

PRE QUALIFICATION REQUIREMENT

Pitot tube with Flow Transmitter

Sl. No.	PQR	Vendor's compliance
1.	The bidder should be an original manufacturer/authorized distributor/channel partner of Pitot tube with Flow Transmitter. For authorized distributors/channel partner, the authorization letter from OEM to be submitted.	
2.	The bidder shall submit minimum one copy of the earlier Purchase Orders executed in the last five years, for supply of Averaging Pitot tube with Flow Transmitter.	
3.	Bidder shall submit proven track record (PTR) from end user for Averaging Pitot tube with Flow Transmitters, which were supplied either directly or through their authorized system integrator/authorized dealer and must have been working satisfactorily for minimum of one year from the date of commissioning, during last Seven years. Bidder to submit satisfactory performance certificate from the end user.	

BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI - 620 014

CONTROLS & INSTRUMENTATION / FB



TECHNICAL SPECIFICATION FOR
Flow Measurement with
Pitot Tube Assembly

SPECIFICATION REF: TCI/SCR/PITOT/BHUSAWAL-1727/REV 00

REVISION HISTORY

REV. No.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED
00	01-12-2020	INITIAL RELEASE	A.Anand	K.Veeramani / N.Rakesh	Aswini Kumar Panda
			<i>A. Anand</i>	<i>K. Veeramani / N. Rakesh</i>	<i>Aswini</i>



1. Scope of Supply:

Vendor shall supply pitot tube with Direct Line Mounted Flow Transmitter as single assembly suitable for mounting in 2 " Class 150 RF flange available in dilution air-line & distribution line.

2. Technical Specification for Pitot Tube

SL. NO.	CHARACTERISTICS	REQUIREMENT
2.1	Probe Type	Averaging Pitot Tube (Traverse probe)
2.2	Medium	Air
2.3	Design	Circular pipe
2.4	Mounting	2" #150 RF Flange Type with Neoprene Gasket
2.5	Probe Material	SS 316
2.6	End support	Probe with threaded end support, gasketed washer and nut.
2.7	DP connection	1/4" NPT
2.8	Output	Individually averaged signals of total and static pressure.
2.9	Accuracy	2-3% or better
2.10	Process condition	Refer Annexure
2.11	Tag plate	SS tag plate is required

3. Technical Specification for Flow Transmitter

SL. NO.	CHARACTERISTICS	REQUIREMENT
3.1	Instrument Tag no	To Match Pitot Tube Characteristics
3.2	Process Medium	
3.3	Operating Pressure / Differential Pressure	
3.4	Operating temperature	
3.5	Calibration range	
3.6	Transmitter Type	Microprocessor based, 2 wire type, HART protocol compatible. No Retrofit models acceptable.
3.7	Output Signal Range	4-20 mA DC, HART Protocol
3.8	Measuring element	Capsule / Diaphragm
3.9	Wetted Part Material	SS316 or better



3.10	Static Pressure	150% of maximum span continuously, without affecting the calibration.
3.11	Turn down ratio	100:1
3.12	Span and Zero	Locally adjustable non-interacting. Facility for elevation and suppression by 100% of span.
3.13	Enclosure Class	IP-65, Intrinsically Safe, PESO Certified
3.14	Output Indicator	LCD
3.15	Name Plate	Tag number, service engraved in SS tag plate
3.16	Power Supply	Loop Powered
3.17	Load	600 Ω (min) @ 24 Volts DC
3.18	Ambient temperature	0 - 50 °C
3.19	Accuracy	± 0.1 % of span or better
3.20	Stability	a. ± 0.1 % of calibrated span for 6 months for range up to 70 kg/cm ² b. ± 0.25 % of calibrated span for 6 months for range above 70 kg/cm ²
3.21	Process connection	To match Pitot Tube End Connection
3.22	Valve Manifold	3 Valve Manifold.
3.23	Mounting Arrangement	Direct Mount to Flow Element
3.24	Electrical Connection	Cable Gland
3.25	Diagnostics	Self-Indicating Feature

4. GENERAL

4.1	INSPECTION & TESTING	Vendor Quality Plan
4.2	DOCUMENTS	
	2 Sets of the following along with technical offer	Technical catalogue
		Data Sheet with model, span and accuracy for calibrated range. Dimensional Drawings
	After placement of order	Instruction / Operation & Maintenance Manual, Technical Catalogues,
	PACKING	QA:CI:STD:PR:04

Note: Any deviations in the specification to be clearly brought in 'Sub Delivery Enquiry Deviation format only'.



