Entry Level & Premium Automation I

E-Command, OnCommnad & ProLogic: General Overview & Features

TTP-AUTO207c

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Product Overview



Product Overview: Automation Systems

- Hayward Automation systems are multifunction pool controllers used to fully manage the pool and spa experience.
- These automation systems can control pumps, valves, lighting, heaters, and chlorination.
- With these controllers we can manage 4-16 high voltage relays, 3-8 valves and 1-2 heaters (depending on model).
- By using either one of the relays or valves, solar can be controlled in addition to conventional heaters.





Product Overview: OnCommand & E-Command

Pick a Control Box:



OnCommand



E-Command	ļ
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Model	Description
ONCOM	Control
ONCOM-ACT	Control + (2) valve actuators.
ONCOM-RC	Control, spa side remote and base station.
ONCOM-POD	Control, aqua pod and base station.
ONCOM-ACT-RC	Control, (2) valve actuators, spa side remote and base station.
ONCOM-ACT- POD	Control, (2) valve actuators, aqua pod and base station.

Model	Description
HPC-4	Control
HPC-4-ACT	Control + (2) valve actuators.
HPC-4-RC	Control, spa side remote and base station.
HPC-4-ACT-RC	Control, (2) valve actuators, spa side remote and base station.



Product Overview: E-Comm/OnComm Accessories



E-Command 4

*Newer units are also compatible with AquaConnect.

Product Overview: E-Comm/OnComm Salt Chlorination

Controllers Salt Chlorination



OnCommand





AQR15, AQR9, or AQR3

AQR940 or AQR925



E-Command 4



AQR15-PRO, AQR9-PRO, or AQR3-PRO



Product Overview: ProLogic Models

Controllers



- PS Series (PL-PS-4, PS-8 and PS-16)
- P4 Series (PL-P4 and PL-PLUS)
- Virtual Series (PL-PS-8V and PL-PS-16V)



PL-PLUS-16V

Product Overview: ProLogic P4 Accessories & Remotes



Product Overview: ProLogic PS Accessories

Controllers

Accessories

PL-PS + Virtual Series







GLX-PC-12-KIT



AQL-RELAY-AC-KIT



AQL-COLOR-MODHV



AQ-CO-SERIAL



Product Overview: ProLogic PS Remotes

Remotes

Controllers

PL-PS + Virtual Series

★ W=White, B=Black

 X=Model Number (4, 8 or 16)

Product Overview: ProLogic Salt Chlorination

Controllers Salt Chlorination

Product Overview: Sizing a Control System

When Sizing a Control System, consider the following:

- How many **Relays** do we need to control?
- How many Valves?
 - If valve three is being used, does it have to be activated manually?
- Are we controlling Heaters?
 - o If answered yes, how many?
- Does the system need to support **Dual Equipment**?
- IS ColorLogic Network control desired?
- Are Groups required?
 - o If answered yes, how many?

Product Overview: Features Comparison

	E-Command 4	OnCommand	Pro Logic P-4 and Aqua Plus	Pro Logic PS-4,PS-8 and PS16
Model #	HPC - 4	ONCOM	PL-P-4 PL-PLUS	PL-PS-4, PL-PS-4, PL-PS-8 and PL- PS-16
Available Applications	Pool Only, Spa Only or P/S Combo	Pool Only, Spa Only or P/S Combo	Pool Only, Spa Only or P/S Combo	Pool Only, Spa Only, P/S Combo and P/S Dual
# of Relays	4	4	4	4-16
# Valves it can rotate	3	3	3	4
Heater(s)	1	1	1	2
Solar	Y	Y	Y	Y
Manages Sense and Dispense	Ν	N	Y	Y
Gen 4.0 LED (AQ-COLOR-MODHV) compatible	N	N	Ν	Y (4.10+)
Salt Chlorination built - in	No, but talks to an external chlorinator	No, but talks to an external chlorinator	Υ	Y
Remote Control Wireless or Wired	SS-RF Only	SS-RF or AQL2-POD Only	Y	Y
Interfaces with Internet (AQ-CO- HOMENET)	Ν	N	Y (4.20+)	Y (4.20+)
Interfaces with Home Automation (AQ-CO-SERIAL)	N	N	Ν	Y
VSP Compatible	Y (All)	Y (All)	Y (2.65+)	Y (2.65+)
Groups/Macros	N	1	N	4

