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 15VDC @ 20mA
Loop Load	600 ohm max @ 24VDC	Controller terminates loop with 50 ohms
Pressure	145 psi @ 75F 10 Bar @ 25C	Rated for in-line and immersion, cooling tower applcations
Temperature	120F, 50C Max	Conductivity, thermally compensated, RTD Pt100
Cable	2 x AWG22, overall shield.	

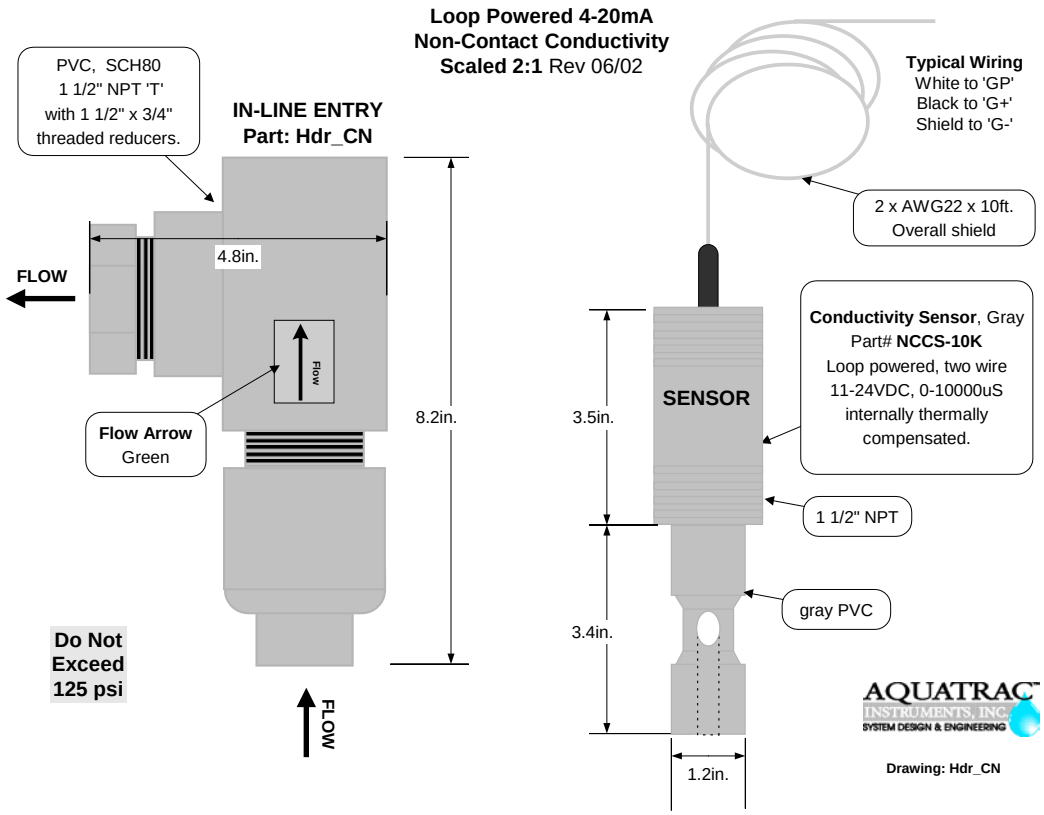
3. INSTALLATION

Install the sensor, as shown on page 2 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 card (**Part: CI)** may be used for sensr measurment. Typical connection for controller shown in the following table.

Controller Terminal	Sensor Wire Color	Function
15 VDC	**White**	4-20mA Loop Power, 15VDC
1+	**Black**	4-20mA Loop Return
	Clear/Shield	Shield, controller and electrical ground

Sensor Installation



Calibration
Current loops require two point calibration to convert the measured current into end user units.

The current loop may be calibrated using either the Keypad or the Browser, by either calculating the Offset & Gain or driving the current loop between two values.

Calculating Offset & Gain

1. The input Offset Adjust and Gain Multiplier may be manually set using Sensors / Configuration.
2. This method to convert a measured current to a user value may be used if it's not easy to drive the current loop between 4 & 20 mA.

At 4mA the 50ohm loop terminating resistor measures 200mV (50 x 0.004).
At 20mA the 50ohm loop terminating resistor measures 1000mV (50 x 0.020).
As the current loop varies from 4-20mA, the controller measures a mV change from 200 to 1000; an 800mV change.

If the site 4mA_Level & 20mA_Level are known.
Gain Multiplier = (20mA_Level – 4mA_Level) / 800
Offset Adjust = -200 x Gain Multiplier

Example: 4mA_Level = 0 uS & 20mA_Level = 2500 uS
Gain Multiplier = 2500 /800 = 3.125
Offset Adjust = -200 x 3.125 = -625

Check: At 4mA we'll measure 200mV and display 200 x 3.125 – 625 = 0 uS
At 20mA we'll measure 1000mV and display 1000 x 3.125 – 625 = 2500 uS