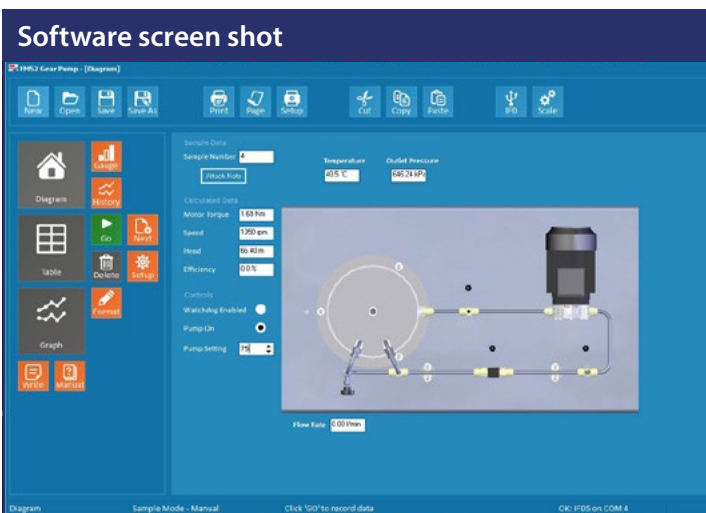**FM SERIES**

Gear Pump Demonstration Unit – FM52

STAINLESS STEEL CONSTRUCTION WITH TRANSPARENT TEST SECTION
CONTROL AND DATA LOGGING VIA PC
SIMPLE USB CONNECTIVITY

Two gear wheels operate inside a casing. One is driven while the other rotates in mesh with it. The liquid is carried around in the space between consecutive teeth and then ejected as the teeth mesh. The pump has no valves. It is a positive displacement pump and will deliver against high pressures. The output is a more even flow than that of a reciprocating pump. It is particularly suitable for high-viscosity fluids.

Software screen shot

Clear view of the gear pump

UK office - email: sales@armfield.co.uk tel: +44 (0) 1425 478781 (for ROW)
USA office - email: info@armfield.inc tel: +1 (609) 208-2800 (USA only)

armfield.co.uk

Description

A motor-driven gear pump mounted on a stainless steel plinth with a water reservoir and pipework for continuous circulation. The pump head and the water reservoir are manufactured from clear acrylic for maximum visibility.

A manually operated valve at the pump outlet allows control of the flow and a pressure relief valve protects the operator and the equipment. Electronic sensors measure the pump outlet pressure, the flow rate and the water temperature.

The pump speed is accurately controlled by an advanced electronic inverter within the IFD7 (an essential accessory). This inverter also calculates the torque produced at the motor drive shaft, allowing the power used by the pump to be derived.

The IFD7 also provides the conditioning electronics for the sensors and allows their readings to be displayed on the computer software.

Armfield IFD7
Interface Unit

Demonstration capabilities

▶ Demonstration of a gear pump in operation
▶ Measurement of constant-speed pump performance, including the production of characteristic curves of outlet pressure against:

- Flow rate
- Motor shaft power
- Pump speed
- Pump efficiency
- Volumetric efficiency

▶ 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

Requirements / Scale

Requirements	Scale
1Ph PC USB	(person icon)

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

Technical specifications

Max flow rate:	6.5 l/m typical
Max head:	25
Max pump speed:	1,800rpm
Motor power rating:	250W
Gear Diameter:	38mm
Pressure sensor:	0 to 100psi
Pressure Relief Valve:	3bar

Overall dimensions

Length	0.88m
Width	0.51m
Height	0.41m

Packed and crated shipping specifications

Volume	0.75m³
Gross weight	100kg

Ordering specification

▶ A small-scale gear pump demonstration unit comprising of a water reservoir, pump, control valve, relief valve and interconnecting pipework, all mounted on a stainless steel base

▶ Equipped with electronic measurement sensors for pump head pressure, flow rate and water temperature

▶ Transparent pump head 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

▶ FM52
▶ 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.

armfield.co.uk

Aftercare

Installation
Commissioning
Training
Service and maintenance
Support: armfieldassist.com