



FAN COIL DUCT TYPE

ENGINEERING INSTALLATION AND OPERATION MANUAL

RF-DT-160-02-L-H
RF-DT-180-02-L-H
RF-DT-200-02-L-H

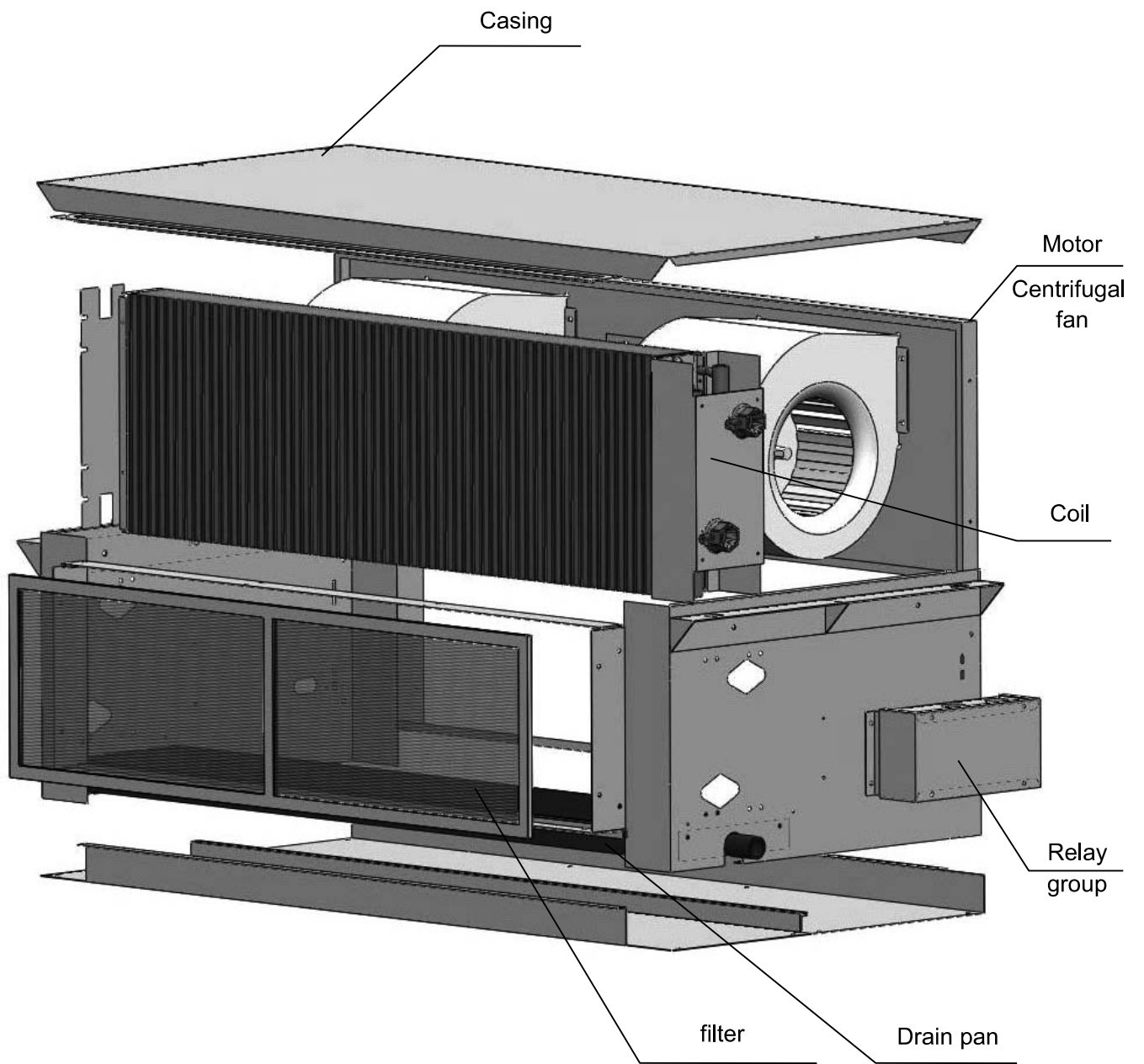
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RF - DT SERIES SPECIFICATIONS:

MODEL RF-DT			160-02-L-H	180-02-L-H	200-02-L-H
Rated Air Flow	H	m ³ /h	3060	3400	4080
	M		2295	2550	3060
	L		1530	1700	2040
Total Cooling Capacity	H	kW	15.9	17.7	20.1
	M		12.9	14.3	16.3
	L		9.5	10.6	12.1
Sensible cooling capacity	H	kW	11.5	12.8	14.6
	M		9.2	10.3	11.7
	L		6.8	7.6	8.6
Heating capacity	H	kW	24.2	26.7	30.7
	M		19.2	21.1	24.3
	L		13.4	14.8	17.0
Water flow rate		L/h	2736	3036	3456
Water pressure drop		kPa	9	8.8	11.1
Fan number		PCS	2	2	2
Fan Diameter		mm	225	225	225
Max absorbed power		W	388	459	572
Current		A	1.8	2.1	2.6
Useful head		Pa	132	127	122
Coil connections			Rc3/4"		
Weight		kg	93	102	103
Dimension (LxW xH)		mm	620x1400x350	670x1400x400	
Sound pressure		dB(A)	62	66	66
Power supply		V / Ph / Hz	220-1-50		

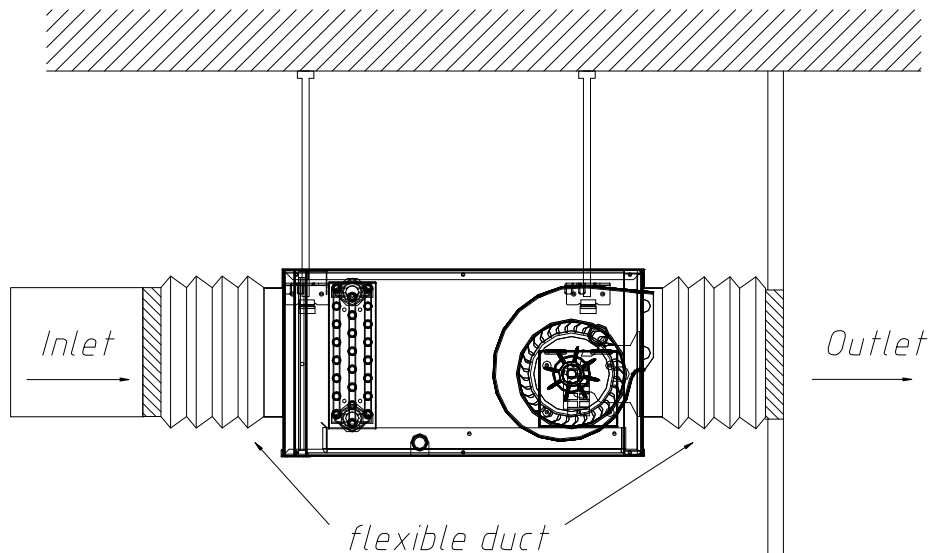


1. INSTALLATION

Pay attention to maintain the unit properly. The turning parts inside should not collide. Make sure there are no superfluous items into fan, motor or coil. Also make sure that the outlet side of a drain pan keeps 3 to 5 mm lower than the opposite side at least and water discharges well.

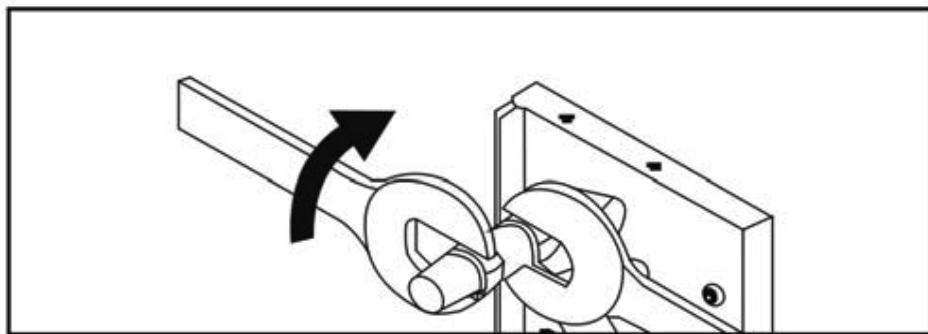
2. AIR DUCT CONNECTION

In order to prevent blocking of coil fins by dust use an air filter fixed on return air grille.

