FlowStation 110
Pump Station Controller

Features

- Out-of-the-box pump station controller
- GPRS cellular, serial & Ethernet radio
- Interface for BlackBerry Bold
- Event logging, alarm reporting via SMS & E-mail
- Fully functional lift station control solution
- Lead/Lag and standby pump management
- Web Interface for configuration, monitor and control
- Local operator panel (color touch-screen)
- 3-year warranty on parts and labor

Complete Pump Package

The Control Microsystems FlowStation 110 is a complete Pump Station Controller, targeted for use in storm and waste water lift stations, and simple pump-up applications. With its built-in web server and user-friendly configuration interface, FlowStation 110 can be set up locally by field technicians or remotely by system engineers, and as such is ideal for stand-alone installations or as part of a greater SCADA network. The product features comprehensive event and alarm logging, hand-held (BlackBerry™) interface and wireless communication and touch-screen options.

For those future situations where additional pump control is required beyond that already provided by the product, the flexibility of optional TelePACE ladder logic or C++ programming future-proofs your installation.

The FlowStation 110 can be supplied with a true RMS AC current transducer, battery-backed power supply and battery charger. Add to these features the product's 3-year parts and labor warranty (18 months for Vision 221), FlowStation 110 is a powerful, economical, yet flexible, water management tool.

Manage, Monitor & Audit

FlowStation supports a fully functional lift station or simple pump-up reservoir application. Digital float switch and analog tank level signals (level sensors not included) are used by FlowStation 110 to manage up to three pumps with a lead/lag/standby pump-switching algorithm. Pump alternation is configurable as automatic or fixed.

To efficiently manage power use and related costs, FlowStation supports the monitoring, calibration and alarming of pump current draw, as well as the minimizing of energy consumption during peak demand periods through the use of up to three alternate setpoint groups.

Pump station operation can be monitored locally with an optional operator interface, or remotely via BlackBerry or computer with an Internet connection.

Whenever maintaining a detailed audit trail is critical, FlowStation 110 is ready to deliver, with pump run-time stats, and individual logs for pump operation, events and alarms. These logs can be viewed on site, remotely or transferred to an external USB memory device, as required.

Flexible Interface Options

As an out-of-the-box, standalone controller, FlowStation 110 is ready for use by field technicians and operators. Local configuration and operational tasks are handled with connections to laptop computers and optional Vision 221, (7" color touch screen with web browser), via industry-standard Modbus/USB, serial Modbus RTU and Modbus/TCP protocols.

For larger water control systems with geographically-dispersed operational and maintenance assets, FlowStation 110 provides interface tools that exploit the product's integrated web server and Ethernet capabilities. An Internet Explorer 7 web browser connection is supported, with FlowStation dynamically allocating IP addresses using DHCP, or via a fixed WAN IP address, making the product accessible wherever the Internet or WAN/LAN is available. An exciting feature that FlowStation brings to the mix is the integrated BlackBerry interface (Bold model) for basic viewing and alarm acknowledgement.

A new software application called FlowStation Configurator is provided as a standalone PC configuration tool

for initial setup of communication parameters, and for backup/restore/replicate operations of FlowStation configuration.

Utilizing any of these interfaces, a user can:

- Change the FlowStation configuration: station name and address, communication parameters, etc.
- Make operational changes: setpoint levels, maximum pumps allowed to run, etc.
- Set alarm levels: Well level, maximum pump starts per hour, maximum pump current, maximum run time
- Acknowledge and Reset alarms
- Browse embedded status Web pages

Advanced Communication

Control Microsystems understands the critical importance of communications in modern water control systems; operational data must be collected reliably and transported in a timely, secure and efficient manner over a variety of communication links. FlowStation 110 meets the challenge with an innovative selection of communication options.

Direct-wired and wireless radio connections are accommodated by serial RS232/RS485 ports, a 10/100Base-T Ethernet port and dual USB 2.0-compliant communication ports (host and peripheral). For added convenience, optional integrated Trio, FreeWave and MDS serial data radios (900MHz & 2.4GHz) are available.

