

4½ Digit DC Voltmeter

1/8 DIN



2001-5 shown actual size.

2001A



- ✓ ±19,999 Count Display Span
- ✓ ±2 V to ±200 Vdc Ranges
- ✓ True-Differential Input
- ✓ 120 dB CMR, 56 dB NMR
- ✓ 1 pA Typical Bias Current
- ✓ 3-Wire Ratio Measurement
- ✓ Bright, 14 mm (0.56") LED Display
- ✓ Automatic Zero and Polarity
- ✓ Display Hold and Test
- ✓ 115/230 Vac Power
- ✓ Short 104 mm (4.1") Deep 1/8 DIN Case

Options

- ✓ Isolated 9 to 32 Vdc Power
- ✓ Isolated 26 to 56 Vdc Power
- ✓ Screw-Terminal Barrier Strip
- ✓ NEMA 4 (IP65) Splash-Proof Lens Cover

The 2001A is a low-cost, true-differential 4½ digit panel meter for applications that require high resolution and high accuracy DC measurement. It fits a standard 1/8 DIN panel cutout and requires a depth of less than 104 mm (4.1") behind the panel. Display span is ±19,999 counts. Accuracy is 99.98%.

Input Ranges

The 2001A offers DC voltage ranges of ±1.9999, ±19.999 and ±199.99 Vdc. By using an external DC voltage reference, any of these ranges can be configured for 3-wire ratio measurement.

Options

The meter can be electrically configured for three input voltage ranges, four decimal-point positions, high-impedance 3-wire ratio input. Mechanical options include a screw-terminal barrier strip for signal and power and a splash-proof lens cover which meets NEMA 4 (IP65) requirements.

Specifications

Noise Rejection

NMR, SIG HI to SIG LO: 56 dB, 50/60 Hz
CMR, SIG LO to ANA GND: 86 dB, DC to 60 Hz
CMR, AC GND to ANA GND: 120 dB, DC to 60 Hz
CMV, SIG LO to ANA GND: ±1 Vp
CMV, AC GND to ANA GND: 1500 Vp per HV test, 354 Vp per IEC spacing

3-Wire Ratio Reference

Analog Input Range: ±2, ±20, ±200 V
External Reference Input: +0.5 to +2.0 V
Load on Reference, Std: 6 kΩ
Load on Reference, Opt: 100 MΩ
Accuracy: 99.98%

Analog Input

Configuration: Differential, bipolar

Zero: Automatic

Span Adjustment: $\pm 5\%$

Analog-to-Digital Conversion

Technique: Dual-slope, average-value

Polarity: Automatic

Signal Integration Period: 100 ms

Read Rate: 2.5/s

Accuracy at 25°C

Maximum Error: $\pm 0.01\%$ of reading
 ± 2 counts

Span Tempco: $\pm 0.01\%$ of reading/ $^{\circ}\text{C}$

Step Response: 1s

Warmup to Rated Accuracy: 10 min

Display

Type: 7-segment, red LED

Height: 14 mm (0.56")

Symbols: -1.8.8.8.8

Decimal Points: Four positions selectable by jumpers from front panel or at connector, 10 mA sink

Overrange Indication:

Four least-significant digits flash

Digital Inputs

HOLD and TEST Inputs:

TTL or 5 V CMOS compatible

Blanking Input:

Open-collector compatible

Power

AC Voltages: 115 or 230 Vac $\pm 15\%$

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: 2.5 W

Output Voltages:

4.7 Vdc and -4.6 Vdc $\pm 5\%$, 10 mA max

Environmental

Operating Temperature: 0 to 60°C

Storage Temperature: -40 to 85°C

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

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 (4.1")

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

Weight: 14 oz (400 g)

Case Material: 94V-0 UL-rated polycarbonate

Range	Resolution	Overvoltage Protection	Input Resistance	Bias Current
± 1.9999 V	100 μV	130 Vp	1 G Ω	10 pA
± 19.999 V	1 mV	250 Vp	1 M Ω	1 pA
± 199.99 V	10 mV	250 Vp	1 M Ω	1 pA

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Model No.						Description
2001A						4½ digit DC voltmeter
	-3					± 1.9999 Vdc
	-4					± 19.999 Vdc
	-5					± 199.99 Vdc
		*				(Nothing, leave field blank) for 3-wire ratio input impedance 6 k Ω
		,HZ				High-impedance (100 M Ω reference input only)
			*			(Nothing, leave field blank). Decimal point programmable at D1 connector
			,DP1			1.9999, internally-wired
			,DP2			19.999, internally-wired
			,DP3			199.99, internally-wired
			,DP4			1999.9, internally-wired
				*		(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
					,D4	Screw-terminal barrier strip for power and signal. Removes inputs from D1. Option required for CE
					,BL	Lens without Newport logo

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

Ordering Example: 3001-4,D4, for 4½ digit voltmeter, 115 Vac power, with ± 19.999 Vdc input, screw terminal barrier strip.