

Engineering Specification

Job Name _____

Contractor _____

Job Location _____

Approval _____

Engineer _____

Contractor's P.O. No. _____

Approval _____

Representative _____

LEAD FREE*

IntelliStation® 2S

Pre-piped Digital Water Mixing System

works with nexa

Features

- Cutting-edge valve design with improved reliability
- Lead Free* construction to comply with lead free* installation requirement
- Integral check valves on hot and cold inlets to prevent cross flow
- Full-color, touch screen display
- Programmable set point range 60°F to 180°F for wide range of temperature
- Control water temperature $\pm 2^\circ\text{F}$ in accordance with ASSE 1017
- Digital temperature and pressure sensors on inlets, outlet, and return
- Configurable on-site without special equipment or software
- Passcode protected for security
- Programmable alerts
- Programmable schedule for setback of temperature
- Time Stamped error message history
- High temperature Sanitization mode to address waterborne bacteria
- In case of power failure, full cold valve flow for safety
- Mixed outlet temperature adjusted/monitored at the valve or remotely by BAS (Building Automation System) or by Wi-Fi or Ethernet connection to Nexa
- Natively supports BACnet MSTP and Modbus protocols
- Wi-Fi security protocols include WPA2-PSK and WPA2-PEAP-MSCHAPv2

Now available: Nexa

- Provides monitoring and visibility of mixing valve assets across multiple campuses/locations
- Remote temperature control for Admin levels
- Sends system alerts by text and/or email
- Configurable alerts based on levels of safety and potential liability
- Two user levels for security
- Data logging and auditing
- Advanced charting capabilities of all datapoints
- Visibility into energy usage and load flow
- Energy savings through scheduled temperature setbacks
- Mixing valve security with 5-digit user access code

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.



IS2S150C00LP



Valve Only

Control Only

NOTICE

Nexa application is only available for use in Canada and the United States of America.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Powers product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Powers Technical Service. Powers reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Powers products previously or subsequently sold.

POWERS™
A WATTS Brand

Accessories

Call customer service if you need assistance with technical details.

SKU	Description	Contents
Extend the Distance Between Controller and Valve		
6555011	IS2 6-foot Cable Extension Kit	Temp, Encoder, and Actuator cables
Keyence Clamp on Flow Sensor Kits to Monitor Mixed Outlet and Recirculation Return Flows		
6555002	IS2 Clamp on Flow Sensor Kit, Pipe Size ½" – ¾"	1 Sensor, power adapter, and I/O cable
6555003	IS2 Clamp on Flow Sensor Kit, Pipe Size 1" – 1¼"	1 Sensor, power adapter, and I/O cable
6555004	IS2 Clamp on Flow Sensor kit, Pipe Size 1½" – 2"	1 Sensor, power adapter, and I/O cable
6555005	IS2 Clamp on Flow Sensor kit, Pipe Size 2½" – 3"	1 Sensor and I/O cable
6555006	IS2 Clamp on Flow Sensor kit, Pipe Size 4" – 5"	1 Sensor and I/O cable

If using Keyence flow sensors, select the sensor based on the size of the pipe it is to be mounted to. Typical sensor locations are on the mixed outlet or recirculation inlet piping. A 120V connection is required for power.

Special made to order options available by request: Actuated valve sequencing, Stainless Steel Shuttle

