⅛ DIN HIGH ACCURACY FREQUENCY OR ANALOG INPUT FLOW INDICATOR *For Flowrate, Total or Batch Control*

OMEGA®

DPF401 shown smaller actual size.

PATENTED
Covered by U.S and International patents and pending applications.

DPF400 Series

5 YEAR WARRANTY

- **Easy to Read Alphanumeric 6-Digit Display**
- **UL Listed**
- **Versions Available to Accept Low-Level Frequency Input Directly**
- **Analog Input for Linear or Square Root Input Optional**
- **5 Open Collector Outputs Standard**
- **Optional Scalable Analog, BCD, RS232 or RS485 Outputs**
- **Optional Dual 7A Relays**
- **RoHS 2 Compliant**

The DPF400 Series is a complete line of flowrate indicators offering exceptional performance at an economical price. Individual models are available for flowrate and totalization (with or without square root extraction) batch control.

The DPF400 is front panel programmable to scale any input range to display in desired engineering units. Independent scale factors for rate and total allow rate indication and totalization in different units, such as GPM rate and total barrels. If the optional RS232 or RS485 communications are installed, the unit may also be programmed by remote computer.

The DPF400 is available with 4 input types, including TTL/open collector pulse, low level frequency, analog voltage or analog current. The unit can be user-configured for one of three functions:

1) A ratemeter/totalizer/batcher
2) A ratemeter/totalizer/batcher with square root extraction (for differential pressure flow measurement)
3) A batch controller only with multibatch counting, auto/manual batch recycle, and remote or local STOP/CONTINUE control (START control can be obtained with a user supplied switch in series with the control relay)

Options to the DPF400 include analog and BCD outputs, alarm/control outputs, and RS232 or RS485 communications.

The RS232 or RS485 communications options are bi-directional, allowing the user to configure the DPF400 as well as read current values.

While each DPF400 comes standard with 5 open collector outputs, the optional DP40-R board provides dual 7A mechanical relays which replace two of the open collector alarms, for a total of two 7A relay and three open collector alarms.

SPECIFICATIONS

TTL Level Inputs (DPF401): 0.7 to 2.0V threshold; 0.2 Hz to 20 kHz frequency; 24V protection, positive trigger slope; 16 to 30V unregulated 75 mA sensor excitation

Isolated Pulse Input with Excitation (DPF402): 60 Vrms with protection to 240V maximum signal

	Excitation	Hysteresis	Sensitivity
DPF402	5V	13 mV	30 mV
Low	8.2V	22 mV	50 mV
Level	2.4V	35 mV	60 mV

NPN Open Collector Input (DPF402): 3-wire connection; 12V regulated excitation

NAMUR Input (DPF402): 2-wire connection; 8.2V excitation; 1 kΩ impedance; <1 mA activated, >3 mA deactivated

Contact Closure Input (DPF402): 2-wire connection; 12V regulated sensor excitation, 10 on/off per second frequency range

Analog Input (DPF403): 0 to 5V, 1 to 5V, or 4 to 20 mA range; 0 to 10V, or 0 to 1 mA inputs optionally available; 354 Vp isolation; programmable low-level shutoff; 0.02% FS non-linearity; 0.05% FS accuracy; accuracy, 50 ppm/°C temperature coefficient, maximum

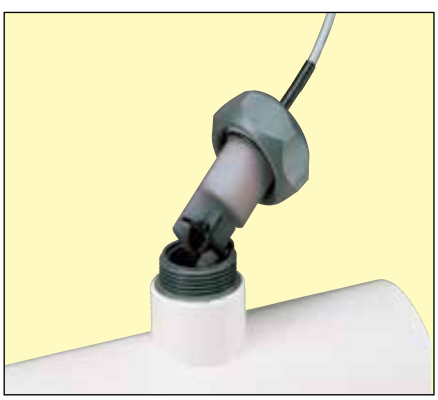
Display: 6-digit, 14-segment LED, red or green; 13.8 mm H (0.54"); indicator lights for alarms and status modes

Display Update: 0.04 to 3 seconds, programmable.

