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

IS2S150C00LP

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 ±2°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

ASSE 1017 UPC NSF Certified to NSF/ANSI/CAN 61&372

Valve Only

BTL c UL us LISTED E365015 Temp. Ind. and Reg. Equip. CE

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™
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 Meter Kits to Monitor Mixed Outlet and Recirculation Return Flows		
6555002	IS2 Clamp on Flow Meter Kit, Pipe Size ½" – ¾"	1 Sensor, power adapter, and cable
6555003	IS2 Clamp on Flow Meter Kit, Pipe Size 1" – 1¼"	1 Sensor, power adapter, and cable
6555004	IS2 Clamp on Flow Meter kit, Pipe Size 1½" – 2"	1 Sensor, power adapter, and cable
6555005	IS2 Clamp on Flow Meter kit, Pipe Size 2½" – 3"	1 Sensor, power adapter, and cable
6555006	IS2 Clamp on Flow Meter kit, Pipe Size 4" – 5"	1 Sensor, power adapter, and cable

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 Range[1]	60°F – 180°F (16°C – 82°C)
Maximum Hot Water Supply Temperature	200°F (93°C)
Minimum Hot Water Supply Temperature[2]	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 Temperature[2]	2°F (1°C) below set point
Minimum Flow Demand	0 gpm (0.0 lpm)
Minimum Total Valve Flow Required[3]	3 gpm (11.36 lpm)
Outlet Temperature Accuracy per ASSE 1017	±2°F
Outlet Temperature Accuracy at Recommended Minimum Flow Rates By Valve Size[2]	
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

