

# Standard Duct Heaters

## Finned Tubular

### TFQU Standard Slip-In Finned Tubular Duct Heaters

The TFQU line of finned tubular duct heaters offers a quick ship alternative to our line of completely custom designed heaters (Figure 47). The greatly reduced lead-time is achieved by limiting the frame and KW offerings. The following is a summary of the custom features we have made available as part of the TFQU program.

**Twenty-three Frame Sizes**, ranging from 12" x 6" to 36" x 24". Heaters need not match duct sizes exactly as long as the duct is large enough to accommodate the heater frame and has no more than 1" of lining. Select a slightly smaller heater filling at least 80% of the duct area. See page 24 which explains how to size slip-in heaters with the 80% Rule.

**KW Ratings** ranging from 1 KW through 40 KW.

**Three Basic Control Circuit Options** and limited Special Features meet the vast majority of installation requirements.

**UL Listed** for zero clearance to combustible surfaces and conforms to National Electrical Code requirements.

These standardized heaters are particularly adaptable to remodeling jobs, contractor-designed jobs and jobs requiring quick completion.

Control Options G, J and K are available for all TFQU frame sizes. Option K controls are single stage only. Reference sample specification on page 34 for descriptions.



Figure 47.

### How To Order

Selection of a heater from our TFQU program is best done in consultation with an INDEECO sales representative. The information listed below is required to place an order. Contact the local representative for pricing and heater selection.

1. **Standard Slip-in Heaters** – Indicate Type TFQU for quick delivery option.
2. **KW Rating.**
3. **“W” and “H” Dimensions.**
4. **Voltage and Phase** – 277 volts available in single-phase only. 480 volts available in three-phase only. 208 and 240 volts available in either single or three-phase.
5. **Number of Stages.**
6. **Control Circuit Voltage** – It is only necessary to specify control circuit voltage for Option G. Either 24 or 120 volt is available.
7. **Control Option** – Option G, J or K are available. With Option K only, a room thermostat will be furnished unless a duct thermostat, input (135 ohms, 2200 ohms, 0-10 VDC, 4-20 mA) or PE transducer is specified. See page 33 for details.
8. **Airflow** – Specify left, right, up or down as illustrated on page 33.
9. **Terminal Box Overhang** – For left or right airflow, left overhang is standard, right overhang is optional. For up or down airflow, up overhang is standard, down overhang optional.
10. **Special Features** – Specify as required from the features listed in **Table XII**, page 33.

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## Airflow Direction and Terminal Box Overhang

For proper positioning of the terminal cutouts, the airflow direction must be specified on all Type TFQU heaters. Left, right, up or down airflows are available.

Left overhang is standard for either right or left airflow, and up overhang is standard for either up or down airflow. The alternate overhangs are available at no extra charge if specified on the order.

For definitions of airflow and terminal box overhangs, see Figures 48 and 49.

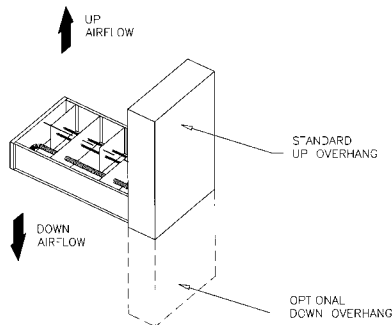


Figure 48.

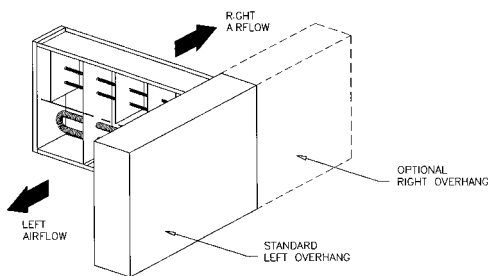


Figure 49.

## Control Circuit Options

Type TFQU heaters are available with control circuit Options G, J or K. These options are described in Table XI.

Use Option G with simple single or multi-stage on/off electronic thermostats.

Use Option J with pneumatic controls.

Use Option K for precise solid-state SCR temperature control.

Table XI

| Option              | G              | J              | K              |
|---------------------|----------------|----------------|----------------|
| Disconnect Switch   | ■              | ■              | ■              |
| Thermal Cutouts     | ■              | ■              | ■              |
| Airflow Switch      | ■              | ■              | ■              |
| Contactors          | ■              | ■ <sup>2</sup> | ■ <sup>2</sup> |
| Control Transformer | ■              | ■ <sup>3</sup> | ■              |
| Fuses               | ■ <sup>1</sup> | ■ <sup>1</sup> | ■ <sup>1</sup> |
| PE Switches         |                | ■              |                |
| SCR                 |                |                | ■              |
| Thermostat          |                |                | ■ <sup>4</sup> |

- Notes: 1. Fuses supplied only on heaters over 48 amps.  
 2. Contactors supplied only when other devices cannot carry heater load.  
 3. Transformer only supplied on heaters rated higher than 27 volts.  
 4. Choice of room or duct thermostat, 135 ohms, 2200 ohms, 0-10 VDC or 4-20 mA inputs.

## Special Features

In addition to the standard offerings, the following Special Features are available. A detailed description of each feature is given on the catalog page indicated.

Table XII

### Special Features Available on TFQU Heaters

| Feature  | Page Number |
|--|-------------|
| Airflow switch for negative pressure operation                                   | 15          |
| Insulated terminal box   | 38          |
| Dust tight terminal box  | 37          |
| Controls mounted in remote panelboard  | 40          |
| Deletion of transformer  | 16          |
| Deletion of transformer and contactor  | 16          |
| Transformer primary fused  | —           |
| Deletion of disconnect   | 17          |
| Fuses for heaters rated 48 amps or less  | 16          |
| “Low Airflow” pilot light  | 17          |
| “Heater On” pilot light  | 17          |
| Each “Stage On” pilot light(s)   | 17          |
| Disconnecting contactors   | 16          |
| Mercury controlling contactors   | 16          |
| Fan relay (instead of airflow switch)  | 15          |
| Fan relay (in addition to airflow switch)  | 15          |
| Step controller  | 19-20       |
| Built-in PE transducer   | 12          |
| <b>When specified, heaters shall be supplied with the following thermostats:</b> |             |
| Pilot duty single stage room thermostat (Fig. 11)                                | 12          |
| Pilot duty two stage room thermostat (Fig. 12)                                   | 12          |
| Proportional electronic room thermostat (Fig. 13 & 14)                           | 12          |
| Pilot duty single stage duct thermostat (Fig. 16)                                | 13          |
| Pilot duty two stage duct thermostat (Fig. 17)                                   | 13          |
| Proportional electronic duct thermostat with set point adjuster (Fig. 18 & 19)   | 13          |
| Special inputs (4-20 mA, 0-10 VDC)   | 21          |