



SCROLL - AIR COOLED PACKAGED & SPLIT SYSTEM CHILLERS



1 to 40 Nominal Tons



Total Process Control inc. 3310 - 122 Street Pleasant Prairie, WI 53158
Phone 708-837-0055 Fax 262-694-9195



Total Process Control Inc.
3310 - 122 Street
Pleasant Prairie, WI 53158

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NOMENCLATURE

Example: P AC T B 30 S 2 - T3 - Z

P P = Packaged ES = Evaporator Section CS = Condenser Section

AC AC = Air Cooled Condenser WC = Water Cooled Condenser

T T = Tank Model

B B = Brewery Model L = Low Temp. Model Blank = Standard Unit

30 Nominal Capacity MBTUH Ex. 12 = 12,000 BTUH Etc.

S S = Single Circuit Unit D = Dual Circuit Unit M = Three Circuit Unit

2 1 = R134a 2 = R22 3 = R407C 6 = R404A, R507

T3 Electrical Requirement
S2 = 208/230-1-60 S6 = 220-1-50
T3 = 208/230-3-60 T7 = 200/208-3-50
S4 = 460-1-60 T9 = 380-3-50
T4 = 460-3-60
T5 = 575-3-60

Z Compressor Type H = Hermetic S = Semi-Hermetic Z = Scroll

Low ambient, or lower leaving water temperatures, can require the recirculation of glycol solutions or other fluid blends. These solutions can effect unit capacities. Please consult the factory on these or other special applications for proper sizing.



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SELECTION PROCEDURE

Air Cooled Selection Procedures

To properly select a air cooled packaged chiller, the following information must be known.

1. The required cooling capacity, BTUH.
2. Entering process fluid temperatures.
3. Leaving process fluid temperature.
4. GPM of process fluid to be circulated.
5. Design ambient air temperature.

If you know any three of the items 1 through 4 above you can calculate the fourth by using the formulas below.

For 100% water:

$$\text{Cooling capacity (in BTUH)} = \text{GPM} \times \text{Delta T} \times 500$$

$$\text{GPM} = \frac{\text{Capacity (in BTUH)}}{\text{Delta T} \times 500}$$

$$\text{Delta T} = \frac{\text{Capacity (in BTUH)}}{\text{GPM} \times 500}$$

Sample selection :

Select a air cooled packaged chiller to cool 6.5 GPM of 100% water from 54°F to 44°F.
Design ambient air temperature 95°F.

Find :

A) Air cooled chiller model

Solution :

- A) 1. Chilled fluid Delta T = 54°F - 44°F = 10°F
2. Capacity (in BTUH) = 6.5 GPM x 10°F Delta T x 500 = 32,500 BTUH
3. From the PAC chiller capacity tables, it can be determined that the PAC30S has the capacity to meet the requirements.

***** Consult factory on sizing chillers with glycol or any fluid other than water *****



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AIR COOLED SCROLL CHILLER CAPACITY TABLE

Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
12S	ZR16KC	42.0	1.2	1.2	7.5	1.2	1.3	6.8	1.1	1.4	6.3	1.1	1.4	6.0	1.1	1.5	5.6
		44.0	1.3	1.2	7.7	1.2	1.3	6.9	1.2	1.4	6.5	1.1	1.4	6.2	1.1	1.5	5.8
		45.0	1.3	1.2	7.8	1.2	1.3	7.0	1.2	1.4	6.6	1.2	1.4	6.3	1.1	1.5	5.9
		50.0	1.4	1.2	8.4	1.3	1.3	7.5	1.3	1.4	7.1	1.3	1.5	6.7	1.2	1.6	6.3
18S	ZR15KC	42.0	1.8	1.7	8.9	1.7	1.8	7.9	1.7	1.9	7.4	1.6	2.0	7.0	1.6	2.2	6.5
		44.0	1.9	1.7	9.1	1.8	1.9	8.1	1.7	2.0	7.6	1.7	2.1	7.2	1.6	2.2	6.7
		45.0	1.9	1.7	9.3	1.8	1.9	8.3	1.8	2.0	7.7	1.7	2.1	7.3	1.7	2.2	6.8
		50.0	2.1	1.8	9.9	2.0	1.9	8.8	1.9	2.0	8.3	1.9	2.1	7.8	1.8	2.2	7.3
24S	ZR19KC	42.0	2.2	1.9	9.7	2.1	2.1	8.6	2.0	2.2	8.1	2.0	2.3	7.6	2.0	2.4	7.1
		44.0	2.2	1.9	10.0	2.1	2.1	8.9	2.1	2.2	8.4	2.0	2.3	7.9	2.0	2.4	7.4
		45.0	2.3	1.9	10.2	2.2	2.1	9.1	2.1	2.2	8.5	2.1	2.3	8.0	2.1	2.5	7.5
		50.0	2.5	1.9	10.9	2.4	2.1	9.7	2.3	2.3	9.2	2.3	2.4	8.6	2.2	2.5	8.1
30S	ZB26KC	42.0	3.1	2.8	10.4	2.9	3.1	9.1	2.9	3.3	8.4	2.8	3.5	7.9	2.7	3.7	7.3
		44.0	3.2	2.8	10.6	3.1	3.2	9.3	3.0	3.4	8.7	2.9	3.5	8.2	2.9	3.7	7.6
		45.0	3.3	2.9	10.8	3.1	3.2	9.5	3.0	3.4	8.8	3.0	3.5	8.3	2.9	3.7	7.7
		50.0	3.5	2.9	11.4	3.4	3.3	10.0	3.3	3.5	9.3	3.2	3.6	8.8	3.1	3.8	8.2
36S	ZB30KC	42.0	3.6	3.4	10.3	3.5	3.8	9.2	3.3	3.9	8.6	3.3	4.1	8.1	3.2	4.3	7.6
		44.0	3.8	3.5	10.6	3.6	3.8	9.4	3.4	4.0	8.8	3.4	4.1	8.4	3.3	4.4	7.8
		45.0	3.8	3.5	10.8	3.7	3.8	9.6	3.5	4.0	9.0	3.5	4.2	8.5	3.4	4.4	7.9
		50.0	4.2	3.6	11.4	4.0	3.9	10.2	3.8	4.1	9.6	3.8	4.3	9.1	3.7	4.5	8.5
48S	ZB38KC	42.0	4.3	4.0	10.9	4.1	4.4	9.5	4.0	4.6	8.9	3.9	4.8	8.3	3.8	5.1	7.7
		44.0	4.5	4.0	11.2	4.3	4.4	9.8	4.2	4.6	9.2	4.0	4.9	8.6	3.9	5.1	8.0
		45.0	4.6	4.0	11.3	4.3	4.4	9.9	4.2	4.7	9.3	4.1	4.9	8.7	4.0	5.2	8.1
		50.0	5.0	4.2	12.1	4.8	4.6	10.6	4.6	4.8	10.0	4.5	5.0	9.4	4.4	5.3	8.7
50S	ZB42KC	42.0	4.8	4.3	11.2	4.6	4.8	9.7	4.4	5.1	9.0	4.3	5.4	8.4	4.2	5.8	7.7
		44.0	5.0	4.4	11.5	4.7	4.9	10.0	4.6	5.2	9.2	4.5	5.5	8.6	4.4	5.9	7.9
		45.0	5.1	4.4	11.6	4.8	4.9	10.1	4.7	5.2	9.3	4.6	5.5	8.7	4.5	5.9	8.0
		50.0	5.5	4.6	12.3	5.3	5.1	10.7	5.1	5.4	9.8	5.0	5.7	9.2	4.8	6.1	8.5
60S	ZB45KC	42.0	5.4	4.6	12.0	5.1	5.1	10.5	5.0	5.4	9.7	4.9	5.7	9.1	4.7	6.0	8.4
		44.0	5.6	4.6	12.3	5.3	5.2	10.7	5.2	5.4	10.0	5.0	5.7	9.3	4.9	6.1	8.6
		45.0	5.7	4.7	12.5	5.4	5.2	10.9	5.3	5.5	10.1	5.2	5.8	9.4	5.0	6.1	8.7
		50.0	6.2	4.8	13.2	5.9	5.3	11.6	5.7	5.6	10.7	5.6	5.9	10.0	5.4	6.2	9.3

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

2. kW input is for compressor(s) only.

