

DC Voltmeter, Ammeter, Indicator/ Controller

1/8 DIN

Q2000-AB Series



- ✓ ±1,999 or ±9,999 Count Display Span
- ✓ ±200 mV to ±200 V or ±100 mV to ±100 V 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



Q2000-AVR4
Meter shown smaller
than actual size.

The Q2/9000A and Q2/9000B are a high-quality ±1,999 or ±9,999 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 fullscale) 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 (Q2), 130 dB (Q9)

Environmental

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

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

Humidity: 95% RH, non-condensing @ 40°C (104°F)

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 *	Q2000 Range	Q9000 Range	Input Imped	Q2000 Res	Q9000 Res	ACC @25°C
AVR1	±199.9 mV	±99.99 mV	1 GΩ	0.1 mV	0.01 mV	±0.05% of Rdg
AVR2	±1.999 V	±999.9 mV	1 MΩ	1 mV	0.1 mV	±1 (Q2)
AVR3	±19.99 V	±9.999 V	1 MΩ	10 mV	1 mV	±2 (Q9)
AVR4	±199.9 V	±99.99 V	1 MΩ	100 mV	10 mV	counts

DC Currents Inputs

B Series

Code *	Q2000 Range	Q9000 Range	Input Imped	Q2000 Res	Q9000 Res	ACC @25°C
BCR1	±19.99 μA	±9.999 μA	10 kΩ	0.01 μA	1 nA	±0.05% of Rdg ±1 (Q2) ±2 (Q9) counts
BCR2	±199.9 μA	±99.99 μA	1 kΩ	0.1 μA	10 nA	
BCR3	±1.999 mA	±999.9 μA	100 Ω	1 μA	100 nA	
BCR4	±19.99 mA	±9.999 mA	10 Ω	10 μA	1 μA	
BCR5	±199.9 mA	±99.99 mA	1 Ω	100 μA	10 μA	
BCR6	±1.999 A	±999.9 mA	0.1 Ω	1 mA	100 μA	

Ordering Example: Q2000-BCR3, LED 120 Vac, 1 μA/count, DC current between -1.999 mA and 1.999 mA.

To Order Visit newportUS.com/q2000a_b for Pricing and Details

Model No.	Description
Q2	3½-Digit for ±1999 Count
Q9	4-Digit for ±9999 Count
0 0 0 -X	A. Power and Display
0	LED; 120 Vac (50/60 Hz)
1	LCD; 120 Vac (50/60 Hz) (Q2000 only)
2	LED; 240 Vac (50/60 Hz)
3	LCD; 240 Vac (50/60 Hz) (Q2000 only)
4	LED; 9 to 32 Vdc, isolated
5	LCD; 9 to 32 Vdc, isolated (Q2000 only)
6	LED; 5 Vdc
7	LCD; 5 Vdc (Q2000 only)
8	LED; 24 Vac
9	LCD; 24 Vac (Q2000 only)
A	LED; 26 to 56 Vdc, isolated
B	LCD; 26 to 56 Vdc, isolated (Q2000 only)
	B. Analog Outputs
0	1 mV/count (Q2000) or 0.1 mV (Q9000) (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)
	C. Control Outputs
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)
	D. Signal Conditioner Inputs
-A(*)	DC voltage
-B(*)	DC current
	Additional Options
,G	Green LED display
,BL	Lens without Newport logo in lieu of standard lens

* Refer to chart above for code options.

Ordering Example: Q2002-AVR2, 3½ digit, red LED, 120 Vac power, 1mv/count, DC voltage between -1.999 V and 1.999 V.