

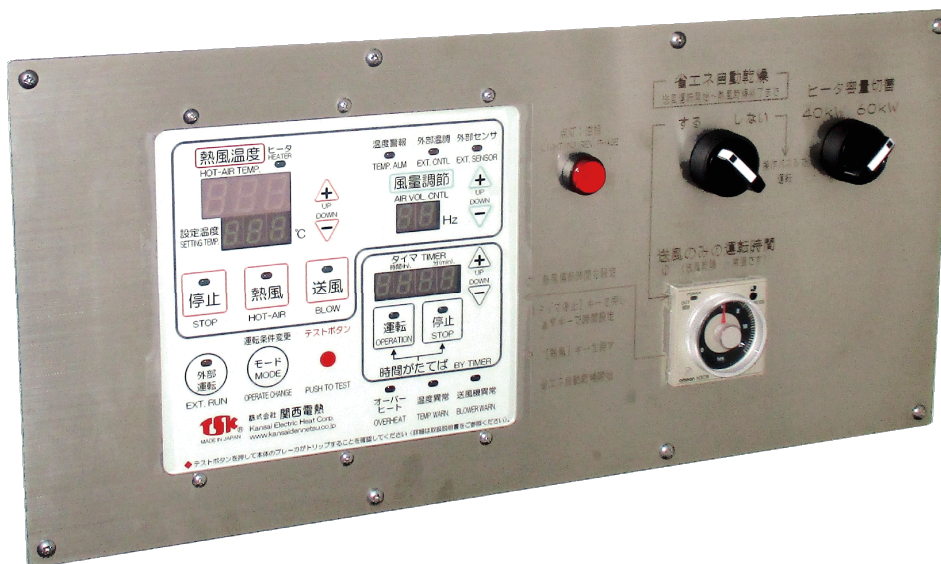
# TSK Hot Air Generator

## Manual: Basic Operations (For Mold Dryers X-3MS, X-4MS)

● Be sure to read before use.

- ◆ Thank you for purchasing the TSK Hot Air Generator.
- ◆ Please verify that the model, part number, and voltage on the nameplate match your ordered product.
- ◆ This manual describes the basic operation of the hot air generator. For installation, piping, power supply,

For details on fault detection and convenient functions, refer to the [General Operation Manual].



TSK Hot Air Generator  
•Electric Hot Air Mold Dryer  
X-3MS  
X-4MS

The contents of this instruction manual are subject to change without notice.

Furthermore, the illustrations and markings in this manual do not guarantee the actual specifications.

Modifying, copying, or distributing this manual without the manufacturer's permission is strictly prohibited.

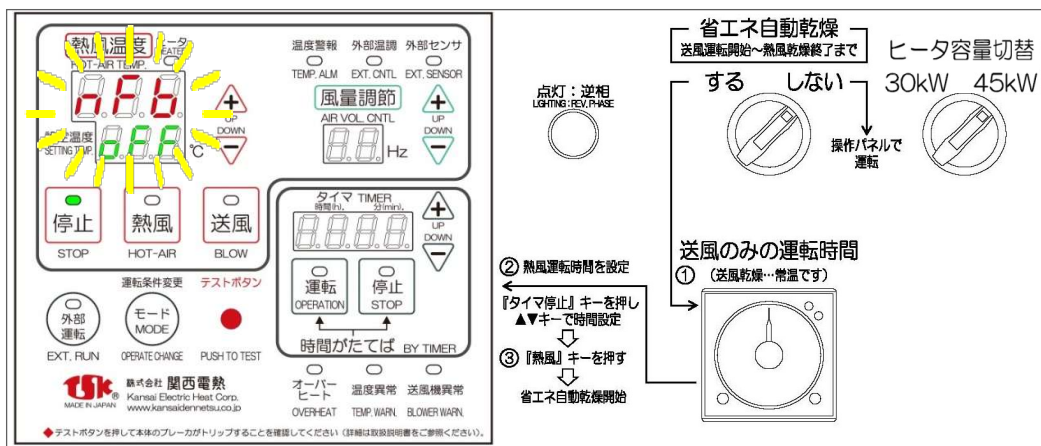


Kansai Electric Heat Corp.

