

Read all instructions thoroughly

INSTRUCTIONS

TYPE AKM TEMPERATURE RECORDER

SAGINOMIYA

IMPORTANT

Failure to read and follow all instructions carefully before installing or operating this AKM Temperature recorder could cause personal injury and/or property damage. Save these instructions for future use.

NOTES FOR SAFETY

⚠ WARNING

- Do not remove the terminal cover or the main unit cover when the power is turned on. Failure to do so may cause electric shock.
- Be sure to turn off the power before connecting the cables. Failure to do so may cause electric shock.
- Be sure to use the supplied grommet when connecting the cables. The cords may otherwise be damaged and cause electric shock.
- Do not splash water onto the product. Water may cause electric shock.
- Use the supplied attachment screws (M4×0.7×5). In case of loss, use screws which will not reach depth of more than 3mm when inserted from the side or from the bottom of the main unit. Failure to do so may cause malfunction.

SPECIFICATIONS

Catalog No.	Temp Range		Alarm Power Source	Catalog No. of Recording Paper	Wt. (kg)	
	Min	Max				
AKM-4014LH1X	-40°C	+14°C	AC 100 ~ 120V	BKM-4044X	1.6	
AKM-4014LH2X			AC 200 ~ 240V			
AKM-1044LH1X	-10°C	+44°C	AC 100 ~ 120V			
AKM-1044LH2X			AC 200 ~ 240V			
AKM-0054LH1X	0°C	+54°C	AC 100 ~ 120V			BKM-0054X
AKM-0054LH2X			AC 200 ~ 240V			
AKM-0620LH1X	-6°C	+20°C	AC 100 ~ 120V	BKM-0620X		
AKM-0620LH2X			AC 200 ~ 240V			

Note: Alarm Contact : Each one on upper and lower limit pointer, 120V AC3Ampere, 28V DC3Ampere.

- Recording Paper: Carbonless Paper, folding type (Full one month continuous recording)
- Driving Motor : Quartz Motor (can be driven by C-type dry cell for one year)
- Feeding speed : 3.3mm/hour
- Alarm contact : Electric Rating of Contact 100V

⚠ CAUTION

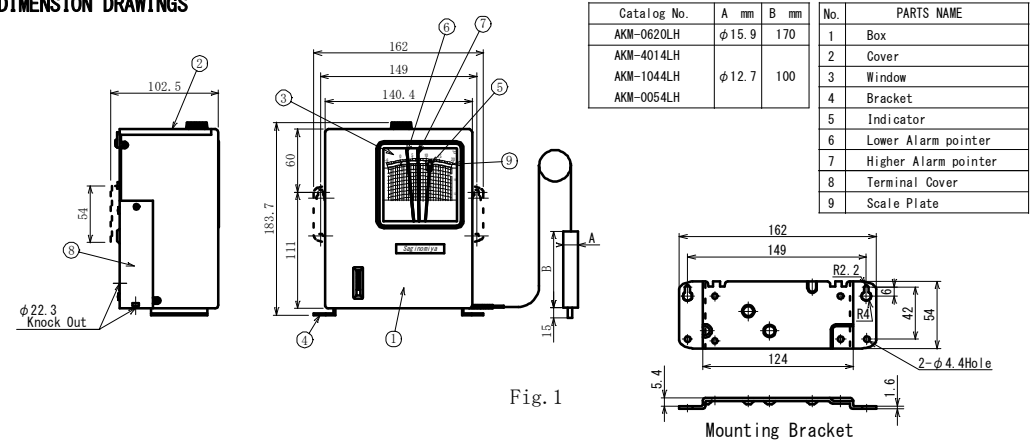
Note the following conditions when attaching the product. Failure to do so may result in malfunction or breakdown.

