

**Aquatrol®**  
Electronic Controls for Hydronic Heating

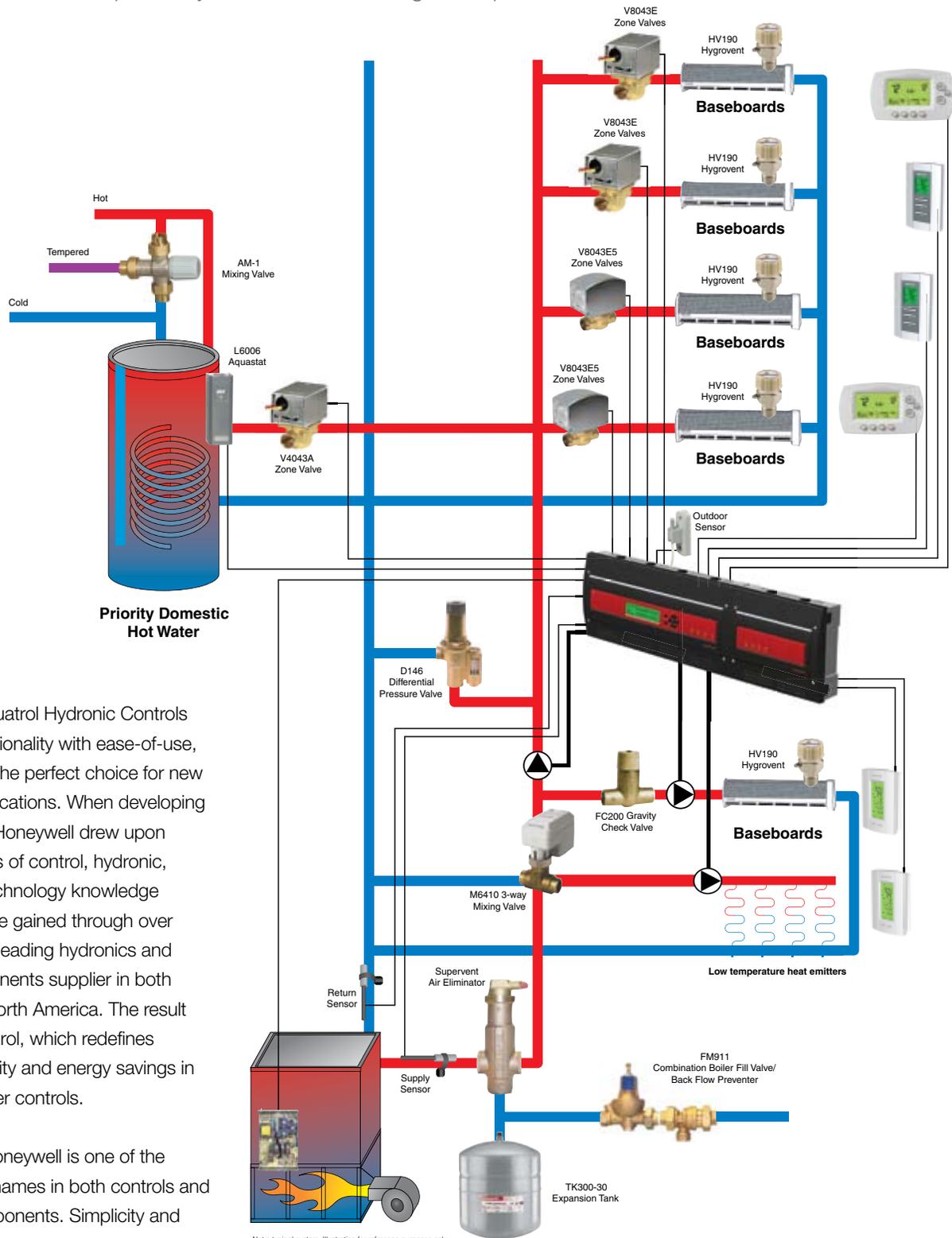
**Honeywell**



**Simple. Powerful. Energy Efficient.**

# Aquatrol® Hydronic Controls

Some hydronic system controls are basic and have limited features and functionality. Others are so complex that they are difficult to install and use or service. With functionality right out of the box, and flexibility to select advanced features - Aquatrol Hydronic Controls fall right into place.



