



TECHINICAL SPECIFICATIONS OF PRESSURE GAUGE

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DATA SHEET – PRESSURE GAUGE				
Sr. No.	1	2	3	4
Mat. Code	100002041	100000586	100007754	100000588
Short Text	GAUGE,PR,0-250MBAR,4",1/2"BSPT	GAUGE,PR,0-6BAR,4"	GAUGE,PR,CBM,0-7BAR,2.5",1/4"BSPTM	GAUGE,PR,0-10BAR,4",1/2"NPTM
Long Text	Pressure Gauge with Range 0 to 250 mBar, Dial Size 4", End Connection 1/2" BSPT	Pressure Gauge with Range 0 to 6 Bar, Dial Size 4"		Pressure Gauge with Range 0 to 10 Bar, Dial Size 4", End connection ½" NPTM
Make	Bidder to Specify	Bidder to Specify	Bidder to Specify	Bidder to Specify
Model	Bidder to Specify	Bidder to Specify	Bidder to Specify	Bidder to Specify
Standard	EN 837-1/EN 837-3	EN 837-1/IS 3624	EN 837-1/IS 3624	EN 837-1/IS 3624
Pressure Gauge Range	0 to 250 mBar	0 to 6 barg	0 to 7 barg	0 to 10 barg
Operating Pressure	0 to 110 mBar	0 to 4 barg	0.5 to 5 barg	0.5 to 6 barg
Over range Protection	130%	130%	130%	130%
Design Pressure	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range
Design Temp.	0 to 65 Deg C	0 to 65 Deg C	0 to 65 Deg C	0 to 65 Deg C
Accuracy	+/- 1.6% FSD	+/- 1% FSD	+/- 1.6% FSD	+/- 1% FSD
Dial Size	4"	4"	2.5"	4"
Glycerine Filled	No	Yes	Yes	Yes
End Connection	1/2" BSPT	1/2" NPTM	1/4" BSPTM	1/2" NPTM
Connection Location	Bottom	Bottom	Back	Bottom
Pressure Element	Capsule Type	C type Bourdon Type	C type Bourdon Type	C type Bourdon Type
Case Material	SS 304	SS 304	SS 304	SS 304
Window Material	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass
Element Material	SS 316	SS 316	SS 316	SS 316
Socket Material	SS 316	SS 316	SS 316	SS 316
Movement	SS 316	SS 316	SS 316	SS 316
Enclosure	IP 65	IP 65	IP 65	IP 65
Mounting	Direct	Direct	Direct	Direct
Fluid	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Blow out protection	Required	Required	Required	Required
Zero Adjustment	Provision required	Provision required	Not required	Provision required
Color	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving
Instrument Pointer	Aluminium Black	Aluminium Black	Aluminium Black	Aluminium Black
Bezel Ring	BAYONET	BAYONET	BAYONET	BAYONET
With Manifold	No	No	No	No
Manifold Details	N/A	N/A	N/A	N/A
Calibration	Required	Required	Required	Required

