

# LOW COST, 3½ DIGIT VOLTMETERS

1/8 DIN

 OMEGA®

## DP301AN



- ✓ ±1999 Count Display Span
- ✓ ±200 mV to ±200 Vdc Ranges
- ✓ True-Differential Input with 80 dB CMR
- ✓ 3-Wire Ratio Input
- ✓ Bright, 14 mm (0.56") LED Display
- ✓ Automatic Zero and Polarity
- ✓ Display Hold and Test
- ✓ 115/230 Vac Power
- ✓ 1/8 DIN Case
- ✓ RoHS 2 Compliant

### 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 DP301AN is a low-cost 3½ digit DC voltmeter. It fits in a standard 1/8 DIN panel cutout and requires a depth of less than 104 mm (4.1") behind the panel. With the addition of a screw-terminal barrier strip, it becomes a low-cost, pin-compatible alternative to the DP2000A and DP2000B in applications where indication-only is required.

### INPUT RANGES

The DP301AN offer voltage ranges of ±0.1999V, ±1.999V, ±19.99V and ±199.9 Vdc. The input is true-differential, with excellent common-mode noise rejection (CMR). By using an external DC voltage reference, any of these ranges can further be configured for 3-wire ratio measurement with readout from 0 to 1.999.

### OPTIONS

The DP301AN can be configured for four voltage input ranges, three decimal-point positions, and 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) standards.



DP301AN-5 shown  
actual size.

### SPECIFICATIONS

#### Noise Rejection

NMR: 56 dB, 50/60 Hz

CMR, AC GND to SIG GND: 120 dB, DC to 60 Hz

CMR, SIG LO to SIG GND: 80 dB, DC to 60 Hz

CMV, AC GND to SIG GND: 1500 Vp per HV test, 354 Vp per IEC spacing

CMV, SIG LO to SIG GND: ±1 Vp

#### Power

AC Voltage: 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: 2.4 W (nominal)

Output Voltages: 4.7 Vdc and -4.6 Vdc ±5%, 10 mA max

#### Display

Type: 7-segment, red LED

Height: 14 mm (0.56")

Symbols: -1.8.8.8

Decimal Points: Three positions programmable internally or at connector

Overrange Indication: Three least-significant digits blank

#### Environmental

Operating Temperature: 0 to 60°C

Storage Temperature: -40 to 85°C

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

#### Analog-To-Digital Conversion

Technique: Dual-slope, average-value

Polarity: Automatic

Signal integration period: 100 ms

## Signals

**HOLD and TEST Inputs:** TTL or 5V  
CMOS compatible

## 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:** 14 oz (400 g)

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

## Accuracy at 25°C

**Maximum Error:** ±0.05% of reading  
±1 count

**Span Tempco:** ±0.01% of reading/°C

**Step Response:** 1 s

**Warmup to Rated Accuracy:** 10 min

## Input Configuration

**Configuration:** Differential, bipolar

**Zero:** Automatic

**Span Adjustment:** ±5%

## Analog Input

RANGE	RESOLUTION	MAXIMUM INPUT	INPUT RESISTANCE	BIAS CURRENT
±199.9 mV	100 µV	130 Vp	1 GΩ	50 pA
±1.999V	1 mV	130 Vp	1 GΩ	50 pA
±19.99V	10 mV	250 Vp	1.1 MΩ	5 pA
±199.9V	100 mV	250 Vp	1.0 MΩ	1 pA

## 3-Wire Ratio Reference

ANALOG INPUT RANGE	EXTERNAL REFERENCE INPUT	LOAD ON REFERENCE STD	LOAD ON REFERENCE OPT	ACCURACY
±200 mV	+0.05 to +0.2V	30.6 kΩ	100 MΩ	99.9%
±2, ±20, ±200V	+0.5 to +2.0V	65.3 kΩ	100 MΩ	99.9%

## To Order

MODEL NO.						DESCRIPTION
DP301AN						3½ digit voltmeter
	-2					±199.9 mVdc
	-3					±1.999 Vdc
	-4					±19.99 Vdc
	-5					±199.9 Vdc
		*				(Nothing, leave field blank) standard 3-wire ratio input impedance
		-HZ				High impedance (100 MΩ)
			*			(Nothing, leave field blank). Decimal point programmable at D1 connector
			-DP1			1.999, internally-wired
			-DP2			19.99, internally-wired
			-DP3			199.9, internally-wired
				*		(Nothing, leave field blank) 115 Vac, 50/60 Hz power
				-C1		230 Vac, 50/60 Hz
				-C3C		Isolated 9 to 32 Vdc
				-C3E		Isolated 26 to 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 power and signal from D1).

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

**Ordering Examples:** DP301AN-2-D4, for 3½ digit DC voltmeter, with ±199.9 mVdc, screw terminal barrier strip.