Product Overview: ProLogic Features Comparison

	Pro Logic P-4 and Aqua Plus	Pro Logic PS-4	Pro Logic PS-8 Pro Logic PS-8V	Pro Logic PS-16 Pro Logic PS-16V
Model #	PL-P-4 PL-PLUS	PL-PS-4	PL-PS-8 PL-PS-8V	PL-PS-16 PL-PS-16V
Available Applications	Pool Only, Spa Only or P/S Combo	Pool Only, Spa Only, P/S Combo and P/S Dual	Pool Only, Spa Only, P/S Combo and P/S Dual	Pool Only, Spa Only, P/S Combo and P/S Dual
# of Relays	4	4	8 *4*	16 *8*
# Valves it can rotate	3	4	4	8 *4*
Heater(s)	1	2	2	2
Solar	Y	Y	Y	Y
Manages Sense and Dispense	Y	Y	Y	Y
Gen 4.0 LED (AQ-COLOR-MODHV) compatible	Ν	Y (4.10+)	Y (4.10+)	Y (4.10+)
Salt Chlorination built - in	Y	Y	Y	Y
Remote Control Wireless or Wired	Y	Y	Y	Y
Interfaces w/ Internet (AQ-CO-HOMENET)	Y (4.20+)	Y (4.20+)	Y (4.20+)	Y (4.20+)
Interfaces w/ AQ-CO- SERIAL	Ν	Y	Y	Y
VSP Compatible	Y (2.65+)	Y (2.65+)	Y (2.65+)	Y (2.65+)
Groups/Macros	N	4	4	4

Installation

120VAC Installation

Use the 120 Volt wiring harness in terminal J1. Part number is G1-016067.

120VAC Installation

120VAC Installation

240VAC Installation

Use the 240 Volt wiring harness in terminal J1. Part number is G1-016084.

240VAC Installation

Installation: ProLogic Electrical

Installation: ProLogic Electrical

Installation: ProLogic Electrical (PS-16)

NOTE: Please make sure the Expansion board is also powered with 120VAC, otherwise a PS-16 Comm error will appear.

Installation: ProLogic & the RF Antenna

Installation: ProLogic & Sense and Dispense

Installation: ProLogic pH Dispense circuit

Installation: All Control Systems & External Chlorination

Installation: Basic Relay Wiring

Relay Wiring:

Operation

Operation: Service States

Service Mode:

The main unit keypad has a "Service" button that is used primarily during servicing of the pool equipment. If you want to completely disable the automatic operation and operate the system manually, you can put the system into Service or Service-Timed mode by pressing the "Service" button.

OnCommand

Operation: Operating Modes

Pool/Spa Setup:

In pool/spa mode, suction and return valve actuators should be connected to the controller. Pressing the POOL/SPA button on the display/keypad will allow us to alternate between pool and spa operations.

Spa Spillover:

The spillover function should only be enabled if the pool has been designed in a manner that allows water to overflow from the Spa to the Pool. When in Spa Spillover, water is pulled from the pool on the suction side and returned to the Spa to promote this overflow.

Pool and Spa Dual:

- Pool and Spa Dual can be programmed into the PS model controllers only. When in Dual setup, the Pool/Spa/Spillover button will be rendered inoperable, unless spillover is enabled. If spillover is enabled the Pool/Spa/Spillover button will option between Pool and Spillover.
- Pool Filter: When Dual mode is established the pool filter is automatically assigned to the filter relay. To control the pool's filter pump simply press the filter button.
- Spa Filter: When Dual mode is established Aux 1 is reserved for the spa filter. To turn the spa filter on or off simply press the Aux 1 button. These rules are embedded in the firmware and can not be shuffled around.

