

DANBRIDGE
DENMARK

new product information



DC - RESISTANCE BRIDGE TYPE MB 3

The MB3 Resistance Bridge has been designed mainly for production applications like the control of trimming machines, sorting machines, final tests, etc.

The bridge has a built-in standard using high precision metal-film resistors with very low temperature coefficient. Readout is provided on a panel meter and an analog output is available as well for the control of auxiliary equipment.

Realizing that for the various applications different control signals are required the

limit or classifying circuits have been separated from the basic bridge. Space is available for a plug-in unit containing the functions required and further to standard modules readily available special limit, timing, and interface modules can be used. A/S Danbridge offers to design modules to customers' specifications. Even the more complicated circuits can be built into the main frame so the need of using the well-known 'black boxes' does not exist.

Specifications of the MB3

Bridge Circuit:

4-terminal Kelvin contacts.

Resistance Range:

1 Ω to 211 M Ω .

1 Ω to 111 M Ω in 8 decade ranges plus additional switch for adding 100 M Ω .

Decade values are set by 3 decade dials.

Decade Ranges	Test Voltage
1 - 10 Ω	80 mV
10 - 100 Ω	240 mV
100 - 1 k Ω	800 mV
1 k - 10 k Ω	2.4 V
10 k - 100 k Ω	8 V
100 k - 1 M Ω	24 V
1 M Ω - 10 M Ω	80 V
10 M Ω - 100 M Ω	80 V
above 111 M Ω	80 V

The measuring voltage varies linearly with deviation around the above values.

Max. dissipation in unknown 10 mW.

Long-term Accuracy:

$\pm 0.03\%$ from 10 Ω to 10 M Ω . $\pm 0.1\%$ below 10 Ω and from 10 M Ω to 211 M Ω .

Temperature range for specified accuracy: 15 to 35 degrees C.

Meter Ranges:

$\pm 1\%$, $\pm 2\%$, $\pm 5\%$, $\pm 10\%$, $\pm 20\%$ deviation with 20% overrange.

Meter Accuracy:

$\pm 3\%$ of full scale.

Terminals:

2 twin coax connectors for 4-terminal measurement, 2 screw terminals for 2-terminal measurement, ground terminal.

Filter:

An internally switched 2-section filter is provided. The filter timeconstant may be varied as required by installing the appropriate capacitor values.

Settling Time:

With filter switched off the maximum settling time for the deviation output is 10 milliseconds on the six highest ranges increasing to 20 milliseconds on the 10 to 100 Ω range and 50 milliseconds on the 1 to 10 Ω range.

Meter Output:

± 10 V full scale, max. ± 10 mA.
Accuracy $\pm 2\%$ of output.

Deviation Output:

0.5 V/% deviation, max. ± 12 V, ± 10 mA.
Accuracy $\pm 1\%$ of output. Stability $\pm 0.1\%$ of output ± 5 mV.

DC Supply Outputs:

± 15 V, max. 0.1 A. -15 V, max. 0.1 A.
 $+5$ V, max. 0.2 A.

Limit Module Facilities:

The instrument is pre-wired for mounting limit module in the right-hand free space of the cabinet.

Power:

90 to 130 V and 180 to 260 V, 50 to 60 Hz, max. 25 W.

Dimensions:

19 inch. rack cabinet, 360 (deep) x 195 (high) mm overall dimensions.

Total Net Weight:

8.3 kg.

Accessories supplied:

3-core power cable 13 pole output cable connector. 2 twin coax connectors.

Limit Modules

As yet the range is not completed but the following modules are available:

- 1 Channel System with adjustable low and high limits. Yellow, green, and red lamps to indicate LOW, PASS, HIGH conditions. Outputs are available as options.
- 2 Channel System (for example $\pm 5\%$ and $\pm 10\%$) with light indication for PASS 1, PASS 2 and REJECT. Outputs are available as options.
- 1 Channel System with maximum 5 sets of limits which are adjustable on internal potentiometers. A front panel switch selects the limits desired. Light indications and outputs as above. This module is extremely useful when unskilled labour is operating the instrument.



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A/S DANBRIDGE

47. BRIGADEVEJ . 2300 COPENHAGEN S . DENMARK

TELEPHONE: ASTA *1575 - SU *4106

CABLES: DANBRIDGE-COPENHAGEN

TELEX 19775

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