

INTRODUCTION

Based on ABB Totalflow XSeries technology, the XFC 6200EX offers an explosion proof product for differential metering and automation systems. The XFC 6200EX is an accurate and reliable orifice gas flow computer with the capability to measure and monitor gas flow in compliance with AGA, API and ISO standards.

Standard

- Cast explosion proof enclosure
- LCD display (4 X 16)
- Main electronics board
- Termination board
- 2 RS232/485 software selectable comm ports
- 1 Configuration port (inside rear enclosure or optional external PCCU connection, as shown above)
- Externally powered from 9 to 30VDC
- Onboard User IO : 1 AI, 1 DI/PI, 1 DO
- Access to optional I/O daughter card
- 512K FLASH (Program Storage)
- 512K PROM (Flash Loader)
- 512K RAM (Data Storage)
- 32K E²PROM (software config)
- Very stable time-base
- Integral multivariable transducer (IMV)

Optional

- Twelve (12) I/O point daughter card
- Manifold
- EX configuration port assembly (pictured above)
- 100 ohm platinum RTD
- Mounting Kit
- Separate battery backup, power supply package

Totalflow consistently provides new and innovative products and systems in support of accurate, reliable and auditable gas measurement. As such, the XFC 6200EX includes features grounded on a thorough understanding of the natural gas industry's custody transfer and measurement needs.



FEATURES

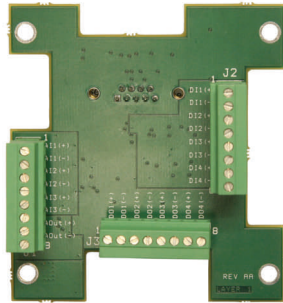
- Low cost, high reliability design
- Cast Aluminum enclosure, powder coated
- Low power consumption
- LCD 4 × 16 character display standard
- Stable time base (accurate integration)
- Dual level security code data protection
- Monitors operation limits for detection, and reporting of abnormal conditions
- Complies with API 21.1 standard for custody transfer devices
- 40+ days historical records (user configurable up to 180+ days of hourly and daily data records)
- Calculation of flow rates, volumes and energy in accordance with AGA 3-85, AGA 3-92, ISO-5167 and AGA-5
- Optional support for other primary elements
- Super compressibility calculations per NX-19 or AGA8-92 Gross or Detail
- Smart (temperature and pressure compensated) integral, factory calibrated, multi-variable transducer
- Flow retention during user transducer calibration
- Selectable 3 or 5 point user calibration
- Programmable DP zero cut-off
- 100 ohm platinum RTD
- Automatic internal calibration of RTD with user programmable offset
- Software selectable (RS232/RS485/RS422) port
- Hazardous Area Classifications: CSA C/US Class I, Div 1, Groups C/D; (ATEX EEx d IIB and IECEx Ex d IIB are pending)
- Real time clock (lithium battery powered)
- Advanced embedded data logger
- Multi-tube capability
- Programmable alarm filtering and exception reporting capabilities
- Multiple protocol options including Totalflow packet protocol and various modbus protocols
- User programmable modbus registers



- User programmable math and logic
- IEC 61131 user programming environment
- IO expansion via optional daughter card
- Software control of power to communications equipment

HARDWARE MODULARITY

Hardware functionality of XSeries devices (including this XFC 6200EX) can be extended in a flexible and simple way by adding optional I/O modules or "Plug-in" cards. The XFC 6200EX is expandable by the addition of a "plug-in" I/O daughter card. The system recognizes the additional I/O automatically and configures the IO Scanner subsystem accordingly.



The 6200EX I/O Daughter Card (2102458-001) provides an additional 12 I/O points to the 6200EX. These I/O points are comprised of a fixed combination of Analog and Digital points. The analog point configuration is comprised of three (3) 0-10V (10K ohm impedance) inputs and one (1) 0-20mA output.

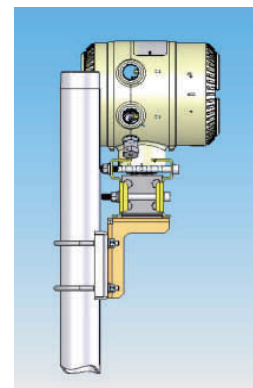
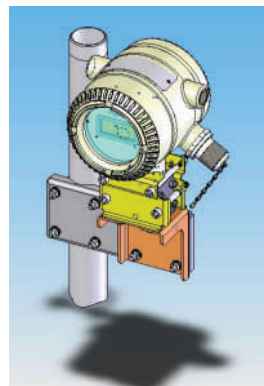
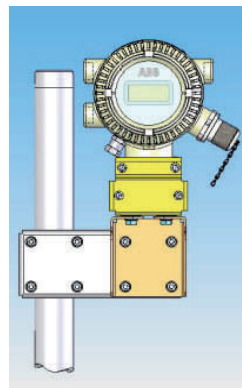
(The analog output is a "SINK" mode and must be used in conjunction with an external power source) The digital point configuration is comprised of four (4) digital inputs and four (4) digital outputs. The digital inputs also function as event counters and are capable of accepting NAMUR type sensors. The digital outputs are optically-isolated type 1A switches capable of switching 200mA of 48VDC or 40VAC.

