

VOLUME- II

**(Detailed Scope of Supply & Specification)
2009-2010**

(Tender Specification: WESCO/CEO/022)

Date: 29.05.2009

Group – A : LT Consumer Distribution Cabinet(Pillar Box)

1. SCOPE

1.1 The quantity will be as under :

LT Consumer Distribution Cabinet(Pillar Box) with provision of 12 meters : 500 nos.

LT Consumer Distribution Cabinet(Pillar Box) with provision of 9 meters : 250 nos.

LT Consumer Distribution Cabinet(Pillar Box) with provision of 6 meters : 250 nos.

1.2 This specification covers design, manufacture, testing at manufacturer works before dispatch and supply of L.T pillar Distribution Cabinet suitable for outdoor installation on Grougthed steel section mounted & pole clamping provision having following features.

- (i) Distribution cabinet.
- (ii) Base Angle structure for mounting.
- (iii) 3 phase 4 wire busbars for in coming cable
- (iv) Fixing plates for 1-phase Energy Meters
- (vi) Internal wiring for all the above.

1.3 The Technical Specification contained herein are for the guidance of the bidders, Any deviation from the Purchasers specification will be considered on their relative advantages from the consideration of performance, efficiency, reliability and over all economy. In such case, he is required to provide a deviation statement showing clearly the reasons & advantage.

2. COMPLETENESS OF CONTRACT:

All fittings or accessories not specifically mentioned herein but necessary or usual for the equipment and their efficient working shall be provided by the contractor without extra charges.

3. ATMOSPHERIC CONDITIONS:

- a) Maximum temperature of air in shade 45⁰ C
- b) Minimum temperature of air in shade 0⁰ C
- c) Maximum temperature of air in sun 50⁰ C
- d) Maximum humidity 100%
- e) Average number of thunder storm days per annum 70days
- f) Average number of dust storm days per annum 20 days
- g) Maximum rainfall per annum 2000mm
- h) Average rainfall per annum 1500mm
- i) Maximum ambient temperature daily average 45⁰ C
- j) Wind pressure 200Kg/M²
- k) Altitude Less than 1000m

4. DESCRIPTION OF MATERIALS

The L.T Consumer Distribution Cabinets are meant for use in LT supply system of consumers to be installed in the Angle Structure grougthed to the ground & welded to it having provision of clamping to the pole.

These Distribution Cabinets are outdoor type and to be fabricated out of 1.6 mm CR sheet steel duly acid treated and finished with one coat anticorrosive primer conforming to IS:

5660/1970, Amendment – 1 and two coats of smoke grey synthetic enamel **paint of reputed make conforming to IS: 2932/1993.**

The body of the cabinets shall have sufficient reinforcement with suitable size of channels keeping a provision for fixing these boxes on the angle structure & ground. The Base Angle structure for mounting shall be made of 50mm x 50mm x 6mm size angle of 600 mm length each which shall be groughted to the ground by 200 mm. The base shall be rectangular in size welded with 50mm x 50 mm x 6mm size angle & shall fit the above Cabinet throughout the circumference through nuts & bolts with the cabinet. The above shall be painted as per the provision given above for the cabinet. Besides, the cabinet shall have clamping arrangement to be fixed to PSC pole/Joist. There will be two compartments for housing as per the drawing dimensions & GTP provided hereafter :

- (i) Meters in the top compartment &
- (ii) 4 bus bars at the bottom compartment.

The meter compartment will have provision for double door arrangements, the internal one will be with purely transparent fire retardant acrylic sheet of thickness 2 mm with sealing & locking arrangements. There will be one outer door for covering both the compartments. The door shall be manufactured from 1.6 mm CR sheet with locking arrangement & sealing provision and door handle conforming to IS 8623/1977. The meter compartment & the bus-bar compartment shall be separated by bakelite sheets having given just-clearance for wiring at the sides. The roof of the box shall be slightly slanting on both sides as per drawing with an over hang of 50mm to the front and back side. For maintenance point of view doors shall be provided on front side as per the requirement so that maintenance in each chamber can be taken up independently. The nuts, bolts, washers used in the box shall be galvanized to avoid rusting. The door hinges shall not be visible from outside & good quality rubber liners will be provided along to prevent water/moisture seepage. The grooves for door fitting shall be shaped such a manner that water will flow along & come out without seeping inside. The box shall have a solid earthing point and arrangement for sufficient ventilation by providing 100mm x 50 mm size opening at both sides of the busbar chamber but covered with wire mesh for air flow & covered by post box opening type overhang arrangement to prevent water flow to inside of the cabinet.

The boxes should confirm to IP 54 degree of protection i.e no dust ingress should be there & no water entry should be thereon water splashing while the cabinet is in closed condition. The purchaser will be free to test these on CPRI or any NABL accredited laboratory at the supplier's cost. The bidder has to give a declaration for the same failing which his bid is liable for rejection. The box shall have provision of 3 nos. of Aluminum bus bars for phases & 1 no. of similar one for Neutral, mounted on epoxy resin cast bus insulators fixed on suitable fixing arrangement. The bus bars shall be conveniently placed so as to provide adequate clearance from the body of the cabinet conforming to I.E. Rules applicable for L.T. supply. Each phase bus bar shall have provision for socketing four connection at distances different from other & the neutral bus bar shall have provision for socketing

twelve connections. There should be heat shrinkable bus bar insulation on the bus bars. The arrangement and dimensions shall be as per the drawing enclosed.

