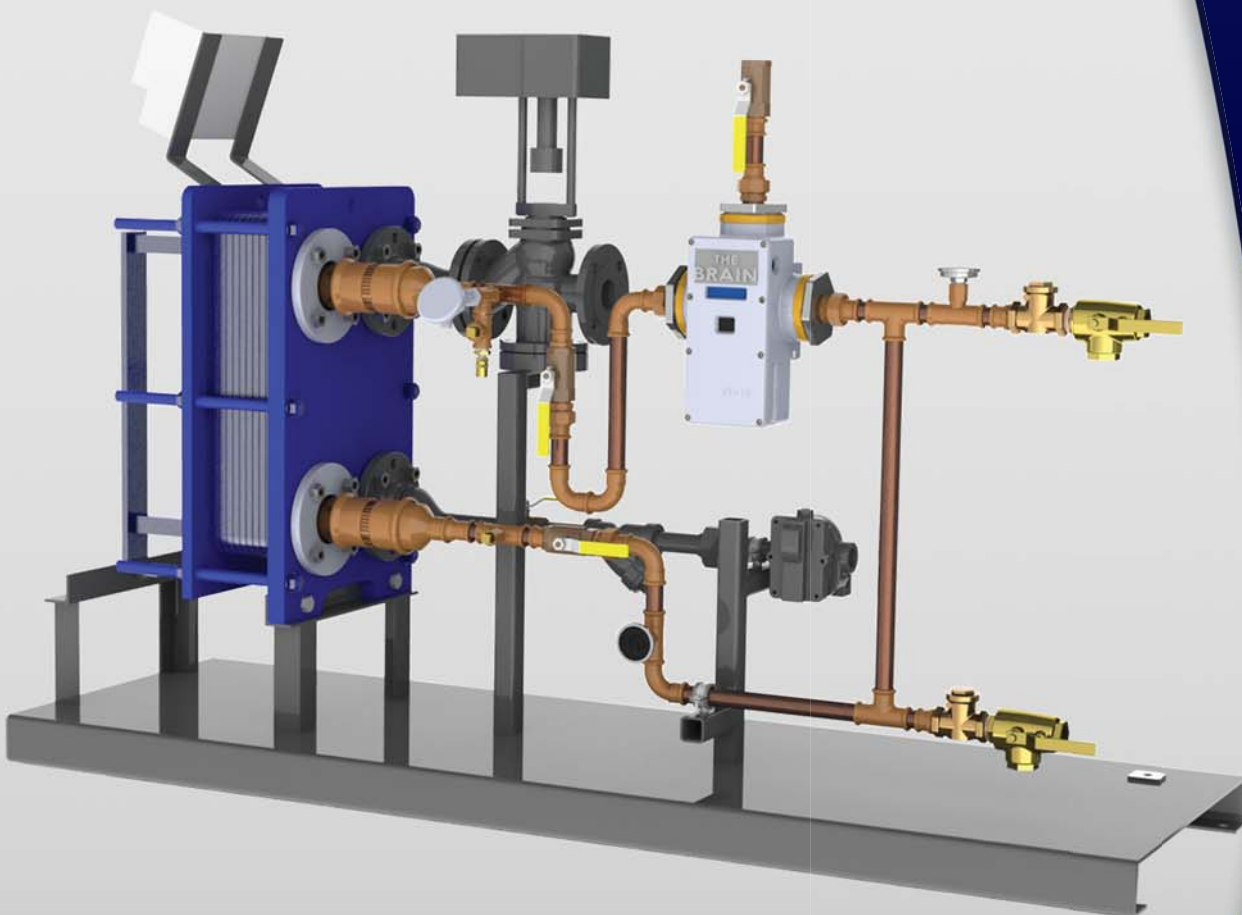


Digital-Flo™ Instantaneous Hot Water

- Shell & Tube
- Plate & Frame





Armstrong® Digital-Flo™ Instantaneous Hot Water

Armstrong blends revolutionary digital water temperature control technology with instantaneous heat exchanger design to deliver Digital-Flo™, an industry changing series of water heaters.

Digital-Flo Instantaneous Water Heaters refine hot water system temperature accuracy to a level previously deemed unattainable. By constantly monitoring the digital re-circulating valve (DRV 80) inlet hot, inlet cold and system return water temperatures, Digital-Flo previews the hot water system dynamics to increase the speed of response to changes in demand.

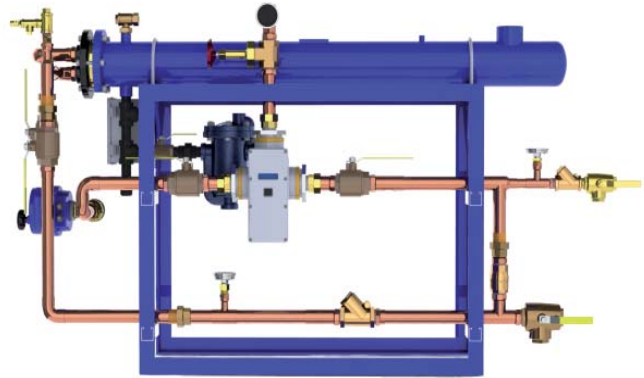
Capable of maintaining +/- 1°C temperature at system draw off between 0 and 37,5 m³/hr., Digital-Flo delivers a “plug and play” hot water generation packaged solution which places efficiency, energy savings and legionella risk reduction at the forefront of hot water system design, operation and maintenance.

