

# MRC 100S-BD-3

for ground connections and earth leads

High precision  
resistance meters

Micro-ohmmeters

The MRC 100S-BD-3 Bounding Tester is a battery-powered portable digital ohmmeter, which can be used, for example, for testing the ground connection in any section of an aircraft using different measuring currents (up to 10A). This high current ensures that any uncertain connections are recognised.

In addition to that a special firmware ensures that uncertain connections, which are in most cases characterised by unstable measured values, can be detected easily.

An unstable value is indicated like a normal measured value, however, the "Error" LED at the front panel is ON.

In most cases a whole series of measured values are recorded. The MRC100S-BD stores the last 100 measured values, even when it is turned off, so that the values can be transferred to a higher-level computer later via the RS232C interface.

The measuring time, i.e. the time the current flows, can be pre-set in a range between 1 sec. and 60 sec. With a measuring current of 10 A test objects of up to 1000 m $\Omega$  can still be measured depending on the feed line resistances.

The higher the feed line resistance, the lower the limit. To be able to measure 500 m $\Omega$  properly, these resistances must not exceed 2x250 m $\Omega$ , including the contact resistances.

In case the voltage drop across the test object and the feed lines exceeds 10 V, a current error is signalled, since the current cannot reach the 10 A level.

Nevertheless, the measurement is correct, as, due to the quotient method used, the measuring current always flows through the internal reference resistance, too, and the two voltage drops  $U_x/U_{ref}$  can be offset. Measured values obtained in this way are marked by "\*"?



In case the current is below 70 %, the measurements are stopped and a general error message is displayed. In case the measuring time is more than 3 sec., the measured value is constantly updated at a rate of two measurements per second.

The built-in battery unit is of a module design and can be replaced easily. Since the number of measurements is limited in the case of long measuring times and high currents, a second battery unit can be charged in the meantime. The battery unit in use can be charged using the built-in battery charger; this is normally done overnight, as the charging takes several hours.

With the battery charger for the external battery unit, the charging time is reduced to 2 hours.

## Features

- Range from 100  $\mu\Omega$  – 1000 m $\Omega$ , decadic
- Overrange up to 80%
- max. resolution of 100 n $\Omega$
- Display 3 ½ digits
- measurement error  $\leq \pm 0,3$  % of MV  $\pm 2$  digit
- Selectable measuring time 1 s to 30 s
- Selectable measuring current 0,1 A to 10 A
- Contact error detection prior to every measurement
- Accumulator operation including internal power supply for reloading

Questions?

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fax: +49 (0)3328 / 3179 - 10

email: [sales@schuetz-messtechnik.com](mailto:sales@schuetz-messtechnik.com)

Here you will get technical assistance as well as complete information regarding features, prices, shipment and reselling.

[www.ohmmeter.de](http://www.ohmmeter.de)

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3. Edition August 2012. Changes are subject to change without notice.



Made in Germany

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MESSTECHNIK

# MRC 100S-BD-3

## Technical Data

### Resistance measurement

Range	100 $\mu\Omega$ – 1000 m $\Omega$ , decadic
Overrange	+80%, to 1800
Max. measurement error	$\leq \pm 0,3\%$ from MV $\pm 2$ digits
Current	0,1 A / 0,2 A / 0,5 A / 1 A / 2 A / 5 A / 10 A
Range selection	using keypad
Display	LED, 4 ½ digits
Speed	1 s / 3 s / 10 s / 30 s / 60 s / selectable

### Error detection

Current connection errors	prior to EVERY single measurement display: ‚CUR‘
Sense connection errors	display: ‚SEN‘
Overrange >80%	display: ‚OVL‘
Current < 100 %	display: ‚< 100%‘
Unstable results	display: ‚Unstable Ex‘

### Start of measurement

using keypad  
via RS232 and IEEE - 488  
via potential free contact

### Ports

RS232C (optional)  
printer (optional)  
start contact (potential free)

### Dimensions

260 x 150 x 350 mm (WxHxD)

### Weight

approx. 8 kg

## High precision resistance meters

### Micro-ohmmeters

#### Available enhancements

- **Centronics printer interface:**  
parallel printers can be connected directly to the instrument using this enhancement
- **RS232C enhancement:**  
enhances the MR 100S-BD-3 with a standard RS232 port
- **IEEE – 488 enhancement:**  
control the instrument via IEEE – 488

#### Available accessories

- **Cable** several lengths, with Kelvin test prod and start button
- **Cable** several lengths, with Kelvin clamps
- **Accumulator block** for replacement
- **External power supply** for reloading the external battery
- **Calibration resistors** 1 m $\Omega$ , 10 m $\Omega$ , 100 m $\Omega$ , 1  $\Omega$ .  
Max. error: 0,1 %
- **DKD – calibration certificate** from the ‚Deutscher Kalibrierdienst‘

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