

---

**APS-1650 LEVEL SENSOR  
INSTALLATION AND CALIBRATION**

You will need a 1/16 Allen wrench, a #1 Phillips screwdriver, and two samples of oil. The first should be a clean highly reflective (clear) or red transmission oil. The second should be a non-reflective dark (dirty) oil. Equal levels of each.

**Installation:**

1. Ensure all parts are included as pictured. (Figure 1)



Figure 1

2. Attach sensor to connector by screwing on until flush with bottom. (Figure 2)



Figure 2

- Using 1/16" Allen wrench, attach level sensor to probe 1" from tip of probe (Figure 3). Ensure fiber is routed on right side of nylon mount, and loosely tie to sample probe line as shown with cable tie (Figure 4).



Figure 3

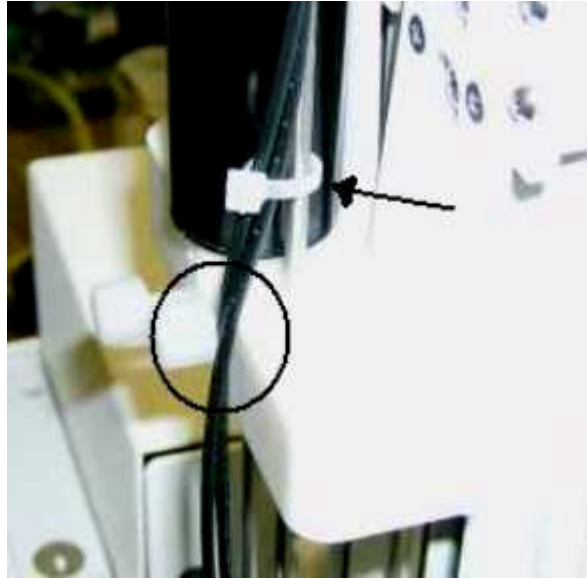


Figure 4

- Route fiber to back of instrument and bundle with other tubing and cables using cable wrap (Figure 5).

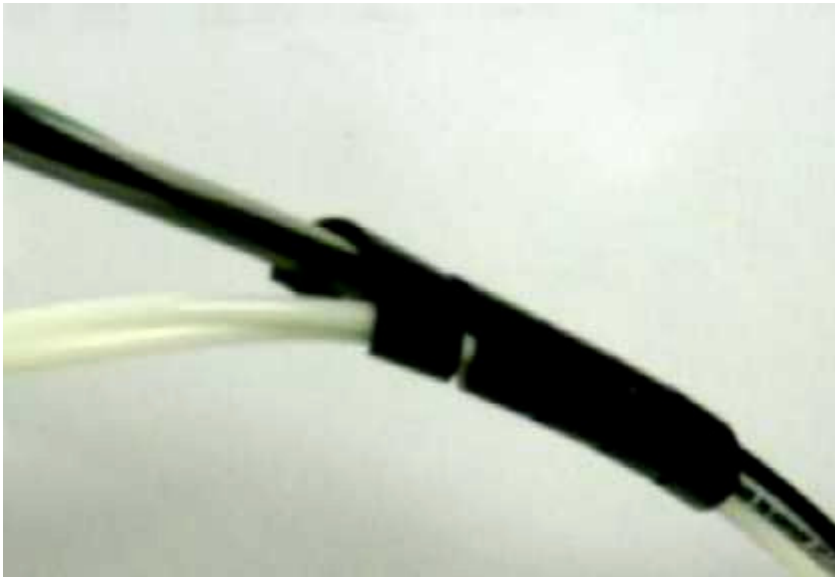


Figure 5

5. Attach detector mounting bracket if not already attached with 2ea 4-40 screws (Figure 6). At this point open the small cover below the bracket and disable dip 5 (on the right end) by switching to the up position. Replace the cover.



Figure 6

6. Attach detector from the bottom and lifting slightly to attach the top (Figure 7). *NOTE- Removal is by lifting slightly and pulling out at the top and sliding down. Damage can be done if removed incorrectly.*



Figure 7

7. Slowly move arm and Z-drive assembly to the furthest position from the detector and move probe to max depth. Follow fiber routing back to detector and ensure there is no binding.

8. Locate fiber cutting tool and identify the three cutting holes (Figure 8). *NOTE-The cutter should only be used once per hole. A clean cut provides better detection.*



Figure 8

9. Cut each of the two fiber leads to a length about 4-5 inches longer than needed to reach the detector (Figure 9).



Figure 9

10. Open detector access from the top (Figure 10).



Figure 10

11. Lift the fiber locking lever (Figure 11).



Figure 11

12. Insert fibers in two holes in top of detector and lock into place (Figure 12). Proceed with calibration.



Figure 12

### Calibration:

1. Use the <MODE> key (with round mark) to enable the menu. Use the up and down arrows to navigate.
2. Navigate to the “L\_ \_ d” screen. Press the <MODE> key and the selection will start flashing. Use the arrow keys to select “d ON”. Press <MODE> to select.
3. Use the arrow keys to find the 'TURN ON' / 'TURN OFF' menu. Use the <MODE> key to toggle between the two. Stop on “TURN ON” which disables Sensitivity Correction.
4. Use arrow keys to find “E it” menu. Press <MODE> to exit menu.
5. There should now be a red number and green number displayed (Figure 13). The red number indicates the current reflected light level. The green number sets the current detection threshold.



Figure 13

- Power on sampler and open Instruo software. Navigate to the Instrument Control Panel. Disable 'LEVEL SENSOR ENABLED' on probe controls (Figure 14).



Figure 14

- Move the sample probe down into the clean sample to a depth of about 2mm.
- Press either one of the arrow keys until the green number flashes. Now press and hold arrow key for fast adjustment and press and release for incremental adjustment. Adjust the green number to match the red number.
- In the Instruo software, raise the sample probe. Increase probe depth setting by 15mm and enable 'LEVEL SENSOR ENABLED'.
- Move the probe down with the software. It should stop at about the same position as before. Adjust the detection threshold as necessary.



11. Move to the dirty/dark sample and lower sample probe. The probe should dip 5-7mm deeper. This is ok. Calibration is done. Close detector cover (Figure 15).



Figure 15

**NOTE-** *If the sensor gets dirty (oily), it cannot detect. Clean as necessary.*