



## TECHNICAL SPECIFICATION FOR VIBRATION SYSTEM

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Revision 00

<b>Project:</b>	<b>JB1308</b>
<b>Client:</b>	<b>KUTCH CHEMICAL LTD.</b>
<b>Consultant:</b>	<b>DCPL. MUMBAI,</b>
<b>Component :</b>	<b>VIBRATION TRANSMITTER</b>

Prepared By: AG	Reviewed By: JIP	Approved: JIP	Date : 20.05.25
Action: Quotation Request	Additional Information:	Discipline : C&I	

<b>Revisions:</b>					
Revision	Date	Revision Purpose	Pages	Revised	Approved
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### 1.0 SCOPE OF SUPPLY & BILL OF QUANTITIES

#### 1.1 SCOPE OF SUPPLY & SPECIFICATION:

1.1.1 The scope of supply shall include design, manufacturer, testing and inspection at manufacturer's works, packing and forwarding, transportation & delivery of instrument as per data sheet attached here with.

1.1.2 The supplier shall provide the Vibration Monitoring system that automatically acquires processes and displays vibration details for all fans and boiler feed pumps and respective motors. We have offered Loop Powered sensor which shall provide 4-20 mA output which shall be connected to PLC/DCS.

1.1.3 The vibration transducers shall be complete with interconnecting cables and accessories. Selection of vibration probes shall be supplier's responsibility and for each drives, vibration probes on both drive end and non-drive end bearings shall be provided.

1.1.4 Number of vibration probes at each drive shall be as follows

- X-Y directions at DE bearing of Pump - 2 nos
- X-Y directions at NDE bearing of Pump – 2 nos

Noted as per the IO list given by M/S ISGEC.

1.1.5 Vibration Sensor & inbuilt transducers shall have 4-20 mA outputs. Noted.

1.1.6 Supply of mounting pad for each sensor. Noted.

#### 1.2 BILL OF QUANTITIES: As per the IO list given by M/S ISGEC.

1.2.1 Bill of quantities to be supplied as per this specification for Vibration Monitoring System.

#### 2.0 PERFORMANCE REQUIREMENT: Noted.

2.1 The design and construction of the equipment shall be appropriate for a very long life and trouble free operation.

2.2 All materials shall be selected by the manufacturer to appropriate specifications except that proprietary materials may be used for special services subject to the approval of the purchaser.

2.3 Materials and standards parts which are not specifically designated here in shall be good quality and in accordance with the best practice in the manufacture of the Transmitters.

#### 3.0 TEST & INSPECTION: For imported portion TCs shall be submitted and for Indian portion inspection shall be carried out as per mutually agreed QAP.

Manufacturer shall provide inspection to establish and maintain the quality of workmanship to ensure accuracy of each components, identity and acceptability of all materials, parts and equipment. Manufacturer shall conduct all test required to ensure that the equipment shall confirm to the requirements of applicable standards and

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specification and shall submit the test certificates for review and approval of the purchaser.

The inspection shall be carried out in a manner satisfactory to and shall be subject to the approval by the purchaser. Manufacturer shall submit the inspection and quality control plan and procedures for the approval of purchaser.

#### 4.0 DRAWING AND DATA: Noted.

##### 4.1 To be furnished during offer.

4.1.1 Technical data sheets

4.1.2 Technical catalogue

4.1.3 Technical deviation list if any, on a separate technical deviation schedule

##### 4.2 To be furnished during detail engineering.

4.2.1 Technical data sheets - for approval

4.2.2 Quality assurance plan - for review

4.2.3 Test certificates - for review and approval before inspection

4.2.4 Operation & maintenance manuals - 6 sets to be submitted before dispatch of instrument at purchasers works and one set of O & M, technical data sheet & test certificate with dispatch of material.

#### 5.0 PERFORMANCE GUARANTEE: Noted.

This shall be guaranteed to meet the performance required by the specification. The manufacturer shall guarantee that each part of equipment any accessories furnished shall be suitable for the service indicated, shall conform to the requirements of all applicable codes and standards and shall meet safety and completely all the conditions of performance and design requirement.

Rectification if any shall be carried out by the manufacturer.

