

# MP50 / 75 series

## HIGH PRECISION DIGITAL PRESSURE SWITCH



### Features

- 2 color digital LCD display.
- Programmable pressure unit: kPa, MPa, kgf/cm<sup>2</sup>, bar, psi, inHg.
- Sensor parts & fitting parts: Stainless steel 316L.
- Corrosive fluid or gas available.
- IP65 enclosure.

#### MP50

- Copy function.

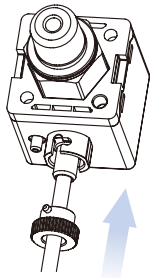
#### MP75

- IOT pneumatic & hydraulic pressure sensor ( multi-medium )
- Remote control / Real-time monitoring
- RS485 Modbus RTU / ASCII

### Features highlight

#### Quick installation

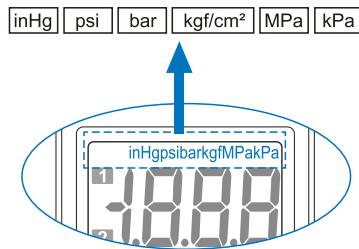
- Save installation time.
- Easy removal.



(Removable data cable)

#### Easy unit identification

- Unit conversion easy to read.



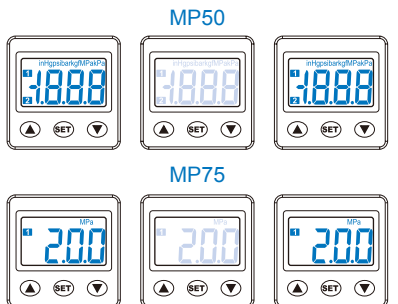
#### IP65 enclosure

- Protected against water and dustsplash from all directions.



#### 2-Color Main display

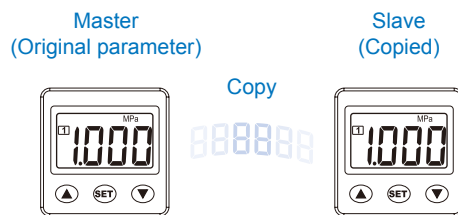
- User selectable color mode, for different conditions use.



	SoL	SoR	UrN	rEd
ON	Green	Red	Green	Red
OFF	Red	Green	Green	Red

#### Copy setting (MP50 only)

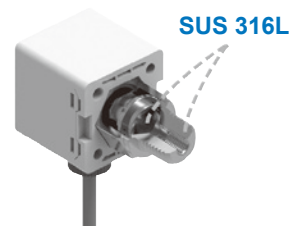
- Reduce setting time.
- Avoid setting errors.



Can copy the setting value from master to slave sensor.

#### Applicable for Corrosive Fluid or Gas

- Sensor parts & Fitting parts are SUS316L, applicable for corrosive fluid or gas equipment.



# MP50 / 75 Specification



## HIGH PRECISION DIGITAL PRESSURE SWITCH

### MP50 Specification

Model	MP50P (Positive)	MP50H (High)	MP50V (Vacuum)	MP50C (Compound)
Rated pressure range	0 ~ 1.0 MPa	0.0 ~ 2.0 MPa	- 101.3 ~ 0.0 kPa	- 100.0 ~ 100.0 kPa
Setting pressure range	- 0.1 ~ 1.0 MPa	- 0.1 ~ 2.0 MPa	- 101.3 ~ 10.0 kPa	- 101.0 ~ 101.0 kPa
Allowable pressure	3 MPa		300 kPa	
Set pressure resolution	KPa	—	0.1	
	MPa	0.001	0.001(~1.999) / 0.01(2.00~)	
	kgf/cm <sup>2</sup> / bar	0.01	0.01(~19.99) / 0.1(20.0~)	
	psi	0.1	0.1(~199.9) / 1(200~)	
	inHg	—	—	
Switch output	NPN: open collector 2 outputs Max. load current : 125mA Max. supply voltage: 30V DC Residual voltage : ≤1.5V		PNP: open collector 2 outputs Max. load current : 125mA Max. supply voltage: 24V DC Residual voltage : ≤1.5V	
Switch ON indicator	Orange indicator 1: OUT1 & Orange indicator 2: OUT2			
Hysteresis mode	One point set / Hysteresis / Window comparator	Adjustable *1		
Analog output (voltage output) *2	Output Voltage: 1 to 5V ±2.5%F.S. (within rated pressure range) Linearity: ±1% F.S. Output impedance: about 1kΩ			
Analog output (current output) *3	Output Current: 4 to 20mA ≤±2.5%F.S. (within rated pressure range); Linearity: ±1% F.S. Max. load impedance: 250Ω at power supply of 12V, 600Ω at power supply of 24V Min. load impedance: 50Ω			

