ProSense QPS is a pressure measurement device. DO NOT use it out of its specification. Improper pressure or incorrect wiring may cause injuries to personnel or damages to other devices.

1. Keep away from high-voltage and high-frequency environment during the installation to prevent interference. Avoid using the device in environments which contain: (a) dust or corrosive gas; (b) high humidity and high radiation; (c) shock and vibration
2. QPS can only be used for air pressure measurement and should avoid corrosive, inflammable or toxic gas measurement.
3. Make sure the input power is switched off when installing or uninstalling the QPS and the pressure source is off to prevent harm to personnel or equipment.
4. Before switching on the input power, check the signal connection, e.g. the input voltage and polarity. Voltage that is too high may cause damage to the QPS.
5. Use dry cloth and DO NOT use acid or alkaline liquid to clean the device.
6. Outputs remain active in Setup Mode.

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions regarding the installation or operation of this equipment, or if you need additional information, please call us at 1-800-633-0405 or 770-844-4200.

This publication is based on information that was available at the time it was printed. At AutomationDirect we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without obligation. This publication may also discuss features that may not be available in certain revisions of the product.

WARNING: Electric shock danger

ProSense QPS Digital Pressure Switch / Transmitter Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>QPSL-AP-42</th>
<th>QPSL-AN-42</th>
<th>QPSH-AP-42</th>
<th>QPSH-AN-42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Pressure</td>
<td>10.8 to 26.4 VDC</td>
<td>10.8 to 26.4 VDC</td>
<td>10.8 to 26.4 VDC</td>
<td>10.8 to 26.4 VDC</td>
</tr>
<tr>
<td>Maximum Pressure</td>
<td>2ms, 4ms, 10ms, 30ms, 50ms, 100ms, 250ms, 500ms, 1,000ms, 5,000ms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Accuracy</td>
<td>±3% of full scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Influence @ 25°C</td>
<td>±3% of full scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid Measured</td>
<td>Air, Non-corrosive gas, Non-flammable gas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Power</td>
<td>400mA maximum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>10.8 to 26.4 VDC</td>
<td></td>
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</tr>
<tr>
<td>Output Type</td>
<td>2PNP, 2PNP, 2PnP, 2PNP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Current</td>
<td>100mA each</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response Time</td>
<td>2ms, 4ms, 10ms, 30ms, 50ms, 100ms, 250ms, 500ms, 1,000ms, 5,000ms</td>
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<td></td>
<td></td>
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<tr>
<td>Residual Voltage</td>
<td>1.5 VDC</td>
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<tr>
<td>Output Type</td>
<td>4-20mA</td>
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<tr>
<td>Analog Output</td>
<td>Maximum Output Load Resistance</td>
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<td></td>
<td></td>
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<tr>
<td>Linear Accuracy</td>
<td>±3% of full scale</td>
<td></td>
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</tr>
<tr>
<td>Process Connection</td>
<td>1/8” NPT outer / M5 inner bore (Nickel Plated Brass)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case Materials</td>
<td>Case = ABS Plastic, Lens = Polycarbonate</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Shock Immunity</td>
<td>10 - 500 Hz, 10mm 3 axes for 2 hours</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Vibration Immunity</td>
<td>Max. 100m / 2g - 20g, 3 axes 6 directions, 3 times each</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0°C to +50°C (32°F to 122°F)</td>
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<tr>
<td>Storage Temperature</td>
<td>-20°C to +65°C (4°F to 149°F)</td>
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<tr>
<td>Altitude</td>
<td>2,000m</td>
<td></td>
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</tr>
<tr>
<td>Ambient Humidity</td>
<td>35% - 80% (non-condensing)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Approvals</td>
<td>cULus - UL 508 (E157382), CE, RoHS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wiring:

- 1 - Positive input power (brown)
- 2 - Digital output 1 signal (black)
- 3 - Digital output 2 signal (white)
- 4 - Analog output signal (orange)
- 5 - Negative power supply input (blue)
Menu Navigation
Changing modes:
The QPS will be in the “Run Mode” when it is powered on, displaying PV and SV. Press \( \text{ } \) \( \text{ } \) for more than 2 seconds in this mode to switch to the “Quick Setup Mode”. Press \( \text{ } \) \( \text{ } \) for more than 4 seconds in the “Run Mode” to switch to “Pro Setup Mode”. Press \( \text{ } \) \( \text{ } \) more than 2 seconds in the “Quick Setup Mode” or “Pro Setup Mode” to return to the “Run Mode”.

