

INSTRUCTION MANUAL
AM2B Waterproof Panel Meter

Confirm that the delivered product is what you have ordered. Read this instruction manual to make sure of correct operation. Make sure that the instruction manual is kept by the end user.

Safety Precautions

In this operation instruction manual, safety precautions are categorized in order of importance to Warning and Caution:

WARNING

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

CAUTION

Caution notices are used where inattention might cause personal injury or damage to equipment.

WARNING

(General)

- Be sure to turn off the power before mounting, removing, wiring, maintenance, or inspection. Failure to heed this warning may result in electric shock or fire.

- Use within the rated range described in this manual. Operation other than rated may cause short circuit or fire.

- Do not disassemble or modify the instrument. Failure to heed this warning may result in electric shock or fire.

- Do not touch live parts of terminals when energizing. As there is a danger of receiving an electric shock.

(Wiring and operation)

- Confirm the terminal position and connect the wires correctly. Failure to heed this warning may result in electric shock or fire.

- Use wire sizes and crimped terminals suitable for the amount of electricity. Be sure to tighten the terminal screw (M4) securely with the recommended tightening torque (0.98 to 1.47 N·m).

If the wiring is used in an incomplete condition, there is a danger of fire due to abnormal heat generation.

- Be sure to install the terminal cover for safety. As there is a danger of receiving an electric shock.

CAUTION

(General)

- The meter of this product uses "Mitsubishi Indicator Electric Meter" manufactured by Mitsubishi Electric Corporation. In accordance with the specifications of the Mitsubishi indicated electric meter, do not use it in the following places. It may cause malfunction or breakage.

- Where ambient temperature exceeds 5°C to +50°C.

- Where the daytime average temperature exceeds 35°C.

- Locations where the humidity exceeds the range of 40% to 75% RH or where condensation occurs.

- Location that is exposed to dust, corrosive gas, salt or oil smoke.

- Locations subject to vibration and shock.

- Location that is exposed to oil, ultraviolet rays or sunlight.

- Location that is subject to external noise and radio waves.

- Locations where static electricity is generated frequently.

- Locations where waveform distortion and high frequency are common, such as harmonics and thyristor circuits.

(Unpacking)

- Check whether the product is the same product as ordered. Incorrect use of the product may cause a failure or accident.

(Installation and Adjustment)

- Mount the product according to the instructions in this manual. Do not allow dust, water, metal powder, or other foreign matter to enter the equipment. Poor contact or poor insulation can result.

- Do not apply excessive load, twisting, or tensile force to electric wires. Otherwise it can cause breakage or failure.

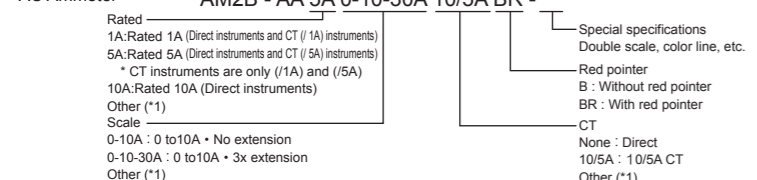
- Be sure to ground the metal panel.

(Operation)

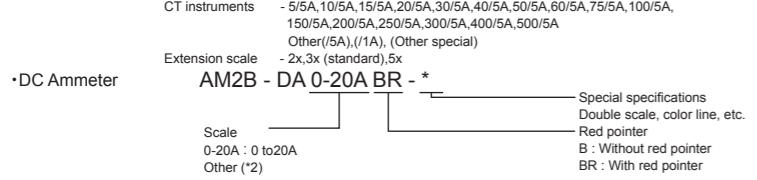
- Stop operation immediately if an error occurs. This may cause secondary accidents.

1 Product Structure

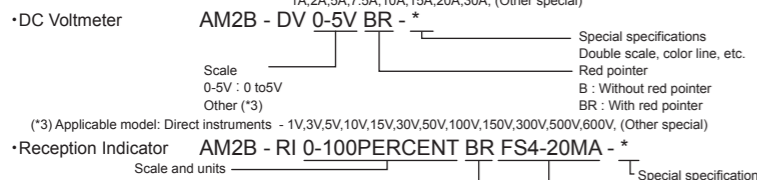
• AC Ammeter **AM2B - AA 5A 0-10-30A 10/5A BR - ***



