

Manostar Electronic Micro Differential Pressure Measurement System

NEW

Manosys receiver EMP5

RoHS compliant

When EMP5 is used combination with Manosys transmitter, it can measure pressure, air volume and velocity.

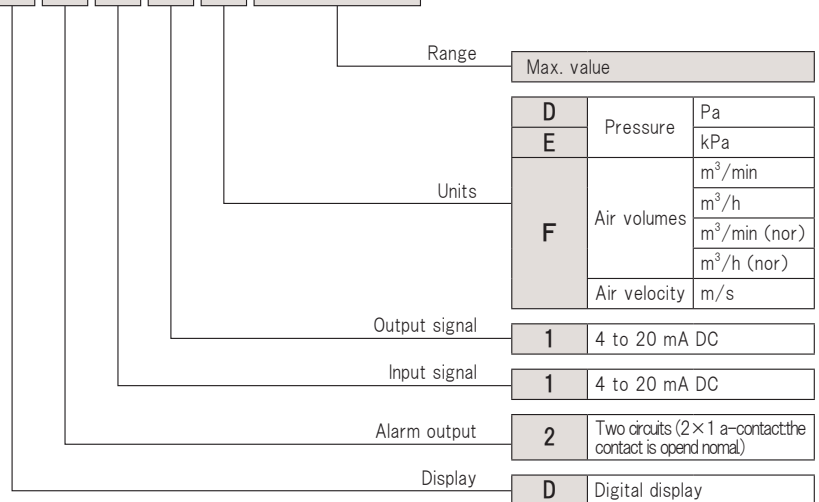
- Manosys receiver is equipped with built-in DC power supply for pressure transmitter of two wires method.
- Two alarm outputs are configurable each action by suitable use.
- Extraction of square root function (only the air volume and velocity measurement receiver)
- IP66 construction in front panel part



EMP5

Product code

EMP5 D 2 1 1 D 300 (example)



<Example of main use field>

Air conditioning control system of factories
 Measuring negative pressure in bag filter and differential pressure in air conditioning
 Monitoring of pressure loss in filter
 Production lines of precision machine
 Air conditioning control system of buildings

<Example of use>

Detector of a pressure loss in an air filter
 Measuring the inside pressure of clean rooms
 Detector of a pressure loss in a bag filter
 Measuring of dynamic pressure in a ventilator and an exhauster

*(refer to p.93)

- ◆ If you order or ask, specify the product code and the pressure range code.
- ◆ In case of measuring air volume and velocity, specification of pressure detection side is needed.
- ◆ We combine the digital indicator JIR-301-M, BK, P24 T1751 produced by SHINKO TECHNOS CO.,LTD. with pressure transmitter produced by our company and adjust them to measure pressure, air volume and velocity.

