

Engineering Schedule for Berner's TRO Unit

Energy Recovery Unit Schedule

Unit ID	Manufacture	Model #	Supply Air Flow			EAT Summer		EAT Winter		Volts-Phase-Hertz	FLA	MCA
			CFM	E.S.P in wc	Fan HP	Outside Air		Outside Air				
						db	wb	db	%RH			
ERU-1	Berner											
ERU-2	Berner											
ERU-3	Berner											
ERU-4	Berner											
ERU-5	Berner											

Cooling Conditions							Heating Conditions					Remarks
LAT		Chilled Water		DX	Max Cooling Btuh's	Reheat Btuh's	LAT	Hot Water		Elec.	Max Heating Btuh's	
db	wb	EWT	GPM	Suct.			db	EWT	GPM	kw		

The above schedule is available in Excel and can be pasted into autocad with the following steps: Contact Berner for a copy. 1-800-479-0988

- 1) Copy the cells that you would like to paste into AutoCAD
- 2) Open AutoCAD
- 3) Under the Edit drop down menu select paste special
- 4) Select paste and then select as: Autocad Entities and hit Ok
- 5) Position where you want to put it on your drawing
- 6) If you need to make changes or edit the schedule you can use you edit command in AutoCAD

Berner's Electrical Calculations - TRO

<i>Calculation Chart</i>			
<i>Electrical Parts</i>	<i>Input Amp Draw</i>		
	<i>208 Volt</i>	<i>240 Volt</i>	<i>480 Volt</i>
Fan HP Motor			
Damper Motor - total			
TRICOIL Pump Motor			
Hot Water Modulating Ball Valve			
Temperature Sensors - total			
Lights and Receptical			
Variable Frequency Drive for Fan			
Variable Frequency Drive for TRICOIL			
Misc. Panel Requirments	5.2	4.3	2.1

<i>Electrical Load Results</i>	<i>208 Volt</i>	<i>240 Volt</i>	<i>480 Volt</i>
Full Load Amps - FLA			
Minimum Circuit Ampacity - MCA			

Direction: Insert the amps for each component (*In the area marked Calculation Chart*) that you plan on using from the chart on the right labeled *Electrical Component Amps*. You can find the Fan and Heat Wheel Motor HP on the data sheets under each model *Selection Tab* and *cfm selection*. First input the amps for the largest fan motor (supply or exhaust). Second input the smallest motor amps (if the fan motors are the same then input the amps in both). Third input the designated Heat Wheel Motor amps. Fourth input only the Accessories Amp Draws that you wish to use.

To calculate FLA: Add each column per Desired Voltage

To calculate MCA: (Largest Fan Motor x 1.25) Plus FLA

<i>Electrical Component Amp Draw</i>			
<i>Fan Motors</i>	<i>208 Volt</i>	<i>240 Volt</i>	<i>480 Volt</i>
3/4 HP Motor	3.50	3.20	1.60
1 HP Motor	3.10	3.00	1.50
1 1/2 HP Motor	4.50	4.40	2.20
2 HP Motor	6.00	5.90	3.00
3 HP Motor	8.60	8.40	4.20
5 HP Motor	14.00	12.70	6.40
7 1/2 HP Motor	21.00	19.00	9.50
10 HP Motor	27.30	24.70	12.30
15 HP Motor	41.00	38.00	19.00
20 HP Motor	54.00	50.00	24.90
25 HP Motor	66.00	60.00	30.00
30 HP Motor	78.00	71.00	35.00

<i>Accessories Amp Draw</i>	<i>208 Volt</i>	<i>240 Volt</i>	<i>480 Volt</i>
Damper Motor - each	0.75	0.75	0.50
TRICOIL Pump Motor for units 3820-68	3.00	3.00	3.00
TRICOIL Pump Motor for units 6875-96	6.00	6.00	6.00
TRICOIL Pump Motor for unit 9620	NA	3.60	1.80
Hot Water Modulating Ball-Valve	0.20	0.20	0.10
Temperature Sensor - each	0.50	0.50	0.25
Lights and Receptical	12.00	12.00	6.00
Variable Frequency Drive per Fan - each			
Variable Frequency Drive for TRICOIL	0.25	0.25	0.15

Caution: FLA & MCA may vary +/- 5 amps depending on Manufactures of Parts