


909964/2022/HEP-HPE41501

	PRODUCT SPECIFICATION HYDRO PROJECTS ENGINEERING	241525368
		Rev. 00
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PURCHASE SPECIFICATION OF MAGNETIC FLOAT LEVEL INDICATOR (BYPASS LEVEL GAUGE WITH SWITCH) FOR DRAFT TUBE		

PROJECT: KALWAKURTHY STAGE- 1 LIS

1. PRINCIPLE OF OPERATION:





Magnetic float level indicator is intended for measurement of water levels in the draft tube. The unit operates on the principle of float position detection in the water draft tube level.


The level measuring chamber is connected parallel to draft tube in such a way that same pressure & level exist in the chamber as in the draft tube. The float moves in the chamber according to the water level in the draft tube and transmits its motion to an externally mounted indicating device.

This indication can be achieved by operation of float moving two colored (half-half red & white) horizontal pivotal roller by magnetic coupling, which is located outside the draft tube. The sequence of the roller showing the red side is the level measurement of the liquid level inside the chamber and SS graduated scale mounted on the side.

2. TECHNICAL PARAMETERS:

Center-to-Center Distance	:	1100 mm
Indicating Range	:	1100 mm
Normal Working Pressure	:	16 Kg/cm ²
Test Pressure	:	24 Kg/cm ²
Indication Accuracy	:	± 10 mm
Magnetic switch accuracy	:	± 10 mm of its switching point or better
Process connections	:	Refer sketch no. HPE-GC-444 Rev. 00
Medium	:	Water
Operating temperature	:	0 deg. C to +45 deg. C
Drain & vent Plug	:	½" BSP (F) metallic SS plug on top & bottom
Scale	:	Stainless steel fixed suitably for clear reading.
Marking to be provided at every 50 mm and minimum graduation line should be at 5 mm.		

REV.NO.		DISTRIBUTION.	QTY.	APPROVED:			
PREPARED				 मनीष साहू / MANISH SAHU गरी उपाय विभागाध्यक्ष (Sr. Dy General Manager) (MS) एच पी ई विभाग/HPE Division बी.एच.ई.एल., भोपाल/BHEL, BHOPAL			
CHECKED		HPE	01	PREPARED	CHECKED	ISSUED	DATE
APPROVED		MHX	02	 विनोद कुमार नाथ / VINOD KUMAR NATH प्रमुख प्रबंधक / Senior Manager एच पी ई विभाग/HPE Division बी.एच.ई.एल., भोपाल/BHEL, BHOPAL (VKN)	 अमित पाण्डेय / AMIT PANDEY उप महाप्रबंधक / Dy General Manager एच पी ई विभाग/HPE Division बी.एच.ई.एल., भोपाल/BHEL, BHOPAL (AP)	 अमित पाण्डेय / AMIT PANDEY उप महाप्रबंधक / Dy General Manager एच पी ई विभाग/HPE Division बी.एच.ई.एल., भोपाल/BHEL, BHOPAL (AP)	23.06.2022
DATE							

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PURCHASE SPECIFICATION OF MAGNETIC FLOAT LEVEL INDICATOR (BYPASS LEVEL GAUGE WITH SWITCH) FOR DRAFT TUBE		

Magnetic Float	:	Made of Titanium / SS316 / SS304, (without vented condensate tube), suitable for normal working Pr. 16 kg/cm ² , Test pressure 24 kg/cm ² and suitable for temp. 0 deg. C to (+) 45 deg. C.
Magnetic level switch	:	Five (5) Nos. Bi-stable magnetic level switch. The contact of each level switches should be 1 NO +1 NC change-over Bi-stable type. These are to be supplied mounted on level indicator. Each switch must be supplied with cable length of 2 Mtrs. long.
Mounting Bracket	:	Vendor to supply suitable mounting bracket / metallic strip for level switch mounting of each switch on housing
Contact rating	:	1 A , 250 V AC / 0.2 A , 250 V DC
Protection class	:	IP-65
Ambient temperature	:	Suitable for temperature range 0 to (+) 45 deg .C
Housing Material	:	SS 316 / SS 316L / SS 316Ti, suitable for Hydraulic test Pressure 24 Kg/Cm ² (Float chamber). Flanges must be suitable for ANSI CLASS 150
Terminal box	:	25 points terminal box (Protection class IP 65) shall be mounted on housing at top of float housing. Wiring of level switches (5 Nos.) shall be terminated to the terminal box with identification ferrule Nos. and wiring diagram to be pasted inside the terminal box cover.

IMPORTANT NOTE:

- (i) Terminal box must be mounted at the top of the float housing as per attached sketch no. HPE-GC-444 Rev.00.
- (ii) Overall dimensions to be adhere to the drawing attached.