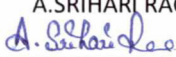
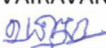

ANNEXURE

SL. NO	DESCRIPTION	TECHNICAL PARAMETER	
1.	Service	Dilution Air Header Flow	NH3/Air Distribution line flow
2.	Tag No	HSG20CF501 & HSG30CF501	HSK50CF501-506 & HSK55CF501-506
3.	Quantity/boiler	2	2x6
4.	Minimum Pressure	-660 mmWC	-660 mmWC
5.	Normal Pressure	425 mmWC	425 mmWC
6.	Maximum Pressure	660 mmWC	660 mmWC
7.	Minimum Temperature	13 °C	13 °C
8.	Normal Temperature	150 °C	107 °C
9.	Maximum Temperature	205 °C	205 °C
10.	Normal operating Flow	5733 Nm ³ /h	956 Nm ³ /h
11.	Maximum operating Flow	6542 Nm ³ /h	1090 Nm ³ /h
12.	Design Pressure	± 660 mmWC	± 660 mmWC
13.	Design Temperature	205 °C	205 °C
14.	Pipe line size (OD x T-mm)	NB 500 (508 x 6.35)	NB 250 (273 x 6.35)
15.	Pipe material	SA 210 Gr A1 or SA 106 Gr B	
16.	Recommended upstream length	Vendor to specify in their offer	
17.	Recommended downstream length	Vendor to specify in their offer	
18.	Model number	Vendor to indicate in their offer.	

**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI**

**CONTROLS AND INSTRUMENTATION / FB
QUALITY ASSURANCE**

**STANDARD PACKING PROCEDURE
FOR
ALL INSTRUMENTS AND MISCELLEANEOUS ITEMS
(ELECTRICAL, ELECTRONIC AND PNEUMATIC)**

Rev	Date	Prepared	Checked	Approved	Revision History
00	01.01.96	Sd/-	Sd/-	Sd/-	Initial History
01	28.03.02	Sd/-	Sd/-	Sd/-	Department name changed
02	26.02.07	Sd/-	Sd/-	Sd/-	Revised after discussion with Shipping Dept.
03	17.12.16	A.SRIHARI RAO 	RM.VAIRAVAN 	S.DAKSHINAMOORTHY 	Revised to suit all type of instruments.

1. Scope

This procedure gives minimum guidelines to be complied with for packing of Electrical, Electronic and pneumatic Instruments. This packing shall be suitable for different handling operations and for the adverse conditions during transportation and during indoor / outdoor storage for period more than one year.

2. Material for packing

The individual instrument shall be packed in carton box (specifically made for particular instrument) and grouped together inside a box made of wood or plywood as per National / International standard.

3. Packing

- Items shall be inspected for cleanliness immediately before packaging. Dirt, oil, residue, metal chips or other forms of contamination shall be removed.
- Adequate protection shall be provided against mechanical damage and atmospheric corrosion in transit and, for equipment suitable for outside storage, for prolonged storage at the site prior to installation.
- Water proof barrier material – high density polythene shall be used as a resistant to grease and water; it shall protect items from airborne and windblown soils.
- Desiccants like silica gel to be used inside the carton box. Silica gel shall conform to IS 3401. The gel is to be packed in sachets placed at different positions inside the components for absorbing moisture. The quantity of silica gel shall be adequate for storage period of one year.
- All tapped openings in equipment shall be plugged with plastic plugs to protect internal / external threads.
- Use a sturdy cardboard shipping carton, large enough for at least 3 inch foam padding around the instrument.
- Do not use loose plastic foam pieces, which can shift during transport.
- Secure the box flaps with packaging tape or box staples.

3.1) Marking & Labelling:

- Components and their containers shall be identified by marking. Shipping marks shall be on all sides of package. The shipping marks shall be at least 3 inches high where space permits. Markings are to be in black paint or ink depending on shade of the package surface.
- Cautionary symbols to be stenciled in red waterproof paint or ink.

QA:CI:STD:PR:04 / Rev 03

- The gap between job and the box shall be filled with suitable material like jute, coir, thermo coal, etc.
- For export packing additional care shall be taken as per contract requirements if applicable. Otherwise, suitable box made of seasoned wood and / or plywood sheets of required thickness shall be used with suitable sea worthy packing protection.

