

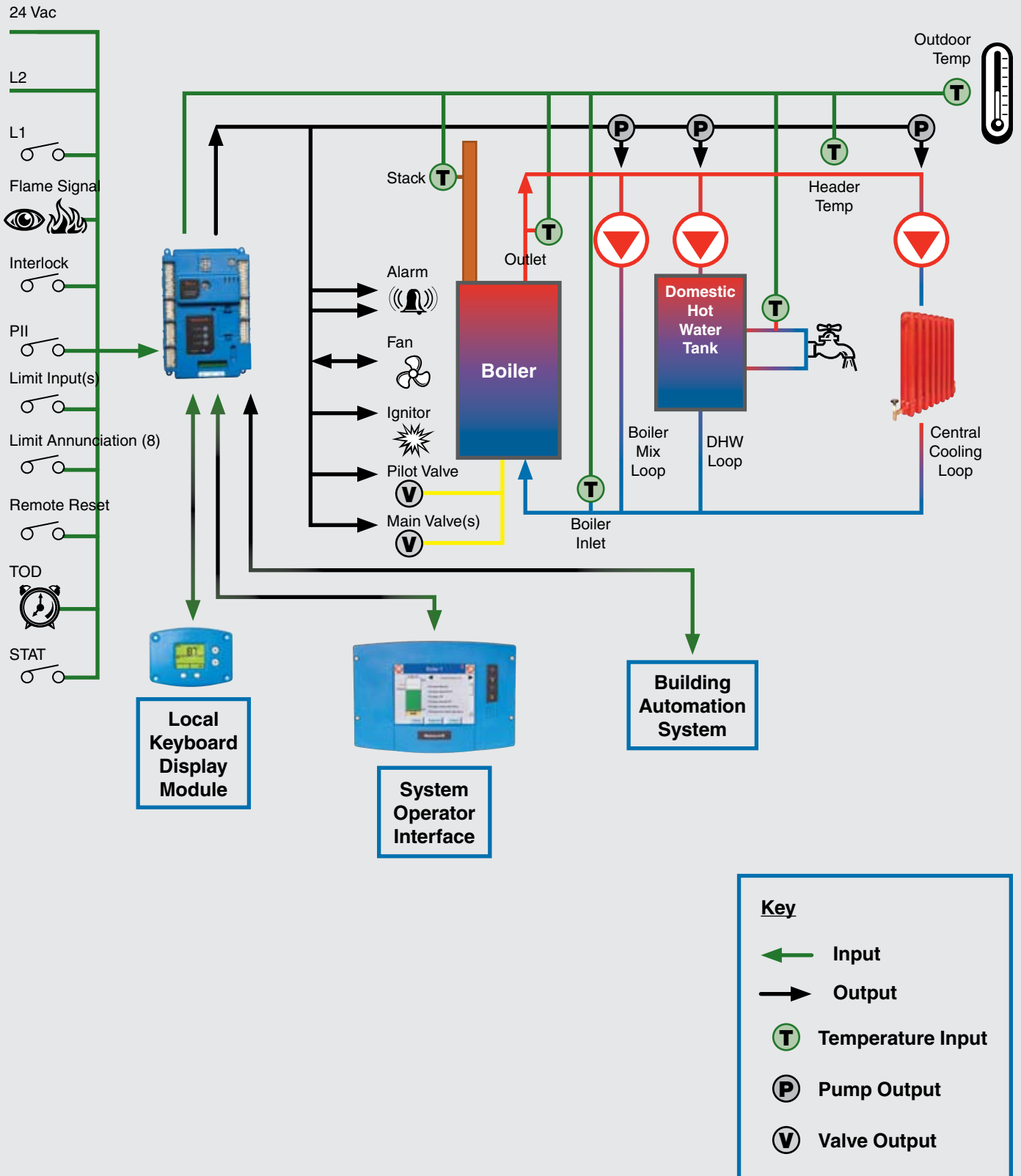
# Commercial Boiler Controls and Accessories



**Your Total Source For  
Mechanical Room Packages**

**Honeywell**

# The Hydronic Boiler Control Solution



## The Integrated Burner/Boiler Management Solution

Ten Controls In One



### SOLA Hydronic Control

The Only Control You Need

- **10 Integrated Control Functions**

- > Primary flame safeguard control
- > Igniter / spark generator
- > Pump control
- > Outdoor reset control
- > High limit control: Boiler outlet
- > High limit control: Domestic hot water
- > Operating control: Central heating
- > Operating control: Domestic hot water
- > PID load control: Central heating
- > PID load control: Domestic hot water

