

# 4½ Digit Ohmmeter

1/8 DIN



2002-OR2 shown larger  
than actual size.

2002B-O



- ✓ 19,999 Count Display Span
- ✓ 19.999  $\Omega$  to 19.999 k $\Omega$  Ranges
- ✓ 2-, 3- or 4-Wire Connection
- ✓ 120 dB CMR, 70 dB NMR
- ✓ 0.1 mV/Count Linearized Analog Output
- ✓ Bright, 14 mm (0.56") LED Display
- ✓ Display Hold and Test
- ✓ 115/230 Vac Power
- ✓ EMI/RFI Filter for AC Power
- ✓ Screw-Terminal Barrier Strip
- ✓ Short 104 mm (4.1") Deep 1/8 DIN Case

## Options

- ✓ Serial BCD Output
- ✓ Isolated 9 to 32 Vdc or 26 to 56 Vdc Power
- ✓ NEMA 4 (IP65) Splash-Proof Lens Cover

The 2002B-O is a low-cost, high-resolution 4½ digit (19,999-count) resistance meter with readout directly in ohms. Four ranges are jumper-selectable: 19.999  $\Omega$ , 199.99  $\Omega$ , 1.9999 k $\Omega$ , 19.999 k $\Omega$ . It is complete with low-level current excitation and open-resistance indication. The current source is tied to the reference of the A/D converter for true ratiometric operation and immunity to changes in line voltage.

## Input Ranges

Electrical features include linearized analog output of 0.1 mV per count, which is ideal for driving a strip-chart recorder. Mechanical features include a bright 14 mm (0.56") LED display, a screw-terminal barrier strip for signal and power, and a compact 1/8 DIN case that requires a depth of less than 104 mm (4.1") behind the bezel.

## Options

Power options include isolated 9 to 32 Vdc and 26 to 56 Vdc. Other options are a PCB edge connector for display control and output of +4.7 Vdc and -4.7 Vdc, and a splash-proof lens cover which meets NEMA 4 (IP65) requirements.

## Specifications

### Noise Rejection

**NMR, SIG HI to SIG LOW:** 70 dB, 50/60 Hz

**CMR, ANA GND to PWR GND:** 120 dB, DC to 60 Hz

**CMV, ANA GND to PWR GND:** 1500 Vp per HV test, 354 Vp per IEC spacing

### Environmental

**Operating Temperature:** 0 to 60°C

**Storage Temperature:** -40 to 85°C

**Relative Humidity:** 95% at 40°C (non-condensing)

### Display

**Type:** 7-segment, red LED

**Height:** 14 mm (0.56")

**Symbols:** 1.8.8.8.8

**Decimal Points:** Four positions programmable by jumpers behind the lens or connector

**Overrange or Break Indication:**

Four least-significant digits flash

## Input

**Connection:** 2-, 3- or 4-wire

**Excitation Current:** 4 mA or 40 µA

**Resistance Break Indication:** Meter displays overrange

**Overvoltage Protection:** 25 Vp

### Accuracy at 25°C

**Zero Tempco:** ±1 MΩ/°C (19.999 Ω & 199.99 Ω ranges), ±0.1 Ω/°C (1.9999 kΩ & 19.999 kΩ ranges)

**Span Tempco:** ±0.005% of reading/°C

**Full-Scale Step Response:** 1 s

**Warmup to Rated Accuracy:** 20 min

### Analog-to-Digital Conversion

**Technique:** Dual-slope, average value

**Signal Integration Period:** 100 ms

**Read Rate:** 2.5/s

### Digital Inputs

**Level:** TTL or 5V CMOS compatible

## Power

**AC Voltages:** 115 or 230 Vac, ±15%

**AC Frequency:** 49 to 440 Hz

**DC Voltages:** 9 to 32 Vdc, isolated to 300 Vp; 26 to 56 Vdc, isolated to 300 Vp

**Power Consumption:** 3.7 W nominal

**Output Voltages:** 4.7 Vdc and -4.7 Vdc ±5%, 10 mA max

### Analog Output (Linearized)

**Voltage:** 0.1 mV/count

**Calibration Error:** Same as given under accuracy

**Current:** 1 mA maximum

**Source Resistance:** 68 Ω

### Mechanical

**Bezel:** 96 W x 48 H x 5.1 mm D (3.78 x 1.89 x 0.20")

**Depth Behind Bezel:** 104 mm (4.09")

**Panel Cutout:** 92 W x 45 mm H (3.62 x 1.77")

**Weight:** 15 oz (425 g)

**Case Material:** 94 V-0 UL-rated polycarbonate

Range	Resolution	Excitation Current	Zero Adjust
19.999 Ω	1 MΩ	4 mA	±2.5 Ω
199.99 Ω	10 MΩ	4 mA	±2.5 Ω
1.9999 kΩ	0.1 Ω	40 µA	±250 Ω
19.999 kΩ	1 Ω	40 µA	±250 Ω

**To Order Visit [newportUS.com/2002b-o](http://newportUS.com/2002b-o) for Pricing and Details**

Model No.					Description
2002B					4½ digit ohmmeter
	-OR1				0 to 19.999 Ω
	-OR2				0 to 199.99 Ω
	-OR3				0 to 1.9999 kΩ
	-OR4				0 to 19.999 kΩ
		*			(Nothing, leave field blank) 115 Vac, 50/60 Hz power
		,C1			230 Vac, 50/60 Hz
		,C3C			Isolated 9-32 Vdc
		,C3E			Isolated 26-56 Vdc
			*		(Nothing, leave field blank) Red LED display
			,G		Green LED display
				*	(Nothing, leave field blank) No Option

**NOTE:** All combinations may not be valid, check spec sheet for valid part numbers.

**Ordering Example:** 2002B-OR2, 4½ digit ohmmeter, 115 Vac power, resistance of 0 to 199.99 Ω.