Micro ML1

Dynamic FLOW COMPUTERS
Made to Measure.

Introduction

The Micro ML1 is a **bi-directional, single meter run**, custody flow computer with an ultra-low power, 32-bit microprocessor. It is primarily used for **Metering** and **Well Injection Testing**.

A **forward and reverse** totalizer is established for the meter run using the DP signal or a digital input for direction indication. In addition, a pulse frequency or 4-20 mA analog signal can be accepted from a **Densitometer**.

An optional **Multivariable Module 205 Sensor** may be integrally mounted to the Micro ML1 to allow accurate determination of **differential pressure, static pressure, and temperature.**

Micro ML1 Details

Specification
32 Bit Processor
7-28 VDC @ 0.5 WATT
NEMA 7, 4X Class 1 Div. 1
Group B, C and D Housing

Display
4 Lines, 20 Characters
Backlit Display
Minutes, Hours or Days
Automatic Scrolling

Standard Interfacing
Serial Modbus
(3) Frequency Channels
(4) Analog Inputs
(1) Analog Output
(4) Digital I/O's
(1) RS-232 Port
(2) RS- 485 ports
(1) Printer Output
Rosemount Multivariable-
DP, Press., & Temp.
.075 % Accuracy of
Calibrated Range

***Input or Output Expansion
Module available*

Interrogation Upgrade Options
TCP/IP Encapsulated Modbus
GSM/ Radio
Satellite

Applications
Metering
Well Injection Testing
Well Head Measurement
Custody Measurement
Allocation Measurement
Gas Process Plants
PID Control
Smart Field I/O

Standardization
API, ISO, AGA

Units of Measurement
US Customary

Metered Products
Saturated Steam
Crude Oil (5A/6A, 6A, 23A/24A, 24A)
Refined Products (5B/6B, 6B,
23B/24B, 24B)
Specialized Products (6C, 24C)
LPG (New 23/24, Old 23/34, Old 24)
Propane/Propylene Mix
Liquid CO2 (NIST 14)
Butadiene (ASTM 1550A/B, 1550B)
Water
Propylene (API2565)
Ethylene (API2565/NBS1045)

Instrumentation
Orifice Meter (API 14.3/AGA3)
Turbine/ Freq. Meter (AGA7)
SmartCone® (Dynamic)
Other Cone Meters
Wedge
Annubar™
Venturi

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Technical Data- Micro ML1

POWER	
VOLTAGE RANGE	7-28 VDC
POWER CONSUMPTION	0.5 WATT
OPERATING CONDITIONS	
UNITS	US
TEMPERATURE	- 40 TO 185 °F
HUMIDITY	100%
HOUSING	NEMA 4X CLASS 1 DIV. 1
FEATURES	
DISPLAY	PLASMA 4 LINES 20 CHARACTERS BACKLIT DISPLAY WITH FOUR (4) INFRARED REFLECTIVE SENSORS
PROCESSOR	32-BIT MOTOROLA 68332 @ 16.7 MHz
FLASH ROM	4 MB @ 70 NANO SECONDS
RAM	2 MB @ 70 NANO SECONDS
FREQUENCY INPUT	THREE (3) CHANNELS
	CHANNELS 1 & 2 ARE SINE/SQUARE WAVE CAPABLE
	CHANNEL 3 IS SQUARE WAVE ONLY
	SQUARE WAVE RANGE: 0-6000 HZ
	SINE WAVE RANGE: 0-1200 HZ
	SIGNAL > 40 Mv FOR SINE WAVE
	SIGNAL> 3v FOR SQUARE WAVE
MULTIVARIABLE	BUILT-IN ROSEMOUNT MULTIVARIABLE TRANSMITTER WITH DIRECT SPI DIGITAL CONNECTION. MAXIMUM UPDATE SPEED ONCE EVERY 109 MILLISECONDS.
	TEMPERATURE RANGE: - 200 thru 1200 F
	PRESSURE RANGE: 0 thru 3626 PSIG
	DP RANGE: 0 thru 250 inches OR
	0 thru 1000 inches
ANALOG INPUT	FOUR (4) INPUTS STANDARD
	EXPANDABLE UP TO NINE (9) ANALOG INPUTS
	OR SEVEN (7) WITH ADDITIONAL 3-WIRE RTD
ANALOG OUTPUT	ONE (1) 16-BITS OPTICALLY ISOLATED OUTPUT
	EXPANDABLE TO FOUR (4)
DIGITAL I/O	FOUR (4) DIGITAL INPUTS OR OUTPUTS
	DIGITAL OUTPUTS HAVE 0.25 AMPS RATING
SERIAL COMMUNICATION	TWO (2) RS-485 @ 19200 BAUDS VARIABLE
	ONE (1) RS-232 @ 9600 BAUDS VARIABLE
	ONE (1) PRINTER OUTPUT
COMMUNICATION PROTOCOL	MODBUS