Specifications

Table 1 lists specification for the available 742A Series Resistance Standards.

Table 1. 742A Series Resistance Standard Specifications

Model	Nominal Resistance at 23 °C	Time Stability		Calibration Uncertainty	Maximum Deviation from the 23 °C Value (18 to 28 °C)	Maximum Current (Voltage)	+1 PPM Error Adder When Current Exceeds the Following
		180 Day	1 Year				
742A-1	1 Ω	±5.0 ppm	±8.0 ppm	±1.0 ppm	3.0 ppm	500 mA (500 mV)	200 mA
742A-1.9	1.9 Ω	±5.0 ppm	±8.0 ppm	±1.0 ppm	3.0 ppm	200 mA (380 mV)	100 mA
742A-10	10 Ω	±5.0 ppm	±8.0 ppm	±1.0 ppm	3.0 ppm	100 mA (1 V)	20 mA
742A-100	100 Ω	±4.0 ppm	±6.0 ppm	±1.0 ppm	3.0 ppm	20 mA (2 V)	5 mA
742A-1 k	1 kΩ	±4.0 ppm	±6.0 ppm	±1.5 ppm	2.0 ppm	10 mA (10 V)	2 mA
742A-10 k	10 Ω	±2.5 ppm	±4.0 ppm	±1.0 ppm	1.5 ppm	3 mA (30 V)	600 µA
742A-19 k	19 Ω	±2.5 ppm	±4.0 ppm	±1.5 ppm	2.0 ppm	1.5 mA (28.5 V)	600 µA
742A-100 k	100 kΩ	±4.0 ppm	±6.0 ppm	±2.5 ppm	2.0 ppm	1 mA (100 V)	400 µA
742A-1 M	1 MΩ	±6.0 ppm	±8.0 ppm	±5.0 ppm	2.0 ppm	100 µA (100 V)	100 µA
742A-10 M	10 MΩ	±6.0 ppm	±9.0 ppm	±10.0 ppm	3.0 ppm	20 µA (200 V)	20 µA
742A-19 M	19 MΩ	±8.0 ppm	±10.0 ppm	±20.0 ppm	4.0 ppm	10 µA (190 V)	10 µA

General Specifications:

Accuracy: The initial resistance is trimmed to ±2 ppm of nominal. The measured value is printed on the rear panel.

Retrace Error (Hysteresis): 23 °C-18 °C-23 °C cycle: Negligible resistance shift
23 °C-28 °C-23 °C cycle: Negligible resistance shift
23 °C-0 °C-23 °C cycle: <2 ppm resistance shift
23 °C-40 °C-23 °C cycle: <2 ppm resistance shift

Operating Temperature Range: 23 ±5 °C

Storage Temperature Range: 0 to 40 °C

Report of Calibration: The report of calibration includes a table of resistance values in 0.5° increments from 18 to 28 °C.

Size: 8.6 cm H x 10.5 cm W x 12.7 cm L (including binding posts)
(3.4 in H x 4.15 in W x 5 in L (including binding posts))
Binding posts; 2.5 cm (1.0 in)

Weight: 0.68 to 0.91 kg (1.5 to 2.0 lbs), depending on model

Design and Construction Notes

The 742A Series are constructed of arrays of Fluke wirewound precision hermetically-sealed resistors. No adjustable resistors of any kind are used.

Each 742A is built with a temperature coefficient near zero at 23 °C. To further reduce errors caused by temperature changes, the binding posts are constructed of low-thermal emf material.

Features

Figure 1 shows a front panel view. Figure 2 shows a rear panel view. Table 2 describes binding post functions. Table 3 describes the rear panel labels.

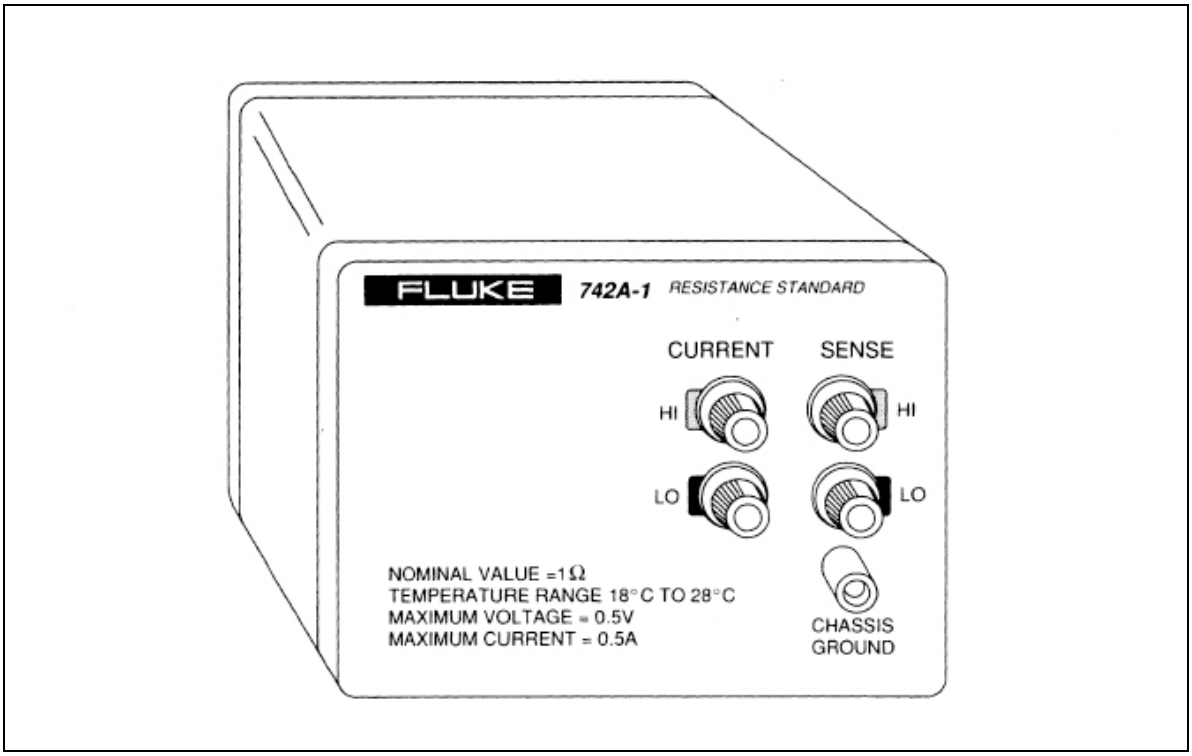

Figure 1. Typical Front Panel View

Table 2. Functions of the Binding Posts

742A Binding Post	Function
CURRENT HI	Input for the current source from an ohmmeter
CURRENT LO	Input for the current source from an ohmmeter
SENSE HI	Measurement point for a four-wire ohmmeter
SENSE LO	Measurement point for a four-wire ohmmeter
CHASSIS GROUND	Connected to the case for shielding