

# DIGITAL INPUT PANEL METERS

## DPF9300



- ✓ Count, Dual Count, Rate and Slave Display
- ✓ 6-Digit, 14 mm (0.56") LED
- ✓ Variable Intensity Display
- ✓ 10-Point Scaling for Non-Linear Inputs
- ✓ NEMA 4X (IP65) Sealed Front Bezel

DPF9300 shown actual size.

The DPF9300 digital input panel meter offers many features and performance capabilities to suit a wide range of industrial applications. The DPF9300 offers both counting and rate in the same package.

The optional plug-in output cards allow the opportunity to configure the meter for present applications, while providing easy upgrades for future needs. This meter employs a bright 14 mm (0.56") LED display. The intensity of the red LED display can be adjusted from dark room applications up to sunlight readable, making it ideal for viewing in bright light applications. It accepts digital inputs from a variety of sources including switch contacts, outputs from CMOS or TTL circuits, magnetic pickups and all standard RLC sensors. The meter can accept directional, uni-directional or quadrature signals simultaneously. The maximum input signal varies up to 34 KHz depending on the count mode and function configurations programmed. Each input signal can be independently scaled to various process values.

This rate meter provides a MAX and MIN reading memory with programmable capture time. The capture time is used to prevent detection of false max or min readings which may occur during start-up or unusual process events. The meter has four set-point outputs, implemented on plug-in option cards.

The plug-in cards provide dual FORM-C relays (5A), quad FORM-A (3A), or either quad sinking or quad sourcing open collector logic outputs. The set-point alarms can be configured to suit a variety of control and alarm requirements. Communication and Bus capabilities are also available as option card through the bus. Additionally, the meter has a feature that allows a remote computer to directly control the outputs of the meter. With an RS232 or RS485 card installed, it is possible to configure the meter using free software available at [omega.com/ftp](http://omega.com/ftp). The configuration data can be saved to a file for later recall. A linear DC output signal is available as an optional plug-in card. The card provides either 20 mA or 10V signals. The output can be scaled independent of the input range and can track any of the counter or rate displays.

Once the meter has been initially configured, the parameter list may be locked out from further modification in its entirety or only the set-point values can be made accessible. This meter has been specifically designed for harsh industrial environments. With NEMA 4X (IP65) sealed bezel and extensive testing of noise effects to CE requirements, the meter provides a tough yet reliable application solution.



DPF9300 shown  
smaller than  
actual size.

FTB-1302, liquid turbine flow meter,  
shown smaller than actual size.

## Specifications

**Display:** 6-digit, 14.2 mm (0.56") red LED, (-99999 to 99999)

### POWER

**AC Powered Units:** 85 to 250 Vac, 50/60 Hz, 18 VA

**Isolation:** 2300 Vrms for 1 minimum to all inputs and outputs (300V working)

**Sensor Power:** 12 Vdc,  $\pm 10\%$ , 100 mA maximum short circuit protected

**Keypad:** 3 programmable function keys, 5 keys total

**User Inputs:** Three programmable user inputs

**Maximum Continuous Input:** 30 Vdc

**Isolation to Sensor Input Commons:** Not isolated

**Logic State:** Jumper selectable for sink/source logic

### INPUT STATE

**Sinking Inputs:** 5.1 k $\Omega$  pull-up to +12V

**Active:** Vin<0.9 Vdc

**Inactive:** Vin>3.6 Vdc

**Sourcing Inputs:** 5.1 k $\Omega$  pull-down

**Active:** Vin>3.6 Vdc

**Inactive:** Vin<0.9 Vdc

**Response Time:** 6 msec. typical; function dependent. Certain resets, stores and inhibits respond within 25  $\mu$ sec if an edge occurs with the associated counter or within 6 msec if no count edge occurs with the associated counter. These functions include CtrStL, CtrStE, HLrStL, HLrStE, INHlbt, StOrE, and PrNsSt.

