
Tettex INSTRUMENTS

# 2292

## High Current Resistance Meter

**High performance** is the key feature of these high current resistance meters based on the four point measuring technique. The instruments are especially designed and optimized for low resistance measurements in highly inductive circuits. The design responds to the needs of utilities and transformer manufacturers for portable unit of high accuracy and ease of operation.

The powerful in built 2.5kW DC supply and the automatically controlled measuring circuitry are more than adequate to handle even the most demanding resistance measuring application. The DC current is continuously adjustable up to 50A to accommodate resistance values from 0.1μΩ up to 20kΩ. The 50V DC test voltages saturate even the largest transformer typically within seconds.

The instrument is capable of measuring the resistance of up to three windings connected serially simultaneously. The test object temperature is measured and resistance readings are automatically temperature compensated for copper and aluminium windings using a standard or customized reference temperature.

An intrinsically-safe discharge circuit dissipates the stored magnetic energy rapidly after the test. The discharge process is continuously monitored and clear indicators show when it is safe to remove the test leads.

The instrument is fully automatic and requires no measuring range adjustment. Measurements are performed according to the related IEC, NEMA and ANSI standards.

Complete field test reports can be generated on a printer available optionally. The report can also be sent over a RS-232C interface to a common PC or notebook. For factory use the system can be remote controlled by a host computer.

## FEATURES

- Fully automated resistance measurement of virtually any size and type of windings.
- Large graphic display shows all data at a glance and supports quick and easy operation of the instruments.
- Compact and rugged design for use in harsh environments in field or factory applications.
- Three independent measurement channels allow testing of three series connected windings simultaneously.
- Data exchange to printer or computer over built-in interface without additional software.
- Remote control software to operate the unit from a laptop or PC, for easy gathering, exchanging and analyzing of measuring data. Optimized for transformer measurement and heat run test.

## BENEFITS

Unmatched speed, range and accuracy make these instruments the perfect tools for cost-effective and reliable maintenance measurements.

**Safety discharge circuit** feature proofs and indicates the rapid discharge process to avoid any damage of personnel, test equipment and instrument.

**Highest charging** power guarantees fast saturation of even the largest power transformers within shortest time.

The 2292 can be operated either as a single instrument or be combined with the transformer turns ratio meter TTR 2795 and the mobile insulation diagnosis and analyzing system MIDAS 2880 for an integrated transformer maintenance system.

## APPLICATIONS

- Power Transformers
- Distribution Transformers
- Instrument Transformers
- Rotating Machines
- Bushings
- Cables
- Circuit Breakers

## TECHNICAL SPECIFICATIONS

**Model 2292** (for transformers > 100MVA)
Article Number: 3490002

| | |
|---|---|
| **Resistance Measurement** | |
| Range | 0.1 μΩ .. 20 kΩ |
| Resolution | 0.1 μΩ |
| Accuracy | ± 0.05 % rdg ±0.05 % full-scale |
| **System Configuration** | |
| Source power | 2.5 kW |
| Test current | 0 .. 50 A |
| Test voltage | 50 VDC |
| Temperature coefficient | < 25 ppm / °C |
| Winding measured | Y, Δ or mixed |
| Printer interface | parallel (serial) |
| Computer interface | RS-232C |
| Built-in Memory | Storage of 32 measurement results and 4 measurement setups |
| **Environmental Conditions** | |
| Operating temperature | 0 .. 40°C |
| Humidity range | < 80 % r.h. non-condensing |
| **Power Supply** | |
| Voltage | 115 (3-phase) / 230 VAC |
| Current @ 115 / 230 VAC | 15 / 7.5 A |
| Frequency | 50 / 60 Hz |
| **Weight and Dimension** | |
| Weight | 32 kg (71 lb) |
| W x H x D | 57 x 38 x 56 cm (22" x 15" x 22") |

## SCOPE OF SUPPLY

High current resistance meter Model 2292 (2.5kW) instrument in rugged field case, mains cable, two high-current supply cables with clamps (10m or 20m), three measuring cable sets with clamps (10m or 20m), one surface temperature sensor with cable (PT100, 30m), operating instructions and test certificate.

## OPTIONS

| | |
|---|---|
| Application software for remote operation, data collecting, reporting, transformer heat run testing, export functionality to MS Excel and ASCII. | APSW 229X |
| PT100 resistance temperature probe for measurement in fluids with connecting cable (30m) | 021167-30 |
| Set of three current leads for interconnecting of transformer windings (15m, ∅16mm$^2$) | 4840452 |
| Set of three current leads for interconnecting of transformer windings (3m, ∅16mm$^2$) | 0261421 |
| RS-232C fiber optic link set (30m) | 5992 |
| Printer cable (3m, parallel port) | 021992 |
| Interface converter RS-232/IEEE488 | 5945 |
| Wire holding device for resistance measurement on cables (∅0.1 .. 25mm or ∅0.3 .. 45mm) | 8871 or 8872 |

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