ProTherm INDUSTRIES

Panel Performance Features

Ambient Temperature Range
-10° F to 104° F

Fail Safe
Fail Safe Output relay is de-energized if the input sensor is either open or short-circuited preventing heater burnout problems.

NEMA 4X Enclosure
Includes pre-mounted electrical hubs for conduit connections.

Single Probe with Dual Sensing
Senses both water temperature and water level. Sensor probe supplied with 12 ft outdoor rated cord pre-wired to control board. Probe also supplied with PVC hub connector for attachment through cooling tower basin wall

Probe Construction
Constructed out of 316 SST tubing and 304 SST fitting to minimize corrosion. Probe can be installed horizontally or vertically with a pressure rating of 15 psi.

Remote Interlock Terminal Block
A means of safeguarding to prevent operation if an interlock is open.

Lower Cost
Installation time and cost are reduced by replacing individually mounted temperature and liquid level control devices with one pre-engineered and assembled control package that requires only one probe to sense both water temperature and level.

Standard Options
Door disconnect, fusing, circuit breaker, fusing with door disconnect, and circuit breaker with door disconnect. Direct immersion cords, custom cord lengths up to 125 ft, 304 SST enclosure.

New Optional Features

Digital Temperature Display
The digital temperature display provides more precise and reliable temperature readings, enabling better control and optimization of the cooling process. This leads to improved energy efficiency, enhanced performance, and better overall system health.

Adjustable Setpoint
An adjustable temperature setpoint on a cooling tower basin offers several benefits, including energy savings, optimized system performance, and enhanced control over water temperature. This allows for fine-tuning the cooling tower's operation based on changing needs and conditions, leading to improved efficiency and reduced operating costs.

Optional RS485 Communication
RS485 communication allows operators to monitor the cooling tower's water basin, including temperature and conductivity. Operators can remotely control the cooling tower's basin heater operation, such as adjusting setpoints.

Enclosure Heater
An integrated enclosure heater is provided to ensure reliable operation at low ambient temperatures as well as prevent issues related to condensation inside the enclosure.

Low Temp Alarm
An optional set of contacts provides remote indication of low basin temperature.

Low Water Alarm
An optional set of contacts provides remote indication of low basin water level.

Enclosure Drain
An enclosure drain allows accumulated water to exit the enclosure, preventing potential damage to internal electrical components.

Catalog Numbering System for Cooling Tower Control Panels

Catalog units: **874Z - X X X A B C D -E – see list below**

Custom units: **874Z - 123456 – custom serial number assigned at time of order**

874	Z-	XXX	A	B	C	D	-E
Product Code Number for Cooling Tower Control Panels	**Agency Status** X = Non-UL/CSA Un-cataloged L =UL Un-cataloged Z = UL and CSA Cataloged S = CSA only	**Control Type** 2XX = Printed Circuit Board, see below for pre-assigned numbers 3XX = Digital controller, see below for pre-assigned numbers	**Catalog Listed Option** 0 = Standard 1 = Door Disconnect 2 = Fusing 3 = Circuit Breaker 4 = Fusing & Door Disconnect 5 = Circuit Breaker & Door Disconnect 6 = Standard w/ Aux. Contact 9 = Special	**Control type-Probe-Cable** 0 = Preset 45°F PCB Non-Adj. Outdoor cord 2 = RTD (required w/ digital controller) Outdoor Cord 5 = Preset 45°F PCB Non-Adj. Immersion, (DI) cord 7 = RTD (required w/ digital controller) Immersion Cord (DI)	**Nominal Cord Length** 0 = 12' 1 = 22' 3 = 32' 4 = 40' 5 = 50' 9 = Special	**Voltage/ Phase Code** See table below	**Options** Blank = no options -A1* = Low temperature alarm -A2* = RS485 communication -A3* = Low water alarm -A4 = Heater “ON” dry contact -N = Enclosure drain -L = Heater “ON” pilot light *only available with digital controller

