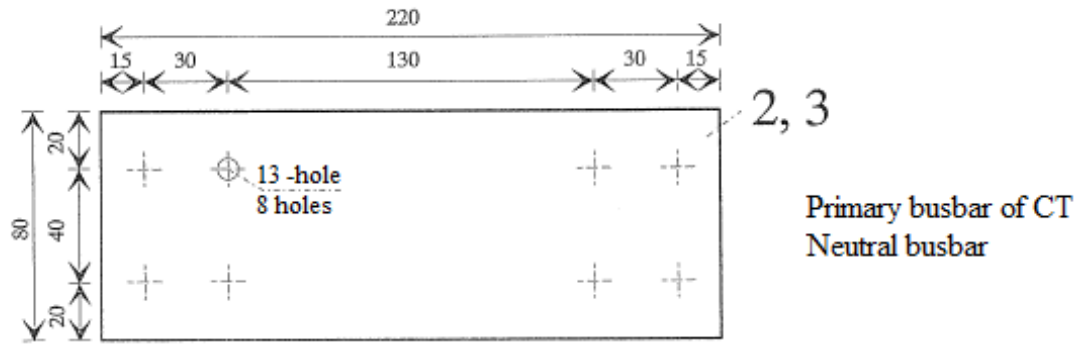
## Apparatus for Type CPTI 150

### Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
3	1	Current transformer	1250/5 A 1500/5 A	NCEM C42-301 (provided by CEM)
3	2	Primary busbar of CT	Cu 80x10	Tinned
1	3	Neutral busbar	Cu 80x5	Tinned
24	4	Hexagonal headed screw M12x50 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
8	5	Hexagonal headed screw M12x40 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	6	Connection terminal	Copper	For connection of conductors of voltage meter
6	7	Connection busbar (phases)	Cu 80x10	Tinned
2	8	Connection busbar (neutral)	Cu 80x5	Tinned

# Apparatus for Type CPTI 150

Detail  
(dimensions in mm)

