

# Manostar Electronic Micro Differential Pressure Measurement System

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

## Manosys Digital Micro Differential Pressure Gage EMD7

DIN 48 × 48 Panel installation type

RoHS compliant



- Eight pressure ranges are available from “range from 0 to 100 Pa” to “range from 0 to 5 kPa”.
- Analog output can be selected either from 4 to 20 mA or 1 to 5 V
- Alarm output can be selected either “NPN transistor” or “PNP transistor”
- DC power voltage (DC 12 to 24 V)
- A variety of function, moving average filter, display of max. and min. value, delay timer, and so on.
- Alarm function mode that is suitable for use can be set.
- UL standards and EU directive conformity



EMD7D3

**<Example of main use field>**

Manufacturing machine parts of semi-conductors  
 Measuring negative pressure in bag filter and differential pressure in air conditioners  
 Monitoring of pressure loss in filters  
 Production lines of precision machine  
 Air conditioning control system of factory

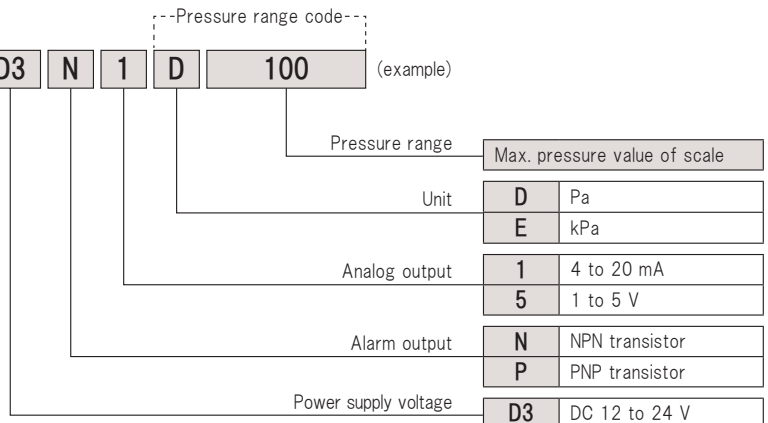
**<Example of use>**

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

\* (refer to p.93)

**Product code**

E M D 7 **D3** **N** **1** **D** **100** (example)



◆ If you order or ask, please specify the product code and the pressure range code.

## Specification

Type	EMD7D3 (panel installation type)			
<b>Pressure units</b>	Pa, kPa	<b>Alarm output</b>	<b>Analog output</b>	<b>Max. current consumption</b>
<b>Pressure measuring method</b>	Measuring differential pressure			
<b>Conversion method of electric signal</b>	Variable inductance			
<b>Gas to be measured</b>	Air or non-corrosive gas (not liquid)			
<b>Pressure receiving element</b>	Diaphragm (silicone rubber)			
<b>Standard installation position</b>	On vertical wall only			
<b>Withstanding pressure of instrument body</b>	20 kPa (refer to p.104)			
<b>Withstanding pressure of receiving element</b>	20 kPa (refer to p.104)			
<b>Medium and ambient temperature</b>	0 to 50 °C (no freezing)			
<b>Ambient humidity</b>	35 to 85 % RH (no dewing)			
<b>Applicable piping</b>	Vinyl, plastic or rubber tube of I.D. 4 (O.D. 6 or less)			
<b>Tube tap polarity</b>	The part of tube tap is marking "H" on high pressure side and "L" on low pressure side.			
<b>Display</b>	Display part Seven segment LED Red four digits Pressure value display / Alarm setting display max. three digits (Upper digit is mode display)			
<b>Zero adjustment</b>	Accuracy ± 1.5 % FS / ± 1 digit(at 20 °C) Temperature characteristics ± 0.15 % FS / °C (zero + span) Auto zero pushing type (Adjustable display and analog output at the same time)			
<b>Insulation resistance</b>	Between each terminal and case : 10 M Ω or more (500 V DC megger)			
<b>Withstand voltage</b>	Between each terminal and case : 500 V AC 50 / 60 Hz for one minute			
<b>Material of the outer case</b>	ABS resin (color ivory)			
<b>Ambient altitude</b>	Altitude to 2000 m or less			
<b>Protection degree</b>	Standard IEC60529 IP-code IP51			
<b>Pollution degree</b>	Standard IEC60664 degree 2 (When you can not install in dry and well-kept clean locations, this equipment must be enclosed in box of min. IP54.)			
<b>Power supply voltage</b>	Mass	Output type 1. EMD7D3N NPN transistor open collector Upper limit and Lowerlimit, one piece for each Max. load current 100 mA (respectively) Max. load voltage 30 V DC or less. Output saturation voltage 1 V DC or less 2. EMD7D3P PNP transistor open collector Upper limit and Lowerlimit, one piece for each Max. load current 100 mA (respectively) Max. load voltage 30 V DC or less Output saturation voltage 2 V DC or less Setting range Upper limit from 0 to 100 % FS Lowerlimit from 0 to 100 % FS Hysteresis width 1 to 5 % FS adjustable Setting method Digital set pushing type Output display Red LED × 2 Output type 1.EMD7D3□1 4 to 20 mA (at zero to FS pressure) Load resistance from 0 to 250 Ω 2.EMD7D3□4 1 to 5 V (at zero to FS pressure) Load resistance min. 10 kΩ Accuracy ± 1.5 % FS (at 20 °C) Temperature characteristics ± 0.15 % FS / °C (zero+span) 1. EMD7D3N (alarm output NPN transistor type) Total consumption : 100 mA (only internal consumption) 2. EMD7D3P (alarm output PNP transistor type) Internal consumption : 100 mA Total consumption : 300 mA (include alarm output load current 100 mA × 2) 12 to 24 V DC ±10 % (with a ripple (p-p) 10 % or less.) Approximately 130 g (include terminal cover and panel installation adaptor)		
<b>Accessory</b>	One set of the fixing adaptor			
<b>Pressure range codes</b>	<b>Pressure ranges</b>	<b>LED displays</b>	<b>Alarm outputs</b>	<b>Analog outputs</b>
D 100	0 ~ 100 Pa	0 ~ 100	NPN transistor or PNP transistor	4 to 20 mA or 1 to 5 V
D 200	0 ~ 200 Pa	0 ~ 200		
D 300	0 ~ 300 Pa	0 ~ 300		
D 500	0 ~ 500 Pa	0 ~ 500		
E 1	0 ~ 1 kPa	0.00 ~ 1.00		
E 2	0 ~ 2 kPa	0.00 ~ 2.00		
E 3	0 ~ 3 kPa	0.00 ~ 3.00		
E 5	0 ~ 5 kPa	0.00 ~ 5.00		