Honeywell Aquatrol Hydronic Controls combine functionality with ease-of-use, making them the perfect choice for new or retrofit applications. When developing the Aquatrol, Honeywell drew upon over 100 years of control, hydronic, and zoning technology knowledge and experience gained through over 50 years as a leading hydronics and zoning components supplier in both Europe and North America. The result was the Aquatrol, which redefines power, simplicity and energy savings in electronic boiler controls.

Simply put, Honeywell is one of the most trusted names in both controls and hydronic components. Simplicity and power — that's the Aquatrol.

Not a typical system. Illustration for reference purposes only.

# Easy To Install. Easy To Use.

Honeywell Aquatrol Hydronic Controls are designed to keep even the most complex systems simple.

## EASY SELECTION

**Intuitive selection tool** lets you answer just a few simple questions and gives you the exact Bill of Materials and wiring configuration for the job

- Available on CD ROM, or online at [customer.honeywell.com/aquatrol](http://customer.honeywell.com/aquatrol)



## EASY INSTALLATION

**Ready to use out of the box**

- Pre-assembled with transformer module, control module, and – for most panels – a zoning module
- Snap-on expansion panels for design versatility and clean installation



## EASY PROGRAMMING

**Pre-programmed with most popular settings**

- Armchair programmable – program at your desk and take to the job site ready-to-install
- Auto test & purge features to prepare system at start-up

## EASY TROUBLESHOOTING

**Diagnostic descriptions of system activity** provided on Backlit screen and zone LEDs during setup or in the event of a malfunction



“Other products out there that I have dealt with are very difficult to set up, very frustrating by the time you are done and usually you have to go back a couple times and re adjust them. The Honeywell Aquatrol panel is amazing, it's very easy to install and to configure. You are going to get out of it what they say you are going to get out of it.”

– Anonymous Hydronics Contractor



# Loaded With Standard Features

Honeywell has included a set of standard features on every Aquatrol Control Panel model, so you can enjoy peace of mind knowing that you left the homeowner with an efficient, dependable system.

## ENERGY SAVINGS



**No Wasted Energy** – The Aquatrol provides **zone synchronization**, which saves energy by ensuring that all zones that require heat operate at the same cycle, therefore reducing random short cycling of the boiler and extending the life of the boiler.

Additionally, **boiler short-cycling protection** keeps the boiler on for at least 2 minutes, and prevents the boiler from firing for at least 2 minutes after the last cycle.

Finally, **boiler post purge** saves energy by delivering excess retained heat to zones where it can be used.

**More Hot Water** – The Aquatrol system provides **domestic hot water priority and priority override**. This ensures adequate hot water supply while still supplying sufficient hot water to heat a home, even on the coldest days. It also has heat demand priority and priority override which allows for auxiliary loads (pool, spa, etc.) if desired.

## EQUIPMENT PROTECTION FEATURES



**Keeping in Shape** – During periods of inactivity, the Aquatrol periodically **exercises all pumps and valves** to extend equipment life and prevent seasonal start-up problems

**Freeze Protection** – The Aquatrol **activates valves and pumps** associated with any zone that is disconnected from the system or if the boiler water temperature drops below 50° F.

**Consistent Checkout** – After installation, the Aquatrol's intelligent checkout process will **automatically perform a test to confirm the equipment is in working order** by energizing and de-energizing all inputs and outputs in sequence, which means fewer callbacks for your business.

## SYSTEM COMPATIBILITY



**Any Thermostat** – The Aquatrol **works with any<sup>1</sup> thermostat**, allowing you the option to easily retrofit an existing job, upgrade to a top-of-the line Honeywell thermostat, or offer enhanced functionality with Aquatrol communicating thermostats.

**Any Size** – The Aquatrol is **easily expandable up to 64 zones** with snap-on expansion zoning and control panels – making it the perfect fit for even the largest jobs.

**Any System** – Even the smartest boilers need zoning controls. The Aquatrol provides advanced control of modulating/condensing boilers and domestic hot water tanks.

<sup>1</sup>Not recommended for use with mechanical thermostats.