3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power



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**AIR COOLED SCROLL
 CHILLER CAPACITY TABLE**

Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
70S	ZB58KC	42.0	7.0	5.9	11.1	6.6	6.6	9.8	6.4	6.9	9.1	6.3	7.3	8.5	6.1	7.7	8.0
		44.0	7.2	6.0	11.4	6.8	6.6	10.0	6.7	7.0	9.4	6.5	7.3	8.8	6.3	7.7	8.2
		45.0	7.3	6.0	11.6	6.9	6.7	10.2	6.8	7.0	9.6	6.6	7.4	9.0	6.5	7.8	8.4
		50.0	7.9	6.2	12.3	7.6	6.8	10.8	7.3	7.2	10.2	7.2	7.5	9.6	7.1	7.9	9.0
80S	ZB66KC	42.0	7.9	7.1	10.9	7.5	7.8	9.7	7.3	8.2	9.1	7.2	8.6	8.5	7.0	9.0	8.0
		44.0	8.1	7.2	11.2	7.8	7.9	9.9	7.6	8.3	9.3	7.4	8.6	8.8	7.3	9.1	8.2
		45.0	8.3	7.2	11.4	7.9	7.9	10.1	7.8	8.3	9.5	7.6	8.7	8.9	7.4	9.1	8.4
		50.0	8.9	7.4	12.0	8.6	8.1	10.7	8.4	8.5	10.1	8.3	8.8	9.6	8.1	9.3	8.9
90S	ZB76KC	42.0	9.0	8.4	10.8	8.6	9.2	9.6	8.4	9.7	9.0	9.0	10.1	8.4	8.0	10.6	7.9
		44.0	9.3	8.5	11.1	8.9	9.3	9.8	8.7	9.7	9.2	8.5	10.2	8.7	8.3	10.7	7.2
		45.0	9.5	8.6	11.3	9.1	9.3	10.0	8.9	9.8	9.4	8.7	10.3	8.9	8.5	10.7	7.3
		50.0	10.3	8.7	12.0	9.8	9.5	10.7	9.6	10.0	10.0	9.4	10.5	9.4	9.2	10.9	7.9
120S	ZB88KC	42.0	10.5	9.1	11.9	10.0	10.0	10.4	9.7	10.5	9.7	9.5	11.1	9.1	9.2	11.7	8.4
		44.0	10.8	9.2	12.2	10.3	10.1	10.7	10.1	10.6	9.9	9.8	11.2	9.3	9.5	11.8	8.6
		45.0	11.0	9.2	12.4	10.5	10.2	10.8	10.3	10.7	10.0	10.0	11.2	9.4	9.7	11.9	8.7
		50.0	11.9	9.5	13.0	11.3	10.4	11.4	11.1	11.0	10.7	10.8	11.5	10.0	10.5	12.1	9.3
180S	ZB11M	42.0	13.1	11.8	10.3	12.5	13.1	9.0	11.8	13.8	8.4	11.8	14.6	7.9	11.6	15.4	7.3
		44.0	13.5	11.9	10.5	12.8	13.2	9.2	12.2	13.9	8.6	12.2	14.7	8.1	11.9	15.4	7.6
		45.0	13.7	11.9	10.6	13.0	13.2	9.3	12.4	14.0	8.7	12.4	14.7	8.2	12.1	15.5	7.7
		50.0	14.7	12.1	11.3	14.0	13.4	10.9	13.3	14.2	9.3	13.3	14.9	8.7	13.0	15.7	8.1
250S	ZR250K	42.0	17.7	16.3	10.7	17.0	18.0	9.4	16.6	18.9	8.9	16.3	19.8	8.4	15.8	20.8	7.8
		44.0	18.3	16.6	10.9	17.5	18.2	9.6	17.1	19.1	9.1	16.8	20.0	8.6	16.4	21.1	8.0
		45.0	18.6	16.6	11.0	17.8	18.3	9.8	17.5	19.2	9.2	17.1	20.1	8.7	16.7	21.2	8.1
		50.0	20.0	17.1	11.6	19.3	18.8	10.4	18.9	19.7	9.7	18.5	20.6	9.2	17.9	21.7	8.6
300S	ZR300K	42.0	21.0	19.4	11.0	20.2	21.3	9.8	19.8	22.8	9.2	19.4	23.4	8.6	18.8	24.6	8.0
		44.0	21.8	19.6	11.3	20.8	21.6	10.0	20.4	22.6	9.4	20.0	23.6	8.8	19.5	24.8	8.2
		45.0	22.1	19.7	11.4	21.2	21.7	10.1	20.7	22.7	9.5	20.3	23.7	8.9	19.8	25.0	8.5
		50.0	23.9	20.8	12.0	22.9	22.2	10.7	22.3	23.4	10.0	21.9	24.3	9.5	21.4	25.6	8.8

