Panel Meter for Frequency, Rate, Total or Period Counter
6-Digit, ⅛ DIN Panel Mount

OMEGA™

DPF20 Series | 5 YEAR WARRANTY | C€ | RoHS |

- ✔ **Dual Channel (A + B + Reset)**
- ✔ **Option for Wall Mounting**
- ✔ **NEMA 4 (IP65) Front Panel**
- ✔ **Power Options of 85 to 260 Vac and 11 to 60 Vdc**
- ✔ **Excitation Power Supply of 5 to 18 Vdc @ 70 mA**
- ✔ **Optional Outputs: Modbus®, Up to 6 Relays, Analog, SSR Drive, RS485 and RS232**

DPF20-LV shown actual size.

Applications
- ✔ **Industrial Flow Rate or Total Indication and Alarm or Control**
- ✔ **Angular Position or RPM Indication (with Quadrature Sensor)**
- ✔ **Product/Piece Counting or Production Rate Indication**

Omega's new DPF20 Series of indicators offer real flexibility for measurement of a wide range of frequency or pulse inputs. The display is easily configured to indicate frequency, rate, period or count. This makes the meter ideal for flow applications where they can display flow rate or total from a variety of different flow sensors. Or for quadrature signals, to indicate angular position or rotational speed and direction.

The DPF20 series offers exceptional performance at an economical price, with some unique and powerful features, summarized in the table on page 3.

Specifications
Main Functions: Counter, ratemeter, period meter
Display Digits: 6
Display Range: 999999/-199999
Decimal Point: Configurable
LED Color: Red standard; green optional
Digit Height: 14 mm (0.55")
Signals Accepted: NPN, PNP, Namur, pick-up, TTL, inductive, mechanical, quadrature
Excitation Voltage: 5 Vdc, 9 Vdc, 15 Vdc, 18 Vdc (max. 70 mA)
Maximum Vdc at Input Terminals: ±30 Vdc
Input Impedance: 2.4 kΩ with pull-up or pull-down resistor; 470 k without resistor
Quartz Accuracy: ±0.01%
Thermal Stability: 20 ppm/°C
Display Refresh: 15/second
Maximum Frequencies:
   Counter: Up to 250 KHz
   Ratemeter and Period Meter: Up to 500 KHz
Minimum Frequencies: Down to 1 mHz (0.001 Hz) (ratemeter and period meter)
Standard Power: 85 to 265 Vac/DC (isolated 2,500 Vac)
Low Power: 11 to 60 Vdc and 24/48 Vac (isolated 1500 Vac)

Power Consumption: <1.5 W (meter only); < 4.0 W (meter with options)
Connections: Plug-in screw terminal
Slow Function: For low frequency rate meter applications
Fast Function: For high frequency counter applications
Scaling Factor: Multiplier and divider from 1 to 999999
Configurable Reset: Front panel and rear remote reset, and reset linked to alarm activation
Preset: Configurable
Retention Memory: Recovers count value in case of power loss

Dimensions and Environment
Weight: <150 grams (<5.3 oz)
Front Panel Size: 96 x 48 mm (3.78 x 1.89")
Panel Cut-Out: 92 x 44 mm (3.62 x 1.73")
Depth Behind Panel: 91 mm (3.58") including terminals
Operating Temperature: 0 to 50°C (32 to 122°F)
Storage Temperature: -20 to 70°C (-4 to 158°F)
Warm Up: 15 minutes
Front Panel Protection: NEMA 4 (IP65)

Output and Communications Options (Up to 3 slots, field installable)

Option	R1	T1	SSR	A0	RTU
Main Function	Relay Output	Transistor Output	SSR Control Output	Analog Output	Modbus Rtu
Characteristics	3 terminals (NC, NO, common) 250 Vac, max. 8A	Open Collector	Output to control SSR relay with DC signal I/P	Output 4 to 20 mA active or passive. 0 to 10 Vdc	Function 4 Read_Input_Registers
Isolation	3500 Vac	3500 Vdc opto-isolated	1000 Vdc		
Specification	Max. current: 8 A (resistive load). Max. Voltage: 250 Vac continuous	Type of output: Transistor. Max voltage: 35 Vdc. Max. current: 50 mA. opto-isolated	Type of output: DC Pulse Output voltage: +15 Vdc Max. current: 45 mA	Load impedances: $\leq 350\ \Omega$ (for 4 to 20 mA active) $\leq 800\ \Omega$ (passive) Max. external voltage: 27 Vdc. $\geq 10\ K\ \Omega$ 0 to 10 Vdc Accuracy: <0.1% FS. Thermal stability: 60 ppm/°C mA; 50 ppm/°C Vdc. Step response: <75mS (to 99%). Factory default setting: 0-9999 = 4 to 20 mA On error: FS	Addresses: 01 to 247. Bus: RS485. Speed: 57.6 Kbps to 600 bps. Data format: 8e1 (standard), 8o1, 8n2. Factory configuration: Address 1; Speed 19.2 Kbps; Format 8e1; Decimal point Auto

