

# PMX400 Series

## Four-digit temperature and frequency display with analogue-value read-out and alarm monitoring

The PMX400 Series consists of two modules:

- Temperature display
- Frequency display / tachometer

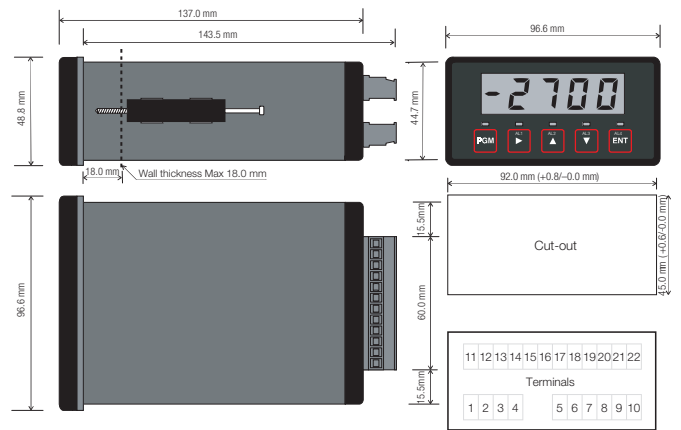
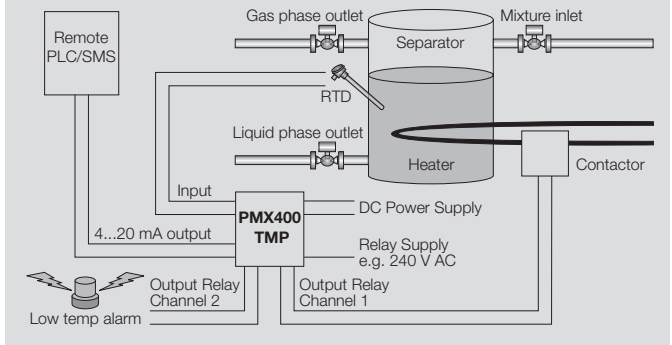
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A variety of temperature or frequency signals can be processed. On the output side, optional analogue signals are available, as well as either two or four relay contacts for alarm monitoring. The PMX400 HZX frequency display module offers, as default, two open-collector outputs as the relay contacts. The outputs are designated for the alarm function. An integrated power supply can be used for supplying external sensors and input devices.

**Technical features:**

- Four-digit digital LED display
- Up to four alarm channels and an analogue current/voltage output
- Retrieval of min. and max. values
- Integral power supply for active sensors
- DC power supply
- Complete electrical isolation
- LED alarm status indication
- DIN-standard 1/8 front panel with IP65 protection
- Decimal point can be adjusted to any position
- configurable via front-panel keypad

**Typical application of PMX400**



**Common technical data**

Display	
Type	Four-digit, red LED, 14.2 mm
Display value	Percent or real-value displayed
Display range	-9999 to +9999
Status indicator	Alarm channel 1-4; Status LED
Output	
Type	Current or voltage output
Scaling	Variable
Output signal limits	0...20 mA or 0...11 V
Load resistance	≤ 850 Ω (current), ≥ 1 MΩ (voltage)
Residual ripple	< 20 mV <sub>ss</sub>
Transmit function	direct or reverse
General information	
Accuracy	Typically ± 0.1 % of signal range
Linearity	≥ 0.05 %
Repeat accuracy	± 0.02 % of signal range
Humidity	0...90 % (no condensation)
Temperature coefficient	≤ 0.02 % / °C
Long-term drift	0.1 % / 10,000 h
Cut-off frequency (-3 dB)	5 Hz
Impulse withstand voltage	4 kV (1.2/50 μs)
Isolation voltage	1 kV between ports
Data backup	≥ 100 years (without power supply)
Operating temperature / storage temperature	0 °C...60 °C / -25 °C...75 °C
EMC standard	DIN EN 61326
Approvals	CE, cULus

**Connections**

Terminal	Signal		
1	-	Supply voltage.	
2	+		
3	Signal +	Analogue output (only for AO version)	
4	Signal - current		
5		Optional, depending on type	
6			
7			
8			
9			
10			
11			
12			
13	NO contacts		Alarm channel 1 (only for 4RO version)
14	Common		
15	NC contact		
16	NO contacts		Alarm channel 2 (only for 4RO version)
17	Common		
18	NC contact		
19		Depending on the individual module	
20			
21			
22			
23			
24			