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

2. kW input is for compressor(s) only.

3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power



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**AIR COOLED SCROLL
 CHILLER CAPACITY TABLE**

Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
72D	ZB30KC	42.0	7.1	7.1	9.8	6.8	7.8	8.7	6.6	8.2	8.2	6.5	8.5	7.7	6.3	8.9	7.2
		44.0	7.4	7.2	10.1	7.0	7.9	9.0	6.9	8.3	8.5	6.7	8.6	7.9	6.5	9.0	7.5
		45.0	7.5	7.3	10.3	7.2	7.9	9.1	7.0	8.3	8.6	6.8	8.7	8.0	6.7	9.1	7.6
		50.0	8.1	7.4	10.9	7.8	8.1	9.7	7.6	8.4	9.1	7.4	8.8	8.6	7.2	9.2	8.1
96D	ZB38KC	42.0	8.8	7.8	11.4	8.3	8.5	10.0	8.1	8.9	9.3	7.9	9.4	8.6	7.7	9.9	8.1
		44.0	9.2	7.8	11.7	8.7	8.6	10.3	8.5	9.0	9.6	8.2	9.5	9.0	8.0	10.0	8.4
		45.0	9.3	7.9	11.9	8.9	8.7	10.4	8.7	9.1	9.8	8.4	9.6	9.1	8.2	10.0	8.5
		50.0	10.2	8.1	12.6	9.7	8.9	11.2	9.4	9.3	10.4	9.2	9.8	9.8	9.0	10.3	9.2
100D	ZB42KC	42.0	9.8	8.4	11.8	9.3	9.4	10.2	9.1	9.9	9.5	8.8	10.5	8.8	8.6	11.2	8.1
		44.0	10.2	8.5	12.1	9.7	9.5	10.5	9.4	10.1	9.7	9.2	10.6	9.0	8.9	11.3	8.3
		45.0	10.3	8.6	12.3	9.8	9.6	10.6	9.6	10.1	9.9	9.3	10.7	9.2	9.1	11.4	8.4
		50.0	11.2	8.9	13.0	10.7	9.8	11.3	10.5	10.4	10.5	10.2	11.0	9.8	9.9	11.7	9.0
120D	ZB45KC	42.0	10.6	9.2	12.0	10.2	10.2	10.5	10.0	10.7	9.7	9.7	11.3	9.1	9.5	11.9	8.4
		44.0	11.1	9.3	12.3	10.6	10.3	10.7	10.3	10.8	10.0	10.1	11.4	9.4	9.8	12.0	8.7
		45.0	11.4	9.4	12.5	10.8	10.4	10.9	10.6	10.9	10.2	10.3	11.5	9.5	10.1	12.1	8.8
