


REQUEST FOR QUOTATION

	BHARAT HEAVY ELECTRICALS LIMITED Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: AKSPROP077 RFQ DATE: 11.12.2023	Due Date/Day: 22.12.2023 FRI Time : 13:00 HRS [REDACTED]
MMI:PU:RF:003			

(address for communication) :	(for all correspondence) Purchase Executive : ABHISHEK Phone : 26998102 Fax : 00918026989215 E-mail: singh.abhishek@bhel.in
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This RFQ is for entering into Rate contract (RC) with BHEL for the tendered item. Validity of the RC will be 1 year from the award of rate contract. Firm orders will be placed during the tenure of rate contract. Prices will remain firm till the validity of RC or till the completion of supplies against the Purchase Orders placed against this rate contract whichever is later. Please note that these quantities are projections based on the current business scenario and expected orders from customers. In the eventuality of business not coming through, BHEL is not obligated to exhaust the ordering of RC quantities.

SI No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	TI0668110823 PRESSURE SWITCH * HSN/SAC : 8536 [REDACTED] PRESSURE SWITCH with Connector 0,3-2 BAR 1/4"BSP ,Set Point: 0,6 BAR [REDACTED] As per Specification PS4452857 Rev No 01	500	NO	500	[REDACTED]

Total Number of Items - 1

1.
2.

<p>NOTES:</p> <p>1. This RFQ is governed by:</p> <p>a) INSTRUCTIONS TO BIDDERS/SELLERS and GENERAL CONDITIONS OF CONTRACT FOR PURCHASE available at http://edn.bhel.com (RFQ-PO Terms & Conditions)</p> <p>b) Any other specific Terms and Conditions mentioned.</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>* The HSN/SAC no mentioned against the line items in the RFQ are indicative only.</p>	For and On behalf of BHEL. ABHISHEK Control Equipment 1 OF 1
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**PREQUALIFICATION CRITERIA (PQC)
FOR PRESSURE SWITCH
GROUP: TRACTION ENGINEERING**

Ref: 445/PQ_PRSW/22

Rev. No.: 01

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1.0 PRE QUALIFICATION CRITERIA (PQC)

1. The Bidder should be Supplier of Pressure Switches used in Traction applications.
2. BHEL shall approach and submit credentials/details furnished by vendor with their offers to customer and await customer's decision for a maximum of one month from the date of tender opening. If approval is not received within the above period, BHEL shall treat the offer as "Not meeting" Pre-qualification criteria and offer shall be rejected.
3. It is preferred that the bidder is the manufacturer of this item. If the bidder is importing some portion of the components, then minimum value addition shall be 20%. Bidder to confirm this in the offer. Value addition less than 20% is not acceptable

2.0 DOCUMENTS SUBMISSION

1. Bidder to submit clause by clause compliance to complete technical specification (Technical specification no. PS4452857 Rev. No.01, dated 05.12.2023) along with copy of type test report.
2. Should possess a valid type test report, not older than five years, conducted at a NABL accredited laboratory as per relevant standards mentioned in the specification with respect to time during the bid submission.
3. Proof of supply of similar rating or higher rating pressure switches used in traction applications directly or through any agency to Indian Railways during the last 5 years to be submitted.

3.0 REFERENCE DOCUMENTS

- a) Purchase Specification No PS4452857, Rev. No. 01 for Pressure Switch.

REVISION 01

APPROVED

AGOSH CHANDRAN R S

PREPARED

L SUNITHA

ISSUED

TRACTION ENGG

DATE

05.12.2023

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PURCHASE SPECIFICATION
FOR PRESSUE SWITCH
GROUP: TRACTION ENGINEERING

P.S NO. : PS4452857

REV. NO: 01

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SPECIFICATION FOR PRESSURE SWITCH

REVISION HISTORY SHEET

REV. NO.	DATE	NATURE OF CHANGE	REASONS	PREPARED BY	APPROVED BY
00	14.12.2022	FIRST ISSUE		L Sunitha	Agosh Chandran
01	05.12.2023	REVISION	Clause 6 changed	L Sunitha	Agosh Chandran

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REVISIONS	01	APPROVED BY	 R S Agosh Chandran		
		PREPARED BY	ISSUED BY	DATE	
		L Sunitha	TRACTION ENGG.	05.12.2023	



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PURCHASE SPECIFICATION

GROUP: TRACTION ENGINEERING

P.S NO.: PS4452857

REV. NO: 01

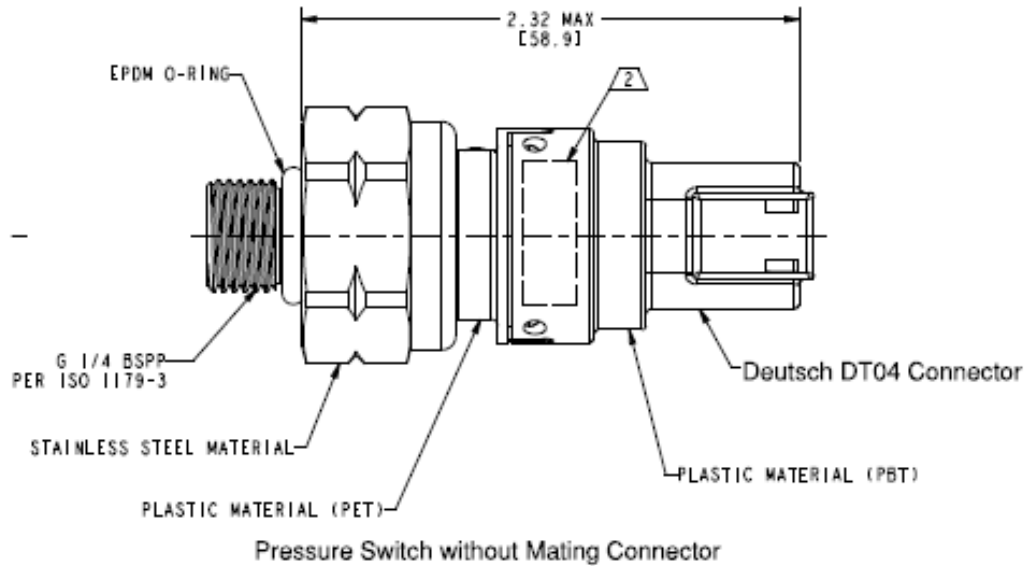
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SPECIFICATION FOR PRESSURE SWITCH