# 1. Normal Operation

## ① Turn ON the factory power supply (primary side power).

- The Stop lamp (green) illuminates, the PV display shows 'NFB', and the SV display flashes 'OFF'.



※Operation is not possible when only the factory power supply (primary side power) is ON.

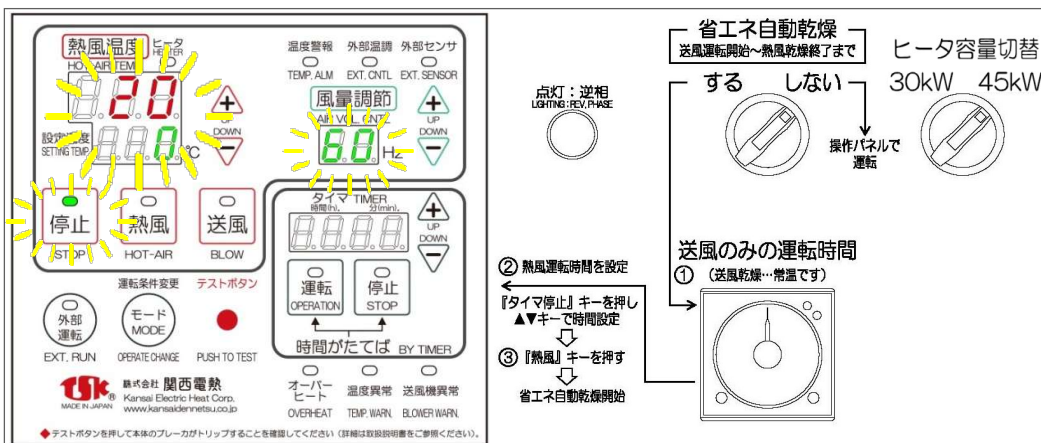
※The reverse phase lamp illuminates when the power line connection is reversed or a phase is missing.

When the reverse phase lamp is lit, refer to the **Instruction Manual: General Edition**.

## ② Turn ON the breaker (NFB).

- The stop lamp (green) will light up, and the display will show 'Current Temperature' in the PV section, '0' in the SV setting section, and '60' (frequency) in the airflow adjustment section.

(During initial operation)

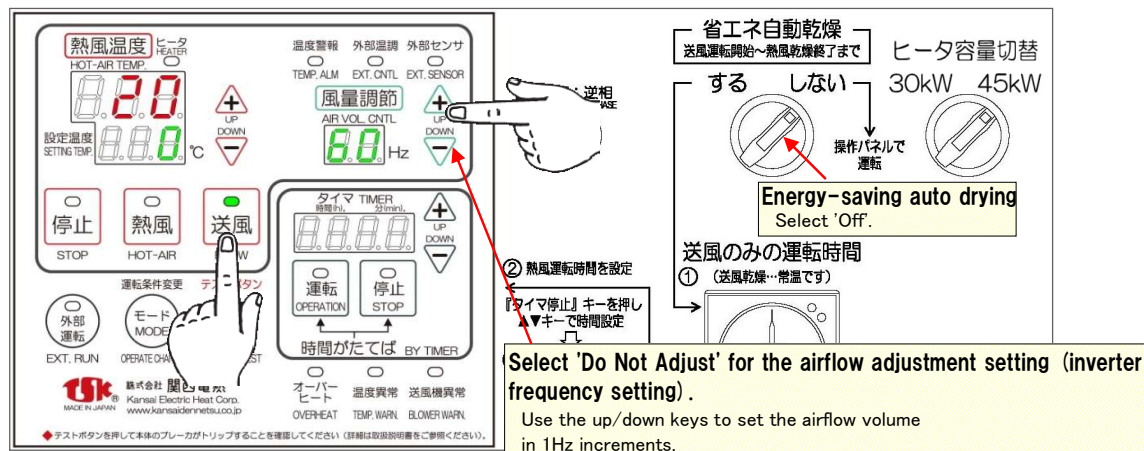


※When turning the main breaker (NFB) ON for the second time or later, the previous setting values will be displayed on the setting SV and airflow adjustment section.