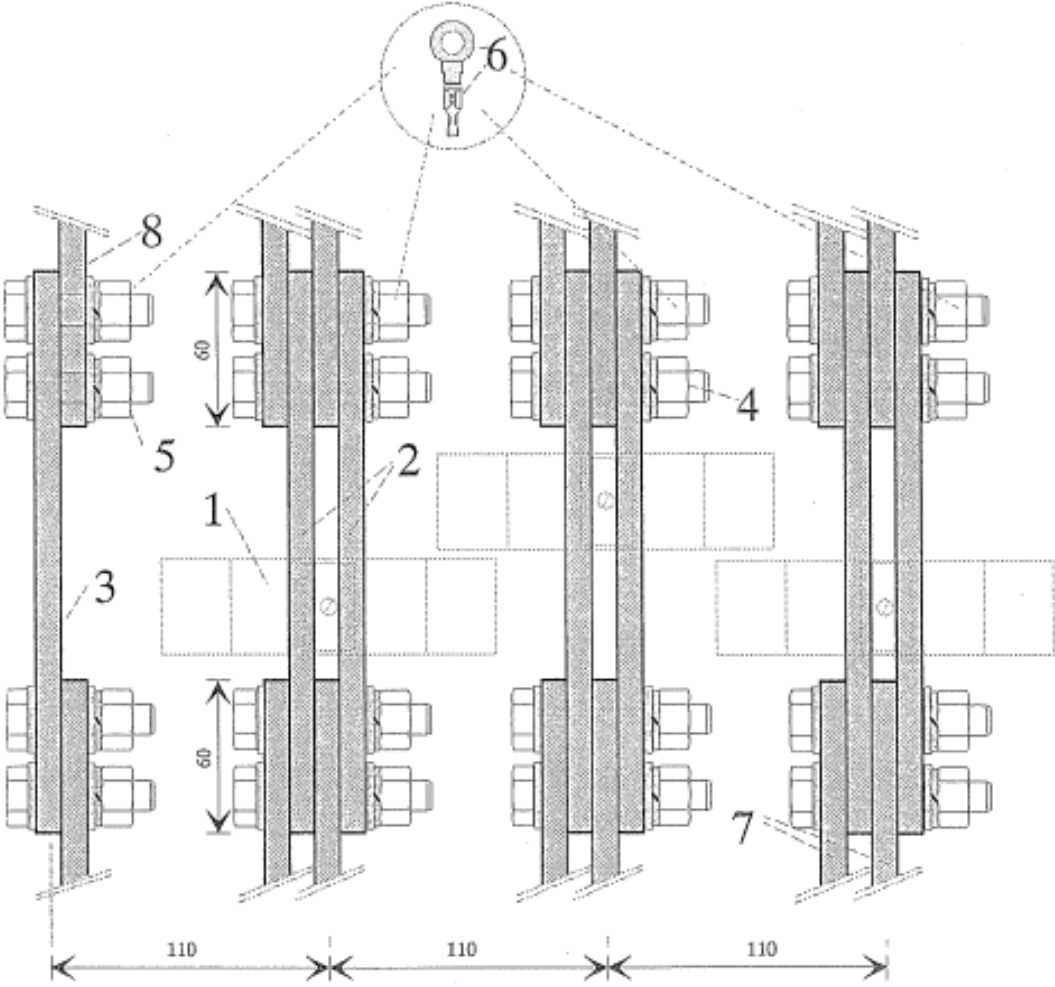


Interior View

Section A-A

Apparatus for Type CPTI 200

Presentation  
(dimensions in mm)



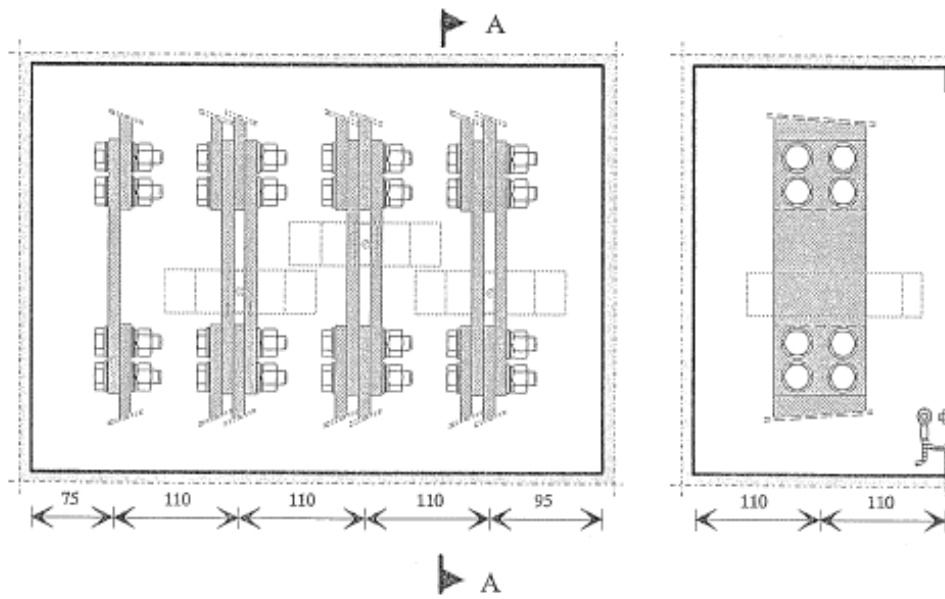
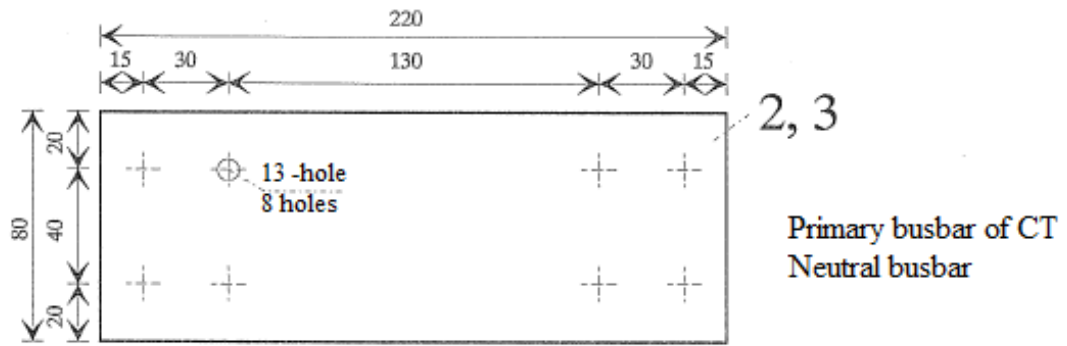
## Apparatus for Type CPTI 200