Sr. No.	5	6	7	8
Mat. Code	100013307	100000587	100013306	100000589
Short Text	GAUGE,PR,GLY,0-10BAR,4",1/2"NPT,W/MNFLD	GAUGE,PR,0-25BAR,4",1/2"NPTM	GAUGE,PR,GLY,0-25BAR,4",1/2"NPT,W/MNFLD	GAUGE,PR,GLY,FLD,0-60BAR,4",1/2"NPT
Long Text	Glycerine filled Pressure Gauge with Range 0-10 BAR, Dial size 4" (100 mm) , Connection 1/2"NPTM along with 3 Way 2 Valve Manifold of One side connection 1/2" NPT (F) and Second Connection 1" NPT (M)	Pressure Gauge with Range 0 to 25 Bar, Dial Size 4" , End connection ½" NPTM	Glycerine filled Pressure Gauge with Range 0-25 BAR, Dial Size 4" (100 mm) , Connection 1/2"NPTM along with 3 Way 2 Valve Manifold of One side connection 1/2" NPT (F) and Second connection 1" NPT (M)	Glycerine Filled Pressure Gauge with Range 0 to 60 Bar, Dial Size 4" , End Connection ½" NPT
Make	Bidder to Specify	Bidder to Specify	Bidder to Specify	Bidder to Specify
Model	Bidder to Specify	Bidder to Specify	Bidder to Specify	Bidder to Specify
Standard	EN 837-1/IS 3624	EN 837-1/IS 3624	EN 837-1/IS 3624	EN 837-1/IS 3624
Pressure Gauge Range	0 to 10 barg	0 to 25 barg	0 to 25 barg	0 to 60 barg
Operating Pressure	0 to 4 barg	3 to 16 barg	3 to 16 barg	0 to 25 barg
Over range Protection	130%	130%	130%	130%
Design Pressure	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range
Design Temp.	0 to 65 Deg C	0 to 65 Deg C	0 to 65 Deg C	-10 to 65 Deg C
Accuracy	+/- 1% FSD	+/- 1% FSD	+/- 1% FSD	+/- 1% FSD
Dial Size	4"	4"	4"	4"
Glycerine Filled	Yes	Yes	Yes	Yes
End Connection	1/2" NPTM	1/2" NPTM	1/2" NPTM	1/2" NPTM
Connection Location	Bottom	Bottom	Bottom	Bottom
Pressure Element	C type Bourdon Type	C type Bourdon Type	C type Bourdon Type	C type Bourdon Type
Case Material	SS 304	SS 304	SS 304	SS 304
Window Material	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass
Element Material	SS 316	SS 316	SS 316	SS 316
Socket Material	SS 316	SS 316	SS 316	SS 316
Movement	SS 316	SS 316	SS 316	SS 316
Enclosure	IP 65	IP 65	IP 65	IP 65
Mounting	Direct	Direct	Direct	Direct
Fluid	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Blow out protection	Required	Required	Required	Required
Zero Adjustment	Provision required	Provision required	Provision required	Provision required
Color	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving
Instrument Pointer	Aluminium Black	Aluminium Black	Aluminium Black	Aluminium Black
Bezel Ring	BAYONET	BAYONET	BAYONET	BAYONET
With Manifold	Yes	No	Yes	No
Manifold Details	3-way 2 valve Manifold one side connection 1/2" NPT (F) and Second connection 1" NPT(M) Manifold Material SS316	N/A	3-way 2 valve Manifold one side connection 1/2" NPT (F) and Second connection 1" NPT(M) Manifold Material SS316	N/A
Calibration	Required	Required	Required	Required

Sr. No.	9	10	11
Mat. Code	100002954	100012163	100013302
Short Text	GAUGE,PR,GLY,FLD,0-60BAR,2.5",1/4"BSP	GAUGE,PR,GLY,FLD,0-60BAR,100MM,1/4"NPTM	GAUGE,PR,GLY,0-60BAR,4",1/2"NPT,W/MNFLD
Long Text	Glycerine Filled Pressure Gauge with Range 0 to 60 Bar, Dial Size 2.5" End Connection 1/4" BSP	Glycerine Filled Pressure Gauge, ¼" NPTM back entry 0-60 Bar; Dial size : 100mm ; Body and internal MOC : SS316 for Combo Skid.	Glycerine filled Pressure Gauge with Range 0-60 BAR, Dial size 4" (100 mm) , Connection 1/2"NPTM along with 3 Way 2 Valve Manifold of one side connection 1/2" NPT (F) and second Connection 1" NPT (M)
Make	Bidder to Specify	Bidder to Specify	Bidder to Specify
Model	Bidder to Specify	Bidder to Specify	Bidder to Specify
Standard	EN 837-1/IS 3624	EN 837-1/IS 3624	EN 837-1/IS 3624
Pressure Gauge Range	0 to 60 barg	0 to 60 barg	0 to 60 barg
Operating Pressure	0 to 25 barg	10 to 40 barg	10 to 40 barg
Over range Protection	130%	130%	130%
Design Pressure	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range
Design Temp.	-10 to 65 Deg C	-10 to 65 Deg C	-10 to 65 Deg C
Accuracy	+/- 1.6% FSD	+/- 1% FSD	+/- 1% FSD
Dial Size	2.5"	4"	4"
Glycerine Filled	Yes	Yes	Yes
End Connection	1/4" BSPTM	1/4" NPTM	1/2" NPTM
Connection Location	Bottom	Back	Bottom
Pressure Element	C type Bourdon Type	C type Bourdon Type	C type Bourdon Type
Case Material	SS 304	SS 304	SS 304
Window Material	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass
Element Material	SS 316	SS 316	SS 316
Socket Material	SS 316	SS 316	SS 316
Movement	SS 316	SS 316	SS 316
Enclosure	IP 65	IP 65	IP 65
Mounting	Direct	Direct	Direct
Fluid	Natural Gas	Natural Gas	Natural Gas
Blow out protection	Required	Required	Required
Zero Adjustment	Not required	Provision required	Provision required
Color	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving
Instrument Pointer	Aluminium Black	Aluminium Black	Aluminium Black
Bezel Ring	BAYONET	BAYONET	BAYONET
With Manifold	No	No	Yes
Manifold Details	N/A	N/A	3-way 2 valve Manifold one side connection 1/2" NPT (F) and Second connection 1" NPT(M) Material SS316
Calibration	Required	Required	Required

