# TECHNICAL SPECIFICATIONS "VIBRATION PROBE WITH ACCESSORIES"

PROJECT	NAME	WHR BASED CAPTIVE POWER PLANT						
PACKA	<b>GE</b>	VIBRATION PROBE WITH ACCESSORIES						
PROJECT LO	CATION:	SEDAM CEMENT V	VORKS, KARNATAKA					
JOB NUN	MBER	26M.0017						
OWNE	ER .	ULTRATECH CEME	ENT LIMITED					
OWNER'S CON	NSULTANT	-						
MAIN CONT	RACTOR	TKIL Industries Pv (formerly known a Pimpri, Pune, Indi	s thyssenkrupp Indust	ries India Pv	rt. Ltd.)			
		DRAW	ING NUMBER & REVISI	ON INDEX				
DF	RAWING NL	JMBER						
	13E-4WB-4							
REVISIO		0						
REVISION	DATE	28.03.2025						
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	AL & INSTR ATEST REV	RUMENTATION	LATEST ISSUE		JJ.ZUZJ	DAIL, 20.0	JU. ZUZJ	
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REVISION		DATE	DE	TAILS		SIGN	SIGN	
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		OBJECTIVE AND SCOPE	
TKII'S DRG #		CONTACTOR'S DRG #	OWNER'S DRG #
	H3E-4WB-42836	0	0
REVIS	ION NO. 0		
	ON DATE 28-03-2025		
OBJECTIV			
		r the requirements of design, engineeri	ng,
nanufacti	uring & testing of following Item:		
SCOPE OI	SUPPLY:		
SR NO	ITEM	QTY	REMARKS
		As per	
4	Vibration Probe With Accessorie	es annexure	
1		a.mexare	
		As nor	
	Total	As per annexure	

NOTE: Erection hardware like nuts, bolts, washers etc, and Nipt DC cable glands with shrouds, lugs, SS tag plates shall be in manufacturer's scope of supply even if not specifically mentioned

	S	STATUTORY	CODES &	STANDARD:	S		
			NTACTOR'S DRG #		OWNER'S DRG #		
	H3E-4WB-42836		0 0				
REVISIO		0		DATE	28-03-2025		
KLVISIC	JIV IVO.	U		DATE	20-03-2023		
STATUTOR	Y CODES & STANDAR	DS					
SR#	CODE				TITLE		
1	IEEE		Institute of	electronics	& electrical engineers		
2	ISA				ms & Automation Society		
3	ISI			dards instit			
4	IEC				chnical commission		
5	NEC			ectrical code			
6	ISO				s organization		
7	BIS			ndian stand			
8	API			etroleum in			
9	ASME				echanical engineers		
10	SAMA			•	frs. Association		
11	Noise immun	ity			oise rejection 80 dB		
					noise rejection 75 Db		
					nputs, noise immunity		
					AMA Std. PMC 33.1 1978		
10	Company Donate at		Class 2, Bands A, B and C.				
12	Surge Protect	ion	IEEE - 472/				
13			ANSI - C37		d for signal/control cobles		
15					d for signal/control cables 0, 5831, 3975, and 1554		
					J, 5051, 5975, and 1554		
			latest - editions				
NOTE: The	list of reference stan	dards dive	n helow tah	le shall he	annlied as at least		
NOTE: THE	inst of reference stair	udius givei			Mechanical Engineers (ASM	ΛF)	
					r Testing & Materials (ASTM		
				n Wire Gaug	, ,	,	
				tandards (II			
			5. DIN Star	•	,		
				tandards (B	S)		
				•	of Automation (ISA)		
				Electric Cod	·		
			9. National	Electrical M	lanufacturer's Association (N	VEMA)	
			10. Interna	tional Electr	o-Technic Commission (IEC)	)	
			11. Institut	e of Electric	al & Electronics Engineers (I	EEE)	
			12. Interna	tional Telec	ommunication Union (ITU)		
					y association (EIA)		
			14. Indian	Boiler Regul	ations (IBR)		

UNIVE	RSAL PARAMETERS OF CONTRACT
DOCUMENT NO.	H3E-4WB-42836
REVISION NO.	0
DATE	28-03-2025
INSPECTION & TESTING	
Calibration Test Tes	st certificates shall be smitted.
SECION LIEF	
DESIGN LIFE The equipments manufactured	9 tested as parthia appaification shall have a decain
	& tested as per this specification shall have a desgin years Standard Warranty period is mentioned in the offer.
	es not apply to items which are considered as consumable
UNITS OF MEASUREMENT	
SI units in accrodance v	with ISO 31 & ISO 100 shall be used
SAFETY	
	prated which enable operations to be performed with
	ff, and the design of which are based on established good
engineering practices.	