Specification

Connection Type	Sweat/Press (Street)
Maximum Test Pressure	250 psi (1793 kPa)
Maximum Operating Pressure	200 psi (1034 kPa)
Maximum Operating Pressure Differential at Inlets	20% of Average Inlet Pressures with Maximum 20 psi (172 kPa)
Temperature Adjustment Range¹	60°F – 180°F (16°C – 82°C)
Maximum Hot Water Supply Temperature	200°F (93°C)
Minimum Hot Water Supply Temperature²	2°F (1°C) above set point
Hot Water Inlet Temperature Range	120°F – 180°F (49°C – 82°C)
Cold Water Inlet Range	35°F – 80°F (2°C – 27°C)
Maximum Cold Water Supply Temperature²	2°F (1°C) below set point
Minimum Flow Demand	0 gpm (0.0 lpm)
Minimum Total Valve Flow Required³	3 gpm (11.36 lpm)
Outlet Temperature Accuracy per ASSE 1017	±2°F
Outlet Temperature Accuracy at Recommended Minimum Flow Rates By Valve Size²	
IS2S075 @ 3 gpm	±2°F
IS2S100 @ 3 gpm	±2°F
IS2S150 @ 3 gpm	±2°F
IS2S200 @ 5 gpm	±2°F
Listing /Compliance	ASSE 1017, cUPC, NSF 61 & 372
Ambient Temperature	32°F – 122°F (0°C – 50°C)
Ambient Humidity	0% – 90% RH noncondensing
Environment	Suitable for Indoor Use Only

¹ Low Temperature Setpoint cannot be less than the cold water temperature. For best operation, hot water should be at least 2°F above desired set point.

² With equal pressure.

³ Minimum flow (3 gpm) when Intellistation 2S is installed at or near hot water source recirculating tempered water with a properly sized continuously operating recirculating pump.

Control Electrical Specification

Input Power	120/240 V (ac) ±10%, 50/60 Hz, 17 W
Pump Relays (Motor Load)	120/240 V (ac), 10/8 FLA, 50/48 LRA
Alert Relay	120/240 V (ac), 5 A, 1/6 hp
Isolation Valve Relays	24 V (ac/dc), 5 A, Resistive
+5V Capacity	25 mA maximum, Resistive, Class 2
+20V Capacity	20 mA maximum, Resistive, Class 2
Actuator Load	13 W
Pump Proof Demand	24 V (ac) or Short
Operating Temperature	32°F – 122°F (0°C – 50°C)
Wi-Fi	802.11 b/g/n, 2.4 GHz
Listing /Compliance	FCC/ISED, UL 60730-1, UL 60730-2-9, IEC 60730, BACnet Testing Laboratories (BTL), CE

