

ELECTRIC RE-HEATING FOR SINGLE DUCT VAV - SDVE/SDVBPE MODELS

ELECTRIC HEATER

DESCRIPTION & OPTIONS

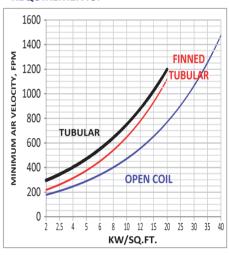
- Slip-in type electric heater made of galvanized steel of appropriate gauge.
- Configuration of the electric heater can be arranged as per customer requirements.
- Heating elements are available in Open Coil, Tubular or Finned Tubular types.
- Available in ON/Off, STAGING and MODULATING electric control.
- Primary over temperature protection is provided by auto reset thermal disc-type
- Air flow switch (requires min Pt total pressure of 0.07 inch WG at the face of the electric coil). MINIMUM AIR VELOCITY

OPTIONS:

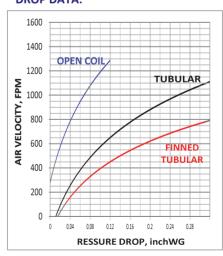
The following components can be provided upon request:

- Secondary over temperature protection with manual reset (push button) thermal
 - disc-type cutout.
- 24V transformer & control fuse.
- Magnetic / safety contactors.
- Line and control terminal blocks.
- Up to 3 steps of heater.
- Patented Modulating HEC controls.
- Available in ETL/CSA or UL listed optional assemblies.
- Door-interlocking disconnect switch.
- Main power fuses.
- Mercury contactors.
- Proportional SSR control (0-100%).
- Discharge temperature limiting control.
- Electronic Flow Sensor can be provided.

REQUIREMENTS:



HEATER'S ELEMENT PRESSURE DROP DATA:







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HEATER CONTROL & POWER:

kW = CFM X $\Delta T^{\circ}F$ / 3160 = m³/h X $\Delta T^{\circ}C$ / 2769

I) CONVENTIONAL STAGED CONTROL:

		ALLOWABLE MAXIMUM KWATT				
		1 PH	3 PHASE			
SIZE	STAGES	120V	240V	380V		
100	1,2	3.5	3.5	3.5		
150	1,2	5.5	6.0	6.0		
200	1,2,3	5.5	11.0	11.0		
250	1,2,3	5.5	11.5	17.0		
300	1,2,3	5.5	11.5	30.0		
350	1,2,3	5.5	11.5	39.0		
400	1,2,3	5.5	11.5	39.0		

Notes:

- 1- Low watt density elements (Max. 35W/in2)
- 2- Min. kW:
 - Single Phase = 0.5 kW/stage
 - Three Phase = 1.5 kW
- 3- Min. based on air velocity of 200 FPM across the coil.

2) MODULATING CONTROL:

ALLOWABLE MAXIMUM KWATT			
1 PF	3 PHASE		
120V	240V	380V	
3.0	3.0	3.0	
4.5	6.0	6.0	
4.5	9.5	11.0	
4.5	9.5	19.0	
4.5	9.5	30.0	
4.5	9.5	33.0	
4.5	9.5	33.0	
	1 PH 120V 3.0 4.5 4.5 4.5 4.5 4.5 4.5	1 PHASE 120V 240V 3.0 3.0 4.5 6.0 4.5 9.5 4.5 9.5 4.5 9.5 4.5 9.5 4.5 9.5	

Notes:

- 1- Low watt density elements (Max. 35W/in2)
- 2- Min. kW:
 - Single Phase = 1.0 kW
 - Three Phase = 1.5 kW
- 3- Min. based on air velocity of 100 FPM across the coil.



^{*} The Max Allowable KW shown is based on UL / NEC standards.

^{**} The minimum air flow requirement for terminals with electric coils is the greater of 70 CFM/KW or the minimum allowable flow rate that can be accurately controlled. This allows proper operation of the electric coil and results in increased coil life with a maximum air temperature rise of 45° F to prevent thermal stratification in the space.

^{***} Uniform flow through a coil results in optimum performance, and therefore, we recommend a minimum length of 48" of full size discharge duct after the air terminal.



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HEATER'S STANDARD & OPTIONAL FEATURES:

ELEMENT TYPE:	□ OPEN COIL			□ TUBULAR		□ FINNED TUB	☐ FINNED TUBULAR	
ELEMENT CONSTRUCTION:	☐ GRADE C NiCr 60 (standard)		□ INCOLOY 800 Nickel Alloy (standard)					
	☐ GRADE A NICT 80 ☐ S.S. ELEMENT							
POWER PHASE:				□ 3 PHASE				
POWER VOLTAGE:	□ 120V			□ 240V □ 380V				
POWER FREQUENCY:	□ 50Hz			□ 60Hz				
	STAGE NO.	CONTROL SIGNAL	K	w	STAGE NO.	CONTROL SIGNAL	KW	
HEATING STAGES:	STAGE 1	□ ON/OFF □ MODULATING			STAGE 3	ON/OFF		
	STAGE 2	ON/OFF			1			
DISC-TYPE AUTOMATIC RE-SET	STANDARD							
THERMAL CUT-OUT	STANDARD							
MANUAL RE-SET THERMAL CUT-	OPTIONAL							
OUT	OFTIONAL							
AIR FLOW SWITCH (at least	STANDARD (OPTIONAL ONLY WITH HEC)							
0.07" WG)	□ fixed (PDN) □ adjustable (PDA)							
MAGNETIC CONTACTORS	STANDARD (OPTIONAL ONLY WITH STEP CONTROLLED HEATERS)							
DISCONNECT SWITCH	OPTIONAL: □ Disconnect switch (door interlock) (DS) □ Toggle switch (TS)							
TIME DELAY SWITCH	OPTIONAL: □ Thermal relay (RT) □ Silent relay (CS) □ Mercury contactor (CM)							
TRANSFORMER	OPTIONAL (STANDARD ONLY WITH HEC)							
POWER FUSES	OPTIONAL: Line fuses (LF) Stage fuses (SF) BOTH LF & SF							
CONTROL FUSES	OPTIONAL (STANDARD ONLY WITH HEC)							
SCR Modulating Controller (0- 10 VDC)	OPTIONAL							
SOLID STATE RELAY	OPTIONAL (STANDARD ONLY WITH HEC)							
PILOT LIGHT	OPTIONAL: □ Line Power (LP) □ Stage ON (LS) □ Heating ON (LH) □ Overheat (LO) □ No airflow (LN)							
VOLT FREE CONTACTS	OPTIONAL							
STEP CONTROLLER	OPTIONAL							
AUTOMATIC CIRCUIT BREAKER	OPTIONAL							