Users may take advantage of modern cell phone technology with an optional GPRS modem, providing remote access via web browser, alarm notification and acknowledgement via email or SMS messaging, and support for BlackBerry hand-held devices. GPRS operation also supports remote IP communications with a data plan SIM from an appropriate telecommunications provider. VPN or public internet connections are also supported for WAN IP, depending on the telecommunications provider data plan.

An FTP connection to the FlowStation may be enabled for the reading of log files from the controller.

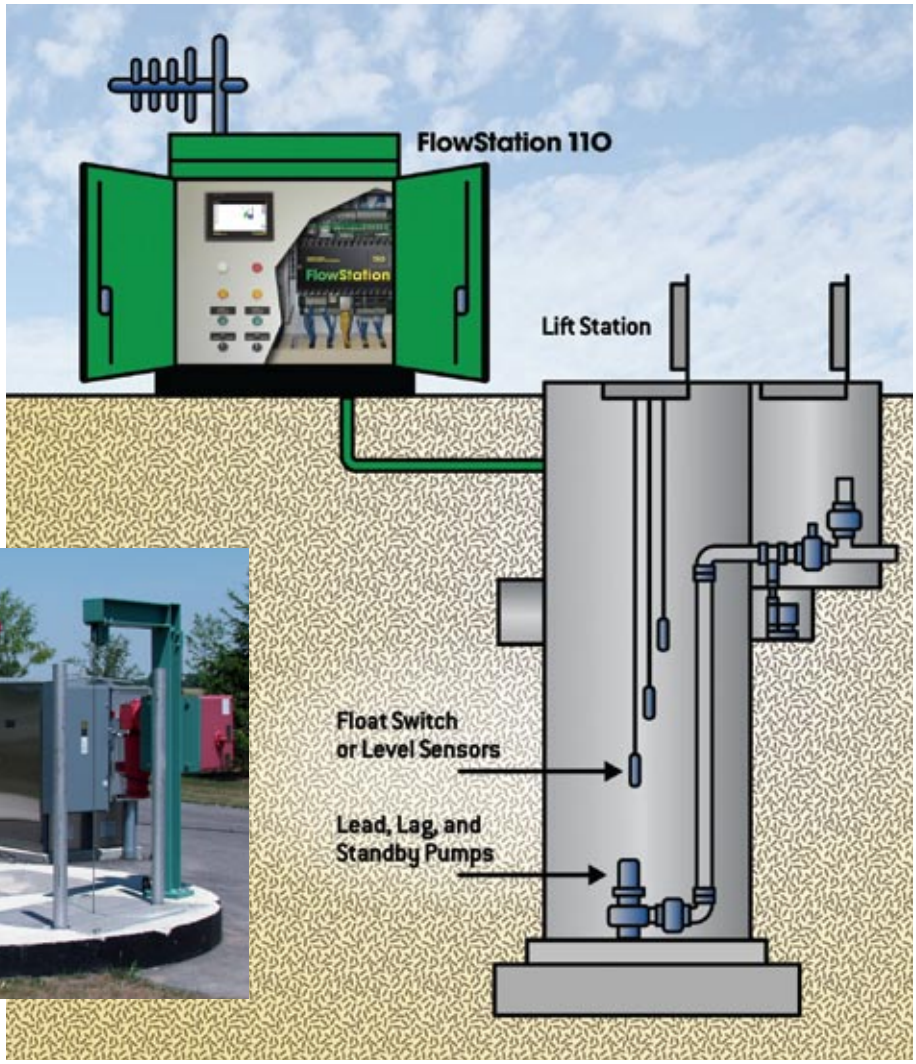
Enhanced SCADA Integration

FlowStation 110 facilitates integration within existing SCADA systems with support for standard SCADA protocols Modbus and Modbus/TCP, and an optimally-grouped register map for maximum polling efficiency.

ClearSCADA pump station templates are provided, containing over 200 I/O points, all pre-configured and addressed for instant use. New pump stations can be brought online easily and quickly by configuring just three parameters. Templates mimic the HTML configuration pages available in the controller and all operational set points (Lead/Lag/Standby On/Off, etc.) can be viewed and set from ClearSCADA.

Flexible I/O

FlowStation 110 comes equipped with a full slate of on-board I/O: 8AI, 2AO (optional), 18DI, 10DO and 1 counter input. For installations requiring higher I/O counts, users may select from the 5000 Series I/O Expansion module set.



