INSTRUCTION MANUAL

SPLIT-RANGE TRANSMITTER
(isolated four outputs)

MODEL **MFS2**

BEFORE USE ....

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.
If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

Signal conditioner
(body + base socket + input resistor).....(1)
Input resistor is provided only with current input type.

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.
This unit is factory adjusted and calibrated according to the Ordering Information included in the product package.
The MFS2 is programmable using the PC Configurator Software. For detailed information on the PC configuration, refer to the MFS2CFG users manual. The MFS2CFG PC Configurator Software is downloadable at our web site.

POINTS OF CAUTION

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
  85 – 264V AC rating: 85 – 264V, 47 – 66 Hz, approx. 4 – 6.5VA
  24V DC rating: 24V ±10%, approx. 2W
  110V DC rating: 85 – 150V, approx. 2W

■ GENERAL PRECAUTIONS

- Before you remove the unit from its base socket or mount it, turn off the power supply and input signal for safety.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within 0 to 50°C (32 to 122°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

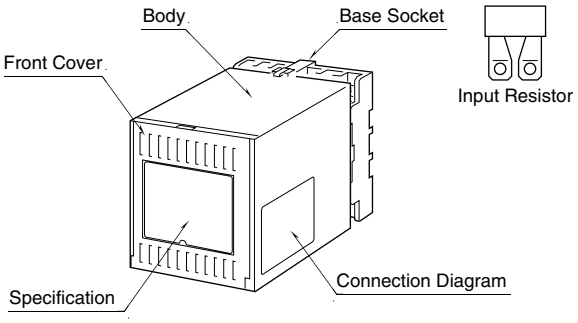
■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND ....

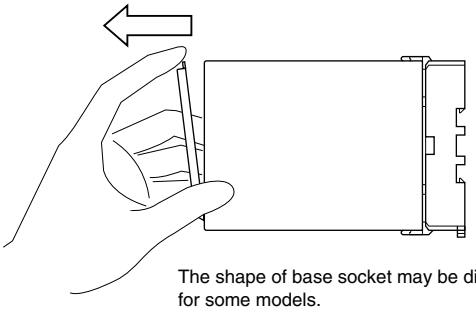
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

COMPONENT IDENTIFICATION



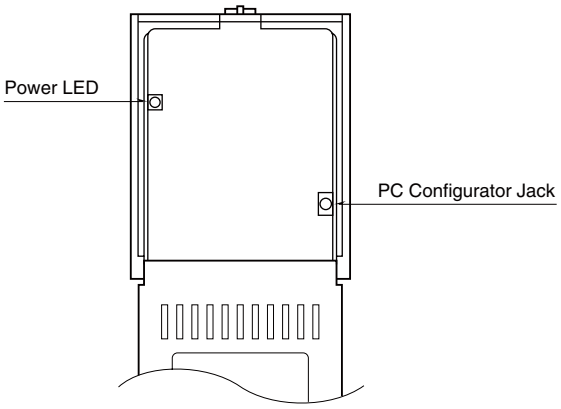
■ HOW TO OPEN THE FRONT COVER:

Hang your finger on the hook at the top of front cover and pull.



The shape of base socket may be different for some models.

■ FRONT PANEL CONFIGURATION



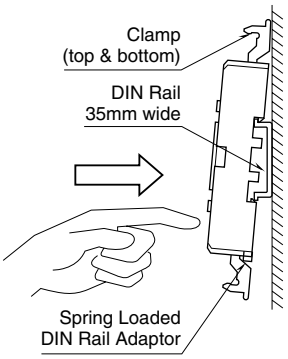
MG CO., LTD. www.mgco.jp
5-2-55 Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN

INSTALLATION

Detach the yellow clamps located at the top and bottom of the unit for separate the body from the base socket.

■ DIN RAIL MOUNTING

Set the base socket so that its DIN rail adaptor is at the bottom. Hang the upper hook at the rear side of base socket on the DIN rail and push in the lower. When removing the socket, push down the DIN rail adaptor utilizing a minus screwdriver and pull.



Shape and size of the base socket are slightly different with various socket types.

