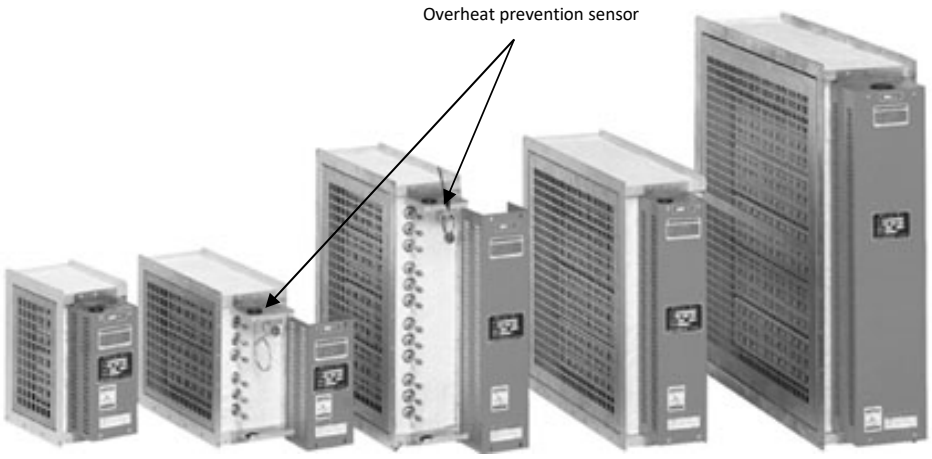
Please be sure to deliver this instruction manual to the final user.

DUCT HEATER DH SERIES

MANUAL

●Please be sure to read before use.

- Thank you for purchasing the duct heater DH series.
- Check the name plate of the main unit to see if the model, part number, and voltage are the same as the product you ordered.



Since the duct heater has a large air passage area, be sure to supply rectified air using the optional rounded corner taper duct or rectifying plate. If the air does not pass evenly through the duct heater, the heating element in that part will become abnormally high temperature, which may cause the heater to break.

※ An air flow direction arrow sticker is attached to the duct heater based on the direction in which the overheat prevention sensor is located on the high temperature side (hot air discharge side).
Please contact us if you are using the duct heater in the installation direction or in multiple connections.

HOT-AIR GENERATOR

製 造
販売元

KANSAI ELECTRIC HEAT CORP.

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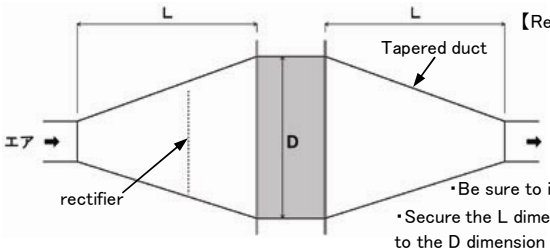
1. Installation

①It can be installed in all directions such as upward, downward, vertical and horizontal. However, determine the mounting direction so that the temperature inside the terminal cover does not exceed 120℃

②Be sure to use the optional rounded corner taper duct or rectifying plate to supply rectified air. If the customer does not use the rounded corner taper duct and rectifies it, install the taper duct etc. according to the rectification example shown on the right.

【Rectification example】



・Be sure to install a current plate.
・Secure the L dimension to the D dimension or more.

③Places that cannot be installed

・Place with vibration
・Near combustibles
・Ambient temperature other than −10 to + 120 ℃
・Places where acid gas, corrosive gas, etc. are floating
・ Places with conductive suspended matter (carbon fiber, etc.)
・Places exposed to wind and rain outdoors
・Places with a lot of dust, dust, etc.
・Places with an ambient humidity of 90% RH (at 40℃) or higher (places with dew condensation)

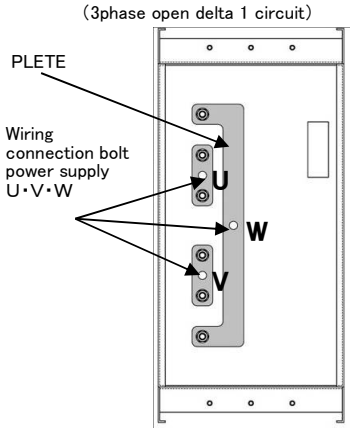
※ For information on how to use the core paste for the flange seal, please refer to page 7 of the optional parts catalog for various sealants.