Conformed standards

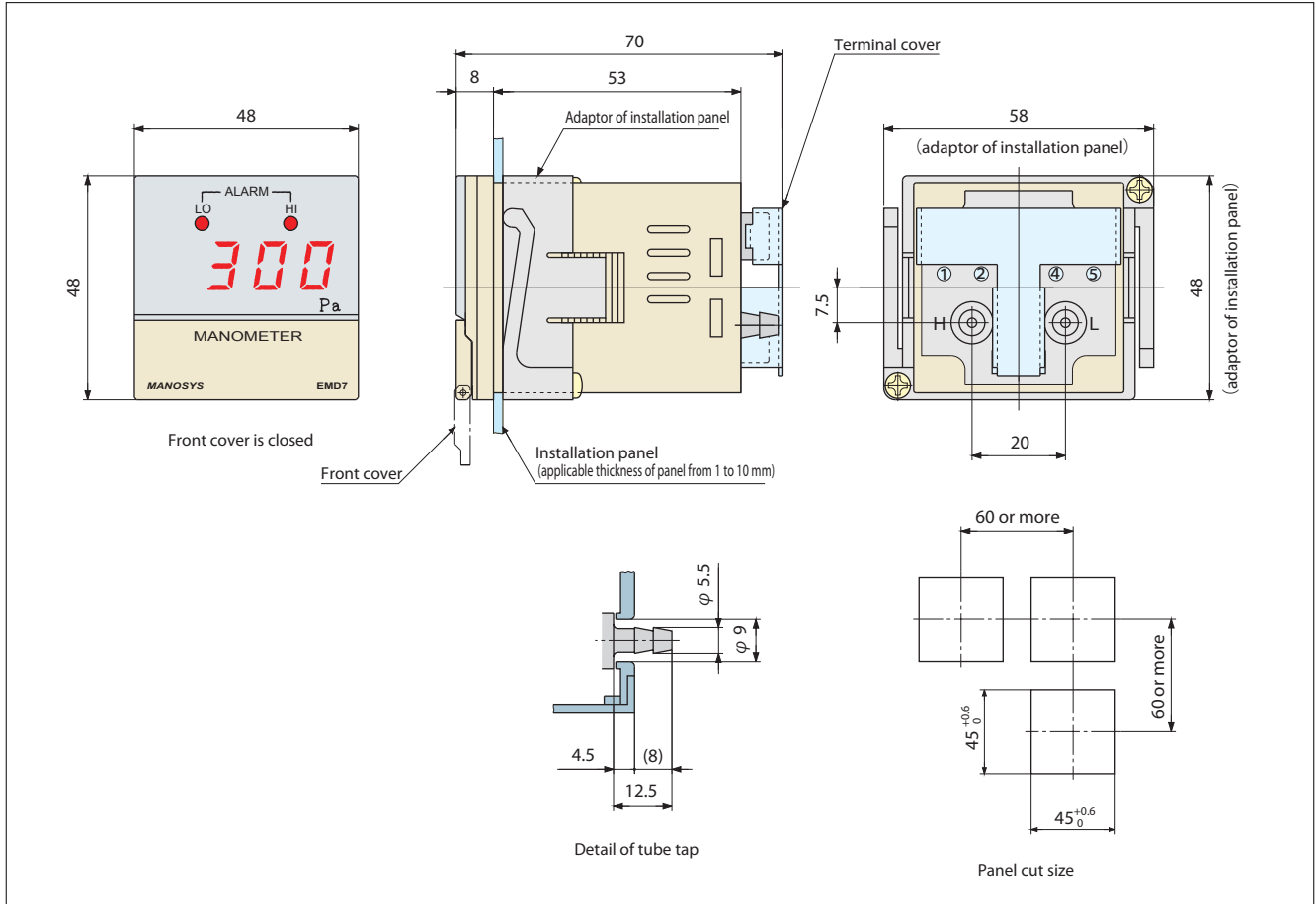
- EU directive
  - This instrument conform EMC directive of EU.
  - The applicable basic request EMC directive standards No.
    - EMI (Electromagnetic emission) standards ··· EN61000-6-3
    - EMS (Electromagnetic immunity) standards ··· EN61000-6-2
- UL standards
  - This instrument is authorized to apply the UL Re as the recognition part of UL standard. However, use this instrument following the condition of installation.
    - The applicable request standards·········· UL3111-1
    - File No. ··········· E220685
    - Condition of installation ··········· The instrument shall be powered by a NEC (National Electrical Code), class 2 power supply.