Control Panel Type	Max Panel KW Ratings								PCB Control Base Catalog Number (Add B, C, D & -E)	Digital Control Base Catalog Number (Add B, C, D & -E)
	Max Panel Amps	120V 1PH	208V 1PH	240V 1PH	480V 1PH	208V 3PH	240V 3PH	480V 3PH		
Standard Panel With No Options	16	1.9	3.3	3.8	7.6	5.7	6.6	13.3	874Z-2420 _ _ _	874Z-3420 _ _ _
	24	2.8	4.9	5.7	11.5	8.6	9.9	19.9	874Z-2430 _ _ _	874Z-3430 _ _ _
	32	3.8	6.6	7.6	15.3	11.5	13.2	26.5	874Z-2440 _ _ _	874Z-3440 _ _ _
	40	4.8	8.3	9.6	19.2	14.3	16.6	33.2	874Z-2450 _ _ _	874Z-3450 _ _ _
	48	5.7	9.9	11.5	23	17.2	19.9	39.8	874Z-2010 _ _ _	874Z-3010 _ _ _
With Door Disconnect Option	16	1.9	3.3	3.8	7.6	5.7	6.6	13.3	874Z-2521 _ _ _	874Z-3521 _ _ _
	24	2.8	4.9	5.7	11.5	8.6	9.9	19.9	874Z-2531 _ _ _	874Z-3531 _ _ _
	32	3.8	6.6	7.6	15.3	11.5	13.2	26.5	874Z-2541 _ _ _	874Z-3541 _ _ _
	40	4.8	8.3	9.6	19.2	14.4	16.6	33.2	874Z-2031 _ _ _	874Z-3031 _ _ _
	48	5.7	9.9	11.5	23	17.2	19.9	39.8	874Z-2041 _ _ _	874Z-3041 _ _ _
With Fusing Option	24	2.8	4.9	5.7	11.5	8.6	9.9	19.9	874Z-2062 _ _ _	874Z-3062 _ _ _
	32	3.8	6.6	7.6	15.3	11.5	13.2	26.5	874Z-2072 _ _ _	874Z-3072 _ _ _
	40	4.8	8.3	9.6	19.2	14.3	16.6	33.2	874Z-2082 _ _ _	874Z-3082 _ _ _
	48	5.7	9.9	11.5	23	17.2	19.9	39.8	874Z-2092 _ _ _	874Z-3092 _ _ _
	64	7.6	13.3	15.3	30.7	23	26.5	53	874Z-2102 _ _ _	874Z-3102 _ _ _
	80	9.6	16.6	19.2	38.4	28.7	33.2	66.4	874Z-2112 _ _ _	874Z-3112 _ _ _
	96	11.5	19.9	23	46	34.5	39.8	79.7	874Z-2122 _ _ _	874Z-3122 _ _ _

Chart continues on next page

Catalog Numbering System for Cooling Tower Control Panels (cont.)

Control Panel Type	Max Panel KW Ratings								PCB Control Base Catalog Number (Add B, C, D & -E)	Digital Control Base Catalog Number (Add B, C, D & -E)
	Max Panel Amps	120V 1PH	208V 1PH	240V 1PH	480V 1PH	208V 3PH	240V 3PH	480V 3PH		
With Circuit Breaker Option	24	2.8	4.9	5.7	11.5	8.6	9.9	19.9	874Z-2133 _ _ _	874Z-3133 _ _ _
	32	3.8	6.6	7.6	15.3	11.5	13.2	26.5	874Z-2143 _ _ _	874Z-3143 _ _ _
	40	4.8	8.3	9.6	19.2	14.3	16.6	33.2	874Z-2153 _ _ _	874Z-3153 _ _ _
	48	5.7	9.9	11.5	23	17.2	19.9	39.8	874Z-2163 _ _ _	874Z-3163 _ _ _
	64	7.6	13.3	15.3	30.7	23	26.5	53	874Z-2173 _ _ _	874Z-3173 _ _ _
	80	9.6	16.6	19.2	38.4	28.7	33.2	66.4	874Z-2183 _ _ _	874Z-3183 _ _ _
	96	11.5	19.9	23	46	34.5	39.8	79.7	874Z-2193 _ _ _	874Z-3193 _ _ _
With Fusing and Door Disconnect Option	24	2.8	4.9	5.7	11.5	8.6	9.9	19.9	874Z-2204 _ _ _	874Z-3204 _ _ _
	32	3.8	6.6	7.6	15.3	11.5	13.2	26.5	874Z-2214 _ _ _	874Z-3214 _ _ _
	40	4.8	8.3	9.6	19.2	14.3	16.6	33.2	874Z-2234 _ _ _	874Z-3234 _ _ _
	48	5.7	9.9	11.5	23	17.2	19.9	39.8	874Z-2244 _ _ _	874Z-3244 _ _ _
	64	7.6	13.3	15.3	30.7	23	26.5	53	874Z-2254 _ _ _	874Z-3254 _ _ _
	80	9.6	16.6	19.2	38.4	28.7	33.2	66.4	874Z-2264 _ _ _	874Z-3264 _ _ _
	96	11.5	19.9	23	46	34.5	39.8	79.7	874Z-2274 _ _ _	874Z-3274 _ _ _
With Circuit Breaker and Door Disconnect Option	24	2.8	4.9	5.7	11.5	8.6	9.9	19.9	874Z-2285 _ _ _	874Z-3285 _ _ _
	32	3.8	6.6	7.6	15.3	11.5	13.2	26.5	874Z-2295 _ _ _	874Z-3295 _ _ _
	40	4.8	8.3	9.6	19.2	14.3	16.6	33.2	874Z-2315 _ _ _	874Z-3315 _ _ _
	48	5.7	9.9	11.5	23	17.2	19.9	39.8	874Z-2325 _ _ _	874Z-3325 _ _ _
	64	7.6	13.3	15.3	30.7	23	26.5	53	874Z-2335 _ _ _	874Z-3335 _ _ _
	80	9.6	16.6	19.2	38.4	28.7	33.2	66.4	874Z-2345 _ _ _	874Z-3345 _ _ _
	96	11.5	19.9	23	46	34.5	39.8	79.7	874Z-2355 _ _ _	874Z-3355 _ _ _