# 1. Normal Operation...Page 1

② Pressing the blower switch lights the blower lamp (green) and starts blower operation.

- In this case, select [Do Not Use] for [Energy-Saving Auto Dry].
- Adjust air volume using the [Air Volume Adjustment Up/Down Keys (Inverter Frequency Setting)].



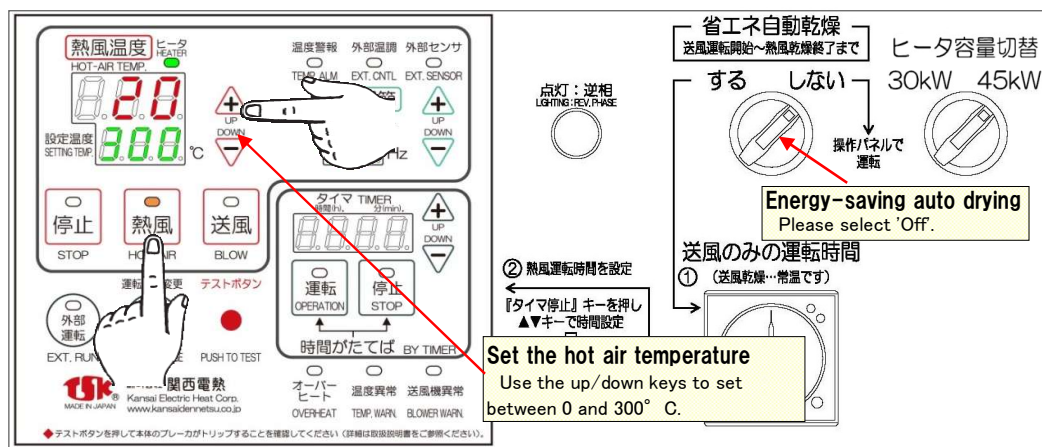
※Even if the airflow is set to the minimum airflow adjustment setting value of 20Hz, the mold dryer will not reach the maximum temperature if it is in a near-no-load state.

This is because a lower limit is set for the motor rotation speed to account for the cooling effect of the blower motor.

If the hot air temperature does not rise to the set temperature even when the airflow adjustment setting is set to 20Hz, install a damper at the outlet to reduce the airflow

...Normally, adjust air volume only via the air volume adjustment setting (inverter frequency setting).

③ Pressing the Hot Air Switch illuminates the Hot Air Lamp (orange) and starts hot air operation.



- To stop operation, press the stop switch (cooling operation is not required).

※ The heater lamp (green) indicates the heater ON/OFF status by lighting or flashing.

※Heater capacity can be changed using the [Heater Capacity Switch]. However, for safety, restrict power wiring, etc., to the following heater capacities using dampers, etc.

|                        |                        |
|------------------------|------------------------|
| X-3MS : 30kW (at 200V) | X-4MS : 45kW (at 200V) |
|------------------------|------------------------|

- When using the optional remote controller, [General Instruction Manual] (for Mold Dryers X-3MS, X-4MS). Please refer to page 13.

## 2. Timer Operation/Timer Stop (During Normal Operation)

- Before starting or stopping timer operation, set the hot air temperature and airflow volume as desired.
- Perform timer settings while the unit is stopped.  
(timer settings cannot be made during fan operation or hot air operation).