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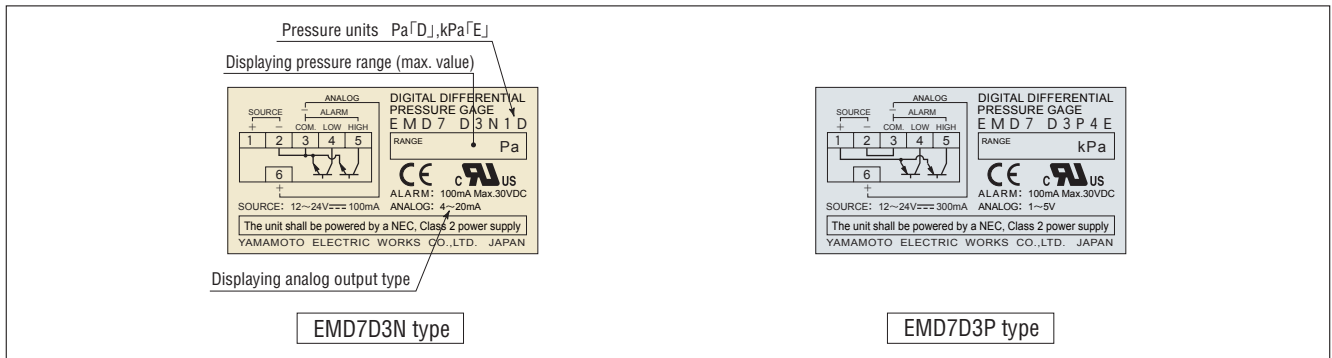
# Manostar Electronic Micro Differential Pressure Measurement System