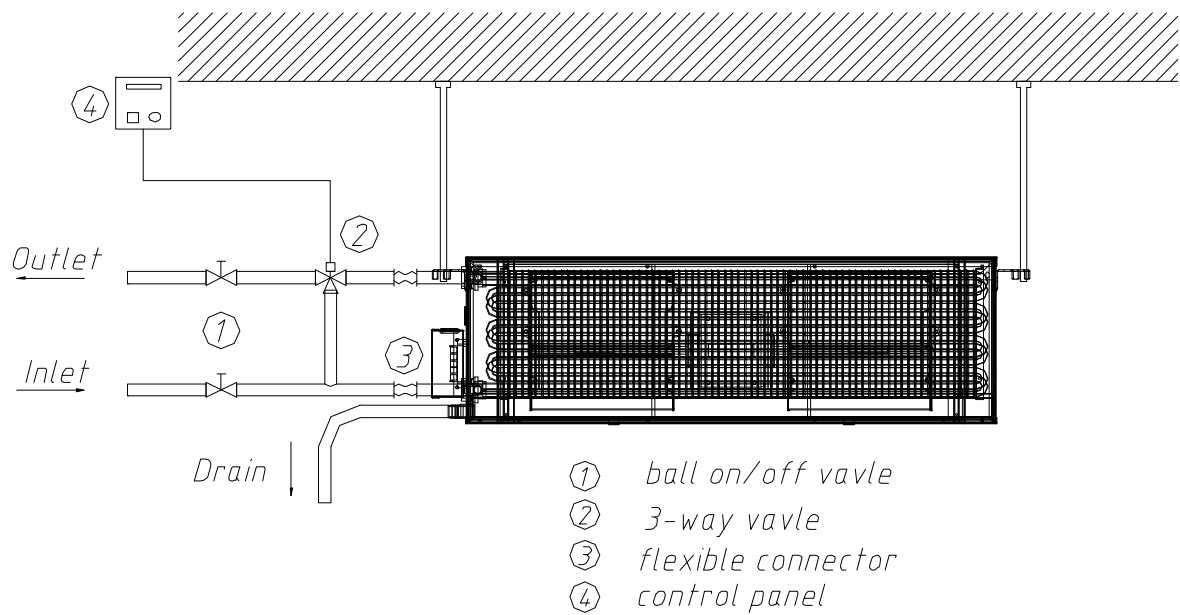


3. WATER CONNECTION

Fix the connections by tightening the fan coil fitting with the wrench against wrench system. Remember that the torque should not exceed 2.5kg.m

