

Electrical Pressure Transmitter

Type: S M P — M S

Instruction Manual

MEIYO ELECTRIC CO., LTD.

Safety Precautions

Be sure to follow the precautions given below before starting inspection or servicing.

An accident may result due to electric shock or short circuit.

- (1) Be sure to turn off the power.
- (2) Using a tester make sure no voltage is applied before starting the work.
- (3) Do not perform live-line work except as required in emergency.

General Information on Electric Shock.

There are the following three cases where people suffer from electric shock:

- (1) Brought into contact with something electrically hot, his/her body makes a path of a ground-fault current.
- (2) Brought into contact with two lines under voltage, his/her body makes short circuit the lines.
- (3) Brought into a path of electricity, such as an electric wire and a switch, his/her body is inserted into the path of load current.

Electric Shock Preventive Measures.

- (1) Eliminate insufficient insulation in wiring and electrical machinery and apparatus.
- (2) Completely execute grounding work for electrical machinery and apparatus.
- (3) Provide electric leak preventive measures for cables to electrical machinery and apparatus operated in wet places.
- (4) Be sure to turn off the power before starting inspection or repair work.

* Matters for Security

With regard to the inspection and maintenance, please always pay attention for the following matters not to cause accidents such as electric shock or short circuit;

- (1) Turn off power surely
- (2) Work after confirmation that there is no voltage by tester
- (3) Except emergency cases, please DO NOT perform the live-line work

* Common Knowledge about Electric Shock

Electric Shock;

- (1) In case of that the human body touches to the state-of-charge, and the human body becomes the passage of the earth electric current
- (2) In case of that the human body touches between 2 lines with the voltage, and the human body becomes like as short circuit between the lines
- (3) In case of that the human body touches the passage of the electric equipments such as an electric wire or the switch, and get shocks by the human body is inserted in the passage of the load electric current

* Preventive Measures

- (1) Avoid bad insulation point of wiring and the electric apparatus
- (2) Construct completely for the setting construction of the electric apparatus
- (3) Make prevention of short circuit on the electric circuit to the electric apparatuses of humid places
- (4) Turn off the electric power supply surely, when the inspection and maintenance work are started

* Important Note for Treatment

Part of Sensor Body

- Do not drop it, hit it, and give a big shock
- Do not use with an atmosphere to spoil stainless steel (SUS316L)
- Avoid direct sunlight and high temperature condition for a long time
- Do not touch to the diaphragm part carelessly
- Handle with care very much because of precision electronic equipment

Cable

- Do not bend it to an acute angle because of incorporated with an atmosphere opening pipe
- Do not crush, stuck water and mud to an atmosphere opening pipe
- Avoid direct sunlight and high temperature condition for a long time
- Do not crush under heavy loads
- Do not wound it by wall, metal piece, and so on

* Installation

- Hang the main body of sensor to the measurement point. In this case, check a right water level beforehand.
- Install the main body of sensor in the state of vertically
- In case of that the sensor body and cable might be hurt by the wall surface or suspended metal pieces, take a necessary protection plan
- Make the setting structure which can take the sensor body part off easily and check it as needed
- In addition, take a necessary safety measures and protection plan, depending on the situation of the setting place