## Manosys Digital Micro differential Pressure Gage EMD7

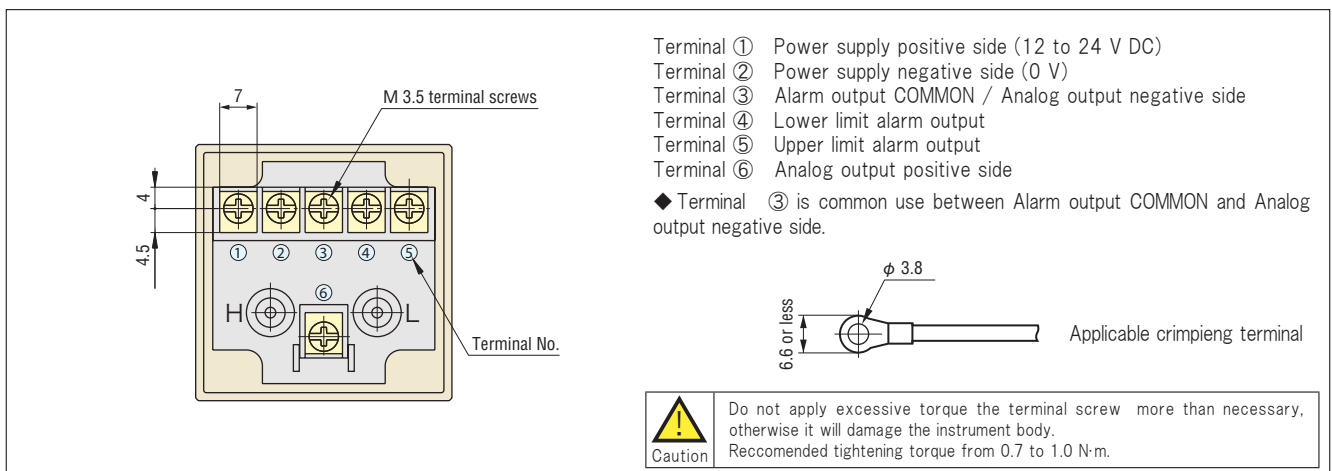
### Outline drawing



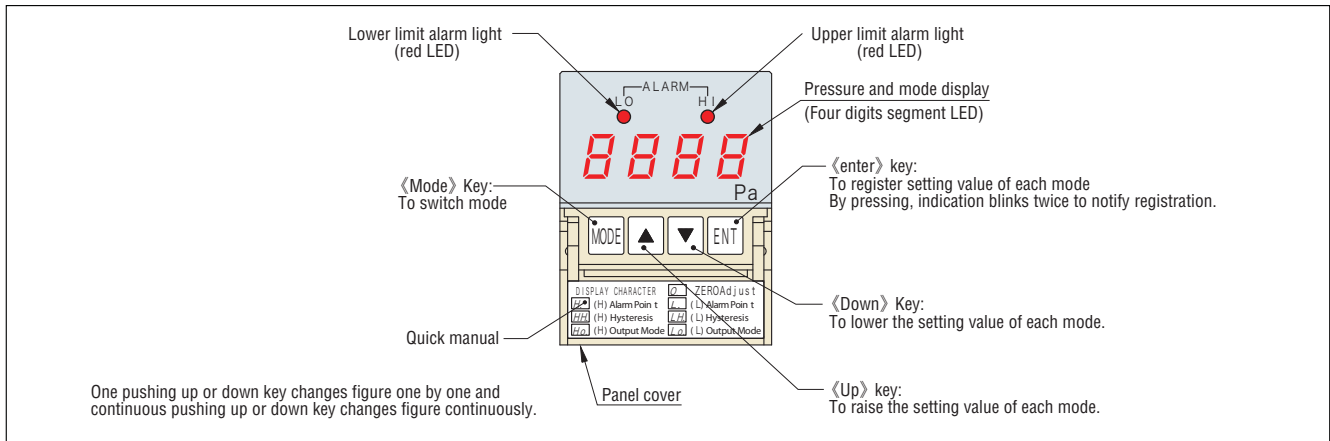