Minimum Input Frequency: 0.2 Hz

Power: 115 Vac, 50/60 Hz; 230 Vac opt., 10 Watts maximum

Accuracy:
- **Frequency:** 0.01% of reading
- **Analog:** 0.05% of full scale



FP7001A sensor shown with fittings, sold separately.

NEMA 4X (IP166) splashproof panel.

DPF400 supplied with gray BUMPER BAND® protective guard. Other colors available.

DP41 models are also available with mV, V, mA and frequency input, for measuring pressure, flow, pH and other processes. Call OMEGA for details.

Step Response:
Analog: 50 msec for 10 to 90% FS;
Frequency: Equal to selected gate time
Operating Ambient Range: 0 to 50°C (32 to 122°F), 95% RH, non-condensing
Storage Temperature: -40 to 85°C (-40 to 185°F)
RS232 Communications (Optional): Front panel programmable for 300/1200/2400/4800/9600/19.2k baud; RJ11 4-wire connection; complete program setup and message display capability; programmable to transmit all measured values, alarm status, actual measured input value (not scaled) and status on programmable intervals from 1 to 60,000 seconds.
RS485 Communications (Optional): 300/1200/2400/4800/9600/19.2k baud; RJ11 6-wire connection; addressable from 0 to 199
Open Collector Outputs: Five 150 mA @ 1 Vdc sink; 30V open
BCD Output (Optional): Isolated; 3- or 6-digit addressing; TTL level output; 5 Vdc external power supply required for isolated output
Mechanical Relays (Optional): Dual, form C; 7A at 230 Vac/30 Vdc
Analog Outputs (Optional): 0 to 5V/1 to 5V/0 to 10V/0 to 20 mA/4 to 20 mA all field selectable; all internally powered (sourcing); 600 Ω max loop impedance for 20 mA outputs; min 500 Ω input impedance for voltage outputs; 354 Vp isolation; 15-bit resolution; 0.1% of reading accuracy; 50 ms step response; fully adjustable zero and span adjustments.
Dimensions:
48 H x 96 W x 149 mm D
(1.89 x 3.78 x 5.86")
Panel Cutout:
45 H x 92 mm W
(1.772 x 3.622"); ⅛ DIN
Weight: 574 g (1.27 lb)

To Order

Model No.	Description
DPF401	TTL/open collector/contact closure input meter includes 16V @ 70 mA output power
DPF402	Low level pulse input meter includes 12V @ 70 mA output power or 8.2V with 1 Ω source impedance
DPF403*	4 to 20 mA/0 to 5 Vdc/1 to 5 Vdc (field-selectable) input meter includes nominal 24V @ 25 mA output power

***** *0 to 10 Vdc and 0 to 1 mA inputs optionally available for DPF403, add suffix "**-10VINP**" or "**-1MA**", no additional charge.*

Display and Power Options

Order Suffix	Description
-GR	Green display
-230V	230 Vac power

Output Boards and Communications Options

Model No.	Description
DPP-5	⅛ DIN panel punch
DPF400-A3	Analog output board
DP40-B*	Isolated BCD output board
DP40-R*	Dual 7A mechanical relays
DP40-S24†	Isolated RS232/485 communications

***** *Both options are not available in one unit.*
† *Communications options include 1.8 m (6') communications cable which plugs into the rear of the **DPF400** and terminates with a phone plug. For proper termination to a computer, a 9-pin and 25-pin connector which mates with the phone plug, are offered below.*

Options

Model. No.	Description
DP40-9SC2	9-pin serial connector for RS232
DP40-9SC4	9-pin serial connector for RS485
DP40-25SC2	25-pin serial connector for RS232
DP40-25SC4	25-pin serial connector for RS485

Comes complete with gray BUMPER BAND® protective guard and operator's manual.
***Ordering Examples: DPF401,** meter for TTL level input.*
***DPF402-GR**, low level pulse input meter with optional green display.*