Graphic display PM-50 with analog input

- 3.5" or 4.3" 18-bit color display with resistive touchscreen
- Parameterization on the device or via APP or web server
- WiFi 4 connectivity (ModbusTCP communication)
- Universal input for process signals, thermocouples, Pt100, potentiometer
- RS485 interface and SSR driver outputs on board
- Modular extensions possible

https://www.wachendorff-prozesstechnik.de/en/PM-50-Analog

Description

The new PM-50 graphic display with its universal analog input can be used with almost all commercially available temperature sensors, resistance thermometers and process signals, as well as programming, operating and control technologies for many applications. It is available with a 3.5" or 4.3" 18-bit (TFT) color display with resistive touchscreen and allows the user to easily switch between relevant screens by "swiping" to obtain comprehensive operating data for monitoring systems and products. Visual warnings and alarms are shown on the display, but can also be viewed via the PM-50 app on mobile devices. The app is available in the Apple and Google Play Store. A program wizard on the device makes it easy to set up the PM-50, but the display can also be programmed via the app or a web browser. For remote access to important workflows and process data, the display has an RS485 interface for Modbus RTU communication and Modbus TCP communication via WiFi (4th gen.). Thanks to the possibility of simple modular expansion of the display on site with the expansion modules, an RS232 interface for Modbus, an Ethernet connection (RJ45) and an analog output and/or relay output module (2x changeover contacts or 4x NO contacts) can be implemented quickly.

Product details

Entrance areas:	**Thermocouple type:** K, S, R, J, T, N, B, E, C(W5/W26) **Temperature sensor (2- or 3-wire):** Pt100 alpha = .00385 Pt100 alpha = .00392 NI120 alpha = .00672 CU10 alpha = .00427 **Voltage:** ± 200 mVDC; ± 2 VDC; ± 20 VDC; ± 60 VDC **Current:** ± 200 µADC; ± 2 mADC; ± 20 mADC; ± 200 mADC; ± 2 ADC **Potentiometer:** 100 Ohm, 1000 Ohm, 10 KOhm
Accuracy:	**Current input:** ± 200 µADC = 0.12% + 0.04 µA ± 2 mADC = 0.12% + 0.4 µA ± 20 mADC = 0.12% + 4 µA ± 200 mADC = 0.12% + 0.40 µA ± 2 ADC = 0.7% + 0.4 mA **Voltage input:** ± 200mVDC = 0.12% + 40 µV ± 2 VDC = 0.12% + 0.4 mV ± 20 VDC = 0.12% + 4mV ± 60 VDC = 0.12% + 40mV All specifications refer to a temperature range of -10 °C to + 55° C.
Resolution:	**Current input:** ± 200 µADC = 10 nA ± 2 mADC = 0.1 µA ± 20 mADC = 1 µA ± 200 mADC = 10 µA ± 2 ADC = 0.1 mA **Voltage input:** ± 200mVDC = 10 µV ± 2 VDC = 0.1 mV ± 20 VDC = 1 mV ± 60 VDC = 10 mV A higher resolution can be achieved by input scaling.
Input impedance:	**Current input:** ± 200 µADC; ± 2 mADC; ± 20 mADC = 100 Ohm ± 200 mADC; ± 2 ADC = 0.06 Ohm **Voltage input:** All ranges 625 KOhm **Thermocouple:** 20 MOhm