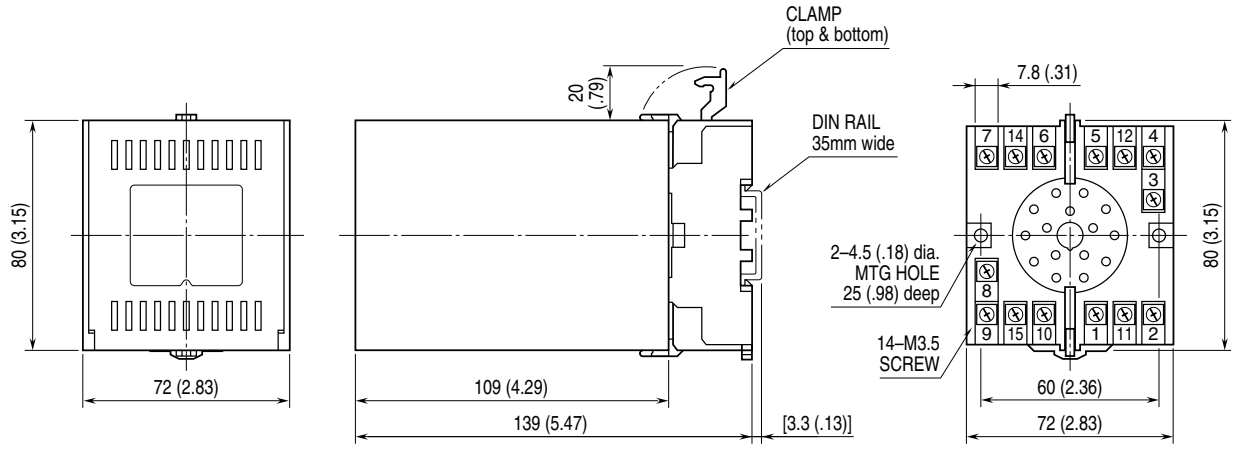
■ WALL MOUNTING

Refer to "EXTERNAL DIMENSIONS."

TERMINAL CONNECTIONS

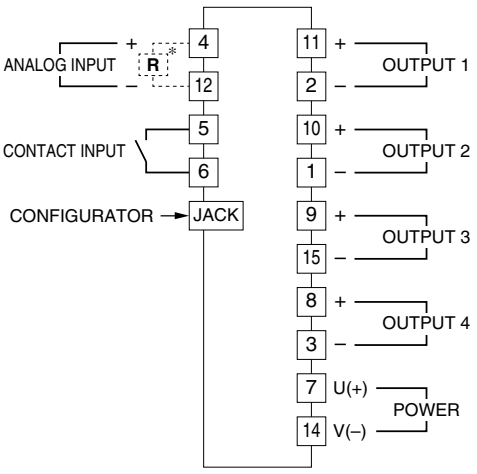
Connect the unit as in the diagram below or refer to the connection diagram on the side of the unit.
When an input resistor is provided with the module, attach it together with input wiring to the input screw terminals.

■ EXTERNAL DIMENSIONS unit: mm (inch)



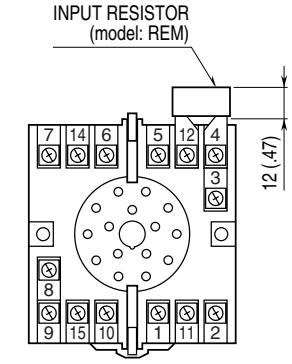
• When mounting, no extra space is needed between units.

■ CONNECTION DIAGRAM



*Input shunt resistor attached for current input.

■ TERMINAL ASSIGNMENTS unit: mm (inch)



Input shunt resistor attached for current input.

OPERATION DIAGRAM

The diagram below shows an example of I/O characteristics as specified in Table 1.
The split-range operations can be specified when ordering, by using Ordering Information Sheet, or programmed by the user using PC Configurator Software. Please refer to Users Manual for the PC Configurator for more information.

1) Two pairs of input and output in % define each split I/O range.

   Proportional (positive) or inverted (negative) characteristics can be specified.

2) High and low limits for each output can be specified independently within the full-scale range.

3) Fixed output value for each output can be specified independently in advance.

   These outputs are provided when the contact input is closed or opened (predefined).

   H limit ≥ Fixed output ≥ Low limit

4) Applying the fixed output or not can be specified independently for each output.

   In the figure, fixed output is applied to the output 2 with contact input. The solid line shows the function when contact input is shorted. The chain double-dashed line shows the function when contact input is opened.

