

INSTRUCTION MANUAL
FOR
CAT. 71-631 & 71-633
RESISTANCE STANDARD

JAMES G. BIDDLE CO.
Blue Bell, PA. 19422

SECTION A

INTRODUCTION

The Catalog 71-631 and 71-633 Resistance Standards are wide range decade resistance boxes of high accuracy. They are suitable as calibration standards and useful in many precision laboratory applications where a variety of exact resistance values of high resolution and stability are needed.

The set resistance value of up to nine significant figures is an in-line digital display, with decimal point, which reduces error in reading resistance values.

The resistance standard is housed in a dust-tight metal carrying case, with metal panel, which provides complete electrostatic shielding.

SECTION B

RECEIVING INSTRUCTIONS

Your Cat. 71-631/633 has been thoroughly tested and inspected to rigid inspection specifications before being shipped and is ready for use after it is set up as indicated in the Installation Section.* Check the equipment received against the packing list. Notify James G. Biddle Co., Plymouth Meeting, Pa. of any shortage of materials. The Cat. 71-631/633 should be examined for damage received in transit. If any damage is found, file a claim with the carrier at once and notify James G. Biddle Co. or its nearest representative giving a detailed description of the damages observed.

* If applicable.

SECTION C

SPECIFICATIONS:

Range -

71-631: 0-1,111,111.1 ohms
71-631: 0-11,111,111 ohms

Power Rating -

0.5 watts for all resistors.
Max. current is marked on top panel, adjacent to each decade.

Limit of Error -

$\pm(0.015\%$ of dial setting $+0.015\Omega)$ except $\pm 0.03\%$ for $1M\Omega$ steps.

Resolution -

1 part in 10^8

Minimum Resistance per Step -

71-631: 0.01Ω
71-633: 0.1Ω

Temperature Coefficient of Resistance -

15 ppm/ $^{\circ}C$ maximum

Termination -

2-wire

Terminals -

3 five-way Binding Posts:

one connected to highest value decade,
one to lowest value decade, one ground terminal.

Dimensions and Weight -

15" x 8" x 6- $\frac{1}{4}$ " high, including lid
(380 x 203 x 159 MM)
15 pounds (6.80 Kg)

SECTION D

ROUTINE MAINTENANCE:

With normal use these Wide Range Resistance Standards require little or no maintenance.

If the instrument should be removed from its case for any reason, the resistors should be protected from mechanical damage and touched with the fingers as little as possible. Fingerprints on the resistors may substantially affect the resistor values and may initiate progressive deterioration of accuracy.

Calibration of the Cat. 71-631 and 71-633 requires a precision bridge such as the James G. Biddle Cat. No. 71-131 Kelvin Wheatstone Deviation Bridge, or a set of fixed resistance standards with known corrections which can be used as references in a suitable Wheatstone Bridge set-up..

SECTION E

PARTS LIST: - FIELD REPLACEABLE

Resistors:

<u>JGB P/N</u>	<u>DESCRIPTION</u>
10011-2	0.01 ohm
10010-1	0.1 ohm
10002-3	1.0 ohm
10002-8	10 ohms
10002-15	100 ohms
10009-5	1K ohms
10009-9	10K ohms
10009-12	100K ohms
11097	1M Ω

Resistor-Switch Assemblies:

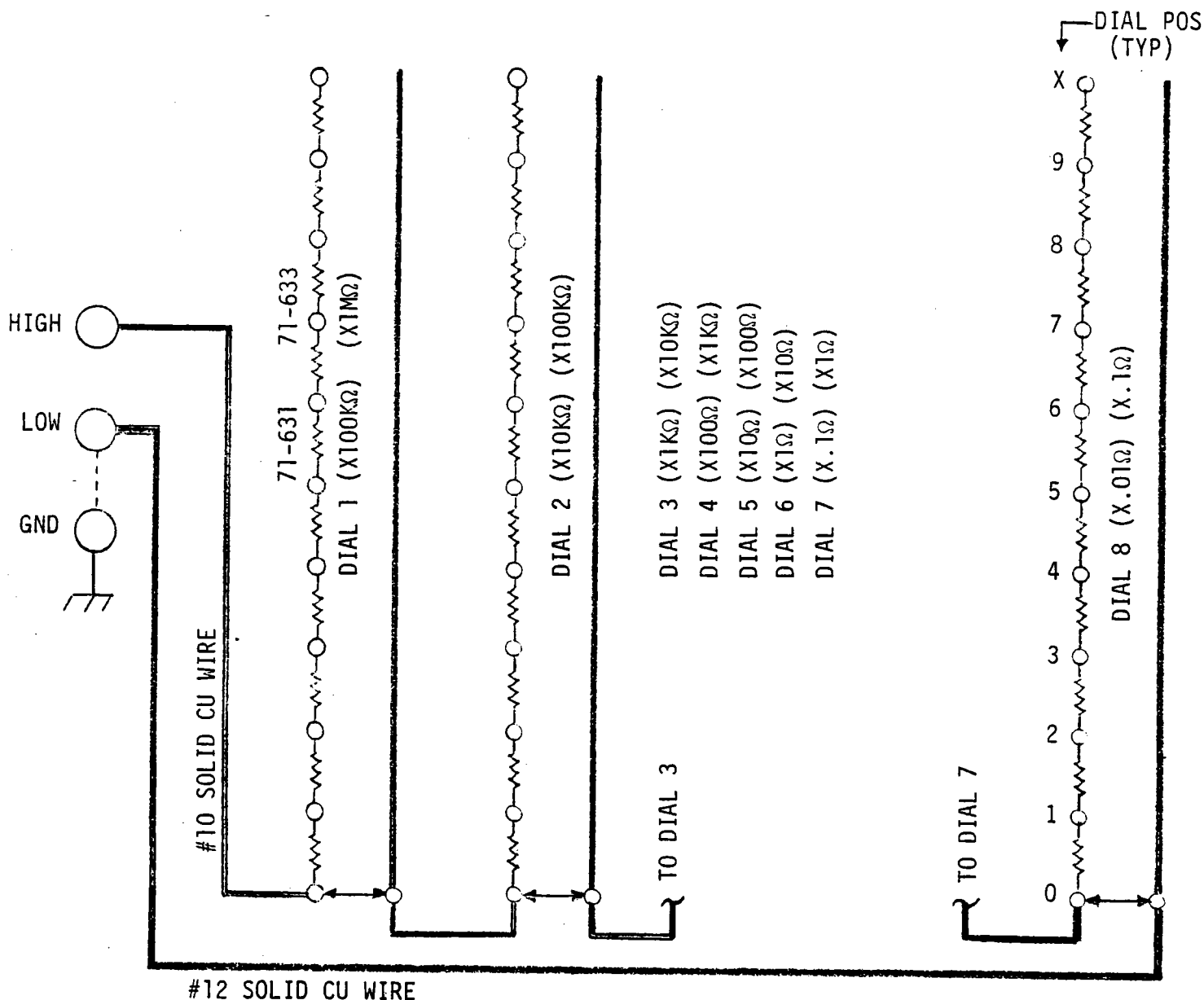
11540-1	0.01 Ω Decade
11497-1	0.1 Ω Decade
11026-8	1 Ω Decade
11026-7	10 Ω Decade
11026-6	100 Ω Decade
11503-3	1K Ω Decade
11503-2	10K Ω Decade
11503-1	100K Ω Decade
11503-4	1M Ω Decade

Binding Posts:

11166-2	High, low & ground
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Miscellaneous:

11365	Shorting link
11539	Case
6182-2	Rubber feet
9746	Handle
11358-1	Dial Ass'y. (bottom index)
11358-2	Dial Ass'y. (top index)
7184-1	Knob



TYPICAL SCHEMATIC DIAGRAM
 FOR CAT. 71-631 & 71-633
 WIDE RANGE RESISTANCE STANDARDS