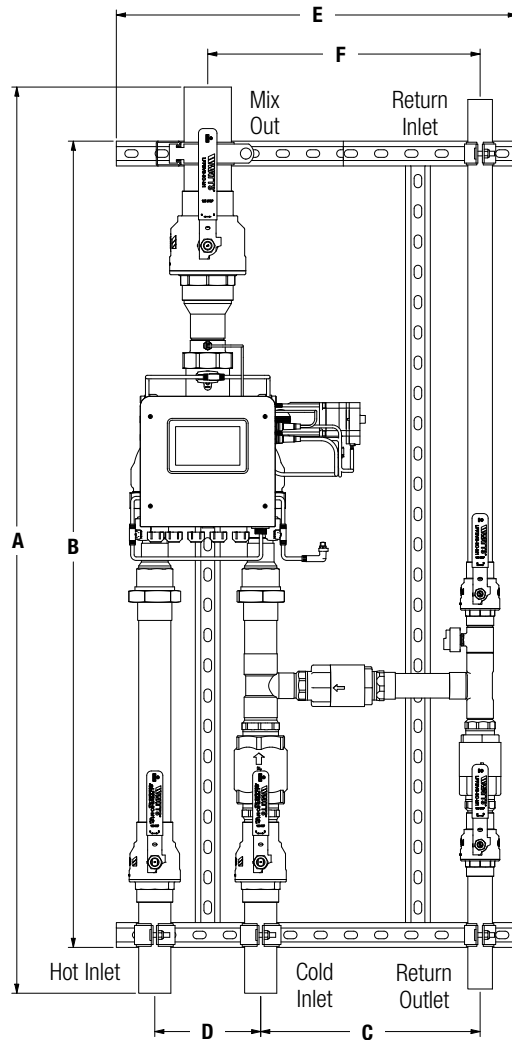
Capacity

Valve Model	System Suffix	Pressure Drop (PSI)								Max Suggested Continuous Use Flow Rate ² (GPM) (Based on 5 ft/s)	Max Suggested Continuous Use Return Flow Rate ² (GPM) (Based on 7 ft/s)
		5	10	15	20	30	45	50	Cv		
IS2S075	COOLP-H	33.4	53.6	64.1	74.7	90.4	111.9	122.5	16.9	53.6	18.0
	COSLPH-H ¹										38.8
	E00LP-H										
	E0SLPH-H ¹										
IS2S100	COOLP-H	49.7	72.3	90.2	102.3	129.1	157.4	168.0	22.9	72.3	18.0
	COSLPH-H ¹										38.8
	E00LP-H										
	E0SLPH-H ¹										
IS2S150	E00LP-H	76.4	110.1	133.3	153.3	196.8	240.4	247.0	34.8	110.1	38.8
	E0SLPH-H ¹										67.5
	FO0LP-H										
	FOSLPH-H ¹										
IS2S200	E00LP-H	98.3	144.4	179.8	211.1	250.8	309.9	324.9	45.7	144.4	38.8
	E0SLPH-H ¹										67.5
	FO0LP-H										
	FOSLPH-H ¹										
IS2S150	DVH00LP-H	151.9	218.9	265.1	304.9	391.3	478.2	491.4	69.2	218.9	135.0
	DVH0SLPH-H	147.6	212.4	257.4	296.1	379.0	463.2	476.8	67.2	212.4	
IS2S200	DVH00LP-H	195.5	287.2	357.5	419.7	498.9	616.5	646.5	90.8	287.2	148.6
	DVH0SLPH-H	190.7	279.7	347.8	408.0	485.8	600.0	629.3	88.4	279.7	
IS2S200	TVH00LP-H	293.0	430.4	535.7	628.9	747.7	923.9	968.9	136.1	430.4	148.6
	TVH0SLPH-H	286.3	427.4	531.8	624.1	742.2	916.9	961.5	135.2	427.4	
Flow at Pressures (GPM) with Check											

¹ Strainers on single valve systems are not accounted for in flow rates. Effect on flow rate is dependent on where the strainer is installed.

