

IND 43

Safety ohmmeter on pyrotechnical elements

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Description

This safety ohmmeter was developed to carry continuity and isolation measurements on pyrotechnical elements where user safety is at stake.

Two types of conditions define the user safety:

Measurement conditions:

- Measuring current much lower than the current of non-fire
- Connection to the test line only for the activated period of measurement
- Discharge of residual electrical charges

Safety conditions:

- No overshoot of maximum current even in case of instrument failure (electronics breakdown, internal short-circuit...)
- Permanent self-checking of the instrument internal functions before connection to measurement channel

Measurement principle

The ohmmeter function is based on 4 wire measurement, which makes it possible to be freed from parasitic line resistance. The principle relies on an internal device of permanent self-calibration which guarantees, over a short and long-term period of time, the high reliability of the measurements carried out by continuously correcting the drifts of gain and offset.

Measurements start with an external input signal. The result of the measurement is internally processed to supply information whether the measured value is within tolerance limits set by the operator.

All parameter settings are entered by keyboard with a locking of the parameters by key. Our units are equipped with dry contact output and S232 connection that allows process automation and implementation of traceability.

On request, our existing products can be adapted to your specific requirements: Adapted protocole RS232, other testing voltage or measuring current, integration, processing software...

Two switching units (INT 17 and INT 17 HT for high testing voltage) are also available in option to interface the devices under test (initiators, airbags...) with IND pyrotechnical ohmmeters / megohmmeters. The contact switches are usually monitored by shared automation (0 24 V) and earth bounding control (contact or transistor). Automation inputs are protected against any change of polarity.

Large applications:

- Automotive airbag inflator / electrical module functional tests
- Seatbelt pre-tensioner actuator / electrical module functional tests
- High speed parallel soak dual inflator or dual test station electrical seek
- Multicontact / switch dry circuit continuity and leakage resistance measurements
- Automotive power / fuse center continuity and leakage characterization
- PCB / PWB and general purpose short/open circuits testing

Technical support:

- Our technical staff can support you:
- Commissioning of your equipment
- Management of units evolution (number and functional needs)
- On site breakdown servicing
- Unit integration on test bench
- On site investigation of any measurement issues
- Yearly calibration is highly recommended in order to control the safety functions of your equipment.

Specifications

Ohmmeter function

Range	0 to 15 Ω
Resolution	0.01 Ω
Accuracy	± 0.1%
Measurement type	4 wires
Measuring current	10 mA
Number of channels	1 or 2

Further features

Parameter setup	- By keyboard with locking of parameters by key - By serial link
Line offset correction	By measurement of line value with validation
Triggers	- 24 V at 5 mA – Programmable on opening or closing - Dry contacts in option
Output signals	Dry contacts – NO or NC, programmable for: ohmmeter channel and megohmmeter channel measurement, end of cycle
Counters	- Counter: Measurement OK - Counter: Measurement out of tolerance - Counter: Measurement out of range - Counter: Measurement total

General specifications

Size	1 channel box: 280 x 155 x 290 mm 2-to-4 channel box: 480 x 170 x 300 mm
Display	Backlit LCD display, 2 lines with 20 characters each Front panel LED showing: - Flashing green: measurement underway - Fixed green: measurement OK - Fixed red: measurement out of tolerance or out of range
Supply	220 VAC – 50 Hz
Communication ports	RS 232 or automation

Models and accessories

Instrument:

IND43	Pyrotechnical ohmmeter – 0 to 15 Ohms

Accessories:

INT17	Switching box
INT17HT	High voltage switching box