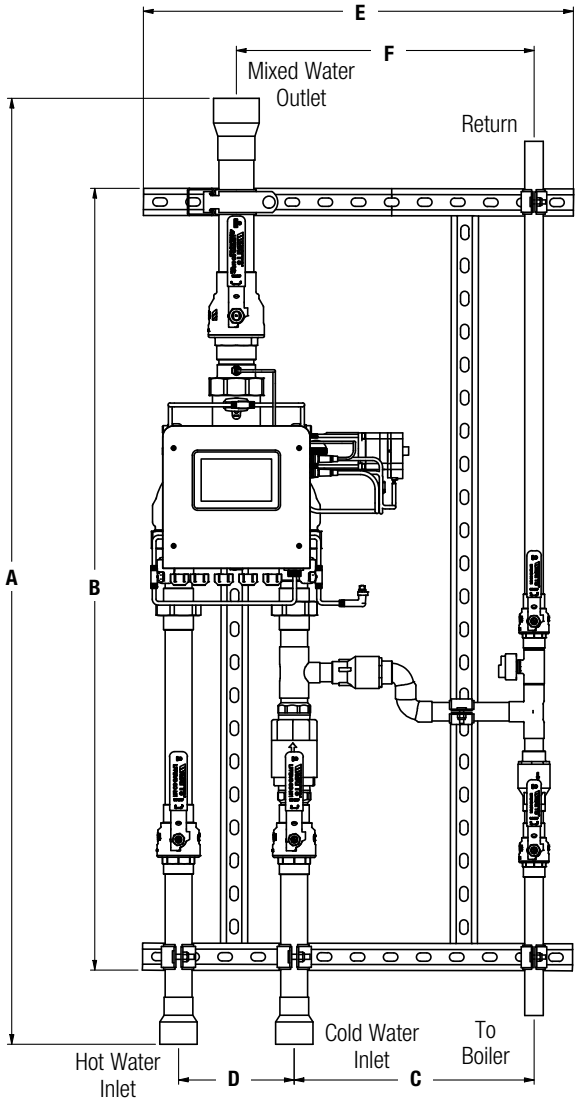
Control Electrical Specification

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

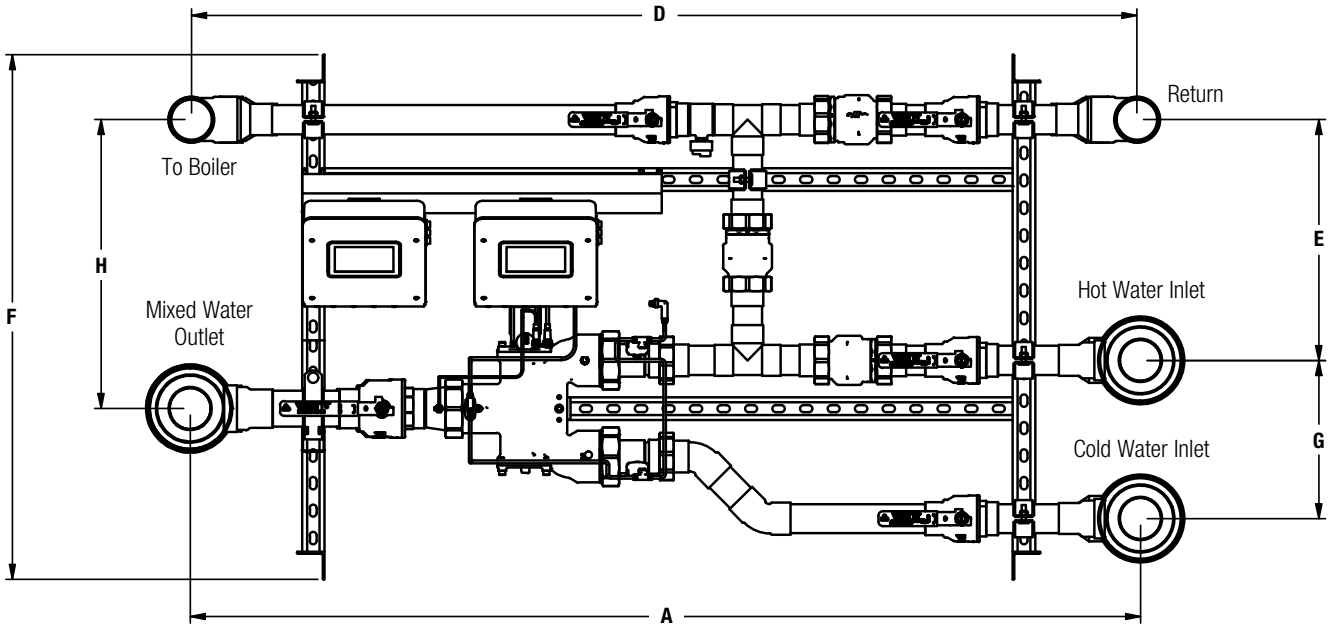
		Pressure Drop (PSI)							
Model	**Valve Size**	**5**	**10**	**15**	**20**	**30**	**45**	**50**	**Cv**
IS2S075	¾"	34.1	54.8	65.5	76.4	92.3	114.3	125.3	17.3
IS2S100	1"	50.5	73.4	91.6	103.8	131.1	159.8	170.6	23.2
IS2S150	1½"	77.8	112.2	135.7	156.0	200.6	245.0	251.4	35.5
IS2S200	2"	100.4	149.4	184.0	216.2	256.5	317.0	332.3	47.3
		Flow at Pressures (GPM) WITH CHECK							