Example

1 . TOP MOUNTING

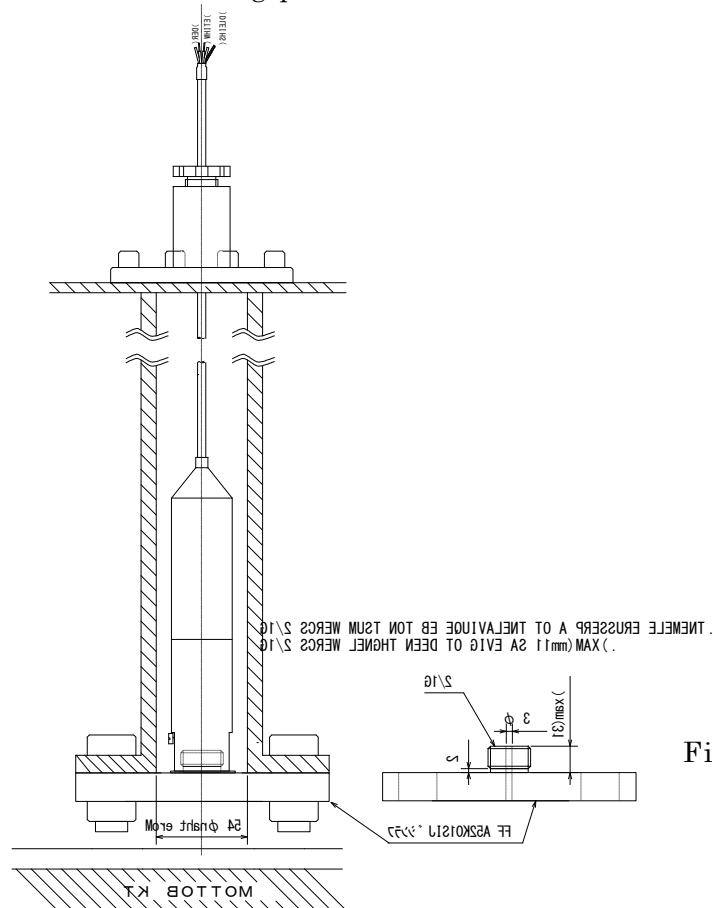


Fig. 1.

