

Thermo Scientific AutoEXEC

Multi run gas flow computer

The Thermo Scientific™ AutoEXEC is the industry's first flow computer that measures natural gas and petroleum liquids simultaneously.

Features

- Custody transfer compliant
- Proven control
- Rack and field mountable
- Liquid and gas calculations

The next-generation Thermo Scientific AutoEXEC is designed for full system control by providing I/O options sufficient to manage upto 32 flow runs in all critical measurement applications. Bidirectional and control functions make the AutoExec an optimal choice for natural gas storage facilities, multi-pad well sites, distribution sites and loading/unloading operations.

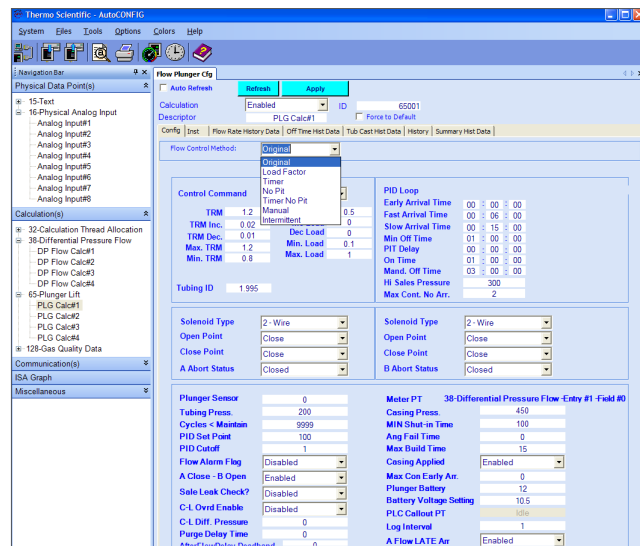


AutoCONFIG Configuration Software

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™ AutoEXEC



Thermo Scientific™ AutoCONFIG built-in software.

Thermo Scientific™ AutoEXEC

General specifications

Processor	32 bit Freescale™ Coldfire®, operates at 200 MHz, processes at 300 million instructions per second (MIPS)
Program memory	32 MB operation, 16 MB flash memory, 2 MB battery backed RAM plus 4 MB non-volatile serial flash
Data storage memory	SRAM, 2 MB, battery-backed
CPU board communication port	CPU Board: 2 RS232, 2 ethernet, 1 slave USB Com Board: 6 RS232, 2 RS485, USB host, USB On-the-Go (OTG)
Input power	90 VAC to 250 VAC, 9 VDC to 30 VDC
Output power	12 VDC on AI board
Historical data storage	User configurable, defaulting to 65 days of daily, 35 days of hourly
Audit trails	200 audit events, 100 different types of audits
Alarm log storage	200 alarm events, 23 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 industrial control enclosure in aluminum or stainless steel
FCC Compliance	Complies with the limits for a Class A computing device with Part 15 of the FCC rules
Approvals	Class I Div 2 (Groups C&D), ATEX zone 2 for hazardous area locations, CE, GOST (pending)

Physical specifications

Rack / Panel Mount Dimensions	Cover: 438.15 mm (17.25 in) W x 266.7 mm (10.5 in) H Card Cage: 431.8 mm (17.0 in) W x 266.7 mm (10.5 in) H x 269.7 mm (10.62 in) D Overall: 438.15 mm (17.25 in) W x 266.7 mm (10.5 in) H x 319.28 (12.68 in) D
NEMA 4X Dimensions	431.8 mm (17.0 in) W x 711.2 mm (28.0 in) H x 411.5 mm (16.2 in) D
Display	4 x 16 character LCD

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	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 (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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