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**PURCHASE SPECIFICATION**  
**GROUP: TRACTION ENGINEERING**

P.S NO. : PS/445/2703

REV. NO: 00

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**REVISION HISTORY SHEET**

| REV. NO | DATE       | NATURE OF CHANGE | REASONS | PREPARED BY | APPROVED BY        |
|---------|------------|------------------|---------|-------------|--------------------|
| 00      | 05.01.2021 | FIRST ISSUE      | --      | L Sunitha   | R S Agosh Chandran |

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REVISIONS 00 DT: 05.01.2021

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DATE

05.01.2021



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**SPECIFICATION FOR**  
**PRECHARGE CONTACTOR**



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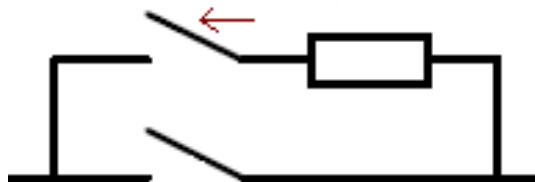
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**1.0 INTRODUCTION:**

A charge circuit is used to pre-charge the HV-capacitors before the main contactor is closed to avoid high inrush peak-currents. Normally the magnetically operated charge switch will only make current, only in abnormal situations (short circuit in the traction converter) the switch has to break current.

**2.0 FUNCTION:**



The maximum current to be switched off during abnormal situations at 3000V is 60A, the current is limited by the 50 Ohm resistor. For voltage sharing, the two contacts of the charge switch shall be put in series. The charge switch shall be operated electromagnetically.



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**3.0 CHARACTERISTICS**

| Electrical Characteristics                           |                   |
|------------------------------------------------------|-------------------|
| Rated Operational Voltage [Vac/Vdc]                  | 1500              |
| Max Operational Voltage [Vac/Vdc]                    | 2000              |
| Rated Insulation Voltage [V]                         | 2000              |
| Maximum current (rated thermal current) A            | 100               |
| Breaking capacity A                                  | 100               |
| Number of poles                                      | 2                 |
| Blow Out Circuit Type                                | Permanent Magnet  |
| Mechanical Characteristics                           |                   |
| Mechanical Endurance (cycles)                        | 2x10 <sup>6</sup> |
| Shock and Vibrations (IEC61373)                      | Cat.1 - Class B   |
| Weight [kg]                                          | approx 3 - 3.5    |
| Environmental Conditions                             |                   |
| Stock Temperature Range                              | 50°C ÷ +85°C      |
| Operational Temperature Range                        | -40°C ÷ +75°C     |
| Pollution Degree - Overvoltage Category (EN 50124-1) | PD3 / OV3         |
| Max Altitude without Performance Derating [m]        | 1500              |

**4.0 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.

**5.0 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 61287 Power Converters on board rolling stock
- IEC-61373 Electric Railway Equipment-Rolling Stock-Shock & Vibrations Requirements



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**6.0 DIMENSIONS**

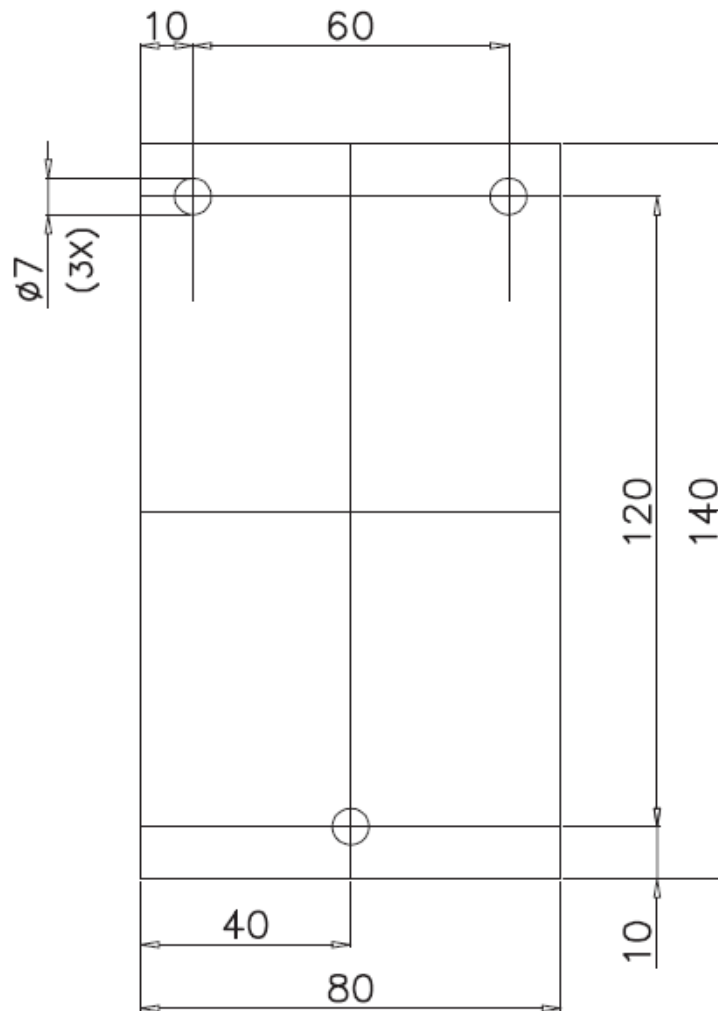


Fig.1- Dimensional details

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