		50.0	12.3	9.7	13.2	11.8	10.7	11.6	11.4	11.2	10.8	11.2	11.7	10.1	10.9	12.4	9.4
140D	ZB58KC	42.0	13.9	11.8	12.5	13.2	13.1	10.8	12.9	13.8	10.1	12.6	14.5	9.4	12.3	15.3	8.7
		44.0	14.4	11.9	12.8	13.7	13.2	11.2	13.4	13.9	10.4	13.1	14.6	9.7	12.8	15.4	9.0
		45.0	14.6	12.0	13.0	14.0	13.3	11.3	13.7	14.0	10.6	13.3	14.7	9.8	13.0	15.5	9.2
		50.0	15.7	12.3	13.7	15.2	13.6	12.0	14.7	14.3	11.2	14.4	15.0	10.5	14.0	15.8	9.8
160D	ZB66KC	42.0	15.3	14.0	11.8	14.6	15.5	10.3	14.3	16.2	9.7	13.9	17.1	9.0	13.5	17.9	8.4
		44.0	16.3	14.3	12.3	15.5	15.7	10.8	15.2	16.5	10.1	14.8	17.3	9.4	14.5	18.2	8.8
		45.0	16.5	14.4	12.5	15.8	15.8	10.9	15.5	16.6	10.3	15.2	17.4	9.6	14.8	18.3	8.9
		50.0	17.8	14.8	13.2	17.1	16.2	11.6	16.8	17.0	10.8	16.4	17.8	10.2	16.0	18.7	9.5
180D	ZB76KC	42.0	17.9	16.8	11.7	17.2	18.5	10.3	16.9	19.4	9.7	16.4	20.3	9.0	16.0	21.4	8.4
		44.0	18.5	17.0	12.0	17.7	18.7	10.5	17.3	19.6	9.8	17.0	20.6	9.2	16.5	21.6	8.6
		45.0	18.9	17.1	12.1	18.1	18.8	10.7	17.7	19.7	10.0	17.3	20.7	9.4	16.9	21.7	8.7
		50.0	20.3	17.6	12.8	19.5	19.3	11.3	19.0	20.3	10.4	18.7	21.2	9.9	18.2	22.2	9.2
180M	ZB38KC	42.0	13.1	11.2	12.2	12.5	12.5	10.5	12.2	13.2	9.7	11.9	14.0	9.0	11.5	14.8	8.3
		44.0	13.6	11.2	12.6	12.9	12.5	10.9	12.7	13.2	10.1	12.3	14.0	9.4	12.0	14.9	8.6
		45.0	13.9	11.2	12.8	13.1	12.5	11.1	12.8	13.2	10.3	12.5	14.0	9.5	12.1	14.9	8.8
		50.0	14.8	11.3	13.7	14.3	12.6	11.9	13.8	13.3	11.1	13.5	14.1	10.2	13.1	14.9	9.5

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**AIR COOLED SCROLL
 CHILLER CAPACITY TABLE**

