RoHS

READ THE INSTRUCTION MANUAL BEFORE USING

INSTRUCTION MANUAL

MANOSTAR TRANSMITTER

EMT6

No. TR-EMT6-E08

Manostar

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INTRODUCTION

Thank you very much for purchasing of「MANOSTAR TRANSMITTER EMT6」.

⚠ Caution	To ensure your safety in using this instrument: ・Be sure to read the instruction manual carefully before using this instrument so that you can use it properly. Wrong use may result in failure of this instrument and lead to its damage and accident. This manual should be kept in a proper place so that you can refer to it any time you need.

⚠ Warning

・Do not apply the pressure to the instrument more than it can withstand.
The diaphragm and the retainer are broken and cause of injury or accident, etc. disaster if the pressure exceeding withstanding pressure of the pressure receiving element is applied to the instrument. The case body and the transparent cover of the instrument are broken and cause of injury or accident, etc. disaster if the pressure exceeding withstanding pressure of the instrument body is applied to the instrument.

・Avoid using where instrument is exposed to many vibration and impact.
Using this instrument where intensified vibration and impact may be damaged instrument. It is expected that gas leaks of instrument which harms a parson.

・Do not exceed rated surrounding temperature, humidity and altitude in use.
Using this instrument by exceeding rated surrounding temperature and humidity and altitude it may be damaged and cause the accident.

・Do not disassemble or reconstruct your instrument.
It may void your warranty.

⚠ Caution

・As to where to install and how to install the instrument, be sure to follow the instruction manual provided so as to ensure a proper method.

・In case of not being installed in dry and well-kept clean locations, the instrument must be enclosed in box.

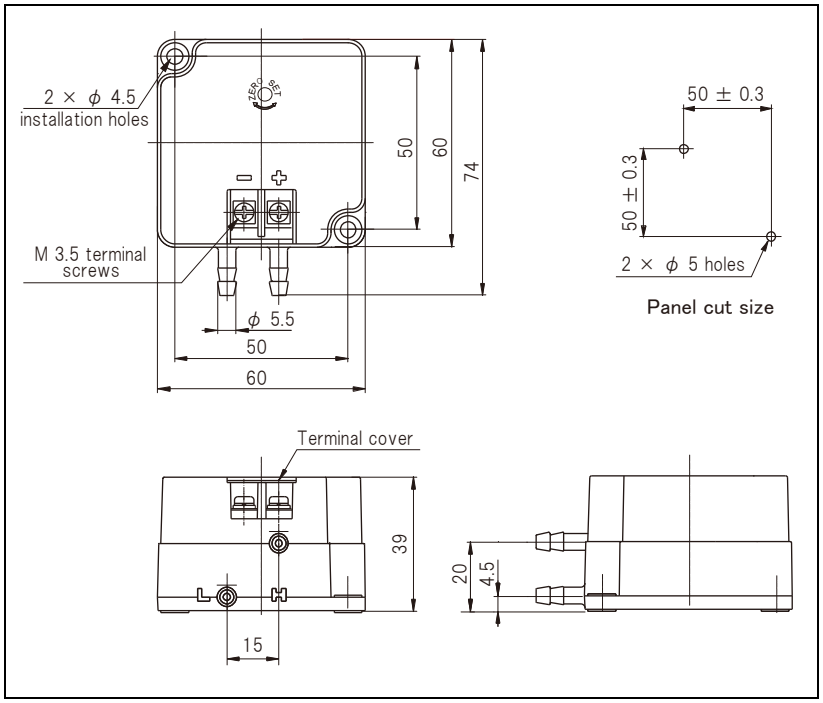
・Do not use organic solvent for cleaning.
Use of organic solvent, such as thinner and benzene, to remove surface dirt and stain may cause melting and cracking on the surface. To remove dirt and stain, be sure to wipe them off with a wet cloth using diluted neutral cleanser.

・Wrong terminal connection
If the signal input and output terminals are connected to the power supply, the internal mechanism burns out.

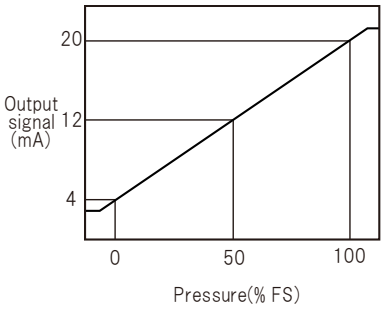
・Dropping the product.
Product is a precision instrument. If you drop the product, there is a possibility that the exterior, also the interior mechanism damage.

・Removal of the piping
If you replace the old pipes, please do not pull the pipe with a strong force. There is a possibility that the pipe cap is broken.

Ⅰ. OUTLINE DRAWING



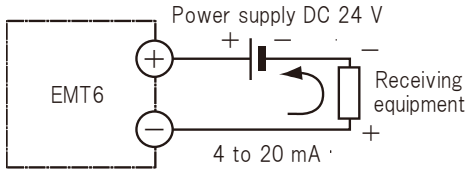
Transmission output diagram
(differential pressure-output signal)



⚠ Caution

Tighten the terminal screws with the torque of 0.7～1.0 N·m.
Do not apply excessive torque more than necessary, otherwise it will damage the instrument body.

