Data Sheet PRO-F3/1201
Supersedes PRO-F3/501

PRO-series Flow Transmitter

(Model PRO-F3 with auto/manual reset totalizer)

CE

Certified Compliant to
European Community Standards

■ **Versatile Sensor Capability.**
The PRO-F3 transmitter can be used with any GLI impeller flow sensor to measure flow rate and volume. A non-GLI flow sensor with a 0-2000 Hz. output can also be used (paddle wheel, turbine, vortex, etc.).

■ **Multiple Measurements.**
The measured flow rate or total volume can be displayed separately or together. The corresponding 4-20 mA analog output value can also be shown.

■ **Versatile Hookup Capability.**
PRO-series transmitters can be wired in a two, three or four-wire hookup arrangement to meet your application requirement.

■ **Compact Size and NEMA 4X Universal Mounting.**
The compact PRO-series transmitter can be panel, wall, pipe or integral sensor mounted.

■ **Simple Interactive Diagnostics.**
Built-in diagnostics continuously test transmitter and sensor operation.

■ **Multiple Language Capability.**
All screens can be selected for display in English or Spanish. (Different languages such as French or German may also be substituted.)

■ **Menu-guided Operation.**
The simple keypad and logical menu structure make this transmitter easy to use. Menu screens guide you through setup, calibration, operation, and test/maintenance functions.

■ **Auto/Manual Totalizer Modes.**
In the automatic reset mode, the totalizer resets displayed volume to zero after reaching its maximum limit and starts a new count. During power outages, counting is temporarily suspended, and then resumed after power returns. The manual reset mode requires the operator to manually reset the volume.

■ **Passcode-protected Access.**
For security, use the passcode feature to restrict configuration and calibration settings to only authorized personnel.

■ **Two Calibration Adjustment Methods.**
To match or verify measured flow versus a secondary precision flowmeter, the PRO-F3 has two selectable calibration adjust methods to “offset by” or “set to” a desired flow rate. This linear adjustment can be made whether using GLI impeller sensors or non-GLI flowmeters.

■ **Isolated 4-20 mA Analog Output.**
The isolated 4-20 mA analog output can represent the flow rate or volume. Parameter values can be entered to define the endpoints at which the 4 mA and 20 mA values are desired (range expand).

■ **Electromagnetic Conformance.**
All PRO-series transmitters exceed U.S. and meet European standards for EMI and RFI emissions and immunity.

■ **OEM Versions Available.**
PRO-series transmitters can be packaged or configured to accommodate OEM-specific needs.

Specifications

Operational:

Display.....Two-line by 16 character LCD

NOTE: *Measured flow rate and volume can be displayed separately or together. The corresponding 4-20 mA analog output can also be shown.*

Measurement	Selectable Ranges
Flow Rate.....	0-9999, 0-999.9 or 0-99.99 with selectable flow rate units and multiplier
Total Volume.....	0-999,999,999 with selectable volume units
Analog Output.....	4.00-20.00 mA

Totalizer.....Counts and displays total volume, and has automatic and manual reset capability

Ambient Conditions.....Operation: -4 to +140°F (-20 to +60°C); 0 to 95% relative humidity, non-condensing
Storage: -22 to +158°F (-30 to +70°C); 0 to 95% relative humidity, non-condensing

Sensor-to-Analyzer Distance.....GLI Impeller Sensors: 2000 ft. (610 m) maximum
Non-GLI Sensors: 300 ft. (91 m) maximum

Power Requirements (Class 2 Power Supply):
- Two-wire Hookup.....16-30 VDC
- Three-wire Hookup.....14-30 VDC (16 VDC minimum with RS-485 serial communication)
- Four-wire Hookup.....12-30 VDC (16 VDC minimum with RS-485 serial communication)

Calibration Adjust:
- Offset By.....Enter offset value (“+” or “-”) that is added to or subtracted from the measurement to linearly offset the flow reading
- Set To.....Enter measurement value (derived from qualified reference instrument reading) to linearly offset measured flow reading

NOTE: *Calibration is actually achieved by configuring the sensor, which is a normal part of the initial instrument setup. During a calibration adjustment, the analog output remains active, responding to its assigned parameter (measured flow rate or totalizer volume).*

Analog Output.....Isolated 4-20 mA output with 0.004 mA (12-bit) resolution

NOTE: *Output can represent the measured flow rate or totalizer volume. Parameter values can be entered to define the endpoints at which the 4 mA and 20 mA output values are desired (range expand).*

Maximum Loop Load.....Dependent on power supply voltage, transmitter hookup arrangement, and wire resistance:

Maximum Permissible Loads							
Transmitter Hookup Arrangement	Power Supply Voltage						
	12 VDC	14 VDC	16 VDC	20 VDC	24 VDC	28 VDC	30 VDC
Two-wire Hookup	- - - -	- - - -	100 ohms	300 ohms	500 ohms	700 ohms	800 ohms
Three-wire Hookup	- - - -	500 ohms	600 ohms	800 ohms	1000 ohms	1200 ohms	1300 ohms
Four-wire Hookup	400 ohms	500 ohms	600 ohms	800 ohms	1000 ohms	1200 ohms	1300 ohms

Memory (non-volatile).....All user settings are retained indefinitely without battery backup

EMI/RFI Conformance.....Exceeds U.S. and meets European standards for conducted and radiated emissions and immunity; certified CE compliant for applications as specified by EN 50081-2 for emissions and EN 50082-2 for immunity

Electrical Certifications:
- General Purpose (pending).....UL, C-UL, FM, and CENELEC
- Class 1, Division 2 (pending).....UL, C-UL and FM: Groups A, B, C, D, F, and G

Analyzer Performance (Electrical, Analog Outputs at 25°C):

Accuracy* .....± 0.1% of span
Sensitivity* .....± 0.05% of span
Repeatability* .....± 0.05% of span
Temperature Drift* .....Zero and Span: ± 0.02% of span per °C
Response Time .....1-60 seconds to 90% of value upon step change

*These performance specifications are typical at 25°C.

Mechanical:

Enclosure.....Polycarbonate; NEMA 4X general purpose; choice of included mounting hardware
Mounting Configurations.....Panel, wall, pipe or integral sensor mounting
Dimensions.....With Back Cover: 3.75 in. W x 3.75 in. H x 2.32 in. D (95 mm W x 95 mm H x 60 mm D)
Without Back Cover for Panel Mount: 3.75 in. W x 3.75 in. H x 0.75 in. D (95 mm W x 95 mm H x 19 mm D)
Net Weight.....10 oz. (280 g) approximately

Ordering Information

MODEL NUMBER (see Notes 1 and 3)

PRO-F3A	Flow transmitter with wall/pipe/integral sensor mount kit (see Note 2)
PRO-F3B	Flow transmitter with panel mount kit (includes gasket, retainer plate, and four screws)
PRO-F3C	Basic flow transmitter (without mounting hardware -- electronics only)

RESERVED CATEGORY

EQUIPMENT TAGGING (specify tag data)

N	None
P	Paper
S	Stainless steel

1 **Product Number**

Choose item from each category.

Ordering Notes:

1. The standard on-screen languages for PRO-series transmitter operation are English and Spanish. A different language (French, German, etc.) may be substituted for Spanish. Please specify the desired language.

2. This mounting kit includes all hardware needed to wall, pipe or integral sensor mount the transmitter. When integrally mounting the transmitter onto a GLI impeller flow sensor, please specify the sensor part number with a "PRO2" suffix to ensure a correct sensor cable length. (GLI impeller flow sensors do not require a coupling for integral transmitter mounting.)

3. Each transmitter is supplied with a CD-ROM containing operating manuals (in PDF-file format) for all of the PRO-series transmitters. Paper manuals are also available (see Accessories below).

Accessories (order separately):

- **Retrofit Wall/Pipe/Integral Sensor Mount Kit 1000A3457-001**

  This hardware kit enables an existing panel-mounted PRO-series transmitter to be wall, pipe or integral sensor mounted.

- **Retrofit Panel Mount Kit 1000A3455-001**

  This hardware kit enables an existing wall, pipe or integral sensor-mounted PRO-series transmitter to be panel mounted.

- **Operating Manual No. PRO-F3**

  A paper booklet operating manual for the PRO-F3 flow transmitter.

