

Read all instructions thoroughly

INSTRUCTIONS

ROOM THERMOSTAT

Type **ARS**



IMPORTANT

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

NOTES FOR SAFETY

Warning

- Before wiring and services, be sure to turn off power supply. Otherwise, may cause electrical shock.
- Do not pour water on the Thermostat as it may cause electrical shock.
- Do not remove a cover and body while power is supplied as it may cause electrical shock. Make sure the power is turned off when removing the cover.

NOTES FOR MOUNTING AND WIRING

Caution

- Locate the Thermostat on the wall 1.2 to 1.5 meters from the floor so that it can detect the average temperature of the room.
- Do not turn knob or screws except a dial knob, terminal screw and Sub-base fixing screw. May cause failures of the Thermostat.
- Please be sure to take out calmly, after removing a Sub-base fixing screw when taking out the body. Please do not pull forcibly. As it may cause damage.
- Do not hold the adjusting dial knob to remove the body. As it may cause damage.
- Mount the Sub-base to a wall with the wall mounting screw M4 provided by customer.
- Do not overtighten the screws.
- The Thermostat must not be located in the following places.
 - In the shade of furniture of which poorly ventilated.
 - Near door or a window where it can be effected by a draft.
 - Direct sunlight or location exposed to radiant heat.
 - Where it is exposed directly to the cold or warm air coming from an air conditioning unit.
 - Please affected by temperature fluctuations, such as those near cold water, hot water, or steam piping.
 - Places with a relative humidity of 85% or higher.
 - Places vulnerable to condensation.
 - Vaporous environments.
 - Dusty places.
 - Places exposed to high levels of machinery vibration or shock.
 - Places exposed to splashing water such as around bathing facilities or pools.
 - Atmosphere that contains chemicals such as corrosive gases or organic solvents.
- On wiring, vinyl coated copper wire of more than 1V2mm² should be used.
- All wiring must be carried out by experts with knowledge of electrical engineering in accordance with standards on electrical equipment and technology.
- Do not use the Thermostat in the units which need larger load current than the rated current of Thermostat, it may cause contact failure.
- This product does not have dustproof or waterproof features.
- Regular maintenance is recommended to assure continuous and safe use of this product.
- When cleaning the cover and sub-base, make the power is turned off and wipe with a dry cloth.

SPECIFICATIONS

CATALOG No.	CONTACT FUNCTION	RANGE °C		DIFF. °C	STEP DIFF. °C	AMBIENT TEMP. ON USE. °C	Weight kg
		MIN.	MAX.				
ARS-C120	Standard SPDT	0	20	Approx. 1.5 (Fixed)	—	-20~50	0.17
ARS-C120S	With Heat Cool Selector						0.18
ARS-C130	Standard SPDT	10	30				0.17
ARS-C130S	With Heat Cool Selector						0.18
ARS-C140	Standard SPDT	20	40				0.17
ARS-C140S	With Heat Cool Selector						0.18
ARS-S630	Standard DPDT	10	30	Approx. 2 (Fixed)		0.22	

ELECTRICAL RATING

Catalog No.		ARS-C120(S), C130(S), C140(S)			ARS-S630	
		DC	AC		AC	
RATED VOLTAGE V	POWER FACTOR	24V	125V	250V	125V	250V
RATED AMPS. A	cos φ	2A	6A	3A	4A	2A
NON-INDUCTIVE CURRENT		1				
INDUCTIVE CURRENT	FULL LOAD	0.75	1A	6A	3A	4A
	LOCKED ROTOR	0.45	10A	24A	12A	16A
					8A	

※ Minimum Contact Capacity : 50mA

MOUNTING

Mounting and wiring should be done in following manner. (See Fig.1, Fig.2)

- Take off the cover while pushing the cover stopper in the direction of the arrow shown on the stopper.
 - Loosen the Sub-base fixing screw(M3).
 - Hold the guide plate, pull the body towards you, and remove the body.
 - Mount the Sub-base to a wall with wall mounting screw. (Mounting pitch : 66.7mm)
 - Make wiring according to Fig.5 "Internal Wiring" and "Application and Examples".
 - Tighten the Sub-base fixing screw(M3) with specified torque(39.2N·cm, 4kgf·cm) to fix the body on the Sub-base.
 - Fix the cover to the Thermostats.
- * A mounting plate is available in case the mounting pitch of the switch box and box cover is 83.5mm. (ARS-AE01)

