

## ADVECO FUSION

Packaged Hybrid Hot Water Systems



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1971 - 2021



# ADVECO FUSION FPH-S

The Advenco FUSION range is a low carbon, all-electric packaged hybrid hot water system available in a range of presized variants with 6 or 10 kW preheat and 9 or 12 kW electric top-up. FUSION brings together an air source heat pump with a stainless steel calorifier and a dedicated control and metering system to address a host of domestic hot water (DHW) applications for commercial projects



We can help you achieve  
**NET ZERO**  
by **2050**

WORKING TOWARDS A  
**ZERO CARBON  
FUTURE**

**50**  
YEAR HISTORY

CONTINUED  
GROWTH  
IN TURNOVER  
for 10 YEARS

**IN HOUSE  
TRAINING  
FACILITIES**

FUSION harnesses Adveco's FPI32 Air Source Heat Pumps with a compact, high-pressure ATSH calorifier with electric immersion. With dedicated controls and metering FUSION provides a complete, low-carbon hot water system for a wide range of commercial end uses.

FUSION provides excellent levels of performance, including throughout the UK's cold winter months. With sleek looks and quiet operation, the compact monobloc ASHP design is specified to provide consistent working preheat at 50°C into the FUSION system, offsetting direct electric demand for a 53% saving in carbon emissions compared to an equivalent direct electric-only system.

FUSION is a perfect response for building projects with small to medium basin and sink led hot water demands.

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AIR SOURCE HEAT PUMP

FUSION

## FEATURES

- Available with 200 - 500 litre capacities
- 6-10kW ASHP preheat
- 9-12kW direct electric immersion heating
- High-quality stainless steel vessel
- Calorifier pressure 10 bar as standard
- Dedicated control system for simple operation and maintenance checks
- 16 pre-sized variants to meet a wide range of applications
- Lower global warming potential with R32 ASHP
- Compact space-saving form factor



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# FPi32 Air Source Heat Pump

Adveco FUSION is built around the stylish FPi32 6 or 12 kW inverter-driven R-32 air source heat (ASHP). Conceived to consistently supply low carbon hot water for commercial applications with higher thermal requirements, the compact monobloc FPi32 is the environmentally-friendly choice.

Transferring heat from the air to a building, the FPi32 can provide hot water up to 55°C throughout the year, even when ambient air temperatures drop as low as -25°C. As part of the FUSION hybrid water heater, hot water is preheated to a consistent 50°C, increasing system efficiency without compromising reliability or performance.

This reduces energy demands, operating costs and provides 53% carbon emission savings when compared to an equivalent direct electric-only system.



## Features

- Specified as an integral element of the Fusion system, FPi32 ASHPs rapidly achieve and then sustain the desired temperature to preheat water for commercial applications
- Able to achieve above-average COP, the highly efficient FPi32 heat pumps are one of the lowest cost ways to effectively provide hot water to a building
- Only a very small amount of electricity is required to operate the compressor
- Reduced environmental impact with improved efficiency from R-32 refrigerant
- Quick to install with minimal space requirements and virtually maintenance-free

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ADVECO  
Powered by @INOGAS

# AIR SOURCE HEAT PUMP

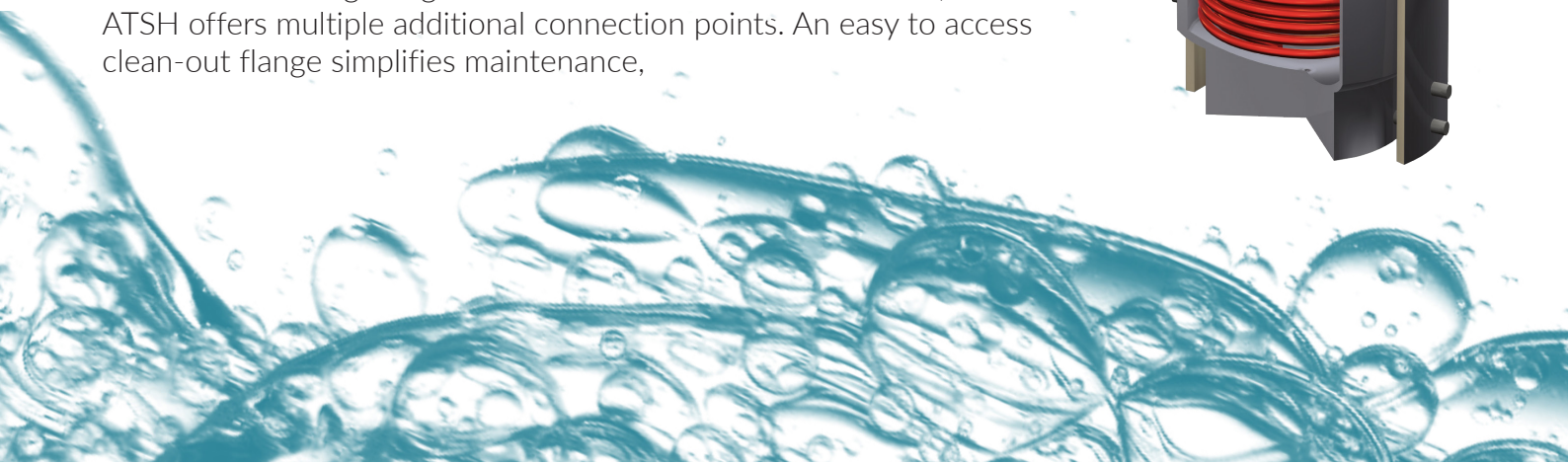
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# ATSH Stainless Steel Calorifier

The FPH-S stainless steel range makes excellent use of the ATSH water heating vessel as a system calorifier. This compact and robust vessel is the perfect choice for projects with hot water demands based around sinks and basins. Multiple storey buildings are no issue for the tank's high-pressure (10 bar) specification.

The FUSION range offers a choice of 200, 300, 400 or 500-litre capacity ATSHs. These vessels feature a single internal high-capacity fixed heating coil at a low level for use with the high powered ASHP as an indirect heat source.

In addition to integrating a choice of direct-electric immersion, the ATSH offers multiple additional connection points. An easy to access clean-out flange simplifies maintenance,



## Features

- Available with 200 - 500 litre capacities
- Produced from high-quality 316Ti and 316L stainless steel
- 100 mm removable insulation for improved energy efficiency
- Suitable for vented or unvented installation
- 10 bar / 95°C max. working pressure/temp (tank)
- 25 bar / 200°C max. working pressure/temp (coil)

## The Resilient Choice

FUSION FPH-S fuses the FPI32 ASHP with an ATSH stainless steel vessel and either 9kW or 12kW electric immersions with a uniquely low 6W/cm<sup>2</sup> heat intensity.

Without detrimental effect to the demands for hot water, this considerably lower heat intensity (compared to 18w/cm<sup>2</sup> typically seen in domestic immersion heaters) slows the potential for scale build-up hard water areas. FPH-S is also less susceptible to corrosion experienced in naturally soft water conditions. The high-quality 316Ti and 316L stainless steel alloy create a protective oxide barrier on the waterside that naturally helps prevent corrosion, even when temperatures increase.

Able to withstand higher temperature water (in excess of 80°C), the FPH-S lends itself to a wide mix of commercial applications making it the ideal choice for projects in the UK, no matter the water quality.

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AIR SOURCE HEAT PUMP

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# FUSION Control

The design of efficient hybrid systems depends on harmoniously balancing the different elements to ensure that they do not work against each other. If the coil and immersion are situated closely together they become impossible to accurately control and system efficiency would be lost. FUSION, through a mix of innovative design and dedicated controls ensures the ASHP preheat and immersion work seamlessly to deliver the highest operational efficiencies.

FUSION controls incorporate a set of submetering options to monitor the heat pump, immersion and water flow. This provides clear sight of energy and water usage to better manage day-to-day operations. Timer controls and remote control via BMS ensure FUSION is only operating when required, maximising energy demands.

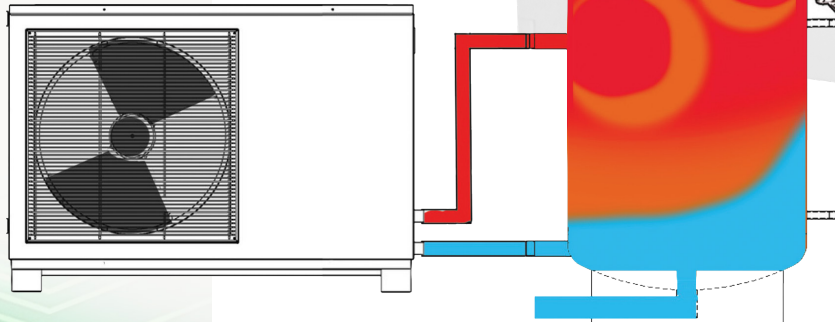




## Features

- On/Off functionality via time clock or BMS
- Fault output
- Thermal disinfection for Legionella prevention
- Day & weekly timer
- Submetering
- Rugged IP55 case

FUSION controls and submetering smartly balance pre-heat provided by the FPI32 ASHP with the direct electric top-up from the immersion to optimise efficiencies, reducing energy demands and delivering considerable carbon emission savings.



**ADVECO**  
EXPERTLY ENGINEERED FOR YOU

**CONTROL PANEL**  
START/STOP  
CALORIFIER

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# FUSION FPH-S Variants

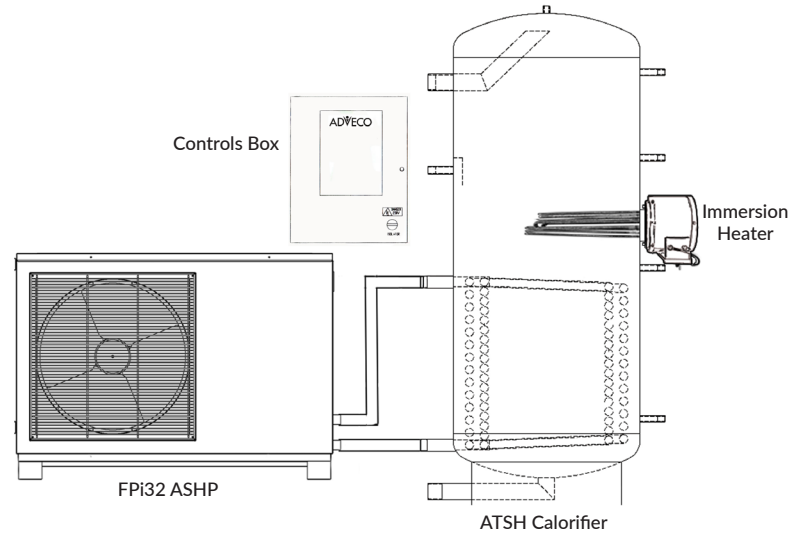
FUSION Variant	ASHP	Calorifier	Tank Volume (l)	Preheat (kW)	Direct Electric (kW)	Continuous Recovery (l/h)	Draw off Capacity (l 30 mins.)	Draw off Capacity (l 60 mins.)	Draw off Capacity (l 120 mins.)
FPH-S1	FPI32-6	ATSH200	212	6	9	257.14	234.57	363.14	620.29
FPH-S2	FPI32-12	ATSH200	212	10	9	325.71	268.86	431.71	757.43
FPH-S3	FPI32-6	ATSH200	212	6	12	308.57	260.29	414.57	723.14
FPH-S4	FPI32-12	ATSH200	212	10	12	377.14	294.57	483.14	860.29
FPH-S5	FPI32-6	ATSH300	289	6	9	257.14	273.07	401.64	658.79
FPH-S6	FPI32-12	ATSH300	289	10	9	325.71	307.36	470.21	795.93
FPH-S7	FPI32-6	ATSH300	289	6	12	308.57	298.79	453.07	761.64
FPH-S8	FPI32-12	ATSH300	289	10	12	377.14	333.07	521.64	898.79
FPH-S9	FPI32-6	ATSH400	411	6	9	257.14	334.07	462.64	719.79
FPH-S10	FPI32-12	ATSH400	411	10	9	325.71	368.36	531.21	856.93
FPH-S11	FPI32-6	ATSH400	411	6	12	308.57	359.79	514.07	822.64
FPH-S12	FPI32-12	ATSH400	411	10	12	377.14	394.07	582.64	959.79
FPH-S13	FPI32-6	ATSH500	490	6	9	257.14	373.57	502.14	759.29
FPH-S14	FPI32-12	ATSH500	490	10	9	325.71	407.86	570.71	896.43
FPH-S15	FPI32-6	ATSH500	490	6	12	308.57	399.29	553.57	862.14
FPH-S16	FPI32-12	ATSH500	490	10	12	377.14	433.57	622.14	999.29



# FUSION FPH-S Variants

FUSION Variant	Carbon Emissions Savings % (Gas)*	Carbon Emissions Savings % (Direct Electric)*
FPH-S1	51%	53%
FPH-S2	51%	53%
FPH-S3	51%	53%
FPH-S4	51%	53%
FPH-S5	51%	53%
FPH-S6	51%	53%
FPH-S7	51%	53%
FPH-S8	51%	53%
FPH-S9	51%	53%
FPH-S10	51%	53%
FPH-S11	51%	53%
FPH-S12	51%	53%
FPH-S13	51%	53%
FPH-S14	51%	53%
FPH-S15	51%	53%
FPH-S16	51%	53%

\*Carbon emission savings calculated versus equivalent-sized and specified systems using only gas or direct electric energy without ASHP preheat



## Controls Box Specification

## Units

Dimensions HxWxD

mm

500x400x210

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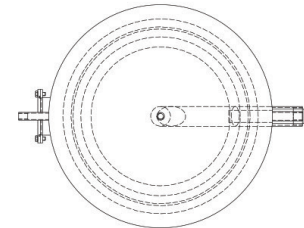
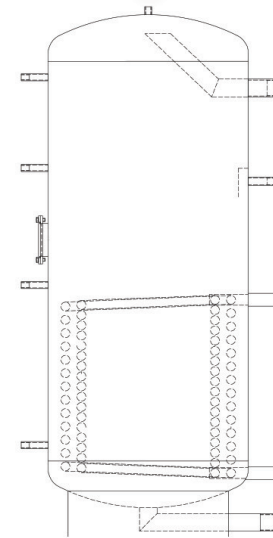
# FUSION FPH-S Specifications - ATSH Calorifier

## ATSH Range Specifications

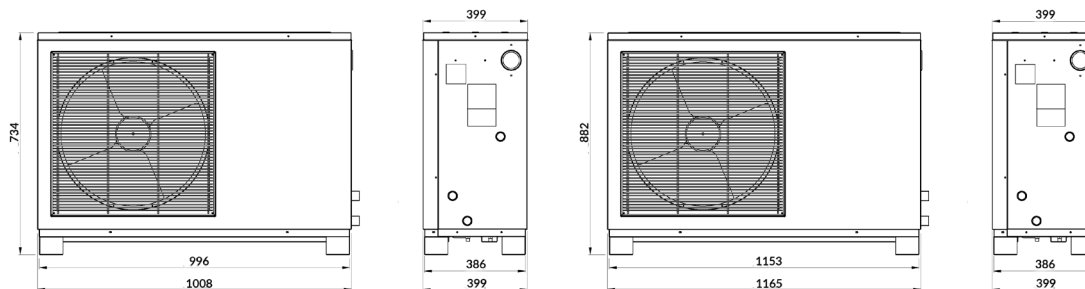
Description	200	300	400	500	
Volume (l)	212	289	411	490	
Energy efficiency class	B	B	C	C	
Standing losses	W	58	66	85	98
	kWh/24h	1.39	1.58	2.04	2.35
Dry mass (kg)	79	96	128	139	
Lower coil surface area (m <sup>2</sup> )	1.8	2.6	3.8	4.0	
Output capacity (80/60:10/60) (kW)	38.3	55.3	80.8	85.1	
DHW flow rate (80/60:10/60) (l/h)	657.2	948.9	1386.5	1460.3	
DHW peak half hour flow (l)	443	627	907	1000	
DHW peak hour flow (l)	776	1107	1609	1740	
DHW peak two hour flow (l)	1429	2050	2986	3191	

## ATSH Range Dimensions

Description	200	300	400	500
Height including insulation (mm)	1490	1740	1735	1985
Outer diameter including insulation (mm)	Ø700	Ø700	Ø800	Ø800
Inner diameter (mm)	Ø500	Ø500	Ø600	Ø600
Cold water inlet (mm)	70	70	70	70
Hot water outlet (mm)	1145	1395	1420	1670
Flow from heat source (mm)	585	775	830	885
Return to heat source (mm)	195	195	215	215
Secondary return (mm)	880	1180	1150	1400
Flange centre point (mm)	800	975	1035	1090



# FUSION Specifications - FPi32 ASHP



FPi32-6

FPi32-12

ASHP Specifications	Units	FPi32-6	FPi32-12
Dimensions HxWxD	mm	734x1008x399	882x1165x399
Run current	A	8	15
Refrigerant (R32)	kg	0.9	1.8
Heating capacity min./max.	kW	3.50/7.45	5.50/11.67
Heating Power Input min./max.	kW	7.58/14.10	11.07/26.83
Seasonal COP (SCOP)		4.74	4.71
Rated power water pump	W		87
Noise level (outdoor)	dB(A)		52

Heating condition: Water in/out temperature 30°C/35°C. Ambient temperature DB/WB 7/6°C.

We can help you achieve  
**NET ZERO**  
by **2050**



T 01252 551 540 E [enquiries@adveco.co](mailto:enquiries@adveco.co)

Adveco Ltd. Unit 7 & 8 Armstrong Mall, Southwood Business Park,  
Farnborough, Hampshire GU14 0NR

ADVECO FUSION FPH-S Packaged Hybrid Hot Water Systems SR600024.1

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