Pool and Spa Dual – Separate Heaters:

Filter must be on for Pool Heater to engage. The pool heater is on AUX 2. AUX1 or Spa Filter must be engaged for heater 1 (spa heater) to come on.

Pool and Spa Dual – Shared Heater:

When in this mode the controller will reserve the Filter relay for pool filter control and Aux 1 for spa filter control. If Spillover is enabled in this configuration V1 represents the pool return, V2 the spa return and V3 is the spillover valve. Valve 3 will be removed from the Configuration in this case.

FILTER

LIGHTS

ALIX 2

Operation: Features – Spa Countdown & AUX Countdown

Spa CountDn:

This menu will appear only if Pool/Spa Setup is set to "Pool and Spa". This setting is the time, after you manually switch the Pool/Spa valves to "Spa Only", until the controller automatically returns the valves to their previous positions. It is programmed in increments of 5 minutes, from "Manual On/Off" (0 minutes) to "21:00" (21 hours). The filter is forced on during this time period.

Countdown Timer:

When an Auxiliary, Valve or Light relay is set to function countdown the feature will automatically turn off after a predetermined time. To cancel a countdown sequence simply push the button of the auxiliary or valve once more, this will terminate any countdown timers that are still active.

V1=Aux1, V2=Aux2:

This menu appears only if the Pool/Spa Setup is "Pool Only" or "Spa Only". When enabled, Valve 1 (return) will follow the Aux1 output and Valve 2 (suction) will follow the Aux2 output. When disabled (default), the return and suction pool/spa valves function normally. This feature, when enabled, allows us repurpose the suction and return valves because they are not being used to circulate flow between two bodies of water.

Filter Off Valve Change:

This menu appears only if Pool/Spa setup is set to "Pool and Spa - Std". When enabled (default), the filter pump will shut off for 35 seconds whenever the Pool/Spa valves are turning. The pump will NOT shut off when a heater is in Heater Cooldown mode.

If Enabled:

1. Pump Turns Off

2. Valve(s) rotate

3. Pump Turns On

This feature is designed put less pressure on the valve actuators.

Sense & Dispense:

The sensing portion is used to monitor the pH and ORP values. The dispense portion refers to pH reduction control.

ORP Auto Sensing vs. Timed %:

When both the chlorinator and sensing system are enabled we can either control salt chlorination based on a ORP mV setpoint (chlorination based on demand) or we can chlorinate based on a timed percentage (chlorination based on time).

pH Reduction Control – Auto Sensing vs. Forced On 15mins vs. Disabled:

If the sensing system is enabled we can opt to reduce the pH level automatically based on a pH setpoint, force the pH dispense on for 15 minutes (usually done to determine pH dispense health) or we can disable this feature.

Heater Cooldown:

This feature ensures that the heater cools down before water circulation is stopped. When enabled, the controller will continue to run the filter pump for 5 minutes after the heater turns off. During this period the filter pump LED will flash and also a "Heater Cooldown, X:XX remaining" message will scroll on the display.

Heater Extend:

If "Enabled", the filter extend logic keeps the filter pump running beyond the normal turn-off time until the pool (or spa) is heated up to the desired temperature setting (see Settings Menu). Heater extend will NOT cause the filter pump to turn on, it will only delay the turn off time when the heater is operating.

Interlock:

If "Enabled", this feature will override the function (Manual On/Off, Countdown Timer, Timeclock), selected above and turn the interlocked feature off when: filter pump is off, first 3 minutes of filter pump operation (allows the pump to prime and get water flowing), when the pool/spa suction return valves are in any position other than "pool only", or for the first 3 minutes after solar turns on (allows air in the solar panels to be purged). Interlock is not available for solar, low speed filter pump, super chlorinate, dimmer or group.

