Z-flow RTU

TER Flow Measurement RTU

The Z-flow RTU is a full Remote Terminal Unit (RTU) version of the Z-flow computer. This unit completes the Z-flow system by adding the capability of local user interface and remote monitoring.

The RTU is offered in two enclosure types: a double sealed stainless steel enclosure, which maintains environmental integrity even with the door open, or a fiberglass enclosure with a front mounted display and integral telemetry interfaces with solar support.

A human machine interface acts as the local user interface for viewing flow data and initiating maintenance routines. A RS-232 port allows connection to a dedicated line modem or radio telemetry for remote data acquisition. While MODBUS RTU is the standard communications configuration, TER can support various protocols as required.

Power can be supplied to the unit by using a standard 110 VAC supply or by using an optional solar kit with batteries.

FLOW CALCULATION

Z-flow uses advanced calculation methods to give accurate measurement of CO_2 and natural gas flow through an orifice plate, wedgemeter, or similar differential-producing flowmeter.

Measuring upstream pressure (4-20 mA), delta pressure (4-20 mA), and temperature (RTD), the unit can calculate flow using AGA#3 style equations. An optional second delta pressure transmitter allows for a greater operating range and still maintains high resolution at low pressures.

The Z-flow algorithm is accurate due to of the unit's ability to calculate density, viscosity, and heat capacity ratio at the actual pressure and temperature conditions of the flow line. The RTU generates its results based upon a specific user entered component mixture of the measured fluid.

Hourly flow data can be stored in nonvolatile memory for up to 35 days. Each hourly flow record retains average pressure, delta pressure, and temperature along with the hourly flow rate.

Expanded use of the Z-flow allows for a densitometer input (4-20 mA). Measuring the current density of the fluid, the flow computer can select one of two component mixtures to use in the flow calculations. In addition, the unit has the option to interface to a Chromatograph for actual fluid mixtures.

CENTRALIZED FIELD MANAGEMENT

Using a Windows-based application, a user can manage up to 255 well sites on the same telemetry system. The graphic user interface simplifies evaluation of flow data. Data storage techniques automatically archive records after 35 days and retain the daily flow volumes for the life of the RTU. By exporting data to a spread sheet application, a user can view records as graphical trends or organized data for reports.

Z-flow RTU Technical Specifications

General:

LCD Operating Temperature	-20° to +70°C
Controller Operating Temperature	-40° to +70°C
Storage Temperature	-40° to +90°C

Environmental Protection:

PCB Treatment	Conformally coated for mild H_2S exposure
Transient Protection	Meets IEEE 587, IEEE 472
Signal Connectors	Gold Plated
Power Connectors	Nickel Plated
Gasket	Neoprene
Keypad	Chemical resistant, UV Stable Polyester

User Interface:

LCD	4 x 20 Character Backlit
Keypad	4 x 20 tactile membrane

Communications:

Data Port	RS232 at programmable data rates

Inputs:

Static Pressure	4-20 mA
2 Delta Pressures	4-20 mA
Densitometer	4-20 mA
RTD	3-wire RTD European or Standard

Power Requirements:

Identified on application basis.

Overall Dimensions:

Stainless Steel enclosure-	Height	10 inches
	Width	7 inches
	Depth	6 inches
Fiberglass enclosure-	Height	20 inches
	Width	16 inches
	Depth	6 inches

Optional Items:

Keypad Certification for Class I, DIV II for Groups A, B, C, D
Customized Keypad Switch Graphics
Customized Programming

Master Station Computer:

Minimum 486 style, 8M memory minimum, 2-button mouse, VGA monitor.
Windows 3.1x, or Windows 95

Specifications Subject to Change Without Notice

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