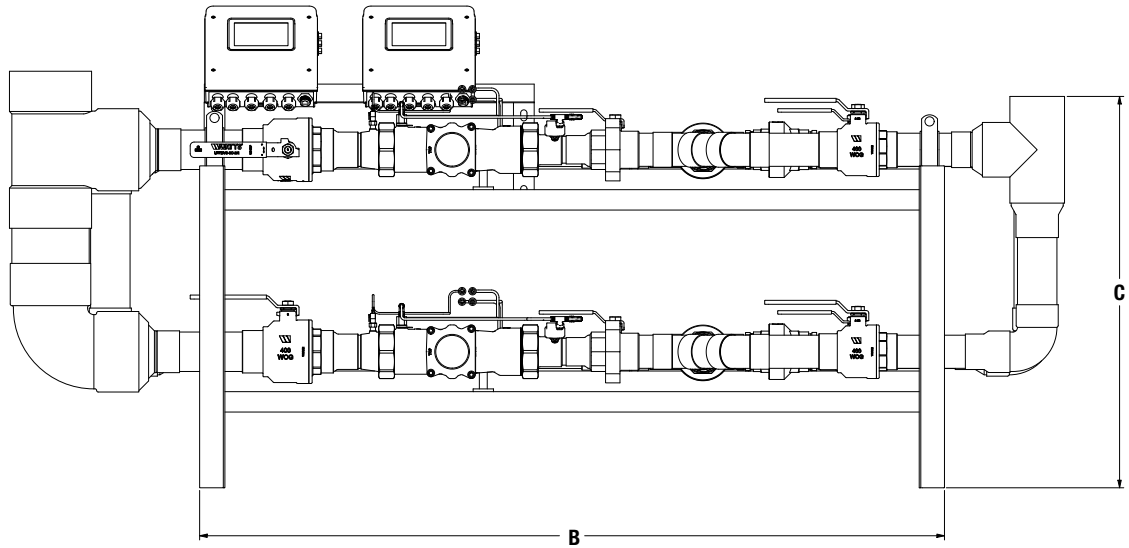
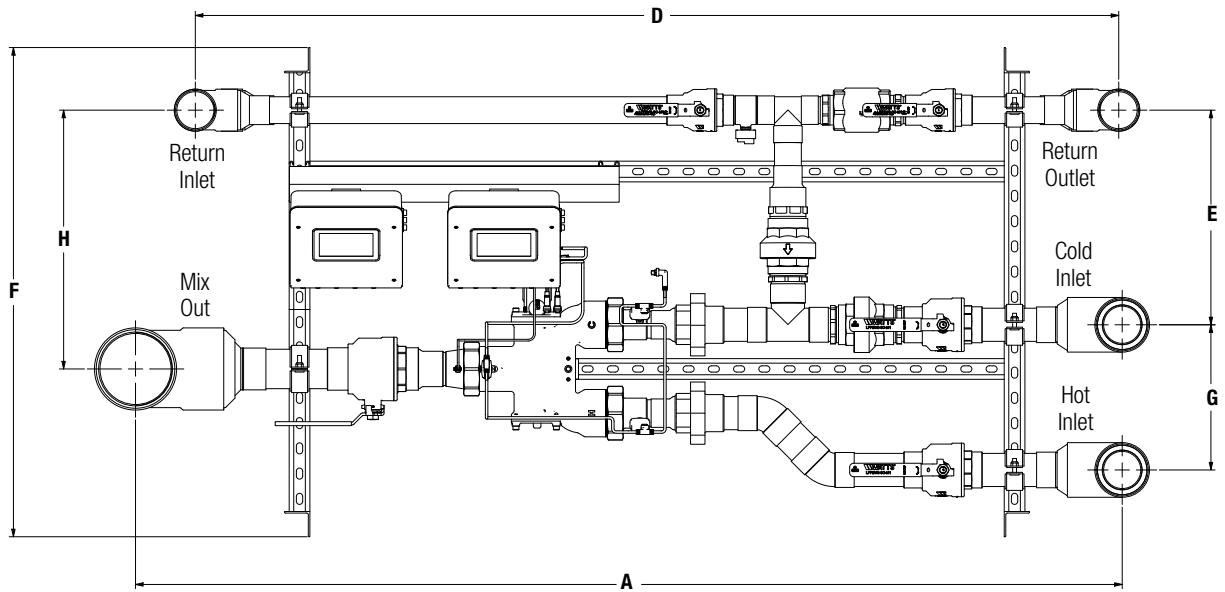
² Velocity recommendation is based on the Uniform Plumbing Code and Copper Development Association, *Copper Tube Handbook*, and minimizes potential erosion and corrosion in the station piping.

