



TECHNICAL SPECIFICATION

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Collective Line Distribution Box

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1 Application field

This section applies to the distribution boxes of the building's collective installations whose purpose is to supply residential and commercial premises where electricity is supplied in low voltage by CEM.

It is admitted that the distribution boxes for the modification of old installations may have constructive characteristics different from those specified in this document, provided that the utilization of the boxes is practically impossible. In any case, the distribution boxes to be installed shall be subject to the prior approval of CEM.

2 Rated values

- Rated voltage: 1 kV
- Number of phases (incoming and outgoing): 3

3 Constructive features

3.1 Generalities

The collective line distribution boxes shall be designed and constructed in such a way as to ensure their perfect functioning and the necessary safety conditions in normal use.

3.2 Enclosure

- Materials

The enclosure of the distribution boxes shall be made of metal sheet, polyester or other suitable material. The enclosure shall be flame retardant and shall be used under temperature between -5 °C and +70 °C.

The boxes shall comply with the tests specified in IEC 61439-2.

- Surface protection

When executed in galvanized steel plate, the galvanizing thickness shall not be less than 20 μm . A zinc-rich primer coating (zinc powder or zinc chromate), a wash-primer coating and a finish enamel coating should be applied successively to a 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).

When executed in stainless steel sheet, a suitable primer coating and an enamel coating mentioned above shall be applied to the carefully cleaned and degreased surface.

In all cases, all bolts, washers and nuts shall be of stainless material or protected by zinc plating or electrolytic plating of minimum 12 μm thickness applied before assembly. After assembly, all screws should be painted with a finishing coating.

When executed in aluminum alloy, the surface should be protected by anodizing or another process that guarantees protection against corrosion for a period not less than 10 years.

- Opening for passage of electrical conduits

The circular grooves for passage of electrical conduits shall be painted, immediately after their execution, with one primer coating of the type used in the paint of the collective line distribution box, when it is in steel.

The passage of the electrical conduits will be carried out using nozzles or stoppers for tube, according to cross-sections of tube, and in thermoplastic material. For multicore cable, it will be carried out using cable glands of suitable diameter.

- Degree of protection

For outdoor mounting, the distribution box should have a degree of protection not less than IP43 and IK07 as defined in IEC 60529 and IEC 62262 respectively.

3.3 Types of boxes

Two types of boxes are considered:

- Type CCL 500 (J120-A) – allows the execution up to four three-phase outgoing or six single-phase outgoing.