### Name plate



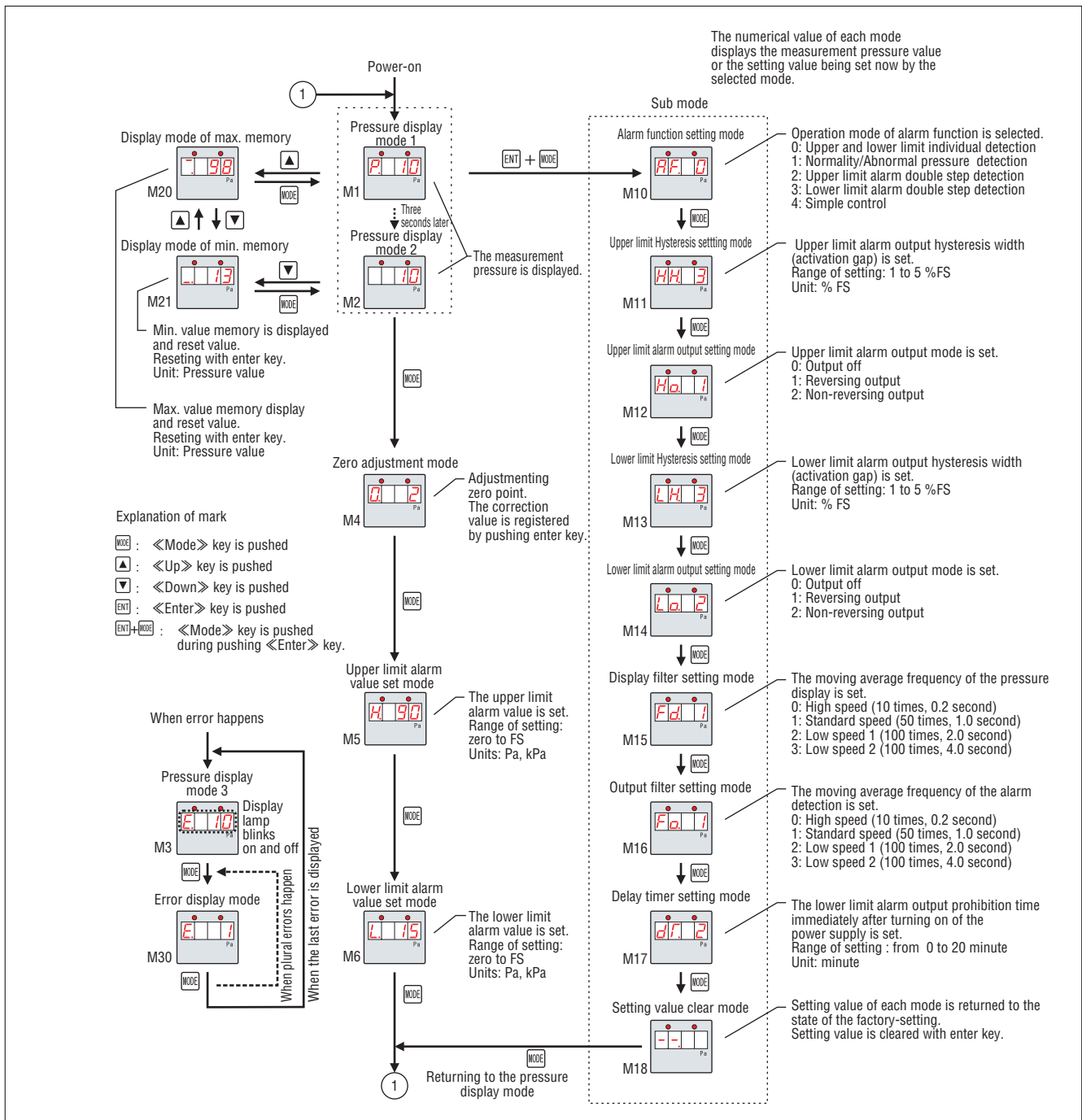
### Terminal connection diagram



## Operation panel



## Switching mode



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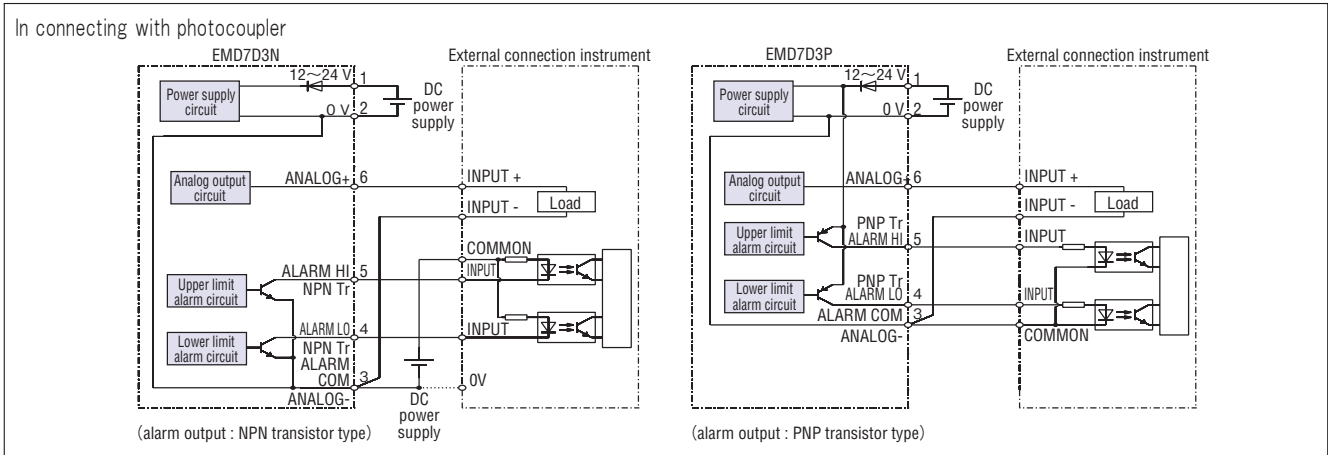