2. Wiring

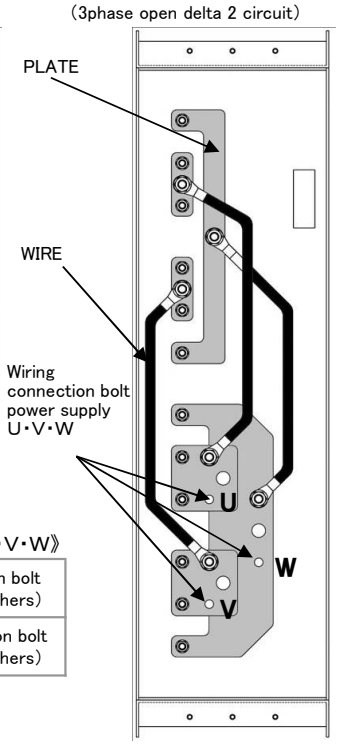
①Ask an electrician for power connection, wiring, and grounding work.

②At the time of shipment, the duct heater is equipped with a wading plate and wading wire at each terminal (excluding DH-1L and DH-2). In addition, wiring connection bolts for customer wiring are attached to the wading board.

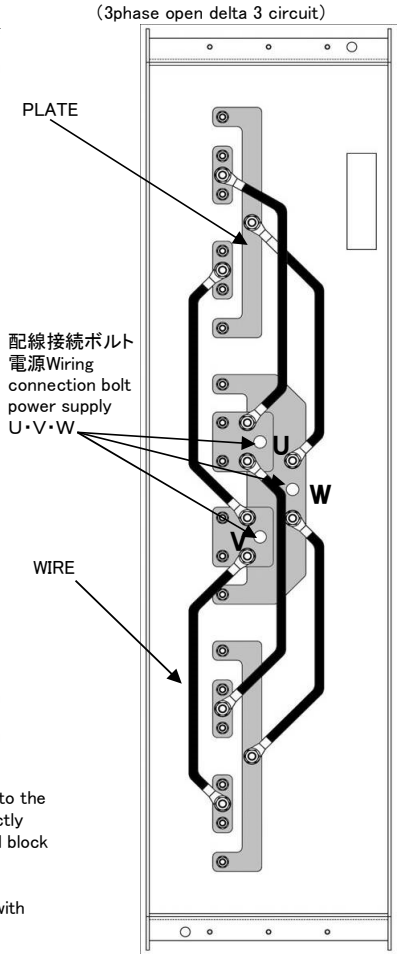
DH−2L･4･4L
(3phase open delta 1 circuit)



DH−8･12
(3phase open delta 2 circuit)



DH−18･24
(3phase open delta 3 circuit)



《Wiring connection bolt power supply U･V･W》

DH−2L～4L	M8×20 Hexagon bolt (Nuts, springs, washers)
DH−8･12	
DH−18･24	M12×25 Hexagon bolt (Nuts, springs, washers)

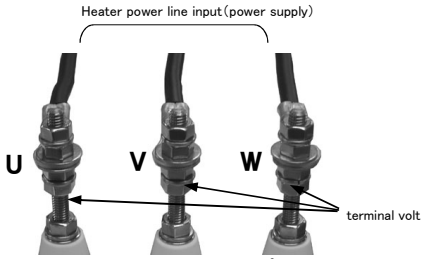
ATTEN: For customers who purchased the dedicated automatic temperature controller TR series at the same time, the wading wire is not attached to the duct heater, so follow the instruction manual of the TR series and directly connect the wiring connection bolt of the wading plate and the terminal block of the TR series. Please wire. Also, after purchasing the duct heater separately, go to the TR series.
When connecting, remove each wading wire and wire to the TR series with the wiring connection bolt of the wading board.