Dimensions



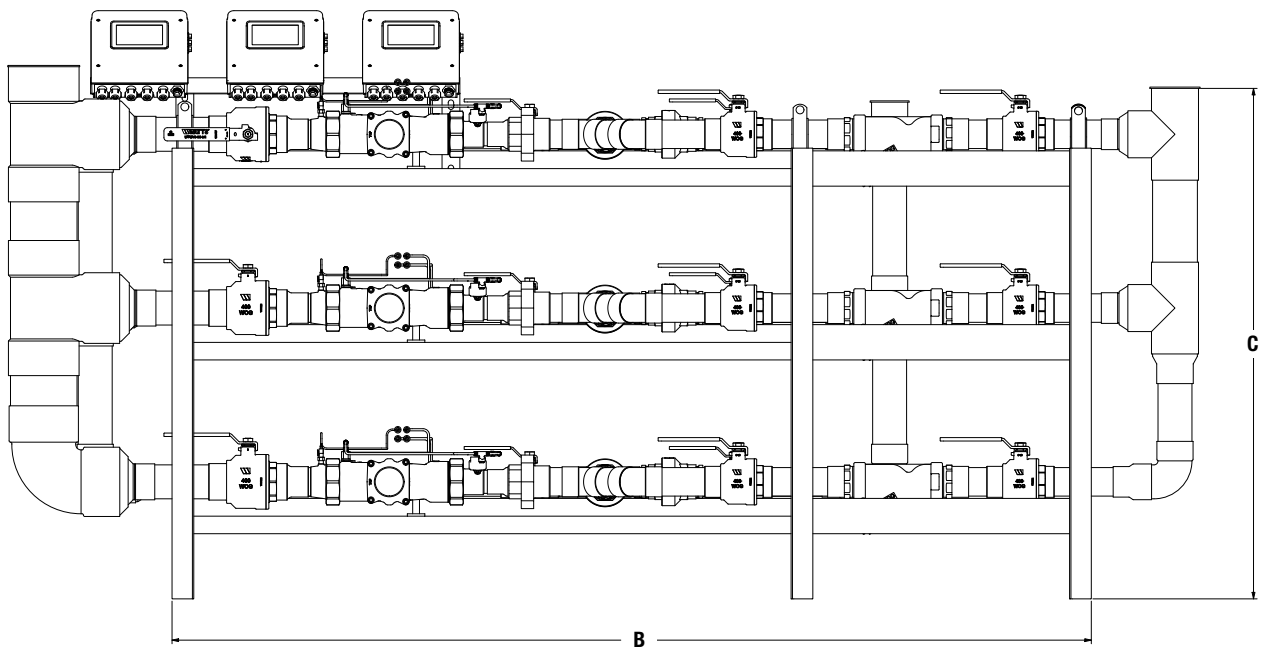
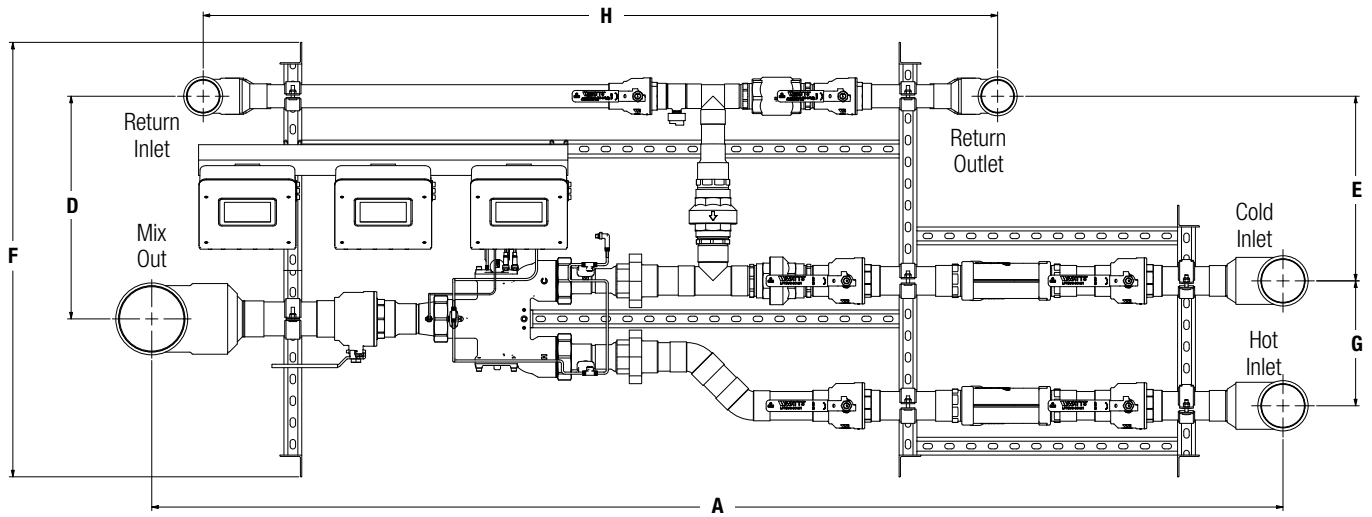
Single Valves