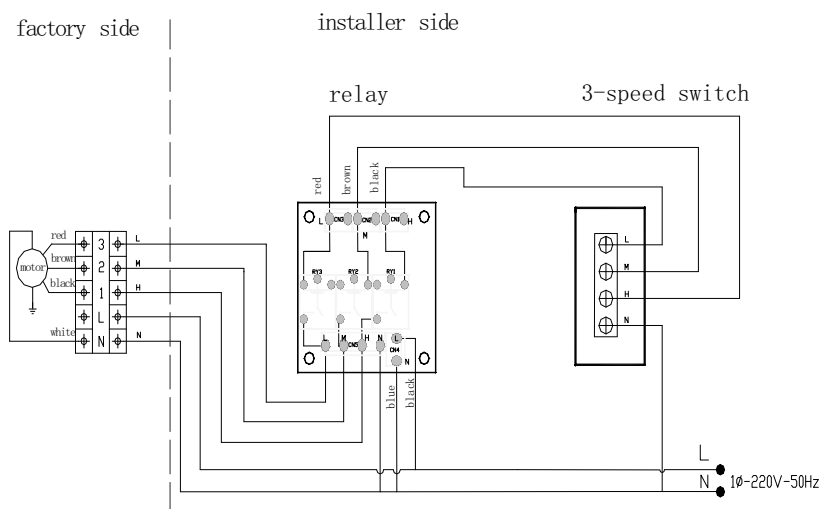


Make sure the correct direction of water flow. The cooling/heating water shall go through the coil from the bottom(inlet) to the top(outlet). The installation of flexible connector is advised to restrict vibration transmitting. To control room temperature use a room sensor connected with 3-way or 2-way valve actuator as on the diagram. Ball valves should be installed to adjust water flow rate or stop up the flow if needed. The drain pipe shall keep a slope to make draining water goes freely. All pipes and regulating parts shall be installed. When connection is finished, a leak test must be applied. Normally the testing pressure is 1.5 times more than working pressure.



4. WIRING

Make sure of the correct color when connecting wires. Make sure that the unit is grounded properly.



5. TEST RUN

After installation, carry out the test run before decorate the interior.

6. OPERATION




In summer time the cooling water temperature shall not be lower than 5 °C, otherwise the dew can destroy the surface of insulation and the interior will be damaged. In winter time the heating water temperature shall not exceed 65 °C. If the unit does not work for a long period in winter time the water must be discharged from the coils if there are no any special antifreeze components. Otherwise it will break coils.

7. MAINTENANCE

In order to keep the normal air flow rate clean the filter and the coil permanently. Pay extra attention in case the unit has no cooling/heating effect.

THERMOSTAT

HR2008 Series thermostats are available for individual room temperature control in residential, industrial and business premises. Suitable for 2-pipe or 4-pipe Fan Coil configuration.

HR2008 adopts digital control technology with large LCD display, It shows the following items: working states (cool, heat or ventilation), the speed of fan coil, room temperature, set-point. There are following keys on the panel: On/Off “”, Exchange mode (cool, heat or ventilation) “M”, timer “”, Select fan speed (high, medium, low or auto) “”, set-point temperature “▲” and “▼”.



MODEL DENOMINATIONS








HR2008 -

T: Clock and timing on/off. Blank is invalid.
R: IR remote function. Blank is invalid. (*remote controller should be ordered additionally*)
L: Backlight available. Blank is invalid.













E: Auto Recovery. Blank is invalid.

Y: Control damper to open or close.
DA/DA2: Control Motorized Valve (DA: Control 2-wire N.C. FCU valve; DA2: Control 3-wire FCU valve) and 3-speed fan; When the temperature reaches the set-point, it will close the Motorized Valve with the fan still running.
DB/DB2: Control Motorized Valve (DB: Control 2-wire N.C. FCU valve; DB2: Control 3-wire FCU valve) and 3-speed fan; When the temperature reaches the set-point, it will close the Motorized Valve and Fan both.
FCV2: Control 4 pipe fan coil units, Control two Motorized Valves and 3-speed fan, when the temperature reaches the set-point, it will close the Motorized Valves with the fan still running.
















BASIC FEATURES

-  Room temperature setting
-  Manual or Auto 3-speed changeover
-  Defrost (low temperature protection)
-  Auto Recovery (E, Option)
-  Clock and Timer (-T, Option)
-  IR remote control (-R, Option)
-  Blue Backlight (-L, Option)












STATUS DISPLAY

-  Working Status: Cool  , Heat  , Ventilation 
-  Fan Speeds: Low  , Medium  , High  and Auto 
-  Room temperature display
-  Temperature setting
-  Clock week display (-T, Option)

SPECIFICATIONS

-  Sensing element: NTC
-  Accuracy : ±1°C
-  Set-point range: 5°C to 35°C
-  Display range: 0~50°C
-  Operating Temperature: 0~45°C
-  Operating Humidity: 5~90%RH (non-condensing)
-  Power supply: AC 85~260V, 50/60Hz
-  Switch current rating: Resistive: 2 A; Inductive: 1 A
-  Rated Power: < 1 W
-  Wirings: Screw-in terminals, each terminal capable of accepting 2 x 1.5 mm² or 1 x 2.5 mm² wires
-  Housing: ABS+PC Flame Retardant
-  Dimensions: 86 × 86 × 13 mm (W × H × D)
-  Hole pitch: 60mm (Standard)
-  Protection Class: IP30
-  Display: LCD

