1 What’s In The Box

<table>
<thead>
<tr>
<th>Standard Items</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-3553T Bubbler With Integrated Pressure Sensor</td>
<td>1</td>
</tr>
<tr>
<td>H-3531-7PCABLE - 7 Conductor Interface Cable; SDI-12 Control</td>
<td>1</td>
</tr>
<tr>
<td>Mounting Feet Kit</td>
<td>1</td>
</tr>
<tr>
<td>360252 - 1/8” to 3/8” brass orifice fitting</td>
<td>1</td>
</tr>
</tbody>
</table>

2 Identify Connections

- **Vent**: Atmospheric pressure vent for sensor
- **Inlet**: Air compressor intake desiccator connection
- **Outlet**: Brass fitting for bubbler tubing/orifice line
- **RS-232**: Communication to laptop / PC
- **Sensor Interface**: SDI-12 communication
- **Compressor 12Vdc**: Compressor power

The H-3553T Bubbler is shipped with a plastic cap in the “Inlet” and “Outlet”. The Bubbler should be purchased with the Desiccating Air Dryer H-355-DES-2 or DES-1 attachments. These dryers are to be connected to the inlet through the attached hose fitting. The hose fitting is shipped lightly attached to the hose in order to be removed and threaded into the inlet. Pipe tape is not required for these hose fittings. The fitting should be snug.

**Note**: Plastic fittings have been known to break; therefore, care should be taken when attaching hoses to the plastic fitting.

3 Install

As with any environmental installation, care must be taken to insure proper installation such that data can be retrieved in a reliable and accurate manner. The following summarizes ideas and recommendations for the H-3553T bubbler system and typical orifice line installations. Additional details can be found in application note “1005 Orifice Line Installation” on the WaterLog web site.

When installing the 360252 brass orifice fitting, pipe tape should be used for the inner thread only. Securely tighten the fitting into the H-3553T. The Ferrell set should be fitted on an orifice tube with a clean cut as shown. When tightening the top brass fitting, it should be finger tight and then adjusted with an additional ¾ turn. Check for leaks on the fitting using “snoop”.

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount the outlet in still water</td>
<td>Do not mount the outlet facing upstream, downstream, or upwards</td>
</tr>
<tr>
<td>Mount the outlet so the last inch is almost horizontal (slightly downward side exit)</td>
<td>Do not allow any portion of the line to be lower than the exit point or allow goose necks in the orifice line</td>
</tr>
<tr>
<td>Try to prevent swells in long runs of orifice line</td>
<td>Do not use thin walled tubing, only use USGS approved orifice line</td>
</tr>
<tr>
<td>Use a muffler in more turbulent waters</td>
<td>Do not mount outlet in the wake of an obstruction, bridge peer, etc</td>
</tr>
</tbody>
</table>

*Contact WaterLOG Technical Support at 435.753.2212 option 2, then option 4 for further questions. Refer to the ‘H-3553T Bubbler User Manual’ for detailed instruction.*
4 PowerUp

**IMPORTANT:** Apply +12V DC to the “Compressor 12Vdc” first.

Next, with the H-3531 seven pin cable disconnected from the H-3553T and using the same power source as the compressor power, apply +12V DC to the red wire, connect the black wire to ground, and the yellow wire is the SDI-12 data line. In instances where using a WaterLOG XL Series data logger, Storm, or System 5000 data logger, wiring should be as shown in the diagram to the right.

Connect the powered cable to the “Sensor Interface” connector which will power the unit’s circuit board in the H-3553T. Upon power up, the H-3553T will take an initial atmospheric measurement. Listen for a “click” sound which indicates that the pressure sensor is taking a measurement. You will then hear the compressor turn on initializing the tank pressure.

5 Communicate

The H-3553T bubbler system is designed to be connected to any data logger that utilizes SDI-12 commands. The following are typical methods for communication with the H-3553T Bubbler.

**XL Series Data Logger**

Any XL Series data logger (H-350, H-500, H-522, and H-522+) can communicate with the H-3553T. Rather than using SDI-12 commands, communication with the H-3553T is typically done through the “Accessory” menu of the XL Series data logger. Using a terminal emulation program such as HyperTerminal, Tera Term or other terminal software, connect to the XL Series data logger and open the main menu. To access the H-3553T options, press “A” for Accessory Setup. The screen displaying the commands below will be shown.

P-H-355 Gas Purge Setup
Enter Option >

Press “L” to look for the H-3553T. The XL Series data logger will then go and look for an attached H-3553T device and will respond with another screen. Notice the SDI-12 address at which the H-3553T was found. The default SDI-12 address from the factory is “0”. You can press “A” to see the default parameters or to make changes to the H-3553T. These parameters can be adjusted to match your individual applications. Please see the H-3553T Users Manual for more details.

**NOTE:** The stage can be set by pressing the “S” key and entering the current stage. The XL Series data logger will automatically calculate the offset required for a new stage reading. The same approach for setting the stage can be performed using the front panel of the H-350, H-500, and H-522+ data loggers.

**SDI-12 Commands**

When utilizing a different brand data logger, the stage reading for the H-3553T can be set using the following SDI-12 command: \texttt{aXSCSn.nn!} Sets the current stage

To verify the stage reading, send the “aMI!” measurement command to the H-3553T. Wait approximately 6 seconds and then send the “aDI!” data command to verify the data retrieved compares with the following example:

Data format: “a+A.AA+B.BBB+CC.C+DD.D+E.EE+FF.F”

- \(a\) = SDI-12 sensor address
- \(A.AA\) = Stage (Feet)
- \(B.BBB\) = Pressure (PSI)
- \(CC.C\) = Temperature (°C)
- \(DD.D\) = Sensor Interface Battery (Volts)
- \(E.EE\) = Tank Pressure (PSI)
- \(F.FF\) = Compressor Battery (Volts)