INDEECO
ELECTRIC FINNED TUBULAR DUCT HEATERS

HEATER TYPE

This print covers the following heater types:
TFXU-Finned Tubular, Custom Slip-In TFZU-Finned Tubular, Custom Flanged 831U-Remote Panel

INDEECO duct heaters utilize the finest construction principles and techniques. A coil of 80% nickel, 20% chromium resistance wire is precisely centered in a .475" diameter stainless steel sheath. Magnesium oxide powder, compacted to rock-like density, insulates the coil electrically from the sheath. A 1-1/4" O.D. spiral wound stainless steel fin makes a minimum of five passes per linear around the outside of the tubular element. The elements are furnished with mounting flanges, making them individually removable from the terminal box. The heater frame is constructed of heavy gauge corrosion resistant steel and is provided with generous flanges for structural rigidity. All heaters are suitable for installation in ducts with up to one inch of interior lining.

All heaters include both automatic and manual reset thermal cutouts (not heat limiters or fusible links). All controls are factory-wired to clearly marked terminal blocks for field connections. Properly sized knockouts are provided. All heaters are supplied complete with wiring diagrams and installation instructions, and all are given a dielectric test at a minimum of 1200 volts before shipment.

UNDERWRITERS LISTING AND NATIONAL ELECTRIC CODE

INDEECO duct heaters and panels with a "U" in the type designation are listed by UL under reference E23192 and E53412. As such, they are suitable for installation with zero clearance to combustible surfaces and for use with heat pumps and central air conditioners. They are also supplied with all necessary provisions for installation in full accordance with the National Electric Code.

INSTALLATION

INDEECO slip-in duct heaters are installed by inserting through a rectangular opening cut in the side of the duct work and are secured to the duct with sheet metal screws. To install INDEECO flanged duct heaters, flanges must be provided on the duct to match the heater flanges, both on the entering and leaving air sides. The heater is secured to the duct work by sheet metal screws or bolts through the mating flanges.

When the duct heater is being used in conjunction with an air conditioning or heat pump unit, it must be installed at least 48" from that unit. Per NEC requirements, a minimum of 3-1/2 feet of accessible working space clearance must be provided on the terminal box side of the heater. Care should be taken to follow all instructions found in the Installation, Operating and Maintenance instruction sheet supplied with each heater.

CONTROL OPTIONS

The following table indicates the basic control components which are supplied with each of the standard control options.

STANDARD CONTROL OPTIONS

Option	G Basic	J Pneumatic	K SCR
Thermal Cutouts	●	●	●
Airflow Switch	●	●	●
Control Transformers	●	□	□
Fuses (for heaters over 48 amps)	●	●	●
Disconnect Switch	●	●	●
Contactors (de-energizing)	●	□	□
PE Switches		●	
SCR Controller			●
Thermostat	□		□

● Standard □ Provided as necessary

SPECIAL FEATURES

INDEECO heaters are available with a wide variety of special features and constructions. Your quotation or certified print includes a column for special feature codes. The codes in this column, as defined by the table below, describes details of both the standard control options, as well as any special features on the heater in question.

SPECIAL FEATURE CODE DEFINITIONS

A60, A62	PE Switch - Close on Rise	H1	Aluminized Steel Frame & Terminal Box
		H2	Stainless Steel Frame & Terminal Box
B	Terminal Box - Bottom	H3	Stainless Steel Elements
B1	Terminal Box - Side Cover		
B2	Terminal Box - Insulated	L3 to L6	Terminal Box Overhang (See Figs. 10 & 11)
B3	Enclosure - Weatherproof NEMA 4 Type	L7	No Overhand, C = M (See Fig. 7)
B4	Enclosure - Dust-tight - NEMA 12 Type		
B5	Panelboard - Required for Heater Control	M to M7	Manual Thermal Cutout
B7	Enclosure - Dustproof		
B8	Enclosure - Outdoor - 3R Type	N (000)	Fan Relay (000 is control voltage)
B9	Enclosure - Stainless Steel Weatherproof NEMA 4X Type	P1	Pilot Light Each Stage On
		P2	Pilot Light Insufficient Air
C, C4, C8	Contactor - Magnetic De-energizing	P3	Pilot Light Heater On
C1, C5, C9	Contactor - Magnetic Disconnecting	P4	Pilot Light - Overtemperature
C2, C6, C10	Contactor - Mercury De-energizing		
C3, C7, C11	Contactor - Mercury Disconnecting	Q, Q1	Disconnect Switch Power
		Q2	Pilot Switch - Control Circuit
E20,21,22	SCR Controller	Q3, Q4	Airflow Switch Positive
E30	SCR input - 2200 Ohms	Q5, Q6	Airflow Switch Negative
E31	SCR input - 135 Ohms	Q8	Disconnect Switch - Control Circuit
E33	SCR input - slave for vernier	Q10	Disc. Switch - Control Circuit Fan Relay
E34	SCR input - 4-20mA		
E35	SCR input - 0-10VDC		SOLITECH STEP CONTROLLER
E36	SCR input - 0-10VDC Thermostat Controlling Master SCR	S5	2200 Ohm input - Deadband
		S16	135 Ohm input - Proportional
E37	SCR input - Pulse Thermostat Controlling Slave SCR	S18	4-20 mA input - Proportional
		S19	with Transducer - Proportional
		S20	0-10VDC input - Proportional
F	Fuses - Minimum NEC	S21	Step Controller - 0-10 VDC Thermostat
F1	Fuses - Per Circuit		
F3	Circuit Breaker - Minimum NEC	T1, T5	Control Circuit Transformer, Fused
F5	Circuit Breaker - Per Circuit		Primary
F6	Time Delay Fusing	T2 to T4	Control Circuit Transformer
G1	Slip-and-Drive Connection	U3 to U9	Airflow Direction (see Figs. 10 & 11)
G2	Extended Cold Section		
G3	Recessed Terminal Box	V	Protective Screens - Both Sides
GG2	Insulated Duct Construction (extended cold section)	V1	Pressure Plate - Inlet Side
		V2	Protective Screens - One Side
GG3	Insulated Duct Construction (recessed terminal box)	Z to Z5	Automatic Thermal Cutout