Specification

Types	EMP5	
Display	Digital Four digits PV (process variable)red Character size 16 × 7.2 mm (height × width) ± 0.2 % FS ±1 digit SV (setting value) green Character size 10 × 4.8 mm (height × width)	
Sampling cycle	0.25 seconds	
Input signal	4 to 20 mA DC (input resistance 50 Ω The accessory is installed outside) However, max. value is different by the range of the air volume and velocity meters.	
Output signal	4 to 20 mA DC (load resistance 550 Ω or less) However, the output signal is extracted square root in air volume and velocity meters.	
Output signal accuracy	± 0.3 % FS	
DC power supply for pressure transmitter of two wires method	24 V DC ±10 % (load current 4 to 20 mA) Ripple voltage 200 mV Max. applied current 30 mA DC	
Alarm output	Output type Relay contact 1a×2 Electrical life one hundred thousand times. Contact capacity (resistive load) Max. 3A 250 V AC, 3A 30V DC Min. 100 mA 5V DC(reference value)	
Power supply voltage	100 to 240 V AC 50 / 60 Hz (tolerance variation range: 85 to 264 V AC)	
Electric power consumption	Approximately 8 VA	
Insulation resistance	10 MΩ or more (500 V DC) Between each terminal (power supply terminal, grounding terminal, input terminal, output terminal)	
Withstand voltage	1.5 kV AC one minute Between each terminal (power supply terminal, grounding terminal, input terminal, output terminal) It is except between input and output terminal	
Medium and ambient temperature	0 to 50 °C (no freezing)	
Ambient humidity	35 to 85 % RH (no dewing)	
Material of the outer case	Flame retardant resin (color panel: dark gray, case: black)	
Mass	Approximately 300 g	
Protection degree	IP66 (front panel part)	
Accessory	Connector installed by screw One set of input resistance 50 Ω, One piece of short-circuit wire for pressure transmitter of two wires method.	
Pressure range codes	Pressure ranges	
	Pa, kPa	
D 10	0 ~ 10 Pa	0.0 ~ 10.0
D 20	0 ~ 20 Pa	0.0 ~ 20.0
D 30	0 ~ 30 Pa	0.0 ~ 30.0
D 50	0 ~ 50 Pa	0.0 ~ 50.0
D 100	0 ~ 100 Pa	0.0 ~ 100.0
D 200	0 ~ 200 Pa	0.0 ~ 200.0
D 300	0 ~ 300 Pa	0.0 ~ 300.0
D 500	0 ~ 500 Pa	0.0 ~ 500.0
D 1000	0 ~ 1000 Pa	0 ~ 1000
E 2	0 ~ 2 kPa	0.000 ~ 2.000
E 3	0 ~ 3 kPa	0.000 ~ 3.000
E 5	0 ~ 5 kPa	0.000 ~ 5.000
E 10	0 ~ 10 kPa	0.00 ~ 10.00
E 20	0 ~ 20 kPa	0.00 ~ 20.00
E 30	0 ~ 30 kPa	0.00 ~ 30.00
E 50	0 ~ 50 kPa	0.00 ~ 50.00
D +- 10	- 10 ~ + 10 Pa	- 10.0 ~ 0.0 ~ 10.0
D +- 20	- 20 ~ + 20 Pa	- 20.0 ~ 0.0 ~ 20.0
D +- 30	- 30 ~ + 30 Pa	- 30.0 ~ 0.0 ~ 30.0
D +- 50	- 50 ~ + 50 Pa	- 50.0 ~ 0.0 ~ 50.0
D +- 100	- 100 ~ + 100 Pa	- 100.0 ~ 0.0 ~ 100.0
D +- 200	- 200 ~ + 200 Pa	- 200 ~ 0 ~ 200
D +- 300	- 300 ~ + 300 Pa	- 300 ~ 0 ~ 300
D +- 500	- 500 ~ + 500 Pa	- 500 ~ 0 ~ 500
D +- 1000	- 1000 ~ + 1000 Pa	- 1000 ~ 0 ~ 1000
E +- 2	- 2 ~ + 2 kPa	- 2.00 ~ 0.00 ~ 2.00
E +- 3	- 3 ~ + 3 kPa	- 3.00 ~ 0.00 ~ 3.00
E +- 5	- 5 ~ + 5 kPa	- 5.00 ~ 0.00 ~ 5.00
Air volume and velocity range code	Air volume and velocity range (*1)	
—	Zero to a <input type="text" value="Numerical value"/> <input type="text" value="Amplification"/> <input type="text" value="Unit"/>	

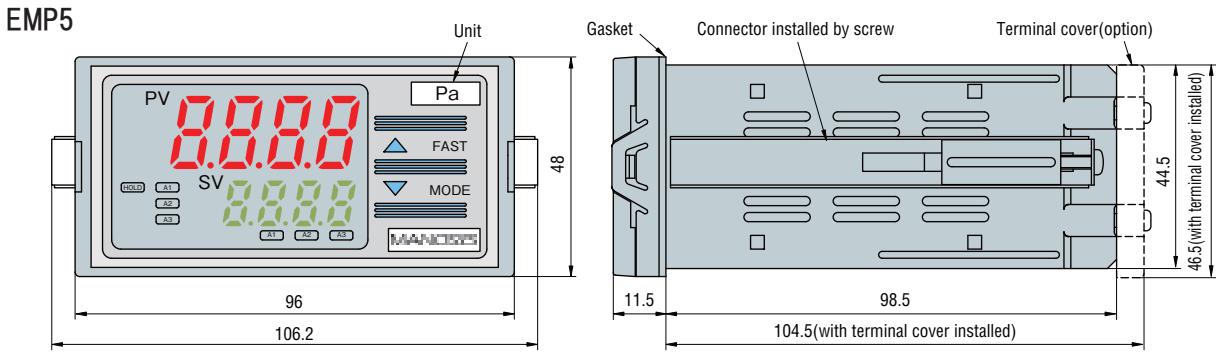
(*1) : Arbitrary value (rounding off), : ×10, ×100, ×1000, ×10000, : m³ / h, m³ / min, m³ / h (nor), m³ / min (nor), m / s
Please tell us the data for calculating air volume or velocity to make the air volume or velocity meter.