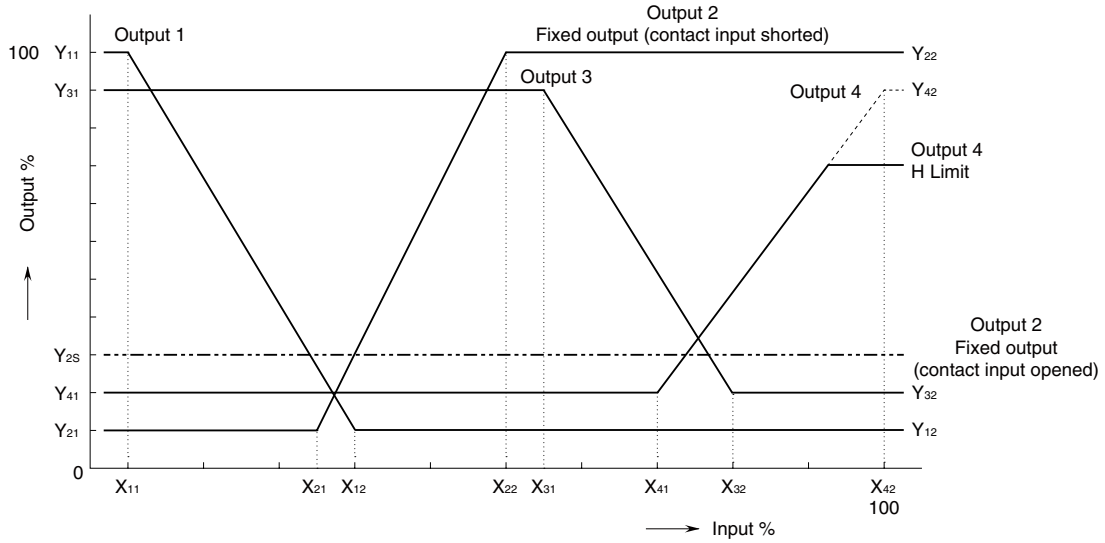


Table 1

	INPUT %	OUTPUT %	LIMIT %	FIXED OUTPUT %	CONTACT INPUT	TRIGGER CONDITION
Output 1	X_{11} = 0.00 X_{12} = 30.00	Y_{11} = 100.00 Y_{12} = 0.00	H_1 = 100.00 L_1 = 0.00	Y_{1S} = 0.00	Not applied	----
Output 2	X_{21} = 25.00 X_{22} = 50.00	Y_{21} = 0.00 Y_{22} = 100.00	H_2 = 100.00 L_2 = 0.00	Y_{2S} = 30.00	Applied	Open
Output 3	X_{31} = 55.00 X_{32} = 80.00	Y_{31} = 90.00 Y_{32} = 10.00	H_3 = 90.00 L_3 = 10.00	Y_{3S} = 0.00	Not applied	----
Output 4	X_{41} = 70.00 X_{42} = 100.00	Y_{41} = 10.00 Y_{42} = 90.00	H_4 = 70.00 L_4 = 10.00	Y_{4S} = 0.00	Not applied	----

Factory default setting used if no Ordering Information is provided:

	INPUT %	OUTPUT %	LIMIT %	FIXED OUTPUT %	CONTACT INPUT	TRIGGER CONDITION
Output 1	X_{11} = 0.00 X_{12} = 100.00	Y_{11} = 0.00 Y_{12} = 100.00	H_1 = 100.00 L_1 = 0.00	Y_{1S} = 0.00	Not applied	Open
Output 2	X_{21} = 0.00 X_{22} = 100.00	Y_{21} = 0.00 Y_{22} = 100.00	H_2 = 100.00 L_2 = 0.00	Y_{2S} = 0.00	Not applied	Open
Output 3	X_{31} = 0.00 X_{32} = 100.00	Y_{31} = 0.00 Y_{32} = 100.00	H_3 = 100.00 L_3 = 0.00	Y_{3S} = 0.00	Not applied	Open
Output 4	X_{41} = 0.00 X_{42} = 100.00	Y_{41} = 0.00 Y_{42} = 100.00	H_4 = 100.00 L_4 = 0.00	Y_{4S} = 0.00	Not applied	Open

MG CO., LTD. www.mgco.jp
5-2-55 Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN

CHECKING

1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
2) Power input voltage: Check voltage across the terminal 7 – 14 with a multimeter.
3) Input: Check that the input signal is within 0 – 100% of the full-scale.
4) Output: Check that the load resistance meets the described specifications.
5) Split-range setting: Confirm that the transmitter outputs are provided as intended.

MAINTENANCE

Regular calibration procedure is explained below:

■ CALIBRATION

Warm up the unit for at least 10 minutes. Apply 0%, 25%, 50%, 75% and 100% input signal. Check that the output signal for the respective input signal remains within accuracy described in the data sheet. When the output is out of tolerance, recalibrate the unit using the PC Configurator Software (moodel: MFS2CFG).

LIGHTNING SURGE PROTECTION

We offer a series of lightning surge protector for protection against induced lightning surges. Please contact us to choose appropriate models.

MG CO., LTD. www.mgco.jp
5-2-55 Minamitsumori, Nishinari-ku, Osaka 557-0063 JAPAN