- **Reduce Installation, Wiring Time, Cabinet Space**

- > Replaces multiple devices with a single integrated compact device
- > Optional program module enables back-up and cloning features

- **Algorithm Prioritization**

- > Burner demand: Central heating, domestic hot water and frost protection
- > Firing rate limiting: Anti-condensate, stack, boiler delta-T, boiler slow start, boiler outlet

- **Expanded Diagnostics**

- > 11-item programmable first-out annunciation
- > 15-item lockout condition history and 15-item alert condition history

- **Flexible**

- > User selectable parameters, features and program settings to meet individual requirements
- > Boiler network can grow to meet future demands

- **Safety/Boiler Protection**

- > Frost protection, slow start, anti-condensate, boiler delta-T, stack high limit, domestic hot water high limit, outlet T-rise limit

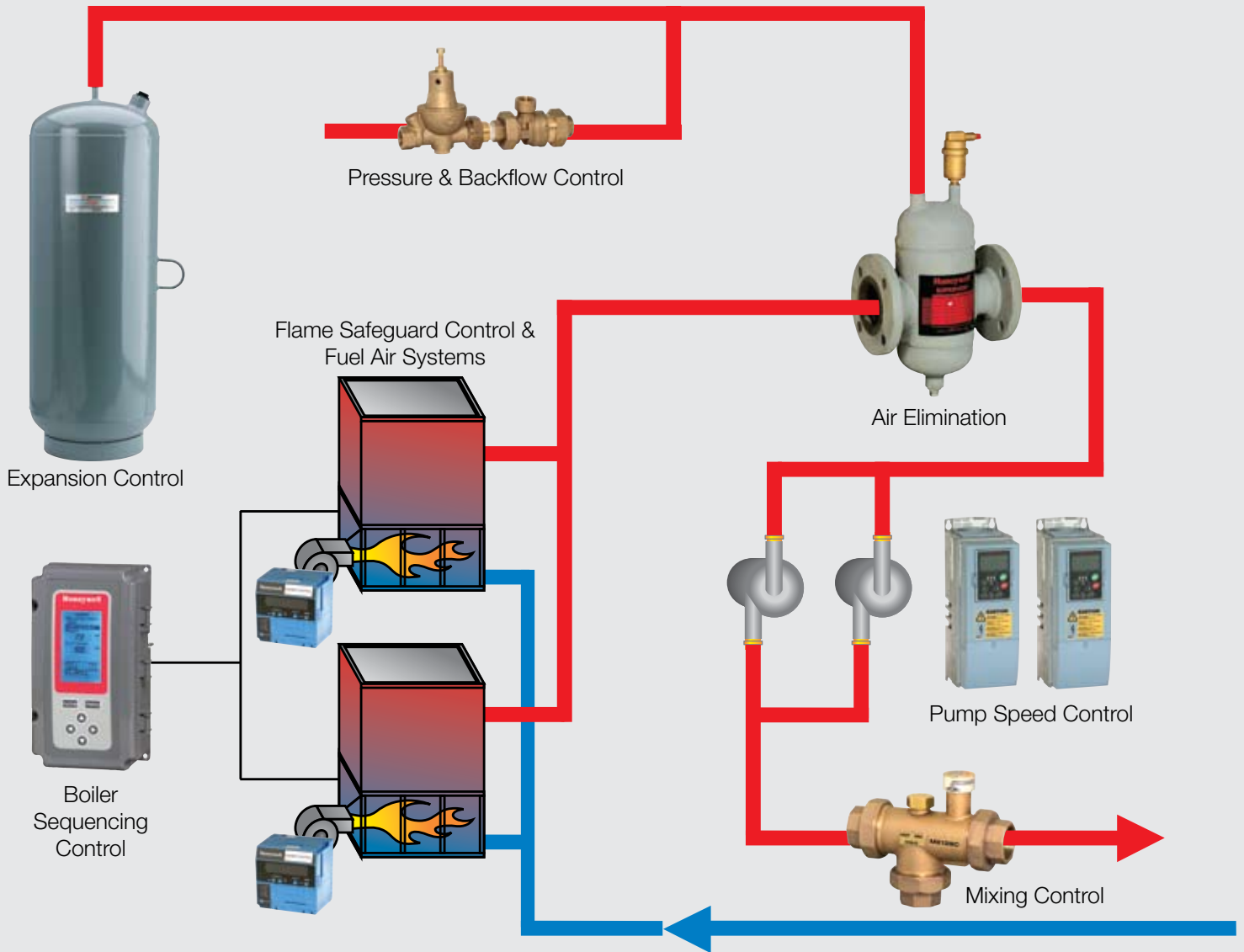
- **Affordable**

- > Compare to purchasing, installing and maintaining 10 individual controls

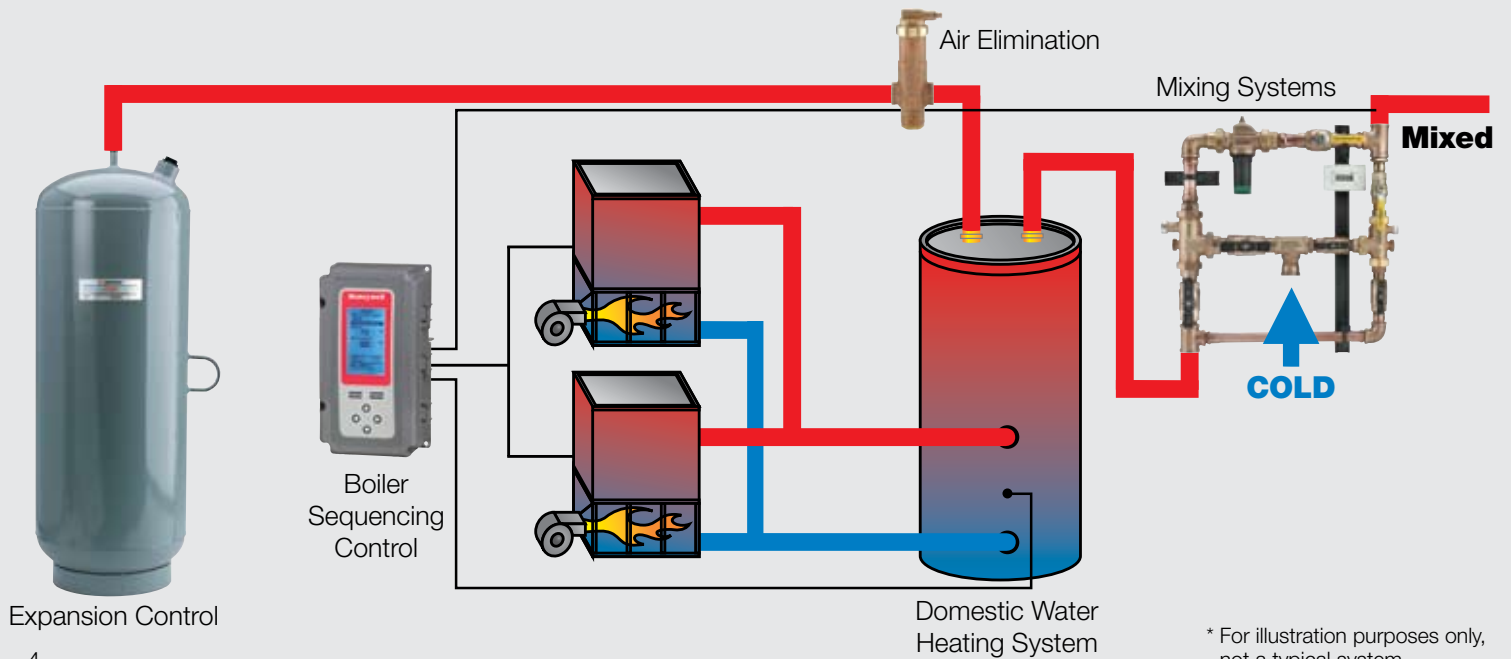
- **Future Provisions**

- > Multiple boiler lead-lag
- > Thermostat input
- > Fuel air ratio control for full modulation power burners

## Complete Boiler Room Peripheral Packages



## Complete Domestic Water Peripheral Packages



\* For illustration purposes only, not a typical system

## A Component Approach to Burner/Boiler Management

### Component Boiler Controls



### T775 Electronic Standalone Controller

One controller with many features self-contained

If your application does not require an integrated approach, Honeywell also offers a component based solution. The T775 electronic standalone controller along with the RM7800 series burner controls or Control Links can be used to provide boiler control. Choose from the standard, modulating, reset, boiler, sequencer, and universal models to meet your application needs.

- **T775 Integrated Control Functions**

- > Pump Control
- > Outdoor Reset Control
- > Operating Control: Central Heating
- > PID Load Control: Central Heating
- > Compatible with the RM7800 Series Burner Controls and Control Links ML7999
- > T775 has UL873, it is not intended to meet the requirements of UL353.

