

 Application Note	Biosystems PHD6™ PID Sensor Failure to Light	Date	2/9/11	Rev	1.0
		N ^o	13-385		
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Summary:

A critical component of a PID sensor is the lamp. As sensors age lamp output intensity/brightness drops, and they become harder to light. Further, their physical/mechanical environment may also influence the ability to successfully light.

Background:

The sensor electronics are rated for an expected life of 5 years. Lamps and stacks, however, are designed to be field replaceable as they have a more limited life. Lamps and stacks are conservatively rated for 2000 hours. Continuous improvements are trending towards operational life of 5000+ hours. Please note this is different from replacement of stacks or cleaning of lamps that are considered routine maintenance for use in chronic/high VOC-background environments.

The smart sensor and firmware of the PHD6 continuously monitor the PID sensor lamp state.

For a properly functional PID equipped PHD6, upon power-up, after basic system checks the channel will display a nominal numerical value, typically 0.0 PPM. This means that the lamp is lit and the sensor is operational.

For a sensor with a marginally operable lamp, upon power-up and after overall system checks, a display of reverse text and hour glass on the PID channel indicates that the unit is trying to light a lamp that remains unlit. If after several seconds of attempting to light the lamp, the display may either go directly to “X” with increased frequency of audible/visual alarms which means that the lamp should light in the next few seconds, or it may go directly to a nominal numerical value. In either case, once a numerical value is displayed, the lamp is lit and the sensor is operational.

Note:

If this reverse text and hour glass state persists for approximately 2 minutes, eventually the display will change to “X” with a message of “check sens” with unchanged audible and visual alarm frequency. This means that the unit could not light the PID sensor lamp and the channel is disabled. At this point the sensor must be serviced in order to restore proper function.

For harder to light lamps or for those that do not light:

1. PID lamps can be harder to light with a pump installed on a unit. If this is the case, start-up of the unit with pump detached will usually result in successful lighting. The pump can then be attached after the unit successfully powers up. As always, the standard pump leak check should be performed prior to use.
2. Older PID’s may be affected by their mechanical environment. For units equipped with a pump, or used with reactive gas calibration adapter, it is important not to over-tighten the corresponding accessory mounting screw. Finger tight torque should be adequate. Do not use a screwdriver or other tool to tighten this screw as this may adversely affect ability of lamp to light.
3. If the above steps are not successful, it would then be advisable to replace the PID sensor stack.
4. If replacement of the stack is not successful, then a new lamp should be used with the new stack.

The lamp within the PID sensor is similar in operational character to a fluorescent light. If the lamp successfully lights and has been operational for some time, and the PHD6 is then powered off, the success of relighting the PID lamp is affected by the duration of time off. For example a lamp is more apt to light if a unit is repowered-up in less than an hour after last use. This can be affected by ambient temperature. In colder environments the ability of a lamp to be relit will be harder, therefore, shortening the duration of time off before successful reuse.

If performing the above steps does not result in successful PID sensor performance, please contact Honeywell Analytics Technical Support at 1-800-711-6776.