Aquatrac Instruments

Application Note

Loop Powered, Non-Contact Conductivity Measurement AN010-24

1. OBJECTIVE

Details the installation & operation of Part# **NCCS-10K**, Loop powered, non-contact, conductvity sensor & sensor entry, Part# **Hdr_CN**.

2. SPECIFICATIONS

Parameter	Value	Notes
Range	0 – 10,000 uS = 4-20mA	Fixed range.
Loop Power	11-24 VDC	Controller supplies 11VDC @ 20mA
Loop Load	600 ohm max @ 24VDC	Controller terminates loop with 50 ohms
Pressure	145 psi @ 75F	Rated for in-line and immersion, cooling
	10 Bar @ 25C	tower applications
Temperature	120F, 50C Max	Conductivity, thermally compensated,
		RTD Pt100
Cable	2 x AWG22, overall shield.	

3. INSTALLATION

Install the sensor, as shown on page 3 in the sample stream piping header.

NOTES:

- 1. Removing the 1 1/2" inlet & outlet reducers allows installs in line sizes from 1" to 1 ½"
- 2. Flow rate reduction and possible solids drop-out occurs on any increase in line size; vertical installation is therefore strongly recommended.
- 3. Sensor cabling may be extended in AWG22, single pair overall shield.
- 4. Any unused 4-20mA input 'G' though 'N' may be used for sensr measurment. Typical connection for controller input 'G' shown in the following table.

Controller	Sensor Wire	Function
Terminal	Color	
GP	White	4-20mA Loop Power, 12VDC
G+	Black	4-20mA Loop Return
G-	Clear/Shield	Shield, controller and electrical ground

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4. CONTROLLER CONFIGURATION

The following details configuration on controller input 'G'.

Any unused analog input 'G' through 'N' may be configured for the non-contact sensor.

Verify Controller Software Version

- 1. Connect to the controller using Tackster at the 'configure' level password.
- 2. Right click on the controller icon in your active view & select **View Configuration**.
- 3. Verify the the controller is running Version 4 operating software.

Prior to Version 4, Trackster Terminal is required to configure an analog input for a new sensor.

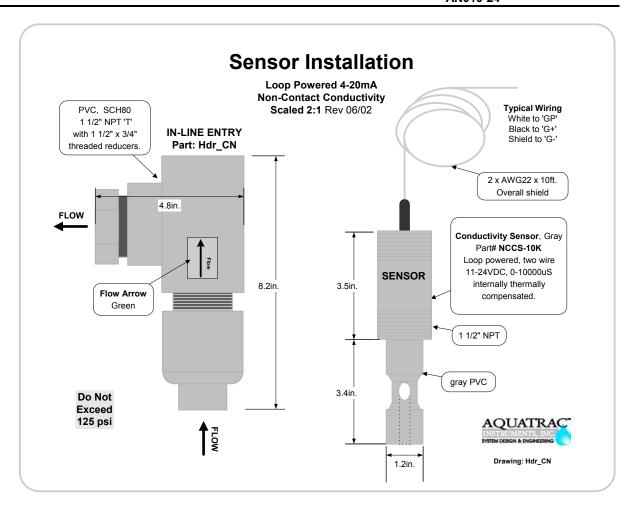
Controller Software Version 4 Instructions

- 1. Click Views then select Diagnostic View II
- 2. On the menu line at the top of the screen, select **OPTIONS / PREFERNCES / VIEWS** and verify that both Gray Out Sensors & Display Parameter Numer are both checked.
- 3. Right click on & Enable Sensor 'G' (You see the sensor letter until you Enable).
- 4. Right click on Sensor 'G', select Calibrate Sensor then select 4-20mA Auto Calibrate
- 5. Enter 0 for 4mA and 10000 for 20mA. You'll see GAIN = 12.5 & OFFSET = -2500.
- 6. The conductivity value will update within 15 seconds.
- 7. Right click on 'G' and **Set Units** = 'US' and **Set Descriptor** = 'Conductivity'. Setting units to upper case allows the **4-20mA Auto Calibrate** option.

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