A Division of Transnet SOC Limited

INFRASTRUCTURE ENGINEERING

ELECTRICAL DEPARTMENT SPECIFICATION

DIGITAL CLAMP METER

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1. GENERAL REQUIREMENTS

1.1. This specification outlines the requirements of a portable handheld, heavy-duty Digital Multimeter Fluke Model 381 with Remote Display True RMS or similar.

1.2. The AC/DC Digital Clamp Meter shall be ergonomically designed for maximum operator productivity and safety.

2. OPERATING CONDITIONS

2.1. The Digital Clamp Meter will be operated in all weather conditions as well as salt-laden and industrial atmospheres.

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	:-10º C to 50º C. (daily average +30˚C)

3. QUALIFICATIONS

3.1. The design of the AC/DC Digital Clamp Meter is to be that of the manufacturer but must be of robust construction to meet sustained heavy-duty demands. Yet, it must be light and easily handled by one operator.

3.2. The Digital Clamp Meter will be acceptable in standard factory production finish and colour.

4. PERFORMANCE REQUIREMENTS

4.1. The actual design and service life of the AC/DC Digital Clamp Meter is to be stated in a form of writing.

4.2. The Digital Clamp Meter is to be easily and economically maintained with standard workshop/calibration tools and equipment.

5. TECHNICAL REQUIREMENTS

5.1. General Description

5.1.1. A True-RMS Remote Display Digital Clamp Meter capable of testing AC/DC voltages and currents, Resistance, Capacitance, frequency, and continuity/diode test.

5.1.2. The equipment must come in a case/pouch capable of storing all accessories furnished with the device.

5.2. Operational Requirements

5.2.1. 1000A AC and DC Current measurement with fixed jaw

5.2.2. 2500A AC Current measurement with flexible current probe with measurement range to 2500 A AC. Flexible current probe wireless technology allows the display to be carried up to +/- 10m away from the point of measurement for added flexibility without interference with measurement accuracy.

5.2.3. 1000 V AC and DC voltage measurements

5.2.4. True-RMS AC voltage and current for accurate measurements of non-linear signals

5.2.5. Frequency measurement to 500 Hz with both jaw

5.2.6. 60 kΩ resistance measurement with continuity detection

5.2.7. Min, Max, Average and Inrush recording to capture variations automatically.

5.2.8. The AC/DC Digital Clamp Meter shall have a Large, easy-to-read, backlight display and carry case pouch.

5.2.9. Safety Rating CAT IV 600V, CAT III 1000 V

5.3. Power Supply Requirements

5.3.1. AC/DC Digital clamp Meter shall be fitted with replaceable batteries to operate the meter and for flexible current probe meter display.

5.3.2. Batteries shall have a life of 400 hours or more.

5.4. Measuring Capability

Description	**Range**	**Resolution**	**Accuracy**
AC Current via jaw	999.9 A	0.1 A	2 % ± 5 digits
AC Current via Flexible Probe	2500 A	0.1 A	3 % ± 5 digits
DC Current	999.9 A	0.1 A	2 % ± 5 digits
AC Voltage	1000 V	0.1 V	1.5 % ± 5 digits
DC Voltage	1000 V	0.1 V	1 % ± 5 digits
Resistance	60,000 Ω	0.1 Ω	1 % ± 5 digits
Frequency	500 Hz	0.1 Hz	0.5 % ± 5 digits
True-RMS		Yes	
Continuity		Yes	
Hold		Yes	
Backlight		Yes	
Min/Max		Yes	
Inrush		Yes	
Low pass filter		Yes	
Removable wireless display		Included	
18-inch Flexible Current Probe Included		Accessory	
Wire capacity		750 MCM or 2-	

		500 MCM	
Safety Rating		CAT III 1000V, CAT IV 600V	

5.5. Additional Requirements

5.5.1. All devices and equipment must be supplied complete with essential tools and consumable items as necessary i.e. Manual, Multimeter Carry Pouch Case, Test Leads, and Operating batteries.

5.5.2. The brand and model number of the Digital Clamp Meter must be clearly shown.

5.5.3. The actual weight in kilograms (g) of the Digital Clamp Meter must be shown either on the booklet or the machine.

5.5.4. The actual dimensions of the AC/DC Digital Clamp Meter must be indicated in millimetres (mm or cm).

6. COMPLIANCE AND CERTIFICATION

6.1. The AC/DC Digital Clamp Meters must comply with relevant international standards.

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

6.3. It must come with a minimum of 1-year warranty where the supplier shall take full responsibility in repairing or replacing the faulty unit and component unless it has been proven to be negligence on the side of the end-user.

7. TECHNICAL EVALUATION

7.1. All bidders shall submit data sheets with clear pictures of the instrument and its accessories.

7.2. Datasheets shall detail relevant technical, operational, functional, and other relevant requirements as indicated in the specification. Failure to provide detailed datasheets shall result in the disqualification of the bidder.