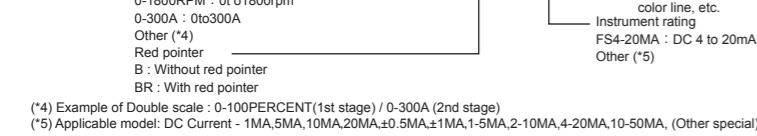
• DC Ammeter **AM2B - DA 0-20A BR - ***



• DC Voltmeter **AM2B - DV 0-5V BR - ***



• Reception Indicator **AM2B - RI 0-100PERCENT BR FS4-20MA - ***



2 Product Specifications

Degree of Protection (IEC 60529)	IP65 (Front panel)
Place of Use	Indoors
Mounting Panel	Metal Panels
Operating Temperature	-5 to +50°C (no freezing)
Storage Temperature	40 to 75%RH (no condensation)
Operating Humidity	-20 to +60°C (no freezing)
Storage Humidity	Less than 90% RH (no condensation)
Altitude	2000m max.
Pollution Degree	3
Category	III
Mounting Orientation	Vertical (⊥)
Degree of Accuracy	2.5 Class (JIS C 1102-2)
Scale Length	55mm
Insulation Resistance	10MΩ min. (500V DC megger)
Dielectric Strength	AC2210V, 5sec (between charged and non-charged parts)
AC Ammeter	Operation Type Moving-iron Type
Frequency	50/60 Hz
Consumption VA	1.0 VA
Scale	1x, 2x, 3x (standard), 5x
Weight (approx.)	140g (Including waterproof cover)
Input Rating	Direct 500 mA 1, 3, 5, 10, 15, 20, 30A CT /5A (Instrument rating 5A), / 1A (Instrument rating 1A)
DC Ammeter	Operation Type Permanent-magnet Moving-coil Type
Weight (approx.)	110g (Including waterproof cover)
Voltmeter / Reception Indicator	Input Rating DC Current 1, 5, 10, 20, 50, 100, 200, 500mA 1, 2, 5, 7.5, 10, 15, 20, 30mA (0 suppress) 1 to 5, 2 to 10, 4 to 20, 10 to 50mA DC Voltage 1, 3, 5, 10, 15, 30, 50, 100, 150, 300, 500, 600V (0 suppress) 1 to 5V

• You can use an option with a red pointer and a special scale (Multiple scale, Conversion scale, Color scale, etc.).

• If you wish to use an input rating other than the above, contact IDEC.

(*): The "Mitsubishi Indicator Electric Meter" manufactured by Mitsubishi Electric Corp. is used as the meter for this product.

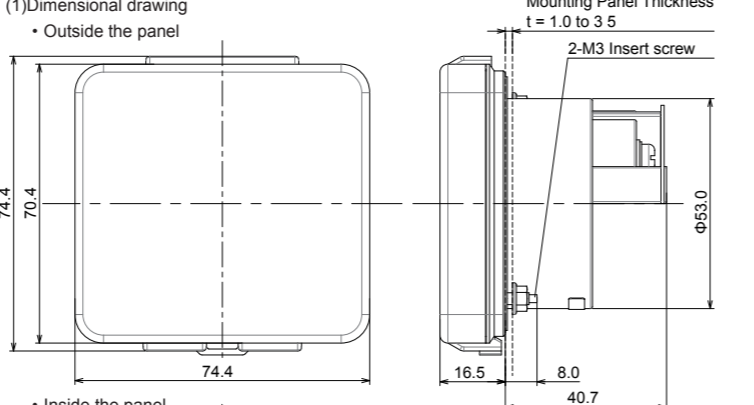
For the meter connection diagram and other detailed meter specifications, refer to the Mitsubishi Electric Instrument catalogue or contact Mitsubishi Electric Corporation based on the table below.

Type of meter	IDEC Model No. (Waterproof Panel Meter)	Mitsubishi Electric Model No. (Mitsubishi Electric Instrument)
AC Ammeter	AM2B - AA□ - *	YS - 206NAA□ - *
DC Ammeter	AM2B - DA□ - *	YM - 206NDA□ - *
DC Voltmeter	AM2B - DV□ - *	YM - 206NDV□ - *
Reception Indicator	AM2B - RI□ - *	YM - 206NR I□ - *