Specifications

Pump Controller	
Pumps Supported	1, 2, or 3 (lead, lag, standby)
Level Control	Level sensor or float switch-based
Level Transducer Signal Input	4-20mA, 0-20mA, 1-5V
Control Modes	Pump-down (Lift Station), pump-up (Reservoir)
Pump Alternation	Automatic or fixed
SMS and E-mail	Alarm reporting and acknowledgement (requires optional GPRS modem)
Event Logs	Operator, Event Type, Time and Date of event
Alarms	Logging and assignable alarm priorities
Serial Ports	3, for connection to SCADA Radios, local smart sensors and auxiliary devices such as motor protection relays or remote I/O
Ethernet Port	1, 10/100BaseT for web-browser access to local Vision 221 touch screen, laptop or Ethernet radio to corporate WAN
Communication Protocols	SCADA-ready with Modbus and Modbus/TCP
GPRS Modem	1, optional
BlackBerry Interface	BlackBerry Bold hand-held browser for basic viewing and alarm acknowledgement (GPRS modem required)
Web/LAN Security	User logon authentication, and friendly IP list
USB Memory Stick	FlowStation auto-configuration, event and alarm log recording
Commissioning	I/O simulation and test modes
Flush Valve Operation	Support for automatic or controller-based
Setpoints	Pump Down/Up, configurable in 3 groups for operation during wet/dry season, or minimization of peak power consumption
Lift Station Maintenance	Fat-ring reduction and pump-down sludge removal algorithms to reduce frequency of wet well cleaning
Control and Alarm Trigger Point Hysteresis	Configurable
Pump Performance Monitoring	Pump start statistics, run time accumulations and history logs; pump current monitoring (optional)
ClearSCADA Enhanced Integration	ClearSCADA host software provides pre-configured lift station templates for rapid rollout of new installations
Options	
Kit A	Wiring diagram and suggested panel layout Vision 221 - 7" color touch screen with cable (6 ft, cross-over) GPRS cellular modem (includes power cable) Modem Cable DE15P - RJ45, 3ft. long Antenna, cabinet mount with integrated cable Single phase current transformer Power Supply 24V, 100W, DIN (for backup during power failure or backup generator switchover) Battery Charger 2 Batteries - 12V Gel Cell, 8.5A-Hr (2 required per system)
Kit B	Wiring diagram and suggested panel layout Vision 221 - 7" color touch screen with cable (6 ft, cross over) GPRS Cellular Modem (includes power cable) Modem Cable DE15P - RJ45, 3ft. long Antenna, cabinet mount with integrated cable
Kit C	Wiring diagram and suggested panel layout Vision 221 - 7" color touch screen with Cable (6 ft, cross-over)
Customization	TelePACE ladder logic, C++ programming, additional alarm and event configuration

