TRANSNET
freight rail

A Division of Transnet SOC Limited

RAIL NETWORK

ELECTRICAL DEPARTMENT SPECIFICATION

200 AMPERE DC INJECTION SET WITH A SINGLE PHASE VARIAC

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Transnet Freight Rail - Infrastructure

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1. GENERAL REQUIREMENTS

1.1. This specification outlines Transnet Freight Rail`s requirements for the supply and delivery of a 200A DC injection set with single phase variac or similar.

1.2. The 200A DC injection set with single phase variac shall be ergonomically designed for maximum operator productivity and safety.

1.3. These instruments shall be of robust nature and designed to withstand the rough conditions of the railway environment. Proper casing or carry bag shall be supplied with each instrument.

2. OPERATING CONDITIONS

2.1. The 200A DC injection set with single phase variac will be operated in all weather conditions as well as salt laden and industrial atmosphere.

Altitudes:	From sea level to 2000m above sea level.
Relative humidity:	10% to 95%
Atmospheric conditions:	May vary from heavily saline to dry and dusty conditions.

Ambient air temperatures:-20º C to 50º C. (daily average +30˚C)

3. PERFORMANCE REQUIREMENTS

3.1. The actual design and service life of the 200A DC injection set with single phase variac is to be stated.

3.2. The 200A DC injection set with single phase variac are to be easily and economically maintained with standard workshop/calibration tools and equipment.

4. TECHNICAL REQUIREMENTS

4.1. General Description

4.1.1. A heavy duty, portable and digital display 200A DC injection set with single phase variac capable of testing substation switchgear.

4.1.2. The equipment must come in a lockable case capable of storing all accessories furnished with the device.

4.1.3. The design of the 200A DC injection set with single phase variac is to be that of the manufacturer, but must be of robust construction in order to meet sustained heavy duty demands, yet it must be light and easy handled by one operator.

4.1.4. The 200A DC injection set with 10A single phase variac will be acceptable in standard factory production finish and colour. Details to be furnished.

4.2. Operational requirements

4.2.1. <u>200A DC Injection Set</u>

4.2.1.1. It should have switch selectable DC current.

4.2.1.2. It should have a set facility of output rating – 200A when adjusting currents/voltages.

4.2.1.3. It should be equipped with a built in LCD Digital Ammeter and should have accuracy at 0.5% of reading + 3,5 digits, linearity should be: 0.05%

4.2.1.4. It should be equipped with a circuit breaker protection for variable transformer

4.2.1.5. It must be supplied with all power cables.

4.2.1.6. The unit should be equipped with a robust enclosure and all components shall be housed within one unit.

4.2.2. <u>A single phase variac</u>

4.2.2.1. It should have switch selectable DC current range.

4.2.2.2. It should have a set facility of output rating – when adjusting currents.

4.2.2.3. It should be equipped with a circuit breaker protection for variable transformer

4.2.2.4. It should be supplied with all power cables.

4.2.2.5. It should have a robust enclosure and all components shall be housed within one unit.

4.3. Power supply requirements

4.3.1. Voltage: 230VAC – 240VAC

4.3.2. Voltage variation: ± 10%

4.3.3. Frequency: 50Hz

4.3.4. Frequency variation: ± 3%

4.4. Measuring Capability

4.4.1. **Output:** currents.

4.4.1.1. Current range: 0 – 200A (with 500A diodes to rectify the output to withstand high currents)

4.5. Preferred mass and housing

4.5.1. The weight of the unit shall not exceed 30 kg

4.5.2. The housing for the units making up this device shall be of robust construction to sustain heavy duty demands under the service conditions as stated in clause 2 of this specification.

4.6. Additional requirements

4.6.1. An operators' handbook, calibration chart and spare parts list must be supplied with each device in order to ensure that the device is operated in accordance to the manufacturer's instructions.

4.6.2. All devices and equipment must be supplied complete with essential tools and consumable items as necessary. Details to be furnished for any tools required.

4.7. Data Plate

4.7.1. The 200A DC injection set with single phase variac must come with a data plate.

4.7.2. The brand and model number of the insulation tester must be clearly shown.

4.7.3. The actual weight in kilograms (kg) of the insulation tester must be shown on the machine.

4.7.4. The actual dimensions of the insulation tester must be indicated in millimetres (mm).

5. COMPLIANCE AND CERTIFICATION

5.1. The 200A DC injection set with single phase variac must comply with relevant international and local standards.

5.2. It must be supplied with calibration certificates traceable to national standards.

5.3. The instruments are to be guaranteed for a minimum period of 12 months (1 year) against faulty material and workmanship-fair wear and tear excluded. Full details of guarantee are to be submitted

6. TECHNICAL EVALUATION

6.1. The information as requested by the various clauses in this specification must be supplied in the form of technical data, pamphlets and/or drawings. Failure to comply with this requirement may result in the offer being overlooked.

6.2. All bidders must submit data sheets with clear images of the instruments and their accessories.