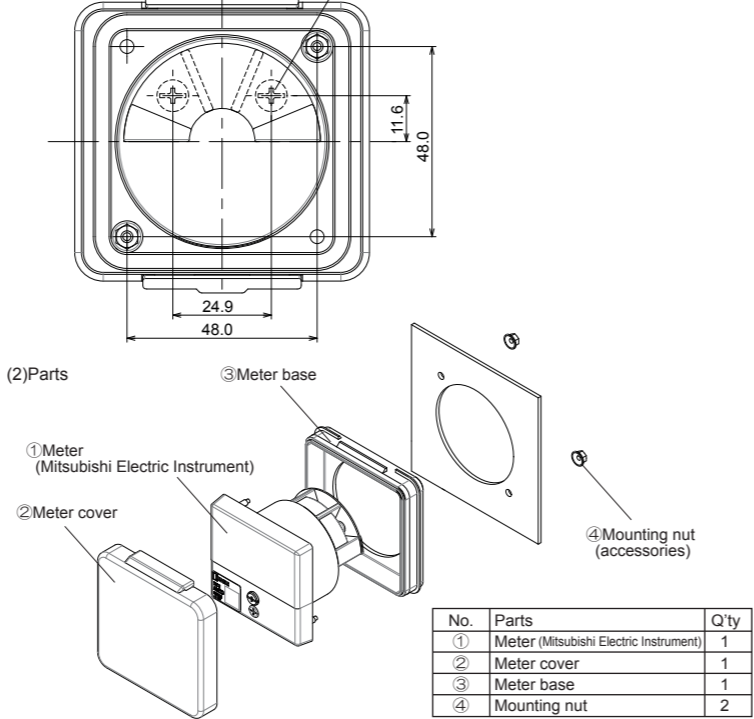
(□ and * contain the same type symbol. For details, refer to **1** Product Structure.)

3 Dimensions and Mounting

(1) Dimensional drawing

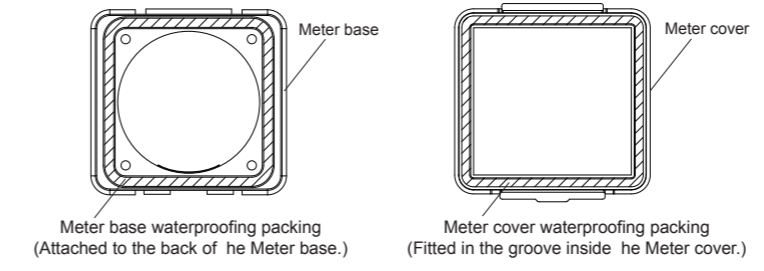


(2) Parts



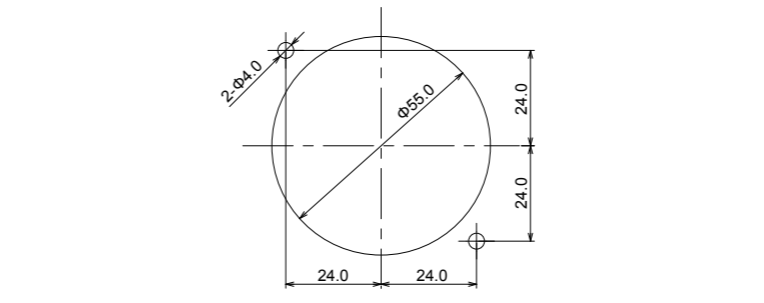
-Precautions for use-

The meter base and the meter cover are fitted with a special packing for waterproofing. (See the figure below)
Do not remove or replace the packing. The waterproof performance may be impaired.



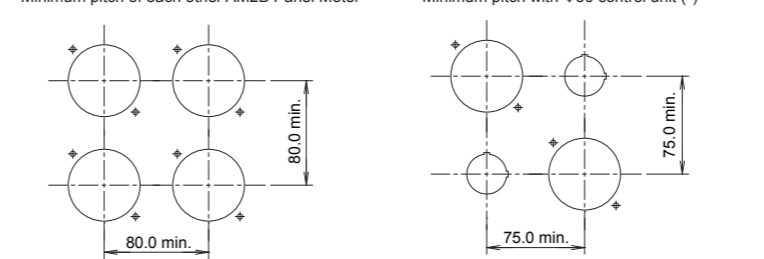
(3) Panel Thickness / Hole Size / Pitch

- Panel Thickness : 1.0 to 3.5mm
- Hole Size : See the figure below



• Pitch : See the figure below

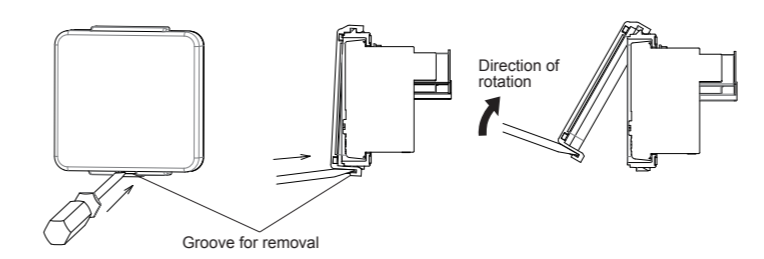
Minimum pitch of each other AM2B Panel Meter



(*): It is a Φ30 series control unit (ABN / APN / ASN series) made by IDEC. For more information on the control unit, please refer to the IDEC website. For other units, please consider the mounting pitch by yourself by referring to the external dimensions.

