



Liquid & Gas Flow Computer MVI56-AFC

The MVI56-AFC module is the ideal solution for the many applications where hydrocarbon flow and SCADA communication must be added to the ControlLogix platform.

Applications using the MVI56-AFC module can be found mainly in the oil and gas industrial sectors.

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Liquid & Gas Flow Computer

MVI56-AFC

The MVI56 Liquid & Gas Flow Computer Module is a ControlLogix backplane compatible module that allows ControlLogix processors to easily support flow applications with 16 meter runs performing measurement of hydrocarbon gases or liquids using AGA 3, 7, 8 and API 2540 measurement standards.

Features and Benefits

The MVI56-AFC is an in-rack Liquid & Gas Flow Computer Module for the ControlLogix platform. The MVI56-AFC Flow Computer module supports 16 meter channels for the measurement of hydrocarbon gases and liquids using currently accepted industry measurement standards.

The module calculates flow rates, accumulated volumes, accumulated mass and accumulated energy (heating value). The calculation results are transferred back to the Processor memory for use in the application ladder program or for transfer back to a SCADA host.

General Specifications

- Single Slot – 1756 backplane compatible
- Local or remote rack
- The module is recognized as an Input/Output module and has access to processor memory for data transfer between processor and module
- Ladder Logic is used for data transfer between module and processor.
- Configuration data obtained through user-defined ladder. Sample ladder file included

Hardware Specifications

Specification	Description
Backplane Current Load	800 mA @ 5 V
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Shock:	30g Operational 50g non-operational Vibration: 5 g from 10 to 150 Hz
Relative Humidity	5 to 95% (non-condensing)
LED Indicators:	Module Status Backplane Transfer Status Application Status Serial Activity

Specification	Description
Debug/Configuration port (CFG)	
CFG Port (CFG)	RJ45 (DB-9M with supplied cable) RS-232 only
Application ports (PRT1 & PRT2)	
Full hardware handshaking control, providing radio, modem and Multi-drop support	
Software configurable communication parameters	Baud rate: 110 to 115,200 baud, depending on protocol RS-232, 485 and 422 Parity: none, odd or even Data bits: 5, 6, 7, or 8 Stop bits: 1 or 2 RTS on/off delay: 0 to 65535 ms
App Ports (P1,P2) (Serial modules)	RJ45 (DB-9M with supplied cable) RS-232 handshaking configurable 500V Optical isolation from backplane
Shipped with Unit	RJ45 to DB-9M cables for each port 6-foot RS-232 configuration cable

Functional Specifications

The AFC module operates as a powerful flow computer module, augmenting the operation of the ControlLogix processor by providing a dedicated and accurate set of flow calculations; the results of which are easily available to process monitoring and control applications developed in the ControlLogix.

The module is highly-configurable (see PSW-AFC), allowing each of the 16 meter runs to be individually set up to meet the specific requirements of an application. Some of the configurable parameters include:

Configurable options

- Gas analysis concentrations for any of all 21 components
- Physical data for all meter runs including, orifice and pipe diameters, selection of type of taps and tap location etc.
- Reference pressure, temperature and local atmospheric conditions
- Default process and operating parameters like DP threshold for flow cutoff etc.
- Metric or imperial units
- User selectable units for totalizers and flow rates on a per channel basis
- Resettable and/or non-resettable totalizers for every meter channel
- Process I/O: analog inputs (pressure, temperature, diff pressure) from analog modules and pulse inputs from pulse/frequency input modules in ControlLogix I/O rack
- Number of meter channels: 16 differential (AGA3) or linear (AGA7) Gas; MPMS 12.2 Liquid

- Calculation methods: AGA3-1992, AGA 7, AGA8-1992 (detailed characterization method), API MPMS Ch12.2 API 2540
- Meter scan time under 1 second for all 16 channels
- Product measurement: hydrocarbon gases and liquids
- Data archiving: Hourly for 2 days for each meter run (48 records per channel), Daily for 35 days (optional extended archives up to 1260 hourly and 350 daily). All archived data is available in the onboard Modbus memory map (archive size and contents are fully-configurable)
- Event log report for all security sensitive configuration data (for example, orifice diameter) are date and time stamped and mapped to the local Modbus memory map. This data can be imported into any spreadsheet program and saved to disk or printed as hard copy.

Modbus interface

- The two Modbus slave ports allow the unit to be used as a SCADA interface and to broaden access to the AFC module's data table.
- Either port may be configured for RTU or ASCII Modbus mode.
- Modbus table may be re-mapped for user assigned contiguous register polling from a SCADA master (up to 20,000 registers).
- Port 3 can be configured as a Modbus Master port to poll data from a remote chromatograph device.

Additional Products

ProSoft Technology offers a full complement of hardware and software solutions for a wide variety of industrial communication platforms.

Visit our web site at <http://www.prosoft-technology.com> for a complete list of products.

Ordering Information

To order this product, please use the following:

MVI56-AFC Liquid & Gas Flow Computer

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