Sr. No.	12	13	14	15
Mat. Code	100009973	100012610	100007493	--
Short Text	GAUGE,PR,GLY,FLD,0-60BAR,6",1/2"NPT	GAUGE,PR,0-400BAR,4",1/2"NPT,BM	GAUGE,PR,GLY,FLD,0-400BAR,2.5",1/4"NPT	GAUGE,PR,GLY,FLD,0-100BAR,4",1/2"NPT
Long Text	Glycerine Filled Pressure Gauge with Range 0 to 60 Bar, 6" Dia Size, End Connection 1/2"NPT	Pressure Gauge, Bottom Mounted, 4" Dial, Range : 0-400bar, 1/2" NPTM		
Make	Bidder to Specify	Bidder to Specify	Bidder to Specify	Bidder to Specify
Model	Bidder to Specify	Bidder to Specify	Bidder to Specify	Bidder to Specify
Standard	EN 837-1/IS 3624	EN 837-1/IS 3624	EN 837-1/IS 3624	EN 837-1/IS 3624
Pressure Gauge Range	0 to 60 barg	0 to 400 barg	0 to 400 barg	0 to 100 barg
Operating Pressure	0 to 30 barg	25 to 250 barg	25 to 250 barg	0 to 80 barg
Over range Protection	130%	130%	130%	130%
Design Pressure	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range	Equal to 130% of Pressure range
Design Temp.	-10 to 65 Deg C	-10 to 65 Deg C	-10 to 65 Deg C	-10 to 65 Deg C
Accuracy	+/- 1% FSD	+/- 1% FSD	+/- 1.6% FSD	+/- 1% FSD
Dial Size	6"	4"	2.5"	4"
Glycerine Filled	Yes	Yes	Yes	Yes
End Connection	1/2" NPTM	1/2" NPTM	1/4" NPTM	1/2" NPTM
Connection Location	Bottom	Bottom	Bottom	Bottom
Pressure Element	C type Bourdon Type	C type Bourdon Type	C type Bourdon Type	C type Bourdon Type
Case Material	SS 304	SS 304	SS 304	SS 304
Window Material	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass	Shatterproof Glass
Element Material	SS 316	SS 316	SS 316	SS 316
Socket Material	SS 316	SS 316	SS 316	SS 316
Movement	SS 316	SS 316	SS 316	SS 316
Enclosure	IP 65	IP 65	IP 65	IP 65
Mounting	Direct	Direct	Direct	Direct
Fluid	Natural Gas	Natural Gas	Natural Gas	Natural Gas
Blow out protection	Required	Required	Required	Required
Zero Adjustment	Provision required	Provision required	Not required	Provision required
Color	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving	Aluminium Dial with Black Engraving
Instrument Pointer	Aluminium Black	Aluminium Black	Aluminium Black	Aluminium Black
Bezel Ring	BAYONET	BAYONET	BAYONET	BAYONET
With Manifold	No	No	No	No
Manifold Details	N/A	N/A	N/A	N/A
Calibration	Required	Required	Required	Required

