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Technical Bulletin

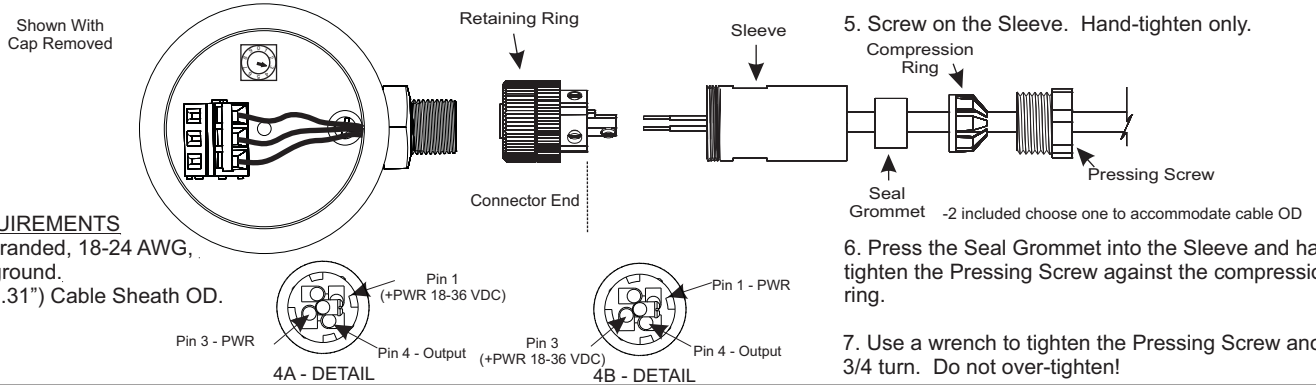
NCS31P Capacitive Point Level Quick Start Installation Guide

Section 1 - Field Wireable Connector

1. Insert cable through Pressing Screw, Compression Ring, Seal Grommet, and Sleeve as shown below.
2. Strip back 1-1/4" of outer sheathing, cut off any excess wires, shield and ground. Strip off 1/4" insulation from remaining four wires. It is not necessary or recommended to tin the wires.

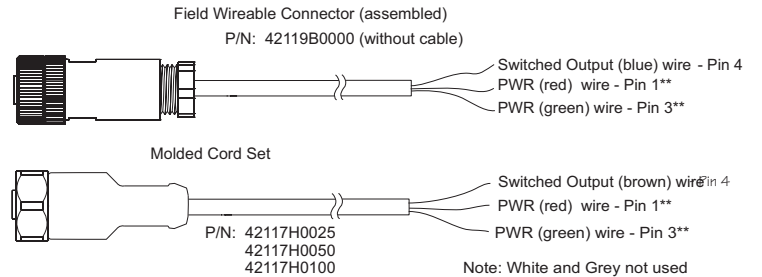
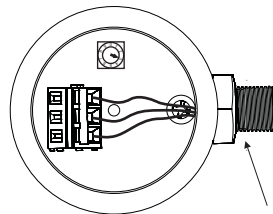
3. Orient Connector end so that center pin connecting screw is horizontal facing right (see detail).

4. Refer to pin detail.
4A - Wiring for full (immersed) indication:
Wire PWR+ to top right terminal (Pin 1) and PWR- wire to bottom left (Pin 3). Wire output to bottom right (Pin 4).
4B - Wiring for empty (not immersed) indication:
Wire PWR- to top right terminal (Pin1) and PWR+ to bottom left (Pin 3). Wire output to bottom right (Pin 4).



To install connector, simply line up key, press into receptacle, and hand-tighten the retaining ring.

*Receptacle pins should be coated with USDA approved dielectric grease to Minimize possibility of corrosion.



** Polarity determined by desired switch action. See switch action below.

Section 2 - Installation

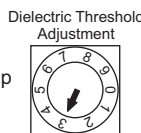
Select Switch Action:

- Switch action is determined by power supply polarity. If field wireable connector is used see instruction 4 in section 1 for wiring instructions. If assembly cable is purchased connect Red conductor to PWR+ (18-36V) and Green conductor to PWR- for full (immersed) indication. Reverse these for empty (not immersed) indication.

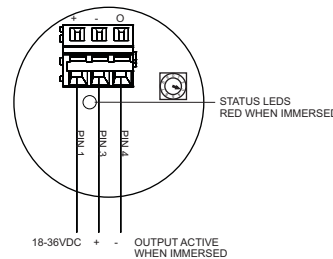
Rotary Switch Output Test & Threshold Adjustment:

1. For installation testing sensor may be set for continuous output:
Position 0 - output off
Position 1 - output on
2. Positions 2-9 act as a sensitivity adjustment, position selects a minimum dielectric recognized. Reducing dielectric threshold can help eliminate false readings.

