

Bharat Heavy Electricals Limited

HIGH PRESSURE BOILER PLANT , TIRUCHIRAPPALLI 620 014.



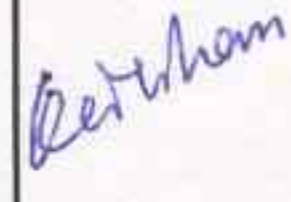
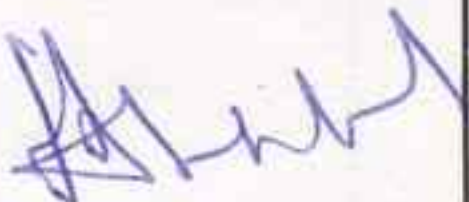
TECHNICAL DELIVERY CONDITIONS

FOR SUB - DELIVERY COMPONENTS OF CONTROLS AND INSTRUMENTATION

TDC : TCI : 101 / REV 07

PAGE 01 OF 03

PRESSURE GAUGE

Sl. No.	DATE	DESCRIPTION	PREPARED	REVIEWED	APPROVED	
					ENGG	QAC
01,02 03,04	----	General Revisions	Sd/-	Sd/-	Sd/-	Sd/-
05	09.07.93	Page Number added	Sd/-	Sd/-	Sd/-	Sd/-
06	16-06-97	General Revisions	S/d	S/d	S/d	s/d
07	29-03-04	Revised based on revisiting of the specification (TCI 103 – Draft Gauge Specification is merged with revised TCI 101)				

CL NO.	CHARACTERISTICS	REQUIREMENT	VENDOR COMPLIANCE (Refer Note : 2)
1.0	<u>SITE CONDITIONS</u>		
1.1	Altitude above mean sea level	550 m.	
1.2	Ambient temperature condition	50°C.	
1.3	Relative humidity	100 %	
1.4	Atmosphere	Tropical , Dusty, salty, corrosive and highly polluted.	
2.0	<u>GENERAL</u>		
2.1	Reference standard	IS 3624 / EN 837 – 1,2,3 / ANSI B40.1	
2.2	Type	Direct reading	
2.3	Scale	Industrial concentric 270° linear	
2.4	Sensing element	Bourdon – for Pressure Gauges Diaphragm / Bellows / Capsule - for Draft Gauges	
2.5	Nominal Dial Size	As specified in data sheet	
2.6	Accuracy	± 1% of FSD for Pressure ranges ± 1.6 % of FSD for Draft ranges	
2.7	Over range protection	130 % of maximum range.	
2.8	Dial graduation	Graduated in Kg / Sq.cm (g) / mmWC.	
2.9	Zero adjustment	Micrometer adjustable from the front after opening the bezel	
2.10	Enclosure protection	Weather proof, water tight and dust tight IP 65 of IS 12063 / IS:13947 – PART-I-1993/IEC:529 / NEMA Equivalent	
2.11	Painting	Stoved enameled anti - corrosive black painting or Epoxy powder coated. (Not applicable for SS 304 casing) Separate SS Tag plate with tag no. and service legend.	
2.12	Identification		
3.0	<u>PROCESS CONDITIONS</u>		
3.1	Tag No.		
3.2	Medium		
3.3	Application		
3.4	Operating parameter	Refer to Data sheet	
3.5	Range		

CL NO.	CHARACTERISTICS	REQUIREMENT	VENDOR COMPLIANCE (Refer Note : 2)
3.6	Mounting & Entry		
3.7	Process Connection		
3.8	Special requirement —		
4.0	<u>MATERIAL</u>	Die cast aluminium or SS 304	
4.1	Case	AISI 316 SS	
4.2	Bourdon	Cast aluminium with screwed ring type / SS 304 with	
4.3	Bezel	Snap Action Bayonet type Neoprene	
4.4	Blow out disc	AISI 316 SS / AISI 316 SSL	
4.5	Socket	AISI 304 SS	
4.6	Movement assembly	Shatter proof glass.	
4.7	Window	As per quality plan QA:CI:STD:QP:01 (Latest revision)	
5.0	<u>INSPECTION & TESTING</u>		
6.0	<u>DOCUMENTS</u>		
6.1	6 sets of the following :	1. T.C. for routine test for each gauge. 2. T.C. for type test 3. Material certificate 4. Guarantee certificate 5. Calibration certificate	
6.2	CD & 2 sets of Original	1. Catalogues 2. O & M manuals	
7.0	<u>PACKING</u>	Material shall be packed as per Packing procedure QA:CI:STD:PR:04. (Latest revision)	

NOTE:

1. Refer current valid list for revision status of Quality Plan, Drawing No & Packing Procedure.
2. In Vendor Compliance column - vendor shall indicate 'YES', 'NO' or 'NOT APPLICABLE'.
3. GA drawings of gauges in AutoCAD and Data sheet in MS WORD shall be submitted for BHEL's approval.