Armstrong Digital Technology

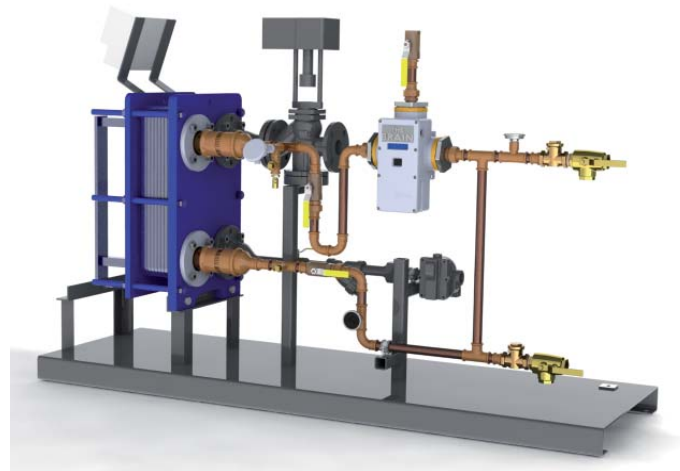
- Powered by low voltage electronics
- Faster response times eliminate the need for pneumatic controls
- Programmable high/low temperature alert function
- Programmable hot water system safety shutdown
- Component self-diagnostics
- Performance monitoring, data logging and reporting
- Integral building management system connectivity
- Simplified system commissioning

Armstrong Heat Exchange Technology

- Constant steam pressure prevents stall - no pump trap
- Low surface temperature option for hard water applications
- Instantaneous - No Storage
- Water raised above Legionella survival temperature



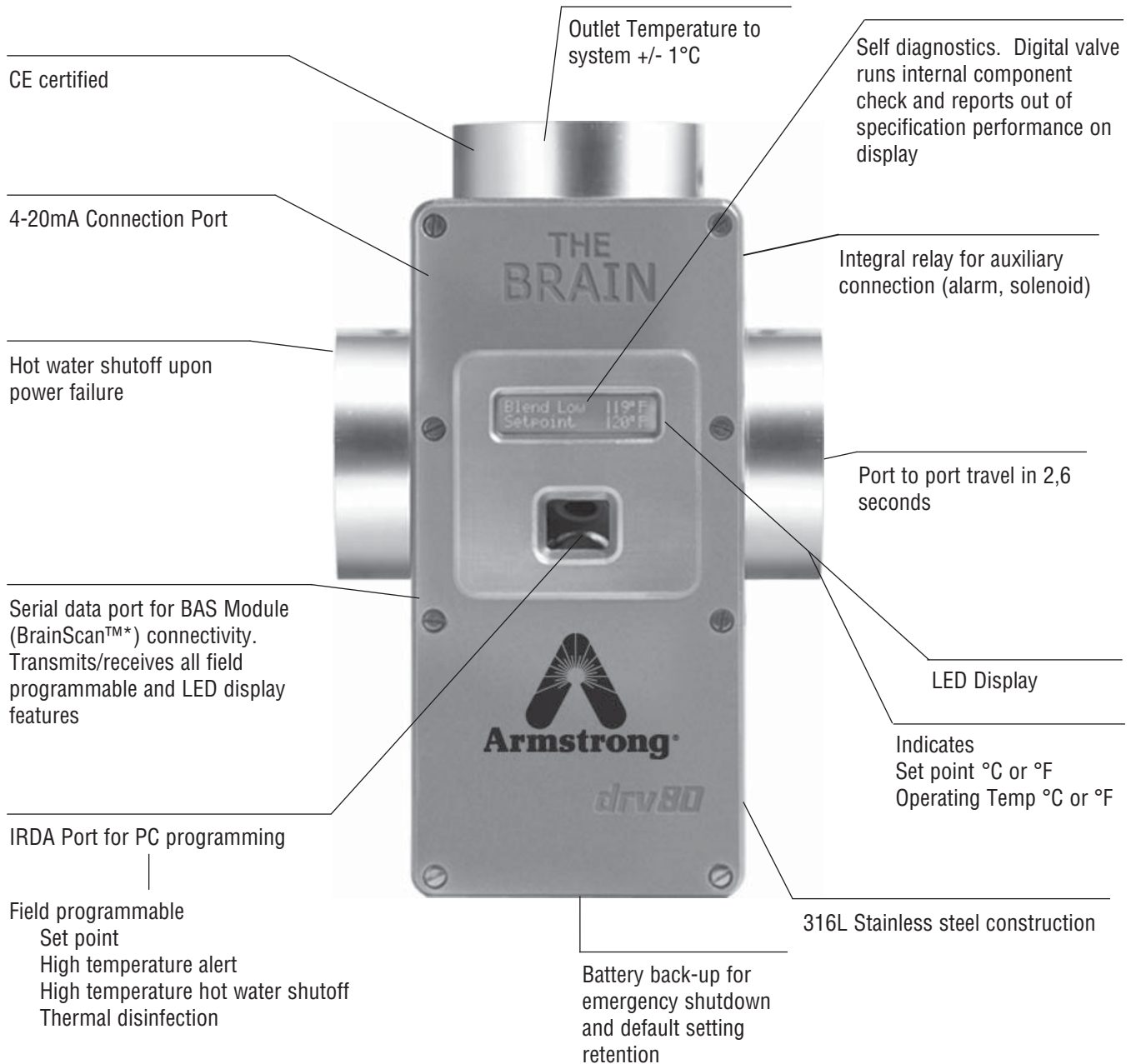
Digital Steam/Water - Shell & Tube



Digital Steam/Water - Plate & Frame
Digital Water/Water - Plate & Frame

*All dimensions and weights are approximate. Use certified print for exact dimensions.
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Digital Controller (DRV80)