- WO81
- WO70
- FR51A
- MS30
- MS61A
- MS65
- EB3C
- EMD8
- EMD7
- EMT6
- EMT1
- EMTGP1
- EMT1H
- EMP5
- EMA3
- EMRT1
- HWS15
- Combination of Manosys
- Accessories
- Application Cautions for use Maintenance

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Manosys receiver EMP5

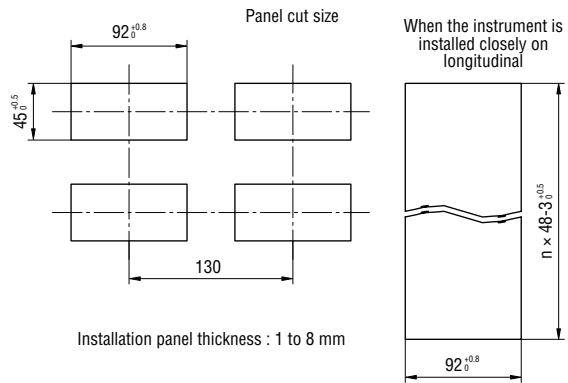
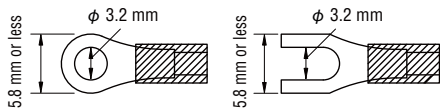
Outline drawing



Crimping terminal of lead wire

As shown below, use the crimping terminal with the insulation sleeve that conforms to M3 screw.

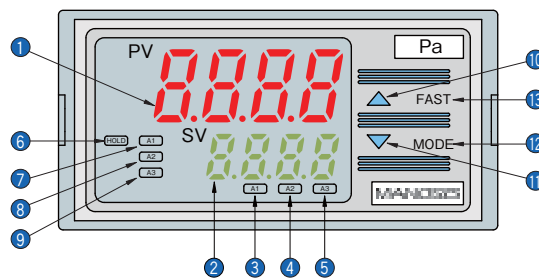
Crimping terminal	Maker	Model name
Y form type	Nichifu Terminal Industries CO.,LTD	1.25Y-3
	Japan Solderless Terminal MFG CO.,LTD	VD1.25-B3A
Round type	Nichifu Terminal Industries CO.,LTD	1.25-3
	Japan Solderless Terminal MFG CO.,LTD	V1.25-3



Caution
Do not apply excessive torque more than necessary, otherwise it will damage the instrument body.
Tightening torque of the terminal screw: 0.6 to 1.0 N·m.
Tightening torque of the installation screw: Approximately 0.12 N·m.