### Characteristics

Quant.	Pos.	Designation	Characteristics	Observation
3	1	Current transformer	2000/5 A	NCEM C42-301 (provided by CEM)
3	2	Primary busbar of CT	Cu 2x(80x10)	Tinned
1	3	Neutral busbar	Cu 80x10	Tinned
24	4	Hexagonal headed screw M12x70 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
8	5	Hexagonal headed screw M12x50 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	6	Connection terminal	Copper	For connection of conductors of voltage meter
6	7	Connection busbar (phases)	Cu 2x(80x10)	Tinned
2	8	Connection busbar (neutral)	Cu 80x10	Tinned

# Apparatus for Type CPTI 200

Detail  
(dimensions in mm)

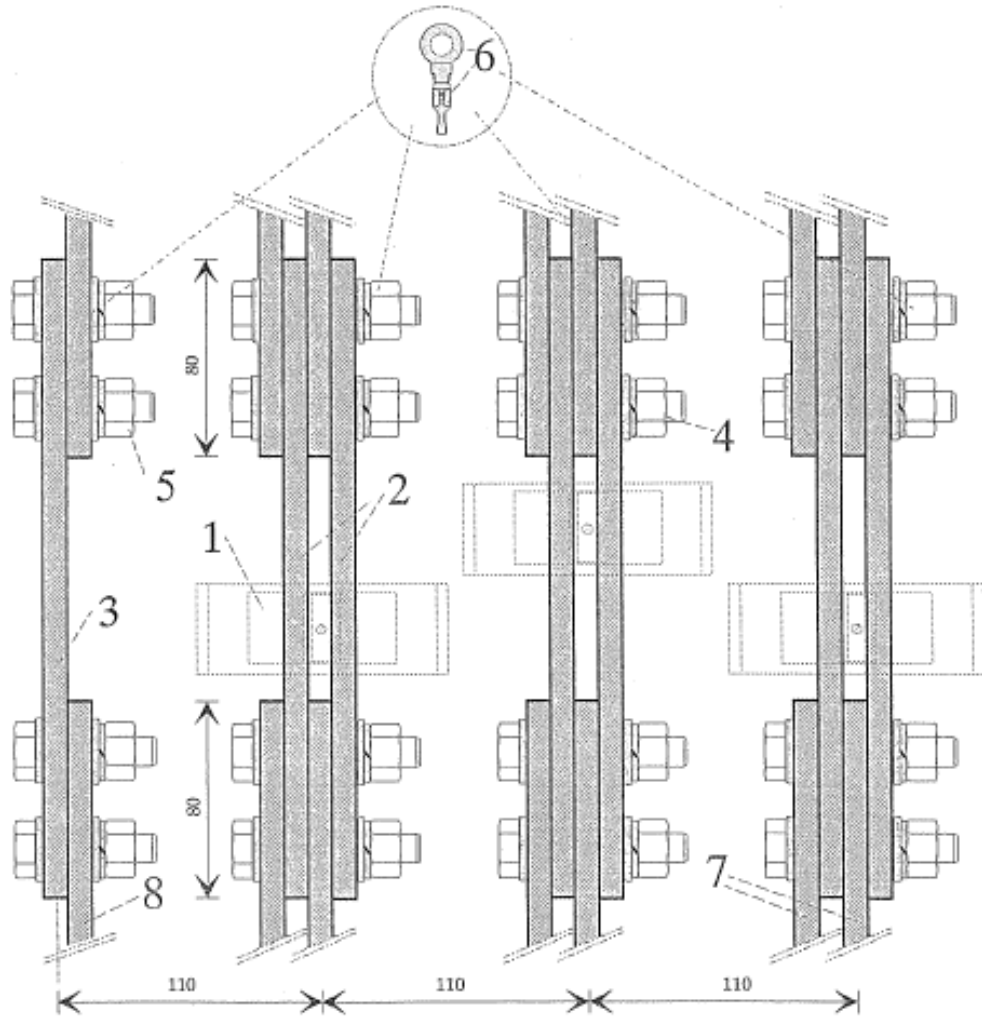


Interior View

Section A-A

# Apparatus for Type CPTI 250

Presentation  
(dimensions in mm)