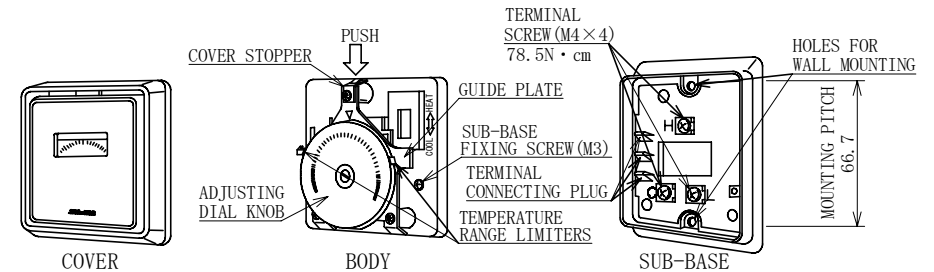


Fig. 1 ARS-C120(S), C130(S), C140(S) TYPE

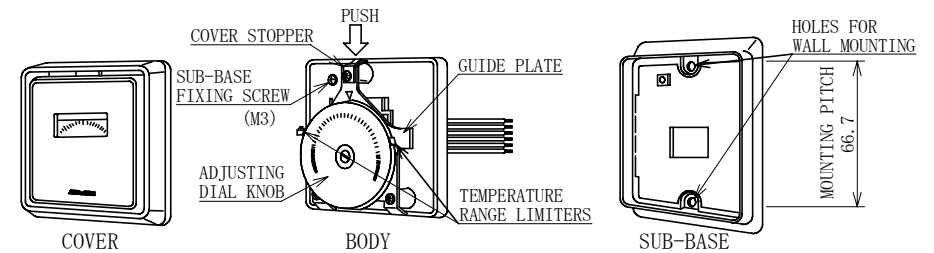
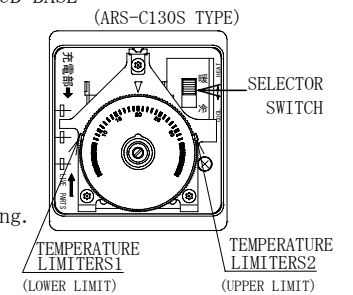


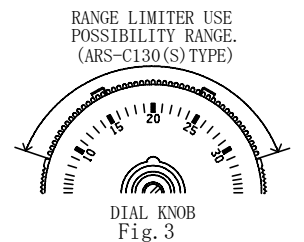
Fig. 2 ARS-S630 TYPE



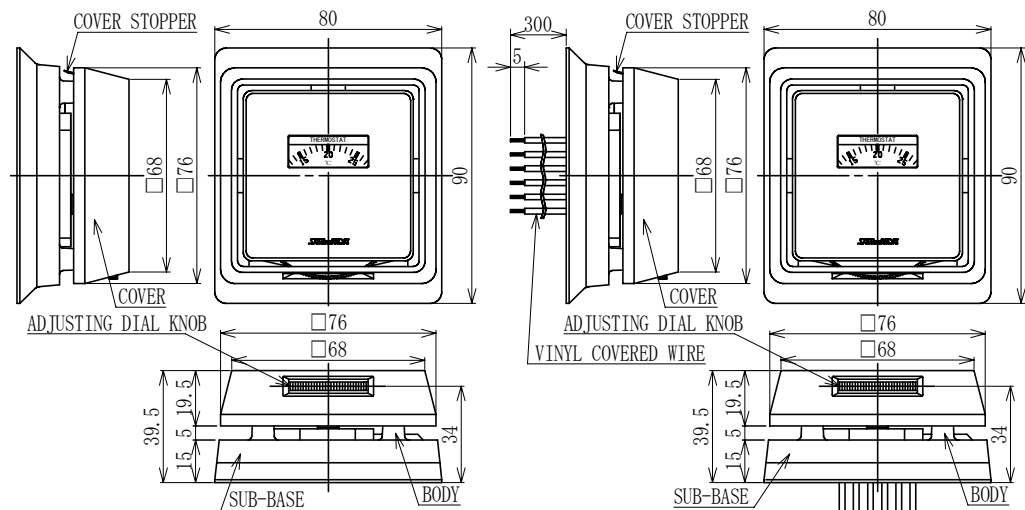
OPERATION

- The thermostat is provided with adjusting dial knob, which raises or lowers both cut-in and cut-out setting an equal amount and its pointer indicates a higher temperature setting.
- For the model with a selector switch, select a position, HEAT or COOL, and remove a cover.
- ON-OFF differential and step differential is fixed and not adjustable in the field.
- RANGE LIMITERS

This room Thermostat has upper-limit and lower-limit range limiters that allow you to limit the setting range. But it might become poor in movement when I set it by impossible power at the position out of a use range. (See Fig.3)
 Example: If you wish to set the temperature range to 15~25°C, push down the range limiters 1 and 2 with your finger and turn the dial knob, and set the limiters to scale marks 15 and 25, respectively.