\*1. Hysteresis value is adjustable within 1~8 digits for one point set and window comparator mode.

\*2. If analog voltage output is selected, the analog current output cannot be selected at the same time.

\*3. If analog current output is selected, the analog voltage output cannot be selected at the same time.

### MP75 Specification

Model	MP75P (Positive)	MP75H02 (High)	MP75C (Compound)
Rated pressure range	0 ~ 1.0 MPa	0.0 ~ 2.0 MPa	- 100.0 ~ 100.0 kPa
Setting pressure range	- 0.1 ~ 1.0 MPa	- 0.1 ~ 2.0 MPa	- 101.0 ~ 101.0 kPa
Allowable pressure	3 MPa		300 kPa
Set pressure resolution	KPa	—	0.1
	MPa	0.001	0.001(~1.999) / 0.01(2.00~)
	kgf/cm <sup>2</sup> / bar	0.01	0.01(~19.99) / 0.1(20.0~)
	psi	0.1	0.1(~199.9) / 1(200~)
	InHg	—	—
Switch output	1 NPN or 1 PNP open collector Max. Load Current : 125 mA Max. Supply Voltage : 1 NPN 30 V DC, 1 PNP 24 V DC Residual Voltage : ≤ 1.5 V		
Switch ON indicator	Orange indicator 1: OUT		
Communication interface	RS485		

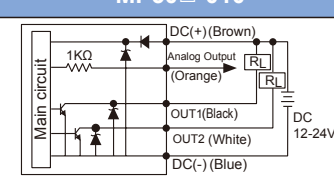
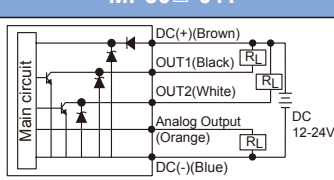
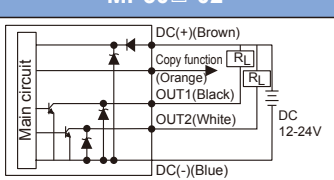
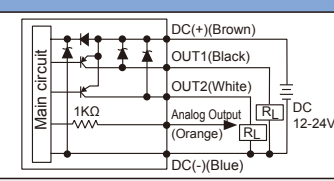
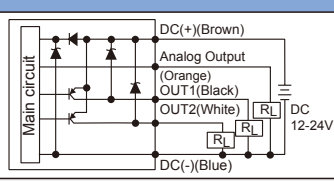
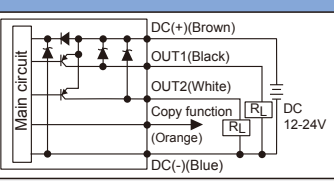
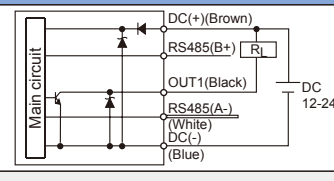
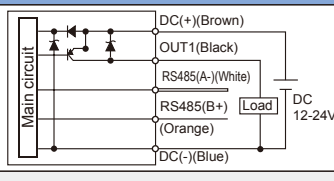
### MP50 / 75 Specification

