

# Thermal Products Corporation

## EFS Installation Instructions

The utmost care has been taken in the manufacturing, calibration, and packaging of this product to insure trouble free operation and ease of installation. **PLEASE** read these instructions prior to unpacking and installation.

### 1. Inspect the carton for damage before opening.

On large orders, the individual cartons are banded and shrink wrapped to pallets. This is done to help minimize damage in shipping. NOTIFY the shipper if external damage exists.

### 2. Remove the diffuser from the carton at the point of installation to minimize handling damage.

**CAUTION! Do not push or bend the damper lift arms as this may cause permanent damage to the unit.**

### 3. Install the diffuser in the ceiling.

### 4. Connect and secure the inlet duct to the collar.

**NOTE:** The EFS-24 Series unit uses a sleeve type damper (valve) that slides up into the collar to open. Excessive tightening of the flex duct to the collar may crush it causing the damper to jam. Damage to the collar in transit, unpacking, handling, or during installation can cause the unit to malfunction. Inspect the collar prior to connection of the duct for dents or deformation that will interfere with the damper movement. **DO NOT USE SHEET METAL SCREWS TO SECURE THE DUCT TO THE COLLAR!!**

### 5. Electrical Connections

Master EFS units Models EFSQ \*\*\* are self-contained and are shipped with a 40 V.A. 24V control transformer. This transformer can operate the master and up to two (2) slave units. CAUTION!!!!

Connecting more than two slaves to the standard master can overload the transformer. The primary winding on the transformer has been factory wired to operate on 115 V.A.C. (European/Middle East-120, 240, 277, or 480 V.A.C.) The control transformer is a multiple primary voltage transformer and can be operated on 115, 200, 208, or

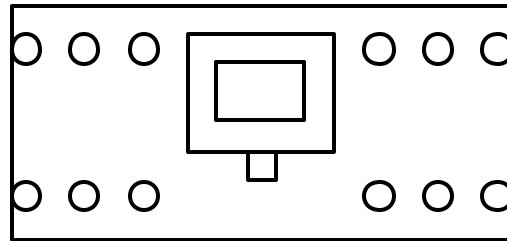
240 V.A.C. (European/Middle East-120, 240, 277, or 480 V.A.C.) by changing the primary tap wiring to the power load at the whip (flexible metal conduit) A wiring diagram Label is attached to the transformer identifying the tap lead voltages.

A six-foot flexible metal conduit whip is provided with a 1/2" connector. Connect the green wire to the ground, white wire to neutral, and black wire to the power lead. Note that the unit is internally wired to operate on 115 V.A.C. (European/Middle East-240 V.A.C.) as shipped from the factory.

### 6. Connecting the thermostat

Connect the low voltage thermostat cable to the thermostat. The connector on the thermostat cable EFSQ has a male phone jack connector on each end. Insert the male connector into the female connector located on the back of the thermostat. It will click and lock in place.

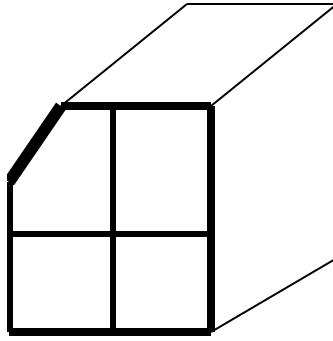
#### Back of Thermostat



Run the cable to the diffuser and connect the thermostat cable to the unit by inserting the male jack cable end into the female receptacle labeled thermostat on the electrical control box that is mounted to the back of the diffuser. Mount the thermostat to the wall with the hardware provided with the thermostat.

### 7. Connecting the Slave Diffuser

If a slave diffuser is required, mount and connect the diffuser to the supply duct as indicated in steps 1-4. A slave cable Model CPT will connect the master unit to the slave unit. The cable has a molex connector on each end that will insert into the molex connector on the master and slave unit. On the back of the unit is the control box that is labeled. The connector will be labeled "slave" on both units.



**Slave**

**8. Test the operation of the unit.**

With the supply air temperature 60 degrees or less, set the thermostat to its lowest temperature. The damper should open in 2-3 minutes. The damper can be viewed by looking through the discharge opening. Adjust the thermostat to its highest setting. The damper should close fully in 2-3 minutes.

**9. Slide the appearance panel open (away from the element housing).**

This will expose the damper adjustments. The adjustments are the minimum and the maximum set point adjustments.

**ROOM TEMPERATURE ADJUSTMENTS**

The EFS-24 N (Cooling) and Q (Heat/Cool) Series diffusers are thermostatically controlled by a remote wall thermostat. Set the thermostat to the desired temperature. The temperature will be maintained within 1 1/2 degrees of the set point. The heat/cool unit (Q) is equipped with a changeover switch that senses supply air temperatures. When the supply air temperature is above 90 degrees F., the unit will operate in the heating mode. (When the room drops below the thermostat set point, the damper will open).

When the supply air temperature drops below 60 degrees F., the unit will operate in the cooling mode. (When the room temperature rises above the thermostat set point, the damper will open).

**MINIMUM DAMPER SET POINT ADJUSTMENTS**

The minimum damper set point adjustment allows for minimum airflow requirements. This control stops the damper from closing

so that a minimum airflow is maintained independent of the room temperature.

The adjustment is made with a 1/16" allen wrench. Included are two minimum set point spacers (they are taped to the back side of the unit). The spacers are 1/2 inch to 1 inch in length. The combination of these will allow for a minimum set point adjustment of zero to 2 inch minimum damper opening. As shipped, the adjustment range is zero to 1/2 inch. The minimum set point set screw will be flush with the panel (without spacers) for a set point of zero (full closed). Turning the set screw clockwise will increase the minimum set point to 1/2 inch without spacers. To increase the range to 1/2 to 1 inch, remove the set screw and insert the 1/2 inch spacer and replace the set screw. Inserting the 1 inch spacer will increase the range from 1 to 1 1/2 inches. Inserting both spacers will extend the minimum set point range from 1 1/2 to 2 inches.

**MAXIMUM DAMPER SET POINT ADJUSTMENTS**

The maximum damper set point adjustment allows the maximum damper position to be set from the face of the diffuser. Slide the appearance panel to the open position to access the adjustment set screw. The adjustment is made with a 9/64 allen wrench. To adjust the maximum damper set point, set the wall thermostat to open the damper. Allow 2-3 minutes seconds for the damper to be fully open. Insert a 9/64 allen wrench and engage the maximum damper adjustment set screw.

Turning the screw clockwise (facing the screw) will increase the maximum damper position. Turning the screw counter clockwise will decrease the maximum damper position

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