

MP48E series

HIGH PERFORMANCE PRESSURE SWITCH



User manual



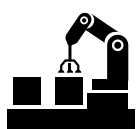
Selection table



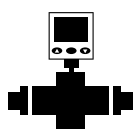
Features

- Main/Sub-Display, 4 1/2 digits 7 segment LCD display.
- Multifunction sub-display.
- Switchable voltage output (1~5V or 0~10V).
- User-defined analog output range.
- Digital filter function.
- Analog output can be inverted.

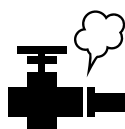
Applicable industries



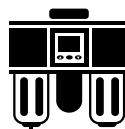
Suction



Pressure detection



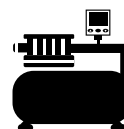
Leakage



F.R.L



Tank

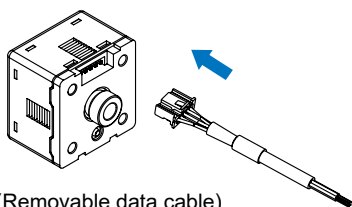


Compressor

Features highlight

Quick installation

- Save installation time.
- Easy removal.



(Removable data cable)

Multifunctional sub-display

- The display can be switched between pressure unit or set points.

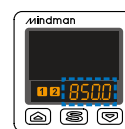
Pressure unit

Pressure set point



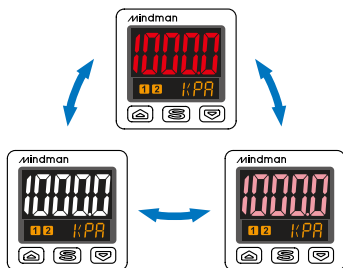
Power-save mode

- 4 level brightness adjustment leads to power savings of up to 30%.
In mode 4, the sub-display shows the current pressure value.



4-color display

- Choose the desired backlight to highlight different setting states.



High-resolution

- Flexible switch the voltage output range.

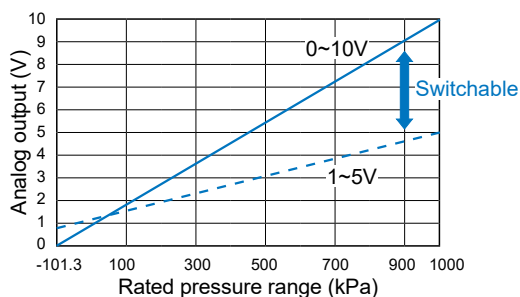
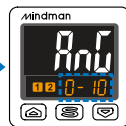
Analog output