### ● Timer Operation (Starts after time elapses)

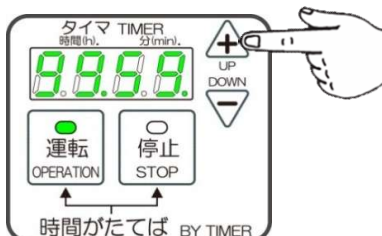
Press the timer operation switch.

The timer operation lamp (green) illuminates, and the timer display shows '00.00' flashes, or the previously set time will be displayed.



Use the up/down keys to set the desired time.

Can be set in 1-minute increments up to a maximum of 99 hours 59 minutes. After setting is complete, release the up/down keys. After 2 seconds, the timer stop lamp (green) will light up, and the timer display will show the set value.



### ③ Press the Hot Air Operation Switch.



The time count (subtraction of the set timer time) begins (the dot indicator flashes), and hot air operation starts when the time count reaches '00.00'. Furthermore, the hot air indicator light (orange) flashes whilst the time count is in progress, and switches to a steady light once hot air operation has started.

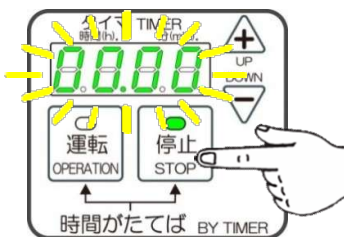
※After the timer count ends, the timer display will show '00.00.'

※Pressing the stop switch will halt timer operation and timer counting will stop.

### ● Timer Stop (Stops after time elapses)

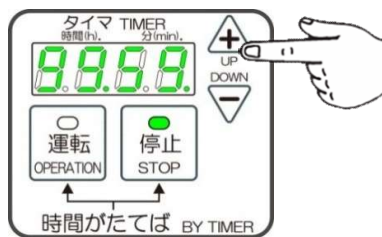
Press the timer stop switch.

The timer stop lamp (green) will light up, and the timer display will show '00.00' will flash, or the previously set time will be displayed.



Use the up/down keys to set the desired time.

Can be set in 1-minute increments up to a maximum of 99 hours 59 minutes. After setting is complete, release the up/down keys. After 2 seconds, the timer stop lamp (green) will light up, and the timer display will show the set value.



### ③ Press the Hot Air Operation Switch.

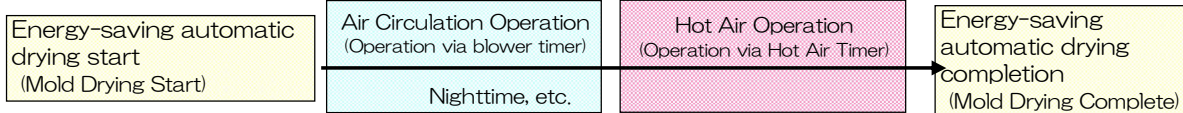


The time count (timer setting time subtraction) begins (beep). The hot air operation begins. When the time count reaches '00.00', the hot air operation stops. During hot air operation, the hot air lamp (orange) will be lit. After hot air operation ends, it will switch to flashing. After hot air operation ends, it switches to flashing. ※After the timer count ends, the timer display will show '00.00.'

※Pressing the stop switch will halt timer operation and timer counting will stop.

### 3. Energy-Saving Automatic Drying

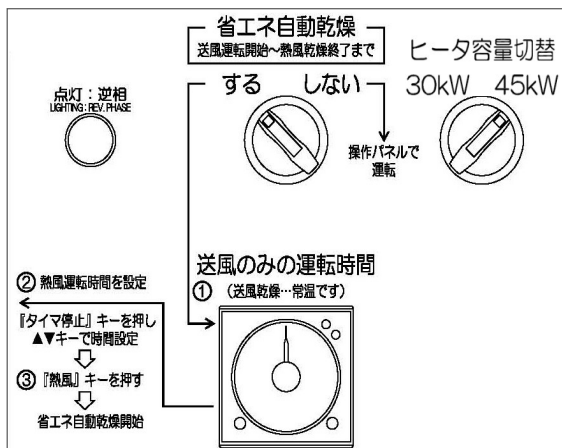
#### ◇About Energy-Saving Auto Drying



For several hours after mold drying begins (e.g., overnight), only air circulation will dry the surface sand. After the air-only timer operation time ends,

Hot air mold drying will start immediately and continue until the hot air timer operation time ends.

