

Installation Instructions

Part No. 30MP-900---004

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components and equipment location. Only trained, qualified installers and service mechanics should install and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and other safety precautions that apply.

- Follow all safety codes.
- Wear safety glasses and work gloves.
- Use care in handling and installing this accessory.

⚠ WARNING

ELECTRIC SHOCK HAZARD

To avoid the possibility of electrical shock, open all disconnects before installing or servicing this equipment.

GENERAL

Check Package Contents — Check for damage to the part. Accessory package 30MP-900---004 contains the thermal dispersion flow switch (Carrier part no. HR81LG020) and cable (Carrier part no. 30MP500424). If damage is found, file a claim immediately with the shipper.

The following field-supplied items are also required for installation:

- two 1/2-in. (13-mm) electrical connectors
- varnish cloth
- 1/4-in. FPT fitting may also be required for units without the condenser water manifold option/accessory

Description — This accessory condenser flow switch is used on 30MPW015-071 liquid cooled chillers. The flow switch (see Fig. 1) is a thermal dispersion switch with a normally open contact that closes on velocity above 0.66 fps (20 cm/s).

NOTE: On some units, the fluid velocity will be less than the factory trip-point setting. In these instances, contact your local Carrier representative for the adjustment tool and procedure.

NOTE: For units with variable condenser water flow for head pressure control, this control may result in nuisance water flow switch alarms as the flow is restricted to increase head pressure. The condenser flow switch accessory is not recommended in this application.

INSTALLATION

⚠ WARNING

ELECTRIC SHOCK HAZARD

Electrical shock can cause personal injury and death. Open all disconnects before installing or servicing this equipment.

Step 1 — Disconnect Unit Electrical Power Supply — Open and tag all disconnects. Be sure all power is off before work begins.

Step 2 — Close Both Sides of the Condenser Fluid (Inlet and Outlet) — Close the condenser fluid inlet and outlet so that the condenser and the piping used to mount the switch will be isolated from the fluid system.

FOR UNITS WITH MANIFOLD PIPING: The FPT fitting is factory-installed. Remove the plug from the fitting; install the flow switch with thread sealant. Be careful not to overtighten. See Fig. 1-3. Continue at Step 4.

⚠ CAUTION

Overtightening can cause damage to the flow switch. Maximum torque is 37 ft-lb (50 N·m).

Step 3 — Mount Flow Switch — Mount switch in a location where shock and vibration are minimal. Ambient temperature must be below 160 F (71 C).

1. Determine location for mounting flow switch as follows:
 - a. Recommended installation is one flow switch per module. The switch must be located downstream of any shutoff valve.
 - b. Mount switch where the piping is small enough to result in a flow velocity sufficient to avoid nuisance trips. Recommended size is 2 in. IPS for 30MPW sizes 015-020 and 2.5 in. for 30MPW sizes 030-071.

⚠ CAUTION

Take care when drilling into cabinet not to damage refrigerant circuit.

⚠ CAUTION

The fluid system may be under pressure. Use caution when installing FPT fitting.

2. Install 1/4-in. FPT fitting or 1/4-in. FPT hole in the piping within 10 ft (3 m) of the condenser inlet or outlet.
3. Install flow switch with thread sealant. Be careful not to overtighten. See Fig. 1.

Step 4 — Connect Wires to Unit Control Box

The condenser flow switch wires can be run through the 1/2-in. (13-mm) knockout in the back of the control box with the minimum load valve and liquid line solenoid valve wiring, if installed. If necessary, remove knockout in the control box. If wires are run in conduit, run the conduit to the box, drill the box for the conduit, and use appropriate conduit connector to secure it to the box. If conduit is not required, install 1/2-in. (13-mm) electrical connector in the control box knockout, and run the wires into the box through this connector. If necessary, install 1/2-in. (13-mm) electrical connector in the sound enclosure panels and run wires through the connector. Use field-supplied varnish cloth to protect the wires going through the connector(s). Typical wiring shown in Fig. 4.

1. Connect the cable to the flow switch. Note the position of the orientation tab on the cable and switch before hand tightening. Refer to Fig. 1 and Fig. 5 for orientation tab.
2. Connect the white switch wire to LVT terminal 17 and connect the black switch wire to LVT terminals 11. See Fig. 4 and 6. (Flow switch wiring is the same for all 30MPW units.)

