Hydronix

Engineering Note: EN0073 Using a Hydro-Probe with a Command Alkon PWS (Precision Water System)

Summary: How to commission a Hydro-Probe moisture sensor to a Command Alkon PWS (Precision Water System)

Products affected: Hydro-Probe (Excluding model HP01)

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Introduction

A Hydro-Probe digital moisture sensor can substitute a Command Alkon 7102 moisture sensor when connected to the PWS (Precision Water System).

Since the PWS (Precision Water System) uses Analogue probe signals and coverts them to Ethernet for use in the Command Batch Software, The material calibration must be performed in their Software.

1 Calibration Procedure Instructions

Once installed there will be no difference in operation from the Alkon sensor hence no re-training required. The output from the Hydro-Probe is converted to a moisture percentage using the Command Batch's own calibration procedure. In this instance the Hydro-Probe will act in exactly the same manner as the Alkon sensor but with added benefits such as advanced temperature compensation, linearity, identical sensor characteristics.

Existing users of the Command Alkon system should already be familiar with the calibration routine; therefore this is not referred to in this document.

This document describes:-

- Sensor Configuration,
- Sensor Electrical Connection to the PWS (Precision Water System).

2 How to configure the Hydro-Probe

The Hydro-Probe sensor has digital RS485 capability for direct data exchange. With the use of an adapter, this serial link can be connected to a PC compatible computer enabling communication with the sensor. For more information please refer to engineering note EN0040 'Wiring a Sensor to a PC'.

Hydronix have written a number of PC based utilities so that users can communicate with the sensor. Most recent of these is the Hydro-Com software which is used for basic diagnostics, configuration and material calibration.

This can be downloaded from www.hydronix.com

For full information on this utility please refer to the relevant Hydro-Com User Guide.

With the sensor correctly connected to the PC and detected on Hydro-Com, go to the 'Configuration' page and check the configuration is set to the following:

Note: The following screen shots may be different to the latest version of Hydro com please refer to the relevant user guide for details. All sensors settings are still valid for all versions of Hydro-Com.

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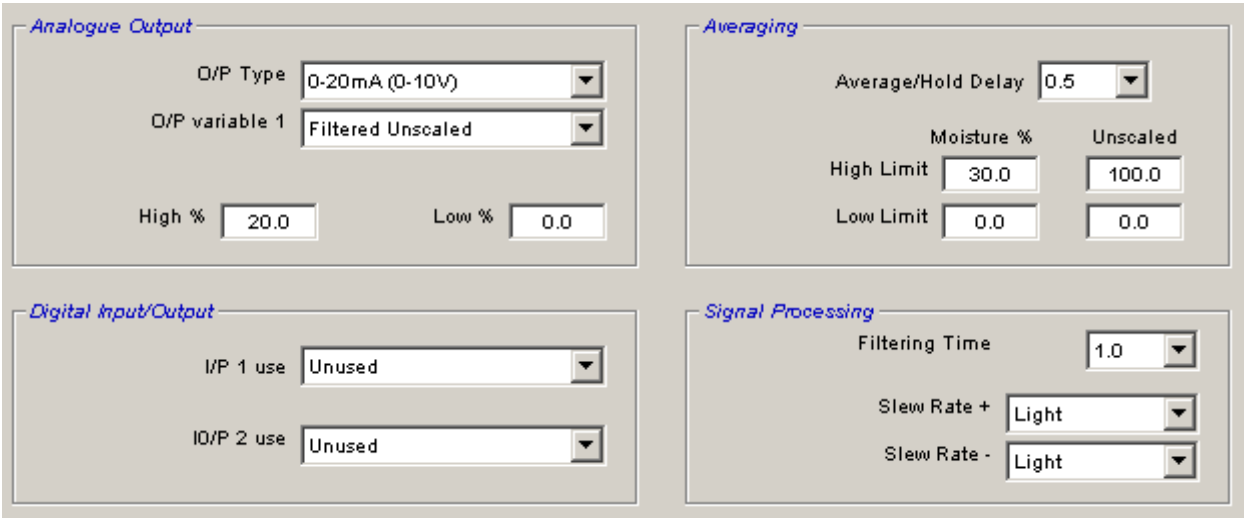
2.1 Analogue Output Setup



The Default Settings are shown above and no change is needed by the Operator to work with the PWS (Precision Water System).