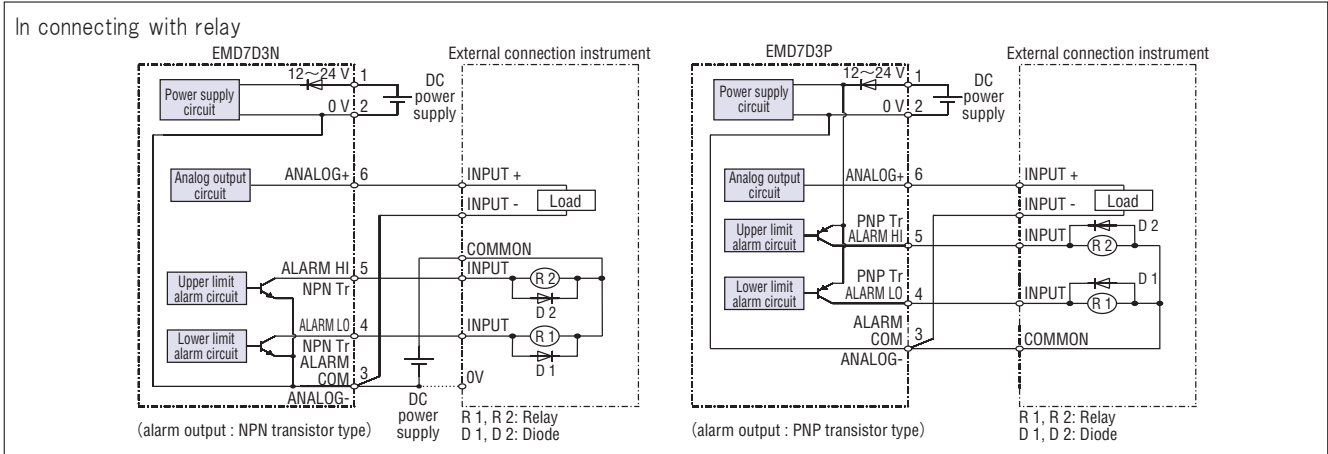
HWS15

Combination of Manosys

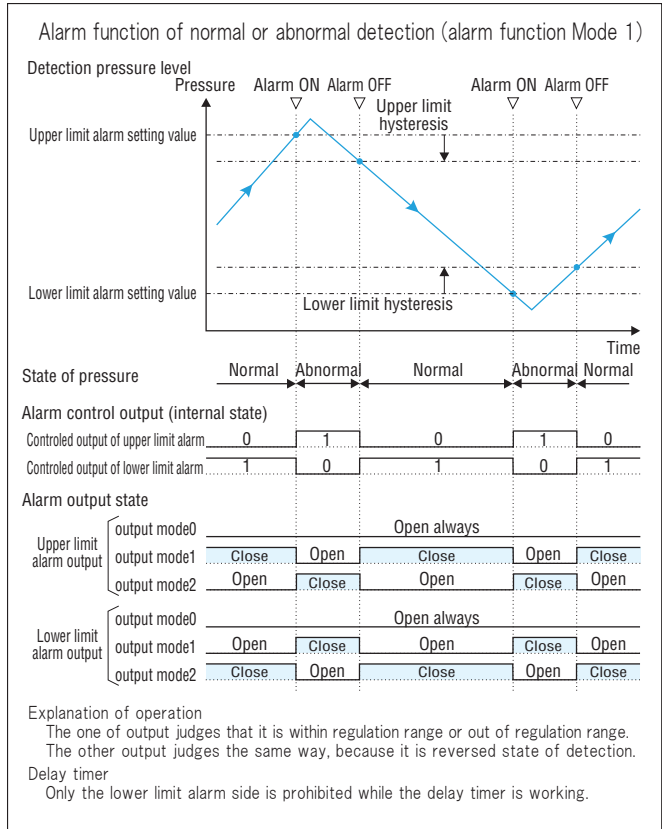
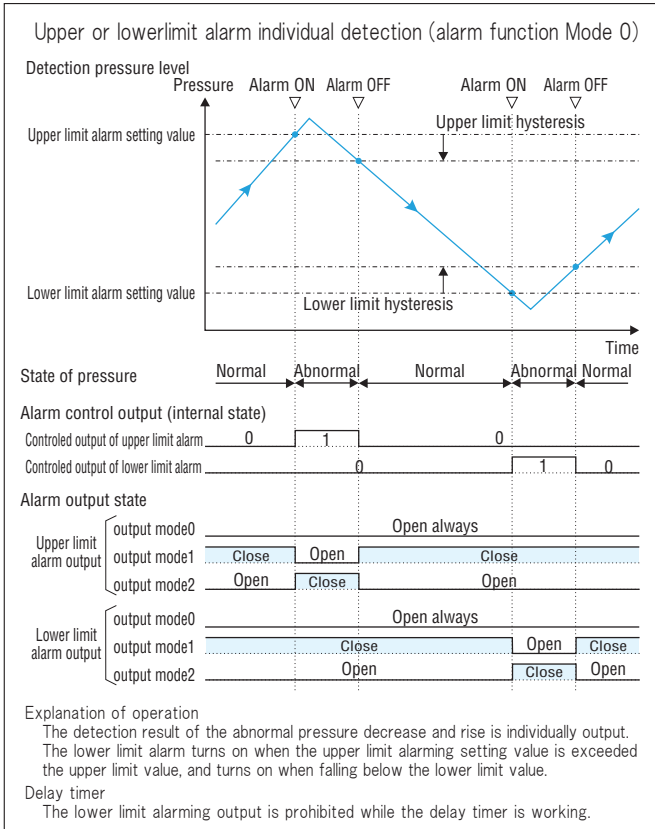
Accessories