In-Floor Cleaner:

This feature is only available for valve 3. When the function is set to in-floor cleaner, the valve switches the water returning to the pool between the in-floor cleaner and the normal return jets which facilitate efficient surface skimming. The valve will operate the in-floor cleaner for the first half of each clock hour and then switch to the jets/skimming for the last half of the hour.

Freeze Protection:

Freeze protection is used to protect the pool and plumbed equipment against freeze damage. If freeze protection is enabled and the AIR temperature sensor falls below the freeze threshold, the controller will turn on the filter pump to circulate the water as well as any other feature that is freeze protect enabled. If "Pool and Spa" is selected in the Pool/Spa sub-menu, the valves will also alternate between the pool and spa every 30 minutes and the filter pump will turn off while the valves are turning. The chlorinator will not operate if freeze protection is the only reason the pump is running.

temps rises.

Operation: Features – Freeze Protection

Freeze Protection Temperature:

Select the temperature to be used for freeze protection. Temperature is adjustable from 33°F - 42°F (1°C - 6°C). 38°F (3°C) is default. This threshold will be used for all outputs that have freeze protection enabled.

Air Temp.	Action
40	Freeze Inactive
39	Freeze Inactive
38	Freeze Inactive
37	Freeze Inactive
36	Freeze Inactive
35	Freeze active until above 35
34	Freeze active until above 35
33	Freeze active until above 35

Air Temperature Sensor Pump

Freeze Protection Set Point

Solar:

If the solar control is "Enabled", several additional steps must be taken to ensure proper operation of the solar system. If the solar is operated by a valve, then the Valve3 output must be setup for function: solar. If the solar is operated by a pump, then one of the AUX relays must be set up for function: solar. Also, the "solar" temperature sensor must be installed. This sensor is typically mounted near the collector array and is used to sense whether sufficient solar heat is available. If solar is "Enabled", the valve or solar pump relay will turn on when the water temperature is less than the desired temperature setting AND the solar sensor is at least eight degrees hotter than the water temperature. The desired temperature is in the "Settings Menu". If applicable, we will be prompted to enter separate pool and spa desired temperature settings.

Solar Extend:

If "Enabled", the filter extend logic keeps the filter pump running beyond the normal turn-off time if solar heat is still available. When solar heat is no longer available, both the solar valve/pump and filter pump will turn off simultaneously. Solar extend will NOT cause the filter pump to turn on, it will only delay the turn off time when solar is operating.

Solar Priority:

If both "Solar Control" and "Heater Control" are enabled, the Solar Priority feature will keep the conventional heater off whenever solar heat is available. This provides the most cost effective way of heating the pool. When solar heat is not available, the conventional heater will operate normally.

External Input Interlock:

The External Input Interlock provides a means to force the filter pump or an Aux output off when certain conditions exists. A normally open or normally closed on/off external device must be connected to the Pro Logic as shown below. After properly configuring the Pro Logic (see Configuration), the filter pump and/or desired Aux will be forced off when the device is active.

then the interlocked item wouldn't be permitted to operate. If the system were set to "Active Closed" then no restrictions would apply in this scenario.

If the system is set to "Active-Closed" then the interlocked item wouldn't be permitted to operate. If the system were set to "Active-Open" then no restrictions would apply in this scenario.

Super Chlorinate (Chlorinator must be enabled):

If Chlorinator is enabled, the controller can be programmed to Super Chlorinate under the group feature or selected manually through the Settings Menu. When selected, the Super Chlorinate cycle will begin. Super Chlorinate will continue until the preset time expires (see Timers Menu/Super Chlorinate Hours) or until the group turns off.

Virtual Relays:

Pro Logic Virtual models are similar to standard PS models, but offer additional auxiliary outputs with limited functionality. The PL-PS-8-V is similar to the PL-PS-4 with 4 additional Aux outputs. The PL-PS-16-V is similar to the PL-PS-8 with 8 additional outputs. The additional aux outputs on virtual models can only be assigned to super chlorinate, group or advanced light module control.