1~5V

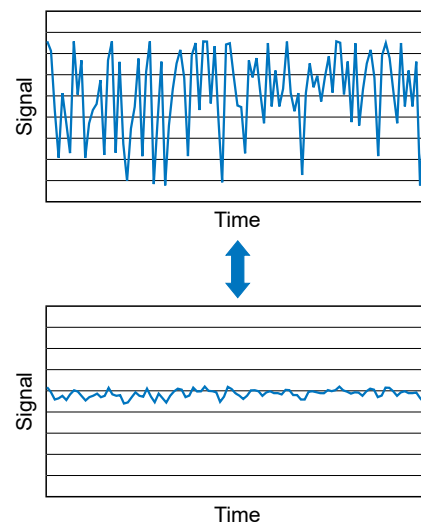


Analog output

0~10V



Digital filter function



MP48E Specification

HIGH PERFORMANCE PRESSURE SWITCH



Specification

Model		MP48E	
Rated pressure range		-101.3 ~ 1000.0 kPa	
Setting pressure range		-101.3 ~ 1000.0 kPa	
Allowable pressure		1500 kPa	
Fluid		Filtered air, Non-corrosive / Non-flammable gas	
Set pressure resolution	KPa	0.1	
	MPa / kgf/cm ² / bar	0.001	
	psi	0.01	
	inHg	0.1	
	mmHg	1	
	mmAq (mmH ₂ O)	1 (*1)	
Power supply voltage		15~24V DC, Ripple (P-P) 10% or less	
Current consumption		≤ 40mA (With no load)	
Switch output		2 NPN open collector outputs Max. load current: 150mA Max. supply voltage: 30V DC Residual voltage: ≤ 1V	2 PNP open collector outputs Max. load current: 150mA Max. supply voltage: 24V DC Residual voltage: ≤ 1V
Repeatability (*2)		±0.2% S.R. (Ambient temperature: 25±3°C)	
Hysteresis		One point set/ Hysteresis/ Window comparator mode: Adjustable (Hysteresis value is adjustable within 1~8 digits for one point set mode and window comparator mode)	
Response time of digital filter (*3)		OFF, 25ms 100ms, 250ms, 500ms, 1000ms, 1500ms, 3000ms selectable	
Overcurrent protection		Yes	
Display		4 1/2 digital, 7 segment LCD display (Red / White / Pink / Orange) (Sampling rate : 0.2, 0.5, 1 sec. / time)	
Indicator accuracy (*2)		C: -100.0~100.0 kPa ± 1% S.R. V: -101.3~0.0 kPa ± 1% S.R.	P: -100.0~1000.0 kPa ± 0.5% S.R. A: -101.3~1000.0 kPa ± 0.5% S.R.
		(Ambient temperature: 25 ± 3°C)	
Switch on indicator		Orange indicator 1: OUT1 & Orange indicator 2: OUT2	
Analog output (Voltage output)		Output voltage: 0~10V ± 0.5% F.S. Linearity: ±0.5% F.S.	Output impedance: 2 kΩ
Analog output (Current output)		Output current: 4~20mA ± 0.5% F.S. Linearity: ±0.5% F.S.	Max. load impedance 250 Ω at power supply of 15V, 600Ω at power supply of 24V Min. load impedance: 5 Ω
Environment	Enclosure classification	IP40	
	Ambient temp. range	Operation: 0 ~ 50°C, Storage : -10 ~ 60°C (No condensation or freezing)	
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (No condensation)	
	Withstand voltage	1000V AC in 1-min (between case and lead wire)	
	Insulation resistance	≥ 50MΩ (at 500V DC, between case and lead wire)	
	Vibration	Total amplitude 1.5mm or 10G, 10Hz-150Hz-10Hz scan for 1 minute, 2 hours each direction of X, Y and Z	
	Shock	100m/s ² (10G), 3 times each in direction of X, Y and Z	
Temperature characteristic		±0.5% F.S. of detected pressure 25°C at temp. Range of 0~50°C	
Communication interface (*4)		RS485 Modbus RTU	
Port size		F1: R1/8", M5×0.8; F3: G1/8"(BSPP), M5×0.8; M5: M5×0.8 female thread	
Lead wire		ø4 PVC - 26 AWG (0.15 mm ²) - 5 cores	
Weight		Approx. 67g (with 2 meter lead wire)	

*1. If set pressure unit is mmAq, the value requires to ten multiply display value.

*2. S.R.: Set range

*3. When digital filter functions is OFF, the response time is 4~6 ms.

*4. This function only available for output specification **02R** and **04R**.

MP48E Order example

HIGH PERFORMANCE PRESSURE SWITCH



Output circuit wiring graph

Model	MP48E-010-□	MP48E-011-□	MP48E-02R-□
Connect diagram			
Output method	2 NPN + Analog output (1~10V)	2 NPN + Analog output (4~20 mA)	NPN output + RS485
Model	MP48E-030-□	MP48E-031-□	MP48E-04R-□
Connect diagram			
Output method	2 PNP + Analog output (1~10V)	2 PNP + Analog output (4~20 mA)	PNP output + RS485 (*)

▲ * For RS485 Modbus wiring, please connect RS485 (B+) or (A-) before powering to avoid short circuits resulting in product damage.

Order example

MP48E — 010 — F1

MODEL

PRESSURE PORT

F1: R1/8, M5×0.8
F3: G1/8(BSPP), M5×0.8

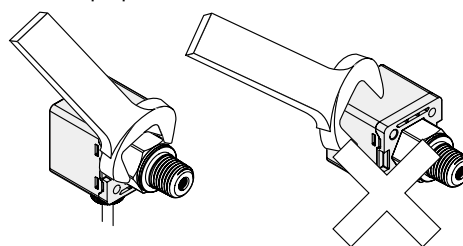
* For other specifications, please contact us.

OUTPUT METHOD

010: 2 NPN output + Analog output (0~10V)
011: 2 NPN output + Analog output (4~20mA)
030: 2 PNP output + Analog output (0~10V)
031: 2 PNP output + Analog output (4~20mA)
02R: 1 NPN output + RS485
04R: 1 PNP output + RS485

Installation precautions

- When mounting, always use the wrench on the metallic area near the pressure port. Never apply a wrench to the plastic body, it will damage the sensor.
- Over tightening may cause damages to the port thread, mounting bracket and pressure sensor. Under tightening may result loosen or leakage.
- Apply pressure and power after installation and make necessary adjustments and inspect any possible signs of leakage to ensure proper installation.



