



DIGITAL-FLO[®] SEMI-INSTANTANEOUS

VERTICAL HOT WATER





Armstrong® Digital-Flo® Semi-Instantaneous Hot Water

Armstrong blends revolutionary digital water temperature control technology with a semi-instantaneous heat exchanger to deliver Armstrong's first Vertical Series of Steam Water Heaters.

Digital-Flo® Semi-Instantaneous (DFS) uses digital technology featuring The Brain® Digital Recirculating Valve (DRV) to offer a level of hot water system temperature control accuracy previously considered unattainable.

DFS is SAGE™ ready and compatible with Building Automation Systems.

Armstrong Digital Technology

- Powered by low voltage electronics
- Quick response times eliminate the need for pneumatic control valves
- Programmable high/low temperature alert function
- Programmable hot water system safety shutdown
- Self diagnostic display messaging
- SAGE™ hot water system monitoring and reporting tool
- Simplified system commissioning

Armstrong Heat Exchange Technology

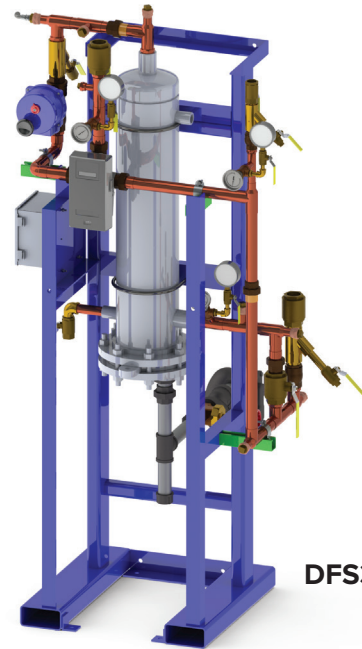
- Constant steam pressure provides positive condensate drainage
- Low surface temperature option for hard water applications
- Water raised above Legionella survival temperature
- Vertical configuration means smaller footprint
- No overhead clearance needed for tube bundle removal

Connectivity

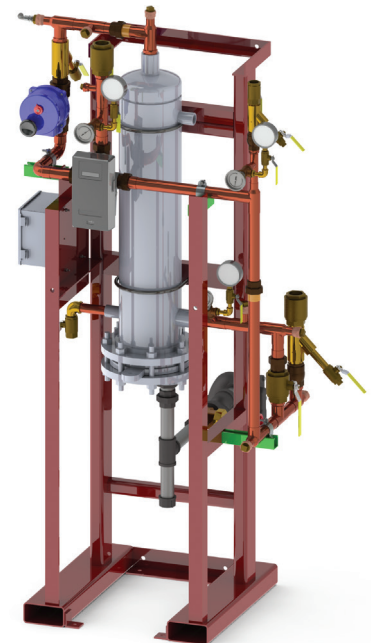
SAGE™ - Hot Water System Monitoring and Reporting Tool.

For Building Automation Systems – Interface module available with Building Automation System (BAS) specific ProtoCessor cards for systems which operate on the Modbus, BACnet™, or LonWorks™ protocols.

For the Web – Dashboard operable, smart hot water system monitoring and reporting software that works seamlessly as it analyzes data to track behavior and performance ensuring full compliance with ASHRAE, VA and World Health Organization hot water system safety guidelines.



DFS3540



DFS35DW40

Single Wall and Double Wall
Tube Bundle Available.



Recirculating Valve (DRV40 & DRV80)



Armstrong® Digital-Flo® Semi-Instantaneous Hot Water

Specifications

Digital-Flo® Semi-Instantaneous Shell & Tube w/ Single-Wall, Tube Bundle						
Model	Water Side Connections @ 7.5ft/sec [2.3m/s]				Steam Side Connections	
	Hot/Cold	Recirc.	HX Capacity @ 100°F [55°C] Delta T*	Max Package Capacity at 120°F [49°C] Blend Outlet*	Steam/ Condensate Inlet/Outlet	Capacity @ 15psi [1bar]
DFS1540	1" [25mm]	1" [25mm]	14gpm [53lpm]	18gpm [68.1lpm]	2" [50mm]	737lb/hr [334kg/hr]
DFS3540	1.5" [40mm]	1" [25mm]	27gpm [102lpm]	35gpm [132.5lpm]	3" [80mm]	1421lb/hr [645kg/hr]
DFS5050	2" [50mm]	1.5" [40mm]	46gpm [174lpm]	60gpm [227.1lpm]	3" [80mm]	2421lb/hr [1098kg/hr]
DFS9080	3" [80mm]	2" [50mm]	84gpm [318lpm]	106gpm [401.3lpm]	4" [101.6mm]	4422lb/hr [1714kg/hr]

*Assumes 40 to 140°F [4.4 to 60°C]; Using Blend Formula w/ a mixing valve setpoint of 120°F [49°C] to determine Max. Package Capacity

Digital-Flo® Semi-Instantaneous Shell & Tube w/ Double-Wall, Tube Bundle						
Model	Water Side Connections @ 7.5ft/sec [2.3m/s]				Steam Side Connections	
	Hot/Cold	Recirc.	HX Capacity @ 100°F [55°C] Delta T*	Max Package Capacity at 120°F [49°C] Blend Outlet*	Steam/ Condensate Inlet/Outlet	Capacity @ 15psi [1bar]
DFS15DW40	1.5" [40mm]	1" [25mm]	14gpm [53lpm]	18gpm [68.1lpm]	2" [50mm]	737lb/hr [334kg/hr]
DFS35DW40	1.5" [40mm]	1" [25mm]	27gpm [102lpm]	35gpm [132.5lpm]	3" [80mm]	1421lb/hr [645kg/hr]
DFS50DW50	2" [50mm]	1.5" [40mm]	46gpm [174lpm]	60gpm [227.1lpm]	3" [80mm]	2421lb/hr [1098kg/hr]
DFS90DW80	3" [80mm]	2" [50mm]	84gpm [318lpm]	106gpm [401.3lpm]	4" [101.6mm]	4422lb/hr [1714kg/hr]

*Assumes 40 to 140°F [4.4 to 60°C]; Using Blend Formula w/ a mixing valve setpoint of 120°F [49°C] to determine Max. Package Capacity

Operational Limitations (all models):

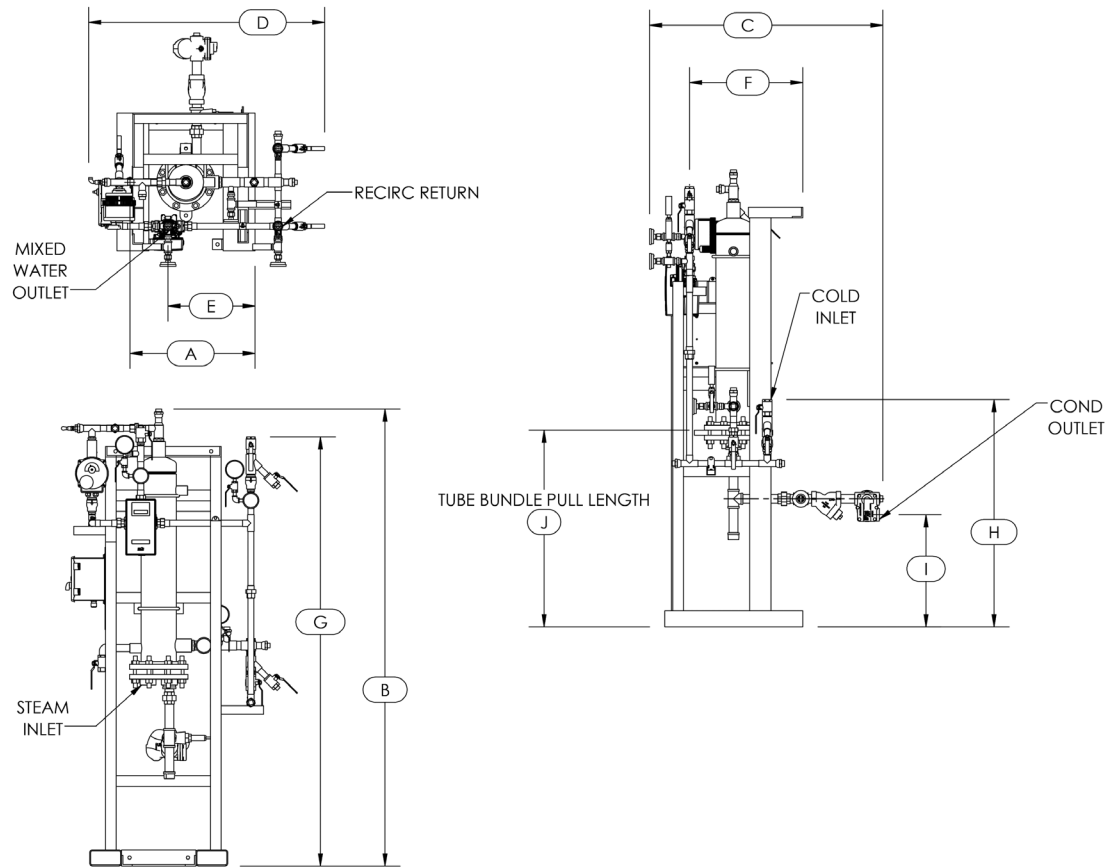
Steam pressure, maximum allowable = 150 PSIG (10 barg) and maximum operating = 15 PSIG (1 barg)

Water pressure, maximum allowable = 150 PSIG (10 barg)

Setpoint temperature, maximum allowable = 158°F (70°C)

Factory connections are US nominal pipe sizes (NPS) w/ ANS taper pipe threads (NPT) or ASME/ANSI B16.5, Class 150, bolted flange connections, as noted. The nearest equivalent pipe sizes in SI (the metric system), known as "diametre nominel", are listed in parentheses. Consult factory for pressure drop information.

Dimensions



Dimensions and Weight					
Model	Dimensions In (mm)				
	A	B	C	D	E
DFS1540	23.5" (598mm)	86.0" (2185mm)	43.9" (1116mm)	44.4 (1129mm)	16.4" (416mm)
DFS3540	25.0" (636mm)	86.9" (2207mm)	48.5" (1231mm)	48.8" (1240mm)	17.1" (434mm)
DFS5050	26.1" (663mm)	88.4" (2245mm)	56.7" (1440mm)	54.6" (1387mm)	18.8" (477mm)
DFS9080	29.6" (752mm)	91.5" (2324mm)	57.6" (1463mm)	65.4" (1662mm)	4.4" (113mm)
	F	G	H	I	J
DFS1540	21.3" (542mm)	80.8" (2052mm)	42.8" (1087mm)	SW=21.1" (536mm) DW=20.3" (515mm)	35" (899mm)
DFS3540	22.8" (578mm)	81.4" (2067mm)	45.3" (1150mm)	SW=19.2" (488mm) DW=18.4" (467mm)	35" (899mm)
DFS5050	25.5" (646mm)	82.6" (2098mm)	46.8" (1189mm)	SW=17.3" (439mm) DW=16.3" (413mm)	35" (899mm)
DFS9080	28.0" (712mm)	81.7" (2076mm)	49.6" (1259mm)	SW=15.4" (390mm) DW=14.4" (365mm)	35" (899mm)
All dimensions apply to both single wall and double wall units. Refer to drawings on previous page for locations.					



Armstrong® Digital-Flo® Semi-Instantaneous Hot Water

Specifications Matrix

Digital-Flo® Semi-Instantaneous Vertical				
		Optional	Standard	Optional
Model	Heat Exchanger	Double-Wall Tube Bundle	DRV	SAGE™
DFS	15	DW	40	BS
DFS	35	DW	40	BS
DFS	65	DW	50	BS
DFS	90	DW	80	BS
Example of heater package Single-Wall Tube Bundle, with SAGE™: DFS1540BS				
Example of heater package Double-Wall Tube Bundle, without SAGE™: DFS15DW40				

For Building System (BS) Integration



INTELLIGENT SOLUTIONS IN STEAM, AIR AND HOT WATER

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