Display:	4.3" or 3.5" color TFT display with analog resistive touchscreen **3.5" display:** Colors: 262,144 K Pixels: 320 x 240 Brightness: 540 cd/m² LED backlight service life: 30,000h* **4.3" display:** Colors: 262,144 K Pixels: 480 x 272 Brightness: 420 cd/m² LED backlight service life: 30,000h* *at room temperature (25 °C)
A/D conversion:	programmable from 5 to 200 measurements per second.
User inputs:	Two programmable user inputs Max. Input voltage: 30 VDC **Sink:** Active: $_{VIN}$ < 0.9 VDC Inactive: $_{VIN}$ > 2.4 VDC 20 KOhm pull-up at 3.3 V **Source:** Active: $_{VIN}$ > 2.4 VDC Inactive: $_{VIN}$ < 0.9 VDC 20 KOhm pull-down
SSR outputs (OnBoard):	2 outputs, only SINK or SOURCE mode available, not separately adjustable. **Sink mode (NPN):** Type: Switched DC, N-channel open-drain MOSFET Max: 100 mA VDS ON: 0.3 V @ 100 mA VDS MAX: 30 VDC Leakage current in off-state: 0.5 mA max **Source mode (PNP):** Type: Switched DC, P-channel open-source MOSFET Max: 100 mA VDS ON: 0.3 V @ 100 mA VDS MAX: 30 VDC Leakage current in off-state: 0.5 mA max
Sensor supply:	24 VDC, ±5%; @max. 50 mA Reference voltage: + 2 VDC, ± 2% Reference current: 1.05 mADC, ± 2%
RS485 interface (OnBoard):	Uses the Modbus RTU protocol (RS485) Baud rate: Up to 115,200 Data format: 7 or 8 bit; odd, even or no parity; 1 or 2 stop bits Isolation: 500 Vrms to sensor, user voltage and digital inputs. Not isolated to semiconductor outputs
Power supply:	10 VDC to 30 VDC; 4.6 W (without modules) Max. Power consumption: 12 W (with modules) Isolation: 500 Vrms for 1 min. to all inputs and outputs.

WiFi 4:	Output power up to 20.5 dBm Frequency: 2412 MHz to 2484 MHz Channels: 1 to 13 Note: Channel/frequency limitation is based on the configured country/ region code. Wi-Fi compliance: TCP/IP; 802.11 b/g/ n Modbus TCP communication via WiFi 4 possible.
Memory:	Non-volatile memory, retains all programmable parameters and display values Memory card: microSD cards of up to 32 GB in FAT16/FAT32 format possible
Totalizer:	Time base: second, minute, hour or day Batch counter: Can totalize measured values / Trigger: User input Time accuracy: 0.01% typical Decimal point: 0 to 0.0000 Scaling factor: 0.001 to 65.000 Display range: -199,999 to 999,999
Linearization:	Data point pairs: Selectable from 2 to 40 Display range: -199,999 to 999,999 Decimal point: 0 to 0.0000
Ambient conditions:	Operating temperature range: -10 °C to +55 °C Storage temperature range: -20 °C to +60 °C Humidity during operation and storage: 0 % to 85 % rH, non-condensing Altitude: Up to 2000 meters
Vibration and shock:	Vibration: 5-500 Hz, 2 g Shock: 20 g (10 g relay)

Dimensions (WxHxD):	**PM500A0301600F00:** Installation dimensions (WxHxD): 44.8 mm x 44.8 mm x 87.17 mm Height without terminal strips Depth specification corresponds to basic device incl. rear cover Installation depth with max. number of modules: 189.47 mm Panel cut-out: DIN 45 x 45 Display/front (WxHxD): 95.09 mm x 82.09 mm x 14.25 mm Rear cover (B): 11 mm **PM500A0400800F00:** Installation dimensions (WxHxD): 91.95 mm x 44.8 mm x 92.20 mm Height without terminal strips Depth specification corresponds to basic device incl. bus connector for PM-50 4.3" Installation depth with max. number of modules: 160.40 mm Panel cut-out: DIN 92 x 45 Display/front (WxHxD): 123.59 mm x 84.91 mm x 14.25 mm Bus connector rear cover (B): 15 mm Max. Sheet thickness: 6.35 mm Min. sheet thickness for NEMA 4X/ IP65 requirements: 1.02 mm
Housing:	One-piece cover/housing. Flame retardant. Installation seal and installation fastening included
Weight:	3.5" device: approx. 224 g 4.3": device approx. 321 g
Protection class:	Type 4X for indoor use only IP65 (front) IP20 (rear)
Certificates:	CE, UKCA, FCC, UL,
Scope of delivery:	**PM500A0301600F00:** 1x rear cover 2x 2x locking clip for shock and vibration applications 1x mounting frame **PM500A0400800F00:** 1x empty module 1x Bus connector rear cover for PM-50 4.3" display 2x 2x locking clip for shock and vibration applications 1x mounting frame
Relay output (accessory):	**PMM000I0RL200000:** 2 x changeover contacts; switching capacity: 5 A at 250 VAC or 30 VDC; resistive load **PMM000I0RL400000:** 4 x NO contacts; Switching capacity: For one relay 3 A at 250 VAC or 30 VDC; resistive load When using all relays switching capacity max. 1A/relay
Analog output (accessory):	**PMM000I0AN000000:** 0/4 mA to 20 mA or 0 VDC to 10 VDC ±10 VDC Effec. Resolution: 16-Bit
RS232 interface (accessory)	**PMM000CM23200000:** Possible baud rates: 300 to 115,200 bit/s Data bits: 7 or 8 Parity: ungrade, grade or no parity
Ethernet interface (accessory):	**PMM000CMENT00000:** 10/100 T-Base Auto MDI / MDI-X RJ-45 socket ModbusTCP communication possible.
AC supply (accessory):	**PMM000PWACP00000:** Input: 85 VAC to 240 VAC; ±10%; 0.16 A to 0.3 A Frequency: 50/60 Hz Output: +15 VDC; ±10%; 0.8 A; max. 12 W Insulation: 3 kV between primary and secondary side Note: The AC supply module must always be mounted in the last position of the communication flow.
Manufacturer:	Red Lion