BHARAT HEAVY ELECTRICALS LIMITED

HIGH PRESSURE BOILER PLANT, TIRUCHIRAPPALLI 620 014.

CONTROLS AND INSTRUMENTATION / PE-FB

TECHNICAL SPECIFICATION FOR ASCERTOR CABINET AND LOCAL INDICATION BOX BHELVISION-20 M SYSTEM

SPECIFICATION REF. CI:RC:BV20M: PANEL / REV. 02

Sl. No.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00	29.05.2004	INITIAL RELEASE	P.S	P.S	P.M V
01	05.08.2011	Door thickness changed & Mounting plate size added	P.S	P.S	R.D
02	20.07.2014	Specification re-visited.	S.R	K.B	A.K.P

1.0 GENERAL

- 1.1 This specification covers general requirements of Ascetor Cabinet & Local indication box suitable for wall mounting for Electronic Water Level Indication (EWLI) System.

2.0 SPECIFICATION REQUIREMENT

- 2.1 The Ascetor cabinet & Local Indication Box shall be suitable for wall mounting with single door (left hinged). General arrangement (OGA) drawing enclosed with the enquiry to be referred for dimensional details, including cutout for display unit.
- 2.2 The construction of the Ascetor cabinets - class of IP-66 (without cutout) & Local indication box - class of IP-65 (without cutout), shall meet the enclosure protection as per IS 60947.
- 2.3 Mounting Plate, Fixing nuts, bolts, fasteners, etc., for the cabinet shall be supplied by the vendor.
- 2.4 The door shall be suitable for a minimum of 120 Deg. opening.
- 2.5 Two point door locking with three keys shall be provided.
- 2.6 Ascetor Cabinet size shall be 600 (H) X 600 (W) X 350 (D) mm.
- 2.7 Rain canopy of thickness minimum 1.5 mm shall be provided.
- 2.8 Removable Un-drilled Gland plate made from CRCA material with 3mm thick Neoprene gasket / PU gasket shall be provided.
- 2.9 Cabinet earthing stud shall be provided.
- 2.10 The cabinet enclosure including removable gland plates shall be fabricated from CRCA grade-CR2 sheet steel (branded makes) as per IS-513.
- 2.11 The thickness of enclosure shall be minimum 1.5 mm and thickness of door shall be minimum 1.75 mm.
- 2.12 Component mounting plate of size 550(W) X 570(H) X 3 mm thickness shall be provided.
- 2.13 Gaskets shall be provided at all mating surfaces. Gasket material shall be 3mm thick Neoprene / PU.
- 2.14 Necessary stiffeners for door shall be provided by the vendor to avoid bowing and bending.
- 2.15 PAINTING:
Exterior and Interior : As per enquiry.
Mounting Plate : GI Plate
- 2.16 Any other accessories / items which are felt necessary to make the cabinet complete, easy mounting and assembling of components, including spare touch-up paint, shall be included.
- 2.17 The cabinet shall be completely assembled and supplied as single unit.
- 2.18 Vendor Quality Plan shall be followed for manufacturing.