- **Easy-To-Use Graphical Interface**

- > Easy-to-use, intuitive programming will save you time on every job

- **Internal Time Clock Scheduler**

- > Save energy during unoccupied times using the Setback and Disable Output options without buying an additional time clock

- **Up To Two Independent Modulating Outputs**

- > Each output can be individually configured for 0-10 Vdc, 2-10 Vdc, 4-20 mA or Series 90

- **Optional Configurable Integral And Derivative Times**

- > Standard on every device, this feature delivers pinpoint control. Now you can adjust reaction times and behavior, giving you more control

- **Reset Models With Simplified Setup**

- > Simply enter the high and low control temperatures and the corresponding high and low outdoor temperatures, and you're done
- > As your outside temperature gets colder, the setpoint temperature automatically adjusts to save energy

- **Universal Model To Control Pressure**

- > Easy setup for configuring control of pressure with a 0-10 Vdc or 4-20 mA input
- > Pressure can be displayed in psi, Pa, kPa or in. w.c.
- > Outputs include two modulating and two relay outputs that can each have their own setpoint

- **Special Boiler Model**

- > With a single control you can handle multiple on/off low mass boiler applications
- > Features include dedicated pump output, staging for up to 12 relays, digital output alarm, pump exercise, pre/post pump purge, warm weather shut down and lead/ lag sequencing

For more information, see <http://customer.honeywell.com/T775>

# A Component Approach to Burner/Boiler Management

## Component Burner Controls



### 7800 SERIES Burner Controls

Reliable. Safe. Flexible.

- Integrated burner control for single burner applications
- Functions include burner sequencing, flame supervision, system status indication, system diagnostics and troubleshooting
- Wide range of applications including burners, boilers, furnaces, rooftop units, kilns and ovens
- Offers intelligent control any way you want it
- Can be customized with the following optional components:
  - > Valve Proving System (VPS)
  - > Keyboard Display Module
  - > Communication: Modbus™ RTU
  - > Configurable First-Out Expanded Annunciator
- Dynamic Self Checks and Trouble-Free Retrofit



### Flame Detectors

Flame Detectors to Fit Every Application

- Ultra Violet, Traditional UV Tube and Solid State
  - > Minipeeper
  - > Dynamic Self-Check (mechanical shutter)
  - > Adjustable Sensitivity
- Infrared
- Visible Light
- Flame Rod
- NEMA 1, 4, and 7 Enclosures plus Explosion Proof Enclosures
- For single or dual fuel applications





## ControlLinks™

The Linkageless Advantage

- Linkageless Fuel Air Ratio Control System
- Stand Alone Parallel Positioning Control System designed for Easy Retrofit
- Integrated Thermal Shock Protection Algorithms
- Maximize Burner Efficiency and Energy Savings
- Reduces fuel usage from 2 to 6% and beyond
- 4 Channel Output Control
  - > Combustion Air
  - > Fuel 1
  - > Fuel 2
  - > Flexible Usage



## S7999B System Display

Commission. Configure. Monitor. Control

- Commission ControlLinks fuel air ratio control
- Configure Honeywell Modbus network
  - > S7830 Expanded Annunciator terminal names
  - > Modbus network burner/boiler nodes and names
- Monitor device status, fault code history, diagnostic information
  - > 7800 SERIES or R7140 Burner Controls
  - > ControlLinks Fuel Air Ratio Control
  - > S7830 Expanded Annunciator
  - > UDC2500/3200/3500 Universal Digital Controllers with Modbus
- Control remote reset of the burner and UDC controls
- Modbus network of up to 99 devices or nodes with S7810M Modbus module

# Variable Frequency Drives

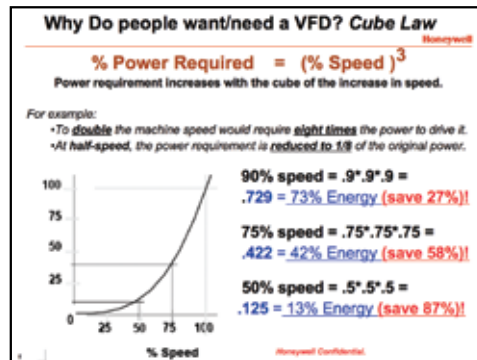
Component Based Boiler Control Solutions