Setting up parameters:
In the three modes, press \( \text{ } \) once to select the parameter to set up. When you find the parameter to set up or modify, use \( \text{ } \) \( \text{ } \) to modify the setting.

Resetting the ProSense QPS to factory default values:
Hold \( \text{ } \) button for 4-5 seconds until display changes to read \( \text{ } \). Press the \( \text{ } \) button 9 times until the display shows \( \text{ } \). Using the \( \text{ } \) \( \text{ } \) buttons change the value to \( \text{ } \) and press \( \text{ } \). When complete the display will read \( \text{ } \).

Caution: Outputs remain active in Setup Mode

Accessing QPS Setup Modes:

Run Mode

Quick Setup Mode

Pro Setup Mode

Additional Help and Support

• For additional technical support and questions, call our Technical Support team @ 1-800-635-0405 or 770-844-4200
**CODE (Pro Setup Mode Parameter)**

CODE provides a quick method to determine the settings of the QPS parameters (Factory Default).  

### QPS Display

**Analog Output**

The analog output is directly proportional to the process pressure over the full range of the device. For example if the process pressure is 0 psi the 4-20 mA output of a QPSL will be approximately 12 mA or for the QPSH the pressure at 12 mA would be 65.3 psi and for 0 psi the output would be 5.45 mA. The analog output is enabled as the factory default. It can be disabled with the “Analog Output Enable” parameter in Pro Setup Mode.

**QPS is able to copy the parameters from one device to another.**

Electrical connection for copying parameters:

Connect Pin 2 (black) on master to Pin 3 (white) on slave; Pin 3 (white) on master to Pin 2 (black) on slave; Pin 5 (blue) on master and slave to COM on power supply; Pin 1 (brown) on master and slave to +24V on power supply.

Setup for copying parameters:

Slave device: In the “Run Mode”, press \( \text{ProSense PSI} \) for more than 4 seconds and release the key after you see \( \text{ SV/Setup Item Display } \). You are now in “Pro Setup Mode”. Press \( \text{ProSense PSI} \) 7 times and find the parameter for setting up the copy function (See Pro Setup Mode chart). Use \( \text{ProSense PSI} \) to select \( \text{SV/Setup Item Display} \) (CP.5 refers to Copy-Slave).

Master device: In the “Run Mode”, press \( \text{ProSense PSI} \) for more than 2 seconds and release the key after you see \( \text{SV/Setup Item Display} \). You are now in the “Pro Setup Mode”. Press 7 times and find the parameter for setting up the copy function (See Pro Setup Mode chart). Use \( \text{ProSense PSI} \) to select \( \text{SV/Setup Item Display} \) (CP.5 refers to Copy-Master).

Next, press \( \text{ProSense PSI} \) for more than 2 seconds and return to the “Run Mode”.

Now you will see \( \text{SV/Setup Item Display} \) on the display and \( \text{SV/Setup Item Display} \) on the slave device, indicating that the two devices have been connected. In the lower display \( \text{SV/Setup Item Display} \) you will see numbers counting up, referring to the number of parameters transmitted successfully between the two devices.

Once the copy of parameters completes, you will see \( \text{Lock Display} \) on the master device and \( \text{Lock Display} \) on the slave device.

After the copy is complete, power the units off and re-connect them according to the wiring diagram.

**Locking the Keys**

Lock On: Press \( \text{ProSense PSI} \) and \( \text{ProSense PSI} \) together for 2 seconds until \( \text{Lock Display} \) is displayed. You will then see the display of pressure value (PV) and setpoint value (SV).

Lock Off: Press \( \text{ProSense PSI} \) and \( \text{ProSense PSI} \) together for 2 seconds until \( \text{Lock Display} \) is displayed. You will then see the display of pressure value (PV) and setpoint value (SV).

