

1/8 DIN MULTI-FUNCTION METER

For Rate, Batch Control And Totalization

DPF6100 Series

Product Discontinued

- ✓ Fast Low-Frequency Measurement
- ✓ Offset from -99,999 to 999,999 (Any Decimal Point)
- ✓ HI and LO Setpoints for Control or Alarm
- ✓ Front Panel or RS232 Programming Standard
- ✓ Sensor Excitation Standard
- ✓ HI, LO, GO 150 mA Open-Collector Output Standard

The DPF6000 microprocessor-based, 6-digit, 1/8 DIN panel instruments can be configured by front-panel keys or by a PC as a frequency meter/tachometer, frequency-ratio meter, period/period-average meter, time interval/time-interval-average meter, reset stopwatch, and cumulative timer or totalizer/1-stage batch controller. Units are available with two signal inputs to provide frequency ratio or time-interval measurements. Five operating modes.

In the frequency meter, the minimum display update rate is equal to 1 period of the frequency input. Thus, very low frequency measurements are displayed and updated faster than most conventional frequency meters. Only two sensors are required to measure the rate of a moving object. The DPF6000 can be set-up as frequency-ratio meter, ideal for monitoring flow ratios.



DPF6100 1/8 DIN shown larger than actual size.

The DPF6000 can be set-up as an up or down totalizer/1-stage batch controller at rates up to 7 MHz. The display capacity is -99,999 to 999,999 counts with exponential format up to 9.99 E9. Upon AC

power loss, the latest reading is automatically saved in non-volatile RAM and is restored upon return of power. See next page for complete specifications.

To Order

Model No.	Description
DPF6100	Dual TTL/CMOS level pulse inputs
DPF6200	Non-isolated signal conditioner with excitation
DPF6300	Isolated signal conditioner with excitation
DPF6400	Dual isolated signal conditioners with excitation
DPF6500	Isolated analog-to-frequency signal conditioner

Options

Order Suffix	Description
-A	Analog output*
-BCD	BCD output, isolated, tri-state parallel*
-R	Dual 8A form "C" SPDT relays*
-10/32VDC	9.5 to 32 Vdc power
-230VAC	230 Vac power

* A, BCD and R options are mutually exclusive; only one may be ordered.

Accessories

Model No.	Description
DPP-5	1/8 DIN panel punch
DPF6D	Menu-driven PC setup software; download from omega.com
SPC18	Clear splash guard, NEMA 4 (IP65) protection

Comes complete with operator's manual.

Ordering Examples: DPF6100, dual TTL input meter.

DPF6300-R, isolated input meter with optional dual relays.

1/8 DIN MULTI-FUNCTION METER

DPF5100/DPF6100 Series-Common Specifications



DPF5100 1/8 DIN shown smaller than actual size with FP7002 paddlewheel flow sensor, sold separately. Visit us online.

COMMON SPECIFICATIONS

COMMON (ALL INPUT TYPES)

Update Rate: 60 msec to 99.99 sec, field programmable

Programmable Functions: Frequency, period, time interval A to B, frequency ratio B/A, totalize

Scale Factor: -99999 to 999999 with a choice of six decimal point positions (9.9.9.9.9.9.), multiply or divide

Offset: -99999 to 999999 with a choice of six decimal point positions (9.9.9.9.9.9.)

Power: 115 Vac; 230 Vac, 10 to 32 Vdc

AC Frequency: 49 to 440 Hz

Power Consumption, Typical: 7.5 W maximum

Battery Backup: User-supplied 6 to 12 Vdc, 60 mA to maintain operation, 400 mA with display

Dimensions: 48 H x 96 W x 150 mm D (1.9 x 3.8 x 5.9")

Cutout: 45 x 92 mm (1.772 x 3.622")

DISPLAY

Type: 7-segment, orange LED

Digit Height: 14.2 mm (0.56")

Symbols: -.8.8.8.8.8. and 8.8.8.8.8.8.

Decimal Point: Six positions; programmable; fixed or auto-ranging
Leading Zeros: Blank or displayed; programmable

Overflow Indication: Display in exponential format to 9.99 E9

Update Time: Averaging time + (10 to 40 milliseconds) + communication time

Brightness: 100%, 50%, 25%; programmable

Displayed Value: (Measurement scale factor) + offset

Indicator Lights: GATE LED; Low and High alarm LEDs

Decimal Format: -99999 or 999999

Exponential Format: -9.9 x 10⁹ or 9.99 x 10⁹

OUTPUT CHARACTERISTICS

Lo, Hi and Go Alarm Outputs: Open-collectors, active low, 150 mA at 1V

Digit 6:

High Level: = 3.5V at 100 μ A

Low Level: = 0.4V at 1.6 mA

Frequency: = 400 Hz + 0.1%

TIME BASE

Internal Clock Reference: 11.059 MHz

Stability: +50 ppm over 0 to 60°C range

Fine-Calibration Method: Programmable calibration value

Calibration Accuracy at 25°C: +2 ppm

COMMUNICATION

RS232 OUT, IN and RTS: RS232C compatible with transmit handshake line (RTS)

Levels: +5V

Transmitted Data: Alarm + 6 digits + decimal point + CR (9 characters) or alarm + 6 digits + decimal point + space + units of measurement + CR (12 characters)

Baud Rate: 1200 or 9600 baud, programmable

Received Data: Complete set-up parameters, no handshake

0 to 20 mA ASCII Out: Open collector (data the same as RS232 OUT)

OPERATION MODES

Frequency/Tachometer Mode-

Frequency Range: 10⁻⁶ Hz to 7 MHz

Accuracy at 25°C (Squarewave): \pm 0.0002% (+2 ppm)

Totalizer Display-Offset (Preset): -99,999 to 999,999

TTL Input

(DPF5100/5200/5300/5400)

Speed and Protection Levels (Jumper Selectable):

7 MHz, 0 to 5V; 100 kHz,

-20 to +25V; 3 kHz, -20 to +25V

Isolated Input Sensitivity (Square-Wave Input) (DPF5300/5400 Only):

\pm 10 mV, 0 to 1 kHz; \pm 25 mV, 0 to 1 kHz; \pm 50 mV at 100 kHz

NPN or PNP Open-Collector Sensor Excitation Output: 12.4V at 20 mA

ISOLATED ANALOG INPUT (DPF5500)

Ranges: 4 to 20 mA, 0 to 1 mA, 0 to 5V, 1 to 5V, 0 to 10V; user selectable

Accuracy: Better than 99.9%

Non-Linearity: 0.05% FS

Isolation: 350 Vdc between output and input

ON/OFF CONTROL AND ALARM OUTPUTS

Standard: Three open-collector transistors, rated 150 mA sink, 30V

Optional BCD Output: 32-bits, display and alarm data; approx 10 msec to transmit data

Optional Relays: Two, form C (SPDT), rated 8 A, 30 Vdc, or 240 Vac, resistive load; for rate alarm or batch control

Optional Analog Output: Isolated, scalable, internally powered and field selectable for 0 to 10V, 4 to 20 mA, or 0 to 20 mA. Rangeable over 4 left most or right most digits, suitable for rate or total display; 500V isolation from analog output to ground

Minimum Impedance for 10V: 500 Ω

Maximum External Impedance for 20 mA: 600 Ω

Note: Specifications for DPF6000 units match the equivalent DPF5000 model.