PL-PS-8-	V		
Filter	Lights	Aux 1	Aux 2
Aux 3	Aux 4	Aux 5	Aux 6
	Physical	Virt	ual

Group Function:

- The ProLogic PS series controllers allow up to four groups, OnCommand supports 1 group.
- This means we press one button and multiple actions are carried out.
- We can control groups Manually, using a Countdown or Schedule.

Example: We have programmed a group on AUX1 to engage the following features.

Group Function (PS Series & OnCommand Only):

Function	Control Parameter	
Pool/Spa	Unaffected, Pool only, Spa only or Spillover	
Pool Filter	Unaffected, Off, On, High, Low, On (Lowest to Highest)	
Lights (Standard Relay)	Unaffected, Off or On	
Lights (Dimmer Relay)	Unaffected, Off, On, 100%,80%20%	
Lights (VSP)	Unaffected, Off or On (10%-100%)	
Spa Filter	Unaffected, Off, On, High, Low, On (Lowest to Highest)	
Aux1&14 (Standard Relay)	Unaffected, Off or On	
Aux1&14 (Dimmer Relay)	Unaffected, Off, On, 100%,80%20%	
Valve 3	Unaffected, Off or On	
Valve 4	Unaffected, Off or On	
Spa Htr 1 and 2 Set	Unaffected, Off, 65-104F	
Pool Htr 1 and 2 Set	Unaffected, Off, 65-104F	
Spa Solar Set	Unaffected, Off, 65-104F	
Pool Solar Set	Unaffected, Off, 65-104F	
Super Chlorinate	Unaffected, Off or On	

Programming

Programming: Basic Navigation

Menu Button:

 Pressing the Menu button repeatedly provides access to the various menus within the control system (i.e. Configuration Menu, Settings Menu...).

Left / Right Arrows:

 Once in the desired menu the left and right arrow buttons provide the ability to navigate through each screen.

Plus & Minus Buttons:

Allows you to make changes to selected items.

Programming: Menus

Menu Overview: Click on each screen to reveal information specific to each Menu

Default Menu:

• The Default Menu is a series of informative displays (temperatures, salt levels, chlorinator settings, etc.) with nothing to set. This menu appears automatically when no keys have been pressed for 2 minutes and will then scroll through each display.

Feature	Model(s)
day and time	ALL
water temperature	ALL
air temperature	ALL
chlorinator setting	ALL
salt level	ALL
reason pump is running (not scheduled)	ALL
inspect cell	ALL
reason hi-speed is running (not scheduled)	ALL
countdown time remaining	ALL
heater control status	ALL
system manual off	ALL
check system error	ALL

Feature	Model(s)
group active	PS/ONCOM
filter vsp speed/reason	ALL
spa filter vsp speed/reason	ALL
lights/aux speed/reason	ALL
pH/ORP levels	PS ONLY

*NOTE: Features in grey are conditional.

Settings Menu:

 The Settings Menu houses most of the customizable set points for dayto-day operations (including Chlorinator set points, temperature set points...etc.).

Feature	Model(s)
spa/pool heater1 temperature	ALL
spa/pool heater 2 temperature	PS ONLY
spa/pool heater 2 priority	PS ONLY
vsp speed settings	ALL
superchlorinate	ALL
spa chlorinator settings	ALL
pool chlorinator settings	ALL
aux colorlogic settings	PS ONLY
day and time	ALL
backlit display light	ALL
beeper	ALL
check system error	ALL

Feature	Model(s)
teach wireless remote	ALL
wireless channel	ALL

*NOTE: Features in grey are conditional.

Programming: Maintenance Menu

Maintenance Menu:

 Will be displayed in ProLogic Systems only- if the optional HL-CHEM is used and the Sensing System is enabled in the Chemistry Config. Wizard. This menu is used to perform functions relating to the HL-CHEM ORP and pH sensing kit.