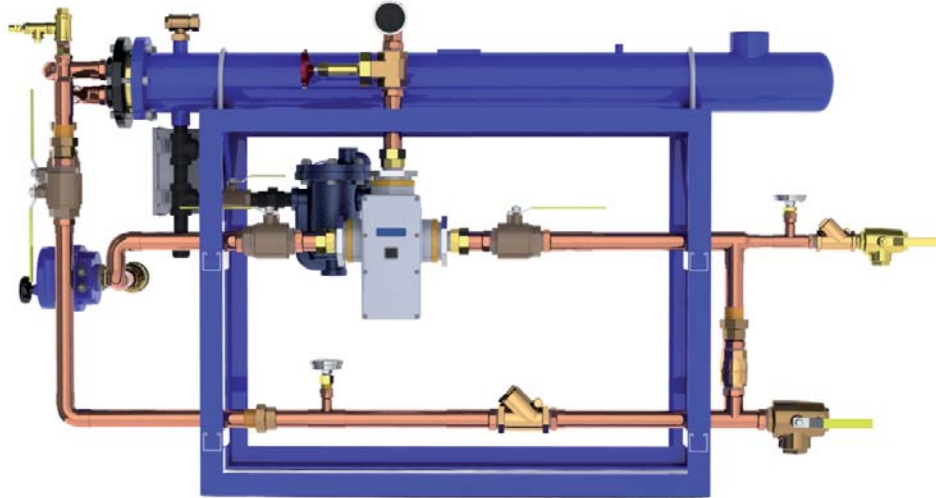
Single integral digital control valve (DRV80) REPLACES:

- Steam Control Valve
- PID Controller
- High Temperature Limit Thermostat
- High Temperature Limit Controller
 - Cold Water Injection Valve
 - Internal Circulating Pump
- Compressed Air Requirement

* BrainScan™ is a digital hot water management system console optionally supplied with DRV80 digital recirculating valves and DRV80 based hot water packages.



Digital-Flo™ Shell & Tube Heat Exchanger



Digital Shell & Tube							
Model	Secondary Side			Primary Steam Side			
	Connections		Flow Rate @ 2,3 m/s	Connections		Capacity @ 1 bar	Duty
	Hot/Cold (PN16)	Return (PN16)	Capacity @ 55°C Delta T	Steam Inlet (PN16)	Condensate (BSP)		
D535	DN40	DN25	9,4 m³/hr	DN65	1"	991 kg/hr	606 Kw
D535 P *	DN50	DN25	16,7 m³/hr	DN65	1"	1761 kg/hr	1077 Kw
D665	DN50	DN50	16,7 m³/hr	DN80	1-1/4"	1761 kg/hr	1077 Kw
D665 P *	DN80	DN50	37,5 m³/hr	DN80	1-1/4"	3965 kg/hr	2424 Kw
D8120	DN80	DN50	37,5 m³/hr	DN100	2"	3965 kg/hr	2424 Kw
D8120 P *	DN80	DN50	37,5 m³/hr	DN100	2"	3965 kg/hr	2424 Kw