# Upgrade for Additional Features To Fit Your Job

In addition to the standard features present on every Aquatrol Hydronic Control model, you can upgrade to a model with additional features to fit your job, and offer increased energy savings to your customers.

## ENERGY SAVINGS



**Efficient** – The Aquatrol has **Outdoor Reset**, which saves an average of 15% off energy bills\* by automatically adjusting the boiler temperature based on outdoor temperature (AQ251 and AQ252 models).

**Outdoor temperature can be displayed** on all communicating thermostats, allowing homeowners to make educated decisions about their heating & cooling needs (AQ251 and AQ252 models).

Additionally, the Aquatrol has **central set-back schedules** (wake, leave, return and sleep) available, which optimizes energy savings throughout the whole system based on a homeowner's schedule when used with Aquatrol communicating thermostats (AQ25A, AQ251 and AQ252 models).

When used with **programmable thermostat**, your customers can achieve the ultimate in energy savings.

## INTELLIGENCE



**Diagnostics** – The Aquatrol has **on-screen diagnostics information**, allowing you to quickly and easily identify and correct system issues (AQ25A, AQ251 and AQ252 models).

**Memory** – The Aquatrol remembers the run time of all zones in a system by **data logging the relay activity**. This feature is ideal for identifying system problems or tracking energy consumption in multi-family dwellings (AQ25A, AQ251 and AQ252 models).

**Protection** – The Aquatrol protects a system by **automatically purging excess air** before system start-up (AQ25A, AQ251 and AQ252 models).

**Multi-tasking** – For more advanced systems, the Aquatrol has the ability to **control multiple water temperatures** – up to 5 reset temperatures with an expansion control panel (AQ252, or with AQ254 models).

“The Aquatrol can do so much that homeowners are interested in today, including energy savings and prolonging the life of the equipment. It's great for either new construction or retrofit applications. It is also very user-friendly. What we do, is we build the boiler board at the shop not out at the job site. We will build it and program it in the shop and then we send it out into the field to save time on the job. We spec it all the time. This is what we recommend, we don't recommend anything else.”

– Brian Streich, Cokato, MN

\*Honeywell Inc. 1979 Study; Control Systems Providing Energy Savings with single and multizone Hydronic Heating. 15% is the average energy savings and can only be achieved assuming Domestic Hot Water Priority is off and the unit is installed as directed.



# Control Panels

MULTIPLE ZONE

## AQ252 Reset Control Panels For Multiple Temperatures

All the great features of AQ251 plus:

- Ability to control 2 water temperatures
- Expandable up to 64 zones with 5 temperatures when used with AQ254



## AQ251 Reset Control Panels

All the great features of AQ25A plus:

- Outdoor reset for energy savings

## AQ25A Relay "Plus" Control Panels

Loaded with standard features plus:

- Backlit screen for easy setup and diagnostics
- Central setback of all zones
- Date logging of relay activities

## AQ250 Relay Control Panels

Loaded with standard features

- Expandable up to 16 zones, plus up to 64 zones with AQ254 panels
- Zone synchronization
- Domestic hot water priority and priority override



SINGLE ZONE

## AQ251 Boiler Reset Control Panel

- Outdoor reset for up to 15% energy savings
- Compatible with existing zoning relay panels
- Perfect for retrofit applications



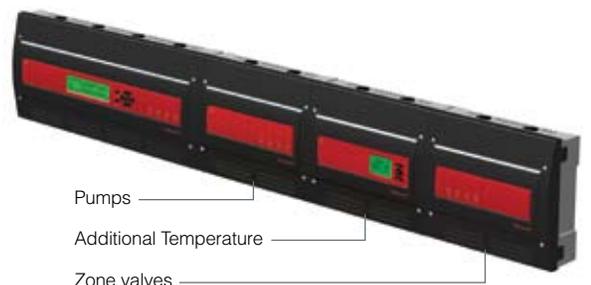
EXPANSION

## AQ254 Add-A-Temperature Injection/Mixing Expansion Panels

- Adds an extra reset water temperature
- Expands network capacity by an additional 16 zones
- Add up to 3 AQ254 panels to an Aquatrol zone panel

## AQ255 and AQ257 Expansion Panels

- Control up to either 4 or 8 zones
- Zone synchronization for efficient operation



# Thermostats

Aquatrol communicating thermostats were designed exclusively for use with Aquatrol panels. They provide enhanced communication capability with multiple zones.