Feature	Model(s)
pH calibration wizard	PS ONLY
clean probe wizard	PS ONLY

Programming: Timers Menu

Timers Menu:

• The Timers Menu is used to set up schedules, countdowns, and set parameters related to other time-based events.

Feature	Model(s)
pool filter 1 or hi-speed 1	ALL
pool filter 2 or lo-speed 1	ALL
pool filter 3 or hi-speed 2	PS ONLY
pool filter 4 or lo-speed 2	PS ONLY
spa filter 1 or hi-speed	PS ONLY
spa filter 2 or lo-speed	PS ONLY
spa	ALL
lights	ALL
aux1	ALL
aux2	ALL

Feature	Model(s)
valve3	ALL
valve4	PS ONLY
superchlorinate	ALL

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***NOTE:** Features in grey are conditional.

Additional Auxiliaries/Valves may appear depending on model and configuration.

Diagnostic Menu:

 Is primarily intended for the service technician and contains information and details about the system operation that are helpful in troubleshooting, if problems occur. It also includes firmware revision information helpful when determining compatibility.

Feature	Model(s)
chlorinator diagnostics	ALL
instant salt	PS ONLY
pH/orp levels	PS ONLY
flow switch	ALL
cell temperature sensor	ALL
water/pool sensor	ALL
spa sensor	ALL
air sensor	PS ONLY
solar sensor	ALL
vsp speed/power	ALL
main software revision	ALL
display software revision	ALL

Feature	Model(s)
expansion unit software revision	PS-16
chemistry sense module software	PS ONLY
vsp software revision	ALL
RF base software revision	ALL
6 button spa side software revision	ALL
digital spa side software revision	PS ONLY
colorlogic module software revision	PS ONLY
colorlogic light software revision	PS ONLY

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*NOTE: Features in grey are conditional.

Programming: Configuration Menu

Configuration Menu:

 The Configuration Menu is the place where the system's core functionality is defined. It is important that items in this menu are accuracy defined and programed, as this will shape how the system will operate.

Feature	Model(s)
chlorinator	ALL
chemistry config.Wizard	PS ONLY
pool/spa	ALL
filter	ALL
spa filter	PS ONLY
heater1	ALL
heater2	PS ONLY
solar	ALL
colorlogic	PS ONLY
external input active state	ALL
lights	ALL
aux1	ALL

Feature	Model(s)
aux2	ALL
valve3	ALL
Valve4	PS ONLY
6 button spa side remote	ALL
digital spa side remote	PS ONLY
remote menus	ALL
7-day or wkend/wkday timeclock	ALL
12 hour or 24 hour time format	ALL
ºF or ºC	ALL
vsp speed (% or rpm)	ALL
reset colorlogic to default	PS ONLY
reset to default	ALL

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***NOTE:** Features in grey are conditional.

Additional Auxiliaries/Valves may appear depending on model and configuration.

Programming: Unlocking the Configuration Menu

Unlocking the Configuration Menu:

 To unlock the Configuration: press the Menu button repeatedly until: "Configuration Menu – Locked" appears.

 Hold the left and right arrows until "Locked" changes to "Unlocked", then use the left or right arrow button to navigate.

Feature Disabled:

 Most features/equipment are disabled by default. Disabled items are prevented from appearing is subsequent screens. Use the plus and minus buttons to Enable/Disabled features.

Feature Enabled:

 When a feature/equipment is enabled, it often appears in other menu screens such as (settings, default...etc.). Once enabled, additional options appear in the configuration menu related to that feature/equipment.

Programming: Relay Name vs. Function

*Relay Name:

• The relay name, only determines how the valve or auxiliary will appear in menus other than the Configuration Menus.

Relay Function:

• The relay function, determines how the relay is controlled (i.e. strictly manually, through the timers menu...etc.)

Relay Type:

 The relay type, determines how the relay is used (i.e. standard relay, dimmer, ColorLogic Light, VSP...etc.)

USP