Ⅱ. EXTERNAL CONNECTION DIAGRAM



・Two wires method transmitter receives 24V DC power supply from outside and using power supply wiring, transmits 4 to 20mA DC signal to external receiver units.

Ⅲ. INSTALLATION AND TRIAL RUNNING

1. Installation

・In installing this instrument, select the place where the ground is smooth and flat.

・Be sure to provide space over the instrument for zero adjustment.

・Do not install the instrument outdoors directly. If you need to get it installed outdoors directly, store the instrument at the storage casing with dew-proof construction.

・Avoid using where the instrument is subject to vibration, big impact and high humidity.

・Do not use at the place where corrosive gas (such as sulfuric gas and ammonia gas etc.) is present.

・Try to use the instrument away as far as possible from intensified power source and the unit generating high frequency (high frequency welder and high frequency sewing machine etc.).

・The instrument is not designed for measurement of combustible gas and installation where explosive danger risk area exists.

2. Piping material

Please use I.D 4, the wall thickness of 1 mm or more piping material. Vinyl or rubber tubes are suitable. When inserting the piping into the tube tap, please push the piping until it stops.

3. Pressure of measurement and connection of piping

a) Measurement of positive pressure

Connect the tube to the high pressure side piping connector (indicated by red color or letter H). The lower pressure port (blue or L) should opened to atmosphere, but do not remove the piping connector.

b) Measurement of negative pressure

Connect the tube to the low pressure side piping connector (blue or L). The high pressure port (red or H) should be opened to atmosphere, but do not remove the piping connector.

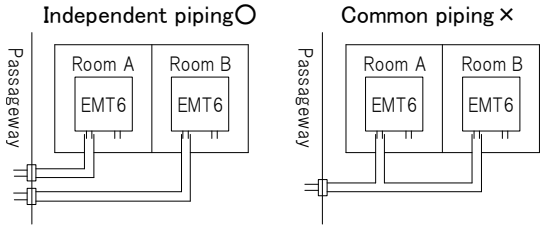
c) Measurement of differential pressure

Connect the tube from the high pressure piping connector to the high pressure port (red or H) and from the low pressure piping connector to the low pressure port (blue or L).

4. Caution of piping

a) Prohibition of common piping

Piping each of pressure detectors and pressure receiving instruments tube exclusively dedicated for it, and do not connect the piping commonly with the adjacent system as shown in the right figure.
Common piping causes measurement error because the pressure of each system interferes.



b) Prevention of clogged piping due to drain

・If drain remains within the line, it causes measurement error. Be sure to install the pressure receiving instrument above the pressure outlet port of the pressure detector and arrange the line so that the drain water should not remain in the slack piping.

・If the arrangement mentioned above in not possible, install a drain tank and clean it once in a while.

・After the cleaning of the tank, check that the air tightness is fully kept.

c) Measurement of high temperature gases

In the pressure measurement of high temperature gas, use the pressure detector (pitot tube) made of the heat-proof metal (such as stainless steel), and connect it with the pressure receiving instrument through a metal tube which is long enough to cool down the high temperature gas.

d) Errors caused by long distance piping

The speed of response is delayed when the product is used for remote monitoring.
In such application, the I.D. of the connection tube should be as large as possible.
If the piping conditions of the high and low pressure side are significantly different, the difference in the piping resistance between high and low pressure side causes the difference in pressure transmission time, and the measurement becomes inaccurate.

5. Wiring and connection

- Use shielded wire for input and output wiring on current and voltage signal, and do not put them near power line. Moreover, do not let it go through the same conduit with power line.
- Make a one point grounding at the one end of shielded output signal cable.
- Use a proper crimp-type terminal that fits a thread of M3.5 on the terminal block of the instrument. Provide the instrument with the grounding terminal on the class D grounding or over (100Ω or less grounding resistance)

6. Zero adjusting

1) Since zero point of the instrument is changed according to mounting posture, therefore, after installation, be sure to perform zero adjustment.
2) When a receiver unit is with an analogue meter, be sure to set mechanical zero position first before power supply.
3) After making sure that there is no mistake about wiring and connection, supply each of them with power and start a warm-up for 10 minutes.
4) Remove tubing of the instrument from High pressure side as well as Low pressure side and vent the atmosphere.
5) Insert minus-screw driver (2.4×0.35 or 2.0×0.30) into the hole on top cover, turn the zero set adjuster inside and then adjust the indicator of receiver meter at zero.

⚠ Caution	Inside the top cover, you may find other adjuster (span set) on printed circuit board, it has been already adjusted exactly at our factory. Do not handle it.

Ⅳ. PERIODIC INSPECTION

Generally speaking, it is important not to exert external stress to keep life and reliability of the instrument for a long time.
Proper use of this instrument will ensure its faultless service over many years without any necessity of periodic lubrication.
However, it is recommended that it is subjected to periodic inspection (calibration) once a year.

Ⅴ. 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.

<Prior notice>

The specifications and description of the product explained in this instruction manual may be subject to change without prior notice because of modification and the like.