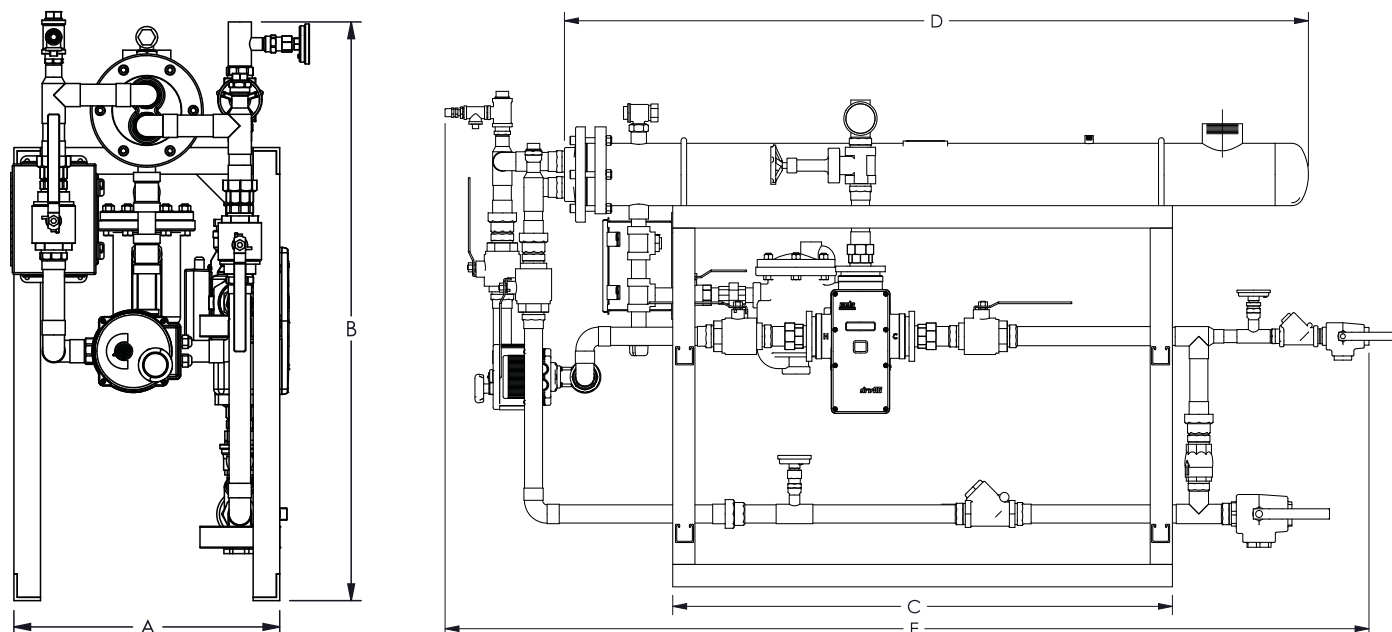
* Duty stand-by

Digital Shell & Tube Double Wall							
Model	Secondary Side			Primary Steam Side			
	Connections		Flow Rate	Connections		Capacity @ 1 bar	Duty
	Hot/Cold (PN16)	Return (PN16)	Capacity @ 55°C Delta T	Steam Inlet (PN16)	Condensate (BSP)		
D535 DW	DN40	DN25	9,4 m³/hr	DN65	1"	991 kg/hr	606 Kw
D535 DW-P*	DN50	DN25	16,7 m³/hr	DN65	1"	1761 kg/hr	1077 Kw
D665 DW	DN50	DN50	16,7 m³/hr	DN80	1-1/4"	1761 kg/hr	1077 Kw
D665 DW-P*	DN80	DN50	37,5 m³/hr	DN80	1-1/4"	3965 kg/hr	2424 Kw
D8120 DW	DN80	DN50	37,5 m³/hr	DN100	2"	3965 kg/hr	2424 Kw
D8120 DW-P*	DN80	DN50	37,5 m³/hr	DN100	2"	3965 kg/hr	2424 Kw

* Duty stand-by

Maximum Allowable Steam Pressure = 1 bar, Maximum Allowable Water Pressure = 6 bar, Maximum Allowable Setpoint = 70°C

Digital-Flo™ Shell & Tube Heat Exchanger



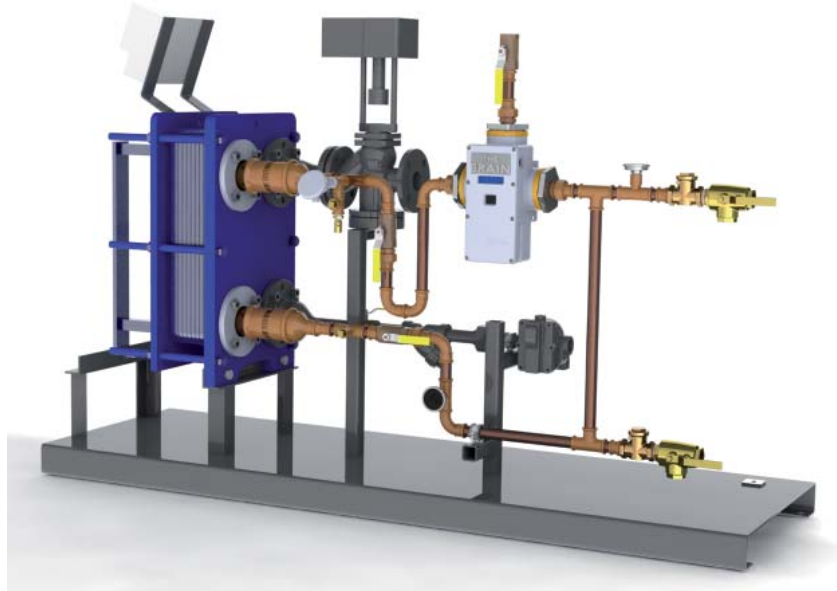
Dimensions and Weight

Model	Dimensions in mm					Weight in kg
	A	B	C	D	E	
D535	508	1103	1143	1702	2062	365
D535 DW	508	1103	1143	1947	2220	490
D535 P	508	1933	1143	1702	2149	560
D535 DW-P	508	1933	1143	1947	2154	597
D665	762	1154	1448	2032	2558	496
D665 DW	762	1154	1448	2252	2578	623
D665 P	762	1863	1448	2032	2547	832
D665 DW-P	762	1863	1448	2252	2545	858
D8120	762	1189	1448	2121	2865	684
D8120 DW	864	1189	1448	1976	2888	703
D8120 P	864	1189	1448	2121	2654	1366
D8120 DW-P	864	1929	1448	1976	2509	1383

Standard Components

- Thermometers
- DRV80 Digital Recirculating Valve
- Steam Trap
- Check Valve
- Inlet Strainer(s)
- Isolation Valves
- Air Vent
- Pipework: Copper or Stainless Steel