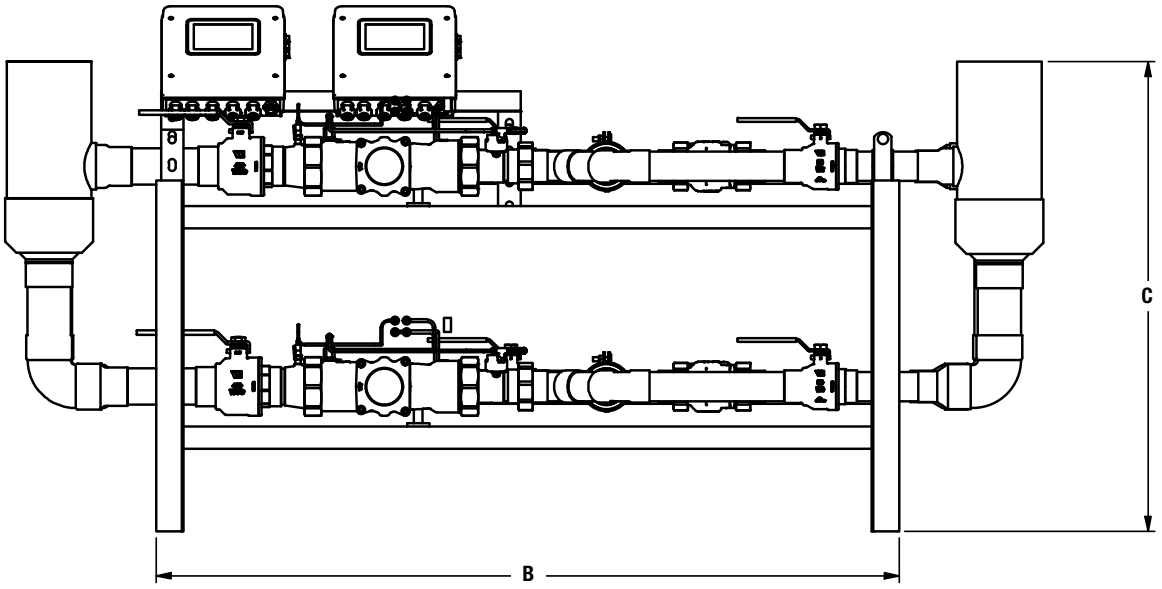
Dimensions



Single Valves

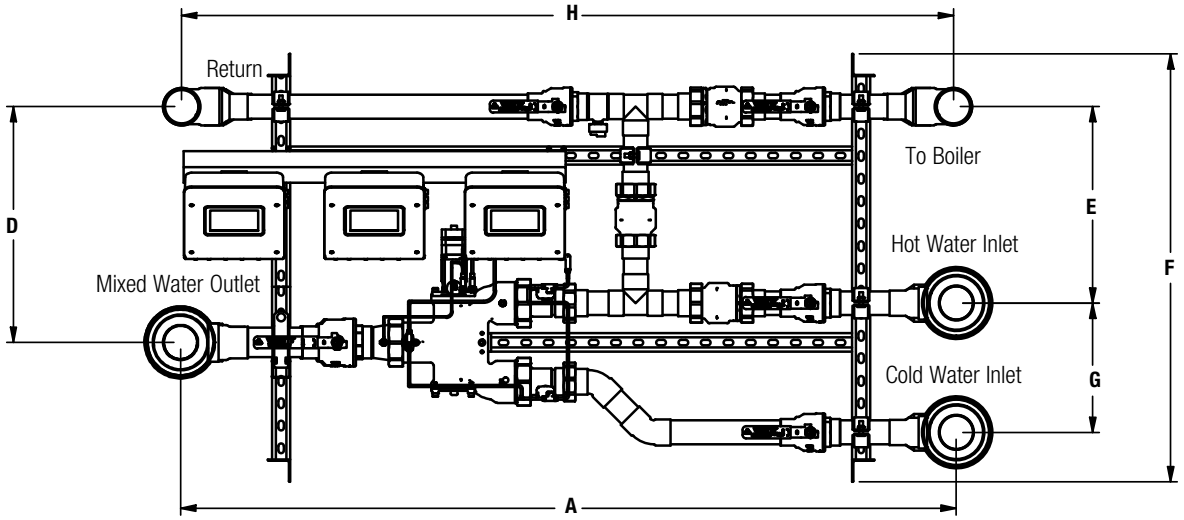
Model	Inlet	Outlet	Return	A	B	C	D	E	F
IS2S075B00LP	¾" (19 mm)	1" (25 mm)	¾" (19 mm)	44⅝" (1133 mm)	39¼" (997 mm)	14½" (368 mm)	6" (152 mm)	24" (610 mm)	17½" (444 mm)
IS2S100C00LP	1" (25 mm)	1¼" (32 mm)	1" (25 mm)	45⅜" (1153 mm)	40¼" (1022 mm)	14½" (368 mm)	6" (152 mm)	24" (610 mm)	17½" (444 mm)
IS2S100CF0LP	1" (25 mm)	1¼" (32 mm)	1" (25 mm)	63⅛" (1603 mm)	58⅛" (1476 mm)	14½" (368 mm)	6" (152 mm)	24" (610 mm)	17½" (444 mm)
IS2S150C00LP	2" (51 mm)	2½" (64 mm)	1" (25 mm)	57¼" (1454 mm)	47¼" (1200 mm)	14½" (368 mm)	7" (178 mm)	25" (635 mm)	18" (457 mm)
IS2S150CF0LP	2" (51 mm)	2½" (64 mm)	1" (25 mm)	81⅛" (2061 mm)	71¼" (1810 mm)	14½" (368 mm)	7" (178 mm)	26" (660 mm)	18" (457 mm)