Lock Display: Press any key in the key locking mode, and you will see the display of pressure value (PV) and setpoint value (SV). Release the key and the PV and SV will return to original values.

**Resetting Zero Pressure:**

Remove pressure from device before starting.

In the “Run Mode”, press \( \text{ProSense PSI} \) and \( \text{ProSense PSI} \) simultaneously, and you will see \( \text{ProSense PSI} \). The zeroing will start. Release the keys to end the zeroing sequence.

**Process Connection**

Use a suitable thread sealing Teflon® tape. Do not use liquid thread sealant. Always tighten with an open end or adjustable wrench on the wrench flats. Never use any part of the pressure gauge to tighten other than the wrench flats that are on the gauge socket. Failure to do so will severely damage the pressure gauge.
**Easy Mode:** When the measured pressure is greater than the pressure setpoint (Hi setpoint), the output will change state. When the measured pressure is less than the pressure setpoint (Lo setpoint), the output will change state. Each digital output can be individually set.

**Hysteresis Mode:**
Using the Press and hold the Verify button for 3-5 seconds until display changes. Verify 3 is set to HYS, if not use the EASY button to change and press HYS button. Verify 3 is set to 0T2, if not use the CDP button to change and press CDP button. Press and hold the EASY button until the display changes to show the Setpoint and Process values.

Briefly press and release the Verify button to change to CDP and set the output 1 ON level to 80psi.
Press and hold the EASY button 3 times so that HYS is on the display. Verify the value 3 is in the upper display, if not use the HYS button to change and press HYS button.

Press and hold the EASY button until the display changes to show the Setpoint and Pressure copy values.

**Hysteresis & Window Modes of operation for control and alarming**

Using Hysteresis Mode to control the pressure in a tank
Hold EASY button for 2-3 seconds until display changes.
Verify 3 is set to 0T2, if not use the HYS button to change and press HYS button. Verify 3 is set to 0T1, if not use the CDP button to change and press CDP button.
Press and hold the EASY button until the display changes to show the Setpoint and Process values.
Using the EASY button set the output 1 ON level to 80psi.
Briefly press and release the Verify button to change to CDP and set it to 55psi.

Using Window Mode to control the pressure in a tank and window mode to generate an alarm
Wire the QPS using the connection diagrams supplied.
Hold EASY button for 2-3 seconds until display changes.
Verify 3 is set to HYS if not use the EASY button to change and press HYS button. Verify 3 is set to 0T2, if not use the CDP button to change and press CDP button.
Verify 3 is set to 0T1, if not use the HYS button to change and press HYS button.
Press and hold the EASY button until the display changes to show the Setpoint and Process values.
Using the EASY button set the output 1 ON level to 90psi.
Briefly press and release the Verify button to change to CDP and set it to 55psi.

Briefly press and release the EASY button to change to CDP and set it to 95psi.

Briefly press and release the EASY button to change to CDP and set it to 95psi.

Hold EASY button for 2-5 seconds until display changes to HYS.
Press the EASY button 3 times so that HYS is on the display.
Verify the value 3 is in the lower display, if not use the EASY button to change and press EASY button.
Press and hold the EASY button until the display changes to show the Setpoint and Process values.

**Window Mode:** In the example below the output will change state when the measured pressure increases to 55 psi (1-H SV+HYS) and will change state again when the pressure decreases to 55 psi (1-L SV+HYS). As the measured pressure decreases back to 50psi (1-L SV+HYS) the output will change state and will change state again when the pressure decreases to 55psi (1-H SV+HYS). Each digital output can be individually set.

**Hysteresis Mode:**
Using the Press and hold the Verify button 3 times so that EASY is on the display. Verify the value 3 is in the upper display, if not use the EASY button to change and press EASY button.

Press and hold the Verify button until the display changes to show the Setpoint and Pressure copy values.

**Easy Mode:** When the measured pressure is greater than the pressure setpoint plus the hysteresis setting (Hi+hysteresis), the output will change state. Each digital output can be individually set.

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