

# DC VOLTMETER, AMMETER INDICATOR/CONTROLLER

1/8 DIN



## DP2000-AB Series

**Product Discontinued**

as of 3/13/2018

- ✓ ±1999 or ±9999 Count Display Span
- ✓ ±200 mV to ±200V or ±100 mV to ±100V Ranges
- ✓ ±20 µA to ±2 A or ±10 µA to ±1 A Ranges
- ✓ 1 or 0.1 mV/Count Analog Output
- ✓ Front-Panel Accessible Adjustments
- ✓ LED or LCD Display
- ✓ Automatic Polarity
- ✓ Display Hold and Test
- ✓ Screw-Terminal Barrier Strip
- ✓ RoHS 2 Compliant



DP2000-A4 shown actual size.

The DP2000/9000A and DP2000/9000B are a high-quality ±1999 or ±9999 count DC voltmeter and ammeter, respectively. The base meters are digital indicators for use in electrically-noisy industrial environments. With the addition of analog and control outputs, these meters can provide two-wire current-loop signals to a central control room and provide local alarm or control. A 1/8 DIN case with screw terminals for signal and power is standard. A wide range of options are available.

### POWER AND DISPLAY OPTIONS

Six types of power supplies are available: 120 Vac, 240 Vac, 24 Vac, 5 Vdc, isolated 9 to 32 Vdc and isolated 26 to 56 Vdc. An LED display is standard, an LCD display is optional and is recommended for viewing in bright ambient light. A NEMA 4 (IP65) splash-proof lens cover is available.

Signal input and power connections are made via a rear barrier terminal strip. The motherboard rear edge connector provides access to hold and test, polarity, clock, and the standard analog output and optional analog outputs. Decimal point positions can be selected by jumpers.

### ANALOG OUTPUT OPTIONS

A 1 mV/count (±2V full-scale) or 0.1 mV/count (±1V full-scale) analog output is standard and is ideal for driving a strip-chart recorder. An additional analog output can be provided by an optional vertical plug-in board. Available output signals are 0 to 5 Vdc, 0 to 10 Vdc, 0 to 1 mA (source or sink) and 4 to 20 mA (source or sink). The top and bottom of each output range can be scaled to fit a user-selected display span.

### CONTROL OUTPUT OPTIONS

Additional outputs can be provided by a horizontal upper board. Available options include single-setpoint control with one 10 A relay, dual-setpoint control with two 10 A relays, 4 to 20 mA proportional control (source or sink), time-proportional 2 A solid-state relay control, and isolated, parallel BCD output.

### SPECIFICATIONS

#### Input Configuration

**Configuration:** Bipolar, single-ended

**Polarity:** Automatic

**Span Adjustment:** ±4%

#### Conversion

**Technique:** Auto-zero, dual slope, average value

**Signal Integration Period:** 100 ms, nominal

**Reading Rate:** 2.5/s, nominal

#### Display

**LED:** Red, 14.2 mm (0.56"), 7-segment

**LCD:** 12.7 mm (0.50"), 7-segment

#### Power

**AC Voltages:** 120, 240 or 24 Vac 10%/-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; 5 Vdc ±5%, non-isolated

**Power Consumption:** 8 W maximum

### Common Mode

**Voltage:** 1500 Vp test (354 Vp per IEC spacing)

**Rejection (DC to 60 Hz):** 120 dB

**NMR 50/60 Hz:** 75 dB (DP2), 130 dB (DP9)

### Environmental

**Operating Temperature:** 0 to 60°C (32 to 140°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

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

### Mechanical

**Bezel:** 96 W x 48 H x 8 mm D (3.78 x 1.89 x 0.31")

**Depth Behind Bezel:** 139.8 mm (5.50")

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

**Weight:** 17 oz (480 g)

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

## DC VOLTAGE INPUTS

## A SERIES

CODE*	DP2000 RANGE	DP9000 RANGE	INPUT IMPED	DP2000 RES	DP9000 RES	ACC @25°C
A1	±199.9 mV	±99.99 mV	1 GΩ	0.1 mV	0.01 mV	±0.05% of Rdg ±1 (DP2) ±2 (DP9) counts
A2	±1.999 V	±999.9 mV	1 MΩ	1 mV	0.1 mV	
A3	±19.99 V	±9.999 V	1 MΩ	10 mV	1 mV	
A4	±199.9 V	±99.99 V	1 MΩ	100 mV	10 mV	

## DC CURRENT INPUTS

## B SERIES

CODE*	DP2000 RANGE	DP9000 RANGE	INPUT IMPED	DP2000 RES	DP9000 RES	ACC @25°C
B1	±19.99 µA	±9.999 µA	10 kΩ	0.01 µA	1 nA	±0.05% of Rdg ±1 (DP2) ±2 (DP9) counts
B2	±199.9 µA	±99.99 µA	1 kΩ	0.1 µA	10 nA	
B3	±1.999 mA	±999.9 µA	100 Ω	1 µA	100 nA	
B4	±19.99 mA	±9.999 mA	10 Ω	10 µA	1 µA	
B5	±199.9 mA	±99.99 mA	1 Ω	100 µA	10 µA	
B6	±1.999 A	±999.9 mA	0.1 Ω	1 mA	100 µA	

**Ordering Example:** DP2000-B3, LED 120 Vac, 1 µA/count, DC current between -1.999 mA and 1.999 mA.

## To Order

MODEL NO.					DESCRIPTION
DP2	3½-DIGIT FOR ±1999 COUNT				
DP9	4-DIGIT FOR ±9999 COUNT				
	0	0	0	-X	<b>A. POWER AND DISPLAY</b>
	0				LED; 120 Vac (50/60 Hz)
	1				LCD; 120 Vac (50/60 Hz) (DP2000 only)
	2				LED; 240 Vac (50/60 Hz)
	3				LCD; 240 Vac (50/60 Hz) (DP2000 only)
	4				LED; 9 to 32 Vdc, isolated
	5				LCD; 9 to 32 Vdc, isolated (DP2000 only)
	6				LED; 5 Vdc
	7				LCD; 5 Vdc (DP2000 only)
	8				LED; 24 Vac
	9				LCD; 24 Vac (DP2000 only)
	A				LED; 26 to 56 Vdc, isolated
	B				LCD; 26 to 56 Vdc, isolated (DP2000 only)
					<b>B. ANALOG OUTPUTS</b>
		0			1 mV/count (supplied on all units)
		1			0 to 5 Vdc
		2			0 to 10 Vdc
		3			0 to 1 mA (internally driven)
		4			4 to 20 mA (internally driven)
		5			4 to 20 mA (externally driven)
		6			4 to 20 mA (isolated)
					<b>C. CONTROL OUTPUTS</b>
			0		None
			1		Dual setpoint, 10 A relay (SPDT)
			2		Proportional 4 to 20 mA
			3		Proportional/time proportioning, 2 A relay
			4		Parallel BCD, isolated
			5		Single setpoint, 10 A relay (SPDT)
					<b>D. SIGNAL CONDITIONER INPUTS</b>
				-A(*)	DC voltage
				-B(*)	DC current
					<b>ADDITIONAL OPTIONS</b>
				-G	Green LED display

\* Refer to chart above for code options.

### Accessory

MODEL NO.	DESCRIPTION
DPP-5	½ DIN panel punch

Comes complete with operator's manual.

**Ordering Example:** DP2000-A2, LED 120 Vac, 1 mV/count, DC voltage between -1.999V and 1.999V.