## MANN SERIES – Indicators and configurable displays for temperature

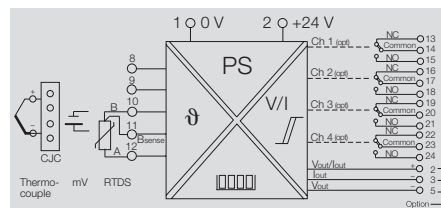
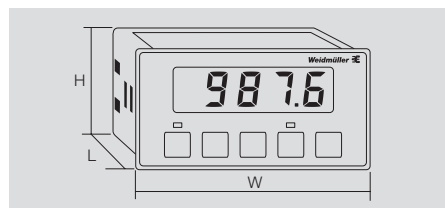
### PMX400 Series

- Suitable for PT100, thermocouple and mV input signals
- Automatic sensor recognition
- Temperature measurement and monitoring in °C or °F
- No additional adjustments needed
- Automatic compensation for PT100 measurement leads
- Cold-junction compensation for thermocouple inputs

### PMX400TMP



- Display instrument for control panel installation
- 1/8 DIN standard front
- IP65 front protection
- Pluggable connection terminals



### Technical data

Display	
Type	
Display value	
Input	
Type	
Input signal	
Cold-junction compensation	
Cable-length compensation	
Alarm	
Type	
Switching current	
Insulation voltage	
General information	
Supply voltage	
Power input	
Step response time	
Scanning rate	
Attenuation factor	
Functions	
EMC standard	
Approvals	
Housing specifications	
Clamping range (nom. / min. / max.)	mm <sup>2</sup>
Connection type / Mounting rail	
Housing type / Weight	
Length x width x height	
Note	
Monitoring of the analogue/alarm outputs is possible with the basic software, without any additional adjustments. Adjustments can be optionally carried out via additional pluggable PCB. Setup and calibration are made with the front-panel keypad	

Voltage input / current input	
°C, °F or mV	
Thermocouple, PT 100 RTD or mV	
Configurable for 10 ranges	
Automatic	
Automatic	
Status relay, CO contact	
3 A @ 240 V AC, 3 A @ 24 V DC (resistive load)	
1 kV between ports	
20...28 V DC	
6 W @ 24 V DC	
300 ms (10...90 %)	
5 per sec.	
0...99, programmable digital filter	
AO: with analogue output	
RO: with alarm channels	
DIN EN 61326	
CE, cULus	

### Connections

Terminal	Signal	
1	-	Supply voltage
2	+	
3	Signal +	Analogue output (only for AO version)
4	Signal - current	
5	Signal - voltage	
6	Connections for changing setup	Configuration
7		
8		Thermocouple inputs
9	Cold-junction compensation	
10		
11		RTD inputs
12	Not used	
8	Not used	
9	Not used	mV inputs
10	B	
11	B-Sense	
12	A	Alarm channel 1 (only for 4RO version)
8	Not used	
9	Not used	
10	mV Signal -	
11	mV Signal +	Alarm channel 2 (only for 4RO version)
12	Not used	
13	NO contacts	
14	Common	
15	NC contact	Alarm channel 3 (only for 4RO version)
16	NO contacts	
17	Common	
18	NC contact	
19	NO contacts	Alarm channel 4 (only for 4RO version)
20	Common	
21	NC contact	
22	NO contacts	
23	Common	
24	NC contact	

### Thermocouple (type J, K, N, T, E, B, S, R), RTD or mV signals

Input Type	Max. display range	
	highest	lowest
J	870 °C (1598 °F)	
K	1372 °C (2502 °F)	
N	1300 °C (2372 °F)	-50 °C (-58 °F)
T	400 °C (752 °F)	
E	700 °C (1292 °F)	
B	1800 °C (3272 °F)	0 °C (32 °F)
S	1768 °C (3214 °F)	-50 °C (-58 °F)
R	1768 °C (3214 °F)	-50 °C (-58 °F)
RTD	820 °C ( 1508 °F)	-220 °C (-364 °F)
mV	200 mV	-200 mV

### Ordering data

Type	
	without analogue/alarm output
	with analogue/alarm output
	Special adjustment
Note	
Additional input/output range versions available on request	