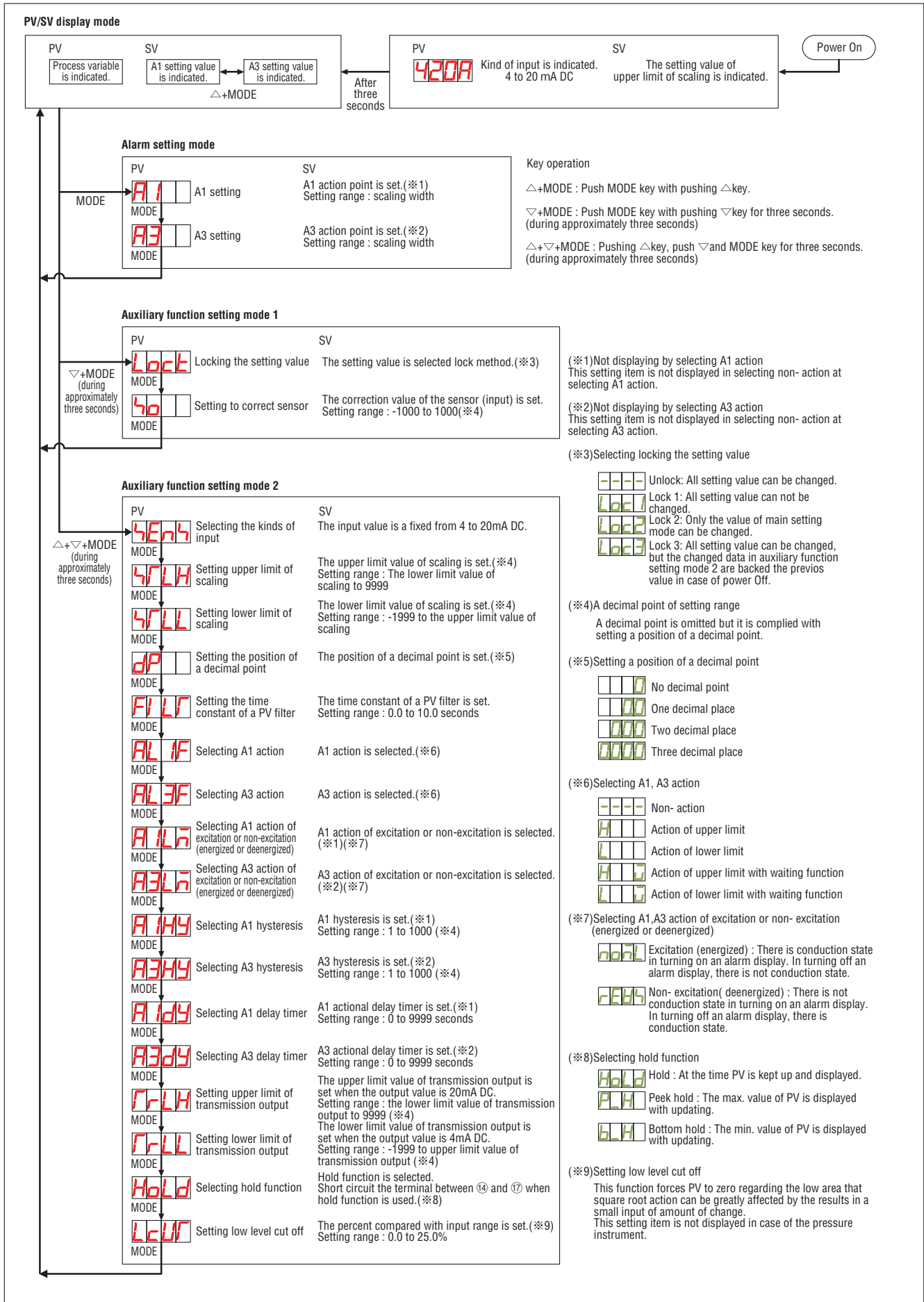
Specification IP66 of dust and drip proof is not satisfied in installing closely on longitudinal.

Operation panel



- ① PV display :input value is indicated in red.
- ② SV display :A1 ,A2 and A3 setting value is indicated in green.
- ③ A1 display lamp :in turning on A1 output , the red LED is put on.
- ④ A2 display lamp :in turning on A2 output , the red LED is put on.(EMP5 do not use it)
- ⑤ A3 display lamp :in turning on A3 output , the red LED is put on.
- ⑥ HOLD display lamp:in turning on PV hold output(hold,peak hold and bottom hold output), the yellow LED is put on.
- ⑦ A1 setting display lamp :in setting A1, the green LED is put on.
- ⑧ A2 setting display lamp :in setting A2, the green LED is put on(EMP5 do not use it).
- ⑨ A3 setting display lamp :in setting A3,the green LED is put on.
- ⑩ Up key:Setting value is increased.
- ⑪ Down key:Setting value is decreased.
- ⑫ Mode key:Setting mode is switched and setting value is registered. (Setting value and selecting value are registered by pushing the mode key.)
- ⑬ Fast key:Fast key is pushed coincidentally with up key or down key. Setting value fluctuates with rapid movement.

