

FREQUENCY METER, TACHOMETER AND RATE METER

1/8 DIN



DP2000-H Series



- ✓ ±1999 or ±9999 Count Display Span
- ✓ Input of 100 Hz to 20 kHz for Full-Scale Display
- ✓ Recorder Output
- ✓ Front-Panel Accessible Adjustments
- ✓ LED or LCD Display
- ✓ Display Hold and Test
- ✓ Screw-Terminal Barrier Strip
- ✓ RoHS 2 Compliant



DP2000-H5 shown actual size.

The DP2000-H and DP9000-H are frequency meter/tachometers with extensive zero and scale factor adjustment capability for direct readout in engineering units for RPM, flow and speed. Input frequencies can be as low as 100 Hz or as high as 20 kHz for the display maximum, which is 1999 for the DP2000-H and 9999 for the DP9000-H. Zero offset is available for use with transducers with a frequency output and a live zero. Choose any combination of display type (LED or LCD), operating power, input type and range, analog output, and digital or control outputs.

Easy to Interface

The meters are designed for easy interfacing to transducers with a frequency or pulse output. These include turbine flowmeters, passive magnetic pickups, and active proximity detectors with NPN, PNP or NAMUR (1 mA/3 mA) output. To accommodate different

signal levels and provide noise immunity, the DC trigger level can be adjusted from -1 to 5V, and two hysteresis levels are selectable. Signals as low as 15 mV p-p or as high as 130 V rms can be monitored directly.

Configuration and Calibration

The units can be configured and scaled in the field. Adjustments for zero, span, and trigger level are accessible from the front panel to allow final calibration or recalibration without removal of the meter from the panel.

The meters can be scaled to read RPM directly. With the dual-setpoint controller (optional), they can provide under and overspeed alarms. The 1 mV/count analog output (standard) can be used to drive a strip-chart recorder for permanent.

Frequency/Rate Inputs, H Series

Code*	Minimum Frequency for 1999 Counts (Maximum Display)	Minimum Signal Peak to Peak		Display Gain	
		High Sensitivity	Low Sensitivity	Minimum	Maximum
H1	100 to 200 Hz	15 mV p-p	125 mV p-p	10 counts/Hz	20 counts/Hz
H2	200 to 400 Hz			5 counts/Hz	10 counts/Hz
H3	400 to 800 Hz			2.5 counts/Hz	5 counts/Hz
H4	500 to 1000 Hz			2 counts/Hz	4 counts/Hz
H5	1000 to 2000 Hz	30 mV p-p	125 mV p-p	1 counts/Hz	2 counts/Hz
H6	2000 to 4000 Hz			0.5 counts/Hz	1 counts/Hz
H7	2500 to 5000 Hz			0.4 counts/Hz	0.8 counts/Hz
H8	5000 to 10,000 Hz	90 mV p-p	175 mV p-p	0.2 counts/Hz	0.4 counts/Hz
H9	10,000 to 20,000 Hz			0.1 counts/Hz	0.2 counts/Hz

SPECIFICATIONS

Conversion

Technique: Dual slope, average value

Signal Integration Period: 100 ms, nominal

Reading Rate: 2.5/s, nominal

Display

Symbol: -1.9.9.9 (DP2); -8.8.8.8 (DP9)

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

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

Power

AC Models: 120, 240 or 24 Vac
10/-15%, 49 to 440 Hz

DC Models: 5 Vdc \pm 5%, 9 to 32 Vdc or
26 to 56 Vdc isolated to 300 Vp

Common Mode

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

Rejection (DC to 60 Hz): 120 dB

Signal Input

Configuration: Single-ended

Input Resistance: 150 k Ω

Maximum Signal: 130 V rms

Minimum Signal, 10 mV Hysteresis

Setting: 15 mV p-p,
100 Hz to 2 kHz (full scale); 30 mV p-p,
2 to 5 kHz (full scale); 90 mV p-p,
5 to 20 kHz (full scale)

Minimum Signal; 100 mV Hysteresis

Setting: 125 mV p-p, 100 Hz to 5 kHz
(full scale); 175 mV p-p, 5 kHz to
20 kHz (full scale)

Hysteresis: 10 or 100 mV

Trigger Level: -1 to 5V with
100 mV hysteresis or -0.1 to 0.5V with
10 mV hysteresis

Signal Types: TTL logic, CMOS logic,
open-collector, 2-wire NPN, 3-wire NPN,
3-wire PNP, 2-wire NAMUR, passive
magnetic

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

To Order

Model No.					Description
DP2	3½-Digit for \pm 1999 Count				
DP9	4-Digit for \pm 9999 Count				
	0	0	0	-X	A. Power and Display
	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. Analog Outputs
		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)
					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
				-H(*)	Frequency/rate/tachometer
					Additional Options
				-G	Green LED display

* Refer to chart on previous page for input code options.

Accessory

Model No.	Description
DPP-5	½ DIN panel punch

Comes complete with operator's manual.

Ordering Example: DP2000-H5, 3½ digit, red LED, 120 Vac power, and 1000 to 2000 Hz frequency/rate/totalizer.