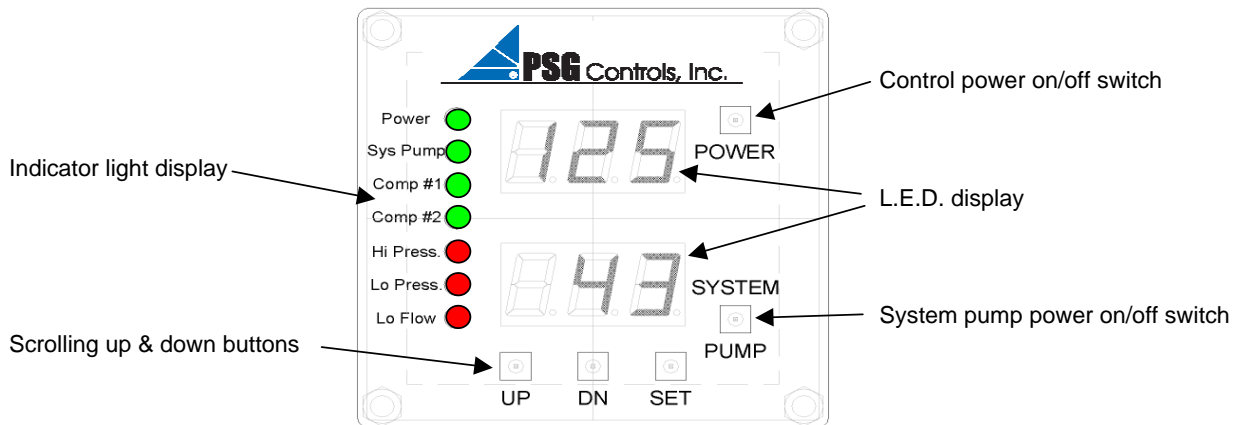
Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
240D	ZB88KC	42.0	20.9	18.0	12.0	20.0	19.8	10.5	19.4	20.8	9.8	18.9	21.8	9.2	18.5	23.0	8.5
		44.0	21.7	18.2	12.3	20.7	20.0	10.7	20.1	21.0	10.0	19.7	22.0	9.4	19.2	23.2	8.8
		45.0	22.1	18.2	12.5	21.0	20.1	10.9	20.5	21.1	10.2	20.0	22.2	9.6	19.6	23.3	8.9
		50.0	23.8	18.8	13.1	22.8	20.6	11.6	22.1	21.6	10.8	21.7	22.6	10.2	21.3	23.7	9.5
360D	ZB11M	42.0	26.0	23.4	10.9	24.8	26.0	9.5	24.2	27.5	8.9	23.7	28.9	8.3	23.0	30.5	7.7
		44.0	26.7	23.5	11.2	25.2	26.2	9.7	24.9	27.6	9.1	24.3	29.1	8.5	23.7	30.7	7.9
		45.0	27.2	23.6	11.3	25.9	26.3	9.9	25.3	27.7	9.2	24.8	29.2	8.6	24.1	30.8	8.0
		50.0	29.1	23.9	12.0	27.8	26.6	10.5	27.1	28.1	9.7	26.5	29.5	9.1	25.8	31.1	8.5
500D	ZR250K	42.0	35.4	33.0	10.7	33.9	36.1	9.5	33.3	37.8	8.9	32.5	39.5	8.4	31.7	41.6	7.8
		44.0	36.7	33.3	11.0	35.1	36.5	9.7	34.4	38.3	9.1	33.7	39.9	8.6	32.9	42.0	8.0
		45.0	37.3	33.5	11.1	35.8	36.8	9.8	35.0	38.5	9.2	34.3	40.1	8.7	33.3	42.2	8.1
		50.0	40.3	34.5	11.7	38.7	37.8	10.4	37.8	39.5	9.8	37.2	41.0	9.3	36.3	43.2	8.6
600D	ZR300K	42.0	42.8	37.7	11.5	41.1	41.4	10.2	40.2	43.4	9.6	39.3	45.4	9.0	38.4	47.7	8.4
		44.0	44.2	38.1	11.8	42.5	41.8	10.5	41.6	43.7	9.8	40.8	45.8	9.3	39.8	48.1	8.7
		45.0	45.0	38.3	11.9	43.3	42.0	10.6	42.3	44.0	10.0	41.4	46.0	9.4	40.4	48.3	8.8
		50.0	48.8	39.4	12.6	46.8	43.0	11.2	45.8	44.9	10.6	44.9	46.8	10.0	43.8	49.2	9.4

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.
2. kW input is for compressor(s) only.
3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power



Total Process Control inc.
3310 - 122 Street
Pleasant Prairie, WI 53158

MICROPROCESSOR STANDARD FEATURES



Features:

- Control operates to a +/- 1°F accuracy.
- Powered from the chiller 24volt control circuit. No high voltage interference.
- 1 or 2 compressor control capability
- Operates and displays in °F or °C
- Controls chiller on inlet or outlet temperature
- Scroll through set up and review mode
- 30 second compressor time delay to prevent short cycling and nuisance faults
- 60 second hot gas solenoid delay to prevent false hot gas feeding during compressor start up.
- Lock out relay shuts down the chiller when control fault settings activate
- Automatic compressor lead lag on dual circuit chillers
- Weather resistant for outdoor use.
- Basic chiller functionality for ease of set up and operation.
- Factory default function code to reset the controller to the initial factory settings