## NXS And NXL Families Of Variable Frequency Drives

Fully configurable bypass options available

- Common user interface – Program one and you can program them all
- Built-in AC choke (input line reactor) reduce electromagnetic and harmful harmonic interference
- A Modular Construction and wide selection of option cards make the NX series a drive that can be easily incorporated into almost any application
- VFDs offer a significant opportunity for energy savings in commercial buildings; for example, reducing fan speed by 50% results in 87.5% energy savings
- Built-in applications make any setup, from accepting a basic speed signal up to complex PID control, quick and easy; enter the motor nameplate information and the NX does the rest.
- Broad communications capabilities (BACnet®, LONWORKS®, Modbus®, N2 and other protocols)
- The on-board intelligence means the drive can replace the local controller
- Versatile PC tools for loading, commissioning, and monitoring
- Warranty — 3 years from installation





## Pressure/Demand Controls

Component Based Boiler Control Solutions



### DS06 Series DialSet® Pressure Regulating Valve

Control water pressure without a gauge

- Built-in adjustment dial eliminates the need for a gauge when adjusting the static pressure setting
- The internal and external threading allows for use in thread-by-thread single-union or double-union configurations
- Noncorroding unitized cartridge contains all the working parts and is easily replaceable
- ASSE and IAMPO certified
- Flexibility to work in a variety of applications reducing inventory
- Outlet Pressure Adjustment ranges are suitable for household, light commercial, industrial and turf-and-irrigation applications
- Outlet pressure range - 1½" to 2" - 15 psi to 130 psi with a inlet pressure
- Inlet pressure of 400 psi



### HL Series™ High-Low Temperature Control Systems

The ultimate solution for controlling hot water temperatures caused by unpredictable demand

- HL Series™ High-Low Systems are pre-engineered, assembled and tested
- Increased safety: controls external hot water temperature during fluctuating demand periods; allows higher tank temperatures to kill bacteria
- Easily installed into existing plumbing configurations; complete system only needs to be hooked up by installer, not an engineer
- Unique — special tools for ease of setup and monitoring include DialSet® Pressure Regulating Valve and Digital Temperature Gauge
- System temperature variations minimized — using High and Low Capacity Thermostatic Mixing Valves maintains water temperature during any demand; low flow reduction if cold or hot water supply is interrupted
- ASSE 1017 rated

# Gas Valves

Wide Range Of Products To Meet Every Need



## Fluid Power Gas Valves and Actuators

Provides high level of safety and application flexibility

- Used to control flow of gas to commercial and industrial burners
- Rated as safety shutoff valves
- High Close-off pressure
- On-Off, Off-Lo-Hi and Modulating models
- Various voltage models available



## Diaphragm Valves

Valve and actuator in a single body construction

- Solenoid operated valves for use on boilers, unit heaters, duct furnaces, makeup air and rooftop heaters
- Different versions available for natural gas and LP (liquified petroleum)
- On-Off and Regulating models
- 120V or 24V available
- Rapid Opening or Slow Opening
- Internal venting



## Solenoid Valves

Fast opening and closing safety shut-off valves

- Used in wide variety of applications including furnaces and ovens, commercial water heaters, power burners, and boilers
- Normally closed valve offers safety shutoff with fast open, fast close operation
- Normally open valve functions as a vent valve for double block and bleed systems
- Used with natural gas, manufactured gas, or LP
- 120V or 24V
- 2 psi version 3/8"-3"
- 5 psi version 3/8"-2"

## Pressure Controllers

For Operating Controls Or Safety Limits On Fuel, Air, And Steam Pressure Systems



### C6097 Gas/Air Pressure Switch

Compact, easy connections...improved reliability

- Flange mount or NPT Mount
- Models
  - > C6097A-SPDT Break Make on Fall
  - > C6097B-SPDT Break Make on Rise
- Scale Range: 0.4"-60" WC  
1.5" to 7" PSI
- Options of manual reset or auto recycle
- Compact design



### Servo Regulated Combination Gas Valves and Venturis

Optimize efficiency...reduce emissions

- Cost effective modulating fuel/air control for premix burner applications
- Modulating 1:1 Fuel/Air Ratio Control
- Internal double block safety shut-off valves
- Commercial 24Vac and 120Vac valve models
- Premixes gas and air in proper proportions to ensure safe, reliable, efficient combustion
- Reduces NO<sub>x</sub>, CO, and CO<sub>2</sub> emissions
- Easy to mix and match components



