



# ELECTRIC OPEN COIL DUCT HEATERS

## HEATER TYPE

This print covers the following heater types:

QUA Open Coil Standard, Slip-In    XUB Open Coil, Custom Slip-In    830U Remote Panel  
 QUZ Open Coil Standard, Flanged    ZUB Open Coil, Custom Flanged

INDEECO duct heaters utilize the finest construction principles and techniques. 80% nickel, 20% chromium coils are supported by ceramic bushings mounted in corrosion-resistant steel brackets, using a patented floating design that prevents breakage due to thermal expansion. The coils are machine crimped into stainless steel terminals which are insulated with high temperature ceramic bushings. The heater frame is constructed of heavy gauge corrosion-resistant steel and is provided with generous flanges for structural rigidity. All heaters, except QUZ, 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 ductwork 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 ductwork 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
		H3	Stainless Steel Elements
B	Terminal Box - Bottom	L3 to L6	Terminal Box Overhang (See Figs. 10 & 11)
B1	Terminal Box - Side Cover	L7	No Overhang, C=M (See Fig. 7)
B2	Terminal Box - Insulated	M to M7	Manual Thermal Cutout
B3	Enclosure - Weatherproof NEMA 4 Type	M8	Remote Manual Reset Rod
B4	Enclosure - Dust-tight - NEMA 12 Type	N (000)	Fan Relay (000 is control voltage)
B5	Panelboard - Required for Heater Control	P1	Pilot Light Each Stage On
B7	Enclosure - Dustproof	P2	Pilot Light Insufficient Air
B8	Enclosure - Outdoor - 3R Type	P3	Pilot Light Heater On
B9	Enclosure - Stainless Steel Weatherproof NEMA 4X Type	P4	Pilot Light - Overtemperature
		Q, Q1	Disconnect Switch Power
C, C4, C8	Contactor - Magnetic De-energizing	Q2	Pilot Switch - Control Circuit
C1, C5, C9	Contactor - Magnetic Disconnecting	Q3, Q4	Airflow Switch Positive
C2, C6, C10	Contactor - Mercury De-energizing	Q5, Q6	Airflow Switch Negative
C3, C7, C11	Contactor - Mercury Disconnecting	Q8	Disconnect Switch - Control Circuit
		Q10	Disc. Switch - Control Circuit Fan Relay
D3	Derated Coils - 25 Watts per Square Inch		SOLITECH STEP CONTROLLER
D4	Derated Coils - 35 Watts per Square Inch	S5	2200 Ohm input - Deadband
E20 to E22	SCR Controller	S16	135 Ohm input - Proportional
E30	SCR input - 2200 Ohms	S18	4-20 mA input - Proportional
E31	SCR input - 135 Ohms	S19	with Transducer - Proportional
E32	SCR input - with transducer	S20	0-10VDC input - Proportional
E33	SCR input - slave for vernier	S21	Step Controller - 0-10 VDC Thermostat
E34	SCR input - 4 - 20mA		
E35	SCR input - 0 - 10VDC	T1, T5	Control Circuit Transformer, Fused Primary
E36	SCR input - 0 -10VDC Thermostat Controlling Master SCR	T2 to T4	Control Circuit Transformer
E37	SCR input - Pulse Thermostat Controlling Slave SCR	U3 to U9	Airflow Direction (see Figs. 10 & 11)
F	Fuses - Minimum NEC	V	Protective Screens - Both Sides
F1	Fuses - Per Circuit	V1	Pressure Plate - Inlet Side
F3	Circuit Breaker - Minimum NEC	V2	Protective Screens - One Sides
F5	Circuit Breaker - Per Circuit	Z to Z5	Automatic Thermal Cutout
F6	Time Delay Fusing		
G1	Slip-and-Drive Connection		
G2	Extended Cold Section		
G3	Recessed Terminal Box		
GG2	Insulated Duct Construction (extended cold section)		
GG3	Insulated Duct Construction (recessed terminal box)		



425 Hanley Industrial Court • St. Louis, MO • 63144  
 (314) 644-4300 • FAX (314) 644-5332 • www.indeeco.com