XynetSCADA uCFlow Controller

Designed for low power and cost effective gas and liquid flow measurement

Algorithms

- **AGA-3**
- **AGA-7**
- **V-Cone**
- **Wafer Cone**

Compliance

- **AGA**
- **API 21.1**
- **AEUB Directive 17**

XynetSCADA uCFlow is a low powered autonomous device that performs flow calculation that enables gas and liquid flow measurement of up to ten meter runs. XynetSCADA uCFlow supports concurrent **AGA3** (for orifice plate; gas), **AGA7** (for turbine meter; liquid) and **V-Cone/Wafer-Cone** flow measurements with **AGA8** for compressibility calculations.

Open Architecture
- ✓ Enables you to operate and monitor your process anywhere, anytime using royalty free software components
- ✓ Easily fits into your existing network infrastructure system
- ✓ Non-Operating System dependent

Network Proficient
- ✓ TCP/IP based flexible network configuration.
- ✓ Compliant with Modbus (TCP and RTU) protocol to communicate with field devices
- ✓ Able to integrate with control room HMI system via Modbus Slave (TCP or RTU) in XynetSCADA uCFlow

Autonomous Function
- ✓ Configure once and operate
- ✓ Web server available to access important flow parameters and system configurations
- ✓ Ability to utilize onboard FTP server to transfer critical process files
- ✓ Easy GUI-based configuration
- ✓ Backup flow parameters as text file (CSV)
- ✓ Rapid deployment of new meter run using configuration file (CSV)

Communication Ports
- ✓ Multiple types of ports; RS-485, RS-232, Ethernet port, wireless
- ✓ Wireless access point with DHCP capabilities

Compliance and Certification
- ✓ Compliance to America Gas Association (AGA)
- ✓ Compliance to American Petroleum Institute (API) Chapter 21, Section 1
- ✓ Compliance with Alberta Energy Utility Board (AEUB) Directive 17.
- ✓ Certified for operating in Hazardous Area. Class I, Division 2, Group A,B, C & D

Solution

XynetSCADA uCFlow supports wide variety of multivariable transmitters to acquire instantaneous differential pressure, static pressure and flow temperature. The schematics show a typical five meter run interfacing with XynetSCADA uCFlow and to the Main Control Center HMI System via a data radio network. The flow parameters and the system configurations can be effortlessly accessed via Wi-Fi enabled devices (such as a mobile phone or a tablet).

Security

The flow parameter and system configurations are protected using username and password security. Any changes that are made to the flow parameter and/or system configuration are logged in the event log file along with who made the changes for future tracking and accountability purpose. Wireless access to the device is protecting using a WEP key.
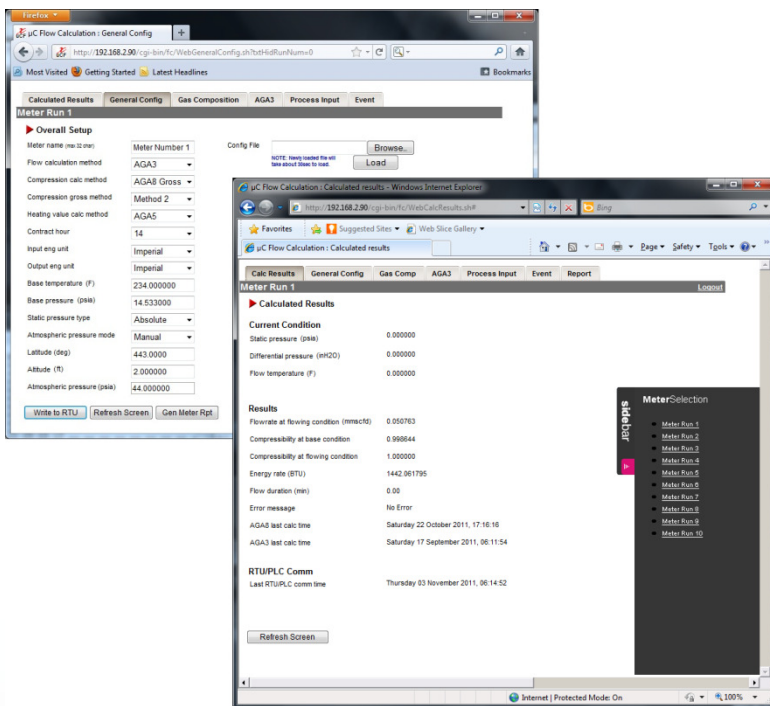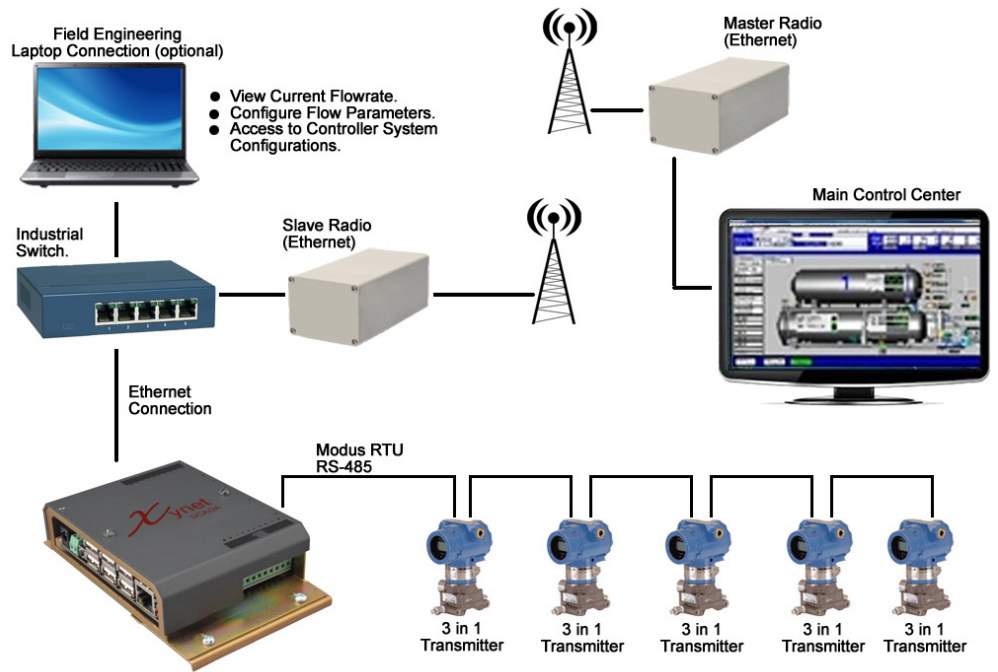
Configuration Tool