3. DOCUMENTATION:

ALONG WITH OFFER:

- (a) The Supplier shall submit the catalogue of the model quoted, including level gauge, level switch with complete dimensional and mounting details along with the offer.

AFTER PLACEMENT OF PO:

The supplier shall submit the following documents after placement of purchase order.

- a) GA drawing along with technical details of Magnetic float level indicator showing overall dimensions, flange details, terminal wiring details and float construction for our approval within 4 weeks after placement of PO.

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<div><u>PURCHASE SPECIFICATION OF</u></div> <div><u>MAGNETIC FLOAT LEVEL INDICATOR (BYPASS LEVEL GAUGE WITH SWITCH) FOR DRAFT TUBE</u></div>		

- b) After incorporating our comments subsequent revised drawing shall also to be submitted within 1 week of receipt of comments.
- c) QAP shall be submitted within 4 week after award of PO for approval.
- d) Manufacturing shall only be started after manufacturing clearance / approval of drawings and QAP.

4. GUARANTEE:

Instrument should bear supplier's guarantee certificate for trouble free operation and good workmanship for a period of 18 months from the date of dispatch or 12 months from the date of commissioning. Supplier should undertake to replace free of cost any material / components found defective in operation during guarantee period.

5. TESTING:

Level (in mm) for setting of 5 nos. switching relays for individual project will be furnished to successful bidder. Vendor has to mount this level switches as per the sketch furnished by BHEL to successful bidder.

Test Certificates of hydro-static test of Housing & magnetic float at 1.5 times of the working pressure is to be required in 2 copies.

6. INSPECTION:

The inspection agency shall certify that the testing has been witnessed as per approved QA plan supplied by the vendor. Acceptance & waiver of inspection does not absolve the supplier of his responsibility to rectify the instrument in case it does not perform satisfactorily at site where it is actually use.

7. STORAGE & HANDLING:

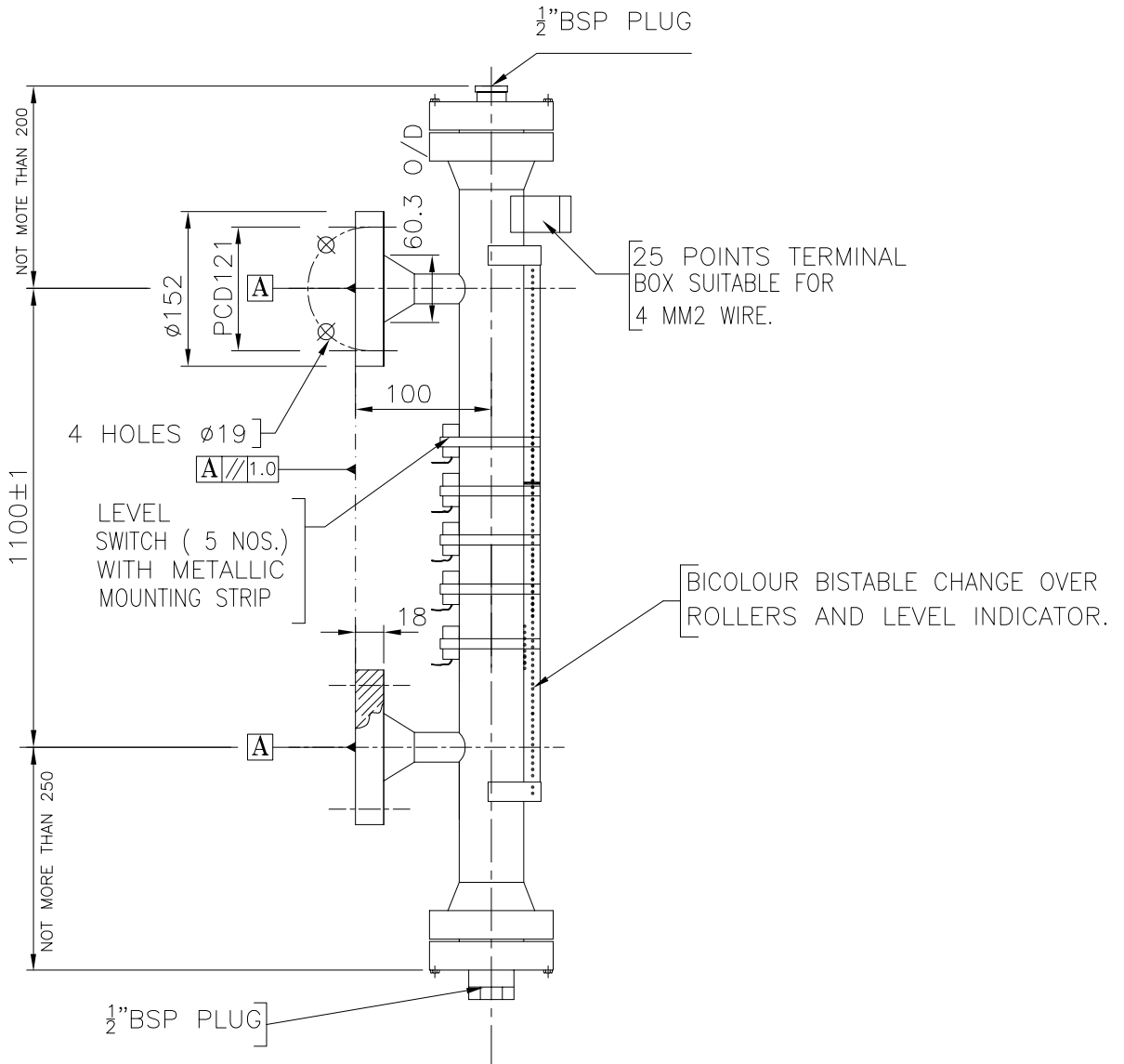
Supplier shall clearly mention the method of storage & handling in BHEL works / site for long storage. It shall also be mentioned if any special protection is to be provided for this purpose. The above should from part of O&M Manual.

8. PACKING INSTRUCTIONS:

Each level indicator should be properly packed individually in wooden box in bolted condition with cushioning on level flapper indicator. Care should be taken so that it should not get damaged during transit to BHEL Bhopal & then BHEL Bhopal to site.



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				CHECKED			CHECKED	
				APPD.			APPD.	
C. COMPANY.								DISTRIBUTION OF PRINTS

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PROJECT – KALWAKURTHY LIS STAGE-I

REMARKS	ITEM NO.	DESCRIPTION	STD	MATL. CODE	A	UNIT	57	58	UNIT WT. (kg)
				46			54	68	71
				MATL. SPCN.				QTY.	

<div></div> <div>BHARAT HEAVY ELECTRICALS LTD. BHOPAL</div>					DRN	NAME	SIGN	DATE	NO. OF VAR.
					CKD	SPS	—sd—	23.06.22	
					APPD	VKN	—sd—	23.06.22	
							MS	—sd—	23.06.22
DEPT. H.T.E.	UNTOL. DIMS. GR.		SCALE NTS	WEIGHT(K.G.) 45.00	REF.TO ASSY.DRG. NA		ITEM NO. NA	NO.OF ITEM NA	
CODE 402	REF. DRG. NO. 32000049014								
TITLE <u>MAGNETIC FLOAT LEVEL</u> <u>INDICATOR (BYPASS LEVEL GAUGE WITH SWITCH)</u> (16ATA)					SKETCH NO. HPE—GC—444			REV. 00	
					SHT. NO. 01		NO. OF SHT. 01		



BHARAT HEAVY ELECTRICALS LIMITED – BHOPAL

SAMPLE QUALITY ASSURANCE PLAN

SHEET: 1 OF 1

PROJECT: KALWAKURTHY LIS STAGE-1

EQUIPMENT: MAGNETIC FLOAT LEVEL GAUGE (INDICATOR) FOR DRAFT TUBE

QA PLAN NO: 241525368-QAP DATE: 30.07.2021

SL NO	COMPONENT/ASSY/ OPERATION	CHARACTERISTICS	QUANTUM	REF. DOC. /ACCEPTANCE NORMS	RECORD FORMAT	AGENCY		REMARKS
						OEM	BHEL /TPI	
1.	MAGNTIC FLOAT LEVEL INDICATOR	HOUSING & FLOAT: 1.) Mechanical properties 2.) Chemical properties 3.) Dimension 4.) Pressure test (At 1.5 times of working pressure Kg/cm2)	100%	Drg / Spec.	TC	P	V	
		SWITCHES: 1.) Make & model code 2.) Functional test	100%	Drg / Spec.	TC	P	V	
		COMPLETE ASSEMBLY: 1.) Pressure test cum leakage test (At 1.5 times of working pressure Kg/cm2) 2.) Opeartion test of level indicator, MagnetiC Flappers, level switches 3.) Dimension	100%	Drg / Spec.	TC	P	W*	
CUSTOMER			BHEL					

Note: 1) * (25% of total quantity or 1 No.) (whichever is more) to be witnessed by TPI / BHEL for each P.O. item.

2) Vendor to submit the Quality Assurance Plan (QAP) in vendor's format in line with our sample QAP for approval after placement of PO.

3) Item to individually packed and supplied as BHEL specification and Vendor has to submit the compliance for packing.