

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 08

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PRESSURE GAUGE

08	04-02-2017	General Revision	 (AB)	 (NR)	 (RMV)	 (TK)
07	29-03-2004	Revised based on revisiting of the spec (TCI 103 - Draft Gauge Spec is merged with revised TCI 101)	Sd/- (TAM)	Sd/- (KAK)	Sd/- (SSM)	Sd/- (KCM)
06	16-06-1997	General revisions	Sd/-	Sd/-	Sd/-	Sd/-
05	09-07-1993	Page number added	Sd/-	Sd/-	Sd/-	Sd/-
01, 02, 03, 04	----	General Revisions	Sd/-	Sd/-	Sd/-	Sd/-
Rev. No.	DATE	DESCRIPTION	PREPARED	Engg REVIEWED	QAC	APPROVED

CL No.	CHARACTERISTICS	REQUIREMENT	VENDOR COMPLIANCE (Refer Note: 2)
1.0	<u>SITE CONDITIONS</u>		
1.1	Altitude above mean sea level	} Refer to Data Sheet	
1.2	Ambient temperature condition		
1.3	Relative humidity		
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 / ASME B40.100	
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	125% 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 / IEC:60529 / NEMA Equivalent	
2.11	Painting	Stoved enameled anti – corrosive black painting or Epoxy powder coated. (Not applicable for SS 304 casing)	
2.12	Identification	Separate SS Tag plate with Tag No. and Service legend.	
3.0	<u>PROCESS CONDITIONS</u>		
3.1	Tag No.	} Refer to Data Sheet	
3.2	Medium		
3.3	Application		
3.4	Operating parameter		
3.5	Range	} Refer to Data Sheet	
3.6	Mounting & Entry		
3.7	Process Connection		
3.8	Special Requirement		

CL No.	CHARACTERISTICS	REQUIREMENT	VENDOR COMPLIANCE (Refer Note: 2)
4.0	<u>MATERIAL</u>		
4.1	Case	Die cast aluminium or SS 304	
4.2	Sensor	Bourdon / Diaphragm / Bellows : SS 316	
4.3	Bezel	Cast aluminium with screwed ring type / SS 304 with Snap Action Bayonet type	
4.4	Blow out disc	Neoprene	
4.5	Socket	AISI SS 316 / SS 316L	
4.6	Movement assembly	AISI SS 304	
4.7	Window	Shatter proof glass.	
5.0	<u>INSPECTION & TESTING</u>	As per quality plan QA:CI:STD:QP:01 (Latest Revision)	
6.0	<u>DOCUMENTS</u>		
6.1	To be submitted along with offer in 2 sets.	1. Catalogues.	
		2. Filled in data sheets	
6.2	To be submitted during inspection	1. T.C. for routine test for each gauge.	
		2. T.C. for type test	
		3. Material certificate	
		4. Guarantee certificate	
		5. Calibration certificate	
6.3	To be submitted after inspection: 2 sets of Original & 1 CD.	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: <ol style="list-style-type: none"> 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 in AutoCAD and Datasheet in MS WORD/EXCEL shall be prepared and submitted in pdf 4. The entire system and accessories should not contain any asbestos material. 			