The setup and modification of the flow parameters can be done though a web browser and no additional software licenses need be purchased. In addition, there is no need to install complicated software and associated drivers just to configure the XynetSCADA uCFlow. The system configuration of the XynetSCADA uCFlow can also be done using the web browser.

Communications

XynetSCADA uCFlow offers a wide range of communications options though multiple communication ports and interfaces. Each port can be configured to independently operate RS-232 and RS-485 to allow for flexible simultaneous protocol transmission. The XynetSCADA is equipped with an on-board 10/100BaseT Ethernet port which allows for more IP based devices to be connected at high speed. The wireless IP option on the controller allows for mobile device (such as smart phones and tablets) to access the data rapidly on demand, improving productivity and reducing tedious cabling to access the controller.

Reports

XynetSCADA uCFlow generates daily, monthly, meter reports (As-Found and As-Left) and snapshot report (on demanded by user). It also generates event log for audit trail purposes. These reports and log file can be effortlessly downloaded using the web browser or using FTP client. The XynetSCADA uCFlow can store all reports and log file for a maximum of 730 days (2 years).

Specifications

General	
CPU	Toshiba S1X643034
Core Processor	ARM920T
Speed	400 MHz
RAM	64MB
Solid State Drive Space	512MB
Supply Voltage	6VDC - 15VDC
Supply Current	13mA - 500mA
Power Consumption	1.2W - 16.2W (depending on number of USB port usage, 2.5W per USB)
Operating Temperature	-40°C to 70°C
Hazardous Location	Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations. Temperature Code T4 CSA certified to the req of CSA Std. C22.2, No 142, 213 ANSI/ISA 12.12.01-2000 for Hazardous Locations Certification UL 508 (Industrial Control Equipment)

Flow Computer	
Number of concurrent meter runs	10
Flow algorithms	AGA-3 (1992/2000) AGA-7 V-Cone Wafer Cone
Compression calculations	AGA-8 (1992)
Energy calculation	GPA2172 AGA-5
Calculation speed	Once per second
Event Log	40 days of audit trails (configurable)
Reports	Daily Report Monthly Report Meter Report (As Found/As Left) Snapshot Report (On Demand by User)
Standards and compliance tested	American Gas Association (AGA) American Petroleum institute (API) 21.1 Alberta Energy and Utilities Board (AEUB) Directive 17