DIMENSIONS



ARS-C120(S), C130(S), C140(S) TYPE

ARS-S630 TYPE

FOLLOW-UP CHARACTERISTICS

A certain time lag may occur due to the poor heat conductivity of air. However, this time lag may be shortened by good ventilation. Figure 4 shows the operating temperature differential of the Thermostat obtained by changing the rate of temperature variation under a 0.2 to 0.4m/s airflow. (Example : The changing rate is 3.33°C/h at the NEMA standard.)

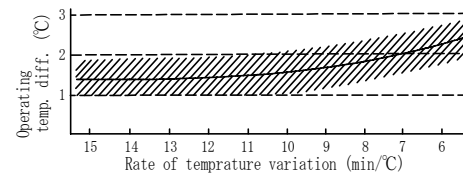
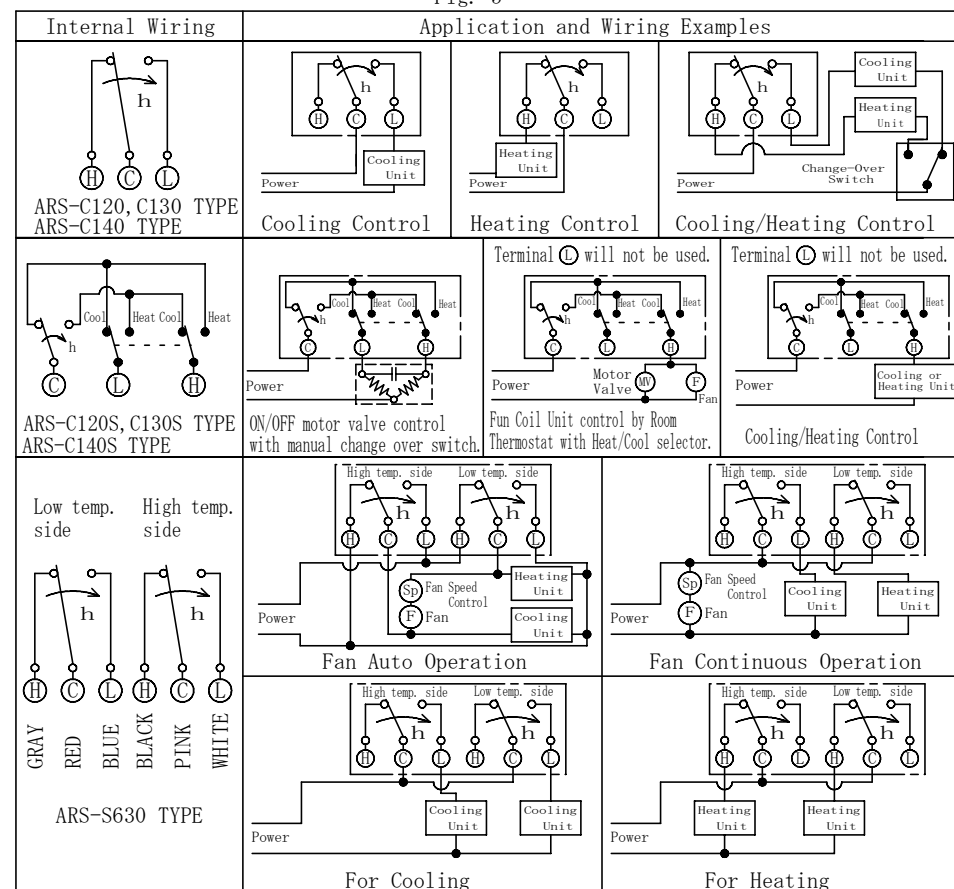


Fig. 4

WIRING

Fig. 5



Note : Arrow indicates Temp. rise.

CONFIRMATION OF OPERATION

All customers using this Product (hereinafter referred to as "Customers") are requested to, after properly installing this Product, test the operation of this Product to confirm that all the systems in connection with this Product fully function. In order to prevent the occurrence of bodily injury, fire accidents, serious damage, etc., in connection with the Customers' machinery or equipment due to improper installation of this Product, Saginomiya kindly requests the Customers to take the necessary safety measures by preparing safe designs such as a fail-safe design (*1) and a fire spread prevention design, as well as to make the proper adjustments for product reliability necessary for fault-tolerance (*2).

- (*1) Fail-safe design: Design to ensure safety in the event of any mechanical failure
- (*2) Fault-tolerance: Utilization of redundancy technology

Periodic Inspection of this Product

Be sure to confirm the proper operation of this Product and keep records of such operation at least once a year.

Saginomiya shall be held harmless and be indemnified by the Customers from any damages incurred due to the Customers failing to conduct the above operational procedures, provided, however, that, this shall not apply if the damages which the Customers incurred due to the defect of this Product caused by Saginomiya.