1.0 Functional requirements:

This document covers specification of pressure switch, to be used in the IGBT based traction converter. The Pressure switch will be mounted in the traction converter and will be used in traction applications. The scope of supply includes pressure switch with connector with configuration: - **0.3-2 bar, 1/4" BSP, Set Point: 0.6 bar.**

The typical pictorial diagram is shown below:



2.0 APPLICATION : IGBT based Traction Converter

3.0 TYPE : Normally Open Contacts

4.0 REFERENCE STANDARDS:

IEC 60076/ IS5553	Power transformers
IEC 60077-1	Railway applications – electric equipment for rolling stock-part 1.
IEC 60085	Thermal evaluation and classification of electrical insulation
IEC 61373	Railway applications – Rolling stock equipment – shock and vibration tests
EN50124	Railway Applications - Insulation Coordination Basic Requirements - Clearance And Creepage Distances
IEC60571/EN50155	Operating conditions

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PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS4452857

REV. NO: 01

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SPECIFICATION FOR PRESSURE SWITCH

5.0 ENVIRONMENTAL CONDITIONS:

- 5.1 Ambient Temperature : 55°C
- 5.2 Maximum Temperature : 70°C (when locomotive standing dead under sun)
55°C (when locomotive working)
47°C Nominal
- 5.3 Relative Humidity : IEC60571
up to 95% any moisture condensation during operation shall not lead any damage Or failure
Yearly average \leq 75% Rel. Humidity
- 5.4 Altitude : up to 1200 m above mean sea level
- 5.5 Atmosphere during hot weather: Extremely dusty and desert terrain in certain areas. The dust concentration in air may reach a high value of 1.6mg/cub meter.
- 5.5 Air Pollution : The equipment shall be designed to work in coastal area in humidity and salt laden Corrosive atmosphere. The maximum values will be as follows
(a) Maximum pH Value : 8.5
(b) Sulphate : 7mg/liter
(c) Maximum concentrate of chlorine:6mg/liter
(d) Maximum conductivity:130 μ Siemens
- 5.6 Climate : Tropical, Hot and humid Climate

6.0 ELECTRICAL REQUIREMENTS

Description	Specification
Switch type	Normally open contacts
Operating temperature range	-40 deg C to 100 deg C
Pressure range	0.3 bar – 2 bar
Maximum Working pressure	2 bar
Bursting Pressure	5 bar
Contact Arrangement	SPNO
Contact Material	Gold plated contacts
Degree of protection	IP67 (with mating connector)
Breaking capacity	100 VA
Switching frequency Max	200/min
Mechanical life	1000000 operating pressure cycles
Reference Voltage	24 V
Max current	50 mA
Operating Media	Glycol based fluid
Switch back difference	10% - 15%

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PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

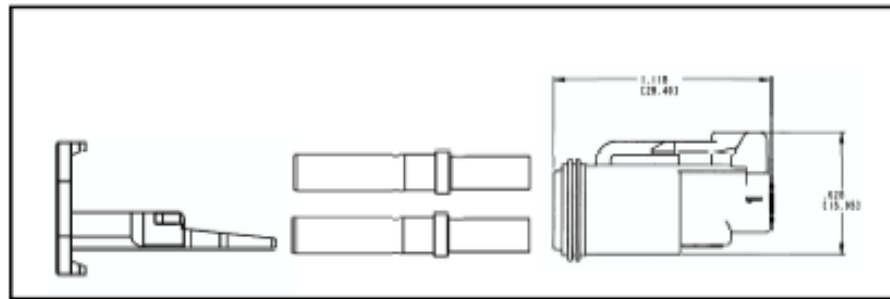
P.S NO. : PS4452857

REV. NO: 01

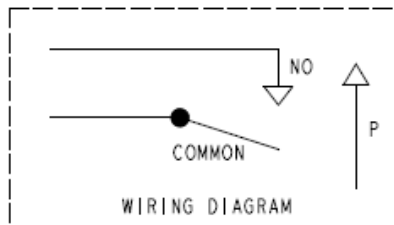
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SPECIFICATION FOR PRESSURE SWITCH

7.0 MATING CONNECTORS and WIRING DIAGRAM



Pressure Switch Mating Female Connector - 1 Set Comprising of
1 No. of Deutsch DT06 Connector
2 Nos. of Socket Connector Pins
1 No. of Wedge Lock W2S



8.0 TEST PROTOCOL

The type test reports from a NABL accredited laboratory to be provided along with the technical offer.
For series supplies, Routine test reports/test certificates are to be provided.

9.0 DOCUMENTATION

- 9.1 Datasheet and drawings required along with techno commercial offer without which offer is liable for rejection.
- 9.2 Supplier shall furnish clause wise confirmation/comments to the technical specification in the Typical format given below. Deviation, if any, shall be clearly brought out indicating the clause Number, original specification, deviation sought with proper technical backup (catalogue, Technical brochure, international standards, calculations etc.
If no deviations required, then supplier shall furnish certificate indicating “NO DEVIATION REQUESTED” and we comply fully with all the technical requirements of this specification no. PS4452857.

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