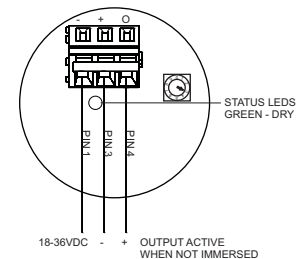
Position 2 - ≥ Dielectric 20	Position 6 - ≥ Dielectric 40
Position 3 - ≥ Dielectric 25	Position 7 - ≥ Dielectric 50
Position 4 - ≥ Dielectric 30	Position 8 - ≥ Dielectric 60
Position 5 - ≥ Dielectric 35	Position 9 - ≥ Dielectric 70



HIGH ACTIVE FULL INDICATION



LOW ACTIVE EMPTY INDICATION



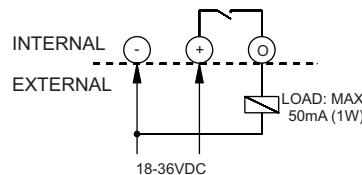
Output Circuit:

Standard unit is PNP output see detail for connection

Misc:

- Media must have water content >25% or a dielectric constant >20
- Coatings are generally ignored. Coatings of highly conductive media ≥ 30ms/cm may cause errors.
- Foam is generally ignored

PNP - Sourcing



Section 3 - Specification

Operation/Environmental Specifications

Ambient Temperature Limits:	14 - 140°F (-10 - 60°C)
Pressure Rating:	150 PSI (10 BAR) max
Process Temperature Limits:	32 - 212°F (0 - 100°C)
CIP Cleaning:	109°F (143°C) for 120 minute
Function:	Full/empty signal determined by wiring
Response Time:	0.1s
Minimum Dielectric Threshold:	Selectable from 20-70

Electrical Specifications

Voltage Required:	18 to 36 Vdc (≤ 20mA)
Power Consumption:	0.6 W Typ. (i.e. 25mA at 24 Vdc)
Signal Output:	PNP - Sourcing (active 50mA)
Signal Transmission Power:	≤ 1mw
Connection:	One 3 pin M12 Micro-mini electrical connector (QDR)

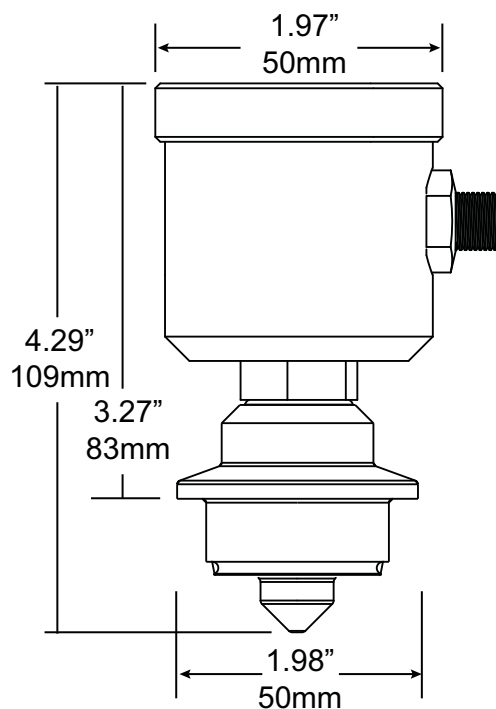
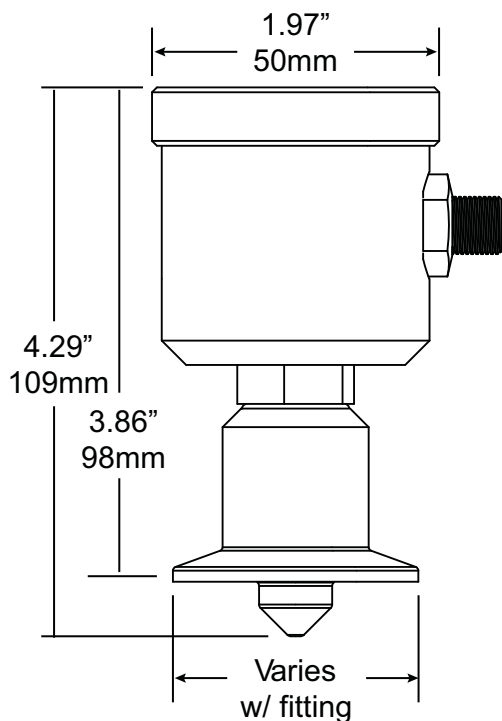
Mechanical Specifications

Wetted Materials:	316L SS, USP class VI PEEK
	Material certificates included
Wetted Finish:	Metal Surfaces Ra = 8 microinch max Polymeric Surfaces = 25 microinch max
	Surface finish certificate included
Housing Material:	300 series Stainless Steel housing, lid and threaded connection (non contact surfaces)
Enclosure Protection:	NEMA 4X, IP69K
Agency Approval:	CE compliant; ASME BPE 2012 compliant

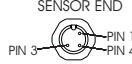
Visual Indication

Status LED:	Red - Probe Immersed Green - Probe Dry
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Warranty: 2 years



ATTENTION: CONNECTOR WIRING

Full Ind	Empty Ind	SENSOR END 
Pin1 - 18-36 VDC	VDC Com	
Pin3 - VDC Com	18-36 VDC	
Pin4 - Switch Output MAX 50 mA		

Refer to technical bulletin for Anderson cable color coding