4. Marking

- After completing the packing, Stencil marking, as per dispatch instructions and symbol marking as per Annexure – I shall be made. Please ensure the box is stenciled with “FRAGILE ITEM”, “HANDLE WITH CARE”.

5. Packing Slip

- A copy of the packing slip, kept in a polythene cover shall be kept inside the box. Another copy of the packing slip, kept in a polythene cover shall be kept outside the box and firmly fixed to the case.

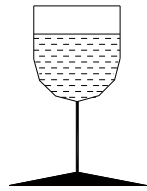
6. Caution

- Do not pack any other Mechanical items with this case.

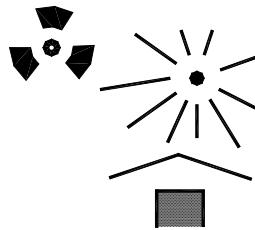
7. General

- These packing procedures are the minimum requirements in addition to the standard instructions mentioned in the Purchase Order and Specification.
- Deviation to meet the packing procedure requirements / non-clarity in packing approach in any quotation will be liable for rejection of offer.

ANNEXURE - 1



FRAGILE, HANDLE WITH CARE



PROTECT FROM HEAT AND RADIOACTIVE SOURCES



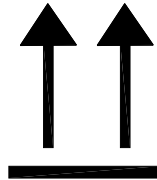
USE NO HOOKS

NOTE: The design of heavy goods packages cannot always resist top lifting by grabhooks.



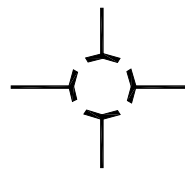
KEEP DRY

NOTE: Not all cases have waterproof internal liners; plywood used in the construction may not have a waterproof glue-line.



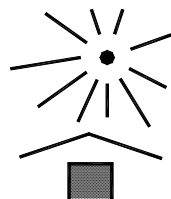
THIS WAY UP

NOTE: Certain designs of small cases make it difficult to distinguish top from bottom.



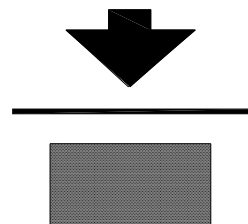
CENTRE OF GRAVITY

NOTE: This should be stencilled as a minimum on the two longest case sides (this information will normally be supplied by the manufacturer of the item(s) packed).



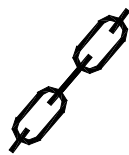
KEEP AWAY FROM HEAT

... kg max



STACKING LIMITATION

NOTE: The maximum load in kilograms should be marked above the arrow.



INTERNATIONAL "SLING HERE" SYMBOL

/ On Bidder's office letter pad /

Self-Declaration

Enquiry No.	GEM/2021/B/1280937
Enquiry Date	12.06.2021

In line with Government public procurement order Number P-45021/2/2017-B.E-II dated 15.06.2017, and further modified order dt.04.06.2020 issued by DPIIT,

I / We hereby declare that I / We are a "Local Supplier" meeting the requirement of minimum local content (.....%) defined in the above government notification for the goods against above mentioned enquiry Number.

Details of location at which local value addition will be made is as follows:

Door No.	
Street / Address 1	
Street / Address 2	
District	
State	
Country	
PIN Code	

We also understand that the false declarations will be considered as breach of Integrity and liable for action.

For Company Name:

Seal:

Signature:

Date:

Place:

(Please fill all the yellow color field)



MATERIALS MANAGEMENT / BOI

SUB-DELIVERY ENQUIRY DEVIATION FORMAT

Page : of

Schedule of deviation to : **GEM/2021/B/1280937**
Sub-delivery Enquiry No. :

Description : **PITOT tube with FLOW TRANSMITTER**

Documents : **Specification: TCI/SCR/PITOT/BHUSAWAL-1727/REV 00**

Drawing No. : -

Quality Plan : **BHEL Approved VQP**

Packing Procedure : **QA:CI:STD:PR:04 Rev.03**

Document reference	BHEL called for	Firm's alternative offer

Certified that other than the above deviations, we are accepting all the other specifications and requirements in full to your Enquiry.

Station :

Date :

Signature of firm's representative

Firm seal

Note : 1. Deviations should be taken only in the extreme case
2. If necessary, use additional sheets with page control number