



# SELECTION TABLES

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Selection Tables for ProLon Controllers

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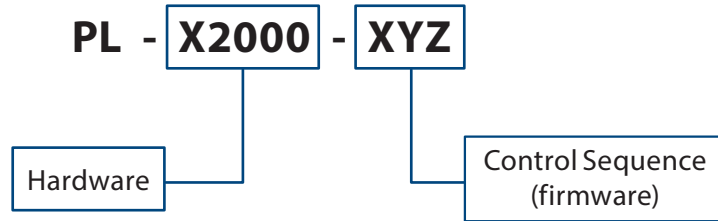
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## 1 - Controller Identification

1. The following selection tables were created to help properly select ProLon Controllers according to the specific applications.
2. There are several different hardware families, each which can support different firmware's (different control sequences). Each controller is **application specific**.



## 2 - Inputs/Outputs per Controller

1. Each hardware series has a fixed number of inputs and outputs

I/O Hardware Series		M2000 Series	C1000 Series	VC2000 Series	Wall Sensors	T1100 Series
Inputs		9	4	1*	0	1*
Outputs	Digital Outputs	5	4	1	0	1
	Analog Outputs	3	1	1	0	1

\*Auxiliary Input



### 3 - How to Use the Selection Tables

1. Each table represents a different application (RTU/AHU Controller Table, Heatpump Controller Table, Boiler Controller Table, etc).
2. Within each application, different hardware models are displayed (M2000, C1000, etc). The inputs and outputs are displayed for each controller.
3. In some tables, there are sections displayed as "CHOOSE 1". In this instance, the input or the output can be configured to be "ANY ONE" of the displayed choices, but cannot be ALL of them at the same time. For example:

<b>DO</b>	Preheat Permission	Choose 1
	Staged Heat (W1)	

In this case, on this particular controller, one the digital outputs can be configured to be EITHER "Preheat Permission" or "Staged Heat (W1)". The actual configuration of the input or output is done with the ProLon Focus Software.



## 4 - Rooftop Unit / Air Handling Controller Selection Table

Rooftop Units / Air Handling Units		PL-C1000-RTU	PL-C1000-RTUS	PL-M2000-RTU	PL-M2000-RTUS	
Master / Follower logic <i>(see note 1)</i>		Master	Follower	Master	Follower	
Inputs	Supply Air Temperature (10K Type III)	✓	✓	✓	✓	
	Return Air Temperature (10K Type III)	✓	✓	✓	✓	
	Outside Air Temperature (10K Type III)	✓	✓	✓	✓	
	Proof of Fan (Dry Contact)	Choose 1	Choose 1	✓	✓	
	Night Setback Input (Dry Contact) <i>(see note 2)</i>					
	CO <sub>2</sub> Sensor (4-20mA)			✓	✓	
	Static Pressure Transducer (0-5VDC)			✓	✓	
	Room Sensor		Digital Room Sensor	10K Type III Thermistor	Digital Room Sensor or 10 K Therm.	
	Room Setpoint		Digital Room Sensor	0-10K Potentiometer	Digital Room Sensor or 10 K Pot.	
	Mixed Air Temperature (10K Type III)			Choose 1	Choose 1	
	Filter Status (Dry Contact)					
	Schedule Override (Dry Contact)					
Outputs	DO	Fan (G)	✓	✓	✓	✓
		Compressor 1 (Y1) <i>(see notes 3 &amp; 4)</i>	✓	✓	✓	✓
		Compressor 2 (Y2) <i>(see notes 3 &amp; 4)</i>	✓	✓	✓	✓
		Preheat Permission	Choose 1	Choose 1	Choose 1	Choose 1
		Staged Heat (W1)				
	Staged Heat (W2)			Choose 1	Choose 1	
	Economizer Power Exhaust					
	General Exhaust					
	AO	Modulating Heat or Additional Heating Stage (W) <i>(see note 5)</i>	✓	✓	✓	✓
		Static Pressure (VFD / Bypass Damper)			✓	✓
Fresh Air Damper (Economizer)				✓	✓	
Local Scheduling <i>(see note 2)</i>		Night Setback Input	Night Setback Input	Internal Clock, Schedule and Calendar		
<b>Notes:</b> <ol style="list-style-type: none"> <li>1. A Master can have Followers beneath it; a Follower is a single zone/space.</li> <li>2. Scheduling can be configured either locally or through the RS485 network with the NC2000 Network Controller.</li> <li>3. 3 or 4 stage cooling: digital output pulses and a DMUX-4J module from ACI is required.</li> <li>4. Analog cooling: digital output pulses and a PTA2 module from ACI is required.</li> <li>5. 0-10VDC relay needed for contact output.</li> </ol>						