OPERATION

- ☞ On/Off: Press “” to turn on, press “” again to turn off thermostat and its output.
- ☞ Setting temperature: Press “▼” to reduce set-point, press “▲” to raise set-point.
- ☞ Mode Selection: Press “M” to change system working in cooling “”, heating “” or ventilation “” mode, the related icon will flash, and it will be confirmed automatically after 5 seconds. The ventilation function is invalid for HR2008Y(E).
- ☞ Fan Speed Selection (HR2008DA[E]/DB[E]/DA2[E]/DB2[E]/FCV2[E]): Press “” to change fan speed among “ (Hi)”, “ (Med)”, “ (Low)” or “ (Auto)”.
- Under auto fan speed “”, the fan-speed will be changed automatically. Auto LOW-speed When the difference between room-temperature and set-point exceed 1°C, Auto MED-speed When exceed 2°C, Auto HI-speed When exceed 3°C.
- ☞ Control Damper (HR2008Y[E]): The damper will be open when the room temperature is higher than set-point in cooling, or room temperature is lower than set-point in heating, Otherwise the damper will be closed.
- ☞ Control Motorized Valve under 2-pipe configuration (HR2008DA[E]/DB[E]/DA2[E]/DB2[E]): If the difference between room temperature and set-point exceed 1°C, FCU valve will be open; if room temperature and set-point are equal, HR2008DA[E]/DA2[E] will close the FCU valve with the fan still running, HR2008DB[E]/DB2[E] will close the FCU valve and Fan both.
- ☞ Control FCU Valve under 4-pipe configuration (HR2008FCV2[E]): In cooling, when the room temperature is higher than set-point, the cooling valved will be opened. Otherwise it will be closed. Heating valve is always closed. In heating, When the room temperature is lower than set-point, the heating valve will be opened. Otherwise it will be closed. Cooling valve is always closed.

AUTO RECOVERY (Option)

☞ When the thermostat is at ON status for one minute, if power cut, it will return back to running automatically with the status how it is one minute ago after power coming back.

☞ When the thermostat is at OFF status for one minute, if power cut, it will keep OFF status after power coming back.

FUNCTIONS ASSOCIATED WITH TIMER ARE IN THE FOLLOWING (Option)

☞ Clock calibration: Press “⊕” till to display “hh:mm” and “mm” flash, press “▲” or “▼” to adjust minute, press “⊕”, “hh” flash, press “▲” or “▼” to adjust hour; Press “⊕”, “week” flash, press “▲” or “▼” to adjust Mon to Sun.

☞ Sleep function setting: Press “⊕”, till to display “☾” and flash, press “▲” to confirm, press “▼” to cancel.

☞ Timer on /Timer off: Press “⊕” till to display “⊕” and “TIMER ON” and all flash, and also “mm” flash, press “▲” or “▼” to adjust minute, press “⊕”, “hh” flash, press “▲” or “▼” to adjust hour; Press “⊕” till to display “⊕” and “TIMER OFF” and all flash, and also “mm” flash, press “▲” or “▼” to adjust minute, press “⊕”, “hh” flash, press “▲” or “▼” to adjust hour.

