

1/4 DIN FLOW MONITORS

FPM-9010A Series

\$625

Basic Unit



- ✔ Simultaneous 4½-Digit Rate and 8-Digit Total Display
- ✔ Pump Pulsing Capability
- ✔ Uninterruptible AC/DC Power Capability
- ✔ Wide Frequency Input (0 to 10 kHz)
- ✔ Non-Volatile Memory
- ✔ Multiple Outputs Optional
- ✔ Modular Plug-In Input/Output Options
- ✔ ¼DIN Enclosure NEMA-4X Front Panel
- ✔ Menu-Driven Operation
- ✔ Matching pH, ORP and Batching Units

The OMEGA® FPM-9010A flow monitor is designed for liquid flowrate measurement and control. The compact ¼ DIN enclosure is NEMA-4X/IP65 rated and ideal for installation into instrumentation panels with limited space. The FPM-9010A can be configured to accept frequency or analog input signals from a variety of flowmeters.

Modular input and output cards can be customized to meet your requirements. Output options include a 4 to 20/0 to 20 mA card, 0 to 5 or 0 to 10 Vdc cards, and a two-relay card. Relays can be separately configured to operate as high or low non-latching flowrate alarms, or as pump pulser controls (for up to 2 pulses/second). Total display can be reset only through the front keypad. The relays cannot be set for batching. Analog outputs are for rate only.

All functions are accessed and controlled from the front panel, so no tools are required for calibration. The two-line LCD features a 4½-digit main display line plus an eight-character



Shown Smaller Than Actual Size

FP-5300 Flow Sensor Sold Separately, \$253



alphanumeric line which is used to prompt the user through all calibration and output control parameters. Resolution for the rate display is programmable from .0001 to 19999. The eight-digit totalizer has no decimal point.

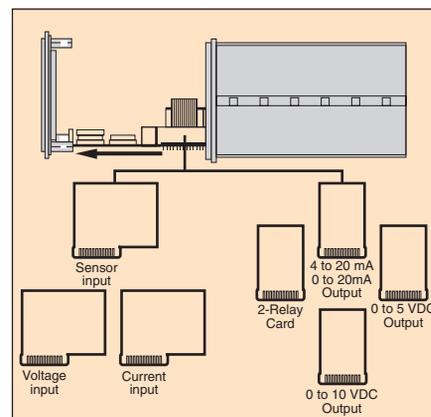
Programmable functions include relay hysteresis, flow averaging and analog output span. Analog output is automatically linearized after respanning for maximum signal accuracy.

COMPLETE SOFTWARE CONTROL

K Factor, relay setpoints, hysteresis, 4 to 20 mA output span, even the actual 4 to 20 mA calibration all are set via a simple pushbutton procedure. The FPM-9010A prompts you through every step, and the software includes specific on-screen instructions when needed. A security code feature is available to prevent unauthorized tampering with settings.

AUTOMATIC SYSTEM RECOGNITION

The software is also smart enough to recognize the unique configuration of your system. As soon as power is applied, the FPM-9010A scans all the input and output locations and records which features are available. All you need to do is press a key, and the alphanumeric display message provides all the information necessary to properly wire all output functions.



INPUT OPTIONS

The FPM-9010A accepts inputs from many frequency sources, or you can select one of the analog input cards to build a full function flow system from any 4 to 20 mA transmitter.

OUTPUT OPTIONS

On the output side, three sockets accept a variety of mix-and-match selections. Two output sockets will accept any combination of the analog cards, whether you choose 4 to 20 mA or 0 to 20 mA, 0 to 5 Vdc or 0 to 10 Vdc, isolated or non-isolated versions. All analog output cards are internally powered ONLY.

The third socket is dedicated to a two-relay card. Each relay can be configured independently of the other, so one can be set as an on-off control relay, while the other is set for pump pulser operation.

Complete software control, modular input and output configuration, and future expandability make the FPM-9010A flow monitor the ideal instrument for today's dynamic market.

SPECIFICATIONS

Power Requirements

17 to 30 Vdc @ 0.5 A max. 90/132 Vac (±10%) 180/264 Vac (±10%), all field selectable

Operating Temperature:

0 to 55°C (32 to 131°F)

Relative Humidity:

95% R.H. max., non-condensing

Enclosure

Materials: ABS plastic

NEMA-4X/IP65 front

NEMA-4X/IP65 rear cover (opt.)