IS2S150E00LP	2" (51 mm)	2½" (64 mm)	1½" (38 mm)	57¼" (1454 mm)	47¼" (1200 mm)	14½" (368 mm)	7" (178 mm)	26" (660 mm)	18" (457 mm)
IS2S150EF0LP	2" (51 mm)	2½" (64 mm)	1½" (38 mm)	81¼" (2064 mm)	71¼" (1810 mm)	14½" (368 mm)	7" (178 mm)	26" (660 mm)	18" (457 mm)
IS2S200C00LP	2½" (64 mm)	3" (76 mm)	1" (25 mm)	64⅛" (1629 mm)	53¼" (1353 mm)	16½" (419 mm)	7" (178 mm)	29" (737 mm)	20" (508 mm)
IS2S200CF0LP	2½" (64 mm)	3" (76 mm)	1" (25 mm)	83¼" (2115 mm)	73¼" (1861 mm)	16½" (419 mm)	7" (178 mm)	29" (737 mm)	20" (508 mm)
IS2S200F00LP	2½" (64 mm)	3" (76 mm)	2" (51 mm)	64⅛" (1629 mm)	53¼" (1353 mm)	16½" (419 mm)	7" (178 mm)	29" (737 mm)	20" (508 mm)
IS2S200FF0LP	2½" (64 mm)	3" (76 mm)	2" (51 mm)	83½" (2121 mm)	72½" (1842 mm)	16½" (419 mm)	7" (178 mm)	29" (737 mm)	20" (508 mm)