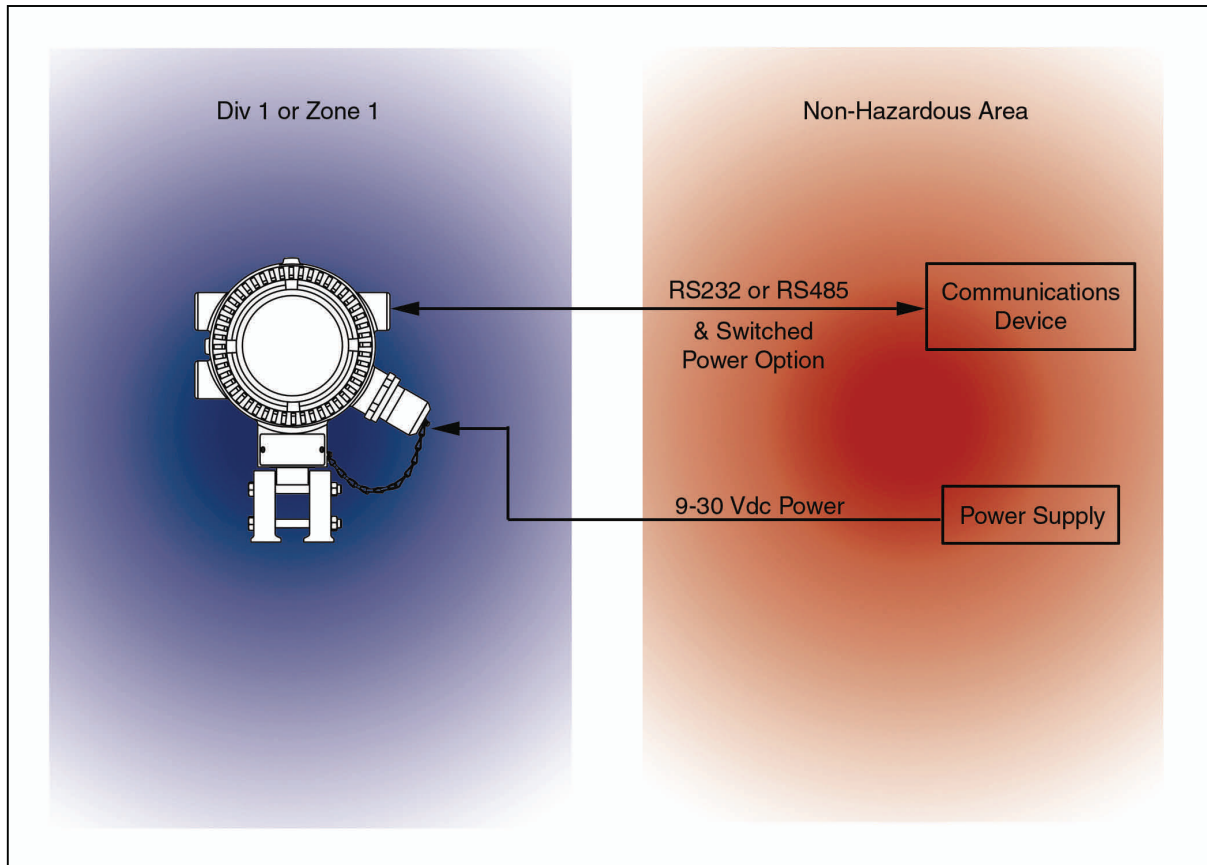
SOFTWARE MODULARITY

A keenly flexible and stable real time environment, this software represents significant modularization through use of object oriented design principles. Totalflow supplied objects (applications) can be instantiated in our factory or by you, one or more times on the same device. It is this framework that allows the support for multi-tube measurement.

Supported Software applications continually grow, but a sample of standard applications include:

- AGA3 orifice meter run
- ISO 5167 orifice meter run
- VCone meter run
- AGA7 rotary/turbine meter run
- Ultrasonic meter run
- Realtime Datalogger (trending)
- Valve Control (Feedback controller)
- RAMS (Alarming, Exception Reporting)
- Operators (simple custom math / logic)
- IEC 61131 (complex math / logic)
- Selectable Units (user selectable engineering units)
- Display Keypad Handler
- IO subsystem Handler
- Tank Level Application
- Therms master application
- Therms slave application
- Multiple protocols (Totalflow native low power, Modbus slave (RTU/ASCII), Modbus master (RTU/ASCII), LevelMaster, Btu 8000/8001, Enron Modbus, MotorSaver, ABB Multivariable Transducer, Altronic and others).