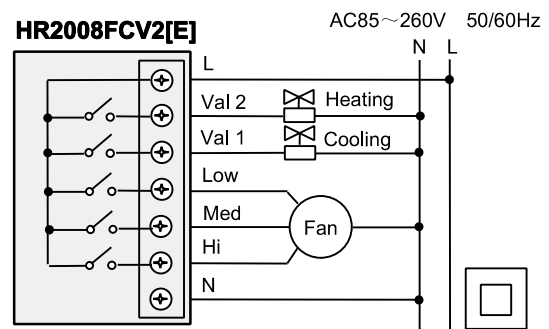
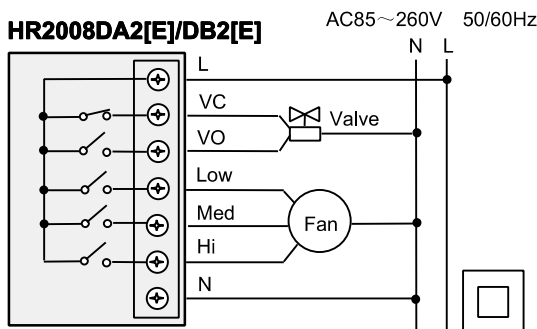
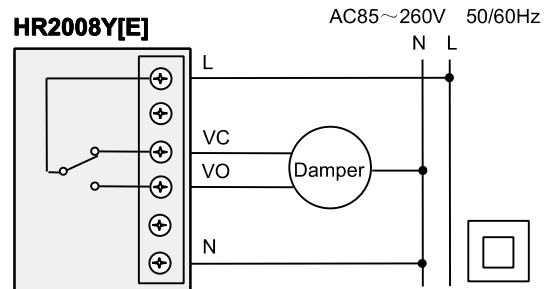
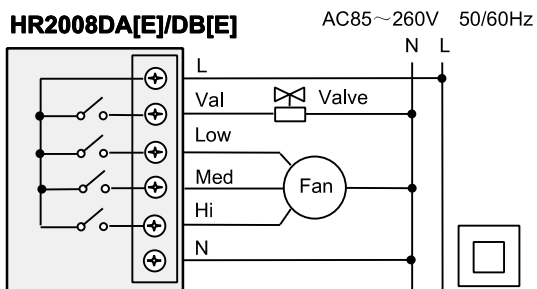
☞ Canceling timer on / Canceling timer off: Press “⊕” till to display “⊕” and “TIMER ON” and all flash, and also “mm” flash, press “▲” or “▼” to adjust minute to “00”. press “⊕”, “hh” flash, press “▲” or “▼” to adjust hour to “00”; Press “⊕” till to display “⊕” and “TIMER OFF” and all flash, and also “mm” flash, press “▲” or “▼” to adjust minute to “00”. press “⊕”, “hh” flash, press “▲” or “▼” to adjust hour to “00”.

DEFROST (LOW TEMPERATURE PROTECTION)

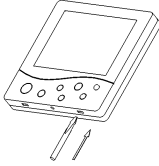
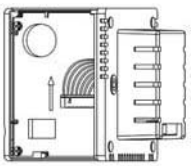
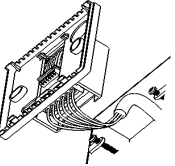
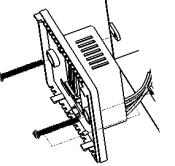
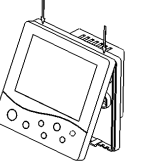
☞ Description: when the thermostat turns off and the room temperature is lower than 5°C, it will be turned on automatically in heating mode with “△” showing, under HR2008DA[E]/DB[E]/DA2[E]/DB2[E]/FCV2[E] models, the system will be in heat mode and fan runs in high speed. under HR2008Y[E] model, the motorized damper will be open. The thermostat will turn off when room temperature is higher than 7°C.

☞ Set low temperature protection: Turn off the thermostat, press “M” and hold for 3 seconds, it will display “00” or “01”, press “▲” or “▼” key to adjust. “00” indicates low temperature protection invalid, “01” indicates low temperature protection function valid. The default is “00”.

WIRING DIAGRAMS



MOUNTING

 <p>1. Open the main control panel: put the screwdriver (3.5mm) into the block 4mm along the bevel. Prize up, open the clips.</p>	 <p>2. Take off the wires.</p>	 <p>3. As per wiring diagram, connect it with terminals, fixed by the screwdriver.</p>	 <p>4. Put the connected thermostat onto the back panel in the wall, then fix it with the two screws in the packing box.</p>	 <p>5. Put the cover with 30 degree angle, then fix the up two clips; 6. Push the places of the two down clips, fix the cover, and finish the installation.</p>
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Note: Be sure to connect all the wires as per the wiring diagrams and keep it away from water, mud and other material so as to prevent the unit being spoiled!