Suitable cable glands of heavy duty, double compression type shall be provided at the bottom of the cabinet for incoming cable and another for outgoing service connection wires at side at top. Detachable plates shall be provided for fixing of cable glands. The distribution boxes shall be wired with copper wire of 6 sqmm. size of reputed make like Anchor/Havells/Polycab/Gloster. Three no. of cable trays of adequate size shall be provided below each rows of meters in the meter compartment in order to run the wires.

A neutral Busbar similar to phase Busbar is to be provided.

5. GENERAL

- a) The L.T. distribution Boxes should be of the dimensions as per the detail given in the Guaranteed Technical Particulars. The bidders can quote with their own design suitably accommodating the components in conforming to the approved clearances and technical requirement and indicate in their offer. The dimensions are only illustrative. Tolerances of dimensions are 10% over & above the dimensions specified. The bidder may specify their own dimensions within + 10% limit and quote accordingly.
- b) The distribution boxes shall be wired with copper wire of 6 sqmm. size.
- c) Terminal connectors for the earth connections to be provided in the box.
- d) The distribution cabinet should be preferably of IP-54 protective category, with provision for lighting inside the cabinet.

WESCO & SI. No. Punching Marks should be given on any one of the side walls of each box as an identification of WESCO property, besides furnishing a non-detachable name plate which should exhibit the details of L.T. Distribution Cabinet.

- e) The bidders are required to furnish the Guaranteed Technical Particulars in the format given.

6. INSPECTION: -

The inspection may be carried out by the Purchaser at any stage of manufacture. The successful bidder shall grant free access to the Purchaser's representative at a reasonable time when the materials have been ready in black stages & during further work in progress. Inspection and acceptance of any equipment under the specification by the Purchaser shall not relieve the supplier of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found to be defective. The supplier shall keep the Purchaser informed in advance about the manufacturing programme so that arrangement can be made for inspection.

The purchaser reserves the right to insist for witnessing the acceptance/routine testing as per stipulation in standards of the bought out items. The purchaser also reserves the right to insist for type test of one item in complete respect from CPRI or NABL accredited laboratory at your cost.

7. ACCEPTANCE AND ROUTINE TESTS IN FINAL INSPECTION :-

In final inspection, all acceptance and routine tests as stipulated in the relevant standards shall be carried out by the supplier in presence of purchaser's representative. Immediately after finalization of the programme of type/acceptance/routine testing, the supplier shall give fifteen days advance intimation to the Purchaser to enable him to depute his representative for witnessing the tests.

8. DOCUMENTATION: -

The Bidder shall furnish following drawings & documents along with the offer.

- (a) General outline and assembly drawing of the L.T. Distribution Box.
- (b) Cross Sectional view.
- (c) Arrangement of terminals & details of connection studs provided.
- (d) Name plate.
- (e) Schematic drawing.
- (f) Test reports, literature of the bought out items and raw materials.
- (h) Testing facilities available at the works.
- (i) List of customers of similar items with detailed address/purchase reference, quantity and year of supply with user certificate for such items.

N.B : Rates are to be quoted separately for :

- 1. Distribution Cabinet in complete respect.**
- 2. Mounting structure.**

The bidder is required to furnish the weight of (1) Pillar Box & (2) Base Angle structures separately while quoting rates.

LT CONSUMER's Distribution Cabinet :

Guaranteed Technical Particulars

Sl. No.	Dimensions	12 way pillar Box	9 way pillar Box	6 way pillar Box	Bidders' Offer for 12 way pillar Box	Bidders' Offer for 9 way pillar Box	Bidders' Offer for 6 way pillar Box
1 (i)	Height of Box overall	1300 mm	1300 mm	1000 mm			
(ii)	Meter compartment	900 mm	900 mm	600 mm			
(iii)	Busbar compartment	400 mm	400 mm	400 mm			
2	Depth of Box	200 mm	200 mm	200 mm			
3	Width of Box	800 mm	600 mm	600 mm			
4	Ventilator length	50 mm	50 mm	50 mm			
5	Ventilator width	100 mm	100 mm	100 mm			
6	Pole clamping	One	One	One			
7 (i)	Base Angle structure						
(ii)	Height :	600 mm	600 mm	600 mm			
(iii)	Angle Size :	50x50x6mm	35x35x6mm	35x35x6mm			
8	Rated voltage & type	415 v	415 v	415 v			
9	Thickness of enclosure	1.6 mm	1.6 mm	1.6 mm			
10	Size of Bus bars						
11 (i)	Size :	25mmx6 mm	25mmx6 mm	25mmx6 mm			
(ii)	Length :	20 inch	14 inch	10 inch			
12	Bus bar material	Aluminium	Aluminium	Aluminium			
13	Bus bar supporting insulator	Reputed make	Reputed make	Reputed make			
14	Degree of protection	IP-54	IP-54	IP-54			
15	Gland Size Incoming	3.5 C, 35/50 mm ²	3.5 C, 35/50 mm ²	3.5 C, 35/50 mm ²			
16	Gland Size for Outgoing	12 nos of twin core 4 sqmm	9 nos of twin core 4 sqmm	6 nos of twin core 4 sqmm			

Apart from above, the bidder is required to furnish the weight of (1) Pillar Box & (2) Base Angle structures separately while quoting rates.

17	Total Weight of Pillar Box	--	--	--			
18	Total Weight of Base Angle structure	--	--	--			