Model	MP50 / 75	
Fluid	Fluids do not corrode stainless steel 316L	
Sealed liquid	Silicon oil	
Power supply voltage	12 ~ 24V DC $\pm 10\%$ , Ripple (P-P) 10% or less	
Current consumption	$\leq 40\text{mA}$ (With no load)	
Repeatability	$\pm 0.3\%$ F.S. $\pm 1$ digit	
Response time	$\leq 2.5\text{ms}$ (chattering-proof function: 25ms, 100ms, 250ms, 500ms, 1000ms and 1500ms selectable)	
Output short circuit protection	Yes	
Display	3 1/2 digital, 7 segment LCD display ( Red / Green / Orange ) ( Sampling rate : 5 times / sec. )	
Indicator accuracy	$\pm 2\%$ F.S. $\pm 1$ digit (Ambient temperature: $25 \pm 3^\circ\text{C}$ )	
Environment	Enclosure classification	IP65 *1
	Ambient temp. range	Operation: $0 \sim 50^\circ\text{C}$ , storage : $-10 \sim 60^\circ\text{C}$ ( No condensation or freezing)
	Ambient humidity range	35 ~ 85% RH (No condensation)
	Withstand voltage	250V AC in 1-min. (between case and lead wire)
Environment	Insulation resistance	$\geq 50\text{M}\Omega$ (at 500V DC, between case and lead wire)
	Vibration	Total amplitude 1.5mm or 10G, 10Hz~55Hz~10Hz scan for 1 minute, 2 hours each direction of X, Y and Z
	Shock	$100\text{m/s}^2$ (10G), 3 times each in direction of X, Y and Z
Temperature characteristic	$\pm 3\%$ F.S. of detected pressure ( $25^\circ\text{C}$ ) at temp. range of $0 \sim 50^\circ\text{C}$	
Port size *2	F1: R1/4", M5; F2: NPT1/4", #10-32 UNF; F3: G1/4"(BSPP), M5	
Lead wire	$\varnothing 4$ Oil-resistance cable ( PVC ) - 26 AWG ( 0.15 $\text{mm}^2$ ) - 5 cores	
Weight ( with 2 meter lead wire )	Approx. 110 g (Rear ported), Approx. 150 g (Bottom ported)	

\*1. Dustproof protector must be installed to maintain IP65.

\*2. G port O-ring material is NBR. If any special request, please contact us.

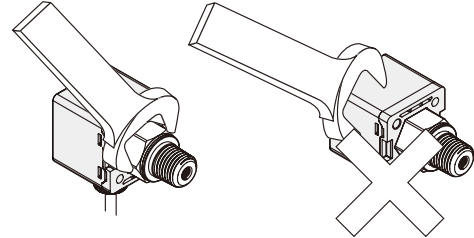
### Output circuit wiring graph

Model	MP50□-010	MP50□-011	MP50□-02
Connect diagram			
Output method	2 NPN+Analog(Voltage) output (1~5V)	2 NPN+Analog(Current) output (4~20mA)	2 NPN+Copy function
Model	MP50□-030	MP50□-031	MP50□-04
Connect diagram			
Output method	2 PNP+Analog(Voltage) output (1~5V)	2 PNP+Analog(Current) output (4~20mA)	2 PNP+Copy function
Model	MP75□-02-□	MP75□-04-□	
Connect diagram			
Output method	NPN output + RS485	PNP output + RS485	

\* Procedure to wiring RS485 products:  
To prevent product damage due to short circuit, MUST do RS485 line connection before power line connection.

### 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.



### Order example

MP75C — 02 — F1 □

1 2 3 4 5

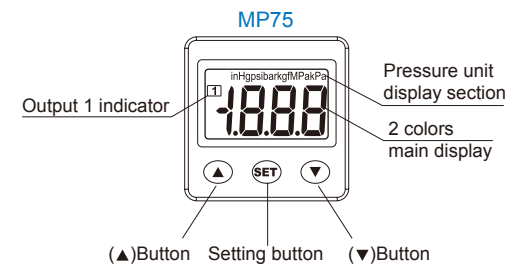
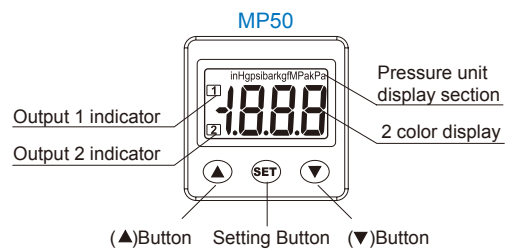
1 2 3