2 . PIE MOUNTING

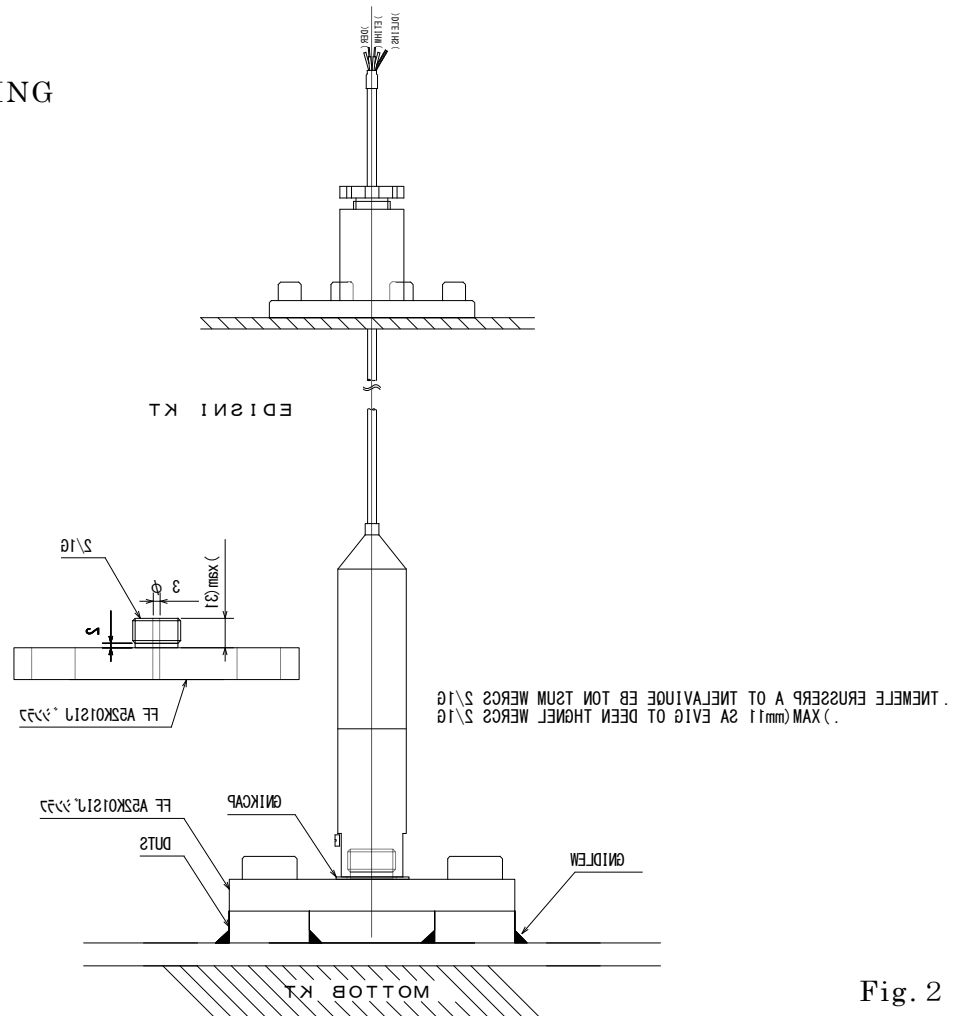


Fig. 2

3 . SIDE MOUNTING

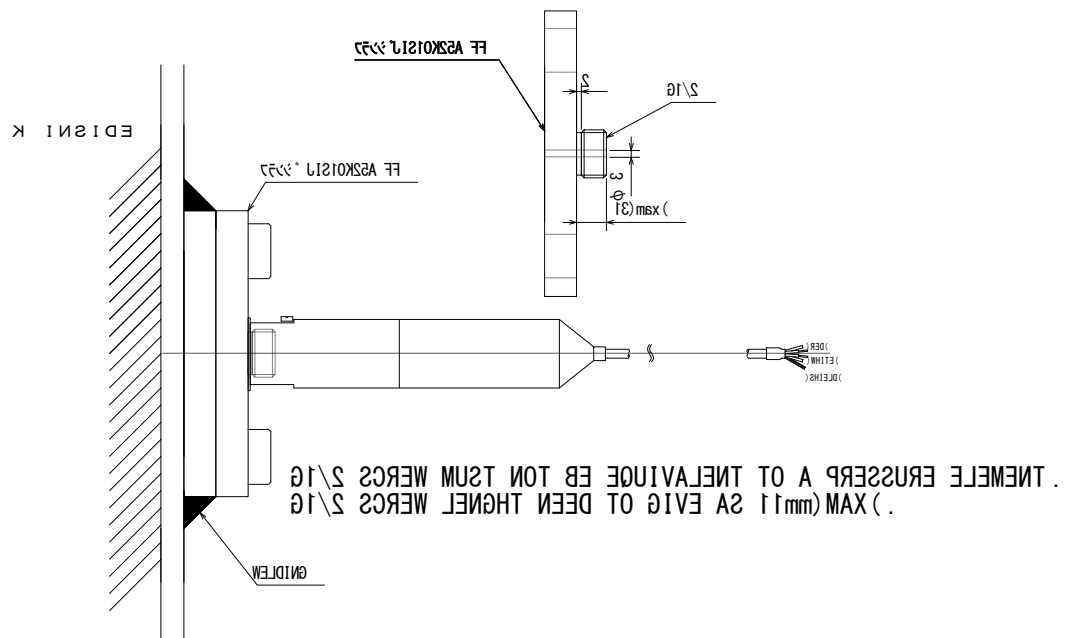


Fig. 3

* Adjustment

- There are no regulating functions for this transmitter. Please perform density of a measurement medium, a full scale of sounding, dead band, attachment posture adjust and compensation by the receiver side.

1 . Outline

SMP-MS Series is a water pressure-type water level sensor that converts and outputs the water pressure which is proportional to depth of water into an electrical signal. This sensor is superior to stability by the double diaphragm structure that adopted a semiconductor method, and highly precise stage measurement is possible.

In addition, because atmospheric pressure is adopted to the inside of sensor, measurement error by the atmosphere change doesn't occur.

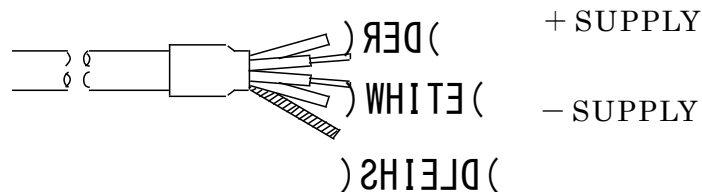
2 . Operation Preparation

2-1: Install sensor to the measurement point of water level after confirmation that there is no problem in the application.