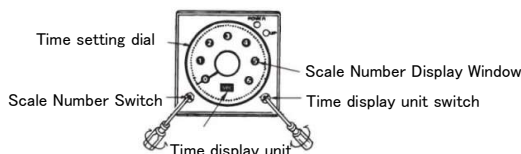
- ① In the stopped state, select [Enable] for Energy-Saving Auto Drying, then set the timer for [Fan-Only Operation Time].



#### 【Fan-Only Operation Timer Setting Method】

- ① Use a screwdriver or similar tool to turn the time unit selector switch and the scale number selector switch to set the desired range.

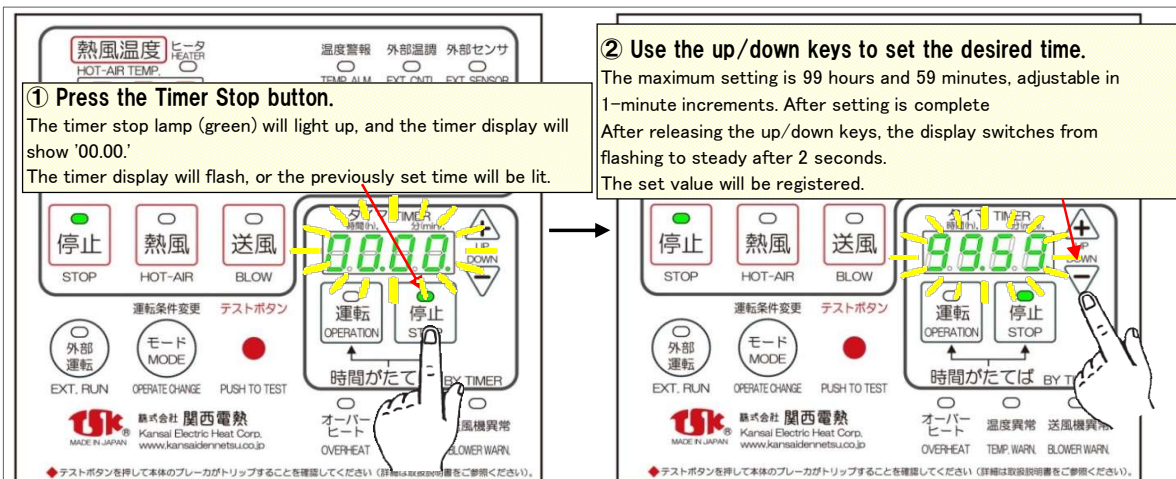
- ② Set the desired time using the time setting dial.



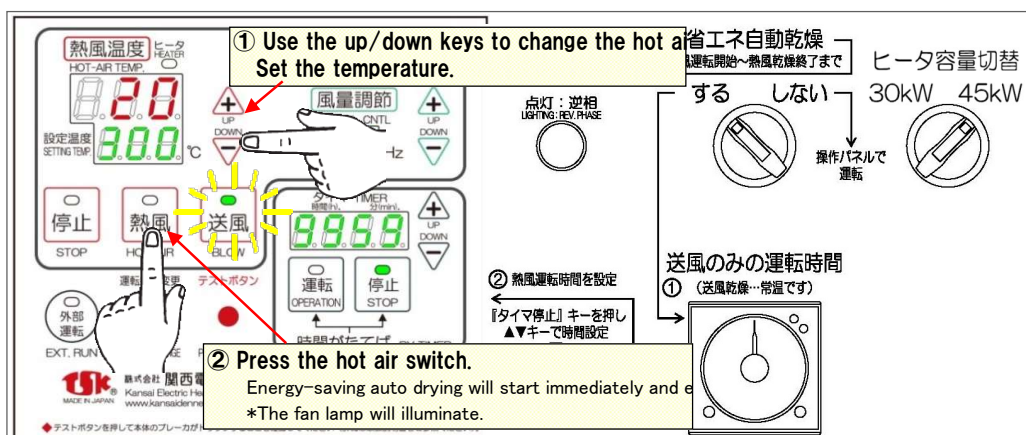
※ Do not set in seconds.