#### 6.0 IDENTIFICATION AND MARKING: FM std tag plates considered.

Each Vibration Monitors shall be individually packed, tagged and protected. The tag Nos. has been indicated in the specification sheets.

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### DATA SHEET FOR VIBRATION TRANSMITTER

Manufacture	As per Contract	Forbes Marshall Pvt Ltd/ Shinkawa
Quantity	As per annexure	Noted as per given IO list.
<b>Sensor</b>		
Direction of measurement	X-Y direction	Noted.
Measured Parameter	Vibration ( <b>Velocity or Accelerometer type</b> )	we have considered loop powered sensors.
Input signal	One for velocity transducer	
Frequency response	02 -1000Hz	10Hz (600cpm) to 1kHz (60kcpm) $\pm$ 5% - ISO10816
Measuring Range	Vendor to provide (0 to 25mm/sec)	0-25mm/sec RMS Considered.
Operating Condition	-40 to 120 Deg C	-25 to 90°C
Sensitivity	CE	Transverse Sensitivity: Less than 5%
Sensing Element	PZT/Compression	Noted.
Case Material	316L SS	Noted.
Accessories	Mounting Pad with Adapter STUD for each sensor	Noted.
End Connection	M10 x 1mm Pitch, 10 mm Deep	Noted.
Power supply	24V DC	15-30 Volts DC (for 4-20mA)
Output	To be specified by Vendor	4-20mA DC proportional to Velocity Range
Sealing	IP68	Noted.
Accessories	Mounting Pad/ Stud , JB & Sensor's Cable in supplier scope	Noted.
Cable Gland	DC Brass Nickel plated cable gland with PVC Hood	Noted for Junction Box.
Output	4-20mA DC isolated	4-20 mA DC Non-isolated.
Range	To be specified by Vendor	0-25 mm/Sec RMS.
Input signal/ Output Signal	Looped powered, 24VDC , 4-20mA	Output of the loop powered sensor shall be 4-20 mA
Junction Box	Die-cast, IP65	Noted.

Note: Flexible cable shall be provided with Metallic flexible conduit.

We have offered FM std 10 meter extension cable with flexible SS Conduit.