- Be sure to attach the main unit to the outside of the refrigerator. Attaching the main unit to the inside of the refrigerator may cause operation failure or breakdown.
- Avoid attaching the main unit in locations where water may splash onto it or where there is high humidity.
- When attaching the main unit, attach the mounting brackets to the main unit and select a location where the unit will be on the level.
- The product should be used in locations with an ambient temperature of -10~55°C and humidity of 85% RH or less. Please note that even in locations where these conditions are held, a location where condensation will not occur should be selected. In case of attaching the unit directly to the refrigerator, the use of insulating materials is recommended to prevent the transmission of refrigerator's interior temperature (low temperature) directly to the recorder, otherwise condensation may occur.
- Attach the unit in the mounting direction using the attachment holes (M4×0.7) on the side or the bottom of the main unit so that the recording chart is on the level and easy to read.
- Do not turn any screws other than the terminal screws.
- Do not let a recorder drop.
- Do not paint a recorder.
- Install a recorder to lower than vibration 0.1m/s²
- If the part within a radius of 10mm of the capillary tube or the part within 40mm length from the junction of the tube is bent or twisted, the capillary tube may break and cause fluid leakage. Be sure to handle it with care.
- Attachment of the feeler bulb
 - Do not bend or scratch the gas charging pinch cock positioned at the end of the feeler bulb.
 - Do not scratch or dent the feeler bulb excessively.
 - The feeler bulb should be used in applications where controlled fluids are employed which will not harm its material properties (copper, copper alloy, silver solder, solder).

- There are no restrictions for the relative temperatures of the main unit (TS), the temperature feeler bulb (TB), and the capillary tube (TC).

- A dry cell should be handled with caution. The battery fluid may leak and result in corrosion or burst.
- Insert the + and - ends of the battery correctly.
- Do not throw the battery into fire, short circuit, disassemble or apply heat.
- If the battery is worn out, replace it immediately. Failure to do so may cause fluid leakage and damage the product.

DIMENSION DRAWINGS



INSTALLATION

1. INSTALLATION OF RECORDER BODY

Use the bracket supplied for installation of body. Bracket can be attached either on the back or bottom of the body.

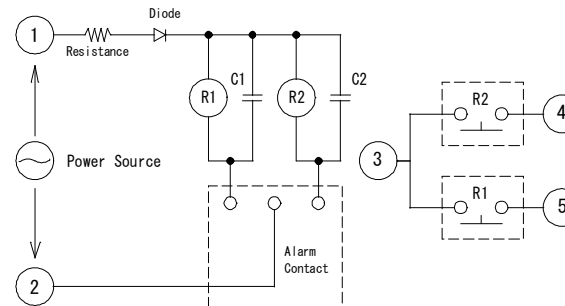
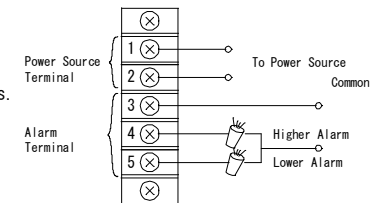
Note: Use accessory screws to attach the bracket to the recorder body.

2. INSTALLATION OF TEMPERATURE SENSING BULB

- (1) Install the Temperature Sensing Bulb at the point where temperature measurement and recording is required.
- (2) Be careful not to damage the Capillary Tube.

ELECTRICAL WIRINGS OF HIGHER & LOWER ALARMS

- (1) Loosen the screw on the terminal cover and remove the cover.
- (2) Alarm terminals are shown in Fig. 2.3
- (3) Solderless terminals (M3.5) should be applied on each alarm wires.
- (4) Alarm wires should introduce through bottom plate or back plate by knock-out using rubber grommet.



- R1 : Lower Alarm Relay
- R2 : Higher Alarm Relay
- C1, C2 : Condenser
- ①~② : Power Source
- AKM-※LH1 AC100V, 110V, 115V, 120V 50/60Hz
- AKM-※LH2 AC200V, 220V, 230V, 240V 50/60Hz
- ③ : Common Alarm Terminal
- ④ : Higher Alarm Terminal
- ⑤ : Lower Alarm Terminal

HOW TO SET RECORDING PAPER

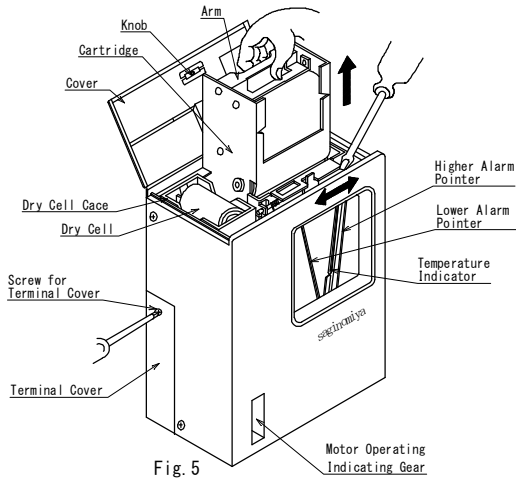


Fig. 5

1. RECORDING PAPER

Recording paper is as shown in Fig. 4.