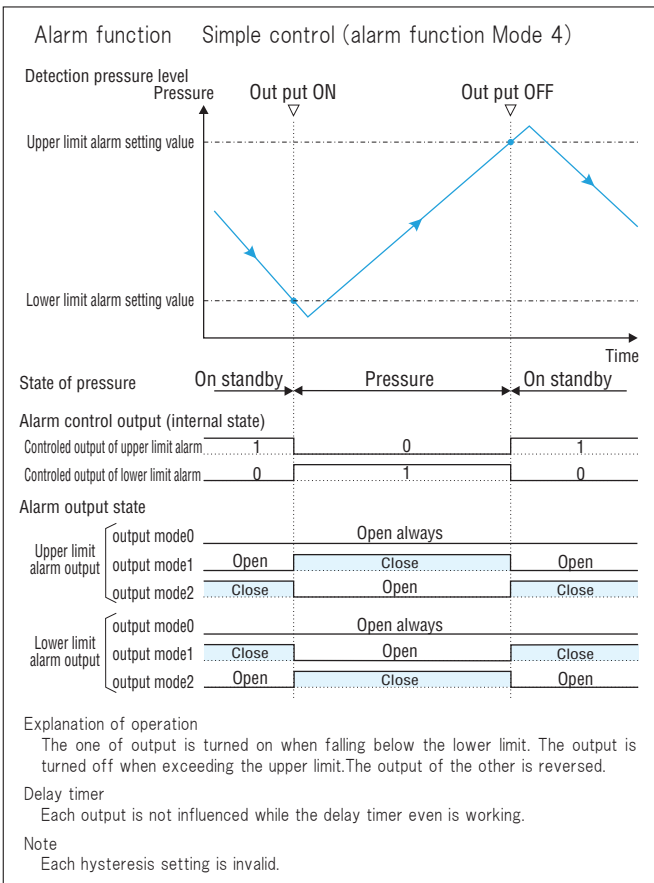
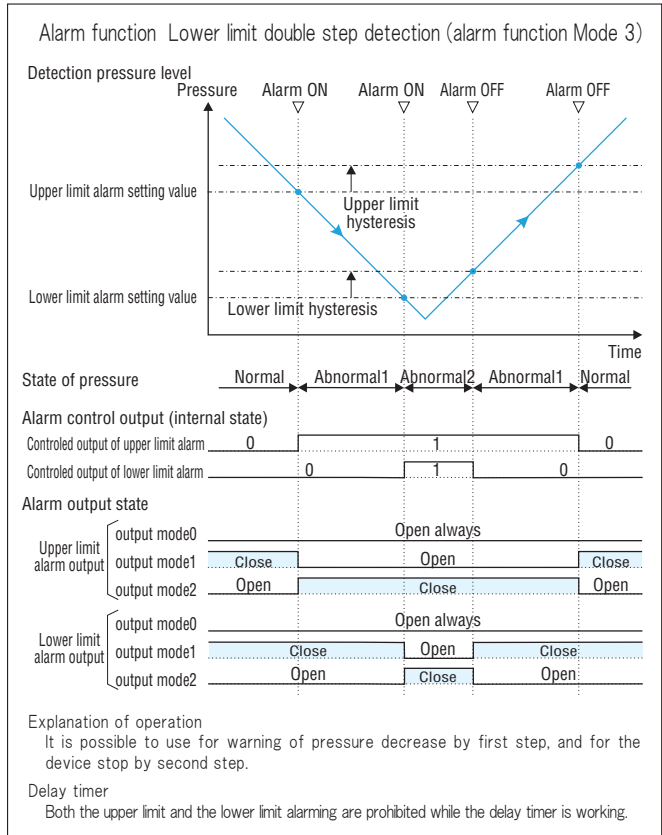
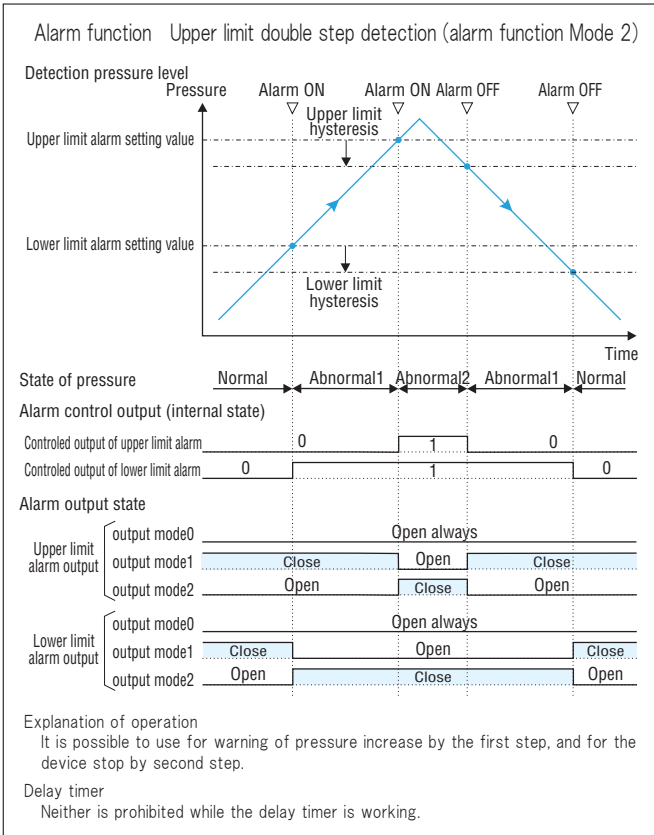
Application Cautions for use Maintenance