When start sensor, please pay attention not to add the sudden water pressure to the sensor. If the water pressure which is more than the withstand pressure is added for a moment, a pressure sensor element may be damaged.

2-2: Terminal treatment of cable is carried out as needed. Following is the detail of terminal treatment of cable.

If the crimped terminal is attached to the lead and shield cable, cut the preliminary solder part of tip of each line, and crimp the crimped terminal. Please use the appropriate crimped terminal which fit to the terminal screw and size of lead cable.



2-3: There is a screw for air bleeding to the sensor body. Please remove it as needed.

2-4: Connection

Pay attention to the following matters:

(1) Switch off the power supply for connection

(2) Check the polarity for connection. Put the shield cable as needed.

※ Wrong connection will be the cause of sensor damage. Please connect the cable correctly and tighten it certainly.

2-5: The wiring

This type pressure-transmitter is 2 wire system, and its output signal is 4~20mA. In this system, the load should be connected in series between + supply (RED) and - supply (WHITE) as it shown in Fig4.1.

In case of connecting several receivers, the total resistance of load should be less than the maximum load resistance cululated above. And also, in case of connecting several receivers exception analog meter, those of them not connecting directly to the 0V line of power supply, should be isolated as it shown in Fig4.1

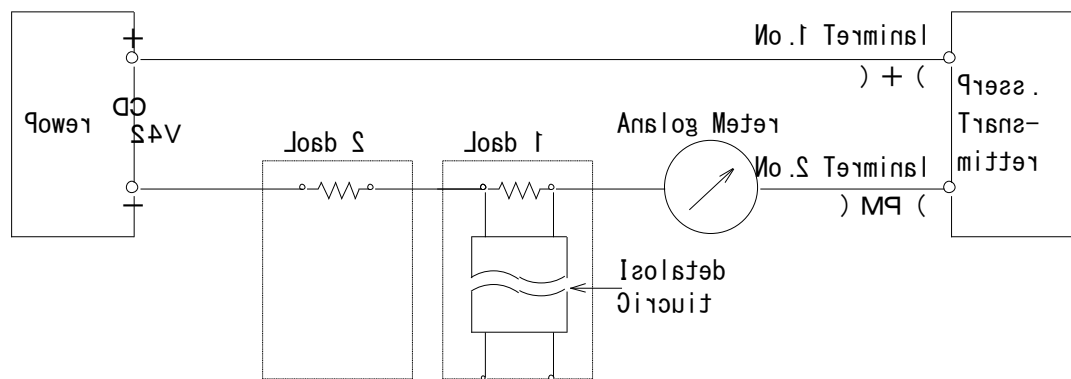


Fig 4.1

3. Start Operation

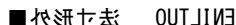
- 3-1: Check that the power supply is in specification range
- 3-2: Switch "ON" of power supply
- 3-3: Add the water pressure equivalent to 0% of measurement range, and confirm that the indicated value of receiver is also 0%

4. Maintenance

Take the sensor off once a year, and inspect whether sensor and cable are no problem or not. Please also check the inner part by removing cover of tip part. Remove dirt of the cover carefully using tender toothbrush, and wash it with fresh water.

With regard to diaphragm, washing by fresh water is enough generally.

In case of serious dirt, omit it carefully using soft materials such as cotton swab not to make any wounds and dents, and wash it by fresh water. Put a cover on after inspection.



■ 卦辭 SPECIFICATION

WIRING ■ 5酒泉

赤	RED	雷 2002 +
白	WHITE	雷 2002 -
ギョー	ギョー	大 2002
FRIT	FRIT	大 2002

■ 堡垒 TY93

2 M 9 - M 2 - K 9 - *

FERRELL

マージナル ※ : 大 〇 〇 〇

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EL ELBAC
00S:500
010:10m
100:100m

200K9:0 200K9s
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*1. DEDUCTION OF THE

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