

# 4½ Digit DC Voltmeter

1/16 DIN Case, 5 Vdc Powered

2520



2520-5 shown  
actual size.

- ✓ ±19,999 Count Display Span
- ✓ ±2 V to ±200 Vdc Ranges
- ✓ True-Differential Input
- ✓ 86 dB CMR
- ✓ 1 GΩ Input Impedance
- ✓ 1 pA Input Bias Current
- ✓ 3-Wire Ratio Measurement
- ✓ Serial BCD Output
- ✓ Bright, 14 mm (0.56")
- ✓ LED Display
- ✓ Automatic Zero and Polarity
- ✓ Display Hold and Test
- ✓ 5 Vdc Power
- ✓ Low-Profile 1/16 DIN Case

## Options

- ✓ Three-State Parallel BCD Output
- ✓ ±0.001%/°C Span Tempco
- ✓ High-Impedance 3-Wire Ratio Input

The 2520 is an economical 5-volt powered, high-resolution, high-accuracy 4½ digit DC voltmeter in a compact 1/16 DIN case. The height of the panel cutout is only 22 mm (0.88"). The depth behind the panel is only 72 mm (2.83").

Low cost, small size, low power consumption and exceptional power-supply noise rejection make the 2520 ideal for demanding OEM and portable-instrument applications. Non-isolated character-serial BCD output is standard to allow the 2520 to be interfaced to other instrumentation.

## Parallel BCD Option F2M

The F2M option is an upper board which converts the meter's serial BCD output to non-isolated, three-state parallel BCD. An address decoder on the board permits the meter's parallel BCD outputs to be enabled by a 4-bit binary address signal for three-state data-busing applications.

## Specifications

### Noise Rejection

NMR: 60 dB at 50/60 Hz

CMR: 86 dB, DC to 60 Hz

CMV: SIG LO to DIG GND ±1 Vp

### Accuracy at 25°C

Maximum Error: ±0.01% of reading ±2 counts

Span Tempco, Standard: (2 V) ±0.005% of reading/°C,  
(20/200 V) ±0.0025% of reading/°C

Span Tempco, Optional: (2 V) ±0.001% of reading/°C,  
(20/200 V) ±0.002% of reading/°C

Step Response: 2 s

Warmup to Rated Accuracy: 0.5 hr

### Signal Input

Configuration: Bipolar, true-differential

Zero: Automatic

### Analog-To-Digital Conversion

Technique: Dual-slope, average-value

Polarity: Automatic

Signal Integration Period: 100 ms

Read Rate: 2.5/s

### 3-Wire Ratio Reference

Reference Voltage: 0.5 to 3.0V

Load on Reference, Std: 40 kΩ

Load on Reference, Opt: 1 GΩ

**Display****Type:** 7-segment, red LED**Height:** 14 mm (0.56")**Symbols:** -1.8.8.8.8**Decimal Points:** Four positions programmable internally or at connector**Overrange Indication:** Display flashes**Digital Signals****Output Signals:** TTL-compatible**Hold Input:** TTL or 5V CMOS compatible**Blanking Input:** Open-collector compatible**Power****Voltage:** 5 Vdc  $\pm 5\%$ **Current:** 170 to 230 mA**Power Consumption:** 1 W (nominal)**Environmental****Operating Temperature:** 0 to 55°C**Storage Temperature:** -40 to 85°C**Relative Humidity:** 95% at 40°C (non-condensing)**Mechanical****Dimensions:** 24 H x 96 W x 72 mm D (0.94 x 3.77 x 2.82")**Panel Cutout:** 22.2 x 92 mm (0.874 x 3.622")**Weight:** 5 oz (145 g)**Case Material:** 94V-0 UL-rated polycarbonate

Range	Resolution	Input Resistance	Bias Current	Maximum Input
$\pm 1.9999V$	100 $\mu$ -V	1 G $\Omega$	10 pA	300 Vp
$\pm 19.999V$	1 mV	1.1 M $\Omega$	1 pA	300 Vp
$\pm 199.99V$	10 mV	1 M $\Omega$	0.1 pA	300 Vp

**To Order Visit [newportUS.com/2520](http://newportUS.com/2520) for Pricing and Details**

Model No.					Description
2520					4½ digit, 5 Vdc powered voltmeter
	-3				$\pm 1.9999$ Vdc
	-4				$\pm 19.999$ Vdc
	-5				$\pm 199.99$ Vdc
		*			(Nothing, leave field blank) Standard ( $\pm 0.005\%$ of reading/ $^{\circ}$ C) span tempco
		,LT			High-stability ( $\pm 0.001\%$ of reading/ $^{\circ}$ C) span tempco
			*		(Nothing, leave field blank) Standard, serial BCD output non-isolated
			,F2M		Parallel BCD output, three-state (mutually exclusive with PA) Includes PCB edge connector
				*	(Nothing, leave field blank) Spring clamp, standard case mounting
				,UC	U-shaped mounting clamp (not compatible with F2M)
				*	(Nothing, leave field blank) Red LED display
				,G	Green LED display

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

**Ordering Example:** 2520, for 4½ digit dc voltmeter, 5 Vdc powered,  $\pm 19.999$  Vdc input, serial BCD output.