

The Fluid Science range is an innovative suite of products designed to enable students to gain an understanding of the fundamentals of Fluid Mechanics and Thermo Fluids by the process of learning via hands-on experimentation.

The high precision elements are supplied as modular tray-based systems which operate in conjunction with the Fluid Science service unit, multifunctional work panel and instrumentation enabling the student to conduct their individual or group experiments.

The experiments are supplied with a highly visual user-friendly operational guide, allowing the students to understand the theory of the subject by the application of practical experimentation.

The range includes experiments ranging from simple flow measurements, losses in hydraulic circuits through to more complex heat exchanger processes.

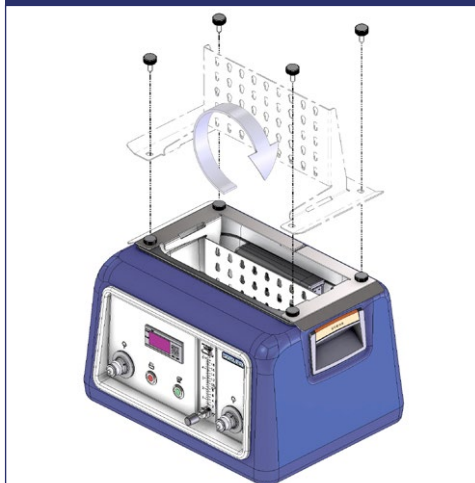
Experiment trays are sold separately, see **Related Products**



**UNIQUE SMALL-SCALE MODULAR TEACHING SYSTEM FOR FLUID MECHANICS AND THERMO FLUIDS**



Back plates is easily stored inside the unit



Configurable as hot or cold water supply



Supplied with digital manometer and thermometer



## Description

The Fluid Science Service Unit (FS-SU) is designed to be used in conjunction with the fluid science experiments offered by Armfield. The unit incorporates a pump and rotameter to vary the water flow rate and a heating system.

The built-in safety features of the unit include a thermal cut out that prevents the hot water circuit exceeding 55°C and a low voltage water resistant power supply unit.

The unit is supplied as standard with a digital manometer and thermometer.

## Requirements

## Scale



### Electrical supply:

- ▶ 100-240V/1 Phase, 50-60Hz
- ▶ Level surface
- ▶ FS experiment trays

Initial fill of 5ltrs water. Drain to empty water away once experiment is complete. During use, water supply or drainage are not required.

## Technical specifications

Water operational temperature range	Ambient to 55°C (131°F)
Water flow rate	0–3.5 litres/minute
Water volume	5 litres
<b>Digital thermometer</b>	
Measuring range:	-200°C to 1372°C (-328°F to 2501°F)
Accuracy:	0.015%
<b>Digital manometer</b>	
Measuring range:	+/- 103.42 kPa
Accuracy:	0.3%
Hardwired thermal cut out switch to prevent over temperature of water	
Operating voltage:	24vDC power supply
PSU voltage:	100VAC to 240 VAC, 50-60Hz
IP65 rated	
CE certified for worldwide use.	

## Overall dimensions

### Dimensions stowed (excluding power supply)

Length	0.385m
Width	0.314m
Height	0.249m

### Dimensions Set Up (excluding power supply)

Length	0.385m
Width	0.314m
Height	0.387m

### Packed and crated shipping specifications

Net weight	8.5Kg (inc. accessories and power supply)
Gross weight	9.9Kg (inc. accessories and power supply)

## Demonstration / instructional capabilities

The entire Fluid Science range is designed to work with the service unit. See individual FS datasheets for specific demonstration experimental capabilities

## Features

- ▶ Integrated pump
- ▶ Integrated flowmeter with needle valve
- ▶ Each service unit can be used as either a hot or cold-water supply
- ▶ Quick connect couplings for easy connection to experiment modules, self-sealing on supply unit to minimise water loss
- ▶ Digital Manometer and Thermometer provided
- ▶ Bespoke system for experimental modules that reduces the risk of spillage
- ▶ Low voltage within the supply unit to protect users

## Benefits

- ▶ Applied student learning via experimentation
- ▶ Common service unit can be used for either hot or cold water supply
- ▶ Tool-less assembly
- ▶ Built in thermal cut-out to prevent overheating
- ▶ Low voltage 24vDC power supply
- ▶ Manual control for in depth student learning

## Related products

### Fluid Science Range

- ▶ FS-1.1 Flow Measurement
- ▶ FS-1.2 Energy Losses - Straight pipes
- ▶ FS-1.3 Energy Losses - Bends
- ▶ FS-2.1 Manometer - Inclined
- ▶ FS-2.2 Manometer - U tube
- ▶ FS-3.1 Heat Exchanger - Shell and tube
- ▶ FS-3.2 Heat Exchanger - Tubular
- ▶ FS-3.3 Heat Exchanger - Cross flow
- ▶ FS-3.4 Heat Exchanger - Plate
- ▶ FS-4.1 Fluidised bed

## Essential Accessories / Equipment

One of the range of Fluid Science service trays



## Ordering codes

FS-SU

## Knowledge base

- > 28 years expertise in research & development technology
- > 50 years providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



Products CE certified

[armfield.co.uk](http://armfield.co.uk)

## Aftercare

Installation  
Commissioning  
Training  
Service and maintenance  
Support: [armfieldassist.com](http://armfieldassist.com)