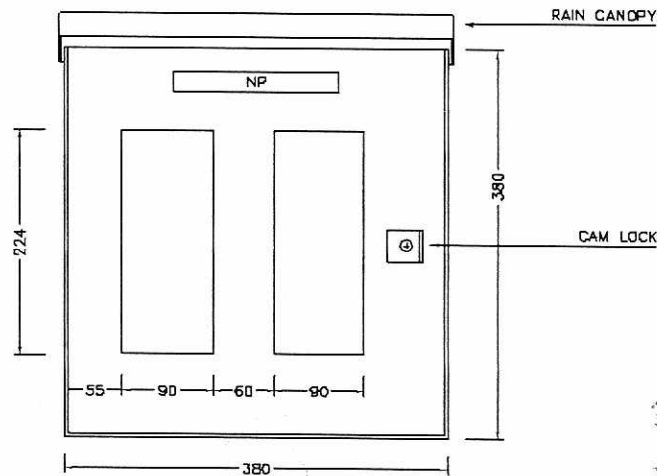
3.0 DOCUMENTATION

3.1 Documents to be submitted along with the offer:

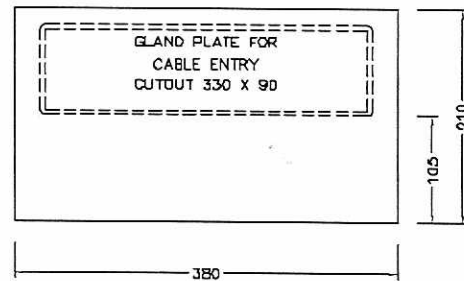
- 3.1.1 Only confirmation to this specification shall be indicated along with the offer. If any deviation is there the same shall be clearly indicated in the sub- delivery enquiry deviation format attached along with the enquiry.

3.2 **Documents to be submitted in the event of order for BHEL's approval within 7 days from PO placement:**

- 3.2.1 The Vendor shall get approval for Display unit cut-out details and colour of Ascertor cabinet and Local Indication Box before start of manufacturing.



FRONT VIEW





BOTTOM VIEW

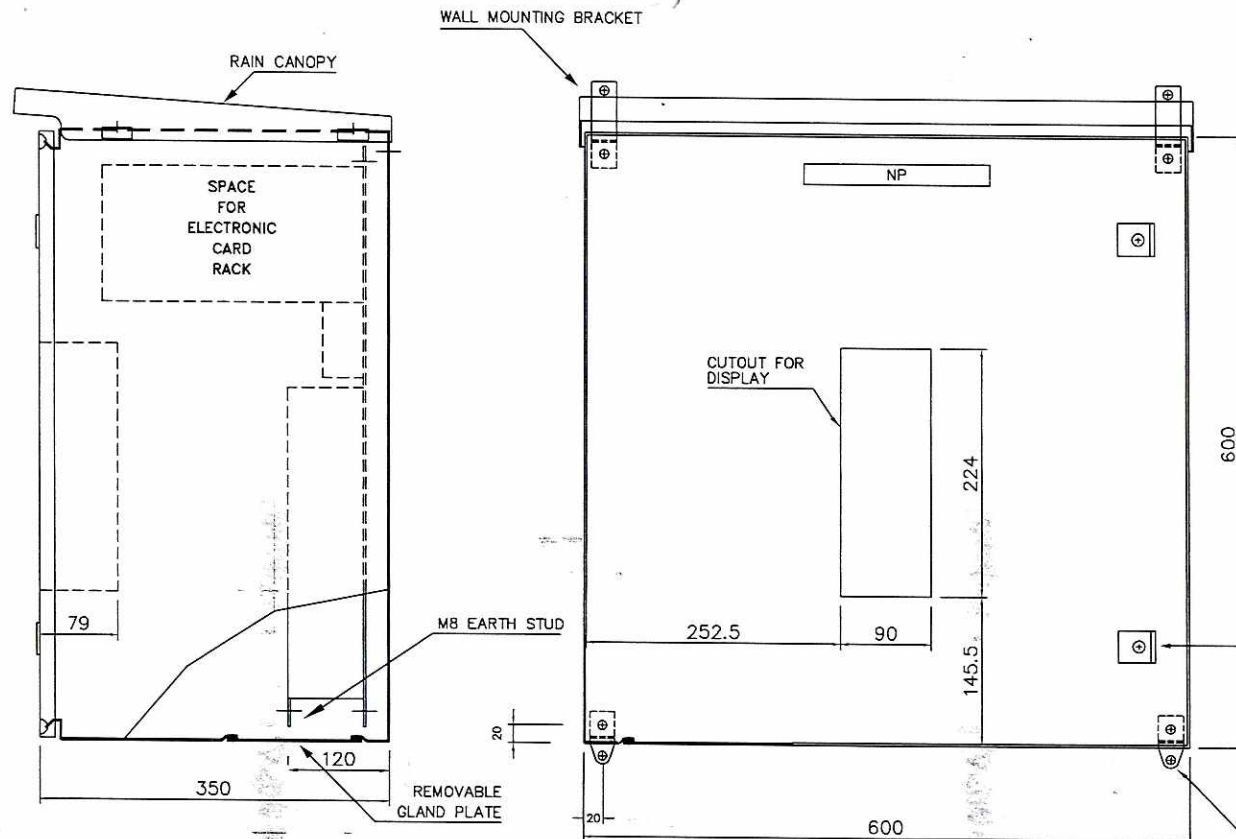
NOTE:

1. PAINTING:
EXTERIOR & INTERIOR : AS APPLICABLE FOR ASCERTOR.
2. CUBICLE PROTECTION SHALL BE IP55 AS PER IS:13947 PART-I.
3. LEFT HINGED DOOR SHALL BE SUITABLE FOR 120° OPENING.
4. MOUNTING CLAMPS (4 NOS.) SHALL BE SENT LOOSE ALONG WITH CABINET AND SHALL BE FIXED AT SITE AFTER FIXING THE RAIN CANOPY.
5. MOUNTING PLATE OF SUITABLE SIZE SHALL BE PROVIDED.
(PAINTING AS PER VENDOR STD.)

REV	DATE	ALTERED :
		CHD. / APPD. :
ZONE		

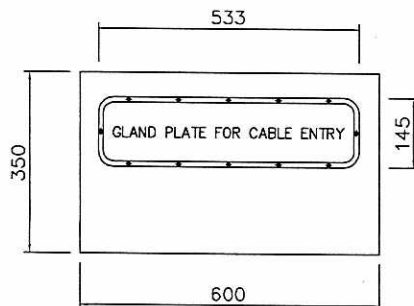
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TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		STANDARD						
 355-055	Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TRUCHIRAPALLU - 620014		DRN	NAME A.Thambu raj	SIGNATURE <i>[Signature]</i>	DATE 15-09-06	NO. OF VAR	
			CHD	P.Sundaram		15-09-06	—	
			APPD	M.Loganathan		16-08-06	—	
DEPT. : C & I		ALL DIMENSIONS ARE IN MM	SCALE NTS	WEIGHT (Kg) —	REF TO ASSY / DLD DWG		ITEM NO —	No OF ITEMS —
CODE : 382					—			
TITLE LOCAL EWLI INDICATION BOX FOR OPERATING FLOOR DISPLAY Sheet 01 Of 01			CARD CODE U 01	DRAWING NO : 3-97-088-14095			REV 00	



SIDE VIEW

FRONT VIEW



PLAN VIEW

- NOTE**
1. CUBICLE PROTECTION SHALL BE IP55 AS PER IS:60947.
 2. **PAINTING :**
EXTERIOR & INTERIOR : DIN RAL 9002. (EPOXY PAINT) WITH TEXTURED FINISH AND THICKNESS 60 MICRON
 3. No. OF ASCERTOR 4 PER UNIT (2 Nos. FOR INDICATION AND 2 Nos. FOR VALIDATION)

JOB NO.		401									
STATUS											
DISTRIBUTION				CONTRACT							
TO											
No. OF											
REV	DATE	ALTERED :									
		CHD. / APPD. :									
ZONE											

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NTPC Drg. No. : 1450-001R-SGTR-PVI-W-002		NBPL Drg. No. : 1450-001R-SGTR-PVI-W-002	
PROJECT : FEROZE GANDHI UNCHAHAR THERMAL POWER PROJECT STAGE-IV, 1 x 500MW, Customer No. 0685			
OWNER : NTPC LIMITED (A GOVERNMENT OF INDIA ENTERPRISE)			
EPC VENDOR : NBPL Y.S.R. PURAM, VILLAGE MANNAVARAM, SRI KALAHASTI MANDAL, DIST. CHITTOOR - 517620 (A.P.)			
Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014		DRN A.ThambuRaj	SIGNATURE A.K.Panda
		DATE 12-07-14	NO. OF VAR
DEPT. - C&I CODE - 392		SCALE NTS	WEIGHT (Kg)
TITLE OGA FOR ASCERTOR CABINET BHELVISION-20M		REF TO ASSY / OLD DWG	ITEM NO
Sheet 01 of 04		CARD CODE U 01	DRAWING NO : 3-97-088-22136
			REV 00