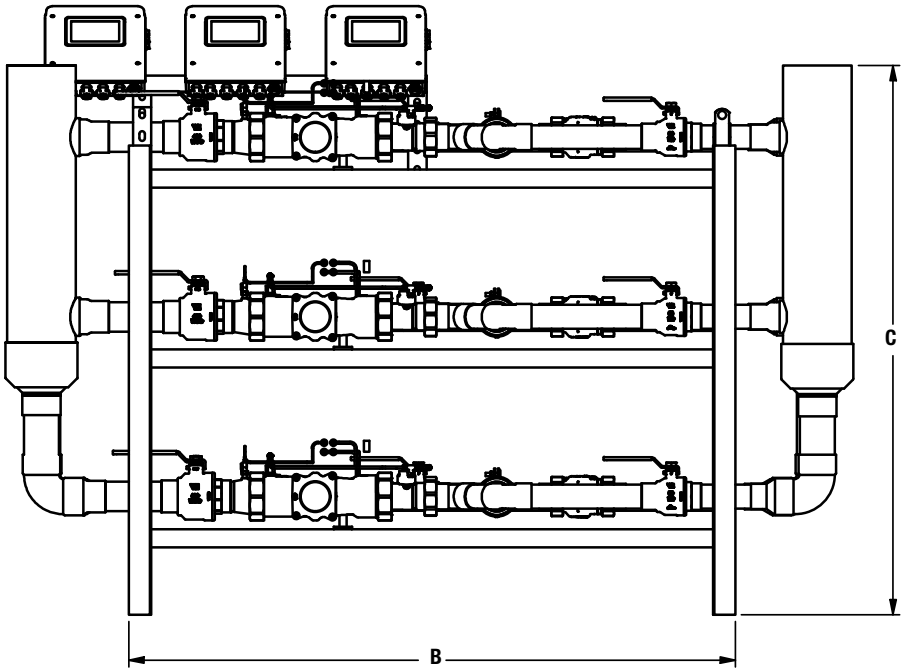




Dual Valves

Model	Inlet	Outlet	Return	A	B	C	D	E	F	G	H
IS2S150DVH00LP	4" (102 mm)	4" (102 mm)	3" (76 mm)	60¼" (1530 mm)	48" (1219 mm)	31½" (800 mm)	62⅛" (1578 mm)	14½" (368 mm)	33" (838 mm)	10" (254 mm)	18" (457 mm)
IS2S150DVHF0LP	4" (102 mm)	4" (102 mm)	3" (76 mm)	85⅝" (2175 mm)	72¾" (1848 mm)	31½" (800 mm)	62⅛" (1578 mm)	14½" (368 mm)	33" (838 mm)	10" (254 mm)	18" (457 mm)
IS2S150DVHFSLP	4" (102 mm)	4" (102 mm)	3" (76 mm)	105⅞" (2689 mm)	94¼" (2394 mm)	31½" (800 mm)	62⅛" (1578 mm)	14½" (368 mm)	33" (838 mm)	10" (254 mm)	18" (457 mm)
IS2S150DVH0SLP	4" (102 mm)	4" (102 mm)	3" (76 mm)	80⅝" (2048 mm)	69½" (1765 mm)	31½" (800 mm)	62⅛" (1578 mm)	14½" (368 mm)	33" (838 mm)	10" (254 mm)	18" (457 mm)
IS2S200DVH00LP	6" (152 mm)	6" (152 mm)	3" (76 mm)	69" (1754 mm)	54" (1372 mm)	34⅛" (867 mm)	68⅛" (1730 mm)	17½" (445 mm)	38⅛" (968 mm)	11½" (292 mm)	21" (533 mm)
IS2S200DVHF0LP	6" (152 mm)	6" (152 mm)	3" (76 mm)	91" (2310 mm)	76⅛" (1934 mm)	34⅛" (867 mm)	68⅛" (1730 mm)	17½" (445 mm)	38⅛" (968 mm)	11½" (292 mm)	21" (533 mm)
IS2S200DVHFSLP	6" (152 mm)	6" (152 mm)	3" (76 mm)	112⅜" (2853 mm)	97½" (2477 mm)	34⅛" (867 mm)	68⅛" (1730 mm)	17½" (445 mm)	38⅛" (968 mm)	11½" (292 mm)	21" (533 mm)
IS2S200DVH0SLP	6" (152 mm)	6" (152 mm)	3" (76 mm)	90½" (2297 mm)	75½" (1918 mm)	34⅛" (867 mm)	68⅛" (1730 mm)	17½" (445 mm)	38⅛" (968 mm)	11½" (292 mm)	21" (533 mm)

