



## IND 44

Safety megohmmeter on  
pyrotechnical elements

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

## Description

This safety megohmmeter 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 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, 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

## Megohmmeter function

Range	0 MΩ to 100 MΩ
Resolution	0.1 MΩ
Accuracy	± 1% from 0 to 50 MΩ ± 2% from 50 to 100 MΩ
Measurement type	2 wires
Measuring current	10 mA (Further current on request)
Test voltage	45 V (Further voltage on request)
Cycle time	< 2 s

## 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	280 x 155 x 290 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
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# Models and accessories

## Instrument:

IND44-1            Pyrotechnical megohmmeter - 0 - 100 MOhms - Voltage test: 45 V

IND44-2            Pyrotechnical megohmmeter - 0 - 100 MOhms - Voltage test: 500 V

## Accessories:

INT17            Switching box

INT17HT          High voltage switching box