

# pro<sup>sense</sup> FSA Series Flow Transmitters

Part No. FSA75-42-6H

Part No. FSA1-42-27H



Part No. FSA75-42-10H

The ProSense FSA Series flow transmitters are ideal for applications with rapid temperature changes or where fast response time is required, such as:

- Machine tool coolant flow
- HVAC cooling water flow
- Injection molding cooling water flow



## Overview

The ProSense FSA Series flow transmitters monitor liquid media and provide an analog output proportional to flow rate for various flow applications.

The ProSense FSA Series sensing principle is based on differential pressure which ensures extremely fast response time and allows for a precise flow measurement. The ProSense flow transmitters are available in three flow ranges up to 27GPM.

## Features

- Measure up to 27GPM (gallons per minute) in 3 models
- Immune to rapid temperature changes of media
- Fast response time of <10ms
- 3/4" or 1" FNPT process connections
- Integrated check valve design allows the sensor to be mounted horizontally or vertically
- 4-pin M12 quick-disconnect
- IP65 / IP67
- 2-year warranty



| ProSense FSA Series Flow Transmitters |  |          |              |          |
|---------------------------------------|--|----------|--------------|----------|
| Part No.                              | Description  | Quantity | Weight (lbs) | Price    |
| <b>FSA75-42-6H</b>                    | ProSense liquid flow transmitter, 0 to 6 GPM measuring range, 3/4 inch female NPT process connection, 4-20 mA analog output, 18 to 32 VDC operating voltage, 4-pin M12 quick-disconnect electrical connection. Purchase cable separately.  | 1        | 1.0          | \$152.00 |
| <b>FSA75-42-10H</b>                   | ProSense liquid flow transmitter, 0 to 10 GPM measuring range, 3/4 inch female NPT process connection, 4-20 mA analog output, 18 to 32 VDC operating voltage, 4-pin M12 quick-disconnect electrical connection. Purchase cable separately. | 1        | 1.0          | \$152.00 |
| <b>FSA1-42-27H</b>                    | ProSense liquid flow transmitter, 0 to 27 GPM measuring range, 1 inch female NPT process connection, 4-20 mA analog output, 18 to 32 VDC operating voltage, 4-pin M12 quick-disconnect electrical connection. Purchase cable separately.   | 1        | 1.5          | \$178.00 |

| ProSense FSA Series Flow Transmitters Technical Specifications |   |              |             |
|--|---|--------------|-------------|
| Model  | FSA75-42-6H   | FSA75-42-10H | FSA1-42-27H |
| <b>Operating Voltage</b>                                       | 18 to 32 VDC (SELV/PELV)**  |              |             |
| <b>Electrical Connection</b>                                   | M12 (note: tightening torque <0.6 Nm based on cable)                          |              |             |
| <b>Connection Pin Material</b>                                 | Gold-plated   |              |             |
| <b>Output Function</b>   | Analog  |              |             |
| <b>Analog Output</b>   | 4-20 mA (sourcing)  |              |             |
| <b>Maximum Load</b>  | 500Ω  |              |             |
| <b>Current Consumption</b>                                     | <35mA   |              |             |
| <b>Short-Circuit Protection</b>                                | YES   |              |             |
| <b>Reverse Polarity Protection</b>                             | YES   |              |             |
| <b>Overload Protection</b>                                     | YES   |              |             |
| <b>Cycles</b>  | 10 million minimum  |              |             |
| <b>Response Time</b>   | <10ms   |              |             |
| <b>Accuracy*</b>   | ± 5% of full range  |              |             |
| <b>Repeatability*</b>  | ± 1% of full range  |              |             |
| <b>Process Connection</b>                                      | 3/4" FNPT   |              | 1" FNPT     |
| <b>Medium</b>  | Liquids (water, glycol solutions, oils), use of 200 micron filter recommended |              |             |
| <b>Maximum Flow Rate</b>                                       | 26.4 GPM  |              | 52.8 GPM    |
| <b>Maximum Viscosity</b>                                       | <68 centistokes   |              |             |
| <b>Flow Measuring Range</b>                                    | 0 - 6 GPM   | 0 - 10 GPM   | 0 - 27 GPM  |
| <b>Pressure Rating</b>   | 362 psig max operating / 724 psig proof pressure                              |              |             |