COMMUNICATING

## Communicating Programmable Thermostats

- Communication with Aquatrol panels for enhanced capabilities
- 7-Day programmable with up to 4 unique programs per day
- Controls both heating and cooling
- 2-wire polarity insensitive for easy installation
- Date and time displayed
- Outdoor temperature displayed on-screen



## Communicating Non-Programmable Thermostats

- Communication with Aquatrol panels for enhanced capabilities
- 2 unique programs per day
- Controls heating only
- 2-wire polarity insensitive for easy installation
- Outdoor temperature displayed on-screen



## ENHANCED COMMUNICATION CAPABILITIES

Only available when Control Panels are used with Aquatrol Communicating Thermostats



**Protection** – The Aquatrol panel offers **zone-by-zone freeze protection** when used with communicating thermostats.



**Time Savings** – Setpoint, setback, and lockout of all Aquatrol Communicating thermostat zones can be **programmed all at once** from the main Aquatrol control panel to save time on the job.



**Radiant Sensing** – Aquatrol Communicating thermostats can connect to a floor sensor to **control both room and floor temperature** from a single, homeowner-friendly device.

CONVENTIONAL

## Conventional Thermostats<sup>†</sup>

Aquatrol Hydronic Controls have the flexibility to also work with conventional Honeywell and other brands of thermostats in applications where communication features are not required. This allows you to easily install a retrofit job, and offer the homeowner flexibility in their thermostat control options.

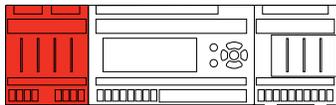
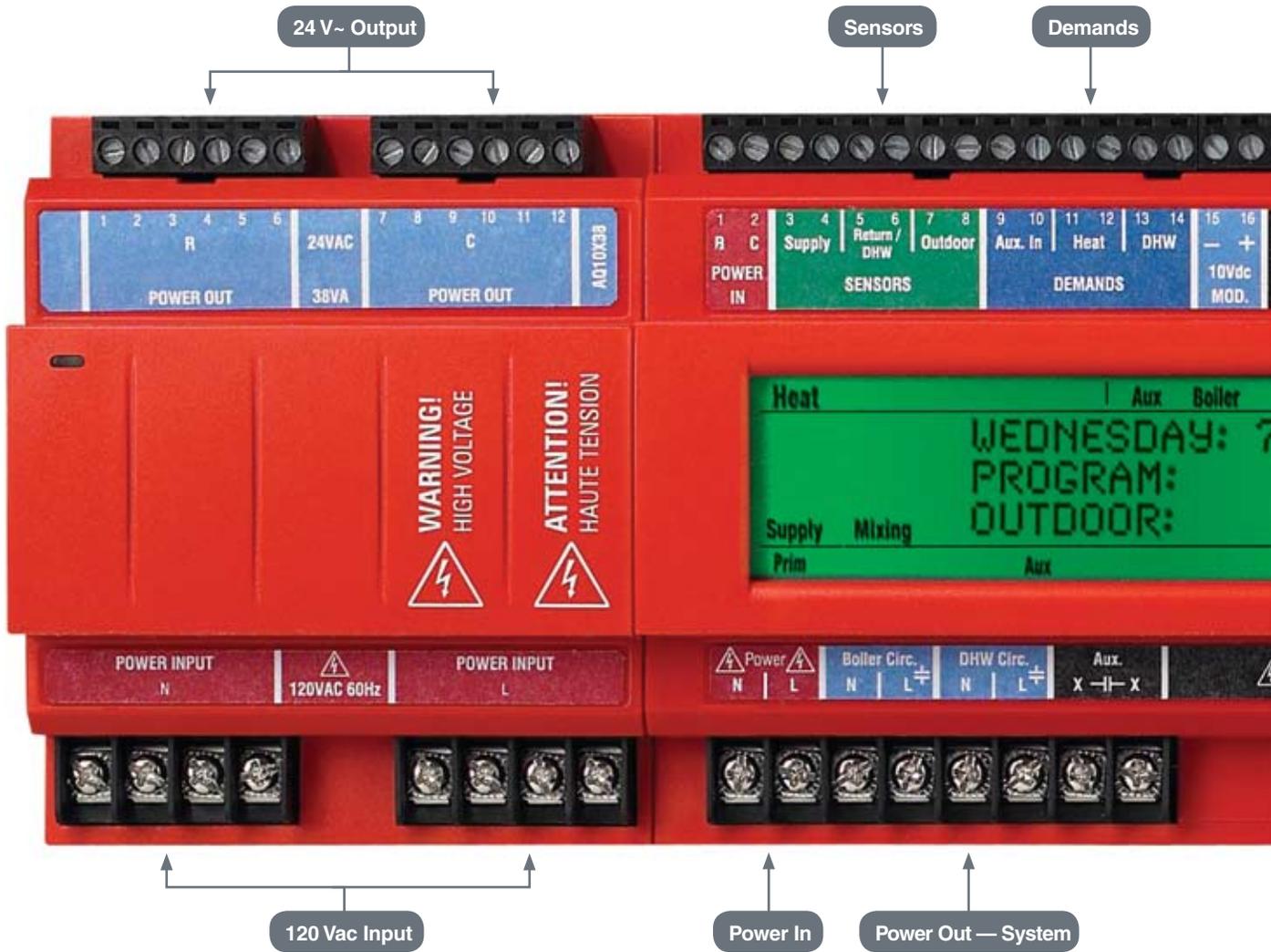
- Easily retrofit an existing job
- Add up to 2 stages of heating and cooling
- RedLINK Wireless thermostats for difficult installations or accessory upsell opportunity



