

PRODUCT SPECIFICATIONS

Thermo Scientific AutoPILOT PRO

One-to-six run flow computer for production

The advanced Thermo Scientific™ AutoPILOT™ PRO System is built on an innovative, field-proven technology platform. Applications include production optimization, wellhead control and tank monitoring.

Features

- Custody transfer compliant
- Built-in surge protection
- Designed for the field
- Liquid and gas calculations

The next-generation Thermo Scientific AutoPILOT PRO has been designed with the end user in mind by providing end users a suite of tools to manage operations from upstream to downstream. Flexible I/O options allow for selection of site specific requirements eliminating additional cost while still providing expansion options.

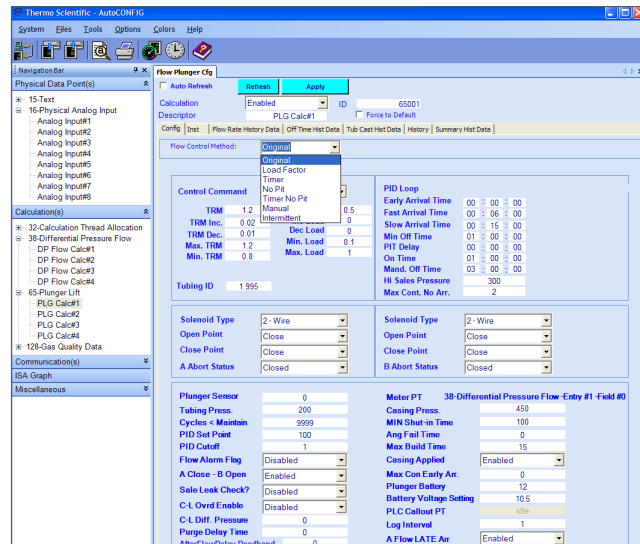


Thermo Scientific™ AutoPILOT PRO



AutoCONFIG Configuration Software

Thermo Scientific flow computers are built on an innovative field proven platform incorporating the latest measurement standards and calculations for hydrocarbon measurement. AutoCONFIG interface allows for simplified configuration eliminating need for indepth programming. Control functions include Station Control, PID, Alarming, Event based logging and many more.



Thermo Scientific™ AutoCONFIG built-in software.

Thermo Scientific™ AutoPILOT PRO EFM/RTU for Production

General specifications

Processor	32-bit, 60 MHz MCU
Program memory	4 MB of flash memory
Data storage memory	SRAM, 2 MB, battery-backed
CPU board communication port	1 RS232, 1 RS232/RS485, 1 10Base-T Ethernet port, 1 USB slave port
Input power	10 VDC to 30 VDC
Output power	9 VDC/80 mA
Historical data storage	User configurable, defaulting to 65 days of daily, 35 days of hourly per meter run
Audit trails	200 audit events, 60 different types of audits
Alarm log storage	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 (provides intrinsically safe circuits to AutoMITTER PRO for use in Class I, Div 1, Groups C and D hazardous locations); ambient temperature range of -40°C to +85°C (-40°F to +185°F), temperature code T3C; type 4X enclosure CE – Electromagnetic compatibility (EMC); CE – II 3 G Ex nL nA IIB T4; -40°C to +85°C (-40°F to +185°F); FCC Compliant – FCC 47CFR Part 15, Class A; Measurement Canada – AG-0564C

Physical specifications

Keypad	4 × 4 (16-key) input
Display	4 × 16 character LCD; User programmable scroll list and menus

Natural gas calculations

Supercompressibility	(Fpv) AGA 8 Gross-1992; AGA 8 Detail-1992; AGA 8 Short-1988; NX-19; NX-19 Analysis; GERG
Differential meters	(DP, Orifice) AGA 3/ANSI/API 2530-1992 Method 2; AGA 3/ANSI/API 2530-1985; ISO 5167; Cone meters; Annubar; GOST
Linear meters	(Turbine) AGA 7; AGA 9; AGA 11
Energy	AGA 5; GPA 2172; ISO 6976
Diagnostic	AGA 10 SoS
Additional factors/equations	Fww (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 (thermal expansion properties); Old Table (NGL, LPG SG range 0.425 to 0.650); Table 23/24 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; 53/54 A/B; 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), equilibrium pressure
Propylene density	API Ch 11.3.3.2
Ethylene density	API 2565 (Ch 11.3.2.1); Ethylene NBS 1045
Live density input	Thermo Scientific Sarasota liquid density meter, Solartron, UGC, 4-20 mA

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