



Liquid and Gas Flow Computer PTQ-AFC

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

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

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Liquid and Gas Flow Computer

PTQ-AFC

The Liquid & Gas Flow Computer Module is a Quantum backplane compatible module that allows Quantum 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 PTQ-AFC is an in-rack Liquid & Gas Flow Computer Module for the Quantum platform. The PTQ-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 – Quantum backplane compatible
- The module is recognized as an Options module and has access to PLC memory for data transfer
- Configuration data is stored in non-volatile memory in the ProTalk module
- Configuration software for Microsoft Windows XP, 2000 and NT is included with the module.
- Up to six modules can be placed in a rack
- Local rack – The module must be placed in the same rack as processor.
- Compatible with common Quantum / Unity programming tools.
- Quantum data types supported: 0x, 1x, 3x, 4x
- High speed data transfer across backplane provides quick data update times.
- Sample function blocks available.

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)

Specification	Description
Relative Humidity	5 to 95% (non-condensing)
LED Indicators	Module Status Backplane Transfer Status Serial Port Activity LED Serial Activity and Error LED Status
Configuration Serial Port (PRT1)	DB-9M PC Compatible RS-232 only No hardware handshaking
Application Serial Ports	(PRT2, PRT3) DB-9M PC Compatible RS-232/422/485 jumper selectable RS-422/485 screw termination included RS-232 handshaking configurable 500V Optical isolation from backplane

Functional Specifications

The AFC module operates as a powerful flow computer module, augmenting the operation of the Quantum 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 Quantum.

The module is highly-configurable, allowing each of the 16 meter runs to be individually setup to meet the specific requirement 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 Quantum 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:

PTQ-AFC Liquid and Gas Flow Computer

To place an order, please contact your local ProSoft Technology distributor. For a list of ProSoft distributors near you, go to <http://www.prosoft-technology.com>

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