※ The indicator needle remains at the set time even as time passes.

- ② Set the hot air operation timer.



- ③ Set the hot air temperature and press the hot air switch to start energy-saving auto drying, begins as fan operation.



※When fan operation (controlled by the fan timer) ends and hot air operation (controlled by the hot air timer) begins, the hot air lamp (orange) illuminates.

※The heater lamp (green) indicates the heater's ON/OFF status by lighting or flashing.

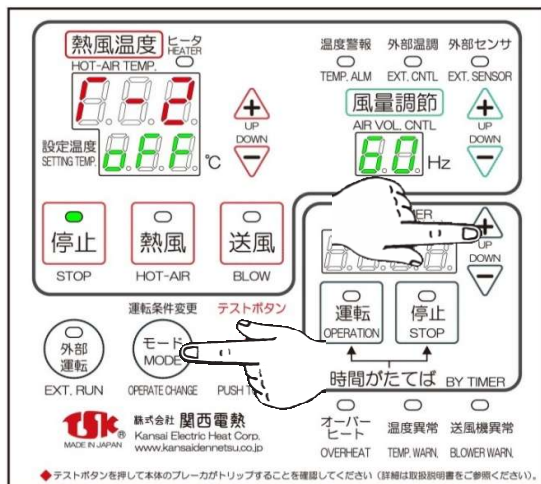
## . When using the cooling operation function (During normal operation and energy-saving auto drying)

● The cooling operation function is only available when selecting operation stop via the timer. After performing hot air operation via the timer, period of fan operation before stopping. (Also usable during energy-saving auto drying.)

※Our hot air generators are designed with a low wattage density, eliminating the need for cooling operation to prevent heater breakage, use this cooling operation function for preventing burns on piping, etc., after stopping operation, or for cooling after handling dried heated products.

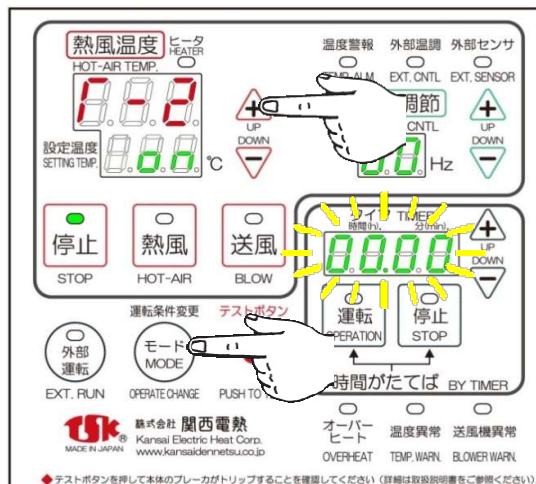
① While in stop state, press and hold the mode switch while pressing and holding the timer up key. Press and hold the Up key on.

The display will show 'T-2' in the指示PV section and 'OFF' in the設定SV section will be displayed.



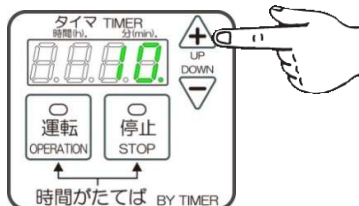
② Press the Up key to change the set SV display to 'ON', once.

The timer display will flash '00.00.'

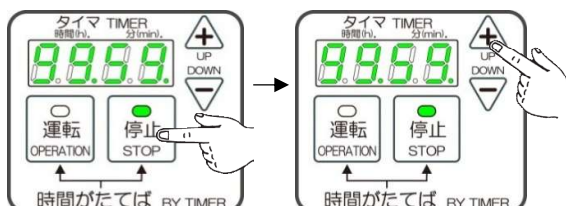


③ Use the up/down keys to set the desired cooling time.

After setting, press the mode switch once to return to the normal operation display.

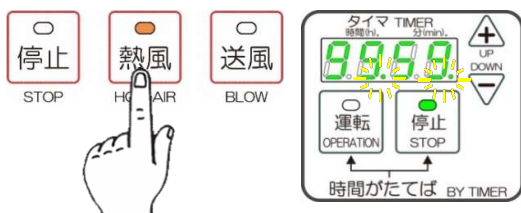


④ Press the timer stop switch to set the hot air operation time..



⑤ Press the hot air operation switch.

The timer (indicated by a flashing dot) will start, and the hot air operation will begin. The hot air indicator light (orange) will remain lit whilst the hot air operation is in progress.



After the timer-controlled hot air operation ends, the timer-controlled cooling operation (fan operation) will start. Also, during cooling operation, the fan lamp (green) will illuminate.



When the time count reaches '00.00.', the cooling operation (air circulation operation) stops, and the air circulation lamp (green) flashes.



※Pressing the stop switch halts timer operation (the timer setting reverts to the default value).

## Precautions for Use ※Be sure to check before use.

### To ensure trouble-free operation of the mold dryer

◆ This section lists important precautions that have caused failures in the past.

- Always clean the mold dryer's intake filter (standard equipment). Clogging of the filter may cause abnormal overheating inside the heater, potentially
- The mold dryer is equipped with a control panel filter; clean it regularly. If clogging becomes severe, dust adhering to the filter may enter the control panel interior
- If the atmosphere at the installation site of the mold dryer contains conductive suspended particles such as dust, powder, carbon fibers, oil, oil fumes, oil mist, moisture, or water vapor. If these substances adhere to or enter the mold dryer's
- Cannot be used in environments with combustible gases, flammable gases, plating, or corrosive atmospheres. Please consult us beforehand.
- Keep the mold dryer's circuit breaker (NFB) ON at all times. Do not use the ON/OFF switch as an operation switch. Do not use it as an ON/OFF switch. Surge voltage may damage internal electronic components.
- Flexible hose piping to the discharge port or suction port of the mold dryer will inevitably leak hot air due to the characteristics of flexible hoses. will inevitably cause hot air leakage. Leaked high-temperature hot air may flow back into the mold dryer, damage the electronic components in the control panel. Therefore, use the
- Applying voltage to input terminals A1 to A10 and output terminals B8 to B10 will cause failure. Additionally, applying voltage exceeding the rated value to output terminals B1 to B7 will cause failure.
- Do not route service terminals adjacent to or bundle them with AC power lines, power lines, or harmonic lines. Doso maynoise interference that damages internal electronic components.  
(When using a remote controller... optional)
- Do not stop the mold dryer operation using the electromagnetic contactor or similar device installed on the primary side of the mold dryer. Do not stop the mold dryer using an electromagnetic contactor or similar device installed on the primary side. Surge voltages will damage the internal electronic components.
- Induced lightning surges caused by lightning strikes can lead to damage, malfunction, or fire in mold dryers. If you use a mold dryer in an area susceptible to lightning strikes, be sure to implement lightning protection measures such as installing arresters (lightning arresters).
- Always use commercial power with a sine wave (50/60 Hz) for the mold dryer's power supply. Never use power from frequency converters or other sources that produce distorted waveforms containing harmonics. Harmonics and noise may damage internal electronic components.

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