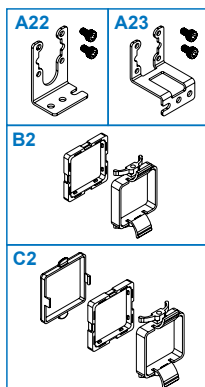
Mounting accessories (Option)

MP — A22

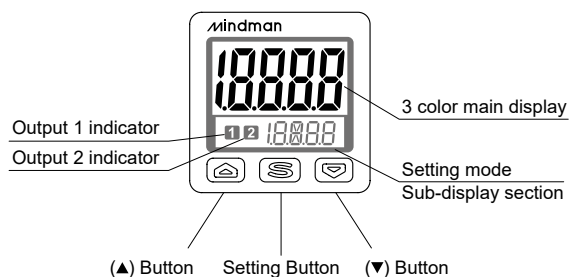
MODEL

OPTION PARTS

A22: Mounting bracket
A23: Mounting bracket
B2: Panel adapter
C2: Panel adapter + Front protective lid



Panel instructions

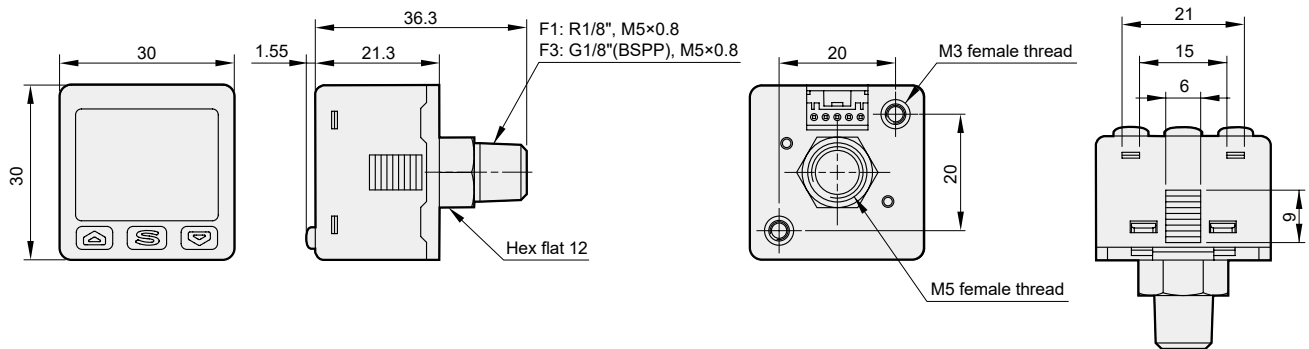


MP48E Dimensions

HIGH PERFORMANCE PRESSURE SWITCH

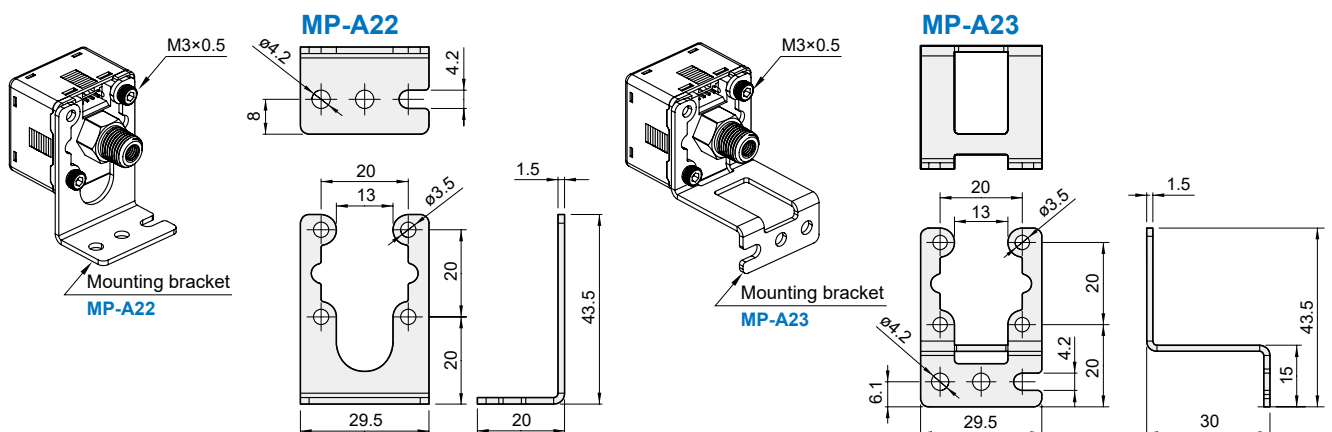


Dimensions



Mounting accessories

Mounting bracket



Panel type