Type	Qty.	Order No.
PMX400TMP	1	7940017862
PMX400TMP 4RO/AO	1	7940012968
PMX400 Variabel	1	8945020000

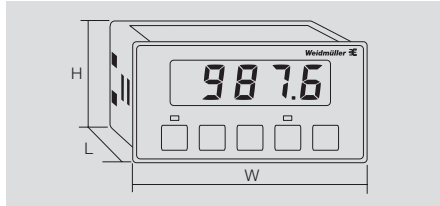
### Accessories

Note

**PMX400 Series**

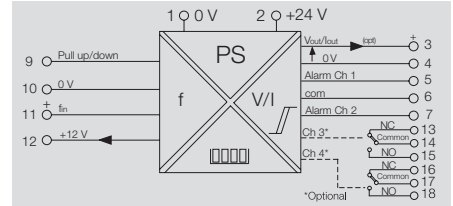
- Display instrument for control panel installation
- 1/8 DIN standard front
- IP65 front protection
- Pluggable connection terminals
- Frequency measuring and monitoring
- Integral power supply for external sensors
- Two outputs for limit-value monitoring
- De-bouncing of switched input impulses

**PMX400HZX**



The frequency display on the PMX400HZX can process the following input signals:

- Three-wire NPN/PNP
- NPN/PNP open-collector
- TTL logic
- Solid-state switch
- No-voltage contacts
- Additional voltage pulses



**Technical data**

Display	
Type	
Display value	
Input	
Type	
Input signal	
Sensor supply	
Input voltage	
Alarm (channel 1/2)	
Type	
Function	
Max. Switching current	
Alarm (channel 3/4)	
Type	
Switching current	
Isolation	
General information	
Supply voltage	
Power input	
Step response time	
Attenuation factor	
Functions	
EMC standard	
Approvals	

Voltage input / current input
Percent or real-value displayed
Programmable frequencies
Configurable for 4 ranges
12 V DC (up to 25 mA)
50 mV...250 V AC or 3...250 V DC
Transistor output
"ON" = 0 V
200 mA "ON", 50 V DC "OFF"
Relay contact (changeover)
3 A @ 240 V AC, 3 A @ 24 V DC (resistive load)
1 kV between ports
24 V DC ±10 %
6 W @ 24 V DC
220 ms (10...90 %)
0..99, programmable digital filter
AO: with analogue output
RO: with alarm channels
DIN EN 61326
CE, cULus

**Connections**

Terminal	Signal	
1	-	Supply voltage
2	+	
3	Signal +	Analogue output (only for AO version)
4	Signal -	
5	Common	Alarm channel 1 and 2 (only for 4RO version)
6	Channel 1	
7	Channel 2	
8	Configuration	Inputs/Configuration (Set-up: 12/8 connection)
9	Pull up / pull down	
10	Signal -	
11	Signal +	
12	12 V DC	Alarm channel 3 (only for 4RO version)
13	Common	
14	NC contact	
15	NO contacts	Alarm channel 4 (only for 4RO version)
16	Common	
17	NC contact	
18	NO contacts	

Input range	Offset	Resolution
0...9.999 Hz	0...9.998 Hz	0.001 Hz
0...99.99 Hz	0...99.98 Hz	0.01 Hz
0...999.9 Hz	0...999.8 Hz	0.1 Hz
0...9999 Hz	0...9998 Hz	1 Hz

**Housing specifications**

Clamping range (nom. / min. / max.)	mm²	1.5 / 0.5 / 2.5
Connection type / Mounting rail		Screw connection / panel assembly
Housing type / Weight		Anodized aluminium housing / 500 g
Length x width x height		137 x 96.6 x 48.8 mm

Monitoring of the analogue/alarm outputs is possible with the basic software, without any additional adjustments. Adjustments can be optionally carried out via additional pluggable PCB. Setup and calibration made with front-panel keypad
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**Ordering data**

Type	
without analogue/alarm output	
with analogue/alarm output	
Special adjustment	

Type	Qty.	Order No.
PMX400HZX	1	7940015595
PMX400HZX 4RO/AO	1	7940011979
PMX400 Variabel	1	8945020000

**Note** Additional input/output range versions available on request

**Accessories**

<b>Note</b>	
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