## Wiring

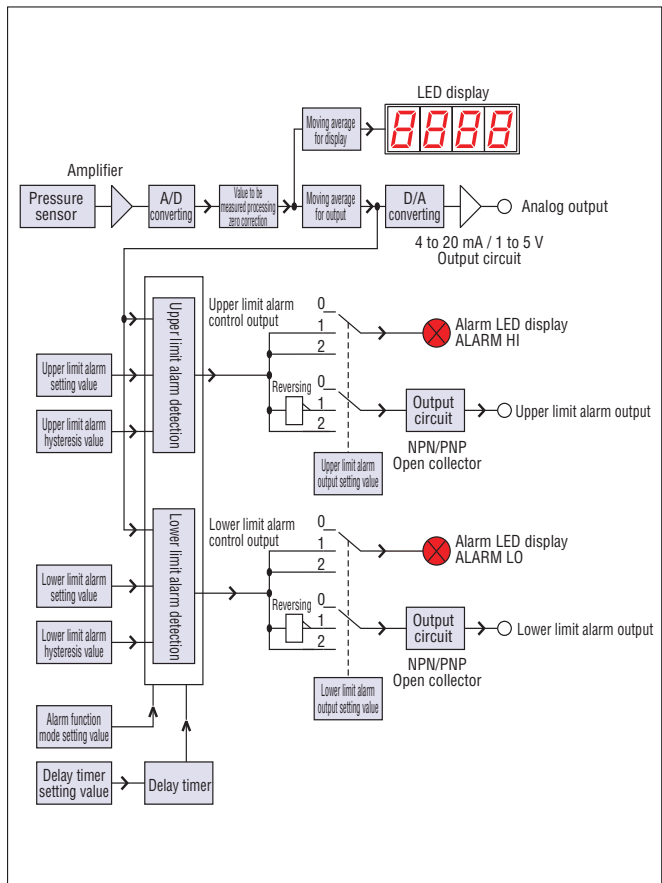


## Alarm function diagram





## Function block diagram



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## 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.

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Manufacturer

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