

# Panel Mount Instruments PM4-PH pH Monitor



With automatic temperature compensation and temperature display



4 digit LED 20mm digit height



5 digit LED 14mm digit height



4 digit LCD 12.7mm digit height

## Description

The intelligent, microprocessor based, panel mount PM4-PH monitor can function as an indicator/controller/transmitter/ computer interface.

The PM4-PH accepts its input from any conventional pH electrode or pH unity gain amplifier and features flexible pushbutton calibration and programming. The PM4's "uncalibrate" function sets the calibration back to that of an ideal electrode. This feature is useful when the electrode is replaced and "on the spot" recalibration is inconvenient.

A versatile input which accepts any one of three standard temperature sensors is provided for automatic temperature compensation. The temperature can also be displayed if required.

The programmable digital filter improves stability by smoothing out short term interference. Each instrument is supplied with a single control/alarm relay as standard.

Optional outputs include additional relays, isolated single or dual channel analog output (4-20mA, 0-1VDC, 0-10VDC), serial communications RS232 or RS485 - choice of ASCII or Modbus RTU protocols). The optional relays can be programmed for setpoint or trailing operation.

A remote input is configurable to perform one of various functions e.g. display hold, maximum memory, minimum memory, display brightness switching, easy access to setpoints, setpoint only access and security lock out.

Electrical isolation between power supply, input signals and retransmission eliminates grounding and common mode voltage problems.

## Features

- Selectable pH or temperature display
- Pushbutton calibration and setup
- Automatic temperature compensation
- High brightness LED displays
- Display flashing over/under range warning
- 240V, 110V, 24VAC, 12-48VDC (factory configured) - for other variations see specifications (over)
- Programmable digital filter, improves stability
- Alarm/control relay output
- Remote input to perform special functions
- 2 year guarantee

## Sensors

A wide variety of pH sensors is available to suit most applications - visit [pH and ORP sensors](#)

## Other display examples



Circular graph and 5 digit display



20 segment bargraph and 5 digit display

PM4PH-4.1-0

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# Specifications

## Technical Specifications

Input types: pH - any electrode where  $E_0=7$   
 Input resistance: Greater than  $10^{10}\Omega$   
 Temperature Input: 100 $\Omega$  1000 $\Omega$  RTD, LM335 or manual  
 Measuring range: pH 0.00 to 14.00  
                                   Temperature -40 to 130°C  
 Accuracy: 0.2% of full scale (pH)  
 Microprocessor: MC68HC11 CMOS  
 Ambient temp: LED models -10°C to 60°C  
                   LCD models -10°C to 50°C  
 Humidity: 5% to 95% non condensing  
 Display types: **LED models:**  
                   4 digit 20mm,  
                   5 digit 14mm, status LEDs, keypad.  
                   LED bar graph 20 segment bar, 5 digit  
                   display, keypad  
                   16 segment circular bargraph, 5 digit  
                   display, keypad  
                   **LCD models:**  
                   4 digit 12.7mm  
 Power supply: 240, 110, 32, 24VAC 50/60Hz,  
                   12-48VDC or 50-110VDC  
                   (factory configured)  
 Power usage: AC supply 4 VA max,  
                   DC supply, consult supplier  
 Output (standard): 1 x relay, form A, rated 5A resistive  
 Relay action: Programmable N.O. or N.C.  
**Output Options**  
 Extra relays: Same specs as relay 1  
                   (form C optional)  
 Retransmission: Analog 4-20mA, 0-1V or 0-10V  
                   (single or dual channel versions)  
                   Serial RS232 or RS485, choice of ASCII  
                   or Modbus RTU protocols  
                   Digital Binary or BCD  
 DC voltage out: Isolated 24V ( $\pm 12V$ ), 20mA  
**Physical Characteristics**  
 Bezel size: DIN 48mm x 96mm x 10mm  
 Case size: 44mm x 91mm x 115mm  
                   behind face of panel  
 Panel cut out: 45mm x 92mm (+1mm & -0mm)  
 Connections: Plug in screw terminals  
                   (max 2.5mm<sup>2</sup> wire)  
 Weight: 400g basic model,  
             450g with option card

# PM4-PH Order Codes

**PM4-PH** - [ ] - [ ] - [ ]

**Power Supplies**

**PM4-PH** - [XXX] - [ ] - [ ]

240VAC .....	240
110VAC .....	110
32VAC .....	32
24VAC .....	24
12 to 48VDC .....	DC
50 to 110VDC .....	DCH

**Display Type**

**PM4-PH** - [ ] - [XXX] - [ ]

4 DIGIT LED .....	4E
5 DIGIT LED + KEYPAD & ALARM LEDs .....	5E
BARGRAPH + 5 DIGIT DISPLAY + KEYPAD .....	5BP
CIRCULAR BARGRAPH + 5 DIGIT DISPLAY + KEYPAD .....	5GP
4 DIGIT LCD .....	4C

**Options**

**PM4-PH** - [ ] - [ ] - [XXX]

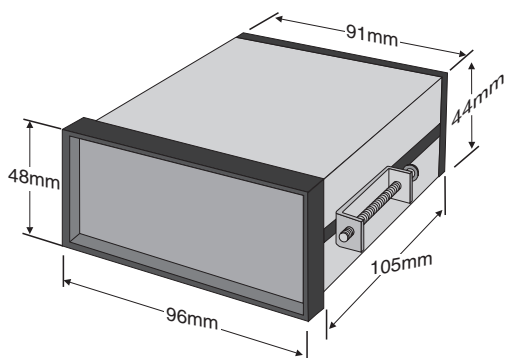
ANALOG (4-20mA, 0-1V or 0-10V selectable) .....	A
DUAL ANALOG (4-20mA, 0-1V or 0-10V selectable) .....	AA
RS232 .....	2
RS485 .....	4
BCD/Binary NPN .....	DN
BCD/Binary PNP .....	DP
DC VOLTAGE OUTPUT 24V ( $\pm 12V$ ) .....	12
1 EXTRA RELAY .....	R
3 EXTRA RELAYS .....	RRR
6 EXTRA RELAYS .....	R6

The valid optional output combinations for PM4-PH models are: -R12, -AR, -ARRR, -AAR, -A12, -AR12, -AR6, -A2, -A2R, -A4, -A4R, -2R, -2R12, -4R, -4R12, -DNR, -DN12, -DN2, -DNR12, -DPR, -DP12, -DPR12

## PM4-PH Accessories

Description	Model No.
IP65 access cover	COVER-IP65
Wall mount enclosure	ENC-PM1-01
Wall mount encl. with IP65 cover	ENC-IP65-PM1-01
Surface mount kit	PM4-OPT-SMKIT
Portable/bench enclosure AC	ENC-PM-AC
Portable/bench enclosure DC	ENC-PM-DC

## PM4-PH case dimensions



## PM4-PH panel mounting details