*All dimensions and weights are approximate. Use certified print for exact dimensions.
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Digital Plate & Frame Steam to Water

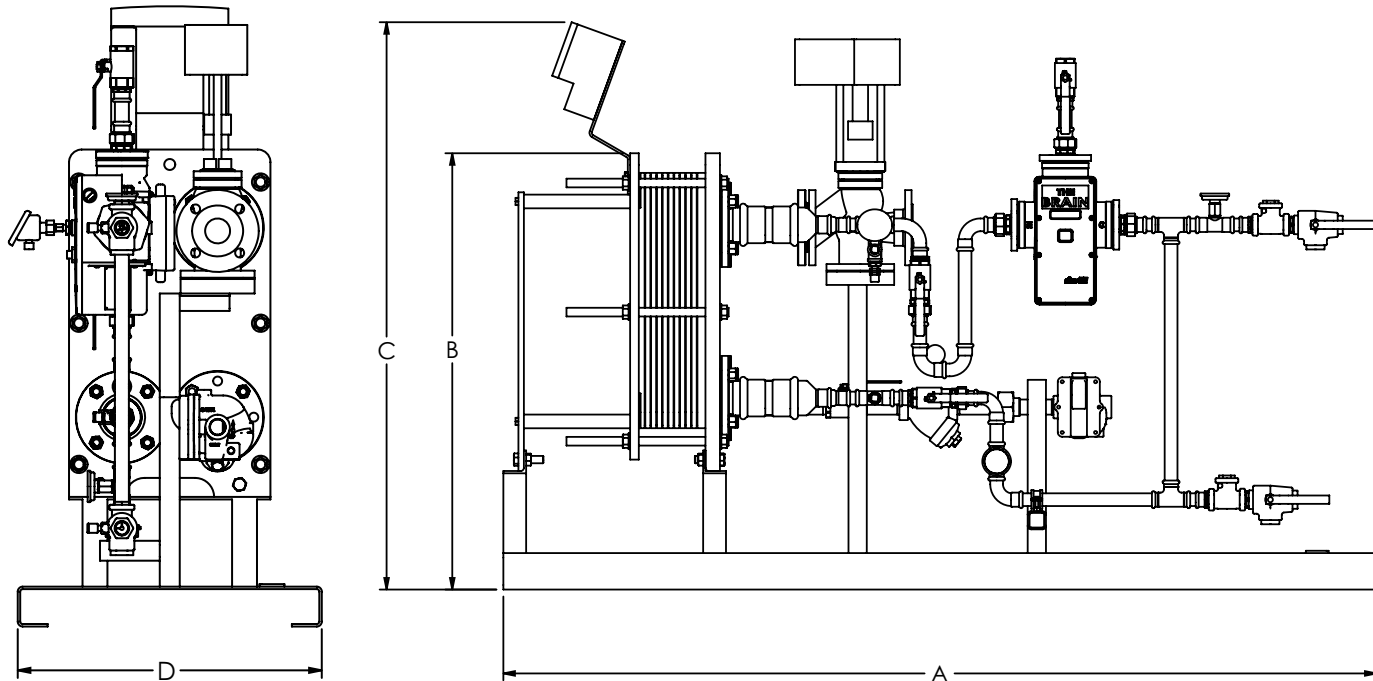
Model	Secondary Side			Primary Side			Duty
	Connections		Flow Rate @ 2,3 m/s (max.)	Connections		Steam Consumption @ 1 bar	
	Hot/Cold (PN16)	Recirc. (PN16)	Capacity @ 55°C Delta T	Steam Inlet (PN16)	Condensate (BSP)		
D1S	DN25	DN25	4,2 m³/hr	DN50	1"	441 kg/hr	270 Kw
D2S	DN40	DN25	9,4 m³/hr	DN80	1-1/2"	991 kg/hr	606 Kw
D3S	DN50	DN50	16,7 m³/hr	DN100	1-1/2"	1761 kg/hr	1077 Kw
D4S	DN80	DN50	37,5 m³/hr	DN150	2"	3965 kg/hr	2424 Kw

Digital Plate & Frame Steam to Water Double Wall

Model	Secondary Side			Primary Side			Duty
	Connections		Flow Rate	Connections		Steam Consumption @ 1 bar	
	Hot/Cold (PN16)	Recirc. (PN16)	Capacity @ 55°C Delta T	Steam Inlet (PN16)	Condensate (BSP)		
D1S DW	DN25	DN25	4,2 m³/hr	DN50	1"	441 kg/hr	270 Kw
D2S DW	DN40	DN25	9,4 m³/hr	DN80	1-1/2"	991 kg/hr	606 Kw
D3S DW	DN50	DN50	16,7 m³/hr	DN100	1-1/2"	1761 kg/hr	1077 Kw
D4S DW	DN80	DN50	37,5 m³/hr	DN150	2"	3965 kg/hr	2424 Kw

Maximum Allowable Steam Pressure = 1 bar, Maximum Allowable Water Pressure = 6 bar, Maximum Allowable Setpoint = 70°C

Digital-Flo™ Plate & Frame Steam/Water Heat Exchanger



Dimensions and Weight					
Model	Dimensions mm				Weight
	A	B	C	D	
D1S*	1915	957	1244	610	Consult Factory
D2S*	2315	1057	1344	610	Consult Factory
D3S*	2625	1474	1769	610	Consult Factory
D4S*	3665	1854	2155	610	Consult Factory