General Specifications	
Dimensions	Nominal Diameter : 6 inches (15.24 cm)
	Nominal Length : 8 inches (20.32 cm)
Weight	Nominal : 16.5 pounds (7.48 kg)
Certification	CSA C/US Class 1, Division 1, Groups C, D, T6 ATEX II2G, Ex d IIB, T6; Enclosure Type 3R, Type 4X, IP53/IP66
Mounting	Pipe Mount
Operating Temperature (ambient)	-40 to 140°F (-40 to 60 °C)
Mechanical Vibration	Tested according to procedures derived from IEC 60068-2-6. Meets or exceeds 10-60 Hz 0.075 mm displacement amplitude / 60-500 Hz 1g specifications taken from IEC 61298-3.
EMC Requirements	EMMISSIONS: <i>European Regions:</i> EN55022 Class B Emissions (Radiated) <i>North America Regions:</i> CFR 47, Part 15, Subpart B, Class B, FCC Emissions ICES-003 Issue 2, Rev. 1, Class B ITE Emissions AS/NZS CISPR 22-2004 (Australia/New Zealand)
	IMMUNITY: <i>European Regions:</i> EN 61000-6-1 Immunity: EN61000-4-2:95, ESD, ±8 k V Air, ±4 k V Contact EN61000-4-3:95 RF Immunity, 10 V/m EN61000-4-4:95 EFT, 2 k V EN61000-4-6:95 Conducted Susceptibility, 10Vrms EN61000-4-8:93 Power Frequency Magnetic Field 3A/m

Electronics	
Power	External DC voltage 9 to 30 VDC
Memory	<ul style="list-style-type: none"> Data stored in 512K SRAM. (lithium battery backup) Applications programs stored in 512K Flash. Flash loader stored in 512K PROM Registry and Configuration files stored in 32K E²PROM Transducer factory calibration data stored in separate E²PROM
Comm Ports	<ul style="list-style-type: none"> 1 - dedicated – PCCU (Local Configuration Port) 2 - RS232, RS485 or RS 422 (Software Selectable).
LCD Interface	Dedicated interface for 4 x 16 Liquid Crystal Display (LCD)
Security Switch	On/Off Dual-level On-board Security Switch
Time Base Stability	± 7.5 ppm (parts per million)
Scan Rate	All Inputs Sampled at 1Hz Rate

Integral Multivariable (IMV) Specifications	
Multivariable Unit	
Temperature Limits	Compensated -20 to 140°F (-29 to 60°C) Operational -40 to 185°F (-40 to 85°C) Storage -40 to 185°F (-40 to 85°C)
Resolution	16 Bit analog-to-digital conversion (0.003% FS) (0.004% FS effective signal resolution)
Vibration Performance	1.5 INW per G (2G maximum) at 1 Hz, decreasing to zero at 1KHz in straight line mode
Mounting Specification	Change from perpendicular (front to back / around x-axis) will be ≤ 1.5 INW (3.736mbar) (can be corrected with calibration)
Reference Conditions	Temperature at most recent factory or user calibration: static pressure and differential pressure ≤100% of URL
Static Pressure	
Accuracy (including linearity, hysteresis, & repeatability at reference conditions)	± 0.075% of User Calibrated Spans from 20% to 100% of URL
Ambient Temperature Effect per 160 °F (70 °C)	± 0.15% of URL ± 0.125% of Reading
Stability (for 12 months)	± 0.1% of URL
Differential Pressure	
Accuracy (including linearity, hysteresis & repeatability at reference conditions)	± 0.075% of User Calibrated Spans from 20% to 100% of URL
Ambient Temperature Effect per 160 °F (70°C)	± 0.15% of URL ± 0.125% of Reading
Stability (for 12 months)	± 0.1% of URL
Static Pressure Effect (DP Zero)	± 0.03% of URL per 1500 PSI (103.42 bar); 3200 PSI (220.63 bar) maximum
Static Pressure Effect (DP Span)	± 0.1% of reading per 1500 PSI (103.42 bar); 3200 PSI (220.63 bar) maximum
Temperature	
Process Range	-80 to +230°F (-62 to 110°C)
Accuracy (as shipped from factory)	± 0.35°F (± 0.2°C) over operating range
Accuracy (after single point field calibration)	± 0.2°F (± 0.12°C) repeatability over operating range

Available Ranges					
	DP (inches H2O)				
AP (psia)		150	500	1500	3200
	150	X	X	X	
	400		X	X	X
	800				

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