

# Standard Duct Heaters

## Open Coil

### Special Features

While QUA slip-in and QUZ flanged heaters may be specified with one of the standard control circuit options, individual job requirements may demand slight variations from the standards. The most common variations are covered by INDEECO's set of Special Features which may be used to modify QUA/QUZ

heaters both mechanically and electrically. These are listed in **Table IX** with a brief description, availability and notes on any limitations of their use.

**Table X** provides a summary of thermostats offered with INDEECO QUA/QUZ heaters. See pages 12 and 13 for more detailed descriptions.

Table IX

Special Feature	Special Feature Code (SFC)	Description	Page Ref.	Availability & Limitations
<b>Mechanical</b>				
Substitute Negative Pressure Airflow Switch	Q5/Q6	Allows heater to be used on inlet side of fan.	15	Available on all heaters.
Vertical Airflow	U9	Allows heater to be used in applications where airflow is either vertical up (U3) or vertical down (U5).	23	Available on all heaters.
Right/Down Terminal Box Overhang	L4/L5	Heater will be supplied with terminal box overhang on right (if horizontal airflow installation) or downward (if vertical airflow installation).	23	Available on all heaters.
Insulated Terminal Box	B2	Prevents condensation inside terminal box when heater is installed in air conditioning duct running through un-airconditioned area.	37	Available on all heaters.
Dust-Tight Terminal Box	B7	Allows installation in dusty areas and satisfies local codes requiring dust-tight box if installed in area used as return air plenum.	36	Available on all heaters.
Remote Panelboard	B5	All controls except thermal cutouts, airflow switch and a pilot switch will be supplied in a separate NEMA 1 panelboard.	39	Available on all heaters except when transformer and contactors are deleted.



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Table IX (continued)

Special Feature	Special Feature Code (SFC)	Description	Page Ref.	Availability & Limitations																				
<b>Electrical</b>																								
Delete Transformer	—	Allows control circuit to be obtained from source outside the heater or, when line voltage is equal to control voltage, directly from power lines within the heater.	16	Only available on Option G heaters. Must be specified if control voltage is not 120 or 24 volts. Customer must specify control volts.																				
Delete Transformer & Contactors	—	Allows for control of heater directly using load carrying thermostats.	16	Available only on single stage, single-phase, Option G heaters with KW not exceeding the following:  <table border="1"> <thead> <tr> <th>Voltage</th> <th>120</th> <th>208</th> <th>240</th> <th>277</th> </tr> </thead> <tbody> <tr> <td>Max. KW</td> <td>1.8</td> <td>3.1</td> <td>3.6</td> <td>4.1</td> </tr> </tbody> </table>	Voltage	120	208	240	277	Max. KW	1.8	3.1	3.6	4.1										
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Max. KW	1.8	3.1	3.6	4.1																				
Delete Disconnect	—	Allows for use of field installed disconnecting means. (Must be within sight of the heater.)	17	Available on all heaters.																				
Add Fuses for Heaters Rated 48 Amps or Less	F1	Allows for addition of one set of fuses to low amperage heaters that do not need internal fusing to meet UL and NEC requirements.	16	Available on all heaters whose KW is lower than or equal to the following. (Other heaters include fusing as standard):  <table border="1"> <thead> <tr> <th rowspan="2">Line Volts</th> <th colspan="2">KW (at 48 amps)</th> </tr> <tr> <th>1 Phase</th> <th>3 Phase</th> </tr> </thead> <tbody> <tr> <td>120</td> <td>5.7</td> <td>—</td> </tr> <tr> <td>208</td> <td>9.9</td> <td>17.2</td> </tr> <tr> <td>240</td> <td>11.5</td> <td>19.9</td> </tr> <tr> <td>277</td> <td>13.2</td> <td>—</td> </tr> <tr> <td>480</td> <td>23.0</td> <td>39.9</td> </tr> </tbody> </table>	Line Volts	KW (at 48 amps)		1 Phase	3 Phase	120	5.7	—	208	9.9	17.2	240	11.5	19.9	277	13.2	—	480	23.0	39.9
Line Volts	KW (at 48 amps)																							
	1 Phase	3 Phase																						
120	5.7	—																						
208	9.9	17.2																						
240	11.5	19.9																						
277	13.2	—																						
480	23.0	39.9																						
Add "Stage On" Pilot Light(s)	P1	To indicate when each heating stage is producing heat.	17	Available on all heaters except Option K SCR stages.																				
Add "Low Airflow" and "Heater On" Pilot Lights	P2, P3	Separate pilot lights to indicate that power has been supplied to the heater and it is ready for operation and whether airflow has been interrupted.	17	Available on all heaters. When fan relay has been substituted for airflow switch, only "Heater On" will be supplied.																				
Substitute Disconnecting Contactors	C1, C3	To meet local codes which require that contactors break all ungrounded conductors.	16	Available on all Option G heaters, all three-phase Option J & K, and single-phase Option J & K heaters whose KW exceeds the following (lower KW single-phase heaters do not use contactors):  <table border="1"> <thead> <tr> <th>Voltage</th> <th>120</th> <th>208</th> <th>240</th> <th>277</th> </tr> </thead> <tbody> <tr> <td>KW Opt. J</td> <td>1.8</td> <td>3.1</td> <td>3.6</td> <td>4.1</td> </tr> <tr> <td>KW Opt. K</td> <td>3.0</td> <td>5.2</td> <td>6.0</td> <td>6.0</td> </tr> </tbody> </table>	Voltage	120	208	240	277	KW Opt. J	1.8	3.1	3.6	4.1	KW Opt. K	3.0	5.2	6.0	6.0					
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Table IX (continued)

