

BEFORE USE

Thank you for choosing M-System. 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 M-System's Sales Office or representatives.

■ PACKAGE INCLUDES:

Signal conditioner (body + base socket).....(1)

■ 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.

POINTS OF CAUTION

■ GENERAL PRECAUTIONS

- Before you remove the unit from its base socket or mount it, turn off the 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 -5 to +55°C (23 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

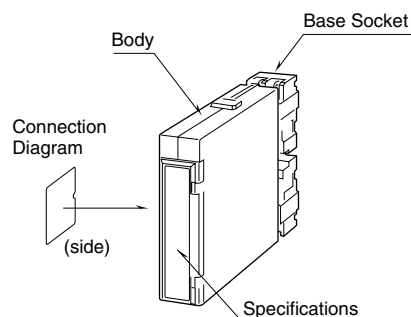
■ WIRING

- 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.

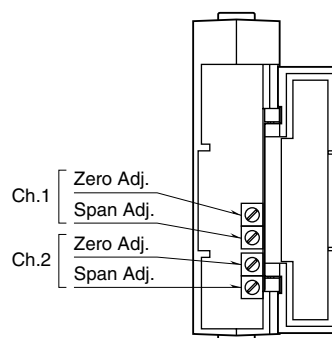
■ AND

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

COMPONENT IDENTIFICATION



■ FRONT PANEL CONFIGURATIONS



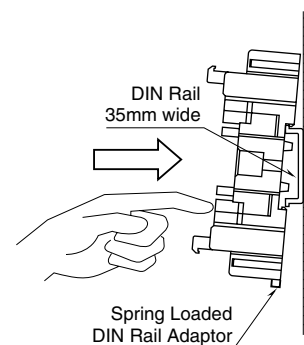
Note: For 1 channel type use ch.2.

INSTALLATION

Pull out the body in pressing the 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.



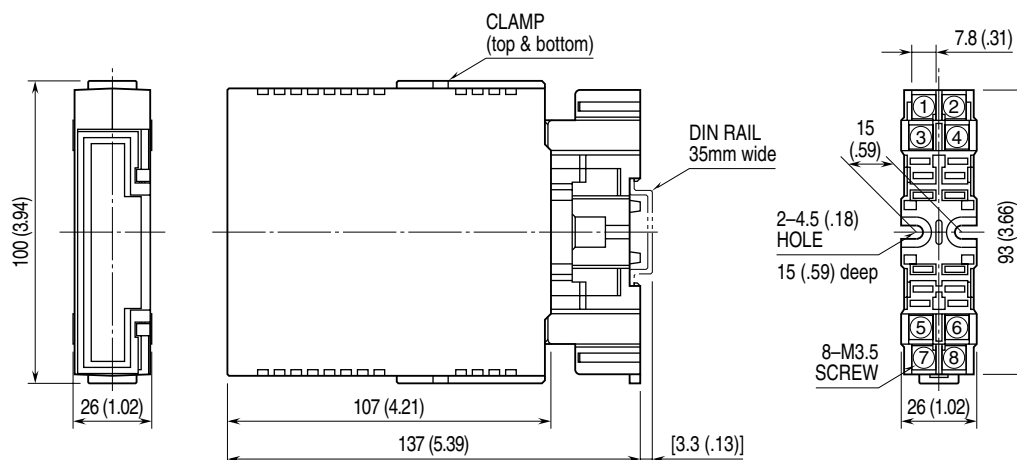
■ WALL MOUNTING

Refer to "EXTERNAL DIMENSIONS."

TERMINAL CONNECTIONS

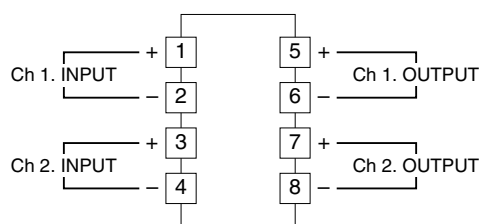
Connect the unit as in the diagram below or refer to the connection diagram on the side of the unit.

EXTERNAL DIMENSIONS unit: mm (inch)



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

CONNECTION DIAGRAM



For the single-channel model, the terminals 3 – 4 and 7 – 8 are used.

WIRING INSTRUCTIONS

SCREW TERMINAL

Torque: 0.8 N·m

CHECKING

- 1) Terminal wiring: Check that all cables are correctly connected according to the connection diagram.
- 2) Input: Check current with an ammeter. Be sure that the connected transmitter allows the load shown in the following table.

MODEL	EQUIVALENT INPUT IMPEDANCE
FSN-x	250Ω
FSN-xH6	100Ω
FSN-xAA	230Ω plus output load
FSN-xHA	90Ω plus output load × 0.16

- 3) Output: Check that output load is within the permissible limit shown in the following table.

MODEL	LOAD RESISTANCE
FSN-x	50kΩ minimum
FSN-xH6	50kΩ minimum
FSN-xAA	50 – 350Ω
FSN-xHA	50 – 600Ω

ADJUSTMENT PROCEDURE

This unit is calibrated at the factory to meet the ordered specifications, therefore you usually do not need any calibration.

For matching the signal to a receiving instrument or in case of regular calibration, adjust the output as explained in the following.

HOW TO CALIBRATE THE OUTPUT SIGNAL

Use a signal source and measuring instruments of sufficient accuracy level. Turn the input signal on and warm up for more than 10 minutes.

- 1) ZERO: Apply 0% input and adjust output to 0%.
- 2) SPAN: Apply 100% input and adjust output to 100%.
- 3) Check ZERO adjustment again with 0% input.
- 4) When ZERO value is changed, repeat the above procedure 1) – 3).

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 according to the "ADJUSTMENT PROCEDURE" explained earlier.

LIGHTNING SURGE PROTECTION

M-System offers a series of lightning surge protector for protection against induced lightning surges. Please contact M-System to choose appropriate models.