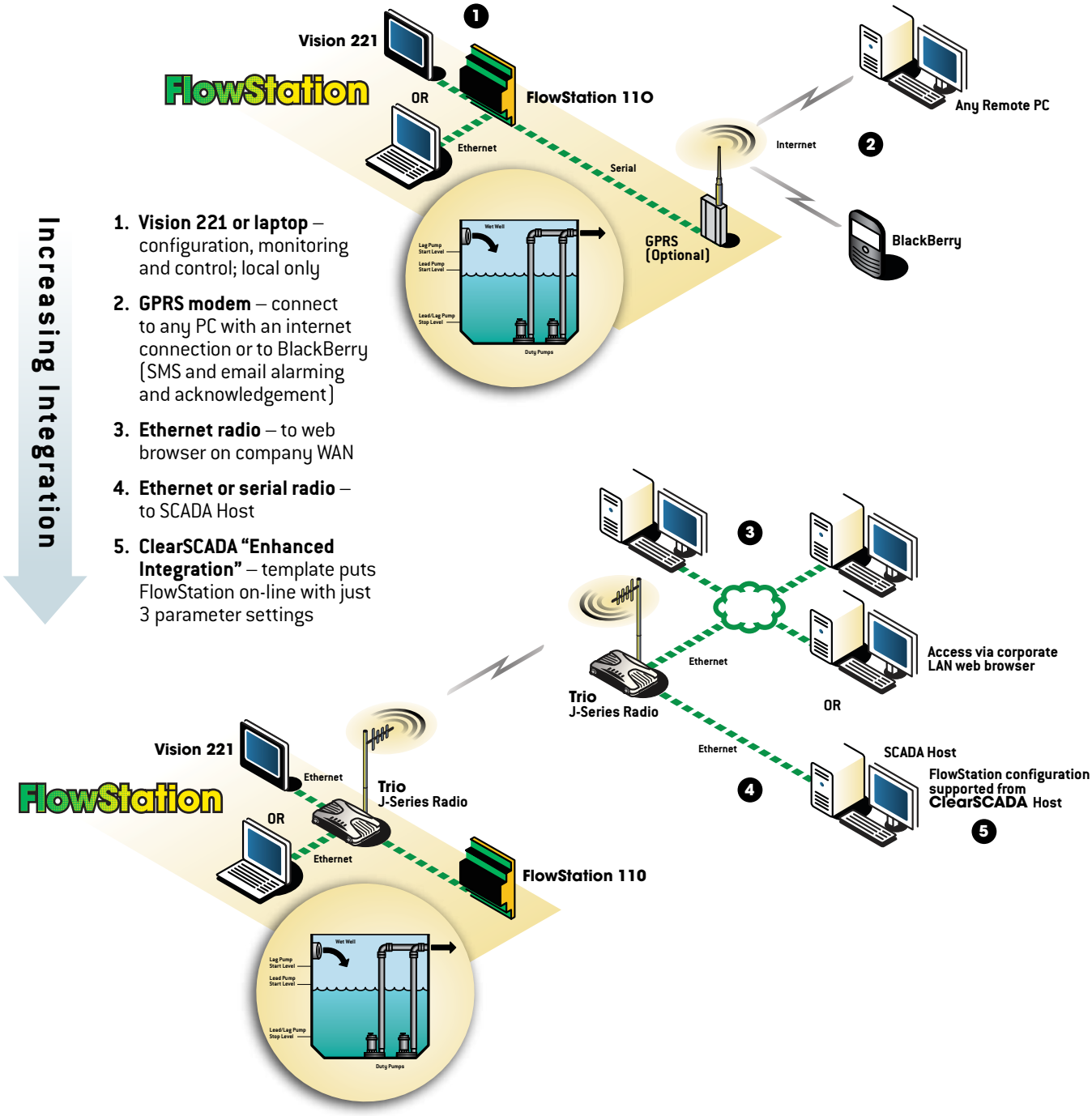
Model Code

F110-1A0N-AB00-A represents a sample code for a FlowStation 110, Modbus protocol emulation, no analog outputs, no integrated radio and kit "A"

Model	Controller
F110	FlowStation110 comes with 8 Analog I/P, 18 Digital I/P, 1 Counter I/P and 10 Digital O/P, USB plug-in memory port
Code	**Communication Ports**
1	5 Communication Ports: 2 RS232/RS485 (RJ45), 1 RS232 (RJ45), 1 Ethernet (RJ45), 1 USB (programming/diags)
Code	**Future Options**
A	None
Code	**Protocol Option**
0	Modbus protocol emulation
Code	**Select: Programming Environment**
N	None (Non-programmable FlowStation)
0	TelePACE Ladder Logic and C Language firmware loaded (Programming Tools sold separately)
1	C++ Language firmware loaded (Programming Tools sold separately)
Code	**Analog Inputs**
A	8 selectable as 0-20, 4-20mA, 0-5V or 0-10V (default 4-20mA)
Code	**Digital Inputs/Outputs**
B	18 Digital Inputs (12/24V), 1 Counter Input and 10 Dry Contact Relay outputs
Code	**Select: Analog Outputs**
0	None
1	2-channel analog output option, 0 - 20mA
Code	**Select: Integrated Communication Interfaces**
0	None
FreeWave & MDS Radios (requires one RS-232 port)	
1	900MHz FreeWave Spread Spectrum Radio
2	2.4GHz FreeWave Spread Spectrum Radio
A	900MHz MDS Spread Spectrum Radio
Trio Radio (requires one RS-232 port)	
B	900MHz Trio K-Series Spread Spectrum Radio with encryption, 902-928MHz (FCC / IC)
Code	**Select: Kit Contents**
A	Kit A (see s pecifications for contents)
B	Kit B (see specifications for contents)
C	Kit C (see specifications for contents)