Special Feature	Special Feature Code (SFC)	Description	Page Ref.	Availability & Limitations																								
<b>Electrical (cont.)</b>																												
Substitute Mercury Controlling Contactors	C2	For silent operation or where long term reliability is crucial. Only controlling contactors will be mercury. Any safety contactors will be magnetic, as they rarely operate.	16	<p>Available on Option G &amp; J* heaters when KW per stage does not exceed the following:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="6" style="text-align: center;">KW/Stage</th> </tr> <tr> <th style="text-align: left;">Volts</th> <th style="text-align: center;">120</th> <th style="text-align: center;">208</th> <th style="text-align: center;">240</th> <th style="text-align: center;">277</th> <th style="text-align: center;">480</th> </tr> </thead> <tbody> <tr> <td style="text-align: left;"><b>1 Ph.</b></td> <td style="text-align: center;">4.2</td> <td style="text-align: center;">7.2</td> <td style="text-align: center;">8.4</td> <td style="text-align: center;">9.6</td> <td style="text-align: center;">16.8</td> </tr> <tr> <td style="text-align: left;"><b>3 Ph.</b></td> <td style="text-align: center;">—</td> <td style="text-align: center;">12.6</td> <td style="text-align: center;">14.5</td> <td style="text-align: center;">—</td> <td style="text-align: center;">29.0</td> </tr> </tbody> </table> <p>* No contactors required in Option J heaters per <b>Table II</b>, page 10.</p> <p>Available on option K heaters only when total KW exceeds values shown in <b>Table III</b>, page 11. (Controlling contactors used only with the vernier control system.)</p>	KW/Stage						Volts	120	208	240	277	480	<b>1 Ph.</b>	4.2	7.2	8.4	9.6	16.8	<b>3 Ph.</b>	—	12.6	14.5	—	29.0
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<b>1 Ph.</b>	4.2	7.2	8.4	9.6	16.8																							
<b>3 Ph.</b>	—	12.6	14.5	—	29.0																							
Fan Relay	N	When static pressure in the duct is too low (below .07" WC) to operate the airflow switch or when airflow switch is not desired.	15	Available on Option G & K heaters except Option G heaters where deletion of contactors and transformer is specified.																								
Add INDEECO Electronic Step Controller	S	Allows better temperature control of high capacity heater by using multiple stages controlled by electronic thermostat and step controller.	19-20	Only available on Option G heaters with 2 or more heating stages. NOT AVAILABLE ON ORDERS FOR 1 WEEK OR 72 HOUR DELIVERY.																								
Low Watt Density Coils	D3, D4	To meet specifications which call for low watt density coils.	—	Available on all heaters.																								
Add Built-in PE Transducer	E32, S19	To allow for pneumatic control.	12	Available on Option K heaters or on Option G heaters with step controller and 6 or more stages.																								
Transformer Primary Fusing	T1	Add transformer primary fusing.	—	Available with all heaters with built-in transformer.																								



# Standard Duct Heaters

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Table X

Summary of Thermostats Available with Option G or K Heaters (No Thermostats are supplied on Option J Heaters)

Type of Thermostat		Use with Control Option	Catalog Number	Comments	
R O O M	Pilot Duty	1 Stage	G	1006998 (Fig. 11)	Rated for 30 volts max.
		2 Stage	G	1007030 (Fig. 12)	Rated for 240 volts max.
	† Proportional Electronic		G or K	SCR Controlled or 2-4 Stages 1016941 (Fig. 14) Vernier Controlled or over 4 Stages 1007101 (Fig. 13)	With Option G, can be used only when step controller is also specified.
D U C T	Pilot Duty	1 Stage	G	1019682 (Fig. 16)	Rated for 277 volts max.
		2 Stage	G	1007044 (Fig. 17)	Rated for 240 volts max.
	† Proportional Electronic		G or K	SCR Controlled or 2-4 Stages 1016942, 1016941 (Fig. 19) Vernier Controlled or over 4 Stages 1001083, 1001068 (Fig. 18)	With Option G, can be used only when step controller is also specified.
† No Thermostat (Special inputs for controller or SCR when customer supplied thermostat is used)		G or K	— — —	2200 ohm Input 135 ohm Input 4-20 mA Input 0-10 VDC Input	

†A thermostat or input must be specified with all Option K heaters and all Option G heaters with step controllers. Step controllers with 4-20 mA or 0-10 VDC will be furnished with proportional control.