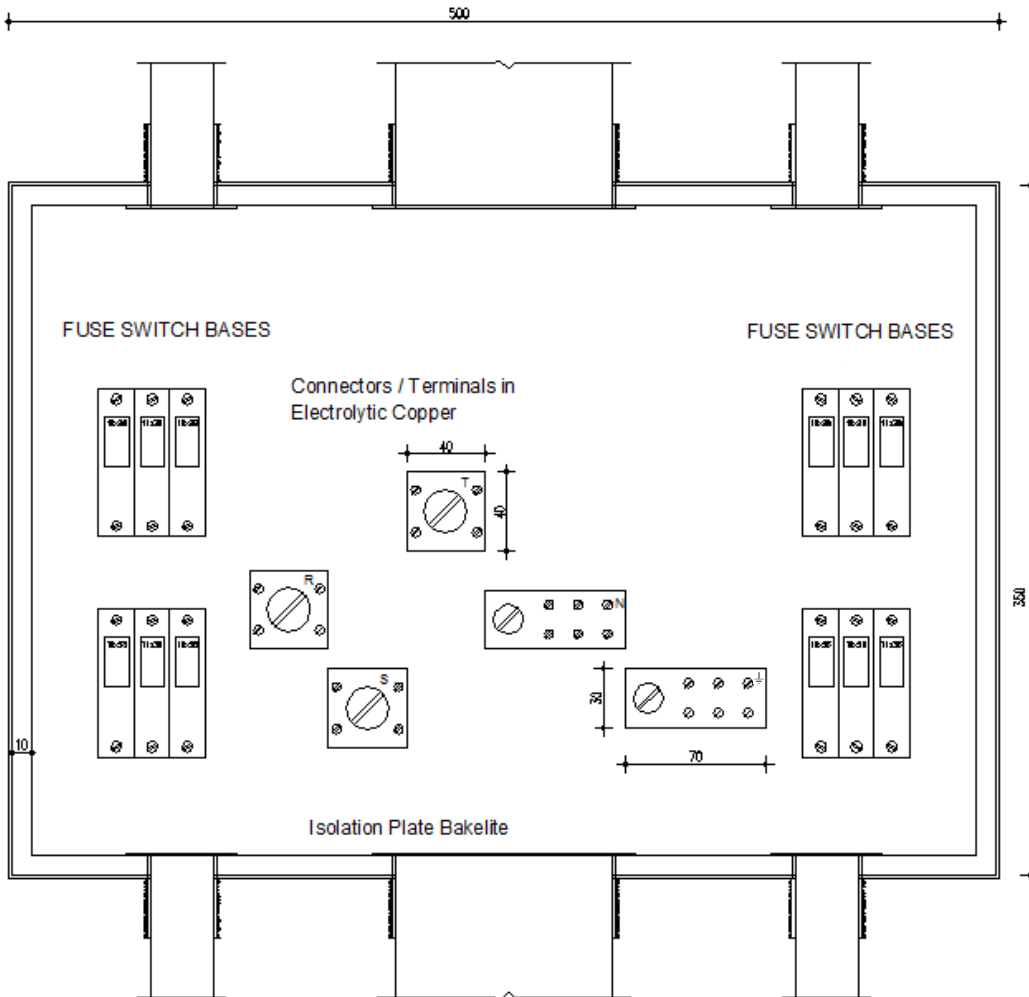


Figure 1 – Typical drawing of distribution box type CCL 500

Distribution boxes shall comply with those indicated in the above figures, considering that the internal dimensions are understood as minimum.

The door, the hinges and the sealed locking system shall be of the type indicated in the drawings.

3.4 Electrical equipment

- Generalities

Distribution boxes are provided for one incoming and one or more outgoings of electrical wires, allowing the assembly of the required connectors and the short-circuit protection devices of the phase conductors, consisting of fuse with or without fuse cartridges.

The protective conductor of the distribution boxes and the incomings should be placed inside the distribution box so that they will not be in contact with the live parts even if the conductors are separated or detached from the connectors.

- Connectors

The connectors for copper conductors shall be of tinned copper.

The connectors for tightening the conductors of the collective line shall allow the fixing of the conductors without interruption and allow the connection of copper conductors up to 35 mm² cross-section. The tightening of each conductor shall be independent.

The connectors shall be strong enough not to deform during the tightening or loosening of the conductors and shall be of adequate size to the nominal sections of the conductors to be used.

When the phase and neutral connectors do not have an isolated mounting base, they shall be mounted on a plate of insulation material which ensures insulation in relation to ground and between phases and also ensures the necessary mechanical strength.

The connectors should be located so that the placement of the conductors and their tightening are easy.

Neutral connectors should be located below and to the right of the phase connectors.

The protective earth (ground) connector should be located below the neutral connectors and be electrically connected to the earth of the distribution box.

- Fuse

The cut-off device installed in the distribution box shall consist of fuse switch with cylindrical type aM fuse (IEC 60269-1 and 2), with high breaking capacity and with nominal current adequate to the protection of outgoings.

3.5 Marking

Inside distribution box, the neutral connector shall be identified by the symbol N and the protection earth (ground) connector shall be identified by the symbol



. These markings should not be placed on the bolts, nuts, washers or other removable parts.

The markings should be made in an indelible, unambiguous and easily readable form.

CCL box must be provided with the following label: "ACCESS TO CCL CANNOT BE BLOCKED".

4 Accessibility

CCL boxes should be easily accessible to CEM staff and should be installed, as a rule, between 2 m and 2.8 m above the floor, and the front working space shall not be less than 900mm.

The CCL box shall be embedded or firmly installed on the vertical wall or the structure of the building, and the hinges shall be opened to a minimum of 90 degrees.