RESTRICTIONS OF USE

This Product is designed and manufactured for the purpose of using them for cooling and heating and refrigerating appliances and air conditioning equipment or various industrial equipment, but is not designed and manufactured for the purpose of using this Product for any instrument or system related to human life or health purposes. Therefore, the use of this Product in fields related to items (1) through (3) below is not intended whatsoever. Saginomiya shall be held harmless and be indemnified from any and all damages incurred by use of this Product under item (3).

- (1) In any field related to nuclear power and radiation;
- (2) In any field related to space or seafloor equipment;
- (3) In any equipment or device requiring a high degree of reliance on such equipment or device with respect to which it is reasonably foreseeable that failure or malfunction of the equipment or device would either directly or indirectly cause serious damage to human life, health or property;

Also, when using this Product under the fields related to items (1) through (10), (except for item (3), in relation to which this Product must never be used), please be sure to notify Saginomiya's contact desk in charge of sales and obtain Saginomiya's prior written approval for such use. Saginomiya shall be held harmless and be indemnified from any and all damages incurred by use of this Product in relation to these fields if the Customers do not notify Saginomiya's contact desk and obtain Saginomiya's prior written approval.

- (4) Heating, cooling and air conditioning equipment that uses flammable and/or toxic refrigerants, or various industrial equipment that uses flammable and/or toxic fluids;
- (5) Transportation device (railroad, aviation, ship or vessel, vehicle equipment, etc.);
- (6) Disaster-prevention or crime-prevention device;
- (7) Facility or application directly related to medical equipment, burning appliances, electro thermal equipment, amusement rides and devices, facilities/applications associated directly with billing;
- (8) Equipment requiring high reliance on supply systems such as electricity, gas, water, etc., in large-scale communication system, or in transportation or air traffic control system;
- (9) Facilities that are to comply with regulations of governmental / public agencies or specific industries or
- (10) Other machineries or equipment equivalent to those set forth in the above items (4) to (9) which require for high reliability and safety.

Be sure to replace the Products within 5 to 10 years of delivery if no other duration of use is provided in the applicable specifications or instruction manual because the conditions and environment of use also have an impact on the Products.

SCOPE OF WARRANTY

SAGINOMIYA WILL PROVIDE THE CUSTOMERS WITH REPLACEMENT OR REPAIRED THIS PRODUCT DELIVERED, FREE OF COST, ONLY WITHIN ONE YEAR OF DELIVERY TO THE CUSTOMER, IF FAILURE OCCURS IN THE CUSTOMERS' EQUIPMENT USING THIS PRODUCT DUE TO A DEFECT OF THIS PRODUCT; PROVIDED, HOWEVER, THAT IN ANY EVENT THE RATIO OF THE AMOUNT THAT SAGINOMIYA BEARS FOR THE DAMAGES INCURRED BY THE FAILURE OF THIS PRODUCT OR CUSTOMERS' EQUIPMENT SHALL NOT EXCEED THE PRICE OF THIS PRODUCT WE DELIVERED. IN ADDITION, SAGINOMIYA SHALL BE HELD HARMLESS AND BE INDEMNIFIED FROM ANY AND ALL DAMAGES INCURRED WHEN THE FAILURE OF THE CUSTOMERS' EQUIPMENT OCCURRED DUE TO ANY CAUSE SET FORTH BELOW.

- (1) WHEN CAUSED BY INAPPROPRIATE HANDLING OR USE OF THIS PRODUCT BY THE CUSTOMERS (SUCH AS NOT COMPLYING WITH THE CONDITIONS, ENVIRONMENTAL SPECIFICATIONS OR CAUTIONS INDICATED IN ANY APPLICABLE CATALOGUE, SPECIFICATIONS, INSTRUCTION MANUAL, ETC.);
- (2) WHEN FAILURE OCCURRED DUE TO ANY REASON OTHER THAN THIS PRODUCT;
- (3) WHEN CAUSED BY MODIFICATION OR REPAIR OF THIS PRODUCT MADE BY ANYONE OTHER THAN SAGINOMIYA OR DESIGNEE OF SAGINOMIYA;
- (4) WHEN CAUSED BY THE USE OF THIS PRODUCT IN VIOLATION OF THE ABOVE "RESTRICTIONS OF USE" OR "CONFIRMATION OF OPERATION";
- (5) WHEN SUCH FAILURE WAS NOT REASONABLY FORESEEABLE AT THE TIME OF SAGINOMIYA'S SHIPMENT; OR
- (6) BY ANY OTHER CAUSE NOT ATTRIBUTABLE TO SAGINOMIYA, SUCH AS AN ACT OF GOD, DISASTER, OR ACT OF ANY THIRD PARTY.

PLEASE NOTE THAT THE CUSTOMERS WILL NOT BE ENTITLED TO ANY OF THE ABOVE WARRANTY IF THE CUSTOMERS PURCHASED THE PRODUCTS FROM INTERNET AUCTION, ETC.

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