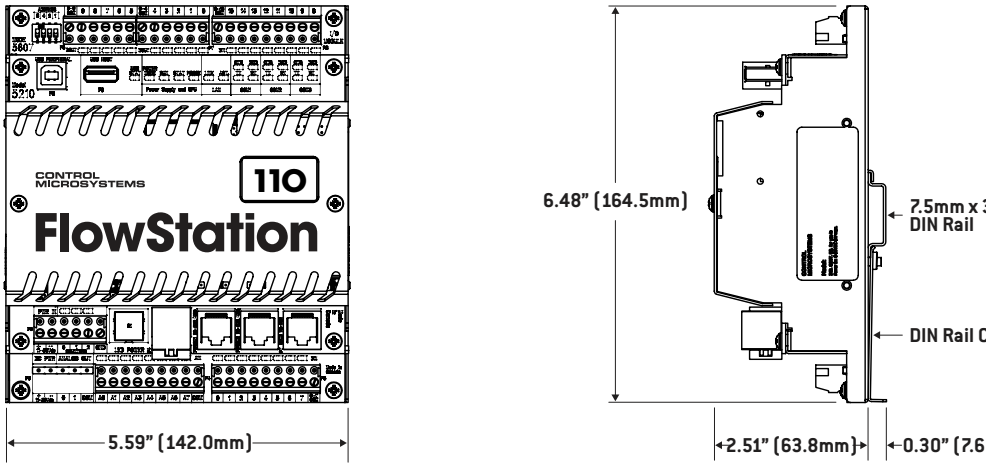
*Note: Stand-alone Trio J-Series Ethernet and K-Series Serial radios are also available in 900MHz spread spectrum.

Connectivity Options to Meet Your Needs

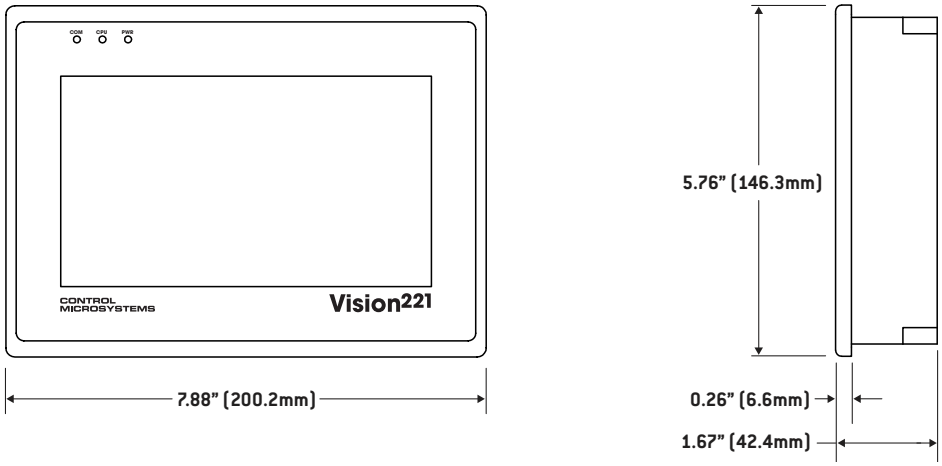


Physical Dimensions

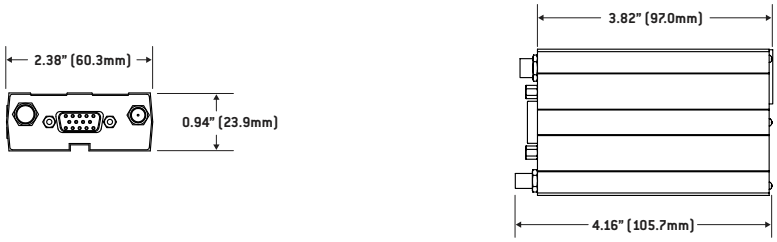
FlowStation 110



Vision 221



GPRS Modem



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