3 Connecting the Hydro-Probe to the PWS (Precision Water System)

3.1 Connection to latest PWS (Precision Water System), 7 pin terminal connector

On the latest PWS (Precision Water System) the Alkon 7102 moisture sensor is connected using a 7-pin screw terminal. The Hydro-Probe can be connected into this terminal strip as shown below. The Hydronix 0975 cable contains 6 twisted pairs although only 3 pairs are required for connection and calibration of the Hydronix sensor. Two twisted pairs connect into the 7-pin moisture plug in board, one pair for power and one for the moisture output (0-10V). The third twisted pair is the digital RS485 communications which when used with a suitable RS232-485 converter, can be connected into a PC for sensor configuration and material calibration.

Important: The Hydronix supplied 500-Ohm resistor must be wired as shown, to convert the current loop output to a voltage input to the PWS (Precision Water System).

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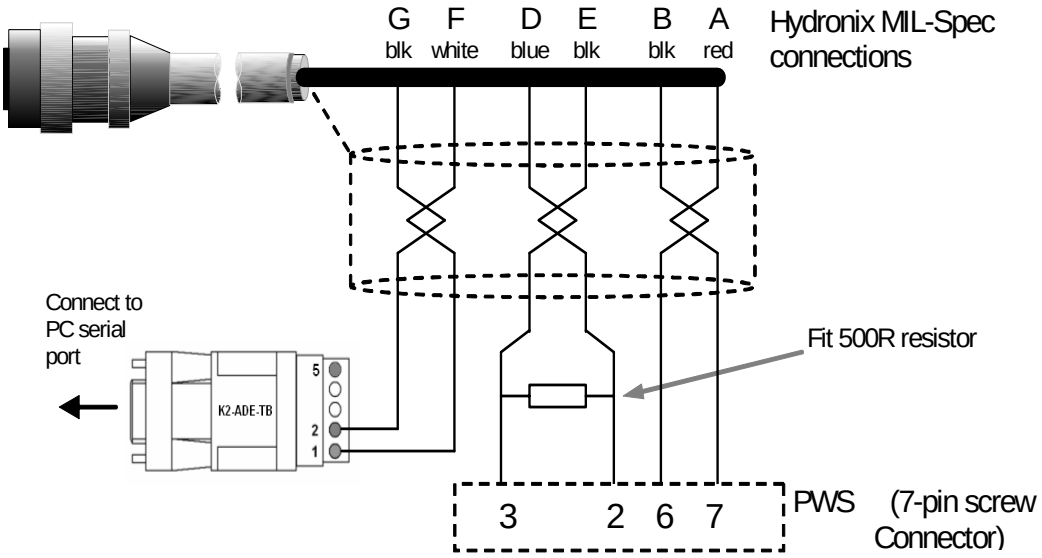
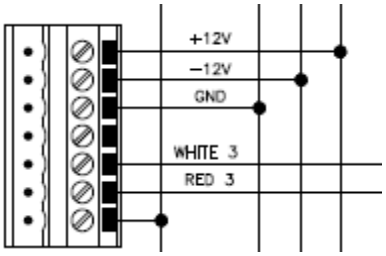


Hydronix Sensor Cable (Part # 0975)				PWS Connection
Twisted Pair #	MIL-Spec pins	Cable colour	Signal Description	
1	A	Red	Supply +15-30Vdc	7
1	B	Black	Supply 0V	6
3	D	Blue	Analogue Positive (+)	3
3	E	Black	Analogue Return (-)	2
4	F	White	RS485 A	-
4	G	Black	RS485 B	-

PWS Connector



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