3. Connect the brown wire to LVT terminal 17 and connect the blue wire to terminal 3 on TB3. See Fig. 4 and 6.
4. The condenser flow switch must be enabled in the software (*Configuration*→*OPT1*→*D.FL.S=ENBL*). When condenser pump control is enabled *Configuration*→*OPT1*→*D.PM.E=1* (On when Occupied) or 2 (On with Compressors), and the condenser pump is operated by another means, nuisance A222 (Condenser Pump Interlock Closed When Pump Is Off) alarms may occur if the pump output does not match the flow switch status.

Step 5 — Open Water Lines to Condenser

Open lines to restore unit to loop. Check for leaks at switch. Bleed all air.

Step 6 — Restore Power to Unit

Restore unit power and check for proper operation. The flow sensor cable is provided with (3) LEDs that indicate if 24 vac power is present and also status of the switch contacts. See Fig. 7. With power applied to the switch, 24 vac across pins 1 and 3, the green LED is ON. One yellow LED (YEL1) will be on if 24 vac has been applied to the line side of the switch closure. These two LEDs must be ON for the switch to be operating properly. When flow is established, the second yellow LED (YEL2) will turn ON. See Fig. 7.

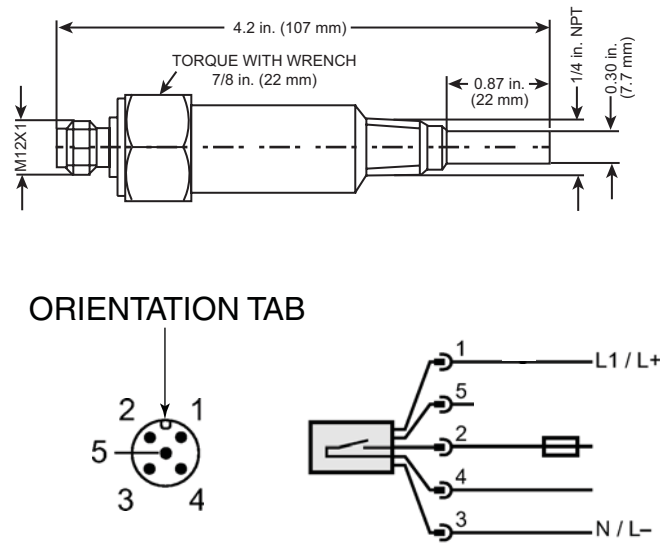
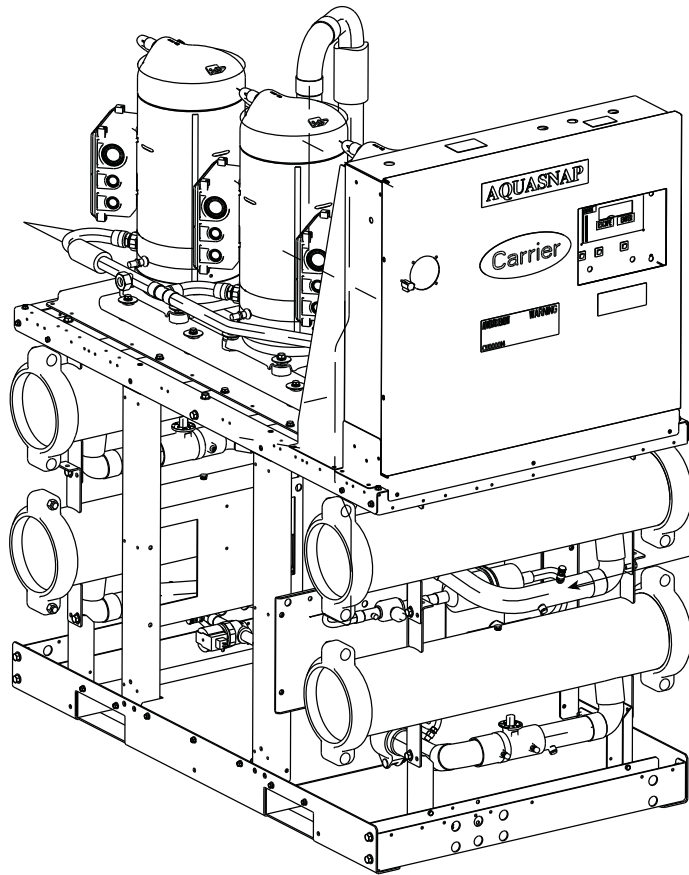