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		VIBRATION SENSOR & TRANSMITTER-ANNEXURE SHEET						Prepared	AG	
		PROJECT ID	JB1308					Checked	JIP	
		CLIENT	M/s. KUTCH CHEMICAL INDUSTRIES LTD.					Approved	JIP	
		CONSULTANT	DPCL, MUMBAI					Date	20.05.25	
		Doc. No.: JB1308-50710700-ANX-0001						Rev	0	
SL. NO.	TAG NO.	ISA	TYPE	QTY.	SERVICE / MEDIUM	RANGE	Engineering UNITS	Make / Model No	Remark	
1	2BLR-VT-M0301A	Vibration	Velocity sensor + Transducer	1	BFP # 1 VIBRATION SENSOR FOR PUMP DRIVE END X- AXIS	0 - 25	mm/sec			
2	2BLR-VT-M0301B	Vibration	Velocity sensor + Transducer	1	BFP # 1 VIBRATION SENSOR FOR PUMP DRIVE END Y- AXIS	0 - 25	mm/sec			
3	2BLR-VT-M0301C	Vibration	Velocity sensor + Transducer	1	BFP # 1 VIBRATION SENSOR FOR PUMP NON DRIVE END X- AXIS	0 - 25	mm/sec			
4	2BLR-VT-M0301D	Vibration	Velocity sensor + Transducer	1	BFP # 1 VIBRATION SENSOR FOR PUMP NON DRIVE END Y- AXIS	0 - 25	mm/sec			
5	2BLR-VT-M0302A	Vibration	Velocity sensor + Transducer	1	BFP # 2 VIBRATION SENSOR FOR PUMP DRIVE END X- AXIS	0 - 25	mm/sec			
6	2BLR-VT-M0302B	Vibration	Velocity sensor + Transducer	1	BFP # 2 VIBRATION SENSOR FOR PUMP NON DRIVE END X- AXIS	0 - 25	mm/sec			
7	2BLR-VT-M0302C	Vibration	Velocity sensor + Transducer	1	BFP # 2 VIBRATION SENSOR FOR PUMP DRIVE END Y- AXIS	0 - 25	mm/sec			
8	2BLR-VT-M0302D	Vibration	Velocity sensor + Transducer	1	BFP # 2 VIBRATION SENSOR FOR PUMP NON DRIVE END Y- AXIS	0 - 25	mm/sec			
9	2BLR-VT-M0303A	Vibration	Velocity sensor + Transducer	1	BFP # 3 VIBRATION SENSOR FOR PUMP DRIVE END X- AXIS	0 - 25	mm/sec			
10	2BLR-VT-M0303B	Vibration	Velocity sensor + Transducer	1	BFP # 3 VIBRATION SENSOR FOR PUMP NON DRIVE END X- AXIS	0 - 25	mm/sec			
11	2BLR-VT-M0303C	Vibration	Velocity sensor + Transducer	1	BFP # 3 VIBRATION SENSOR FOR PUMP DRIVE END Y- AXIS	0 - 25	mm/sec			
12	2BLR-VT-M0303D	Vibration	Velocity sensor + Transducer	1	BFP # 3 VIBRATION SENSOR FOR PUMP NON DRIVE END Y- AXIS	0 - 25	mm/sec			
13	2BLR-VT-0701A	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-1 IN PA FAN -1 DE X-AXIS	0 - 25	mm/sec			
14	2BLR-VT-0701B	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-2IN PA FAN -1 DE Y-AXIS	0 - 25	mm/sec			
15	2BLR-VT-0701C	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-3 IN PA FAN -1 NDE X-AXIS	0 - 25	mm/sec			
16	2BLR-VT-0701D	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-4 IN PA FAN -1 NDE Y-AXIS	0 - 25	mm/sec			
17	2BLR-VT-0702A	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-1 IN PA FAN -2 DE X-AXIS	0 - 25	mm/sec			
18	2BLR-VT-0702B	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-2IN PA FAN -2 DE Y-AXIS	0 - 25	mm/sec			
19	2BLR-VT-0702C	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-3 IN PA FAN -2 NDE X-AXIS	0 - 25	mm/sec			
20	2BLR-VT-0702D	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-4 IN PA FAN -2 NDE Y-AXIS	0 - 25	mm/sec			
21	2BLR-VT-0703A	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-1 IN SA FAN -1 DE X-AXIS	0 - 25	mm/sec			
22	2BLR-VT-0703B	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-2IN SA FAN -1 DE Y-AXIS	0 - 25	mm/sec			
23	2BLR-VT-0703C	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-3 IN SA FAN -1 NDE X-AXIS	0 - 25	mm/sec			
24	2BLR-VT-0703D	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-4 IN SA FAN -1 NDE Y-AXIS	0 - 25	mm/sec			
25	2BLR-VT-0704A	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-1 IN SA FAN -2 DE X-AXIS	0 - 25	mm/sec			
26	2BLR-VT-0704B	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-2IN SA FAN -2 DE Y-AXIS	0 - 25	mm/sec			
27	2BLR-VT-0704C	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-3 IN SA FAN -2 NDE X-AXIS	0 - 25	mm/sec			
28	2BLR-VT-0704D	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-4 IN SA FAN -2 NDE Y-AXIS	0 - 25	mm/sec			
29	2BLR-VT-0705A	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-1 IN ID FAN -1 DE X-AXIS	0 - 25	mm/sec			
30	2BLR-VT-0705B	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-2IN ID FAN -1 DE Y-AXIS	0 - 25	mm/sec			
31	2BLR-VT-0705C	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-3 IN ID FAN -1 NDE X-AXIS	0 - 25	mm/sec			
32	2BLR-VT-0705D	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-4 IN ID FAN -1 NDE Y-AXIS	0 - 25	mm/sec			
33	2BLR-VT-0706A	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-1 IN ID FAN -2 DE X-AXIS	0 - 25	mm/sec			
34	2BLR-VT-0706B	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-2IN ID FAN -2 DE Y-AXIS	0 - 25	mm/sec			
35	2BLR-VT-0706C	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-3 IN ID FAN -2 NDE X-AXIS	0 - 25	mm/sec			
36	2BLR-VT-0706D	Vibration	Velocity sensor + Transducer	1	VIBRATION ELEMENT-4 IN ID FAN -2 NDE Y-AXIS	0 - 25	mm/sec			

