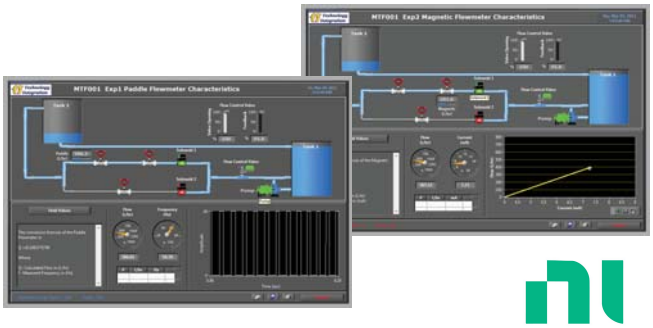
Flow Measurement Trainer

Curriculum Coverage

- Magnetic Flow Meter Characteristics
- Paddle Wheel Flow Meter Characteristics
- Differential Pressure Flow Meter Characteristics
- Vortex Flow Meter Characteristics (with option)
- Comparison between Flow Meters

Features

- Computer based Flow Measurement Trainer used to teach flow sensing technologies
- Includes all required sensors to measure flow
- For use with NI's Data Acquisition & Control hardware



Description

FMT001 is a bench-mount trainer that is used to teach students how to measure flow between two tanks using different flow measuring devices; Magnetic Flow Meter, Paddle Wheel Flow Meter, Venturi Flow Meter, Rota Meter and Vortex Flow Meter (option).

Developed for use with a wide variety of NI's data acquisition and control platforms - easy-to-use, highly expandable programmable automation controllers, intelligent communication interfaces, and rugged I/O mod-ules. These industrial I/O modules filter, calibrate, and scale raw sensor signals to engineering units and perform self-diagnostics to look for problems.

The curriculum covered includes understanding the characteristics of the different flow measuring devices and comparing between their different behaviors and characteristics.

Components

- Pump
- Magnetic Meter
- Paddle Wheel Meter
- Diff. Pressure Meter
- Rota Meter
- Flow Control Valve
- Vortex Flow Meter (Option)

NI[1] Compatible Platforms

- Compact RIO
- Others[2]

1. NI
2. Please check with us about compatibility of other NI Platforms

Required NI Modules

- cRIO: NI-9215, NI-9203, NI-9474, NI-9263, NI-9422

Software

- User friendly with easy to use interface
- Developed using NI LabVIEW package
- Built-in safety features & limitations, and designed for students' use

Ordering Information
Flow Measurement Trainer

FMT001 - A - B - C

NI* Platform	Power	Options
1... cRIO	1... 220 VAC	0... No Option 1... Vortex Flow Meter

*Purchase NI Hardware Separately

For complete product specifications, pricing, and information:
e-mail: info@ti.jo / website: www.ti.jo

Technical Specifications

Flow Measurement Trainer Specifications:

Dimensions & Volumes:

- Dimensions (LxWxH): 1200 x 700 x 600 mm
- Lower Tank Dimensions: 400 x 255 x 205 mm
- Upper Tank Dimensions: 300 x 255 x 205 mm
- Lower Tank Volume: 18.7 Liters
- Upper Tank Volume: 14 Liters

Safety Considerations:

- Maximum allowable temperature: 55 °C
- Maximum allowable water level in the upper tank: 23 cm

Electromagnetic Flow Meter:

- Flow Rate: 0.01-0.5 … 35-700 L/min
- Maximum pressure: 10 BAR
- Maximum temperature: 80 °C
- Output: 4-20 mA, 3-wire
- Max. Load: 500 Ω
- Power Supply: 24 VDC
- Power Consumption: 80 mA

Differential Pressure Flow Meter:

- Flow Rate: 0.5-3.3,….,300-2350 L/Min. water
- Output: 4-20 mA, 3-wire
- Maximum pressure: 10 BAR
- Maximum temperature 80 °C
- Power Supply: 24 VDC
- Power Consumption: 100 mA

Rotating Vane Flow Meter:

- Flow Rate: 1-26 L/min water
- Output: 4-20 mA, 3-wire
- Maximum pressure: 16 BAR
- Maximum temperature: 80 °C
- Power Supply: 24 VDC
- Power Consumption: 15 mA

Maximum Flow Rate:

- Upper: 4-5 Liters/minute
- Lower: 11-12 Liters/minute

Pump:

- Pressure: Max. 10 Bars
- Power: 115 Watts