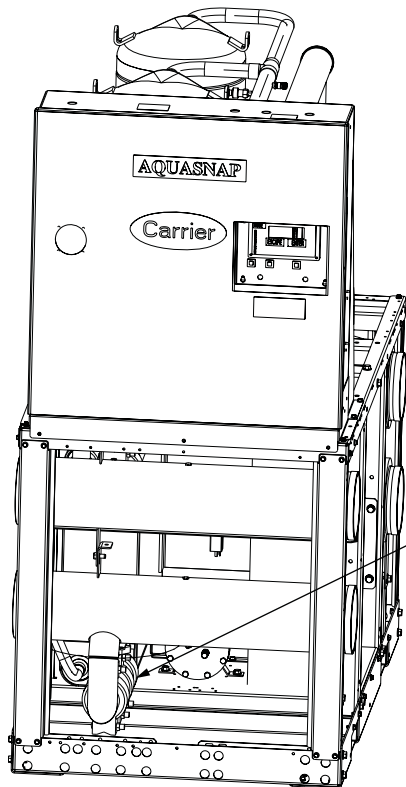
Fig. 1 — Flow Switch



1/4 in. FPT FITTING IS LOCATED ON CONDENSER OUTLET TUBE, FACING THE FILTER-DRIER ASSEMBLY

NOTE: Style A water manifold is not compatible with Style B. Style A water manifold is used on 30MP015-045 units made before November 2015. Style B water manifold is used on 30MP050-071 units and 30MP015-045 units made starting November 2015 with a serial number beginning with 4515Q---- (example: Week 45, Year 2015, Q, sequence number).

Fig. 2 — 1/4-in. FPT Fitting Location, Style A Manifold



1/4 in. FPT FITTING IS LOCATED ON CONDENSER WATER IN PIPING

NOTE: Style A water manifold is not compatible with Style B. Style A water manifold is used on 30MP015-045 units made before November 2015. Style B water manifold is used on 30MP050-071 units and 30MP015-045 units made starting November 2015 with a serial number beginning with 4515Q---- (example: Week 45, Year 2015, Q, sequence number).