Products Order no.	
PM500A0301600F00	Graphic display PM-50 with analog input, 3.5" display
PM500A0400800F00	Graphic display PM-50 with analog input, 4.3" display

Accessories Order no.	
PMM000CM23200000	RS232 interface module for PM-50
PMM000CMENT00000	Ethernet interface module for PM-50
PMM000I0AN000000	Analog output module for PM-50
PMM000I0RL200000	Relay output module for PM-50; 2x changeover contact
PMM000I0RL400000	Relay output module for PM-50; 4x NC/NO contact
PMM000PWACP00000	AC supply module for PM-50
PMA000CP00800000	Bus connector for PM-50 4.3"
PMA000MK00800000	Adapter kit for PM-50; 92 mm x 75 mm to 96 mm x 48 mm
PMA000MK01600000	Adapter kit for PM-50; 68 mm x 68 mm to 96 mm x 48 mm
PMA000MKMLP00000	Locking clip for shock and vibration applications
PMA000SP00800000	Protective film for the display of the PM-50; 4.3" display (content 10 pieces)
PMA000SP01600000	Protective film for the display of the PM-50; 3.5" display (content 10 pieces)

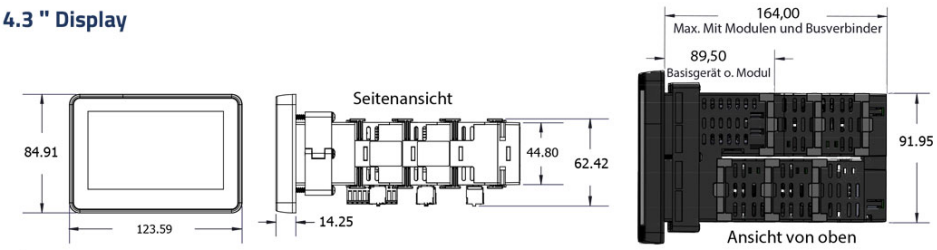
Drawings

Dimensions PM-50

Abmessungen vom PM-50, Modulen, Hintere Abdeckung und Busverbinder

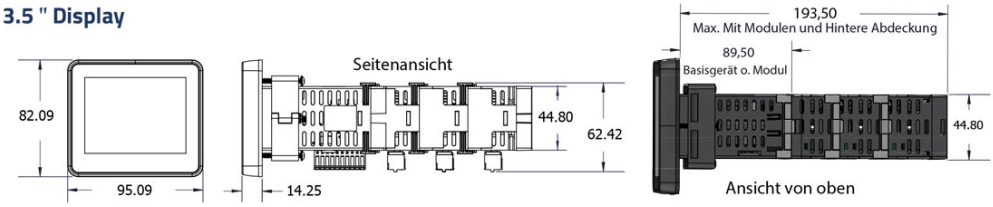
Abmessungen in mm

4.3 " Display



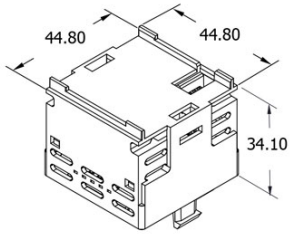
Abmessungen in mm

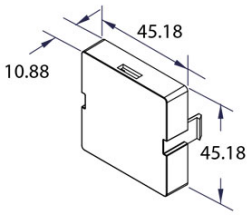
3.5 " Display



Abmessungen in mm

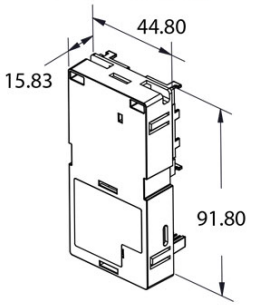
Module





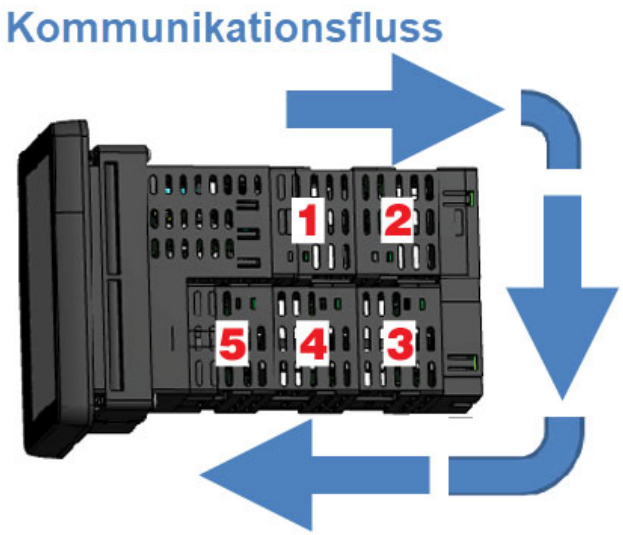
Hintere Abdeckung für 3,5 " Display

Busverbinder für 4,3 " Display



Drawings

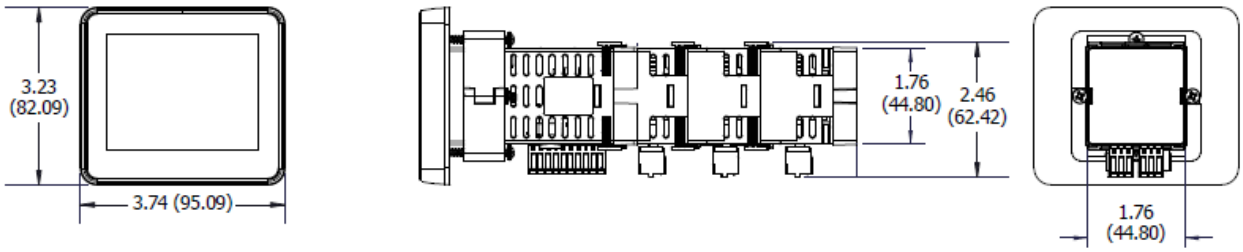
Communication flow



Drawings

CAD file PM-50 3.5"

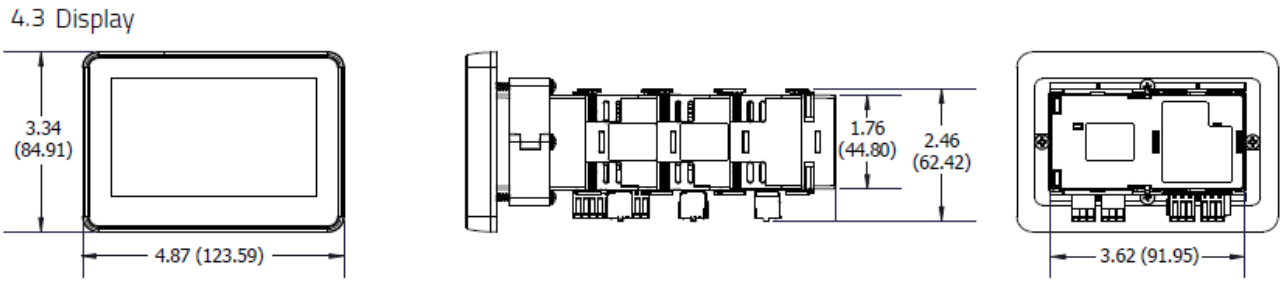
3.5 Inch Display



PM-50_3-5-Zoll.dwg

Drawings

CAD file PM-50 4.3"



PM-50_4-3-Zoll.dwg

Drawings

Locking clips for shock and vibration applications

PM-50_4-3-Zoll.dwg

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