MODEL	PRESSURE RANGE	OUTPUT METHOD
MP50	P: Positive (− 0.1~1.0 MPa)	010: 2 NPN output + 1 Analog output (1~5V)
	H: High (− 0.1~2.0 MPa)	011: 2 NPN output + 1 Analog output (4~20mA)
	V: Vacuum (− 101.3~10.0 kPa)	02 : 2 NPN output + Copy function
	C: Compound (− 101.0~101.0 kPa)	030: 2 PNP output + 1 Analog output (1~5V)
MP75	P: Positive (− 0.1~1.0 MPa)	031: 2 PNP output + 1 Analog output (4~20mA)
	H02: High (− 0.1~2.0 MPa)	04 : 2 PNP output + Copy function
	C: Compound (− 101.0~101.0 kPa)	02: NPN output + RS485
		04: PNP output + RS485

4 5

PRESSURE PORT	PIPING DIRECTION
F1: R1/4, M5×0.8	Blank: Rear ported L: Bottom ported
F2: NPT1/4", #10-32UNF	
F3: G1/4"(BSPP), M5×0.8	

### Panel instructions

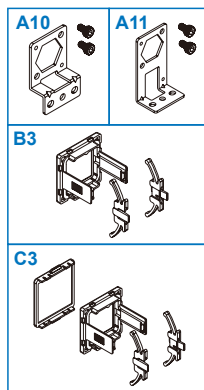


### Mounting accessories (Option)

MP — A10

- MODEL OPTION PARTS
- A10: Mounting bracket
  - A11: Mounting bracket
  - B3: Panel adapter
  - C3: Panel adapter + Front protective lid
  - E1: Snubber (for Pressure Port F1 & F3)
  - E2: Snubber (for Pressure Port F2)

\* MP50P & MP50H & MP75P & MP75H02 suggest to select a snubber.

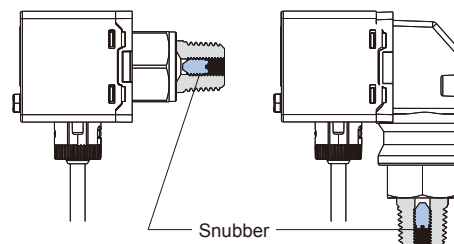


### MP-E\*

### Removable snubber installed

- Pressure port equipped with snubber can avoid damage caused by sudden pressure surge of water or oil, improve product durability.

\* When snubber is clogged with contaminants, please use a flat head screwdriver to remove the snubber, clean and reinstall.