Fig. 3 — 1/4-in. FPT Fitting Location, Style B Manifold

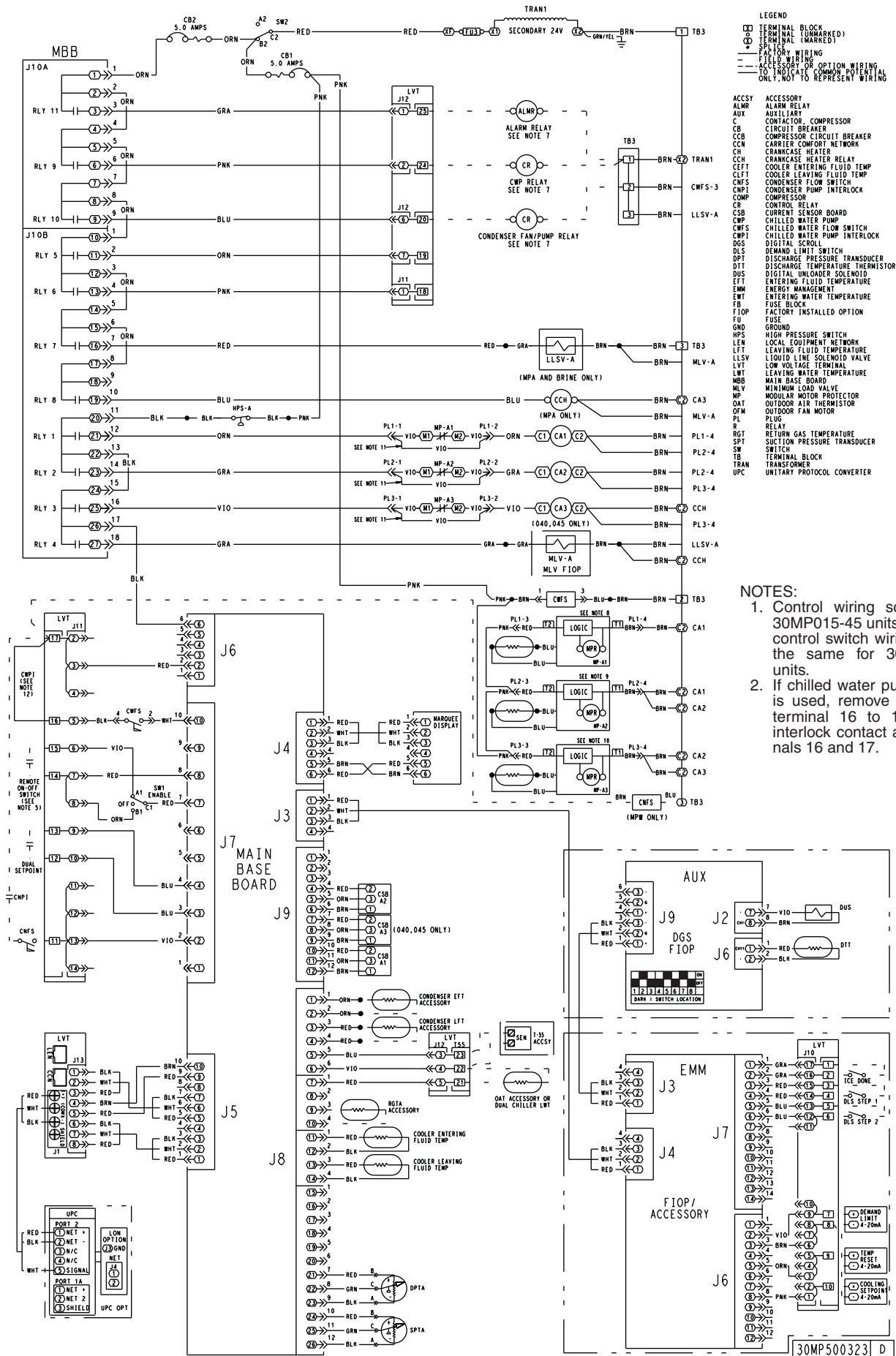


Fig. 4 — Control Wiring Schematic (Typical), 30MP015-045 Shown

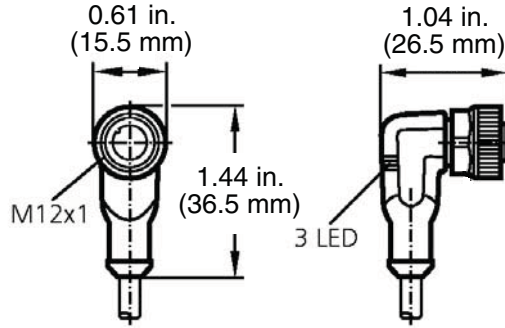
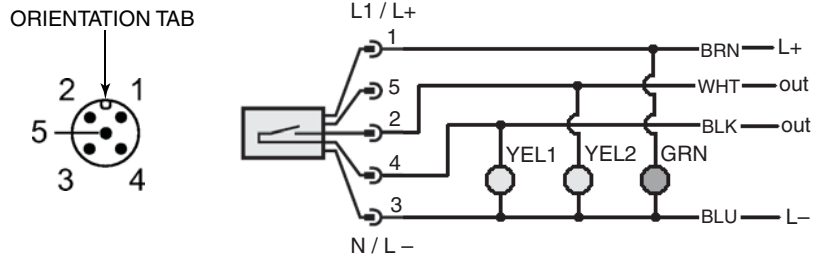


Fig. 5 — Flow Switch Cable

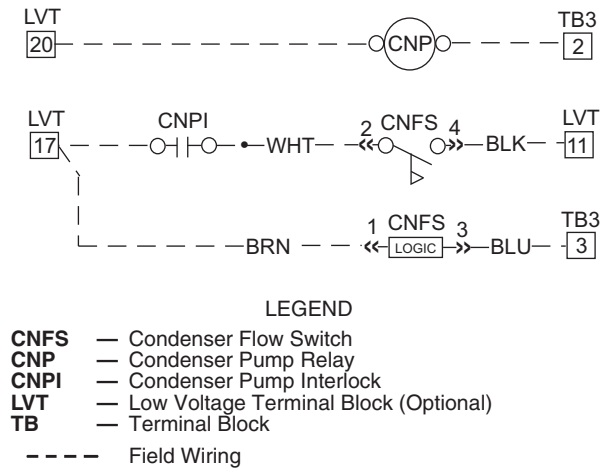


Fig. 6 — Condenser Water Flow Switch Wiring

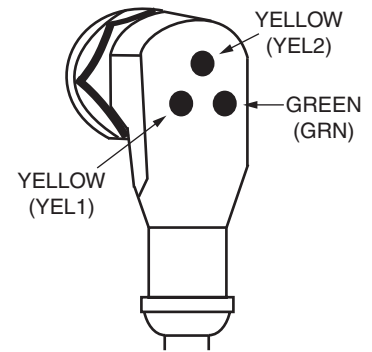


Fig. 7 — Switch Cable LEDs