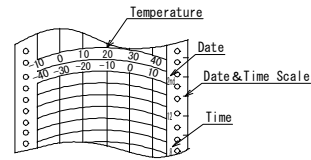


Fig. 4

2. PULL OUT CARTRIDGE

Turn the knob on the cover counter-clockwise and open the cover.

Pull out the cartridge. (Fig. 5)

3. HOW TO SET RECORDING PAPER

1) Put the recording paper into the cartridge with the printed surface out, from the leading end as shown in Fig. 6.

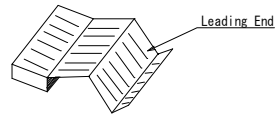


Fig. 6

2) Pass the paper under the arm through between the guide plate. (Fig. 7 ①→②)

3) Continuing to pass the paper through between the guide and the guide plate, turn the gear in the arrow mark direction and confirm the teeth of the gear and the sprocket going together. (Fig. 7 ②→③→④)

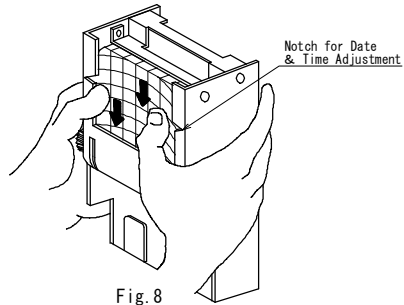


Fig. 8

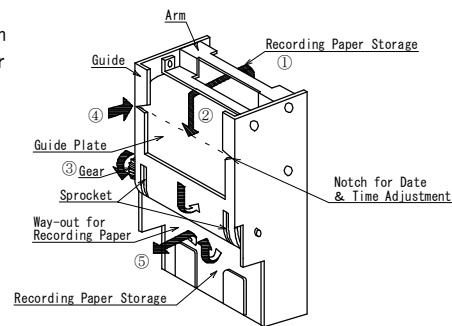


Fig. 7

TIME & DATE ADJUSTMENT

By turning the gear in the arrow mark direction, set Date & Time at the notch of the guide. (Fig. 7 ③, ④)

Please fold the recording paper correctly in the recording paper storage before setting the cartridge into the recorder body.

HOW TO TAKE OUT RECORDED PAPER

Take the recorded paper out from the way-out of the cartridge after pulling the cartridge out from the body.

Note

If a part of the recording paper remains in the recording paper storage, turn the gear to forward the paper completely into the recorded paper storage.

DRY CELL

Turn the knob and open the cover of the recorder body. Set the C-type dry cell in a correct position indicated in the dry cell case. (Fig. 9)

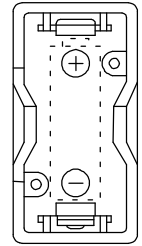


Fig. 9

START OF DRIVING MOTOR

- (1) Insert a dry cell battery and the quartz motor will start to drive.
- (2) To confirm a start of operation of the motor, check if the motor operation indicating gear is turning.
- (3) Change the dry cells (C-type) once a year.

SET OF HIGHER & LOWER ALARM POINTERS

Open the cover and set Alarm Pointers at the required temperature on the scale plate.

NOTE

Do not cross the Higher alarm pointer and Lower alarm pointer.

OPERATION CHECK

Install the product correctly and then check its operation to confirm correct function of the whole system when using.

LIMIT ON APPLICATION

The product is not designed nor manufactured for an use in such equipment or system that is intended to be used under such circumstances that may affect human life. For application requiring extreme high reliability, please contact the Company first.

SCOPE OF WARRANTY

Unless otherwise agreed by the parties, warranty period of the Product shall be one year after date of delivery to Buyer. In case of failure attributable to the Company within such period, the Product shall be repaired or replaced without charge, provided that any one of followings are out of the warranty:

1. Unproper handling or application by user
2. Modification or repair by other than the Company
3. Any failure to be caused by acts of God, fire, storm or the like, war, riot or the like and other causes beyond the control of the Company.

Warranty described in this paragraph means the warranty for the Product itself and does not include warranty for any consequential damage arising out of or occasioned by a defect or failure of the product.

SAGINOMIYA
SESAKUSHO, INC.

Shinjuku Garden Tower 22F
8-2, Okubo 3-chome, Shinjuku-ku, Tokyo, 169-0072 Japan
Tel: +81 3 6205 9123 Fax: +81 3 6205 9125
E-mail: inter@saginomiya.co.jp
URL: <http://www.saginomiya-global.com/en/>