Model	Inlet	Outlet	Return	A	B	C	D	E	F
IS2S075C00LP-H IS2S075C0SLP-H	1½" (38 mm)	2" (51 mm)	1" (25 mm)	51⅞" (1299 mm)	45¼" (1149 mm)	13⅝" (346 mm)	6" (152 mm)	24" (610 mm)	16⅝" (422 mm)
IS2S075E00LP-H IS2S075E0SLP-H			1½" (38 mm)						
IS2S100C00LP-H IS2S100C0SLP-H	2" (51 mm)	2½" (64 mm)	1" (25 mm)	57½" (1461 mm)	51¼" (1302 mm)	15½" (394 mm)	7" (178 mm)	27" (686 mm)	18½" (470 mm)
IS2S100E00LP-H IS2S100E0SLP-H			1½" (38 mm)						
IS2S150E00LP-H IS2S150E0SLP-H IS2S150F00LP-H IS2S150F0SLP-H			3" (76 mm)	1½" (38 mm) 2" (51 mm)	59⅞" (1521 mm)	53¼" (1353 mm)		14½" (368 mm)	
IS2S200E00LP-H IS2S200E0SLP-H IS2S200F00LP-H IS2S200F0SLP-H	2½" (64 mm)	4" (102 mm)	1½" (38 mm) 2" (51 mm)	68" (1727 mm)	58¼" (1480 mm)	17" (432 mm)		30" (762 mm)	20½" (521 mm)



Dual Valves

Model	Inlet	Outlet	Return	A	B	C	D	E	F	G	H
IS2S150DVH00LP-H	3" (76 mm)	4" (102 mm)	3" (76 mm)	69" (1753 mm)	54" (1372 mm)	30" (762 mm)	68 ¹ / ₈ " (1730 mm)	14 ¹ / ₂ " (368 mm)	30 ¹ / ₂ " (775 mm)	7" (178 mm)	18" (457 mm)
IS2S150DVH0S1P-H				88 ⁵ / ₈ " (2251 mm)	73 ⁵ / ₈ " (1870 mm)				32" (813 mm)		
IS2S200DVH00LP-H	4" (102 mm)	6" (152 mm)		78 ¹ / ₈ " (1984 mm)	59" (1499 mm)	31" (787 mm)	73 ¹ / ₈ " (1857 mm)	17" (432 mm)	38 ³ / ₄ " (984 mm)	11 ¹ / ₂ " (292 mm)	20 ¹ / ₂ " (521 mm)
IS2S200DVH0S1P-H				104 ¹ / ₈ " (2645 mm)	84 ⁵ / ₈ " (2149 mm)				40" (1016 mm)		



Triple Valves

Model	Inlet	Outlet	Return	A	B	C	D	E	F	G	H
IS2S200TVH00LP-H	4" (102 mm)	6" (152 mm)	3" (76 mm)	78 ¹ / ₈ " (1984 mm)	59" (1499 mm)	50 ³ / ₈ " (1280 mm)	20 ¹ / ₂ " (521 mm)	17" (432 mm)	38 ³ / ₄ " (984 mm)	11 ¹ / ₂ " (292 mm)	73 ¹ / ₈ " (1857 mm)
IS2S200TVH0SLP-H	4" (102 mm)	6" (152 mm)	3" (76 mm)	104 ¹ / ₈ " (2645 mm)	84 ⁵ / ₈ " (2149 mm)	47" (1194 mm)	20 ¹ / ₂ " (521 mm)	17" (432 mm)	40" (1016 mm)	11 ¹ / ₂ " (292 mm)	73 ¹ / ₈ " (1857 mm)