<sup>†</sup>Not recommended for use with mechanical thermostats.

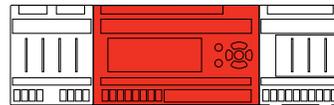


# Installing And Connecting Components Is Easy With Aqu



## Transformer Module

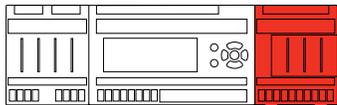
- 38 VA capacity
- Powerful enough to drive internal electronics, up to 16 communicating thermostats and 4 zone valves\*\* without needing to add external transformers



## Control Module

- Large dot matrix display with plain language menus
- Integrated control of Domestic Hot Water — priority and priority override

\*\* Applies to most electric and thermally actuated zone valves, like Honeywell V8043E1012 or MT-4. High power-consuming zone valves (such as Taco heat motor valves) will require additional (up to four times more) transformer capacity (VA).



## Zoning Module

- LED lights for valuable diagnostics
- Easily switch from zone valves to pumps with the AQ15540B zoning module
- Zones can be set to operate a group pump
- Expansion zoning panels can operate different types of zone equipment — one panel may control 4 pumps and another may control 4 zone valves



The convenient channel connectors allow you to easily add expansion zoning panels without running wires outside of the panels. This eliminates the risk of having wires exposed to the homeowner outside of the panel, and makes for a clean and organized installation.

# Aquatrol Selection Chart

## Aquatrol Control Panels - Single and Multi-Zone Systems

	MODEL	TYPE	APPLICATIONS				ENERGY-SAVINGS FEATURES				EQUIPMENT PROTECTION FEATURES		HOT WATER	
			Programmable	Expandable up to 64 zones by using AQ254 panels	Number of reset temperatures controlled	Direct control of modulating/condensing boilers (0-10Vdc)	Zone Synchronization	Boiler Post Purge	Temperature adjustment using indoor feedback (load adaptive reset) or indoor/outdoor feedback (outdoor reset) <sup>2</sup>	Freeze Protection	Pump/Valve Exercise	Integral Domestic Hot Water Management	Domestic Hot Water Priority (override) protection	
<b>Multi-Zone Controls</b>														
AQ252 Reset & Mixing Injection	AQ25242B	Pumps or 2-Wire Valves	Y	•	2	•	•	Adjustable length	•	•	•	•	•	
	AQ25244B	4-Wire Valves	Y	•	2	•	•	Adjustable length	•	•	•	•	•	
AQ251 Reset	AQ25142B	Pumps or 2-Wire Valves	Y	•	1	•	•	Adjustable length	•	•	•	•	•	
	AQ25144B	4-Wire Valves	Y	•	1	•	•	Adjustable length	•	•	•	•	•	
AQ25A Relay "Plus"	AQ25A42B	Pumps or 2-Wire Valves	Y	•		•	•	Adjustable length		•	•	•	•	
	AQ25A44B	4-Wire Valves	Y	•		•	•	Fixed length		•	•	•	•	
AQ250 Relay	AQ25042B	Pumps or 2-Wire Valves		•			•	Fixed length		•	•	•	•	
	AQ25044B	4-Wire Valves		•			•	Adjustable length		•	•	•	•	
<b>Single Zone Controls</b>														
AQ251 Reset	AQ25110B	1-Zone Reset Pumps or Valves	Y	•			•	•	•			•	•	