- Two L.E.D. display windows.
 - a) Inlet & outlet temperature during chiller operation
 - b) Displays refrigerant high and low pressure in review mode
 - 1) no cap tubes to break causing a loss of refrigerant and down time
 - 2) No refrigerant recovery to change out the pressure transducer

- Indicator lights
 - a) Chiller control power on/off switch with green indicator.
 - b) System pump on/off switch with green indicator.
 - c) Compressor run indicator lights
 - d) High and low refrigerant pressure red fault indicator
 - e) Low fluid flow red indicator

- Display flashes all chiller faults.
 - a) Safety faults:

High fluid temperature outlet alarm	- (display only - does not shut down the chiller)
Low fluid temperature outlet alarm	- (shuts down the chiller and requires manual reset)
High refrigerant pressure	- (shuts down the chiller and requires manual reset)
Low refrigerant pressure	- (shuts down the chiller and requires manual reset)
Low water flow through evaporator	- (shuts down the chiller and automatically resets when flow is restored)

- Monitors and logs compressor run hours



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PAC & PACT CHILLER STANDARD FEATURES AND OPTIONS

Standard Features (All Models)

- ETL listed
- **Microprocessor controller** (See page 9 for features)
- **STAINLESS STEEL** brazed plate evaporator with 1/2" insulation, and secured in a steel bracket
- **Shell & tube 180S to 600D models**
- **Scroll** compressor with crankcase heater
- **Suction accumulator**
- **Water flow switch**
- **Hot gas by-pass capacity control**
- **24V control transformer**
- Direct drive condenser fan motor
- Rust resistant, high CFM, aluminum
- condenser fan blade
- Condenser(s): copper tube / aluminum fin
- Compressor motor contactor
- Condenser motor and control circuit fusing
- "Hard start kit" (single phase units only)
- Painted galvanized sheet metal cabinet
- 1/2" insulation on all water and refrigerant lines
- Liquid line drier, sightglass, solenoid, TEV
- Full refrigerant charge from factory



PAC90S model shown



PACT60S model shown

Additional Features On Tank Models Only

- **STAINLESS STEEL** storage tank with 1/2" insulation
- Fused **STAINLESS STEEL** re-circulation pump for tank operation with ball valve and cleanable strainer
- Tank pressure relief valve, vent and drain connections

AVAILABLE OPTIONS (All Models)

- | | |
|---|---|
| <ul style="list-style-type: none"> • 4 year extended compressor warranty • Casters (factory mounted) • 115 volt (rain tight) service outlet • Fused disconnect • Phase monitor • Compressor fusing • Fan cycle control on Pac90 & 120 units only (+40°F) • Variable fan speed control (+20°F) • Flooded condenser with receiver / head pressure control (-20°F) • Heated flooded condenser with receiver / head pressure control (-20°F) • Factory installed evaporator heat tape freeze protection thermostatically controlled | <ul style="list-style-type: none"> • Fused STAINLESS STEEL system process pump • Dual system pump with manual changeover • Dual system pump with auto changeover • Low flow bypass valve • "Gold" finned condenser coil (coastal protection) • Semi-hermetic compressor • Shell and tube chiller barrel • Water flow meter • Auto city water make up solenoid • Auto city water changeover panel • Auto city water changeover panel with 5 micron filter • Special piping for de-ionized and reverse osmosis water systems • Blower type condenser fan (forward curve) 12S to 60S |
|---|---|

