

Mandatory Pre-Qualification requirements for FLOW METER as per specification**TG60183** (W90414902491, W96414905194).**Description:**

Flow meter is used for measuring oil flow in seal oil system of turbo generator. It comprises of float placed in the path of flowing fluid whose movement is magnetically transmitted to indicator. Flow meter should be of very reliable and proven design to measure the flow parameter in all operating conditions.

- 1.0 The vendor should be a regular manufacturer of such flow meter with following requirements-


Sr. No.	Parameter	Value
(i)	Application fluid	Oil (ISO VG46)
(ii)	Nominal pressure	10 Kg/cm ² (minimum)
(iii)	Working Temperature	50° C (minimum)
(iv)	Measuring range	0-200 LPM
(v)	End connection	Flanged NB 25 (minimum)
(vi)	Material of body, float, flange, spring	SS316 or equivalent
(vii)	Material of indicator	Die cast aluminium

- 2.0 In support of above sl. no. 1, vendor shall furnish technical details in below mentioned format for at least five (5) nos. of flow meter for the P.O. executed in past 5 years (from date of enquiry) along with P.O. copies.

S. No.	Brief technical details	Application	Name & address of customer	Date of supply
	<ul style="list-style-type: none"> - Application fluid - Working pressure and temperature - Measuring range - Material of body/float/flanges 	Oil (ISO VG46)		

- 3.0 Vendor to furnish the test certificate for hydro and calibration test against any one of the P.O. submitted as per clause 2. Test certificates must be clearly correlated with P.O.
- 4.0 Vendor to furnish acceptance certificate from one of the end users of flow meter against any one of the P.O. submitted as per clause 2. (Original Certificate or through e-mail directly from the customer). Acceptance certificate should contain information like item details and its application or correlation with P.O.

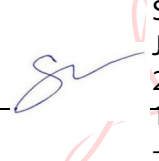
Note: BHEL reserves the right to verify information submitted by vendor. In case the information is found to be false / incorrect, the offer shall be rejected.

MANUFACTURER'S NAME AND ADDRESS		STANDARD QUALITY PLAN					TO BE FILLED BY BHEL		TO BE FILLED BY BHEL			
 BHEL	VENDOR'S NAME	ITEM	FLOW METER (Magnetic transmission/flapper type)		QP NO. REV.	QA/BE/QP/926 00 Date: 07.03.2022						
		Drg. No.	As per PO									
		Spec.	TG60183, AA7335501									
		Spec. Rev.	As per PO									
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY M B N			REMARKS
1	2	3	4	5	6	7	8	9	D	10		11

1.0 RAW MATERIALS												
1.1	Body, flange, float etc.	Chemical composition	Major	Measurement	1 sample/lot	Ord. Drg./Spec.	Ord. Drg./Spec.	MTC	√	P	V	-
1.2	Electronic indicator	Chemical composition	Major	Measurement	1 sample/lot	Ord. Drg./Spec.	Ord. Drg./Spec.	MTC	√	P	V	-
1.3	Raw material for major parts of flow meter	Chemical composition	Major	Measurement	1 sample/lot	Ord. Drg./Spec.	Ord. Drg./Spec.	MTC	√	P	V	-
2.0 FINAL TESTING												
2.1	Visual & Dimensional check	--	Major	Measurement	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	IR	√	P	W	-
2.2	Hydraulic test	--	Major	Physical	100%	Ord. Drg./Spec.	No leakage	IR	√	P	W	-
2.3	Calibration/accuracy test	--	Major	Physical	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	IR	√	P	W	-
2.4	DP test for weld joints	--	Major	Physical	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	IR	√	P	W	- If applicable
2.5	Helium leakage test	--	Major	Physical	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	IR	√	P	W	- For mat. code W90414907167
2.6	Compliance to technical specification	--	Major	Review	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	COC	√	P	V	-
2.7	Marking	--	Major	Review	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	-	-	P	V	-
2.8	Packing	--	Major	Review	100%	Ord. Drg./Spec.	Ord. Drg./Spec.	-	-	P	V	-

Note: 1. Witness by inspection agency to be random 10% of each material code (minimum 1 pieces per material code) from each lot. However, vendor to carry out 100% tests internally and tests report shall be reviewed by inspection engineer during inspection at Vendor's works. 2. Manufacturer to maintain calibrated instrument having better accuracy than the item under the test. Inspection engineer shall check the same.

MANUFACTURER/ SUBCONTRACTOR	LEGEND: ORD.: PURCHASE ORDERING, DRG: BHEL APPROVED DRAWING, SPEC: BHEL SPECIFICATION, MTC: MATERIAL TEST CERTIFICATE, T.C.: TEST CERTIFICATE, I.R.: INSPECTION REPORTS, COC: CERTIFICATE OF CONFORMANCE, M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOMINATED INSPECTION AGENCY, N: CUSTOMER, 'P': PERFORM, 'W': WITNESS, 'V': VERIFICATION, "√" RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER	FOR CUSTOMER USE	APPROVED BY
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