

GENERAL

Badger's Primo amplifier was specifically designed to be used with the entire line of Magnetoflow electromagnetic flow meters. This amplifier represents the culmination of years of research into mag meter signal processing and includes the latest developments in microprocessor signal conditioning technology. The advanced design of the unit allows the accuracy of the detector to be better than .25% and the flow range better than 300:1. The Primo amplifier can be used as an integral part of the detector or it can be mounted remotely when necessary. The Primo electronics are housed in a NEMA 4 aluminum powder coated enclosure with easy access to all wiring and programming functions.

OPERATION

As the analog signal is received from the detector, the Primo unit amplifies the signal and converts it into digital information. At the processor level, the signal is analyzed through a series of sophisticated software algorithms and after separating it from electrical noise, it is converted into both analog and digital signals that are used to display rate of flow and totalization. In addition the processor controls zero-flow stability, analog and frequency outputs, serial communications and a variety of other parameters. Primo's 4 line, 16 character LCD display simultaneously indicates rate of flow, forward and reverse totalizers and diagnostic messages. It also serves to guide the user in simple English terms through the user-friendly programmable routines.

Programmable parameters of the Primo amplifier include: Calibration factors, reset of totalizers, pulse value with auto decimal point position, selection of unit of measure, selection of flow direction, analog signal output, relay and open collector high and low flow alarm signals, low flow cut-off percent of flow and noise dampening factor.

APPLICATION

The Primo amplifier main function is to detect and condition the flow information from the electromagnetic detector. The unit is ideally suited for use in applications where the flow is continuous and indication of rate and totalization is required. Also, in applications where a minimum and/or a maximum flow rate must be kept and carefully monitored, the unit also provides pulse signals that can be fed to dedicated batch controllers, PLCs and other more specialized instrumentation.

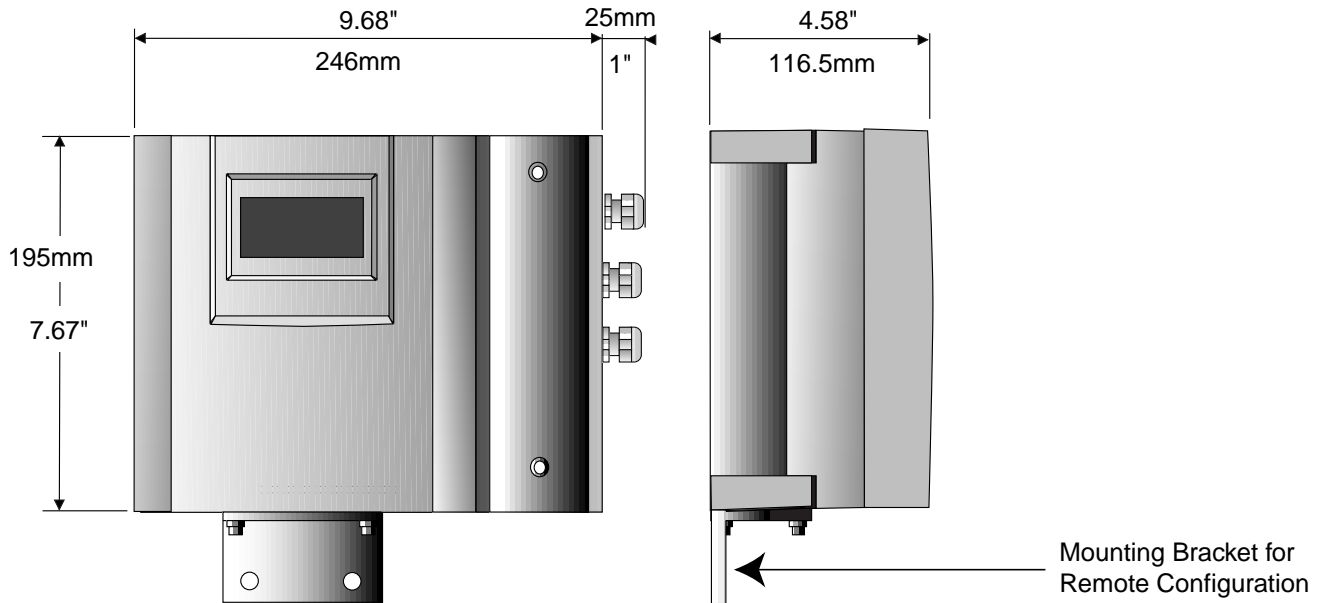


Magnetoflow Primo

FEATURES

- Microprocessor based
- Large 4 line x 16 character back-lit LCD display
- User friendly programming procedure
- Digital and analog outputs
- Waterproof NEMA 4 enclosure
- Sensor or remote wall mount
- Bidirectional flow sensing
- Automatic zero point stability
- Better than 0.1% repeatability
- Measures fluids with as low as 0.5 micromhos/cm conductivity





SPECIFICATIONS

Power Supply: 115V/60Hz \pm 10% - 24DC

230V/50Hz \pm 10% - 24DC

Power Consumption: 16VA max

Accuracy: \pm 0.25% accuracy of rate from 1-33 fps.

\pm 0.5% accuracy of rate from .1-1 fps.

Repeatability: <0.1%

Minimum Fluid Conductivity: 0.5 micromhos/cm

Processing: Microprocessor H8 (16 bit)

Flow Direction: Unidirectional or bidirectional, 2 separate totalizers (programmable)

Analog Outputs:

Current		Voltage	
$\pm 4 - \pm 20\text{mA} < 600 \Omega$	or	$\pm 2 - \pm 10\text{V} < 1\text{K} \Omega$	
$\pm 2 - \pm 10\text{mA} < 600 \Omega$	or	$\pm 1 - \pm 5\text{V} < 1\text{K} \Omega$	
$0 - \pm 20\text{mA} < 600 \Omega$	or	$0 - \pm 10\text{V} < 1\text{K} \Omega$	
$0 - \pm 10\text{mA} < 600 \Omega$	or	$0 - \pm 5\text{V} < 1\text{K} \Omega$	

Output Frequency: Scaled Pulse output, Max 10Khz

Digital Outputs:

Voltage sourcing transistor, 24VDC, 200mA max

(3) AC Solid state relays, 48VAC, 0.5 amp max

Noise Dampening: Programmable from 1 to 256

Pulse Width: Programmable from 5ms to 1000ms

Calibration Factor: Programmable from 0.1 to 6553.5

Min-Max Flow Alarm: (2) Programmable relay outputs
0 to 100% of flow

Detector Size: Programmable from 1 to 1400mm

Units of Measure: Gallons, Ounces, Pounds, MGD, Liters, Cubic Meters

Galvanic Separation: All outputs are short-circuit-proof to 500 volts

Low-flow-cutoff : Programmable 0-10% of max flow

Zero-point Stability: Automatic correction

LCD Display: 4 lines x 16 character back-lit alphanumeric.
Displays (2) Totalizers, Flow Rate, Alarm conditions

Programming: Three button manual

Housing: Cast aluminum, powder coated paint

Housing Rating: NEMA 4, water tight

Mounting: Detector mount or remote wall mount (bracket supplied)

Cable Connection: 1/2" NPT Cord Grip

Ambient Temperature: -4 to 122° F (-20 to 50° C)



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