Additional Available Options on Tank Models Only

- Storage tank sight glass
- Tank low liquid level indicator with dry contacts

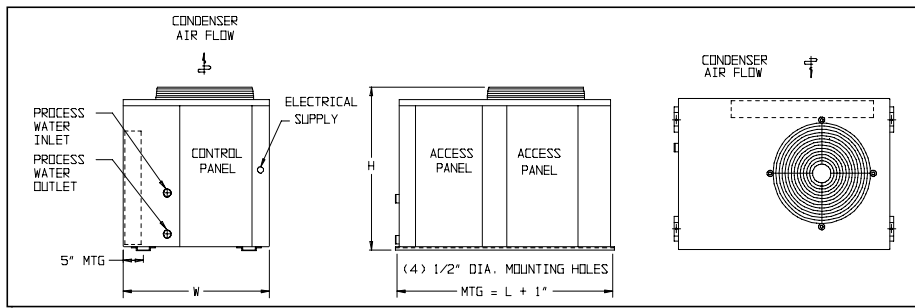


Total Process Control inc.
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PAC DIMENSIONAL & ELECTRICAL SPECIFICATIONS

Single circuit packaged air cooled chiller

Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor				Fan Motor		MCA	M.O.P.	Weight Pounds						
						Qty.	HP	RLA ea.	LRA ea.	Qty.	FLA ea.									
12S2-S2-Z	14,400	36	34	40	3/4" FPT	1	1.3	10	42	1	3.3	20	25	250						
18S2-S2-Z	21,600														13.6	61.0	3.3	25	30	
18S2-T3-Z															2.0	8.6	55.0	3.3	15	20
18S2-T4-Z															4.3	27.0	1.6	15	15	
24S2-S2-Z															25,200	15.7	73.0	3.3	25	35
24S2-T3-Z	2.5															8.2	63.0	3.3	15	20
24S2-T4-Z	36,000	4.3	31.0	1.6	15	15														
30S2-S2-Z		30	20.7	127.0	3.3	30	45													
30S2-T3-Z			3.5	13.9	88.0	3.3	25	30												
30S2-T4-Z	7.1		44.0	1.6	15	15														
36S2-S2-Z	42,000	56	34	40	1" FPT	1	4	25.0	132.0	1	3.3	35	50	500						
36S2-T3-Z															15.0	115.0	3.3	25	35	
36S2-T4-Z															7.4	47.5	1.6	15	15	
48S2-S2-Z															50,400	56	34	40	1" FPT	1
48S2-T3-Z	20.7	115.0	3.3	30	45															
48S2-T4-Z	8.9	63.0	1.6	15	20															
50S2-S2-Z	56,400	85	34	40	1.25" FPT	1	5	27.9	129.0	2	3.3	40	60	575						
60S2-T3-Z															20.7	156.0	3.3	30	45	
60S2-T4-Z	63,600	85	34	40	1.25" FPT	1	6	11.5	70.0	2	1.6	20	25	600						
70S2-T3-Z															8	32.1	195.0	3.3	50	70
70S2-T4-Z	81,600	85	34	40	1.25" FPT	1	8	16.4	95.0	2	1.6	25	40	700						
80S2-T3-Z															9	33.6	225.0	3.3	50	80
80S2-T4-Z	93,600	85	34	40	1.25" FPT	1	9	17.3	114.0	2	1.6	25	40	725						
90S2-T3-Z															10	42.0	239.0	3.3	60	100
90S2-T4-Z	106,800	85	34	40	1.25" FPT	1	10	19.2	125.0	2	1.6	30	45	750						
120S2-T3-Z															12	47.0	245.0	3.3	70	110
120S2-T4-Z	123,600	85	34	40	1.25" FPT	1	12	22.1	125.0	2	1.6	35	50	850						



Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor				Fan Motor		MCA	M.O.P.	Weight Pounds
						Qty.	HP	RLA ea.	LRA ea.	Qty.	FLA ea.			
180S2-T3-Z	148,800	157	45	54.5	2" MPT	1	15	55.2	425.0	2	6.6	90	125	1600
180S2-T4-Z					27.2									
250S2-T3-Z	210,000	157	45	54.5	2.5" MPT	1	20	81.0	505.0	2	6.6	125	175	1700
250S2-T4-Z					34.0									
300S2-T3-Z	248,400	157	45	54.5	2.5" MPT	1	25	87.9	500.0	2	6.6	125	200	1800
300S2-T4-Z					43.0									