Once activated, all functions are latched for 50 msec min. to 100 msec maximum. After that period, another edge/level may be recognized

**Memory:** Nonvolatile EEPROM retains all programmable parameters and display values.

### ENVIRONMENTAL CONDITIONS

**Operating Temperature Range:** 0 to 50°C (32 to 122°F) [0 to 45°C (32 to 113°F) with all three plug-in cards installed]

**Storage Temperature Range:** -40 to 60°C (-40 to 140°F)

**Operating and Storage Humidity:** 0 to 85% maximum relative humidity non-condensing

**Altitude:** Up to 2000 m (1.24 mi)

**Connections:** High compression cage-clamp terminal block

**Wire Strip Length:** 7.5 mm (0.3")

**Wire Gage:** 30-14 AWG copper wire

**Torque:** 4.5 inch-lbs (0.51 Nm) maximum

**Construction:** This unit is rated for NEMA 4X/IP65 outdoor use. IP20 Touch safe. Installation Category II, Pollution Degree 2. One piece bezel/case. Flame resistant. Synthetic rubber keypad. Panel gasket and mounting clip included.

**Weight:** 10.1 oz (286 g)

### COUNTER DISPLAYS

**Maximum Display:** 8-digits: ±99999999 (greater than 6-digits display alternates between high order and low order)

### RATE DISPLAY

**Accuracy:**  $\pm 0.01\%$

**Minimum Frequency:** 0.01 Hz

**Maximum Frequency:** 34 kHz (depending on set-up)

**Maximum Display:** 5-Digits: 99999

**Adjustable Display (low) Update:** 0.1 to 99.9 seconds

**Over Range Display:** "rOLOL"

### INPUTS A or B:

DIP switch selectable to accept pulses from a variety of sources including switch contacts, TTL outputs, magnetic pickups and all standard RLC sensors.

**Logic:** Input trigger levels VIL=1.5V maximum VIH=3.75V minimum

**Current Sinking:** Internal 7.8 k $\Omega$  pull-up to +12 Vdc, IMAX=1.9 mA

**Current Sourcing:** Internal 3.9 k $\Omega$  pull-down, 7.3 mA maximum @ 28 Vdc, VMAX=30 Vdc

**Filter:** Damping capacitor provided for switch contact bounce. Limits input frequency to 50 Hz and input pulse widths to 10 msec minimum

