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**TECHNICAL SPECIFICATION**  
**OF SOLENOID VALVE**

Revisions :	Prepared by:	Checked by:	Approved By:	Date
		-SD-	-SD-	
00	Anupam	Amit/PCS	MNSR	31.07.18

TD-106-2 Rev.No. 5	Form No.		<p align="center"><b>PROJECT ENGINEERING &amp; SYSTEM DIVISION</b> <b>BHEL, HYDERABAD –32.</b></p>	<b>PY51410</b>
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<p align="center"><b><u>IMPORTANT INSTRUCTION TO BIDDER</u></b></p> <p align="center"><b>DOCUMENTS TO BE SUBMITTED WITH THE BID:</b></p> <p>The bidder must submit the following documents along with their bid.</p> <p>a) Un-priced copy of price format indicating quoted/ not quoted against each line item.</p> <p>b) Signed copy of the Technical Specification.</p> <p>c) No Deviation certificate.</p> <p align="center"><b>BHEL’s decision will be final in case vendor fails to submit above documents.</b></p>				
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**1. SCOPE/INTENT:**

- 1.1.** This specification covers the technical requirements of constructional features, accessories, inspection, tests, test certificates, documentation, preservation, packing and forwarding of Solenoid Valve.
- 1.2.** Scope of supply shall include design, manufacture, inspection, shop testing, shop painting, packing and delivery.
- 1.3.** The supplier shall strictly comply with this standard in all respects. No deviation shall be allowed. However, bidder can raise technical queries on the specification during pre-bid stage and clarifications may be sought from BHEL before the bid submission.

**APPLICATION:**

These items suitable for fire protection systems (Water & Foam based protection system).

	<b>Scope of supply</b>	<b>Qty.</b>
1.	Solenoid valve – 32 NB	02 Nos.

**2. VARIANT TABLE:**

<b>Var. No.</b>	<b>Description</b>	<b>Material Code</b>
01	Solenoid Valve	PY9751410010
02	Solenoid valve – 32 NB	PY9751410029

Note: Bidder to quote as per Material Code as mentioned in the Enquiry.

**3. TECHNICAL REQUIREMENTS:****3.1 Solenoid valve- 15 NB**

<b>Sl. No.</b>	<b>Requirements</b>	<b>Compliance</b>
1	Operating Principle	Electromagnetic (noiseless)
2	Coil voltage rating	24 V DC
3	Ways	2/2 way
4	End Connection	1/2" NPT (F)
5	Body	SS316 bar stock
6	Trim	SS-316
7	Duty	Suitable for continuous energization
8	Sealing	Airtight and leak proof



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9	Ambient Temperature	0 - 50° C
10	Fluid Temperature	0-75° C (approx.)
11	Coil Enclosure	Stainless Steel
12	Insulation	Class-H
13	Coil Casing	IP-65 (Explosion proof for NEC Class-1, Division-1 area)
14	Mounting	On pipe or on panel
15	Cable Connection	½" NPT
16	Accessories	Cable glands, SS Tag plate
17	Approval	UL listed
18	Working Pressure	1-20 kg/cm2

### 3.2 Solenoid valve- 32 NB

Sl. No.	Requirements	Compliance
1	Operating Principle	Electromagnetic (noiseless)
2	Coil voltage rating	24 V DC
3	Ways	2/2 way
4	End Connection	1-1/4" NPT (F) (32 NB)
5	Body	SS316 bar stock
6	Trim	SS-316
7	Duty	Suitable for continuous energization
8	Sealing	Airtight and leak proof
9	Ambient Temperature	0 - 50° C
10	Fluid Temperature	0-75° C (approx.)
11	Coil Enclosure	Stainless Steel
12	Insulation	Class-H
13	Enclosure rating	IP-67 (Weather proof)
14	Mounting	On pipe or on panel
15	Cable Connection	½" NPT
16	Accessories	Cable glands, SS Tag plate
17	Approval	Indian
18	Working Pressure	1-20 kg/cm2

#### 4. PAINTING

As per manufacturer standard practice.

#### 5. INSPECTION AND TESTING



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Bidder to furnish Quality Plan to BHEL/Customer/Consultant for approval after award of contract. Quality plan will be reviewed during detailed Engineering stage with respect to Inspection, standard Engineering practices & Specification Requirements and various tests and stages of inspection. Bidder to abide by the same.

QAP guidelines and format is attached as annexure.

Inspection agency:

BHEL/Third Party appointed by BHEL/Customer/Consultant. The various review/witness/observation stages by Individual agencies (or) Group of Agencies as above will be in line with approved quality plan.

**6. DOCUMENTATION:**

**6.1. Along with the offer:**

Signed and stamped copy of this specification as token of acceptance of the specification for execution in the event of Order.

**6.2. After PO Placement:**

Two copies each of the following documents shall be submitted for approval.

- G.A. Drawings with weights and dimensions
- Technical Data sheets, Catalogue
- Material specification details
- Tests to be conducted
- O&M manuals
- Storage/Preservation instructions for at least three years.

Final documentation consisting of above documents shall be submitted in requisite sets (to be decided post order) of hard and soft copies.

Schedule for document submissions:

S.no	Description	Schedule
1	Submission of GA drawing & Technical Datasheet by vendor	7 days from the date of P.O.
2	Approval GA drawing & Technical Datasheet by BHEL	14 days from receipt of the document*

\* The GA drawing & Technical Datasheet submitted by vendor shall be strictly in compliance to all applicable standards and specification.

**7. PRESERVATION, PACKING & MARKING OR PACKING CASE:**



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**7.1.** A suitable temporary rust preventive with minimum life of two years shall be applied inside the item/equipment body in order to prevent corrosion.

**7.2.** All the item / equipment shall be packed suitably in closed wooden cases in order to avoid damage during transit and storage at BHEL. Suitable supports shall be provided inside the cases in order to avoid internal movement. In case of exported consignments, the packing shall be seaworthy (Refer enclosed Annexure for Export Packing guidelines, AA 0490009, Rev-01).

Each item / equipment after end protection should be wrapped in polythene sheet before packing in the cases.

Each packing case must contain two copies of the shipping list giving details of all the contents of the case.

**7.3.** The following marking shall be done on each packing case minimum on two sides and at the top.

- (a) Complete address of the consignee and destination as per BHEL Purchase Order.
- (b) BHEL Purchase order Number
- (c) BHEL item Material Code
- (d) Number of pieces in each packing case
- (e) Net Weight
- (f) Gross Weight
- (g) Packing case number and total number of packing
- (h) Arrow indicating top of the packing case.

	<b>List of Annexures</b>	
1.	Annexure-1	Price bid format
2.	Annexure-2	QAP guidelines and format

