

Centrifugal Pump Demonstration Unit – FM50

STAINLESS STEEL CONSTRUCTION WITH TRANSPARENT TEST SECTION
CONTROL AND DATA LOGGING VIA PC
SIMPLE USB CONNECTIVITY
SECOND REVERSE IMPELLER FOR COMPARATIVE STUDIES



Software screen shot



Transparent construction



Description

A motor-driven centrifugal pump, mounted on a stainless steel plinth with a water reservoir and pipework for continuous circulation.

The pump volute and the water reservoir are manufactured from clear acrylic for maximum visibility. Similarly the pipe runs are made from transparent PVC. Manually operated valves at the pump inlet and outlet allow control of the flow and also facilitate the study of suction effects.

The pump volute has been designed so that the impeller can be easily accessed and replaced without tools.

The FM50 is delivered with two impellers, one with forward-curved blades and one with backward-curved blades, allowing the students to investigate the effects of impeller characteristics.

Requirements

Scale

1Ph PC USB



- ▶ Armfield IFD7
- ▶ Software requires a computer running Windows XP or above with a USB port (computer not supplied by Armfield)

Armfield IFD7
Interface Unit



Technical specifications

Max flow rate:	1.6 l/s typical
Max head:	9.0m
Max pump speed:	1,800rpm
Motor power rating:	250W
Pressure sensor:	0 to 15psi
Flow sensor:	0 to 27l/s

Overall dimensions

Length	0.88m
Width	0.51m
Height	0.60m

Packed and crated shipping specifications

Volume	1.10m ³
Gross weight	110kg

Demonstration capabilities

- ▶ Demonstration of a single-stage centrifugal water pump in operation
- ▶ Measurement of constant-speed pump performance, including production of characteristic curves:
 - Pump total head
 - Motor shaft power
 - Impeller speed
 - Pump efficiency
- ▶ Introduction to pump speed laws
- ▶ Investigation of impeller styles
- ▶ Comparison of student calculations with computer results

Software

The ArmSOFT software enables the operator to control the pump speed 0 to 100%. Feedback from the sensors is then displayed in real time for the end user with simultaneous data logging.

The data trend is also displayed graphically in real time and can be exported to another platform such as Excel for further analysis.

Essential Accessories / equipment

- ▶ Armfield IFD7

Ordering specification

- ▶ A small-scale centrifugal pump demonstration unit comprising of a water reservoir, the pump, control valves and interconnecting pipework all mounted on a stainless steel base
- ▶ Equipped with electronic measurement sensors for pump head pressure, suction, flow rate and water temperature
- ▶ Transparent pump volute for visibility
- ▶ Capable of being linked to a PC (not supplied) via a USB interface console (an essential accessory), which does not require internal access to the computer. Also enables interfacing to other software packages
- ▶ Supplied with software providing full instructions for setting up, operating, calibrating and performing the teaching exercises. Facilities for logging, processing and displaying data graphically
- ▶ Offers a complete teaching package of coursework and laboratory investigation

Ordering codes

- ▶ FM50
- ▶ IFD7-A: 220-240V / 1Ph / 50Hz
- ▶ IFD7-G: 220-240V / 1Ph / 60Hz

Armfield standard warranty applies with this product

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



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