

FLOW CONTROL MODULE

940-3 TYPE CV

INSTALLATION & OPERATION INSTRUCTIONS

GENERAL

The following instructions give information relative to the installation of the Flow Control Module with all Aqua Therm Systems. Aqua Therm air handlers are designed for either closet, recessed wall or hideaway ceiling installations.

The manufacturer assumes no responsibility for the equipment installed in violation of any code requirement.

Material in this shipment has been inspected at the factory and released to the transportation agency in good condition. When received, a visual inspection of all cartons should be made immediately. Any evidence of rough handling or apparent damage should be noted on the delivery receipt and the material inspected in the presence of the carrier's representative. If damage is found, a claim should be filed against the carrier immediately.

SYSTEM SEQUENCE OF OPERATION

Heating Cycle

On call for heat, the thermostat energizes both the fan relay and the Flow Control Module relay. This causes the blower motor and circulating pump to energize, circulating the hot water from the water heater through the water coil in the air handler. When the thermostat is satisfied, both relays de-energize causing the blower motor and circulating pump to stop operating until the next call for heat.

MODULE INSTALLATION

Install the air handler, water heater and condensing unit per the installation instructions furnished with each of these products.

The installer must adhere strictly to all local and national code requirements pertaining to the installation of the equipment.

The Flow Control Module must be installed in the hot water line supplying water to the air handler but can be located either at the hot water heater or the air handler. The arrow on the bottom of the pump must point in the direction of the water flow to the air handler. Physical positioning of the pump must be so that the motor is in a horizontal position. However, make sure that the junction box is **not** located underneath the circulator. (6 o'clock position)

PIPING

All piping between the water heater and air handler should be copper and should not exceed 200 feet of total piping. It is recommended that 3/4" nominal (7/8" OD) piping be used to prevent excessive head pressure losses. (Consult the factory for other piping applications.)

It is recommended that all piping be adequately insulated to prevent freezing when piping is run in an unconditioned space.

NOTE: An expansion tank may be required if a back-flow preventer is installed in the system.

Solder Connections - All copper joints in the water lines must be made with **low temperature -non lead solder**. **Caution: Protect the Flow Control Module from internal damage while soldering by wrapping the pump, check valve and bleed valve with a damp cloth.**

"T" Connections (at the water heater) - Water lines to and from the air handler **must** be taken from the horizontal connection of the "T" fittings in the vertical hot and cold water supply lines at the water heater. This ensures that any air in the system will be purged each time water is used in the dwelling. (See figure 1)

Isolation Valves - Two valves are recommended to be installed within the circulating loop to permit servicing of the system if required and to assist in purging the system. (See figure 1)

ELECTRICAL

All wiring should meet applicable national and local codes.

Line Voltage - Electrical supply

TYPICAL PIPING SCHEMATIC

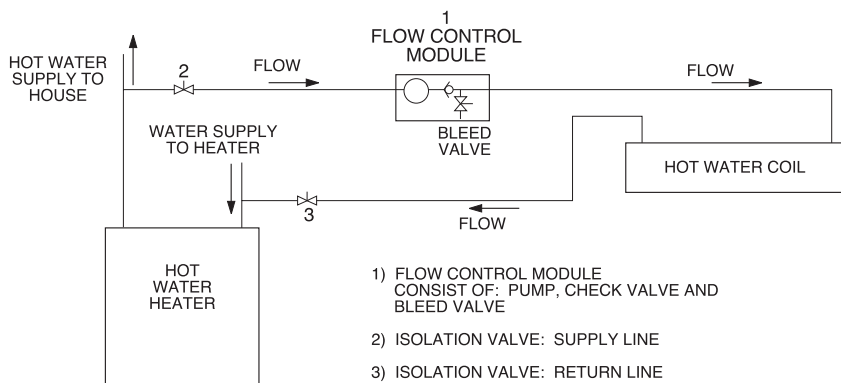


Figure 1

to the Flow Control Module is 115V-1PH-60HZ. All connections are to be made within the pump junction box. (See figure 2)

NOTE: The module is furnished with a cord and plug for convenient connection to a wall outlet. For those areas where local codes require hard wiring, discard the cord assembly and wire directly to the connections within the pump junction box using acceptable wiring materials.