GLI Impeller Flow Sensors

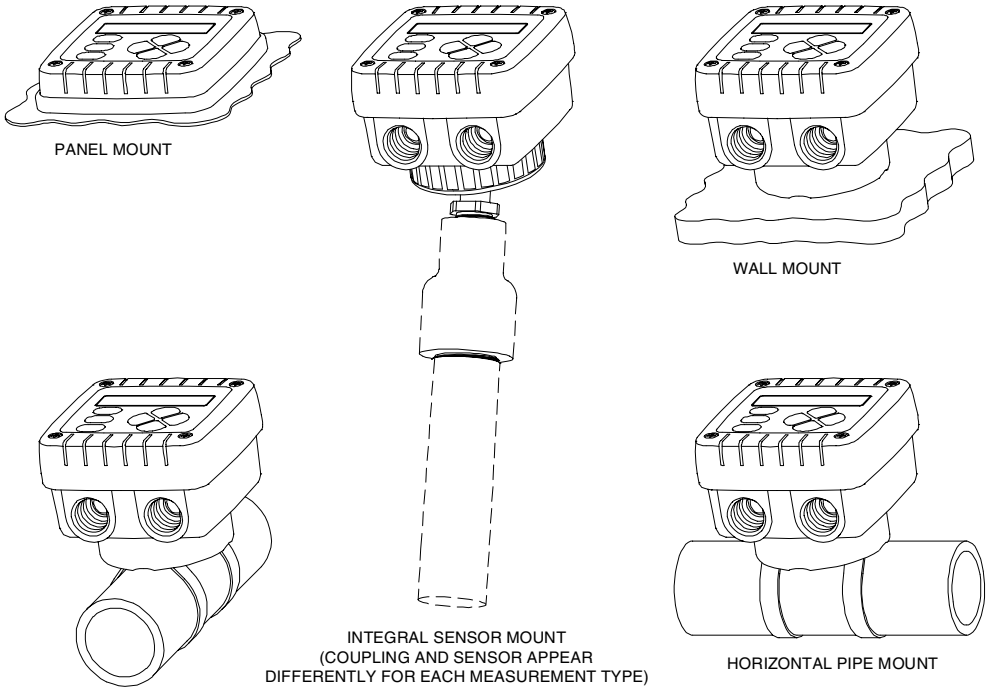
Refer to data sheet F1A11 for tee mount style flow sensors, or data sheet F1A13 for pipe thread and "hot tap" style flow sensors.

Engineering Specification

1. The microprocessor-based transmitter shall accept any GLI impeller flow sensor, or non-GLI flow sensor with a 0-2000 Hz. output such as a paddle wheel, turbine, vortex, etc.
2. The transmitter shall measure flow rate and volume.
3. The transmitter shall be operable in multiple languages.
4. The analyzer shall have a two-line by 16 character LCD. It shall display the measured flow and volume separately or together on a single screen. The corresponding 4-20 mA analog output value shall also be shown.
5. The analyzer shall have two selectable calibration adjustment methods to linearly offset the measured reading:
   a) Offset By: Enter an offset value ("+" or "-") which is added to or subtracted from the measured reading.
   b) Set To: Enter a measurement value (derived from qualified reference instrument reading).
6. The transmitter shall have a passcode to restrict configuration and calibration settings to only authorized personnel.
7. The transmitter shall have a totalizer with two selectable reset modes:
   a) Manual -- totalizer stops counting after reaching the maximum limit, and must be manually reset to zero.
   b) Automatic -- totalizer resets itself to zero after reaching the maximum limit, and starts a new count.

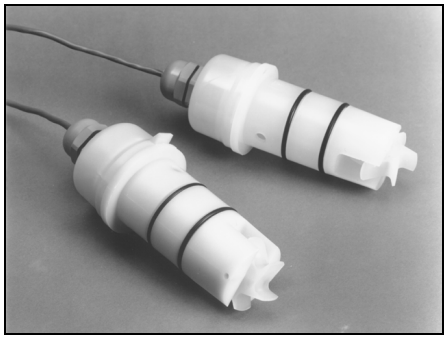
   At any time, regardless of the selected mode, the volume shall be capable of being manually reset to zero. Whenever power is interrupted, volume counting shall be suspended until power is restored when counting resumes.
8. The transmitter shall have user-test diagnostics for transmitter and sensor operation without requiring special test equipment.
9. The transmitter shall have an isolated 4-20 mA analog output that can be assigned to represent the flow rate or volume. Parameter values can be entered to define the endpoints at which the 4 mA and 20 mA output values are desired (range expand).
10. The transmitter shall be GLI International, Inc. Model PRO-F3.

Mounting Configurations

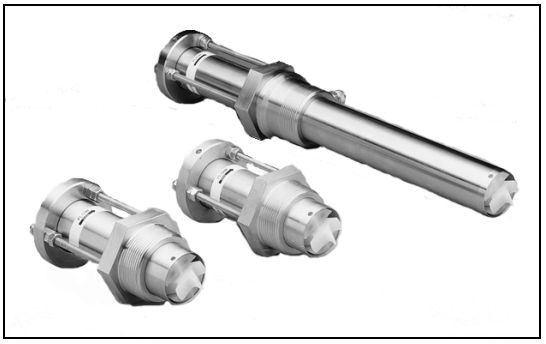


Impeller Flow Sensors (for use with PRO-F3 Transmitter)

Tee Mount Style Sensors
(Model F1A11-series)



Pipe Thread and "Hot Tap" Style Sensors
(Model F1A12 and F1A13-series)



For complete details and specifications, refer to data sheet F1A11 or F1A13 respectively.