SITE CLIMATIC CONDITIONS						
TKII'S DRG #	ŧ	CONTACTOR'S DRG #			OWNER'S DRG #	
H3E-4WB-42836		0			0	
REVISION NO.		0		DATE	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]		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

<sup>\*\*</sup> 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

TKII'S DRG # OWNER'S DRG # OWNER'S DRG # H3E-4WB-42836 0 0 0 0 0		LIST	of vendo	R DRAWING	GS & DOCUN	MENTS	
REVISION NO. 0 DATE 28-03-2025  IST OF VENDOR DRAWINGS & DOCUMENTS - BEFORE ORDER  SR# DRAWING / DOCUMENTS REMARKS  1 List of Commisioning Spares Vendor to Specify 2 List of 2 Years operational Spares Vendor to Specify 3 List of Special Tools required Vendor to Specify 4 Price list with break down of prices & unit rates 5 Signed Technical Specification & All attachments 6 Model decodification details 7 Deviation List  IST OF VENDOR DRAWINGS & DOCUMENTS - AFTER ORDER  SR# DRAWING / DOCUMENTS REMARKS  1 Operation & Maintenance Manual 2 Equipment Catalogues 3 Specifications / Data sheets 4 GA Drawings with Mounting & Dimension details. GADs shall be provided during detailed engineering. 5 QAP 6 Test Certificates, MTC & Calibration report. TCs shall be provided. 7 Factory Internal Test Report		TKII'S DRG#	COI	NTACTOR'S	DRG #	OWNER'S	DRG #
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	TECHNICAL SPECIFICATIONS					
	TK	II'S DRG #	REVISION			
H3E-4WB-42836		4WB-42836	R0			
SR NO.		DESCRIPTION	REQUIREMENTS SUPPLIER DATA			
			INSTRUMENT DATA: VIBRATION PROBE WITH ACCESSORIES			
1		Make	As Per Approved Vendor List Forbes Marshall Pvt Ltd.			
2	General	Model	Vendor to specify  Forbes Marshall Pvt Ltd.			
3	General	Tag Number	Refer attached annexure-1 Noted. FM Standard tag plates shall be provided.			
4		Application	Refer attached annexure-1 Noted.			
5		Туре	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		мос	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	Vibration Transmitter	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			
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

OD#	DOOLINENT NO	TITLE
SR#	DOCUMENT NO.	TITLE
1	H3E-4WB-42836	Technical Specification for Vibration Probe with accessories
2	VMS Annexure-1	
3		

### **NOTES & REMARKS:**

- 1. Commissioning spares, if any, to be included in scope of supply.
- 2. Free erection/commissioning services to be provided if required.
- 3. Calibration equipment, if separately required, to be provided.
- 4. SS tag plate with site identification no to be attached to the equipment.
- 5. Painting shall be epoxy based corrosion resistant paint; paint shade will be approved at the time of detailed engineering.
- 6. Supplier to indicate the accuracy, stability, repeatability & detailed specifications of each item.
- 7. Valve Selection calculation sheet to be submitted along with offer.
- 8. Supplier to submit detailed technical catalogue for all the items quoted.
- 9. Supplier to confirm / submit the data required / mentioned in this technical specifications duly signed along with detailed offer & data.
- 10. Inspection & calibration test will be witnessed by TKII/ Client / Consultant/ Third party inspector at vendors works
- 11. Packing shall be as per enclosed Packing Instructions document.

#### **DEVIATIONS & DESCRIPANCIES**

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. Any deviation raised before order shall be subjected to acceptance by Purchaser 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

In case there is a descripancy 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.

## QUALITY OF DRAWINGS AND DOCUMENTS SUBMITTED TO PURCHASER

All drawings and document shall be submitted as hard copies and or electronic copies as required by the Purchaser

All drawings and document shall be submitted in editable formats as required by the Purchaser

Use of non-liscensed versions of softwares for making drawings or documents is NOT allowed.

Manufacturing shall be not be commenced without approval of Purchaser.

All drawings and documents shall be submitted as "As-Built" after manufacturing

Piecemeal / Incomplete Submissions shall not be considered for review, delay in such a case shall be to the manufacturer's account

Vendor shall be responsible to incorporate all the corrections / comments given by pruchaser on the drawings submitted for approval

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