Data Access Tool	
Configuration	Microsoft Internet Explorer 7.0 or higher, Firefox 14 or higher, Safari 4 or higher Or any other browsers.
Calculated Data	Microsoft Internet Explorer 7.0 or higher, Firefox 14 or higher, Safari 4 or higher Or any other browsers.
Event Log	Microsoft Internet Explorer 7.0 or higher, Firefox 14 or higher, Safari 4 or higher Or any other browsers.
Reports	Microsoft Internet Explorer 7.0 or higher, Firefox 14 or higher, Safari 4 or higher Or any other browsers.
Event and Report File Format	Comma Separated Values (CSV)
Required Operating System (OS)	Any OS
Additional Information	User can configure, monitor and access (import/export) flow calculation data and configuration parameters remotely (from their laptop, operating room, HMI server room or engineering workstations).

Miscellaneous	
Security	Login required to configure flow parameters Event log tracks user change(s)
Time Sync Capability	Able to configure/sync time though the web configuration tool
Maintenance Mode	Maintenance mode is available for the purpose of testing and loop checking
Communication Port	
Ethernet Port (RJ45, 10/100BaseT)	1
RS-485 (configurable)	6
RS-232 (configurable)	6
Wi-Fi	Allows for 255 mobile devices (e.g. laptop, smart phone and tablet) connections
Communication Protocol	
Protocols	Modbus TCP (Ethernet), Modbus RTU (serial RS232 and/or RS485)
Baud rate	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Web Services	
Services	Hypertext Transfer Protocol (XyberHTTP) Secure File Transfer Protocol (XyberSFTP) Dynamic Host Configuration Protocol (XyberDHCP)

Dimensions
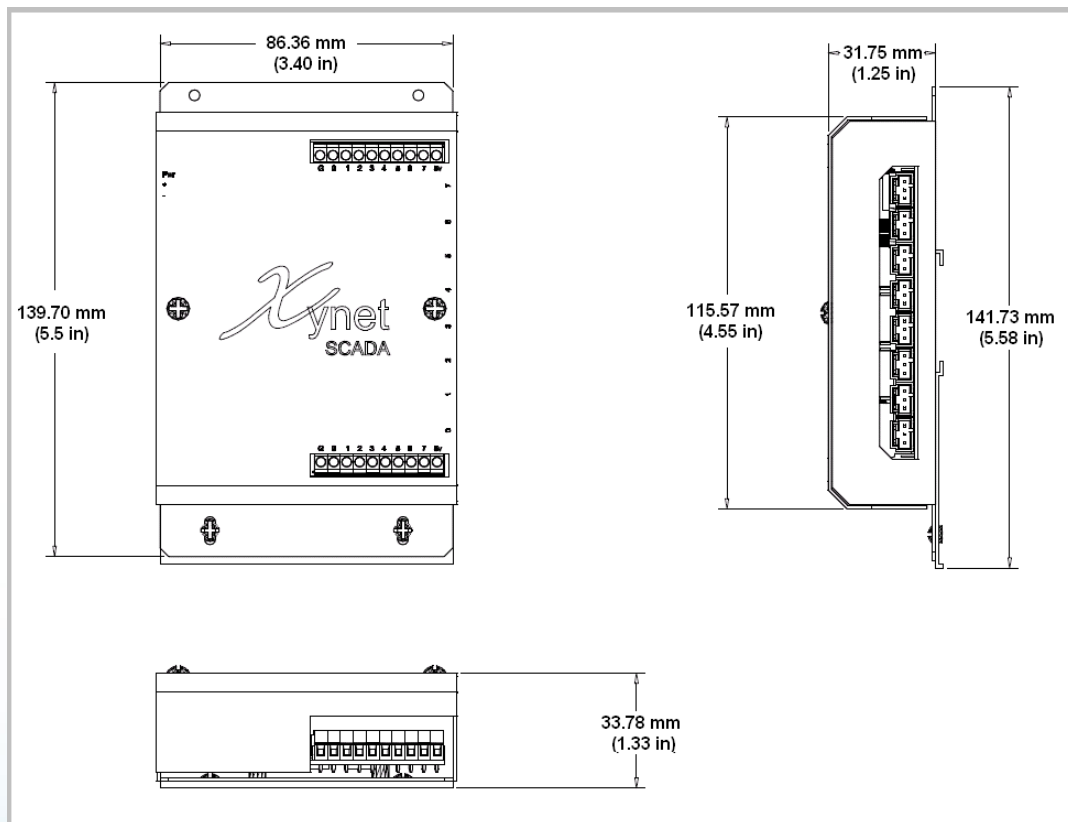
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