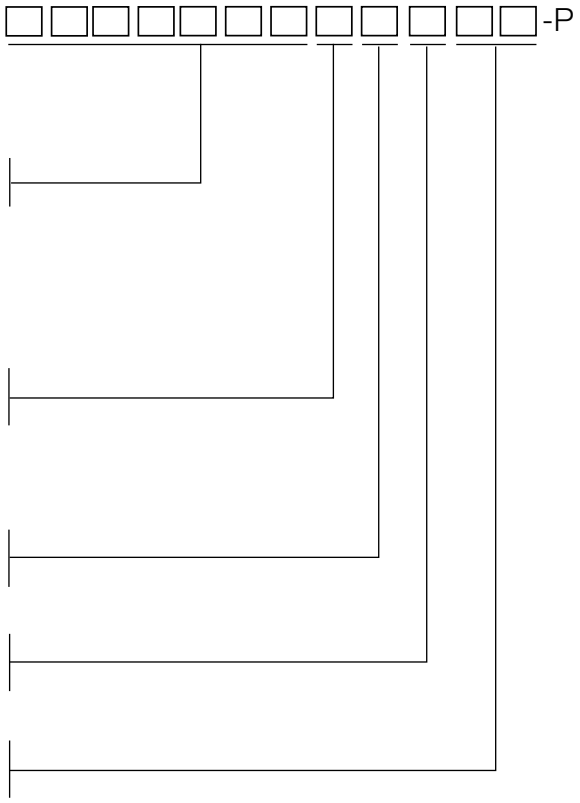




Triple Valves

Model	Inlet	Outlet	Return	A	B	C	D	E	F	G	H
IS2S200TVH00LP	6" (152 mm)	6" (152 mm)	3" (76 mm)	69⅛" (1756 mm)	54" (1372 mm)	48⅞" (1241 mm)	21" (533 mm)	17½" (6 mm)	38⅛" (968 mm)	11½" (292 mm)	68¾" (1746 mm)

Ordering Information



STANDARD CAPACITY

Valve	Inlet	Outlet	Ordering Code
IS2S075	¾"	1"	IS2S075
IS2S100	1"	1¼"	IS2S100
IS2S150	2"	2½"	IS2S150
IS2S200	2½"	3"	IS2S200

Return Pipe Size

¾"	Available for IS2S075	B
1"	Available for IS2S100, IS2S150, IS2S200	C
1½"	Available for IS2S150	E
2"	Available for IS2S200	F

Flow/BTU Package

None	0
Flow/BTU Package	F

Strainers+

None	0
On inlets	S

Pump

Less Pump	LP
Pump Assigned by Factory	--

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

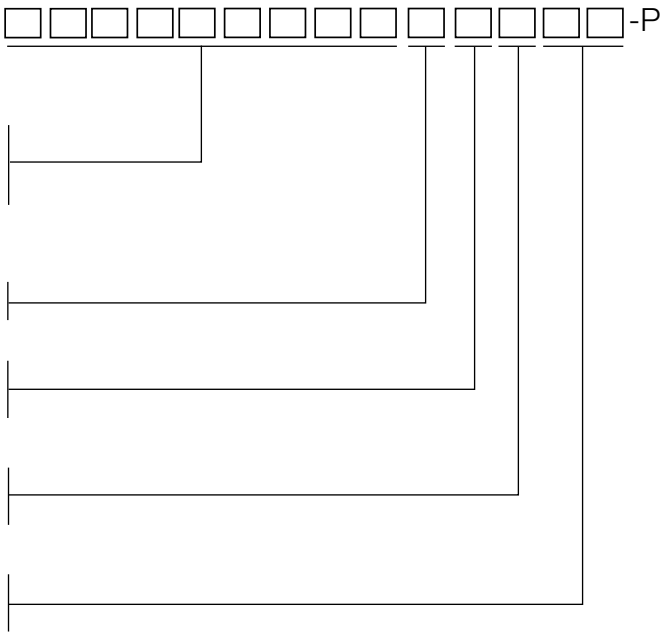
Pump Manufacturer: _____

Part/Model Number _____

System Head Loss _____

Required Flow to Maintain Recirculating Temperature _____

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



HIGH CAPACITY

Valve	Inlet	Outlet	Ordering Code
IS2S150DV	4"	4"	IS2S150DV
IS2S200DV	6"	6"	IS2S200DV
IS2S200TV	6"	6"	IS2S200TV

Return Pipe Size

3"	H

Flow/BTU Package

None	0
Flow/BTU Package	F

Strainers

None	0
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 ±2°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, showers, etc.

The Sanitizing function produces high temperature at all point-of-use fixtures (faucets, sinks, tubs, showers, etc.) 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.

Notes

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

[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.

POWERS™

A **WATTS** *Brand*

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