Operation flow diagram



- WO81
- WO70
- FR51A
- MS30
- MS61A
- MS65
- EB3C
- EMD8
- EMD7
- EMT6
- EMT1
- EMTGP1
- EMT1H
- EMP5
- EMA3
- EMRT1
- HWS15
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WO81

Relationship diagram between input and output

WO70

FR51A

MS30

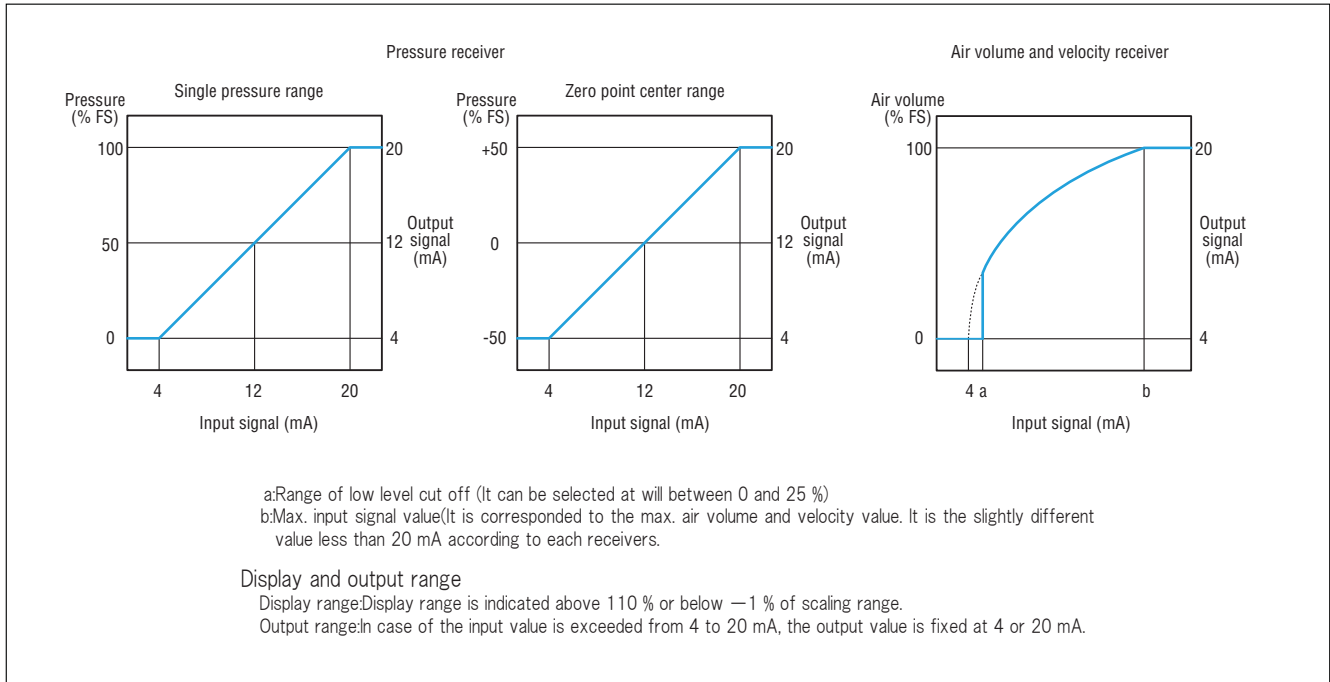
MS61A

MS65

EB3C

EMD8

EMD7



EMT6

Alarm action diagram

EMT1

EMTGP1

EMT1H

EMP5

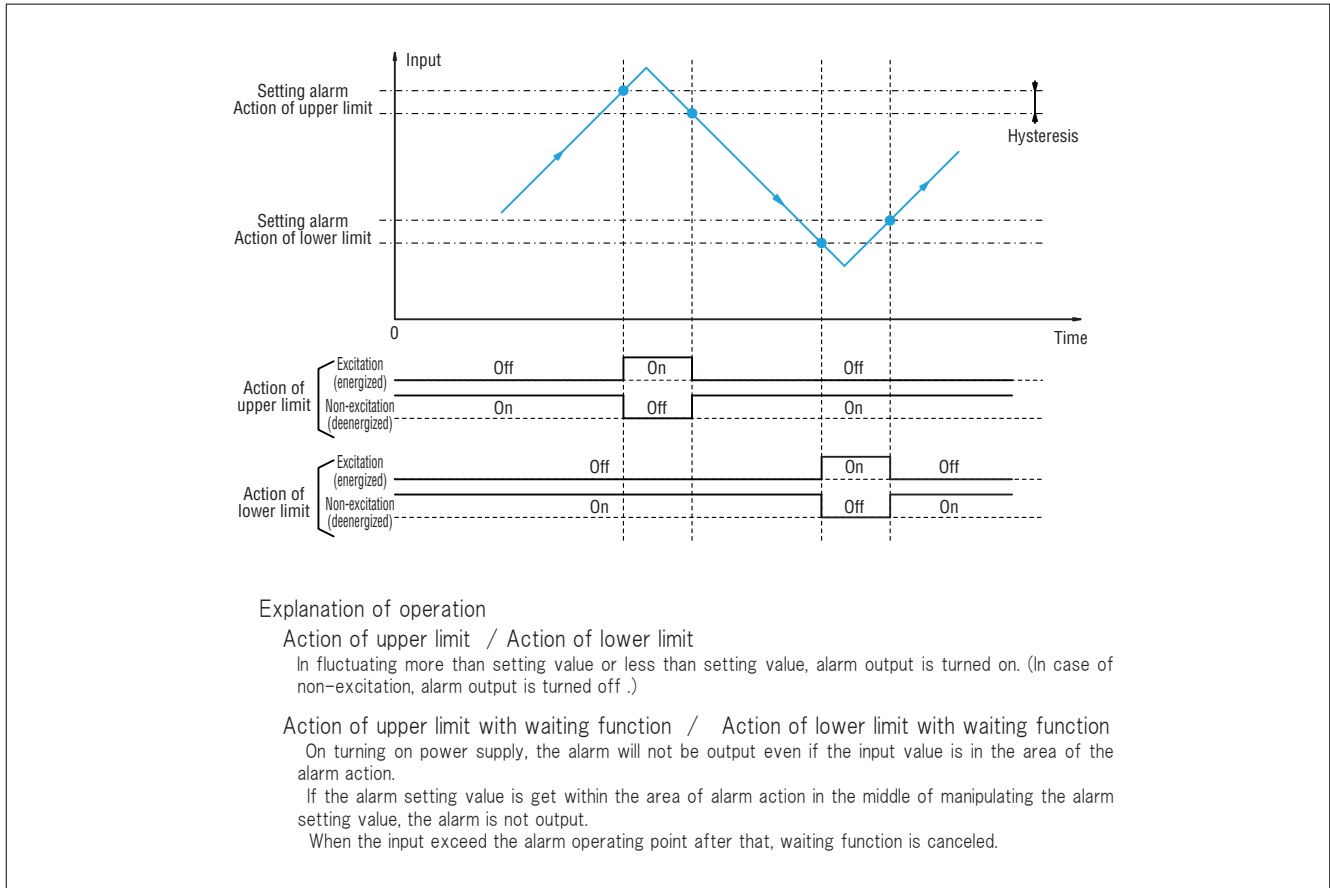
EMA3

EMRT1

HWS15

Combination of Manosys

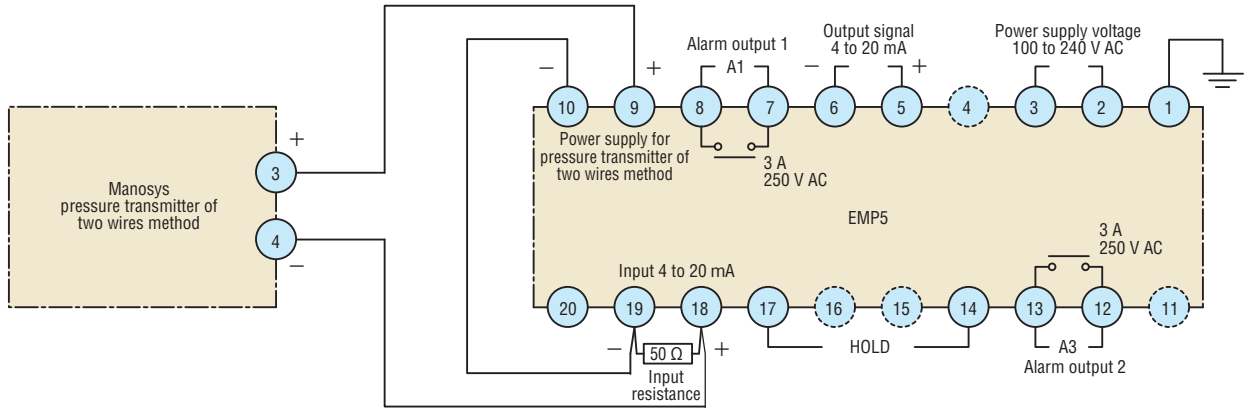
Accessories



Application Cautions for use Maintenance

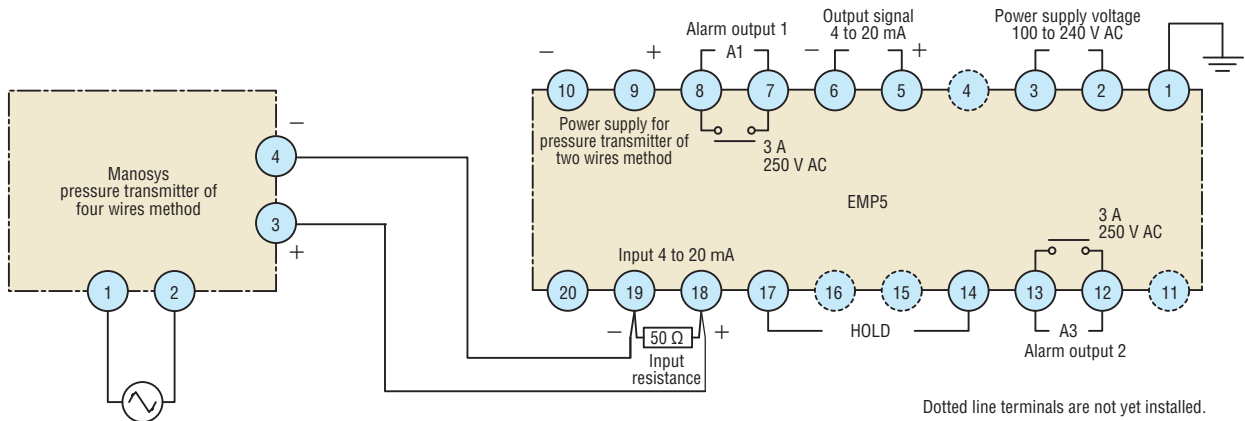
Wiring

Connecting Manosys pressure transmitter of two wires method



Short each terminal ⑩ and ⑲ by short circuit wires attached in case of combining with a pressure transmitter of two wires method.

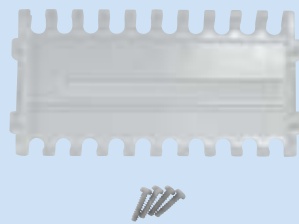
Connecting Manosys pressure transmitter of four wires method



Dotted line terminals are not yet installed.

Accessory for EMP5

