



AutoFLEX Flow Computer shown with Enclosure and Chassis versions

AutoFLEX Flow Computer

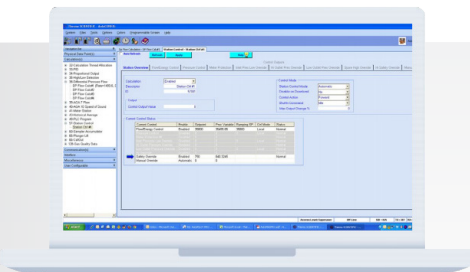
The Thermo Scientific™ AutoFLEX Flow Computer is built on the field-proven AutoCONFIG platform. Designed to reduce pipeline disruptions and maintain worker safety.

Features

- Application scalability
- Instrument health
- Seamless integration

Scalable all-in-one platform

From a single measurement point to large delivery points, the AutoFLEX flow computer coupled with the Thermo Scientific AutoCONFIG interface helps oil and gas transporters maximize flow throughput with quick field deployment and enhanced station visibility.



Flawless integration

To avoid unnecessary downtime, the AutoFLEX flow computer easily and efficiently integrates into existing measurement and control systems. Single-click exporting and importing MODBUS mapping is available for a simplified SCADA connection.

Operator safety

With an extended range through Bluetooth 5.1 connectivity, operators are removed from potentially hazardous environments. The 200+ alarm configurability provides real-time sight-to-site operations for quick decision-making regardless of being onsite or remote.

Configuration software

The field-proven Thermo Scientific AutoCONFIG built-in software unlocks the power of our AutoFLEX platform with effortless configuration, health status, and field-proven control functions that enable field technicians to effectively and efficiently manage product delivery.



Control
15+ functions from single-valve control to station control.



Configurability
Customizable screens to help streamline the dashboard and save time.



Convenience
Easily operates on latest platforms.



Offline access
Gain access to data and modify configurations without an instrument.



Standardization
A single program for all active instruments.

AutoFLEX Flow Computer

	Point count	Electrical	Isolation
Communication board	(2) RS232/485 2/4 wire (1) Isolated 485 4 wire (1) Non-isolated 485 4 wire	Up to 2 comm modules in one system Up to 115.2K baud rate	1500 V on isolated RS485 only
Non-isolated combo board	Multifunction points: (2) P/DI/DO (4) DI/DO (1) DO/FO/DI (5) AI (1) AO (1) RTD	DO: FET, 30 VDC max, 1 A per integrated driver for 4 channels with built-in protection FO: Up to 10 KHz PI: SW selectable magnetic input, dry contact, or slot sensor with internal pull up	
Analog input board	(12) AI	SW selectable, 4–20 mA or 1–5 VDC	1500 V
Analog output board	(6) AO	AO: 4–20 mA with internal power or loop power option	1500 V
Digital input board	(8) DI	DI: Dry contact or an open collector	1500 V
Digital output board	(8) Relay output	Relay out: 30 VDC, 1 A	1500 V
Isolated combo board	(4) P/DI/DO (4) DI/DO (4) AI (1) AO (1) RTD	DO: FET, 30 VDC max, 1 A per integrated driver for 4 channels with built-in protection PI: SW selectable magnetic input, dry contact, or slot sensor with internal pull up	1500 V
Prover board	(2) Switch input	Switch input for start/stop	1500 V
Digital multi-function board	(6) PI (4) DI (4) DO	DO: FET, 30 VDC max, 1 A per integrated driver for 4 channels with built in protection PI: SW selectable magnetic input, dry contact, or slot sensor with internal pull up	1500 V

General specifications	
Processor	792 MHz 32 bit high-performance, ultra-low power ARM processor with neon co-processor
Program memory	256 MB
CPU board communication port	2) Serial (2) Ethernet (1) USB
Input power	11–30 VDC
Historical data storage	User configurable; defaulting to 65 days of daily, 35 days of hourly
Audit trails	User configurable; defaulting to 200 audit events, 60 different types of audits
Alarm log storage	User configurable; defaulting to 200 alarm events, 15 different types of alarms
Environmental specifications	
Operating temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Operating humidity	0–95% RH, non-condensing
Enclosure rating	NEMA 4X/IP65
Certifications	CSA/C-US Class I, Div 2, Groups C and D hazardous locations; ambient temperature range of -40 to +85 °C, temperature code T3C1 Type 4X enclosure
Physical specifications	
Rack/panel mount dimensions	7.18" W X 7.5" H X 6.9" D
NEMA 4X dimensions	AF3E: 17.24" H x 15.20" W x 8.75" D AF7E: 25.0" H x 17.0" W x 14.7" D
Display	128 x 65 backlit LCD display User programmable scroll list and menus

Natural gas calculations	
Supercompressibility	(Fpv) AGA 8 Gross-1992; AGA 8 Gross-2017; AGA 8-1992/2017; AGA 8 Short-1988; NX-19; NX-19 Analysis; GERG
Differential meters	(DP, Orifice) Annubar; AGA 3/ANSI/API 2530-1992 Method 2; AGA 3/ANSI/API 2530-1985; AGA3-2012; ISO 5167; ISO Venturi; Cone meters; Verabar; GOST; NIST14; ISO 5167-4 2003 (Venturi)
Linear meters	(Turbine) AGA 7; AGA 9; AGA 11
Energy	AGA 5; GPA 2172; ISO 6976
Diagnostic	AGA 10 SoS
Additional factors/equations	Fwv (manual, partial or full); Fws
Turbine meter linearization	10 Point Frequency/K-factor Table
Liquid calculations	
API tables	Table A (generalized crude oils); Table B (generalized products); Table C (alpha 15/60 supplied); Table D (Lubricating Oils); Old Table (NGL, LPG SG range 0.425 to 0.650); Table 23/24 E, 53/54 E (NGL, LPG); VCF (CH 11.1 2004); Propylene (CH 11.3.3.2); Ethylene (API 2565/CH 11.3.2.1); Ethylene (NBS 1045)
Volume correction factor (VCF)	Consistent with API 2540/ASTM D1250-80/IP 200; 5/6 A/B; 23/24 A/B/D; 53/54 A/B/D; 6/24/54 C; CH 11.1 2004; Note: natural gas liquids (NGL) and liquefied petroleum gases (LPG); OLD 23/24, OLD 53/54; Table E is new standard to replace OLD 23/24.
Correction for effect of pressure on liquid	Ch 11.2.1/Ch 11.2.2; Ch 11.2.1M/Ch 11.2.2M (compressibility factors for hydrocarbons), GPA TP15 equilibrium pressure
Propylene density	API Ch 11.3.3.2
Ethylene density	API 2565 (Ch 11.3.2.1); Ethylene NBS 1045; IUPAC
Live density input	Thermo Scientific Sarasota liquid density meter, Solartron, UGC, 4-20 mA

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