Ordering Information

SINGLE VALVE

Valve	Inlet	Outlet	Ordering Code
IS2075VL	1½"	2"	IS2S075
IS2100VL	2"	2½"	IS2S100
IS2150VL	2"	3"	IS2S150
IS2200VL	2½"	4"	IS2S200

Return Pipe Size

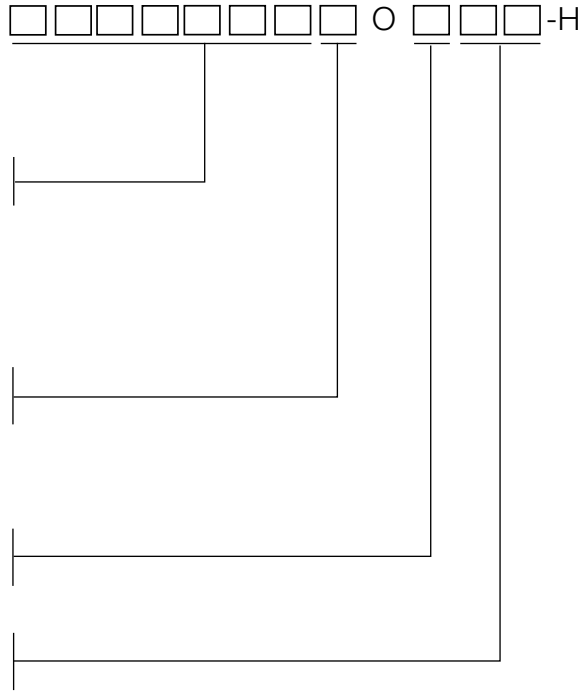
1"	Available for IS2S075 and IS2S100
1½"	Available for all valves
2"	Available for IS2S150 and IS2S200

Strainers*

None	O
Inlet strainers	S

Pump

Less Pump	LP
Pump Assigned by Factory	--



Must Provide Following Pump Information to Factory to Select the Pump:

Pump Manufacturer: _____

Part/Model Number _____

System Head Loss _____

Required Flow to Maintain Recirculating Temperature _____

*Strainers ship loose and must be installed by a plumber at the job site.

MULTI-VALVE

Valve	Inlet	Outlet	Ordering Code
IS2150VL	3"	4"	IS2S150DV
IS2200VL	4"	6"	IS2S200DV
IS2200VL	4"	6"	IS2S200TV

Return Pipe Size

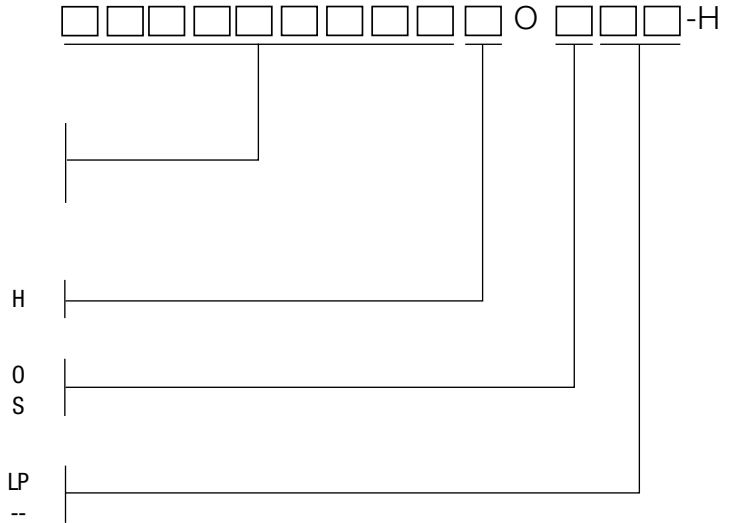
3"