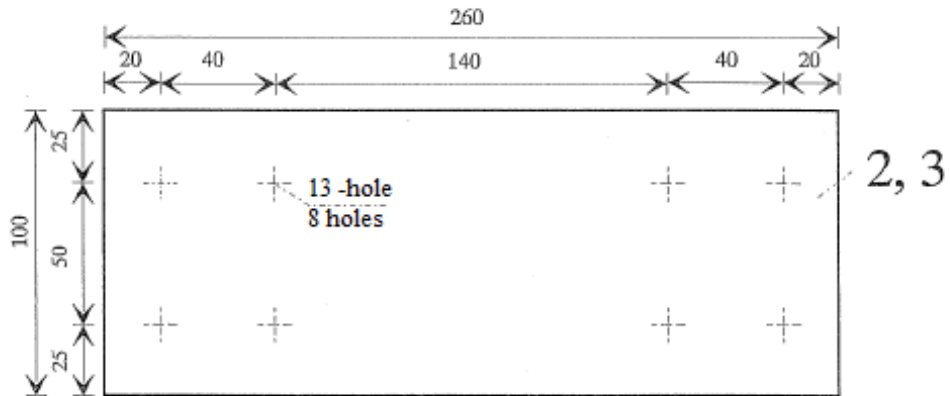
## Apparatus for Type CPTI 250

### Characteristics

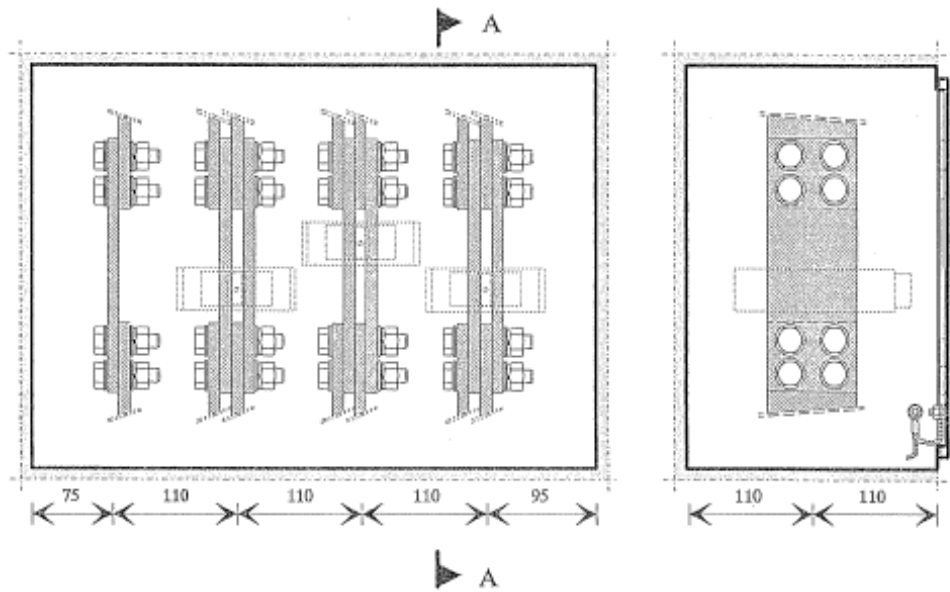
Quant.	Pos.	Designation	Characteristics	Observation
3	1	Current transformer	2500/5 A	NCEM C42-301 (provided by CEM)
3	2	Primary busbar of CT	Cu 2x(100x10)	Tinned
1	3	Neutral busbar	Cu 100x10	Tinned
24	4	Hexagonal headed screw M12x70 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
8	5	Hexagonal headed screw M12x50 Hexagonal nut Two washers Spring washer	Mild steel Mild steel Mild steel Steel	Galvanized
4	6	Connection terminal	Copper	For connection of conductors of voltage meter
6	7	Connection busbar (phases)	Cu 2x(100x10)	Tinned
2	8	Connection busbar (neutral)	Cu 100x10	Tinned

# Apparatus for Type CPTI 250

Detail  
(dimensions in mm)



Primary busbar of CT  
Neutral busbar



Interior View

Section A-A