Terminal cover



Product code TCA-P5A3

WO81

WO70

FR51A

MS30

MS61A

MS65

EB3C

EMD8

EMD7

EMT6

EMT1

EMTGPI

EMT1H

EMP5

EMA3

EMRT1

HWS15

Combination of Manosys

Accessories

Application Cautions for use Maintenance

Product Warranty

Warranty Period

This product warranty is valid for one year from the date of delivery to a place specified by an ordering party who has transacted directly with Yamamoto Electric Works Co., Ltd.

Coverage

If a product breaks down due to a reason for which we are responsible during the warranty period and you return the product to us, we will either repair or replace the product free of charge.

This warranty does not cover:

- (1) Usage of the product under any inappropriate conditions or environment contrary to what is described in our product catalog, specifications or manual.
Handling or usage of the product other than as described in our product catalog, specifications or manual.
- (2) Breakdown due to a reason other than a fault within our product.
- (3) Any product that has been modified or repaired by a party other than us.
- (4) Any breakdown due to a reason that was not foreseeable based on scientific and technical standards applied at the time of shipment.
- (5) Any breakdown due to a reason not attributable to us such as a natural calamity or other disaster.

These terms of warranty represent our entire liability with respect to the product, and we shall have no liability for any other loss arising in connection with a breakdown of the product.

*This product warranty is only valid within Japan.

This document is a translation from the original Japanese version, and the original Japanese version has priority over this translation.

Be sure to refer to the original Japanese for the details of this warranty.



Caution

The Japanese original document shall always take precedence over the translated versions.

You should be sure to refer to the Japanese original document.

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