



WEBTEC

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Digital Flow Meter

Turbine Flow Blocks

To 800 lpm,
420 bar



The Webster DF Series Digital flowmeter system provides a complete solution to flow measurement on hydraulic test-stands, industrial machines and other fixed and mobile applications. The readout is electrically connected to the flow block which can be installed anywhere in the hydraulic circuit for production, commissioning and development testing.

The readout has a standard DIN aluminium case and the calibration can be easily adjusted.

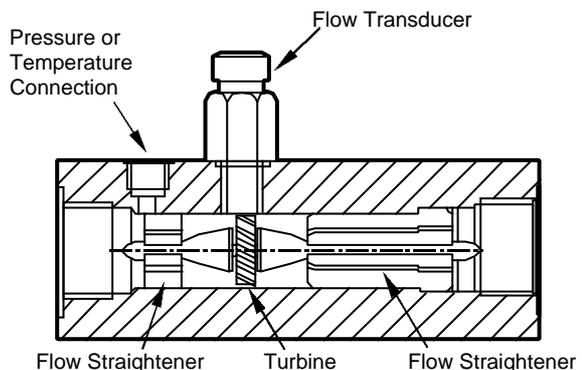
A wide range of turbine and positive displacement flow blocks are available which can accurately measure flow in both directions.

High accuracy, 1% of reading over a wide flow range, is obtained automatically without complicated programming of flow errors for each turbine.

These flow meters together with the Webster range of digital pressure meters, tachometers, thermometers and associated transducers, provide the instrumentation needed to analyse the performance of pumps, motors, valves and hydrostatic transmissions.

Features

- **FLOW:** 2.0 - 800 lpm
0.4 - 176 gpm
- **PRESSURE:** Up to 420 bar
6000 psi
- **ACCURACY:** $\pm 1\%$ of reading over a wide flow range
- **LARGE:** Easy to read 4 digit display
- **POWER:** Supply AC or DC
- **BI-DIRECTIONAL:** Flow Turbine



Another quality product from the Webster Range

Turbine Test System Specifications

Model Number	Normal Flow Range		Maximum Flow Range		Max. Cont. Pressure bar	Port Size
	lpm	gpm	lpm	gpm		
DF120 - 30*	4.5 - 30	1 - 7	0.8 - 30	0.17 - 10	420	3/4" BSPF
DF120 - 50	10 - 50	2.2 - 10	2 - 60	0.5 - 15	420	3/4" BSPF
DF120 - 125	10 - 125	2.2 - 27	5 - 150	1 - 33	420	3/4" BSPF
DF120 - 300	20 - 300	4.4 - 66	10 - 300	2 - 66	420	1" BSPF
DF120 - 400	20 - 400	4.4 - 88	10 - 400	2 - 88	420	1" BSPF
DF120 - 500	20 - 500	4.4 - 110	20 - 600	4.4 - 132	350	1 1/2" Flange
DF120 - 750	25 - 750	5 - 165	20 - 800	4.4 - 176	350	1 1/2" Flange

For flows between 0.1 and 20 lpm, please refer to Bulletin DF 2E

*Powered Transducer

Connections

Turbine blocks have BSPF female threaded ports except for the 500 & 750 sizes which have a SAE type 4 bolt flange.

Measurement and Indication

Flow

Measured by the electronic count of an axial turbine, designed to minimise the effects of variations in temperature and viscosity. The speed of the turbine is monitored by a magnetic transducer; each time a blade passes the transducer head an electrical pulse is generated. Built in flow straighteners reduce flow turbulence and allow flow measurements in both directions. Webster flow blocks can be used for intermittent or continuous measurement of hydraulic systems.

Accuracy: $\pm 1\%$ of reading over normal flow range. The flowmeter can be used continuously over the maximum flow range. Consult sales office for accuracy and operating conditions for this extended range.

Readout

Large easy to read 4 digit red LED display reading to 9999. Character 12.7mm (0.5") high. Decimal place selected automatically throughout the flow range to ensure a high degree of resolution. Readouts can be scaled in lpm Imperial and US gpm. The calibration of the Flow Block can be easily adjusted by selecting internal dip switches.

Input sensitivity 10mV at 10Hz to 100mV at 2 kHz.
Digital Readout Resolution: 1 part in 9999 \pm 1 count,
Accuracy: 1 part in 15,000

Construction

Flow Block

High tensile aluminium block houses a six blade turbine rotating on a stainless steel bearing and shaft.

The flow straighteners and turbine form a one piece assembly which can be easily removed for cleaning. The standard block has a 1/8" BSPF port for a pressure or temperature sensor. Alternatively one or two 1/4" BSPF ports can be provided. Optional loading valves are available. Consult Sales Office.

Transducer

The self energised magnetic reluctance transducer has an output of 80mV RMS at minimum flow. The transducer output frequency is proportional to flow rate and is typically 20 - 1500 Hertz. An alternative powered transducer is available when better accuracy over a wide flow range is required. Cable connection, Amphenol threaded DIN. Normal temperature Range -20 to +90 °C. Consult Sales Office for high temperature applications and powered transducers details.

Seals

Turbine: Viton seals compatible with oil, fuels, water glycol and water emulsions. EP seals for use with phosphate-ester are available. Consult Sales office.

Readout

The display is housed in a black robust aluminium case with DIN standard dimensions. Built-in power supply and electronic components are mounted on a circuit board accessible from the back of the case. The calibration factor is switch selectable and a standard correction curve is stored on an EPROM for the model of turbine flowmeter.

The readout is supplied complete with mounting clamps.
Voltage - 240 V AC / 110 V AC or 12/24 Volt DC.
Power Consumption - 5 Watts.
Mass - 0.67kg
Size - 96 x 48 x 190mm (includes cable gland)

Installation

LT turbines have built-in flow straighteners so the normal recommended length of straight tube can be reduced where space is limited. Inlet and Outlet connections should always be of an adequate size to prevent venturi constriction effects.

Standard transducer output is 5 pin DIN Amphenol threaded connection. Cannon MS type connectors are available.

General

Accessories

Flow Switches and Analogue Interface units with 4 - 20 mA or 0 - 10 Volt outputs are available. Complete range of temperature sensors, pressure transducers and pressure test points are available.

Cable connections

FT 8384 - * cable for connecting readout to flow block
* = length of cable in metres

How to Order

Specify readout DF 120 together with the model number of flow block from the above table. E.g. Webster Model DF 120 - 50 lpm & FT 8384-6 is a 2 - 60 lpm Turbine flow Meter System complete with a 6 metre long cable. If a longer cable is required, please specify when ordering.