Low Voltage - Control wiring from the air handler to the Flow Control Module is to be 24V Class 2 wiring. (See figure 2)

WARNING: *The low voltage thermostat must have heat and cool fan cycle control. This is commonly referred to as an "Electric Heat" thermostat and subbase.*

START - UP

Heating Cycle

1) Fill the water heater. Open a hot water faucet while filling the water heater to vent the air. When the tank is full and all the air is purged, close the faucet.

2) Ignite the water heater and set the thermostat to 140 degrees.

3) Purge the air handler's hot water coil and lines.

NOTE: *It may require purging several gallons of water so either have a bucket available or connect a garden hose to the valve and route to a drain.*

Close valve number 2 and open valve number 3. Next, open the bleed valve on the Flow Control Module. When all of the air is purged from the loop close valve number 3 and open valve number 2. After all the air is purged from the loop open both valve

number 2 and 3 and close the bleed valve.

4) Switch the room thermostat to "Heat" and set it high enough to energize the fan motor and pump. If the pump and valve are operating properly and the water temperature in the water heater has reached the set point, then the hot water inlet at the air handler will begin to get hot. If the pump is running but hot water is not circulating, open the bleed valve on the Flow Control Module long enough to purge the remaining air from the hot water lines and coil. This will allow the pump to begin circulating hot water.

5) The water heater thermostat should be adjusted so that the water temperature entering the air handler coil is as close to 140 degrees as possible with the system energized and operating long enough for all temperatures to stabilize.

MODULE SPECIFICATIONS

Description	Part No.	Volt	Amps	HP	WATTS
Brass Volute Pump	E3070R	115	0.52	1/40	65
Check Valve	CP91				
Bleed Valve	CP951				

WIRING DIAGRAMS

940-3-CV

FLOW CONTROL MODULE

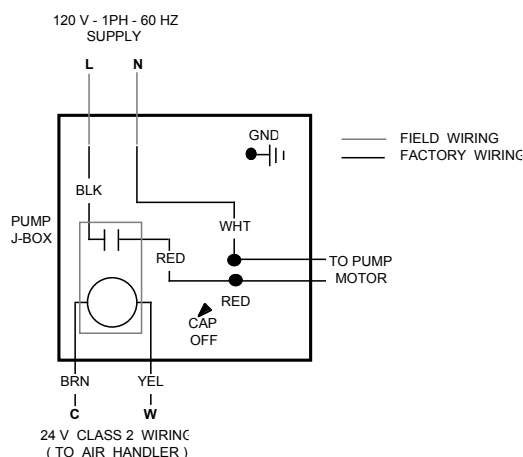


Figure 2

TYPICAL AQUA THERM SYSTEM

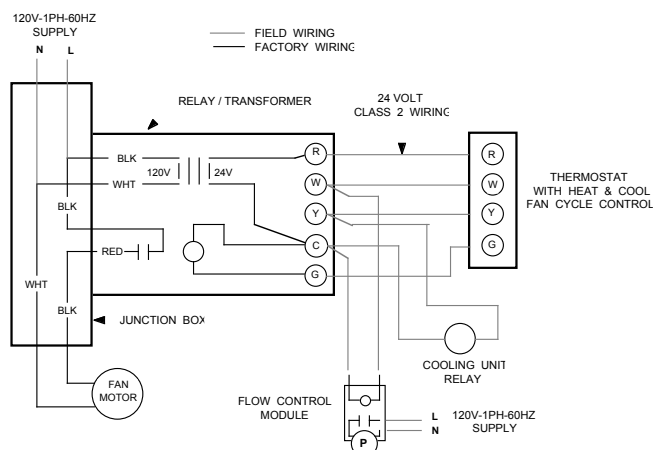


Figure 3