Notes:

1. The Vendor shall submit QAP and data sheet within 10 working days after getting contract/order (whichever is earlier) to GEL for their review and approval. Queries raised by GEL during review of QAP and Data Sheet, if any, shall be resolved by the vendor to the complete satisfaction of GEL within 7 working days from date of receipt of all queries. No extension in delivery schedule shall be provided in case of delay in completing the QAP, datasheet approval process as stated above for reasons directly attributable to the vendor. Decision taken by GEL in the regard shall be final and binding on the Vendor.
2. Manufacturer shall perform all tests as specified in GEL approved QAP and compliance report for the same shall be produced at the time of TPI inspection.
3. TPI in the scope of Bidder. Bidder shall perform inspection at their works and calibration certificates shall be furnished to Gujarat Energy Limited.
4. Technical clearance shall be provided by GEL based on TPI report based on which Vendor shall dispatch the materials.

Annexure-1 QAP (Vendor shall furnish compliance to below QAP)

#	Parameters	Characteristics	Acceptance Standard	Manufacturer's Testing		TPIA Scope of Testing – Witness/Review		Inspection Scope	
				Extent of Check	Records	Extent of Check	Records	Manufacturer	TPI
1	Visual	Dial Size	GEL Approved Data Sheet	100%	Compliance certificate by Manufacturer	As Per Annexure-A	Witness report	P	W
		Colour							
		Connection							
		Connection Location							
		Range							
		Glycerine Filled							
		Pressure Element							
		Blow out protection							
		Zero Adjustment							
		Manifold Details							
2	Functional	Overpressure limit	GEL Approved Data Sheet	100%	Compliance certificate by Manufacturer	As Per Annexure-A	Witness report	P	W
		Accuracy							
		Over-range protection							
3	Material Test Certificate	Case Material	GEL Approved Data Sheet	100%	Compliance certificate by Manufacturer	As Per Annexure-A	Summary report	P	R
		Bezel Ring							
		Window Material							
		Sensor							
		Element Material							
		Movement							
		Socket Material							
		Pointer							
		Manifold							
4	Documents	Enclosure	Test Certificate	100%	Compliance certificate by Manufacturer	As Per Annexure-A	Summary report	P	R
		Calibration							
		Ingress Protection (Enclosure)	Ingress Protection Certificate			100%		-	R
		Manufacturer's records for internal inspection as per test requirements above	GEL Approved Data Sheet						

P: Perform
W: Witness
R: Review

Annexure A (reference standard: IS 2500)**SAMPLING PLAN (Single Sampling Plan with 1% AQL, Normal Inspection-Level 1 (As per IS 2500))**

Sl. No.	Batch Size	Sample Size	Acceptance Number	Rejection Number
1	2 to 8	2	0	1
2	9 to 15	2	0	1
3	16 to 25	3	0	1
4	26 to 50	5	0	1
5	51 to 90	5	0	1
6	91 to 150	8	0	1
7	151 to 280	13	0	1
8	281 to 500	20	0	1

Number of samples inspected will be equal to the sample size given by the plan. If the number of non-conforming product(s) is equal to acceptance number, the lot shall be considered acceptable. If the number of non-conforming product(s) is equal to or greater than the rejection number, then the whole lot will be retested for that particular parameter and rejected products will be replaced by conforming products.

Notes for TPIA:

1. TPI Signed and stamped Document set shall include:
 - 1.1) IRN, Inspection report/Joint inspection report
 - 1.2) Summary sheet to include TPI observations and remarks (Accepted/Not accepted) for each line item in QAP
 - 1.3) Witness report providing details of Witness performed on the sample Quantity.
 - 1.4) Compliance certificate by Manufacturer and Compliance certificate by TPI
2. All test certificates
3. TPI to Specify Total Offered Qty. in the lot and corresponding sample size Qty. (and serial nos.) in Summary Sheet.
4. TPIA shall issue Release Note on the basis of witness/review of all stages as per approved QAP.