\* When used with water @ 20°C [68°F]

\*\* Voltage Supply According to EN50178 SELV (Safety Extra-Low Voltage) / PELV (Protected Extra-Low Voltage)

# proense® FSA Series Flow Transmitters

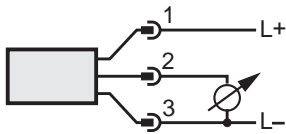
| ProSense FSA Series Flow Transmitters Environmental Specifications |  |              |             |
|--|--|--------------|-------------|
| Model  | FSA75-42-6H  | FSA75-42-10H | FSA1-42-27H |
| Housing Material   | Brass chemically nickel plated; PP (Polypropylene); stainless steel (316L / 1.4404); aluminum anodized; PA (Polyamide)               |              |             |
| Materials (wetted parts)   | Stainless steel (316 / 1.4401); brass chemically nickel plated*; PP (Polypropylene); PPS (Polyphenylene sulfide); O-ring:FKM (Viton) |              |             |
| Operating Temperature  | 32 to 140°F (0 to 60°C)  |              |             |
| Medium Temperature   | 14 to 212°F (-10 to 100°C)   |              |             |
| Storage Temperature  | 5 to 176°F (-15 to 80°C)   |              |             |
| Protection   | IP65 / IP67  |              |             |
| Protection Class   | III  |              |             |
| Agency Approvals   | cULus (#E320431), CE, RoHs   |              |             |

\* The brass contains between 1-2% lead by weight. Not recommended for use in potable water applications.



**NOTE: CHECK THE CHEMICAL COMPATIBILITY OF THE SENSOR'S WETTED PARTS WITH THE MEDIUM TO BE MEASURED.**

## Wiring Diagrams



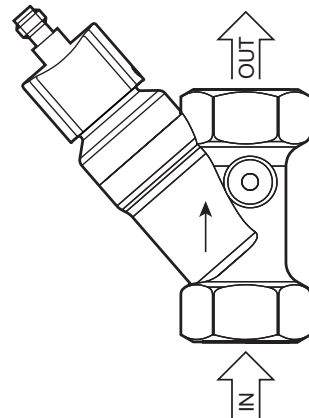
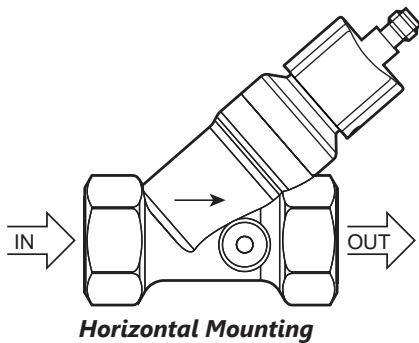
### Cable Assembly Wiring Colors:

- Pin 1 - Brown
- Pin 2 - White
- Pin 3 - Blue
- Pin 4 - Black

Note: Wiring colors are based on AutomationDirect CD12L and CD12M 4-pole cable assemblies.

## Installation\*:

For proper operation, please observe the flow direction arrows on the body of the sensor. The mounting orientation does not effect the operation of the unit.



\* Integral check valve design allows the sensor to be mounted in any position.

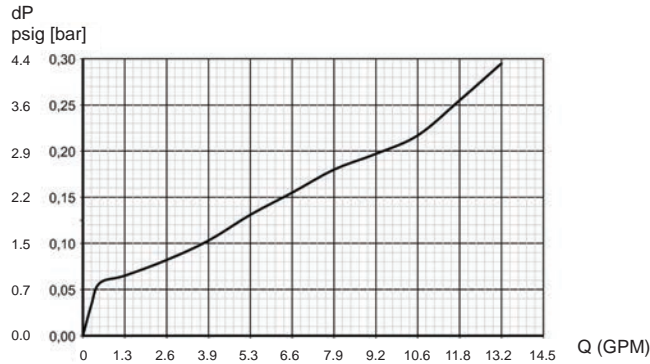


1. Ferromagnetic materials in the surrounding environment should be at least 50mm from the housing of the unit.
2. Ferromagnetic piping may be used on the inlet and outlet connections.
3. Do not operate the unit in the vicinity of magnetic constant and alternating fields (e.g. welding systems).
4. If the sensors are installed side by side, observe a minimum distance of 50mm between the sensor axes.
5. Avoid downward flow in unpressurized pipes.