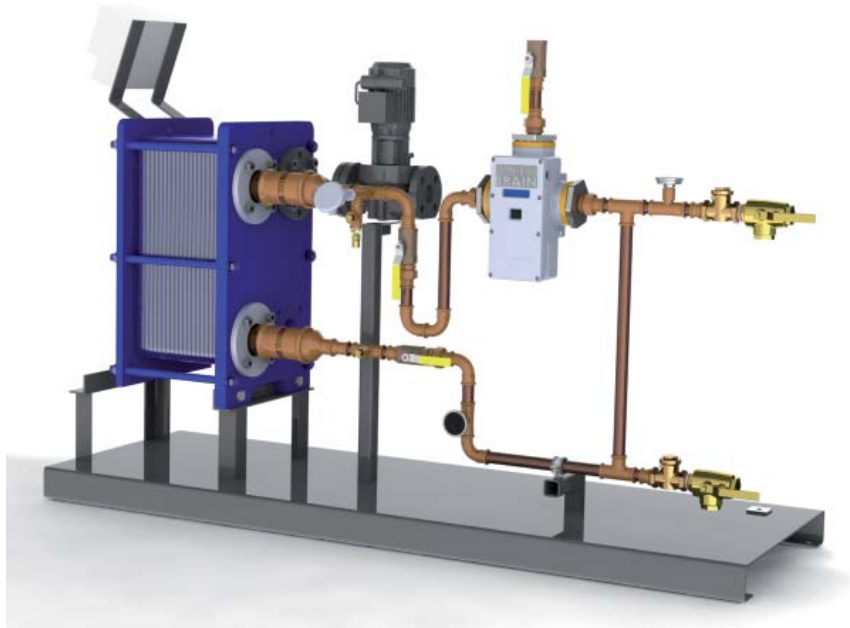
*Consult factory for Double Wall (DW) dimensional changes.

Standard Components

- Thermometers
- DRV80 Digital Recirculating Valve
- Steam Trap
- Automatic Steam Safety Shut Off Valve
- Check Valves
- Inlet Strainer(s)
- Isolation Valves
- Pipework: Copper or Stainless Steel

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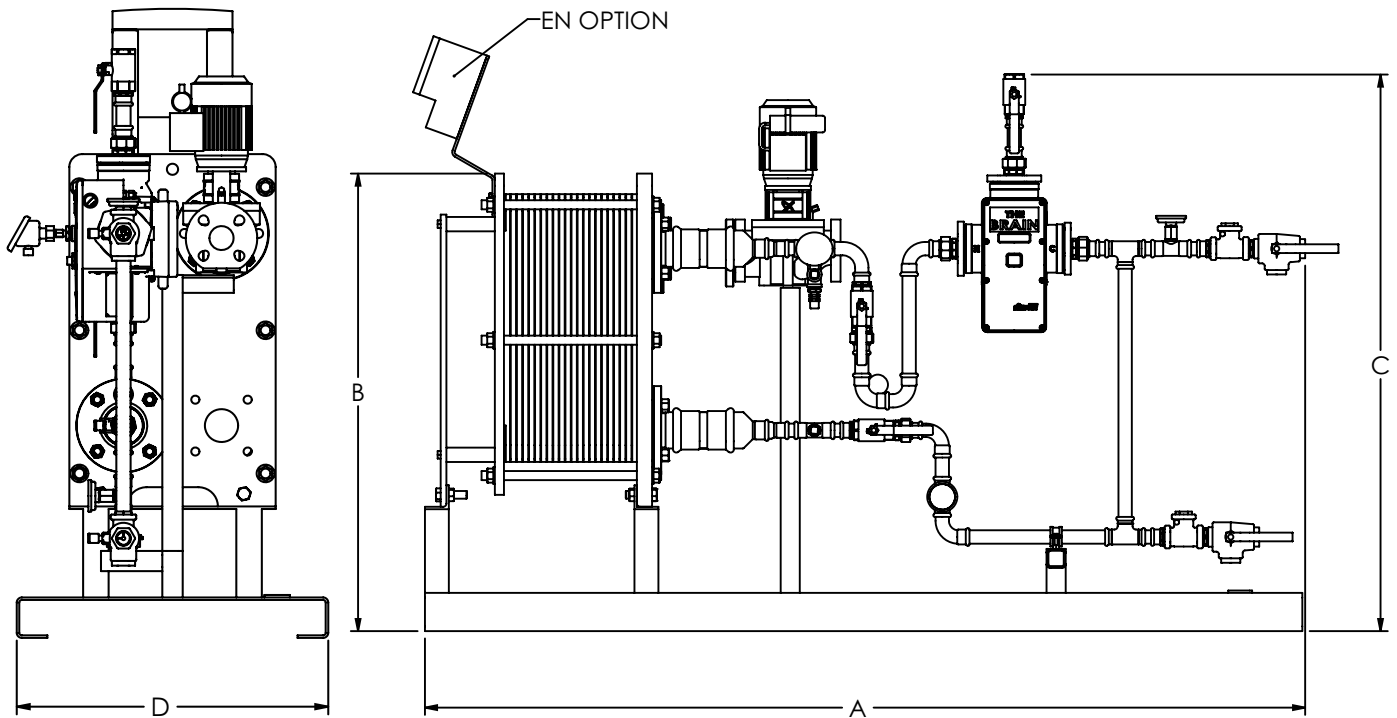


Digital Plate & Frame Water to Water							
Model	Secondary Side			Primary Side			
	Connections @ 2.3 m/s		Hot Water Flow Rate	Connections		Flowrate @ 28°C Delta T	Duty
	Hot/Cold (PN16)	Recirc. (PN16)	Capacity @ 55°C Delta T	Boiler Inlet (PN16)	Boiler Outlet (PN16)		
D1W	DN25	DN25	4,2 m³/hr	DN32	DN65	8,4 m³/hr	270 Kw
D2W	DN40	DN25	9,4 m³/hr	DN50	DN65	18,7 m³/hr	606 Kw
D3W	DN50	DN50	16,7 m³/hr	DN65	DN65	33,3 m³/hr	1077 Kw
D4W	DN80	DN50	37,5 m³/hr	DN100	DN100	75,0 m³/hr	2424 Kw

Digital Plate & Frame Water to Water Double Wall							
Model	Secondary Side			Primary Side			
	Connections @ 2,3 m/s		Flow Rate	Connections		Flowrate @ 28°C Delta T	Duty
	Hot/Cold (PN16)	Recirc. (PN16)	Capacity @ 55°C Delta T	Boiler Inlet (PN16)	Boiler Outlet (PN16)		
D1W DW	DN25	DN25	4,2 m³/hr	DN32	DN65	8,4 m³/hr	270 Kw
D2W DW	DN40	DN25	9,4 m³/hr	DN50	DN65	18,7 m³/hr	606 Kw
D3W DW	DN50	DN50	16,7 m³/hr	DN65	DN65	33,3 m³/hr	1077 Kw
D4W DW	DN80	DN50	37,5 m³/hr	DN100	DN100	75,0 m³/hr	2424 Kw

Maximum Allowable Boiler Water Temperature = 121°C, Maximum Allowable Water Pressure = 6 bar, Maximum Allowable Setpoint = 70°C

Digital-Flo™ Plate & Frame Water/Water Heat Exchanger



Dimensions and Weight					
Model	Dimensions in mm				Weight
	A	B	C	D	
D1W*	1835	957	1164	610	Consult Factory
D2W*	2315	1057	1276	610	Consult Factory
D3W*	2685	1157	1429	610	Consult Factory
D4W*	4275	1854	1950	610	Consult Factory

*Consult factory for Double Wall (DW) dimensional changes.

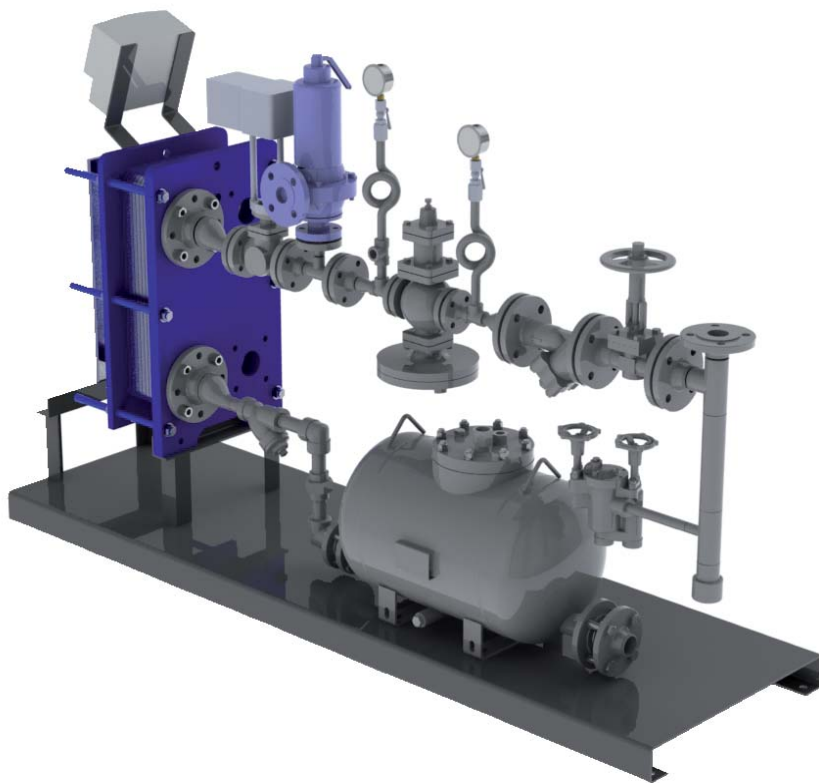
Standard Components

- Thermometers
- DRV80 Digital Recirculating Valve
- Primary Side Pump
- Check Valves
- Inlet Strainer(s)
- Isolation Valves
- Pipework: Copper or Stainless Steel

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Packaged Solutions With Performance Matched Options

- Pre-piped Pressure Reducing Station
- BrainScan™ * - Web-Enabled and BAS Compatible - Hot Water System Monitoring
- Low Surface Temperature - recommended for hardwater over 100 ppm of CaCO₃ (5.6 german degrees - 10 french degrees)
- Copper/Brass (Standard) or 316 Stainless Steel Pipe, Valve and Fittings
- Mechanical or Electric Condensate Pumps



Heat Exchanger Options

Plate Heat Exchangers:

- Gasketed (standard) or Brazed
- Titanium Plates
- Double Wall Module

Shell & Tube:

- Copper/Brass or 316L Stainless Steel tubes
- Carbon steel or 316L Stainless Steel Shell

Corrugated tube

Shell & Plate

Using quality Armstrong components, Armstrong Digital-Flo™ Heat exchangers can be packaged to meet your specific requirements. Armstrong can configure a solution for virtually any application. Best of all, Armstrong Digital-Flo™ Water Heating Packaged Solutions are supplied fully assembled, pressure tested and performance guaranteed.

Hot water system assessments, full turn-key installation, system optimization and financing options are also available.

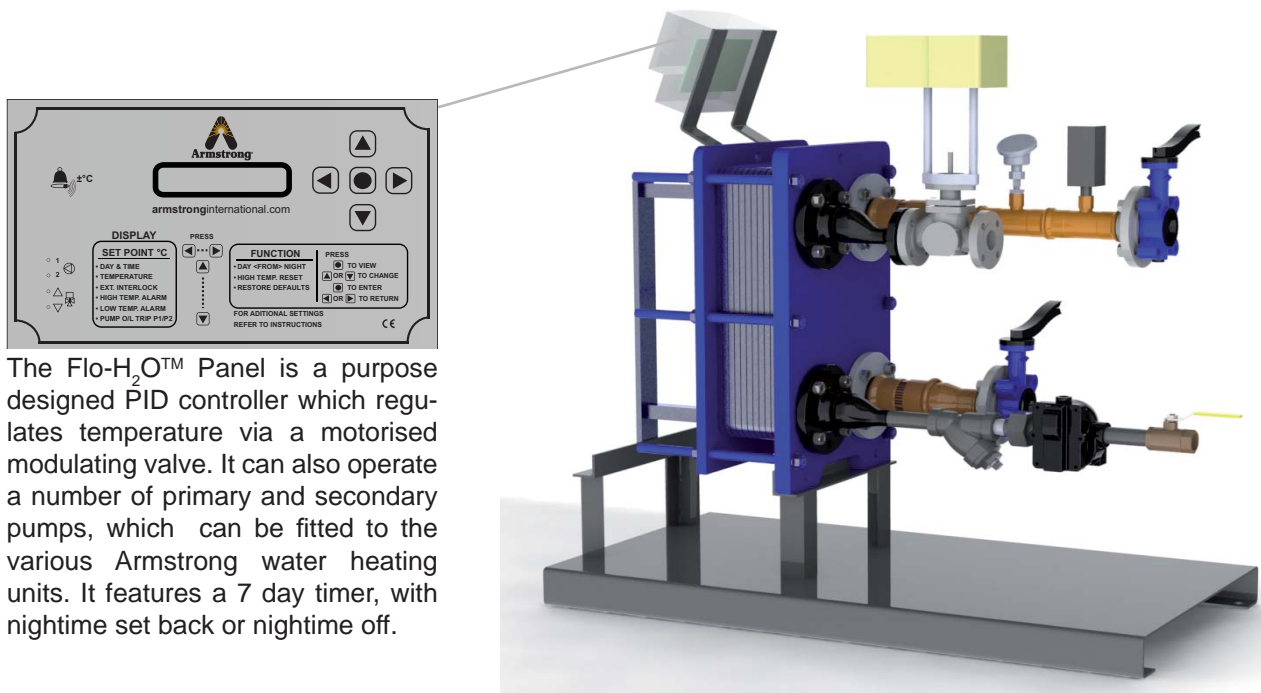
Contact your Armstrong representative for more information.

* BrainScan™ is a digital hot water management system console optionally supplied with DRV80 digital recirculating valves and DRV80 based hot water packages.

Flo-H₂O™ - Building Heating Solutions

Flo-H ₂ O™ - Building Heating Solutions							
Model	Duty kW	Max. Flow @ 11 °C Delta T (l/s)	m ³ /hr @ 2,3 m/s (max.)	Secondary Pipe Size	Condensate Connection	Steam Consumption (kg/hr)	Control Valve Size
FHH1	230	5	18,0	DN50	1"	386	DN32
FHH2	414	9	32,4	DN65	1-1/4"	694	DN40
FHH3	552	12	43,2	DN80	1-1/2"	926	DN50
FHH4	875	19	68,4	DN100	1-1/2"	1467	DN65
FHH5	1427	31	111,6	DN125	2"	2393	DN80
FHH6	2072	45	162,0	DN150	2"	3474	DN100

Maximum Allowable Steam Pressure = 4 barg, Maximum Allowable Water Pressure = 6 barg, Maximum Allowable Setpoint = 99°C



The Flo-H₂O™ Panel is a purpose designed PID controller which regulates temperature via a motorised modulating valve. It can also operate a number of primary and secondary pumps, which can be fitted to the various Armstrong water heating units. It features a 7 day timer, with nighttime set back or nighttime off.

Flo-H₂O™ is also your total customised solution for any water heating application.

Contact your Armstrong representative for more information.

**All dimensions and weights are approximate. Use certified print for exact dimensions.
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Armstrong provides intelligent system solutions that improve utility performance, lower energy consumption, and reduce environmental emissions while providing an “enjoyable experience.”



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