



BHARAT HEAVY ELECTRICALS LIMITED

TIRUCHIRAPALLI - 14

CONTROLS & INSTRUMENTATION/FB

SHEET 01 OF 05

**TECHNICAL SPECIFICATION FOR
FLAMEPROOF / EXPLOSIONPROOF JUNCTION BOXES**

SPECIFICATION NUMBER-TCI:341, REV. 00

Rev	Date	Description	Prepared	Checked	Approved
01	06-11-17	General Revisit	Blessing Jany Churchil J 	Blessing Jany Churchil J 	V M Selvaraaj 



SPECIFICATION REQUIREMENT

1. Site Conditions	Tropical, Dusty, Corrosive & Heavily polluted, Hazardous and Windy
2. Enclosure Protection Clause	IP 65 protection as per IEC-60529. Enclosure protection Type test certificate from any of the National Test House shall be submitted during the time of Inspection (Typical Certificates produced shall not be earlier than 5 years from the date of Purchase Enquiry).
3. Type of Protection	Flame proof / Explosion proof-Ex d – as per purchase enquiry. A valid Flame proof / Explosion proof Type Test (conducted at National/International Test Houses) certificate shall be submitted along with the offer (not earlier than 5 years)
4. Area Classification	Suitable for Hazardous Area as per IS-5572, Zone-2, Gas Group-IIA/IIB/IIC & Temperature Class T4/T5/T6 of IS-2148. Gas Group and Temperature Clause shall be as indicated in the purchase enquiry.
5. Body and Door Material	Cast Aluminium, LM 6
6. Material thickness	Vendor to design the thickness, to suit the area classification. However, minimum thickness shall be as per purchase enquiry.
7. Variants	1) Standard Junction Box - 24, 48 & 72 way – as per purchase enquiry. 2) MTM Junction Box - 24, 48 & 72 way – as per purchase enquiry.
8. Colour	As per Purchase enquiry



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9. Finish	Epoxy – Painted / Powder coated Thickness shall be 75 micron (outer) & 50 micron (inner)
10.Type of Terminal blocks	<u>Standard Junction Box :</u> Side Entry, Cage clamp type, suitable for 4 sq.mm. cables. Wago Model No. 281-101. Colour: Grey. <u>MTM Junction Box (for Thermocouple) :</u> Side Entry, Screw clamp type, Thermocouple Terminal blocks suitable for 'K' type Thermocouple, suitable for 2.5 Sq.mm size. Connectwell Model No. CTT2.5U. Colour: Grey. All terminal blocks shall be properly numbered as per the respective method. Terminal blocks shall be mounted by using suitable Zinc plated DIN RAIL and other mounting accessories. Terminal blocks shall be mounted in vertical orientation for all the varieties of junction boxes. Vendor can also offer equivalent models for the above items from the approved makes indicated in QA:CI:STD:QP:34, Rev. 04.
11.Door Sealing gasket	Door sealing gasket shall be of Neoprene Rubber to meet with Enclosure protection requirements.
12.Canopy	Requirement - As per purchase Enquiry. Material shall be Mild steel – 2 mm thick. Colour shall be same as junction box, as per Purchase enquiry. Canopy mounting shall not hinder door opening and IP rating of the junction box.



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13.Shield Bus	Shield bus-10 mm x 3 mm, 150 mm long, Connectwell Model, NEB-10. 10 numbers of Sliding type Earth Links, Connectwell Model, CENC-4. Shield bus shall be mounted using Bus-bar mounting support, Connectwell Model, NES.
14.Dimension	Vendor shall select the dimensions of the Junction box, considering the Number of Ways, provision of Earth bus and leaving adequate space for working inside the box.
15.Name Plate	2 Nos. of SS-304 Name Plate of size 75 mm X 25 mm and thickness 0.5mm shall be provided for each Junction box. 2 Sets of SS-304, M3 x 10 size bolt, nuts & washers shall be supplied with each name plate. Name plate Engraving details will be furnished during the time of purchase order. Colour of Engraving shall be Black.
16.External earthing - Arrangement	Junction box body earthing arrangement shall be provided at both sides of the junction box. 1 No. SS-304, M6, earth bolt with 2 Nos. SS Nuts & washers, shall be provided at both sides of the junction box. Earth Symbol sticker (Black lines on Yellow background) shall be provided near earth terminal.
17.Cable Entry Details - Cable Glands and Dummy Plugs	Flame Proof type Cable Glands and Dummy Plugs Compatible to the Area of classification of the Junction box shall be supplied by the vendor. Cable Gland Sizes and Quantity – As per annexure. Dummy Plug Sizes and Quantity – As per annexure.



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18.Junction box Mounting Hardware	SS-304 Mounting Bolts, Nuts and Spring Washers shall be supplied.
19.Inspection and Testing	As per VQP and BHEL approved Dimensional drawings. Vendor Quality Plan (VQP) shall be submitted for BHEL (T)'s approval, in BHEL's Standard format.
20.Packing	Packed for proper protection against transit damage.
21.Guarantee	A Guarantee Certificate for 24 months of trouble-free operation/performance from the date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished
22.General	Vendor to forward relevant Catalogue/ Dimensional drawings of the Flame proof Junction boxes and other accessories, along with the offer. Any deviation to this specification requirements shall be clearly indicated in the sub delivery enquiry deviation format. In case of No deviation, the format has to be filled in as "NIL / No deviation" and furnished with the offer. After Placement of a purchase order, the respective vendor shall submit the Complete Dimensional drawing and get the same approved by BHEL(T), before start of manufacture.