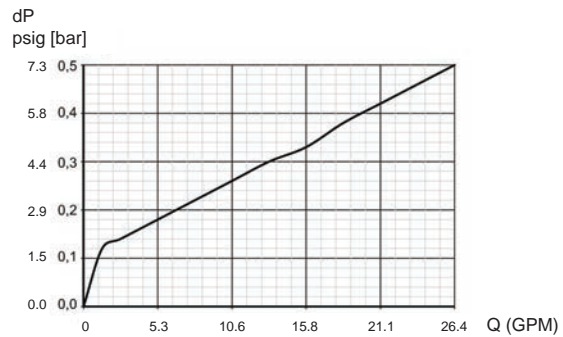
# pro<sup>ense</sup>® FSA Series Flow Transmitters

## Pressure Loss/Flow Rate\*

**FSA75-42-6H**  
**FSA75-42-10H**



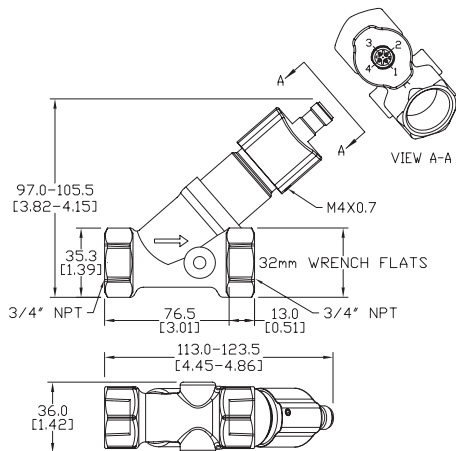
**FSA1-42-27H**



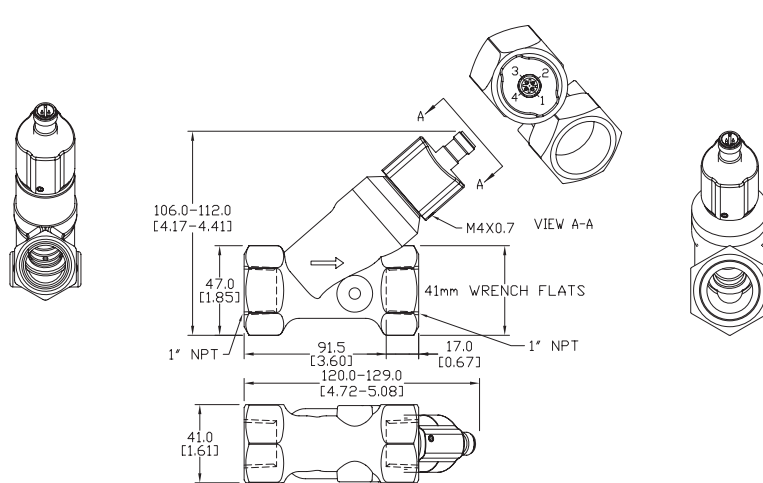
\* when used with water @ 20°C [68°F]

## Dimensions

mm [inches]



**Part No. FSA75-42-6H**  
**FSA75-42-10H**



**Part No. FSA1-42-27H**

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

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## Operation

The flow sensor utilizes a spring-supported piston that is lifted by the flowing medium. By monitoring the piston position the flow rate is determined on the principle of differential pressure and is converted into an analog output signal (4 to 20 mA). The spring resets the piston to its initial position with decreasing flow. This allows the sensor to be mounted in any position (horizontally or vertically) and function as a check valve.



Cutaway View

| Part Number  | Flow Measuring Range (Gallons/Minute) |
|--------------|---------------------------------------|
| FSA75-42-6H  | 0 to 6                                |
| FSA75-42-10H | 0 to 10                               |
| FSA1-42-27H  | 0 to 27                               |

## Function

The analog signal for water (20°C [68°F]) is linear from 4.3 mA to 20mA (4mA = no flow). For an output signal >20mA the flow rate is above the final value of the measuring range.



Click or scan the above QR code to be taken to the installation insert for the FSA Series Flow Transmitters

## Analog Output Charts