## 5 - Heatpump Controller Selection Table

Air or Water Sourced Heatpumps		PL-C1000-HP		PL-C1000-HPS		PL-M2000-HP		PL-M2000-HPS		
Master / Follower logic (see note 1)		Master		Follower		Master		Follower		
Inputs	Supply Air Temperature (10K Type III)	✓		✓		✓		✓		
	Return Air Temperature (10K Type III)	✓		✓		✓		✓		
	Filter Status (Dry Contact)	Hatched		Hatched		Hatched		Hatched		
	Schedule Override (Dry Contact)	Hatched		Hatched		Choose 1		Choose 1		
	Water Intake Temperature (10K Type III)	Choose 1		Choose 1		Choose 1		Choose 1		
	Outside Air Temperature (10K Type III)	Choose 1		Choose 1		Choose 1		Choose 1		
	Alarm Input (Dry Contact)	Hatched		Hatched		Optional		Optional		
	Proof of Fan (Dry Contact)	Hatched		Choose 1		Choose 1		✓		
	Occupancy Input (Dry Contact)	Hatched		Hatched		Hatched		Hatched		
	CO2 Sensor (4-20mA)	Hatched		Hatched		✓		✓		
	Static Pressure Transducer (0-5 VDC)	Hatched		Hatched		✓		✓		
	Room Temperature Sensor	Hatched		Hatched		Digital Room Sensor		10K Type III Thermistor		
	Room Temperature Setpoint	Hatched		Hatched		Digital Room Sensor		0-10K Potentiometer		
	Outputs	# Heatpump Compressor Stages		1 Compressor		2 Compressors		1 Compressor		2 Compressors
DO		Fan	✓		✓		✓		✓	
		Compressor 1 (Y1)	✓		✓		✓		✓	
		Compressor 2 (Y2)	Hatched		✓		Hatched		✓	
		Reversing Valve (B)	✓		✓		✓		✓	
AO		Auxiliary Staged Heat (W)	✓		Hatched		✓		Hatched	
		Auxiliary Staged/Mod. Heat (W)	Choose 1		✓		Choose 1		✓	
		Fresh Air Damper (Economizer)	Hatched		Hatched		Hatched		Hatched	
	Static Pressure (VFD/Bypass Damper)	Hatched		Hatched		Hatched		Hatched		
Local Scheduling (see note 2)		Occupancy Input				Internal Clock, Schedule and Calendar				
<b>Notes:</b> 1. A Master can have Followers beneath it; a Follower is a single zone/space. 2. Scheduling can be configured either locally or through the RS485 network with the NC2000 Network Controller.										



## 6 - VAV Controller Selection Table

VAV Controllers		PL-VC2000	PL-VC2000-PI	PL-C1000-VAV	PL-C1000-VAV-PI/PIH
Master / Follower logic <i>(see note 1)</i>		Follower	Follower	Follower	Follower
Inputs	Room Temperature	Digital Sensor	Digital Sensor	Digital Sensor or 10K Type III Therm.	Digital Sensor or 10K Type III Therm.
	Room Setpoint	Digital Sensor	Digital Sensor	Digital Sensor or 0-10K Pot.	Digital Sensor or 0-10K Pot.
	Supply Air Temperature or Slab Temperature	Choose 1	Choose 1	Choose 1	Choose 1
	Discharge Air Temperature			See Room Temp. Input	See Room Temp. Input
	Remote Space Temperature Sensor			Choose 1	Choose 1
	Occupancy Input			Choose 1	Choose 1
	Standby Mode Input				
	Flow Sensor		✓		✓
Outputs	Digital Outputs	1	1	4	4
	Analog Outputs	1	1	1	1
Embedded Belimo HALOMO® Actuator		✓	✓		
Outboard Floating Actuator (2x DO) Sequence				✓	✓
Outboard Modulating Actuator (0-10/2-10VDC) Sequence		✓	✓	✓	✓
Local Scheduling <i>(see note 2)</i>		Occupancy Input			
<b>Notes:</b> 1. A Master can have Followers beneath it; a Follower is a single zone/space. 2. Scheduling can be configured either locally or through the RS485 network with the NC2000 Network Controller.					



## 7 - Boiler Controller Selection Table

Boilers		PL-C1000-BLR		PL-M2000-BLR		
Master / Follower logic <i>(see note 1)</i>		Follower		Follower		
Inputs	Supply Water Temperature (10K Type III)	✓		✓		
	Return Water Temperature (10K Type III)	✓		✓		
	Outside Air Temperature (10K Type III)	✓		✓		
	Proof of Pump 1	✓		✓		
	Proof of Pump 2	/		✓		
Outputs	Boiler Configuration		Staged Boiler	Modulating Boiler	Staged Boiler(s)	Modulating Boiler
	DO	Boiler Stage 1	✓	/	✓ <i>(see note 2)</i>	/
		Boiler Stage 2	✓	/	✓ <i>(see note 2)</i>	/
		Boiler Stage 3	/	/	✓ <i>(see note 2)</i>	/
		Boiler Stage 4	/	/	✓ <i>(see note 2)</i>	/
	AO	Pump 1	✓	✓	✓	✓
		Pump 2	✓	✓	/	/
		Pump 2	/	/	✓	✓
		Mixing Valve	✓	/	✓	/
		Modulating Boiler	/	✓	/	✓
		Backup Modulating boiler	/	/	/	✓
Local Scheduling <i>(see note 3)</i>				Internal Clock, Schedule and Calendar		
<b>Notes:</b> <ol style="list-style-type: none"> <li>1. A Master can have Followers beneath it; a Follower is a single zone/space.</li> <li>2. Can be 4x single stage, 2x dual stage or single 4 stages boiler.</li> <li>3. Scheduling can be configured either locally or through the RS485 network with the NC2000 Network Controller.</li> </ol>						





## 8 - Wall Sensor / Thermostat Wiring Compatibility

Wall Sensors and Thermostats		Wall Sensor				Thermostat
		PL-RS (F or A)	PL-T200	PL-T500	PL-T1000	PL-T1100
Unit Controllers	PL-M2000-RTU	#18/3	/	/	/	#24/2
	PL-M2000-HP					
	PL-C1000-RTU					
	PL-C1000-HP					
	PL-M2000-RTUS	#18/3	#24/2 + #18/2			/
	PL-C1000-RTUS	/	Cat5e or #18/4 + PL-T1000-ADAPT			
	PL-C1000HPS					
Zone Controllers	PL-VC2000	/	Cat5e or #18/4			/
	PL-VC2000-PI	/				/
	PL-C1000-VAV	#18/3	Cat5e or #18/4 + PL-T1000-ADAPT			/

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