Strainers

None	O
On inlets	S

Pump

Less Pump	LP
Pump Assigned by Factory	--



Must Provide Following Pump Information to Factory to Select the Pump:

Pump Manufacturer: _____

Part/Model Number _____

System Head Loss _____

Required Flow to Maintain Recirculating Temperature _____

Typical Specification

Lead free* digital water temperature control and monitoring system shall feature full-color touchscreen interface which is configurable on location and does not require factory pre-programming. System shall control water temperature to $\pm 2^{\circ}\text{F}$ in accordance with ASSE 1017 and resist "temperature creep" during periods of low/zero demand. The control shall be password protected and feature a user-adjustable outlet temperature range of 60°F to 180°F with high and low temperature alerts, and an approach temperature of 2°F .

System shall digitally control and monitor mixed outlet temperature. The control shall integrate with building automation systems (separate module not required) through BACnet and Modbus protocols and feature local and remote temperature alarms.

System shall provide monitoring and visibility of mixing valve assets across multiple locations/sublocations. System shall offer the ability to remote temperature control for admin levels. System shall be capable of sending system alerts by text and/or email and prioritizing alerts based on levels of safety and potential liability. System offers two user levels for security. The control shall be equipped with secure Wi-Fi protocols WPA2-PSK and WPA2-PEAP-MSCHAPv2.

System shall feature a user-set, high-temperature sanitization mode for thermal disinfection of bacteria and a programmable temperature set back feature to improve energy efficiency. System shall also feature high speed actuator with override feature. In the event of a power failure, system shall open full cold supply. In case of a loss of cold water, the system shall close hot water supply.

System shall be listed/approved to ASSE 1017, cUPC, NSF, UL 60730-1, UL 60730-2-9, IEC 60730, and BTL (BACnet Testing Laboratories).

System shall be a Powers IS2075VL, IS2100VL, IS2150VL, or IS2200VL.

⚠ WARNING

Hot water poses a danger of burning or scalding above 110 degrees Fahrenheit. Setting the mixing valve to temperatures over 110 Fahrenheit without the protection of additional point-of-use mixing valves (such as Watts LFUSG-B or Powers LF480 series valves) could result in scalding at point-of-use fixtures such as faucets, sinks, tubs, and showers.

The Sanitizing function produces high temperature at all point-of-use fixtures and extreme care must be taken to mitigate against the risk of personal injuries such as burning or scalding, or other property damage. The Sanitization function must only be used for the purposes of sanitizing the system, and never during normal operations or use.

Sanitation times and temperatures should be chosen based on your company's Sanitization Protocol requirements, your plumbing systems characteristics, and sanitation validation data.

Ensure proper time is allotted for proper cooldown of water system after sanitization in order for temperatures to return to normal. Not giving enough time for this cooldown period can also result in scalding at point-of-use devices.

⚠ WARNING

Intellistation 2 system provides user-directed control and monitoring of water distribution systems. The Sanitization mode is intended for use as part of a user-directed, controlled, and supervised protocol that has been safely and properly designed.

It is recommended to install the Intellistation 2 system as part of a ASSE compliant water distribution system, including point-of-use mixing valves. Installation and adjustment of the Intellistation 2 system are the responsibility of the owner and installer and must be done by qualified personnel in accordance with the manufacturer's instructions, and complying with all governmental requirements, building and construction codes and standards. The owner and user of the Intellistation 2 system are responsible for selecting and installing the product in an appropriate water distribution system, proper sizing, maintaining proper water quality/condition, and deciding what temperature is safe and appropriate for the water distribution users and facility.

Always read and follow Installation, Operation, and Maintenance Manual and all product warnings and labels, and comply with all governmental and safety requirements.

NOTICE

A copy of the applicable limited warranty and disclaimers is available at www.PowersControls.com.

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