Option	S4	S2	R4	R6
Main Function	RS485 ASCII	RS232 ASCII	4 Relays	6 Relays
Characteristics	ASCII Protocol	Retransmission of signal to allow "Daisy Chaining"	3 terminals (NC, NO, common) 250 Vac, max. 6A	3 terminals (NC, NO, common) 250 Vac, max. 6A
Isolation	1000 Vdc		2500 Vac	
Specification	Speed: 57.6 Kbps to 600 bps. Data format: 8n1, 8o1, 8n2, 8e1. Bus terminator: not included. Protocol: ASCII. Architecture: master - slave. Addresses: 01 to 31. Broadcast address: 128. Factory configuration: Mode Slave; Address 1; Speed 19.2 Kbps; Format 8n1; Decimal point Auto; Mode Master; Destination address 31; Frequency 0.5 sec; Decimal point Auto; Answer delay 0 mS.	Speed: 57.6 kbps to 600 bps. Data format: 8n1 (standard), 8o1, 8n2, 8e1. Protocol: ASCII. Architecture: master - slave. Address: 01 to 31. Broadcast address: 128	Max. current: 6 A (resistive load). Occupies 2 option slots. 3rd slot only available for AO, RTU, S4 or S2	Max. current: 6 A (resistive load). Occupies all 3 option slots. No other options available.

DPF20 Performance

Feature	Description
Scaling	Multiply, divide and preset values
Alarms	• Configure a second setpoint in the same alarm, to create "alarm windows" • Configure independent activation and deactivation delays • Configure hysteresis • Configure alarm to activate as high or low • Failsafe function – normally closed relay requires activation for non-alarm condition • Latched alarms function – operator reset required • Counter Reset, Stop or Continue • Configurable hysteresis
Power Up Delay	Allows for a delay in the start-up time after powering the instrument. During this time the instrument performs no measurement or control. Ability to reset the display count on instrument start-up.
Display Brightness	Select from 5 levels of LED intensity.
Password	Password protect the configuration menu. This blocks access to the instrument set-up parameters, but the operator can still access set-point values.
Max/Min Memory	Front panel key selection of display minimum or maximum values
Sensor Type	The fast and simple way to configure a sensor. Select from a predefined list Eg. NPN, PNP, Namur, pick-up, inductive, etc. The instrument will automatically configure the required parameters for the selected sensor (pull-up / pull-down resistors, trigger level, excitation voltage, etc)
Trigger Sense	Simple selection of the optimal trigger level for the sensor input. The display indicates up or down reflecting the status of the input signal level. When the LED changes state continuously the optimal trigger level has been achieved.

To Order

Model No.	Description
DPF20-HV	Frequency panel meter, 85 to 260 Vac powered
DPF20-LV	Frequency panel meter, 11 to 60 Vdc powered
Plug-in Option Cards	
DPF20-AO	Analog output
DPF20-RTU	Modbus RTU
DPF20-S4	RS485 ASCII
DPF20-S2	RS232 ASCII
DPF20-T1	Open collector output
DPF20-SSR	SSR drive (DC pulse)
DPF20-R1	Single relay output
DPF20-R4	4 relay output
DPF20-R6	6 relay output
Accessories	
DP20-BTC-2	Benchtop case with handle/tilt stand for ⅛ DIN panel meters. Includes 2 cable glands on rear panel
DP20-WME-2	NEMA 4 (IP65) wall-mount ABS enclosure, 175 W x 125 H x 125 mm D (6.9 x 4.9 x 4.9") with 2 glands for cable entry

To order with optional green display add suffix "-GN" to meter model number. Contact sales for pricing. Additional 2 weeks delivery.
To order with plain front lens (no operator access to buttons) add suffix "-NBT" to meter model number. Contact sales for pricing.
Comes with unit of measurement stickers, panel mounting clips, and installation/operator's manual.
Order Example: DPF20-LV-GN-NBT, *6-digit frequency panel meter, 11 to 60 Vdc powered, with green display and plain front lens.*