

TECHNICAL SPECIFICATIONS

" VIBRATION PROBE WITH ACCESSORIES "

PROJECT NAME	WHR BASED CAPTIVE POWER PLANT	
PACKAGE	VIBRATION PROBE WITH ACCESSORIES	
PROJECT LOCATION:	SEDAM CEMENT WORKS, KARNATAKA	
JOB NUMBER	26M.0017	
OWNER	ULTRATECH CEMENT LIMITED	
OWNER'S CONSULTANT	-	
MAIN CONTRACTOR	TKIL Industries Pvt. Ltd. (formerly known as thyssenkrupp Industries India Pvt. Ltd.) Pimpri, Pune, India – 411018	

DRAWING NUMBER & REVISION INDEX			
DRAWING NUMBER			
H3E-4WB-42836			
REVISION NO	0		
REVISION DATE	28.03.2025		

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RESPONSIBLE DEPT	CREATED BY	CHECKED BY	APPROVED BY
ELECTRICAL & INSTRUMENTATION	PDJ	KDB	SNS
	DATE: 28.03.2025	DATE: 28.03.2025	DATE: 28.03.2025
LATEST REVISION	LATEST ISSUE DATE		
0	28.03.2025		

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STATUTORY CODES & STANDARDS			
TKII'S DRG #		CONTACTOR'S DRG #	
H3E-4WB-42836		0	
REVISION NO.	0	DATE	28-03-2025
STATUTORY CODES & STANDARDS			
SR#	CODE	TITLE	
1	IEEE	Institute of electronics & electrical engineers	
2	ISA	Instrumentation, Systems & Automation Society	
3	ISI	Indian standards institution	
4	IEC	International electro technical commission	
5	NEC	National electrical code	
6	ISO	International standards organization	
7	BIS	Bureau of Indian standards	
8	API	American petroleum institute	
9	ASME	American society of mechanical engineers	
10	SAMA	Scientific apparatus mfrs. Association	
11	Noise immunity	• Input normal mode noise rejection 80 dB	
		• Input common mode noise rejection 75 Db	
		• For radio frequency inputs, noise immunity	
		hall be tested as per SAMA Std. PMC 33.1 1978	
		Class 2, Bands A, B and C.	
12	Surge Protection	IEEE - 472/1974	
		ANSI - C37.90A/1982	
13		Standard to be followed for signal/control cables	
		shall be as per IS-8130, 5831, 3975, and 1554	
		latest - editions	
NOTE: The list of reference standards given below table shall be applied as at least			
		1. American Society of Mechanical Engineers (ASME)	
		2. American Society for Testing & Materials (ASTM)	
		3. American Wire Gauge (AWG)	
		4. Indian Standards (IN)	
		5. DIN Standards	
		6. British Standards (BS)	
		7. International Society of Automation (ISA)	
		8. National Electric Code (NEC)	
		9. National Electrical Manufacturer’s Association (NEMA)	
		10. International Electro-Technic Commission (IEC)	
		11. Institute of Electrical & Electronics Engineers (IEEE)	
		12. International Telecommunication Union (ITU)	
		13. Electronics Industry association (EIA)	
		14. Indian Boiler Regulations (IBR)	

UNIVERSAL PARAMETERS OF CONTRACT		
DOCUMENT NO.	H3E-4WB-42836	
REVISION NO.	0	
DATE	28-03-2025	
INSPECTION & TESTING		
<div>Calibration Test</div> <div>Visual & Dimension Check</div> <div>Test certificates shall be submitted.</div>		
DESIGN LIFE		
The equipments manufactured & tested as per this specification shall have a design life of minimum 15 years. <div>Standard Warranty period is mentioned in the offer.</div> <p>*The criterion of design life does not apply to items which are considered as consumable</p>		
UNITS OF MEASUREMENT		
SI	units in accordance with	ISO 31 & ISO 100 shall be used
SAFETY		
Safety features shall be incorporated which enable operations to be performed with minimum risk to operations staff, and the design of which are based on established good engineering practices.		

SITE CLIMATIC CONDITIONS			
TKII'S DRG #		CONTACTOR'S DRG #	
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0		28-03-2025	
Following environmental conditions shall be considered to be prevailing at site. All Electrical & Instrumentation items shall be design as per the ambient conditions mentioned in below table			
SR#	PARAMETER	VALUE	UNIT
1	Ambient Air Temperature - Minimum [For Design]	5	Deg. C
2	Ambient Air Temperature - Average	32	Deg. C
3	Ambient Air Temperature - Maximum [For Design]	47	Deg. C
4	Relative Humidity - Minimum	20	%
5	Relative Humidity - Maximum [For Design]	85	%
6	Altitude from Mean Sea Level	420	m
7	Atmospheric Pressure		Bar
8	Rainfall - AnnualAverage	705	mm
9	Rainfall - Maximum Intensity		mm/hr
10	Wind - Average Velocity	47	m/s
11	Wind - Thunderstorm Velocity		m/s
12	Wind - No. of Thunderstorm days per year		Days
13	Seismic Zone **	III	-
14	Maximum Earthquake Factor	-	g
** Standard for Seismic Zone:			
In addition to the above mentioned environmental conditons prevailant at site, special care must be taken to ensure precautions for following ambients			
SR#	SPECIAL REQUIREMENT	STATUS	
1	Marine	No	
2	Tropicalisation	No	
3	Sand storms	No	
4	Lightning	No	
5	Termite	No	
6	Chemical	No	
7	Flooding	No	
8	Free to use	Yes / No	
9	Free to use	Yes / No	
10	Free to use	Yes / No	