③Wire the heater power line to each wiring connection bolt. Determine the wire size in consideration of the heater capacity, heater current value, and voltage drop.

ATTEN : Do not wire the heater power line to any place other than the wiring connection bolt of the wading board. It may overheat abnormally.

DH－1L･2

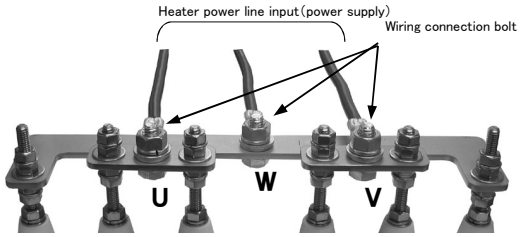
Heater current value ar 200V ･DH－1L : 3phase 5kW 14. 4A
･DH－ 2 : 3phase 5kW 14. 4A



Applicable wire 2～8㎜^{2}

DH－2L･4･4L

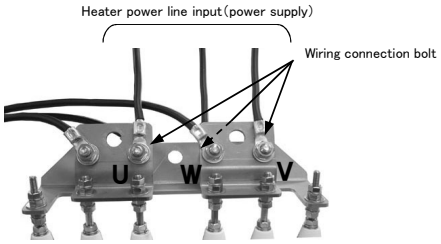
Heater current value ar 200V ･DH－2L、4 :3phase10kW 28. 9A
･DH－4L :3phase15kW 43. 3A



Applicable wire 8～22㎜^{2}

DH－8･12

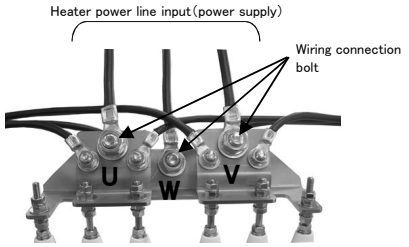
Heater current value ar 200V ･DH－ 8 ::3phase20kW 57. 7A
･DH－12 ::3phase30kW 86. 6A



Applicable wire 22～38㎜^{2}

DH－18･24

Heater current value ar 200V ･DH－18 :3phase45kW 130A
･DH－24 :3phase45kW 130A



Applicable wire 38～80㎜^{2}

Attn : For wiring to the terminal bolt, wading plate, and wading wire, use a tool of a certain size and tighten the terminal bolt so that excessive force is not applied (tightening torque DH-1L, 2: 6N, m DH- 2L-12: 12N・m DH-18・24: 42N・m).

Attn : Be sure to use a heat-resistant type (heat-resistant temperature of 120 ° C or higher) for the wiring material.

Attn : The terminal part may become hot during hot air operation or when overheat prevention is activated. There are no restrictions on the mounting direction of the duct heater, but it is recommended to use the terminal part in a direction other than the upper side as much as possible. When using the terminal on the upper side, be careful not to exceed the terminal temperature of 120 ℃

Attn : Wire so that the space distance between each terminal in the terminal section can be sufficiently secured.

Attn : For different voltage specifications, calculate the heater current value by the heater capacity (W) ÷ supply voltage (V) ÷ √3 = heater current value (A), and determine the wire size (DH-2, The wiring method is different only for 4L and 8 from 380V to 460V, so please refer to the attached attachment).

Attn : Fix the connected heater power line so that excessive force is not applied to the terminal bolts and that the heater frame, metal parts, and wading plate are not touched.

Attn : It is recommended to use an insulated wire (single wire) to enter the heater power line of the duct heater, considering the load of the main body entry hole and the wiring routing inside the terminal cover.

④Make a safety circuit with the overheat prevention sensor, and be sure to cut off the current flowing through the heater when the overheat prevention is activated.