<sup>1</sup> Available Only with Communication Thermostats  
<sup>2</sup> Only with AQ Thermostats  
<sup>3</sup> Only with TP2 Thermostats with flexible customization features

## Aquatrol Expansion Panels

	MODEL	DESCRIPTION	EXPANSION CONTROL FUNCTIONS				ENERGY-SAVINGS FEATURES	EXPANSION ZONING PANEL FEATURES			WARRANTY
			Adds an additional reset water temperature to any main control panel	Mixed loop temperature controlled by variable speed injection pump or motorized mixing valve	Extends capacity of network by 16 zones for each expansion control panel installed	Zone Synchronization	Number of Zones	38 VA Transformer Included	Auto-test function checks connected zones at system start-up	User interface	2-Year Warranty
<b>Add-A-Temp Expansion Control Panel</b>											
AQ254 Add-A-Temp Expansion Control Panel	AQ25400B	Use with AQ255 or AQ257 Expansion Zoning Panels	•	•	•	•				LCD	•
<b>Expansion Zoning Panels — to expand an Aquatrol Hydronic Control panel (250,25A,251 or 252 series)</b>											
AQ255 Expansion Zoning Panels for pumps	AQ25582B	8 Zones of Pumps					8		•	LEDs	•
	AQ25542B	4 Zones of Pumps					4		•	LEDs	•
	AQ25742B	4 Zones of 2-Wire Zone Valves					4	•	•	LEDs	•
AQ257 Expansion Zoning Panel for zone valves	AQ25744B	4-Zones of 4-Wire Zone Valves					4	•	•	LEDs	•

## Aquatrol Communicating Thermostats

	MODEL	SCHEDULE OPTIONS		USER INTERFACE			APPLICATION	FEATURES AND FUNCTIONS						WARRANTY	
		Number of Unique Programs Per Day	Zone settings can be programmed from main AQ control panel	Indoor and Outdoor temperature displayed	Date and Time displayed	Soft Keys	Easy-to-read backlit display	Controls Zone Heating and 1 A/C Unit	Controls Heat Only	Retains settings after extended power loss	Min/Max setpoint and vacancy settings for air and/or floor temperatures from AQ panel	Lock-Out of individual zone thermostats from main AQ control panel	Zone by zone freeze protection	Compatible with AQ12C20 floor sensor for in-floor heating	2-wire polarity insensitive installation
Programmable Communicating 7-day Thermostat	AQ1000TP2	4	•	•	•	•	•	•	•	•	•	•	•	•	•
Non-Programmable Communicating Thermostat	AQ1000TN2	2	•	•	•	•	•	•	•	•	•	•	•	•	•

MANAGEMENT			EASY INSTALLATION			EASY TROUBLESHOOTING		ADDITIONAL FEATURES	FLEXIBLE CUSTOMIZATION FEATURES					FEATURES AVAILABLE WITH COMMUNICATING THERMOSTATS				WARRANTY
Separate setpoint targets for boiler maximum and DHW	DHW vacancy setpoints	Heat Demand Priority and Priority Override	Automated test feature for quick start-up	Automated purge for quick start-up	Edit all zone settings at once from central control panel <sup>1</sup>	Test feature for simple troubleshooting	Data logging of relay activity (useful for property managers)	Daylight Saving Time auto-changeover <sup>3</sup>	Coordinate 1 zone of A/C with multiple zones of cooling when used with an AQ1000TP2 thermostat	Option to use Return Sensor as DHW sensor	Optional Auxiliary Out (low voltage) closure on DHW call	Optional Auxiliary Out (line voltage) closure on DHW call	Optional Auxiliary Out (line voltage) closure on Heat call	Editing zone settings from control panel	Central set-back schedules	Outdoor Temperature displayed on all thermostats	Zone by zone freeze protection	2 Year Warranty
•	•	•	•	•	•		•	•	•	•	•	•	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	• <sup>1</sup>	•	
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## Replacement Modules and Enclosures