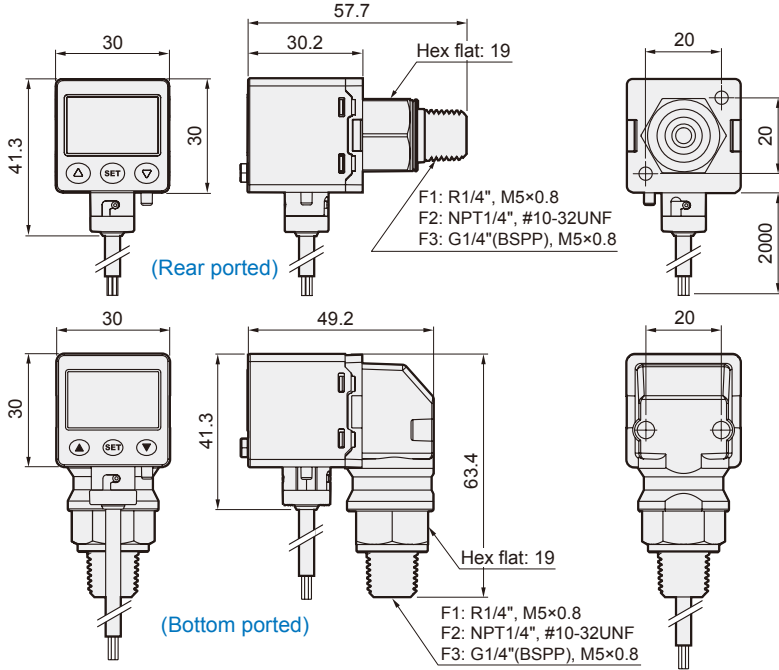


# MP50 / 75 Dimensions

## HIGH PRECISION DIGITAL PRESSURE SWITCH

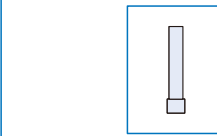
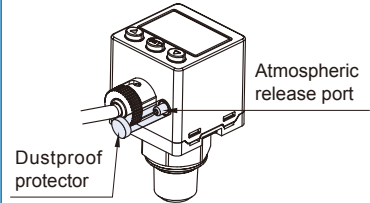


### Dimensions



### Accessory

#### IP65 protector

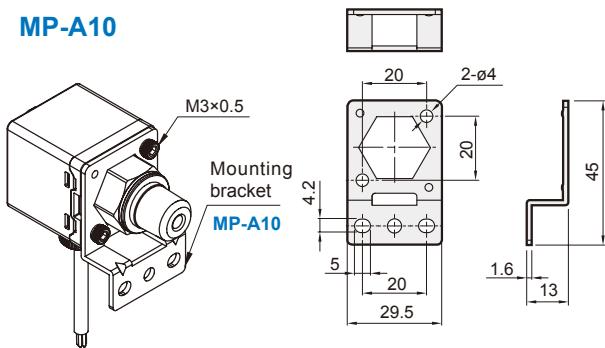


#### Caution

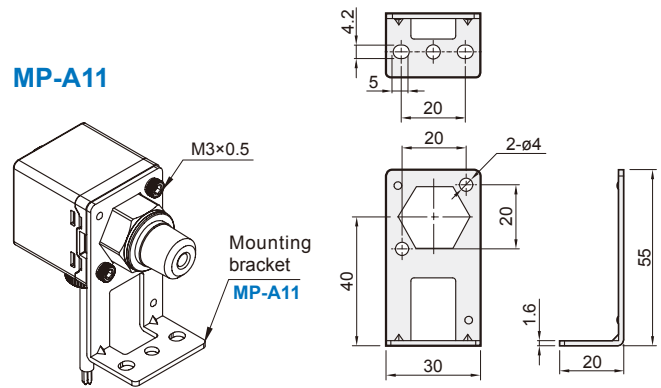
This device must be installed to maintain IP 65 (Dust and splash proof) enclosure rating.

### Mounting bracket

#### MP-A10

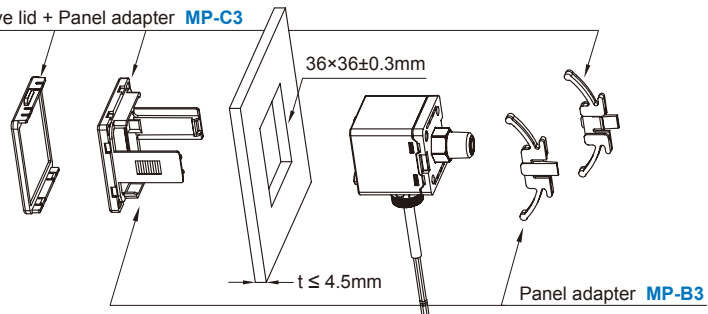


#### MP-A11

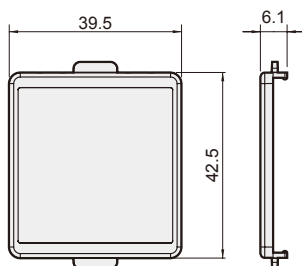


### Panel type

#### Front protective lid + Panel adapter MP-C3



#### Front protective lid



#### Panel adapter