《Overheat prevention sensor》

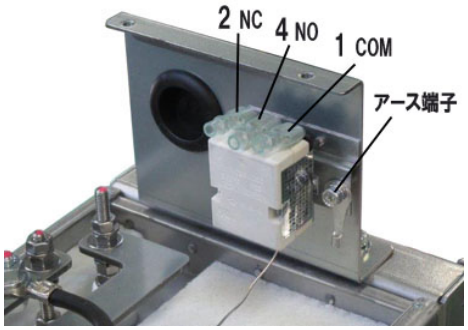
･Preset temp: 350℃ ･Contact capacity: AC200V 8A

･Terminal : Terminal №.1 COM(common)

Terminal №.2 NC(It opens when abnormality.)

Terminal №.4 NO(It closes when abnormality.)

※Faston terminals (with sleeve: applicable wire range 0.75 to 2 mm2) are attached to each terminal of the overheat prevention sensor at the time of shipment. Use this Faston terminal to wire to the overheat prevention sensor.



⑤Use the ground terminal (with crimp terminal 2-E6) for grounding work (300V or less: D class ground, 600V or less: C class ground).

3. Operation

①Be sure to secure a safety circuit with an overheat prevention sensor, and also secure an interlock circuit with the blower.

Attn： If power is supplied to the duct heater without blowing air, it will be heated empty and the heater will be disconnected due to abnormal overheating.

②Install a temperature sensor at any position on the discharge side, supply appropriate air, and control the duct heater at that temperature.

Attn： The maximum hot air temperature used for the duct heater is 350 ° C.
Control the temperature to 350 ° C or less depending on the position of the discharge port temperature control sensor provided arbitrarily (If the temperature sensor is installed in a place away from the duct heater, the maximum hot air temperature used by the duct heater may be exceeded. I have

Attn： When control is performed using semiconductor elements (SSC, SCR, etc.) as control elements, these are due to their characteristics and are conductive when the circuit is abnormal.Since it may be in a state, install an electromagnetic contactor on the primary side or secondary side and cut off the circuit.

Attn： Do not control the heater of two or more circuits of duct heaters (DH-8 or more) for each circuit.
Due to thermal resistance, a large amount of air will flow to the heater in the OFF state, and the heater in the ON state may overheat abnormally.

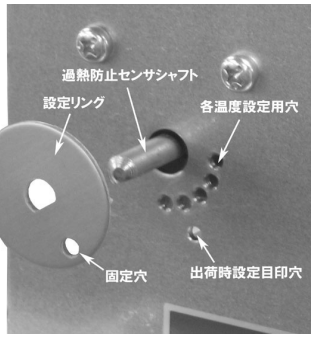
4. Change overheat prevention temperature setting

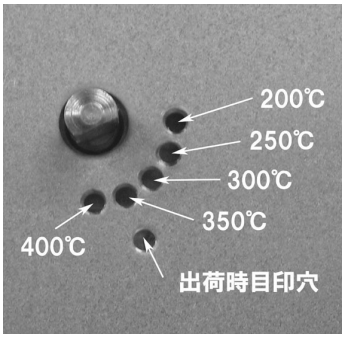
● At the time of shipment, the overheat prevention temperature of the duct heater is set to 350℃。The overheat prevention temperature setting can be arbitrarily changed to 200 ℃, 250 ℃, and 300℃.

【Setting change procedure】

Remove the fixing hole screw of the setting ring, put the setting ring in the overheat prevention sensor shaft, and fix it by aligning the fixing hole of the setting ring with the setting hole of 200℃, 250℃, or 300℃. .. Since the setting ring and the overheat prevention sensor shaft are half-moon circles, they can rotate at the same time and set to the desired temperature.

〈Factory setting of 350 ℃〉





Do not set the overheat protection temperature to 400℃. We do not guarantee any trouble caused by setting 400 ℃.