	MODEL	DESCRIPTION	WARRANTY
		Unique Programs Per Day	2 Year Warranty
<b>Transformer Module</b>			
Transformer Module	AQ10X38	Adds 38 VA Power, Use with AQ Enclosures	•
<b>Boiler Control Modules</b>			
Replacement for AQ254	AQ15400B	Add-a-Temp	•
Replacement for AQ252	AQ15200B	Reset & Mixing Injection	•
Replacement for AQ251	AQ15100B	Reset	•
Replacement for AQ25A	AQ15A00B	Relay "Plus"	•
Replacement for AQ250	AQ15000B	Relay	•
<b>Zoning Module</b>			
Replacement for Pumps/2-Wire Zone Valves	AQ15540B	Compatible with both communicating and non-communicating electronic thermostats	•
Replacement for 4-Wire Zone Valves	AQ15740B		
<b>Enclosures</b>			
Small (10 DIN width)	AQ11D10	Use as an enclosure for additional transformers, or to hide wiring. Includes integral DIN mounting rail.	•
Medium (15 DIN width)	AQ11D15		
Large (20 DIN width)	AQ11D20		

## Sensors

	MODEL	FEATURES AND FUNCTIONS		
		Jacketing length (in feet)	Can be connected up to 500 feet from control	Includes mounting bracket
Outdoor Sensor	AQ12C10	10	•	•
Supply/Return Sensor	AQ12C11	10		
Slab/Floor Sensor	AQ12C20	15	•	



## EASY SELECTION

**Intuitive selection tool** lets you answer just a few simple questions and gives you the exact Bill of Materials and wiring configuration for the job (Form #63-9699).

- Available on CD ROM, or online at [customer.honeywell.com/aquatrol](http://customer.honeywell.com/aquatrol)

# Make it a Honeywell System

In addition to adding the Aquatrol to run your entire hydronic system, be sure to use Honeywell hydronic accessories. Honeywell makes world class air eliminators, zone valves, and more so your system will run more quietly and effectively over time.

1. **Aquatrol Hydronic Control**
2. **Aquatrol Communicating Thermostat or any Honeywell Conventional Thermostat**
3. **Supervent Air Eliminator:** PV or PVU Series
4. **Expansion Tanks:** TK or TX Series
5. **Zone Valves:** V8043 1000 or 5000 Series
6. **Manifold Zone Valves:** RM and RAM Series
7. **Mixing Valves:** AM-1 Series, AM 1070, AMX DirectConnect, UMV Series UnderSink and MX Series High Capacity
8. **Backflow Preventers:** BP700, BP701, BP900, BP901
9. **Fill Valves:** F449, FM450, FM911 (combination backflow preventer and fill valve)
10. **Boiler Trim Kits:** Include Expansion tank and various hydronic components in one easy-to-use kit

## Learn More

For complete details on increasing profits with Honeywell Hydronic Heating Solutions, contact your Honeywell distributor or visit [customer.honeywell.com](http://customer.honeywell.com).

**1-800-328-5111**

**[info@honeywell.com](mailto:info@honeywell.com)**

**[customer.honeywell.com](http://customer.honeywell.com)**

## Automation and Control Solutions

In the US:

Honeywell

1985 Douglas Drive North

Golden Valley, MN 55422-3992

In Canada:

Honeywell Limited

35 Dynamic Drive

Toronto, Ontario M1V 4Z9

Phone: (800) 328-5110

E-mail: [info@honeywell.com](mailto:info@honeywell.com)

[www.honeywell.com](http://www.honeywell.com)

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