HR-G3 SERIES THREE-WAY MOTORIZED VALVES

General

HR-G3 series three-way motorized valves are used to control the cool/heat water flowing through or by pass the fan coil unit. When a thermostat sends the controlling signal to the motorized Valve, the valve is turned on to let water flow from C to B (Fig. 1), and when the signal disappears, the valve, with the help of its own spring, returns back to its original position to change the water flow from C to A(Fig. 2).

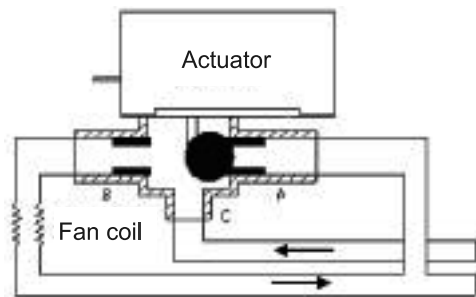


Fig.1

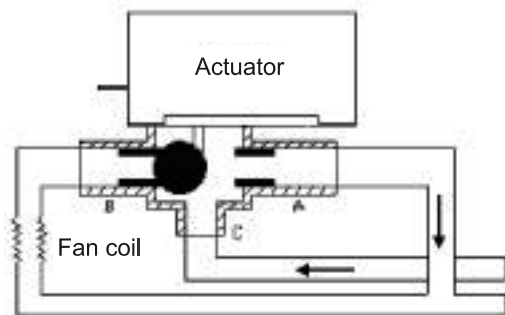


Fig.2



Features

- Forging Brass Body
- Stainless Base with Aluminum Shell
- Synchromotor Drive
- Efficient Power Consumption and Less Noise
- Separated Motorized Valve is easy to dismantle and install and convenient to use.

Model Listing

No.	Model	Caliber	Body Structure	Kv (Cv) Value	Closing Pressure (MPa)
1	HR-G3-1/2	1/2" (15mm)	Actuator and valve body fixed together	2.2 (2.5)	0.20
2	HR-G3-3/4	3/4" (20mm)		3.0 (3.5)	0.18
3	HR-G3-1	1" (25mm)		6.9 (8.0)	0.15
4	HR-G3-1/2-S2	1/2" (15mm)	Actuator is easily dismantled from valve body	2.2 (2.5)	0.20
5	HR-G3-3/4-S2	3/4" (20mm)		3.0 (3.5)	0.18
6	HR-G3-1-S2	1" (25mm)		6.9 (8.0)	0.15

Specifications

Power Supply : AC220V \pm 10%, 50/60Hz

Power Consumption: <7W

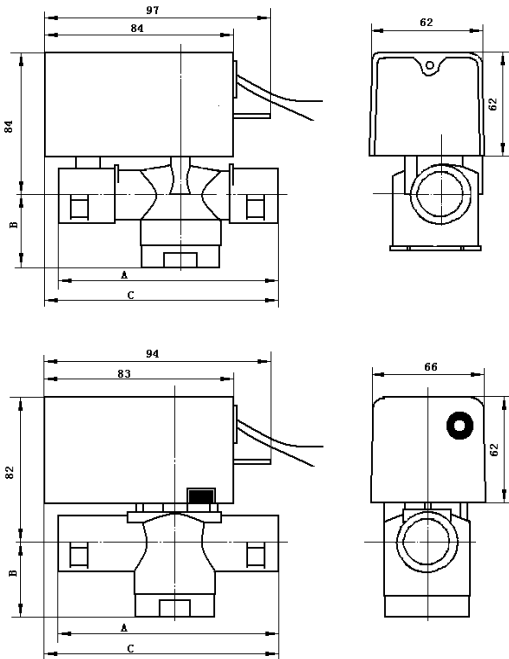
Pressure: 1.6MPa

Medium Temperature: 5~90°C

Valve Action Time: Open < 10s, Return < 6s

Working Environment: 5~60°C, 10%-95%RH

Dimension (mm)



Model	A	B	C
HR-G3-1/2	90	33	94
HR-G3-3/4	94	37	103
HR-G3-1	96	43	105
HR-G3-1/2-S2	70	33	86
HR-G3-3/4-S2	87	37	93
HR-G3-1-S2	94	43	95

Installation

