▷ Panel Meters: Vertu™ Series

VPM2000 Loop-powered Isolator/Alarm with Display

cULus LISTED CE 24 HOUR STOCK ITEM 3 YEAR WARRANTY RoHS Compliant
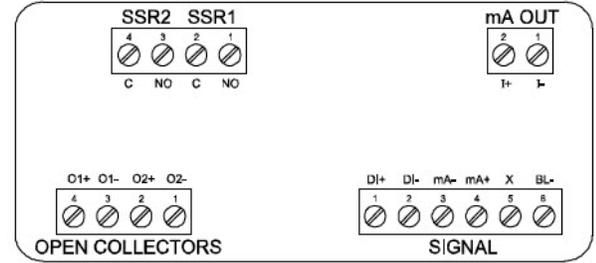
Loop-powered Process Meter ◆ 4-20mA input/output ◆ Solid-state Relays ◆ Non-incendive, Intrinsically Safe

Description

These loop-powered 1/8 DIN digital panel meters provide a convenient and informative display of any 4-20mA signal. A dual line display shows the process value on the top line and the units or a tag on the bottom line. Alternatively, you can display the input in one scale on the top line (e.g. height) and another scale on the bottom (e.g. volume). A bargraph option indicates the percentage the value represents.

All models include a digital input and two open collector outputs. For signal isolator and alarm trip applications, model options add two solid state relays or 4-20mA analog output. The digital input enables remote reset or triggering of alarms. Open collector outputs are useful for alarm indication or pulse output. Relays support alarm activation, on/off control, and pump alternation functions.

Installation is greatly simplified as the meters acquire power from the 4-20mA loop and therefore require no separate power source. A low voltage drop adds very little burden to the loop. The NEMA 4X IP65 panel, conformal-coated PCBs, wide temperature operation, and a backlit LCD enable use in most environments. Intrinsically safe and non-incendive versions allow installation in hazardous areas.

Setup is fast and easy using the front panel buttons or the free configuration software. A micro USB cable connects the meter to the PC and provides power for software-based programming and saving the file. The pushbuttons also serve as programmable function keys to change displays, reset min/max readings, acknowledge alarms, and other uses.

Key Features & Benefits

- Loop-powered process meter
- 4-20mA input
- Two open collector outputs standard
- Optional loop-powered solid-state relays
- Optional 4-20mA analog output
- 1.5 volt drop (4.5 volt drop with backlight)
- Loop-powered backlight with red backlight for alarm conditions
- Free PC-based USB programming software
- 5-digit alphanumeric top line, 8-digit alphanumeric bottom line
- 20-segment bargraph with percent indication
- Relay pump alternation based on level and runtime
- Display relay runtime and cycle count
- UL/cUL 61010 listed for electrical safety
- UL/cUL listed as intrinsically safe and non-incendive
- -40 to 167°F (-40 to 75°C) safe area operating temperature range

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Performance Specifications

■ General

Except where noted all specs apply to operation at +25°C.

Temperature Range
Operating (safe area models): -40 to 75°C.
Operating (hazardous area models): -40 to 70°C.
Storage: -40 to 85°C.

Relative Humidity
0 to 90% non-condensing. PCBs conformal-coated.

Programming Method
Front panel & Free PC-based USB programming software.

Digital Input
2.1V DC on contact. No contacts across DI+ and DI-.
Logic High: 2.4 to 30V DC (max).
Logic Low: 0 to 0.9V DC.

Overall Dimensions
4.68″ x 2.45″ x 3.79″ (119 x 62 x 96 mm) W x H x D.

Weight
8.7 oz (247g) with option board.

Warranty
3 years parts and labor.

UL/cUL Approvals
General purpose: UL 61010-1.
Hazardous area: Class 1, Div 1, Groups A, B, C, D and
Class 1, Div 2, Groups A, B, C, D.

■ Input

Inputs
4 to 20mA.

Accuracy
±0.02% of span ±1 count.
Square root/ exponent: 10-100% FS.

Voltage Drop
Without Backlight: 1.5V max. With backlight: 4.5V max.

Function
PV1: Linear, square root, or programmable exponent.
PV2: Linear or round horizontal tank.

HART Transparency
Analog input will not interfere with existing HART
communications on the wired 4-20 mA signal.

■ Display

Display
Dual-line LCD with backlight. Both lines 14-segment
alphanumeric. Top: 0.7″ (17.8 mm), Bottom: 0.4″ (10.2 mm).
Display may be programmed to turn red and flash a user-
defined message on alarm condition.

Decimal Point & Commas
Top line: Up to four decimal places.
Bottom line: Up to seven decimal places and commas to
indicate 1000s (e.g. 88,987,628).

Dual-Scale Feature
Input can display in different scales on top and bottom lines.
Top line could display input in height and bottom line displays
same input in volume.

■ DisplayWizard LP Programming Software

DisplayWizard LP System Requirements
Microsoft® Windows® 7 & 10.

Communications
USB 2.0 (Standard USB A to Micro USB B).

■ Common Open Collector & Relay (Alarm)

High or Low Alarm
User programmable for high or low alarm.

Alarm Deadband
0-100% FS, user programmable.
Pulse, alarm, timer, stopwatch on/off, or disable.

On & Off Time Delay
0 to 9,999 seconds.

Fail-Safe Operation
Independent for each open collector and relay.
Fail-safe on: output is on under normal conditions.
Fail-safe off: output is on under alarm conditions.

Alarm Operation
Automatic, automatic with manual override, latching (manual
reset anytime), latching with reset after cleared (manual reset
only after alarm has cleared).

Under/Over Range
If input < 3.5 mA: 1.0, 3.5, 3.8 mA, or disabled.
If input > 20.5 mA: 20.5, 20.8, 23.0 mA, or disabled.

■ Open Collector Outputs

Rating
Isolated, sinking NPN, 5-30V DC @ 150mA max.

■ Solid State Relays

Rating: 250VAC/VDC @ 1A resistive.
75VA; 250VAC; 0.6A pilot duty (inductive) – UL Code D300.
25VA; 250VDC; 0.6A pilot duty (inductive) – UL Code R300.

Pump Alternation
Relays will alternate with each pump cycle and alternation
can be based on elapsed time. Pump alternation time can be
programed for: 0 to 999:59 (hrs:min).

■ 4-20mA Transmitter Output

Accuracy
±0.05% FS ±0.001mA.

Scaling Range
1.00 to 23.00 mA.

Under/Over Range
If input < 3.5 mA: 1.0, 3.5, 3.8 mA, or disabled.
If input > 20.5 mA: 20.5, 20.8, 23.0 mA, or disabled.

Isolation
500 V input-to-output.

External Loop Power Supply
7.0 VDC to 30.0 VDC maximum.

Output Loop Resistance
10-750 Ω @ 24 VDC; 100-1100 Ω @ 30 VDC.

Ordering Information (click here to view online)

Model No.	Loop-powered	4-20mA Output	Dual Relays	Bargraph	General Purpose	Hazaradous Location
VPM2111	x				x	
VPM2112	x		x		x	
VPM2113	x	x			x	
VPM2114	x	x	x		x	
VPM2121	x			x	x	
VPM2122	x		x	x	x	
VPM2123	x	x		x	x	
VPM2124	x	x	x	x	x	
VPM2211	x					x
VPM2212	x		x			x
VPM2213	x	x				x
VPM2214	x	x	x			x
VPM2221	x			x		x
VPM2222	x		x	x		x
VPM2223	x	x		x		x
VPM2224	x	x	x	x		x

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AS9100
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