

DHM 3 Series

Digital Hydraulic Multimeter

**Measure Flow, Pressure, Peak
Pressure and Temperature
Power and Volumetric Efficiency**

Up to

- 800 lpm, 210 US gpm
- 480 bar, 7000 psi

The DHM 3 Series Digital Hydraulic Multimeter is an all-in-one unit designed to test the performance of hydraulic pumps, motors, valves and hydrostatic transmissions.

The easy-to-use design allows the operator to just switch on and test, without complex setup. The DHM measures flow, pressure and temperature. In addition, the DHM holds the peak pressure value as well as calculating hydraulic power and volumetric efficiency using the unique P-Q test button.

The DHM is the ideal tool for pinpointing hydraulic system faults, reducing downtime, and helping in preventative maintenance. The design builds on the very successful DHT range of portable testers with the addition of a large digital display and a built-in pressure transducer.

The turbine flow meter with built-in loading valve is bi-directional and specifically designed to enable the operator to simulate the maximum working pressure safely during normal machine operation.

The loading valve has safety discs built-in to protect the operator and the multimeter in the event of excessive pressure, allowing oil to bypass the loading valve INTERNALLY with no spillage of oil from the hydraulic circuit, eliminating any danger to the operator or environmental hazards.



*DHM 3 Series Digital
Hydraulic Multimeter*

**Manufacturers of hydraulic components and test equipment
for the Mobile, Industrial and Agricultural Industries**



Nuffield Road,
St. Ives, Cambs.,
PE27 3LZ, UK

Tel: +44(0)1480 397400

Fax: +44(0)1480 466555

www.webtec.co.uk

E-mail: sales@webtec.co.uk

Features

- **FLOW** 10-800 lpm, 2.5-210 US gpm
- **PRESSURE** 480 bar, 7000 psi
- **ACCURATE** measurement of flow, pressure, peak pressure and temperature.
- **BUILT-IN** loading valve.
- **BI-DIRECTIONAL** for unrestricted connection and simplified testing.
- **INTERNAL** oil by-pass protects the tester and system against overpressure.
- **AUTOMATIC** calculation of hydraulic power and volumetric efficiency
- **EASY** to operate controls.
- **PORTABLE AND LIGHTWEIGHT** with angled case for easier viewing and cleaning.



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Specifications

Model number	Flow range	Pressure range	Fluid temp. range	Inlet/outlet ports
DHM403-B-6	10 - 400 LPM	0 - 420 bar	0 - 105°C	1" BSPP
DHM403-S-6	2.5 - 100 US gpm	0 - 6000 psi	32 - 220 °F	1-5/16" -12UN #16 SAE ORB
DHM803-S-7-L*	20 - 800 LPM	0 - 480 bar	0 - 105 °C	1-7/8" -12UN #24 SAE ORB
DHM803-S-7*	5 - 210 US gpm	0 - 7000 psi	32 - 220 °F	1-7/8" -12UN #24 SAE ORB

* DHM803 has limited pressure control below 86 lpm (23 US gpm). The maximum controllable pressure in this region is calculated by:
 $\text{max pressure (in bar)} = 5 \times \text{flow (lpm)} + 30$

Functional specification

Ambient temperature:	5 to 40°C (41-104°F)
Fluid type:	Hydraulic oil
Accuracy:	Flow: $\pm 1\%$ of indicated reading (15 to 100% of range)
	Pressure: $\pm 0.5\%$ full scale
	Temperature: $\pm 1^\circ\text{C}$ ($\pm 2^\circ\text{F}$)
	Power: Below 100KW (134HP) $\pm 3\text{KW}$ ($\pm 4\text{HP}$)
	Above 100KW (134HP) $\pm 5\text{KW}$ ($\pm 6.7\text{HP}$)
	Volumetric efficiency: $\pm 1\%$

Dimensions in mm (inches)

DHM403	240 (9.45") wide, 200 (7.87") deep, 200 (7.87") high
DHM803	245 (9.65") wide, 225 (8.86") deep, 225 (8.86") high

Weight

DHM403	Unpacked 6.5Kg (14lbs)
DHM803	Unpacked 10Kg (22lbs)

Construction materials

Case:	Painted mild steel
Flow block:	High tensile aluminium
Seals:	Viton as standard - EP seals on request

Operation

The DHM is microprocessor based and has three screens that can be toggled by the operator. Flow, pressure, peak pressure and temperature are displayed simultaneously on screens one and two. Power can be displayed in place of temperature at the touch of a button. The three screens show: all digital values, digital values with a bar graph, and P-Q test.

The readout refreshes three times per second and uses low power circuitry to maximise battery life. The DHM has an auto power off feature that turns the unit off if unused for more than 20 minutes. The standard 9-volt battery enables more than 6 months normal testing time. The 9V battery is available worldwide.

The turbine block, manufactured from high tensile aluminium, houses a six blade turbine rotating on a stainless steel bearing and shaft. Built-in flow straighteners reduce flow turbulence and allows accurate flow measurement in both directions.

The integral loading valve gives progressive pressure loading in either flow direction. Replaceable safety discs relieve to internally by-pass the oil if the maximum pressure is exceeded by $\sim 5\%$. Replacement safety discs are stored in an internal holder machined in the rear of the flow block. Safety discs with different pressure ranges up to 480 bar are available. Consult sales office for further information.

Calibration

All testers are calibrated with 21cSt oil as standard. Calibration certificates are available on request - this is a chargeable option.

Installation

It is recommended to connect the flow block with flexible hoses 1-2 metres (3-6ft) long. All connections should be made by suitable qualified personnel.



APPROVED