

REQUEST FOR QUOTATION



BHARAT HEAVY ELECTRICALS LIMITED
Electronics Division
PB No. 2606, Mysore Road Bangalore - 560026
INDIA

RFQ NUMBER:
AKSPROP053

RFQ DATE :
01.09.2023

Due Date/Day: 14.09.2023 THU
Time : 13:00 HRS

MMI:PU:RF:003

(address for communication) :

(for all correspondence)

Purchase Executive : ABHISHEK
Phone : 26998102
Fax : 00918026989215
E-mail: singh.abhishek@bhel.in

1)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.

2)Reverse Auction Clause: BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

SI No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	TI0668103990 RESISTOR 200W 5% 10R * HSN/SAC : 8533 RESISTOR 200W 5% 10R As per Specification PS4452701 Rev No.00	1,500	NO	1,500	

Total Number of Items - 1

- 1.
- 2.

NOTES:

1. This RFQ is governed by:

a) INSTRUCTIONS TO BIDDERS/SELLERS and GENERAL CONDITIONS OF CONTRACT FOR PURCHASE available at <http://edn.bhel.com> (RFQ-PO Terms & Conditions)

b) Any other specific Terms and Conditions mentioned.

* The HSN/SAC no mentioned against the line items in the RFQ are indicative only.

For and On behalf of BHEL.

ABHISHEK
Control Equipment

1 OF 1



PREQUALIFICATION CRITERIA (PQC)
FOR AL Housed Power Resistor
GROUP: TRACTION ENGINEERING

Ref: 445/PQ_TR/21

Rev. No.: 00

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1.0 PRE QUALIFICATION CRITERIA (PQC)

1. The Bidder should be Supplier of Aluminum Housed Power Resistor 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. PS4452701 Rev. No.00, dated 01-01-2020) 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 Aluminum Housed Power Resistor 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 PS4452701, Rev. No. 00 for Aluminum Housed Power Resistor

REVISION 00

APPROVED

AGOSH CHANDRAN R S

PREPARED

Sadat U K

ISSUED

TRACTION ENGG

DATE

01.01.2020



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PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2701

REV. NO: 00

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REVISION HISTORY SHEET

REV. NO.	DATE	NATURE OF CHANGE	REASONS	PREPARED BY	APPROVED BY
00	01.01.21	FIRST ISSUE	--	--	--

THIS DOCUMENT IS A SPECIFICATION CUM DATA SHEET. VENDOR TO FILL UP ALL CONFIRMATIONS AND DATA AS REQUIRED AND SUBMIT THE SAME TO BHEL / EDN, BANGALORE. ANY DEVIATIONS TO THIS DOCUMENT TO BE BROUGHT OUT CLEARLY BY VENDOR.

REVISIONS 00 DT: 01.01.2021

APPROVED BY:

PREPARED BY:

ISSUED BY

DATE

Sunitha L
Dy Manager/Traction Engg

TE

01.01.2021



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PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2701

REV. NO: 00

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SPECIFICATION FOR
ALUMINIUM HOUSED POWER RESISTOR



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PURCHASE SPECIFICATION

GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2701

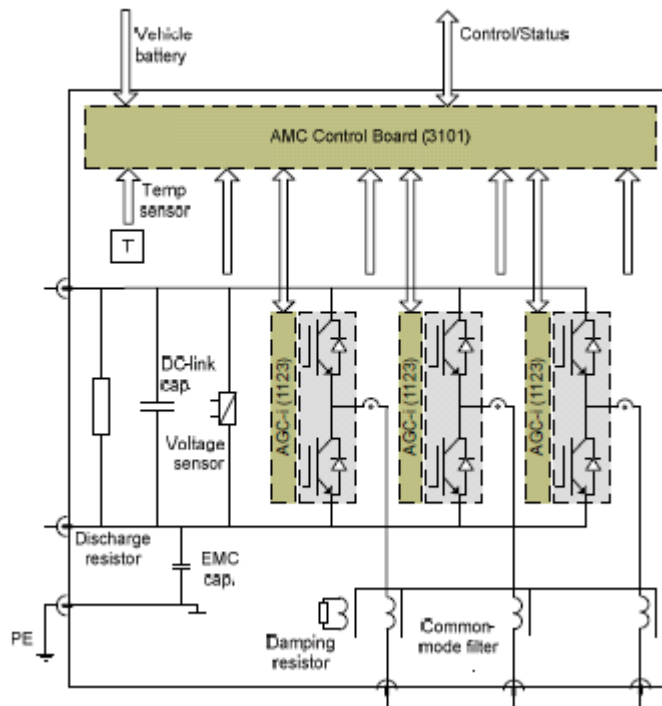
REV. NO: 00

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1.0 INTRODUCTION:

The auxiliary converter employs a common mode filter to suppress the Electro Magnetic interference at the output of the 3ph Inverter. The Aluminum Housed Power Resistor will act as the damping resistor element in the common mode filter.

2.0 FUNCTION:



The damping resistor will absorb the high frequency components in the inverter output generated as a result of IGBT switching. A ferrite core assembly is provided at the output of the auxiliary inverter which will trap the high frequencies which are dissipated by the damping resistor.



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PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

P.S NO. : PS/445/2701

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3.0 CHARACTERISTICS

SI No	Characteristic	Value	Unit
1	Dissipation @ 25°C with Heatsink	200	W
2	Dissipation @ 25°C without Heatsink	50	W
3	Ohmic Value	10	Ω
4	Tolerance	5	%
5	Maximum working voltage	1900	Vdc
6	Dielectric Strength	5600	Vac-pk
7	Stability (% resistance change, 1000 hrs)	3	%
8	Insulation Resistance, Dry	10	G Ω
9	Temperature coefficient	50	ppm/°C

4.0 MOUNTING STYLE

The resistor should have Flange on two sides. There are 6 mounting holes of 5.3mm hole diameter as detailed in section 5.



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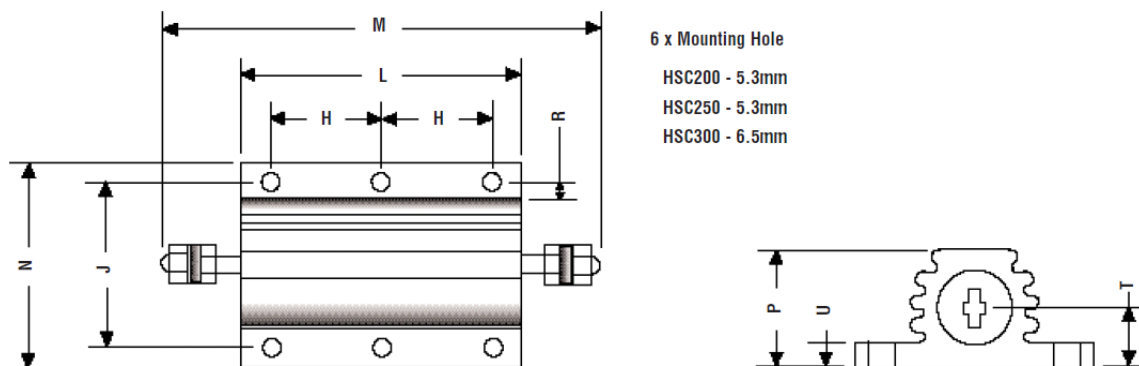
PURCHASE SPECIFICATION
GROUP: TRACTION ENGINEERING

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5.0 MECHANICAL DIMENSION



H- $35 \pm 0.3\text{mm}$	J – $57.2 \pm 0.3\text{mm}$	L max- 90.0 mm
M max- 143.0 mm	P max – 45.0 mm	R max – 5.6 mm
T – $22.2 \pm 0.5\text{ mm}$	U max – 6.75 mm	

6.0 INSPECTION

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

7.0 APPLICABLE NORMATIVE STANDARD

The offered system shall generally conform to the following normative standards

- IEC 60529 for IP68 protection
- EN 50121-2 EMC: Emissions to external environments
- IEC60077 Rules for equipment for onboard rail vehicles
- IEC-61373 Electric Railway Equipment-Rolling Stock-Shock & Vibrations Requirements
- IEC 60322 Rules for Ohmic Resistors