### MAGNETIC PICKUP

**Sensitivity:** 200 mV peak

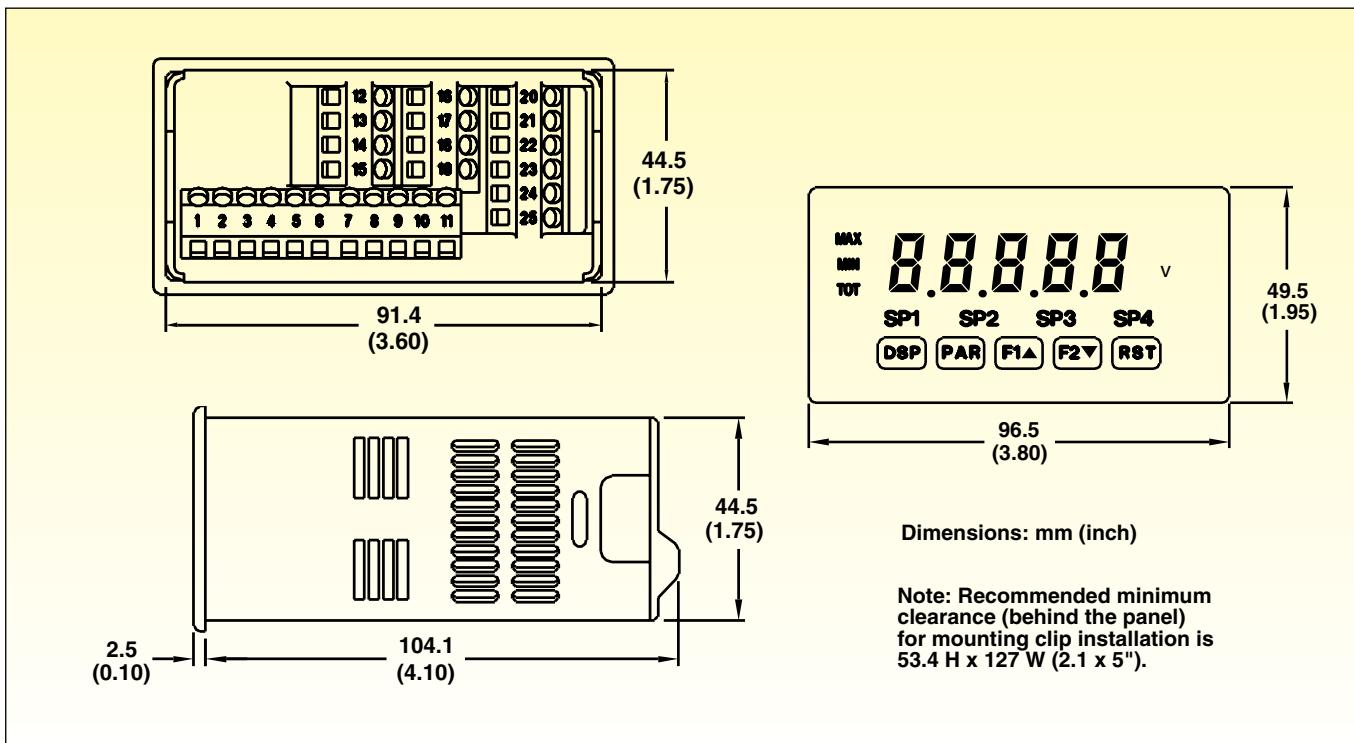
**Hysteresis:** 100 mV

**Input Impedance:** 3.9 k $\Omega$  @ 60 Hz

**Maximum Input Voltage:**  $\pm 40$ V peak, 30 Vrms

### DUAL COUNT MODES

When any dual count mode is used, then User Inputs 1 and/or 2 will accept the second signal of each signal pair. The user inputs do not have the Logic/Mag, High/Low Freq, and Sink/Source input setup switches. The user inputs are inherently a logic input with no low frequency filtering. Any mechanical contacts used for these inputs in a dual count mode must be debounced externally. The user input may only be selected for sink/source by the User Jumper placement.



## To Order

Model No.	Description (Display Meter Only, No Outputs)
DPF9300	6-digit rate, count or dual count display, 85 to 250 Vac power

## Optional Plug-In Output Cards (Field Installable)

Setpoint Alarms (Only 1 Alarm Card Can Be Installed Into Base Meter)	
<b>Model No.</b>	<b>Description</b>
LDP6-CDS10	Dual setpoint relay output card
LDP6-CDS20	Quad setpoint relay output card
LDP6-CDS30	Quad setpoint sinking open collector output card
LDP6-CDS40	Quad setpoint sourcing open collector output card
Analog Output	
LDP6-CDL10	Analog output card
Communications (Only 1 Communications Card Can Be Installed Into Base Meter)* (DPF9300 Only)	
LDP6-CDC10	RS485 serial communications output card with terminal block
LDP6-CDC1C	Extended RS485 serial communications output card with dual RJ11 connector
LDP6-CDC20	RS232 serial communications output card with terminal block
LDP6-CDC2C	Extended RS232 serial communications output card with 9-Pin D connector
LDP6-CDC40	Modbus® communications card
LDP6-CDC4C	Extended Modbus communications card with dual RJ11 connector

\* Programming and communication software is available for **FREE** download, visit [omega.com/ftp](http://omega.com/ftp)

Comes complete with operator's manual.

**Note:** Adding option cards—meters can be fitted with up to 3 optional plug-in cards. Cards can be installed initially or at a later date. Each optional plug-in card is shipped with installation and programming instructions.

**Ordering Example:** DPF9300, 6-digit count/dual count display, 85 to 250 Vac power, LDP6-CDL10, analog output card.