

Z-Flow

TER Mini-Flow Computer

The Z-flow mini-flow computer joins the list of TER products involving Oil Field Automation. Z-flow takes advantage of advanced calculation techniques to meet the demands for accurate measurement of CO₂ and natural gas flow through a wedge meter or a similar differential-producing device.

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 while still maintaining high resolution at low pressures. The Z-flow algorithm is accurate due to the unit's ability to calculate density, viscosity, and heat capacity ratio at the actual flowing pressure and temperature conditions of the flow line. Final results are generated based upon the component mixture of the measured fluid.

A single 4-20 mA output indicates volumetric or mass flow rate based upon user-defined settings. Utilizing a terminal program executing on a laptop, the user can program all settings. The system has a 9-pin RS-232 connection to support such an interface.

Expanded use of the Z-flow device allows for a densitometer input (4-20 mA). Measuring the current density of the fluid, the flow computer can automatically select one of two component mixtures for use in flow calculations. In addition, the unit has a second RS-232 port to serve as an interface to a Chromatograph analyzer.

The flow computer is provided as a circuit board suitable for mounting in an industrial enclosure. As an option, the unit can be provided fully assembled within an enclosure.

Z-Flow Specifications

General Specifications

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

Environmental Protection

PCB Treatment	Conformally coated for mild H ₂ S exposure
Transient Protection	IEEE 587, IEEE 472

Power Requirements

Single DC Source	15 to 28 volts @ 2.5 watts
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Communications

User Interface	RS-232 @ 9600 Baud
Data Port	RS-232 @ programmable data rates

Overall Dimensions

Width	5 inches
Length	8 inches
Height	2.25 inches

Inputs

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

Output

Volumetric or Mass Flow Rate	4-20 mA
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Specifications subject to change without notice.



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