Dimensions: 88 x 88 x 165 mm (3.5 x 3.5 x 6.5")

Memory Backup: Non-volatile RAM

Liquid Crystal Display

4½-digits, 12.7 mm (0.5") height (upper)

8-digits, 7.6 mm (0.3") height (lower)

2 alarm annunciators

Programmable averaging from 2 to 10 sec

Accuracy

Display:

0 to 5 kHz input, 0.05% of reading

Analog Output: 0.5% of full scale

Noise Immunity

Meets IEC 801-2, level 3,

IEC 801-3, level 2

Input Frequency

Frequency Range: 0 to 10 kHz

K-Factor Range: 0.0001 to 19999

Min. Signal Amplitude:

non-iso freq. input 0.2 V p-p

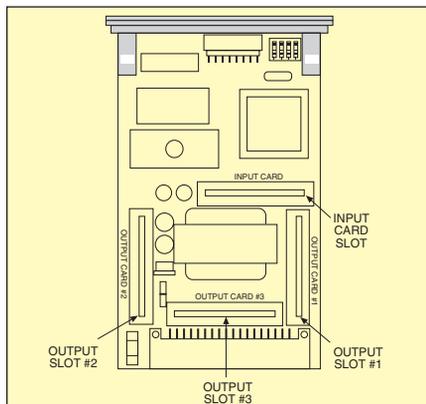
Isolation: 500 Vdc to earth ground

Input Current and Voltage (Iso.)

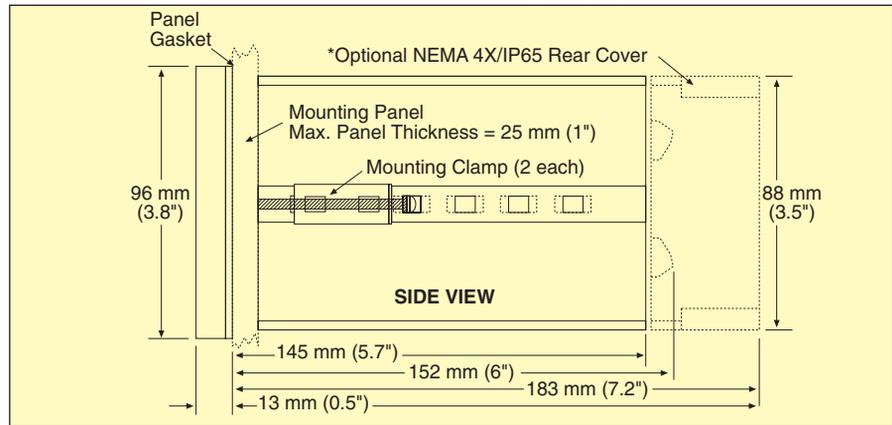
Input Range: 4 to 20 mA or

0 to 20 mA, 0 to 5 Vdc or 0 to 10 Vdc

Isolation: 500 Vdc to earth ground



Panel cutout: 90 mm (3.54") square



Analog signal must be externally powered

Sensor Pulse Output (std)

TTL compatible pulse in phase with sensor

Max. Current Sink: 20 mA

Max. Current Source: 10 mA

Counter Pulse Output (std)

Open Collector pulse in phase with totalizer

Max. Current Sink: 50 mA @

30 Vdc max.

2-Relay Output Card (opt.)

2 SPDT contact outputs

5 A @ 250 Vac or 30 Vdc resistive load

4 to 20 or 0 to 20 mA Output Card (opt.)*

Response Time: 2.5 sec. max for 100% change

Max. Loop Resistance: 425 Ω, internally powered ONLY

Isolation*: 500 Vdc to earth ground

0 to 5 or 0 to 10 Vdc Output Card (opt.)*

Response time:

2.5 sec. max. for 100% change

Min. load impedance: 1 kΩ

Isolation*: 500 Vdc to earth ground

Wt.: 0.9 kg (2 lb)

*Analog output cards can be ordered in isolated or non-isolated versions

Accessories

(Also see page F-34)

Model No.	Price	Description
FPM-5000-RAK	\$22.00	5 x 5" panel adaptor plate
FPM-5000-SBCK	38.00	NEMA-4X/IP65 rear cover
PHOR-9FUSE	4.50	¼ amp fast blow fuse

HIGHLIGHTED MODELS IN STOCK FOR FAST DELIVERY!

To Order (Specify Model No.)

Model No. (Base Unit)	Price	Description
FPM-9010A	\$625	Flow ratemeter/totalizer without input card. (REQUIRES ONE INPUT CARD – SEE BELOW!)

Comes with two mounting clamps and complete operator's manual.

Ordering Example: FPM-9010A, plus FPM-9011A, plus PHOR-90-MA-I, plus PHOR-90-R2, non-isolated frequency input flow monitor with one 4-20 mA isolated output proportional to flow and 2 relays, \$625 + 71 + 131 + 82 = \$909

Input Cards (One Required. All Field-Installable)

Model No.	Price	Description
FPM-9011A	\$71	Frequency input card, non-isolated
FPM-9013A	131	4 to 20/0 to 20 mA input card, isolated

Output Cards (Field-Installable)

Model No.	Price	Description
PHOR-90-MA-N	\$66	4 to 20/0 to 20 mA, non-isolated
PHOR-90-MA-I	131	4 to 20/0 to 20 mA, isolated
PHOR-90-5V-I	131	0 to 5 Vdc, isolated
PHOR-90-10V-I	131	0 to 10 Vdc, isolated
PHOR-90-R2	82	2-relay card



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• Flow and Level

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• pH and Conductivity

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• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters