



# ▲ Analog Input Graphical Panel Meters

THE PM-50 METERS ARE DESIGNED TO INCREASE OPERATOR PRODUCTIVITY, EXPOSE CRITICAL PLANT FLOOR DATA, AND AID IN PROJECT SCHEDULING AND PROCESS IMPROVEMENTS. EASILY RELATABLE INTUITIVE GRAPHICAL DISPLAY. SECONDARY DISPLAYS PROVIDE EVEN MORE DATA. THE METERS FEATURE ON-BOARD WI-FI, RS-485/MODBUS, AND OPTIONAL ETHERNET OR RS-232.













#### **GRAPHICAL DISPLAY**

- ▲ Full color touchscreen
- ▲ Intuitive screens
- ▲ Multiple displays

### SIMPLE PROGRAMMING

- Start-up Wizard
- ▲ Programming App
- Web server

### **ALARM NOTIFICATION**

- Display color change
- Push messaging
- ▲ Focuses attention

# **DATA ACCESS**

- Wi-Fi
- ▲ Modbus/RS485
- ▲ Ethernet & RS232

### **MODULAR CONSTRUCTION**

- Plug-in play modules
- Upgradeable firmware
- Outputs, power & comms

### **EASY FIELD REPLACEMENT**

- Use existing wiring
- ▲ 4.3" 1/8 DIN products
- **⊿** 3.5" 1/16 DIN products

### **SMART DEVICE CAPABILITIES**

- ▲ Functionality
- Programming
- ▲ Connectivity

# **▲ PM-50 Ordering Guide and Specifications**

# ▲ Ordering Guide

### **MAIN UNIT**

PART NUMBER	DESCRIPTION
PM500A0400800F00	4.3" Analog Input Graphical Panel Meter
PM500A0301600F00	3.5" Analog Input Graphical Panel Meter

#### **ACCESSORIES**

PART NUMBER	DESCRIPTION
PMM000CM23200000	RS232 Serial Communications Module
PMM000CMENT00000	Ethernet Communications Module
PMM000I0AN000000	Analog Output Module
PMM000I0RL200000	Dual Setpoint Relay Output Module
PMM000I0RL400000	Quad Setpoint Relay Output Module
PMM000PWACP00000	AC to DC Power Module
PMA000MK00800000	Conversion Panel 92 mm x 75 mm to 1/8 DIN
PMA000MK01600000	Conversion Panel 68 mm x 68 mm to 1/16 DIN
PMA000SP00800000	4.3" Protective Screen Overlay
PMA000SP01600000	3.5" Protective Screen Overlay
SD032G00	MicroSD Card
PMA000CP00800000	Replacement Rear Cover/Bus Board with Spacer Module (4.3" model only)
PMA000MKLP00000	Replacement Module Lock Pins

# ▲ Meter Specifications

# **POWER REQUIREMENTS**

MODEL	4.3-INCH	3.5-INCH
Input Voltage (Volts)	10-30 VDC	10-30 VDC
Max Power PM-50 only	4.6 W	4.6 W
Max Power PM-50, with modules	12 W	12 W

Host Isolation: 500 Vrms for 1 min. to all inputs and outputs.

#### **DISPLAY**

4.3" or 3.5" Color TFT display with resistive analog touch screen

SIZE	4.3-INCH	3.5-INCH
Туре	TFT	TFT
Colors	262,144	262,144
Pixels	480 X 272	320 X 240
Brightness	420 cd/m <sup>2</sup>	540 cd/m <sup>2</sup>
LED Backlight Life*	30,000 HR TYP.	30,000 HR TYP.

<sup>\*</sup> Lifetime at room temperature (25°C)

#### **UPDATE RATES**

A/D conversion rate: programmable 5 to 200 readings/sec.

#### **INPUT CAPABILITIES**

Current Input:  $\pm$  200  $\mu$ A DC,  $\pm$  2 mA DC,  $\pm$  20 mA DC,  $\pm$  200 mA DC,  $\pm$  2 A DC

Voltage Input: ± 200 mV DC, ± 2.0 V DC, ± 20 V DC, ± 60 V DC Thermocouple Input: T, E, J, K, R, S, B, N, C (W5/W26)

RTD Input:  $100~\Omega$  Pt alpha = .00385,  $100~\Omega$  Pt alpha = .00392,  $120~\Omega$  Nickel alpha = .00672,  $10~\Omega$  Copper alpha = .00427

Resistance Input:  $100 \Omega$ ,  $1000 \Omega$ ,  $10 K\Omega$ 

### **EXCITATION POWER**

Transmitter Power: +24 VDC, ± 5% @ 50 mA max.

Reference Voltage: + 2 VDC, ± 2% Reference Current: 1.05 mADC, ± 2%

# **USER INPUTS**

Two programmable user inputs

#### **TOTALIZER**

Time Base: second, minute, hour, or day

Batch: Can accumulate (gate) input display from a user input

Time Accuracy: 0.01% typical Decimal Point: 0 to 0.0000 Scale Factor: 0.001 to 65.000

Low Signal Cut-out: -199,999 to 999,999

Total: Up to 9 digits

#### **CUSTOM LINEARIZATION**

Data Point Pairs: Selectable from 2 to 40 Display Range: -199,999 to 999,999

Decimal Point: 0 to 0.0000

#### **MEMORY**

Nonvolatile memory retains all programmable parameters and display values.

Memory Card: microSD slot accepts up to 32 GB capacity cards in FAT16/FAT32 format.

#### **RS485 SERIAL PORT**

Uses Modbus protocol (RTU and ASCII)

Baud Rate: Up to 115,200

Data Format: 7/8 bit; odd, even, or no parity; 1 or 2 stop bits

# ▲ PM-50 Specifications Cont. and Module Specifications

Isolation: 500 Vrms to sensor, user power and digital inputs. Not isolated to solid state outputs

#### Wi-Fi CAPABILITIES:

Wi-Fi: Power output up to 20.5 dBm

Frequency:

TECHNOLOGY	CHANNELS	FREQUENCIES
Wi-Fi	1-13	2412-2484 MHz

Note: Channel/frequency limitation is enforced based on configured country/region code.

Wi-Fi Compliance: TCP/IP; 802.11 b/g/n

#### **ON-BOARD DUAL SSR OUTPUTS**

Both outputs must be used either in SINKING or in SOURCING mode together.

Sinking Mode:

Type: Switched DC, N-channel open drain MOSFET

Max Sink Current: 100 mA  $V_{DS}$  ON: 0.3 V @ 100 mA  $V_{DS}$  MAX: 30 VDC

Offstate Leakage Current: 0.5 mA max

Sourcing Mode:

Type: Switched DC, P-channel open source MOSFET

Max Source Current: 100 mA  $V_{DS}$  ON: 0.3 V @ 100 mA  $V_{DS}$  MAX: 30 VDC

Offstate Leakage Current: 0.5 mA max

#### **ENVIRONMENTAL**

Operating Temperature Range: -10 to 55 °C Storage Temperature Range: -20 to 60 °C

Operating and Storage Humidity: 0 to 85% max. RH non-

condensing

Vibration to IEC 68-2-6: Operational 5-500 Hz, 2 g Shock to IEC 68-2-27: Operational 20 g (10 g relay)

Altitude: Up to 2000 meters

Installation Category II, Pollution Degree 2 as defined in IEC/EN 6064-1.

### **CERTIFICATIONS & COMPLIANCES**

**CE** Approved

EN 61326-1 Immunity to Industrial Locations

Emission CISPR 11 Class A

IEC/EN 61010-1 RoHS Compliant

FCC ID #: 2AC7Z-ESP32WROOM32U

UL Hazardous: File # E317425

Type 4X Indoor/IP65 Enclosure rating (Face only) for all models

IP20 Enclosure rating (Rear of unit)

#### CONNECTIONS

High compression spring-clamp terminal block

#### CONSTRUCTION

This unit is rated NEMA 4X/IP65 for indoor use only. IP20 Touch safe. One piece bezel/case. Flame resistant. Panel gasket, module locks, and mounting panel latch included.

# **WEIGHT**

4.3: 11.3 oz (321 g) 3.5: 7.9 oz (224 g)

#### WARRANTY

2 years on design and manufacturing defects. Specifications are subject to change. Visit www.redlion.net for more information.

# ▲ Module Specifications

Note: All modules are field installable

### **RS232 MODULE**

Removable terminal block Hardware status LEDs

# **ETHERNET MODULE**

10/100 Ethernet module Auto MDI/MDI-X Modbus over TCP/IP

# **ANALOG OUTPUT MODULE**

Retransmitted analog output 0 (4) to 20 mA or 0 to 10 VDC, ±10 VDC Removable terminal block

# **DUAL RELAY MODULE**

Dual Form C 5 Amp relays Up to 250 VAC or 30 VDC Removable terminal block

#### **QUAD RELAY MODULE**

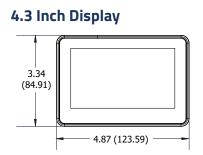
Up to 250 VAC or 30 VDC Removable terminal block Quad Form A 2 Amp relays

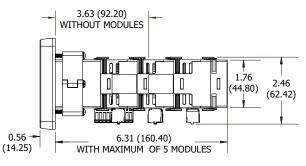
#### **AC TO DC POWER MODULE**

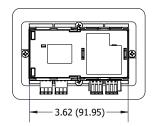
Input: 85 VAC to 240 VAC Supports 4.3" and 3.5" PM-50 meters Removable terminal block

# ▲ PM-50 Meter and Module Dimensions

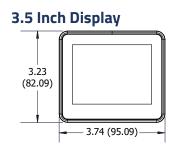
# ▲ Dimensions In inches (mm)

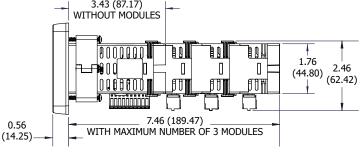


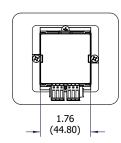




# ■ Dimensions In inches (mm)

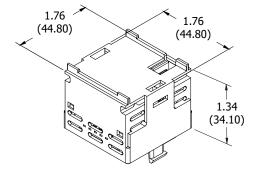






# **⊿ Dimensions** In inches (mm)

# Module





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Red Lion has been delivering innovative solutions to global markets since 1972 through communication, monitoring and control for industrial automation and networking - enabling companies worldwide to gain real-time data visibility that drives productivity. Red Lion is part of Spectris plc, the productivity enhancing instrumentation and controls company.

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