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TECHNICAL SPECIFICATIONS					
TKII'S DRG #			REVISION		
H3E-4WB-42836			R0		
SR NO.	DESCRIPTION		REQUIREMENTS		SUPPLIER DATA
INSTRUMENT DATA : VIBRATION PROBE WITH ACCESSORIES					
1	General	Make	As Per Approved Vendor List	Forbes Marshall Pvt Ltd.	
2		Model	Vendor to specify	Forbes Marshall Pvt Ltd.	
3		Tag Number	Refer attached annexure-1	Noted. FM Standard tag plates shall be provided.	
4		Application	Refer attached annexure-1	Noted.	
5	Vibration Transmitter	Type	Accelerometer	Noted & Loop Powered type sensors offered.	
6		Sensing Element	PTZ ceramic	Noted.	
7		Range	0 – 20 mm/Sec	Noted 0-20 mm/sec RMS.	
8		Frequency Response	10Hz to 1kHz	Noted 0-20 mm/sec RMS.	
9		MOC	SS 316	Noted.	
10		Sealing Type	Welded, Hermetic	Noted for Hermetic sealing.	
11		Response time	Less than 60 sec.	Turn On time 4-20 mA loop:30 seconds	
12		Output	4–20mA, 24VDC (2 wire type)	4-20 mA DC proportional to RMS velocity (mm/s), Supply Voltage: 12-32 VDC	
13		Operating Temperature	Up to 85 Deg. C	-40 to 105°C	
14		Humidity	95% Relative Humidity non cond.	Sealing : Hermetic	
15		Electrical case isolation	100 Mega ohms	Case isolated, internally shielded	
16		Electrical connection	2 Pin MIL-C-5015 top	Noted.	
17		Frequency Range	10 to 1 KHZ	±10% 10 Hz - 1.0 kHz ±3 dB 3.5 Hz - 2.0 kHz	
18		Mounting Angle	At any angle on bearing housing circumference	90 degree angle.	
19		Mounting Hardware	Mounting pad and SS 316 stud to be provided	FM standard mounting stud of MOC SS304 considered.	
20		Stud details	M6 X 1.25 (Pitch) x 10mm Deep – For mounting sensor	Noted.	
21		Cable	10 mtrs. long teflon coated SS armoured cable from sensor to junction box for each sensor FM standard 10 meter extension cable with Flexible SS conduit considered.		

SPECIAL NOTES		
DOCUMENT NO.	H3E-4WB-42836	
REVISION NO.	0	
DATE	28-03-2025	
ORDER OF PRECEDENCE		
In case of conflict, the following order or precedence shall be applied, final closure shall be subject to acceptance by the Purchaser		
SR#	DOCUMENT NO.	TITLE
1	H3E-4WB-42836	Technical Specification for Vibration Probe with accessories
2	VMS Annexure-1	
3		
NOTES & REMARKS:		
<p>1. Commissioning spares, if any, to be included in scope of supply.</p> <p>2. Free erection/commissioning services to be provided if required.</p> <p>3. Calibration equipment, if separately required, to be provided.</p> <p>4. SS tag plate with site identification no to be attached to the equipment.</p> <p>5. Painting shall be epoxy based corrosion resistant paint; paint shade will be approved at the time of detailed engineering.</p> <p>6. Supplier to indicate the accuracy, stability, repeatability & detailed specifications of each item.</p> <p>7. Valve Selection calculation sheet to be submitted along with offer.</p> <p>8. Supplier to submit detailed technical catalogue for all the items quoted.</p> <p>9. Supplier to confirm / submit the data required / mentioned in this technical specifications duly signed along with detailed offer & data.</p> <p>10. Inspection & calibration test will be witnessed by TKII/ Client / Consultant/ Third party inspector at vendors works</p> <p>11. Packing shall be as per enclosed Packing Instructions document.</p>		
DEVIATIONS & DESCRIPANCIES		
<p>In case the bidder needs to take any deviation regarding any requirement enlisted in this technical specification, then a list of deviation shall be provided by the bidder before placement of order. The deviation shall be supported with due justification.</p> <p>Any deviation raised before order shall be subjected to acceptance by Purchaser</p> <p>Deviations raised after the placement of order shall NOT be accepted, and thereby complete compliance to technical specification shall be met by the manufacturer without any delivery and or commercial implications to purchaser</p> <p>In case there is a discrepancy between any of the attachments of this technical specification vendor shall clearly hilight the same and get the resolution from Purchaser before proceeding for commercial discussions.</p>		
QUALITY OF DRAWINGS AND DOCUMENTS SUBMITTED TO PURCHASER		
<p>All drawings and document shall be submitted as hard copies and or electronic copies as required by the Purchaser</p> <p>All drawings and document shall be submitted in editable formats as required by the Purchaser</p> <p>Use of non-liscensed versions of softwares for making drawings or documents is NOT allowed.</p> <p>Manufacturing shall be not be commenced without approval of Purchaser.</p> <p>All drawings and documents shall be submitted as "As-Built" after manufacturing</p> <p>Piecemeal / Incomplete Submissions shall not be considered for review, delay in such a case shall be to the manufacturer's account</p> <p>Vendor shall be responsible to incorporate all the corrections / comments given by pruchaser on the drawings submitted for approval</p> <p>BOM, Technical or commercial offer [if any] submitted during quotation shall not be binding on the purchaser, this technical specification shall be complied without any commercial or delivery implications, after placement of order</p>		