Voltage/Phase Codes for Product Code 874 Control Panel

B = 120/1	**E = 220/1**	**J = 240/1**	**O = Special**	**T = 480/1**	**X = 575/3**
C = 208/1	**G = 230/1**	**K = 240/3**	**R = 460/1**	**U = 480/3**	**Y = 600/1**
D = 208/3	**H = 230/3**	**N = 277/1**	**S = 460/3**	**W = 575/1**	**Z = 600/3**

Catalog Numbering System for Cooling Tower Control Panels (cont.)

Enclosure size table

Control Panel Type	Max Panel Amps	PCB <=250V	PCB >250V	Digital Ctrl <=250V	Digital Ctrl >250V	Option A1	Option A2	Option A3	Option A4	Option N	Option L
						These options only available with digital ctrlr					
Standard Panel with No Options	16	Small	Small	Medium	Medium	Large	Large	Large			
	24	Small	Small	Medium	Medium	Large	Large	Large			
	32	Small	Small	Medium	Medium	Large	Large	Large			
	40	Small	Small	Medium	Medium	Large	Large	Large			
	48	Small	Small	Medium	Medium	Large	Large	Large			
With Door Disconnect Option	16	Small	Small	Medium	Medium	Large	Large	Large			
	24	Small	Small	Medium	Medium	Large	Large	Large			
	32	Small	Small	Medium	Medium	Large	Large	Large			
	40	Small	Small	Medium	Medium	Large	Large	Large			
	48	Medium	Medium	Medium	Medium	Large	Large	Large			
With Fusing Option	24	Medium	Large	Large	Large	No Change in Box	No Change in Box	No Change in Box	No Change in Box	No Change in Box	No Change in Box
	32	Large	Large	Large	Large						
	40	Large	Large	Large	Large						
	48	Large	Large	Large	Large						
	64	Large	Metal	Metal	Metal						
	80	Large	Metal	Metal	Metal						
	96	Large	Metal	Metal	Metal						
With Circuit Breaker Option	24	Large	Large	Large	Large						
	32	Large	Large	Large	Large						
	40	Large	Large	Large	Large						
	48	Large	Large	Large	Large						
	64	Metal	Metal	Metal	Metal						
	80	Metal	Metal	Metal	Metal						
	96	Metal	Metal	Metal	Metal						
With Fusing and Door Disconnect Option	24	Medium	Large	Large	Large						
	32	Large	Large	Large	Large						
	40	Large	Large	Large	Large						
	48	Large	Large	Large	Large						
	64	Metal	Metal	Metal	Metal						
	80	Metal	Metal	Metal	Metal						
	96	Metal	Metal	Metal	Metal						
With Circuit Breaker and Door Disconnect Option	24	Large	Large	Large	Large						
	32	Large	Large	Large	Large						
	40	Large	Large	Large	Large						
	48	Large	Large	Large	Large						
	64	Metal	Metal	Metal	Metal						
	80	Metal	Metal	Metal	Metal						
	96	Metal	Metal	Metal	Metal						

Dimensional Reference

Small	10" H x 8" W x 6" D	**Medium**	12" H x 10" W x 6" D	**Large**	16" H x 14" W x 8" D	**Metal**	30" H x 20" W x 8" D