### PressureTrol® Controllers

Reliable Pressure Control

- Provides operating control with automatic limit protection for pressure systems up to 300 psi, or oil burner systems up to 150 psi
- Can be used with steam, air, non-combustible gases, or fluids non-corrosive to the pressure sensing element
- MICRO SWITCH® snap-acting switches
- Automatic and manual reset models available
- Scale plates marked in Metric (kg/cm<sup>2</sup>) and English (psi) units

# Air Eliminators And Air Vents

Effectively Eliminates Air, Noise And Callbacks



## PV Series SuperVent®

Effectively eliminates air and noise from hydronic heating systems

- Debris baffle to control dirt fouling and prevent failure
- NPT and sweat connections available in threaded, flanged and flanged cleanable for application flexibility
- Operating temp: 250° F Max
- No-clog vent ends leaking and callbacks
- Adjustable vent top collar ring allows easier installation and application flexibility
- Flow rates up to 940 GPM
- Working pressure: 150 psi maximum



## SV Series SuperVent Top Air Vent

Leak-resistant, long-term performance

- Durable brass body with no ferrous metals
- No-clog Vent, includes shut-off cap
- Debris baffle to control dirt fouling and prevents failure
- High temperature thermoplastic float controls venting rate under continuous operation
- Includes service check valve for easy maintenance without draining system
- 3/8" NPT(SV173 model) & 1/2" NPT(SV175 model) connection sizes



## EA79 Automatic Air Vent

Industrial Series Automatic Air Vent for high pressure

- Industrial grade air vent
- Rugged Brass body construction
- Built-in shut-off valve for easy service with draining system
- 3/4" NPT external threads and 1/2" female NPT threads
- Replaceable float top assembly

## Thermostatic Mixing Valves

Designed To Protect People And Equipment



### AM-1 1070 Series Thermostatic Mixing Valve

Designed to meet new ASSE 1070 plumbing code for point-of-use applications

- Lockable hand wheel prevents tampering for code compliance
- Cv rating of 1.8 provides larger flow
- Teflon coating resists mineral deposit build up to extend life
- ASSE 1070 listed
- Includes Thermostrip for initial temperature setting



### UMV Series — Universal UnderSink Thermostatic Mixing Valve

The smart way to help prevent accidental scalding

- Built for easy installation in both 3- and 4- port applications
- Provides protection right at the sink
- Large adjustment knob with tamper-resistant screw to lock in setting for added safety
- Internal Check Valves in hot and cold inlets prevent cross flow
- New black lockable hand-wheel prevents tampering



### MX Series™ Large Flow Proportional Mixing Valve

High capacity mixing valve is specifically designed for larger applications

- Valve controls hot and cold supply based on control setting
- Teflon® coating increases product life and reduces callbacks
- Tamper-evident temperature adjustment
- Union NPT and flanged models
- ASSE 1017 listed (Union Models only)

# Commercial Expansion Tanks

Maintains System Pressure And Customer Relationships



## XPS Series Commercial Heating Non- ASME Models

For use with closed hydronic heating & cooling

- 14 – 86 gallons
- Factory pre-charged to 12 psi
- Stainless steel system connection
- Maximum working pressure – 100 psi
- Maximum operating temperature – 240° F



## TAX Series Commercial ASME Models

Commercial Horizontal models without saddles ASME 125 PSIG

- 7.8 – 132 gallons
- Diaphragm design and construction per ASME standards
- Horizontal and vertical model options
- Maximum working pressure – 100 psi
- Maximum operating temperature – 240° F



## TAXV Series Commercial ASME Models

Commercial Vertical models – ASME 125 PSIG

- 7.8 – 132 gallons
- Steel Shell – Heavy Duty Diaphragm
- Max operating pressure 125 psi
- Max operating temperature 240F
- ASME Construction



## TL Series Commercial ASME Models

Commercial usage for large closed heating systems

- 53 – 528 gallons
- Replaceable diaphragm design with floor stand
- Construction per ASME standards
- Maximum working pressure – 100 psi
- Maximum operating temperature – 240° F



## TX Series Thermal Expansion Tanks

For use with domestic hot water systems – large capacity

- 158 – 586 gallons
- 100% non-metallic, polypropylene liner and non-corrosive water reservoir
- Controls pressure build up in system
- Prevents water hammer
- Eliminates relief valve spillage
- Helps extend water heater life

**Automation and Control Solutions**

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1985 Douglas Drive North

Golden Valley, MN 55422-3992

In Canada:

Honeywell Limited

35 Dynamic Drive

Toronto, Ontario M1V 4Z9

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**Honeywell**

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