CB3 Moisture Probe Interface

Note

The CB3 interfaces with moisture probes by other manufactures. Please consult the specific manufacturer for installation and calibration instructions.

The Hydronix Hydro-Probes require their own 24 VDC power supply. This power source is used to source the 4-20 mA current loop, simplifying the connections between the PLC and probe, requiring only two wires between them.

Installing the Probes

Use the Hydronix installation and documentation guides to install and wire the Hydro-Probes.

- Hydro-Prove IV Installation Guide: https://www.hydronix.com/downloads/user_guides/hydro_probe/hp04/hd0675_1_3_1.pdf
- Hydro-Probe IV Calibration and Configuration: https://www.hydronix.com/downloads/user_guides/all_sensors/calibration/hd0679_1_4_0.pdf
- Hydronix Product Downloads: <u>https://www.hydronix.com/downloads/products.php</u>

Wire the Probes

Wire the probes to the PLC CPU Analog section. This board has a 9-pin header for analog inputs.



Figure 1. PLC CPU Analog Section



Hydro-Probe 1

- 1. Connect wire E (black) to terminal A-.
- 2. Connect wire D (blue) to terminal A+.
- 3. Connect the shorting jumper to JP5.

Hydro-Probe 2

- 1. Connect wire E (black) to terminal B-.
- 2. Connect wire D (blue to terminal B+.
- 3. Connect the shorting jumper to JP3.

A+ is Current +, A- is Current -



B+ is Current +, B- is Current -

CB-3 Configuration

- 1. Select *vPanel*. This will be used in Step 12.
- 2. Open the **Settings** menu.
- 3. Select the *Features* tab.
- 4. Check the Moisture Probe checkbox.



- 5. Press Save Changes .
- 6. Press Exit
- 7. Open the *Materials* menu.
- 8. Press Bins .
- 9. Select the Bin the probe will be on.

10. Select the probe from the drop down menu.

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Figure 2. Bins Menu - Select Probe

- 11. Press Save Changes .
- 12. Move the *Materials* menu and the *Bins* menu to the right of the display to view the *Raw Counts* in the *vPanel*.

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Figure 3. vPanel Raw Counts

- 13. To calculate the zero, apply the desired zero or low reference to the moisture probe.
- 14. Review the *Raw Counts* on the *vPanel* and enter that value in the *Zero Counts* field of the *Probe Calibration* menu.



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15. Enter the actual moisture percentage of the zero reference in the Zero% field.

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Figure 4. Probe Calibration - Zero Count

- 16. To calculate the span, apply the desired span or high reference to the moisture probe.
- 17. Review the *Raw Counts* on the *vPanel* and enter that value in the *Span Counts* field of the *Probe Calibration* menu.



Figure 5. Probe Calibration - Span Count

18. Enter the actual moisture percentage of the span reference in the Span % Moist field.

19. Press Calculate Slope and Intercept . The Slope and Y-Intercept fields autofill and the Calibrated box is checked.



Figure 6. Probe Calibration Complete

- 20. Press Save .
- 21. Close the Probe Calibration, Bins and Materials menus.
- 22. Open the *Batcher* menu and the span moisture percentage are displayed (if the probe is in the span material).



Figure 7. Batcher Menu





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