(4) Mounting

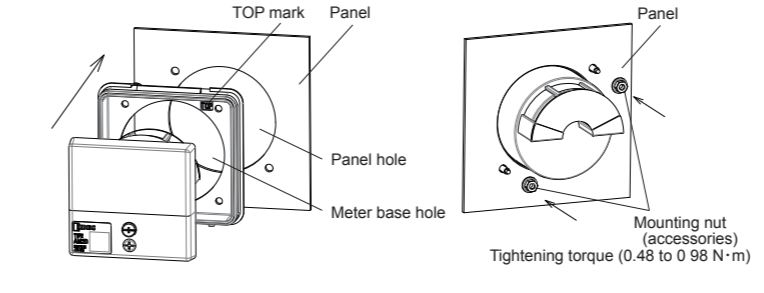
Insert a flat blade screwdriver into the groove on the bottom of the meter cover and rotate slowly in the direction shown in the figure to remove the meter cover from the meter base.



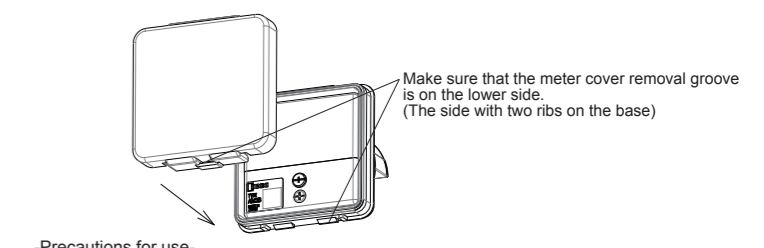
Refer to the following for the recommended dimensions of the tip of the flat blade screwdriver.



After confirming that the waterproof packing is properly attached to the back of the meter base, install the meter in the order of the meter base hole and the panel hole from the front panel side. At that time, install so that the TOP mark side of the meter base is on the upper side. Then, tighten the M3 nut from the back of the panel with the recommended tightening torque (0.48 to 0.98 Nm).



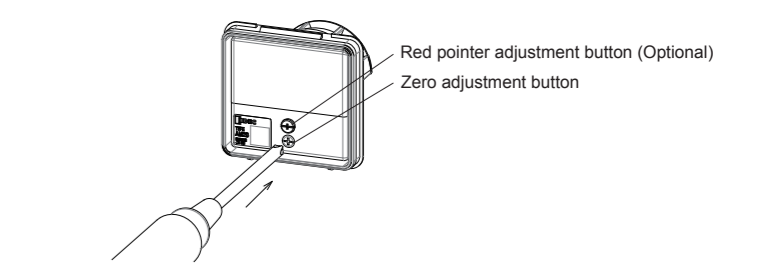
Make sure that the waterproof packing is properly installed inside the meter cover, and then insert the meter cover into the meter base. At that time, attach the meter cover so that the groove for removing the meter cover faces downward, and push it in slowly until the upper and lower claws of the meter base snap. (See the figure below)



-Precautions for use-
Forcibly applying force when installing or removing the meter cover may cause damage. If you feel something is wrong with the cover when inserting it, check that the cover is oriented correctly and that there is no foreign matter or deformation on the cover, and then reattach it.

(5) Zero adjustment and setting of red pointer

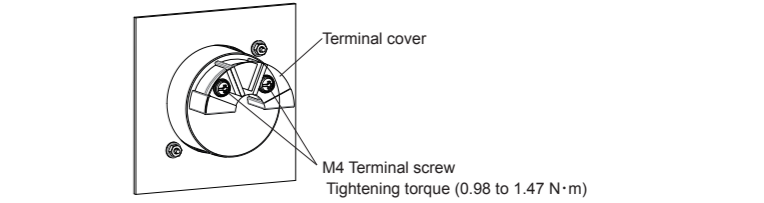
With the meter cover removed, use a Phillips screwdriver to turn the Zero adjustment button or turn the Red pointer adjustment button to make adjustments.



-Precautions for use-
Do not apply excessive force to the button. It may cause damage to the meter.

4 Wiring

For wiring, use a wire size and crimp terminal suitable for the amount of electricity. For the terminal screw (M4), be sure to use the screw attached to the product and tighten it with the recommended tightening torque (0.98 to 1.47 N·m). Be sure to attach the Terminal cover for safety.



5 Maintenance and Inspection

For safe use, perform the following daily and regular inspections appropriately.

- (1) Daily inspection
 - There is no damage to the instrument and cover.
 - There are no abnormalities in the instrument instructions.
 - No abnormal noise or odor.
 - No dust or dirt is attached.
- (2) Periodic inspection

In addition to the above inspection

 - There is no looseness in the mounting or terminal connection.
 - The terminals, panels, etc. must not be deformed by heating or stress.
 - The error is within the accuracy grade.

6 Disposal

Observe the national standards for refuse disposal.

Specifications and other descriptions in this manual are subject to change without notice.