BAZOOKA FARMSTAR

ECS-Nexus Pressure Sensor Replacement and Troubleshooting

4/4/2024 REV-

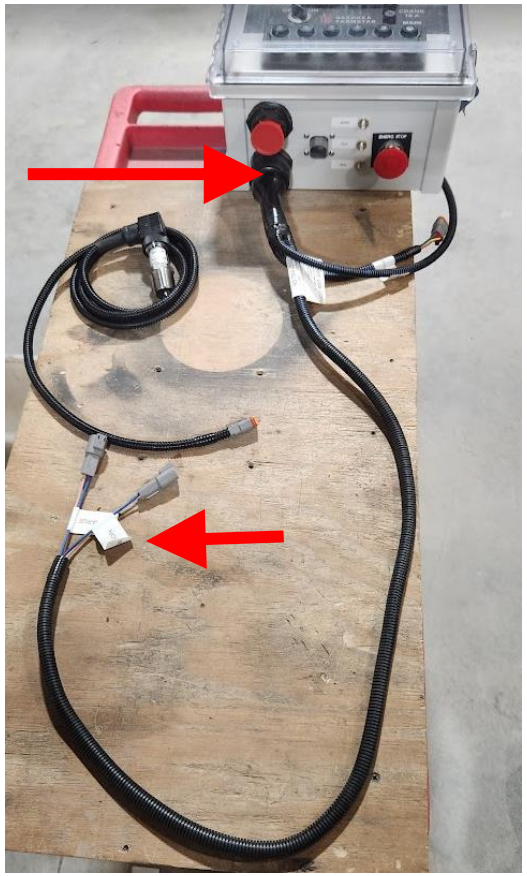
Locating your pressure sensor

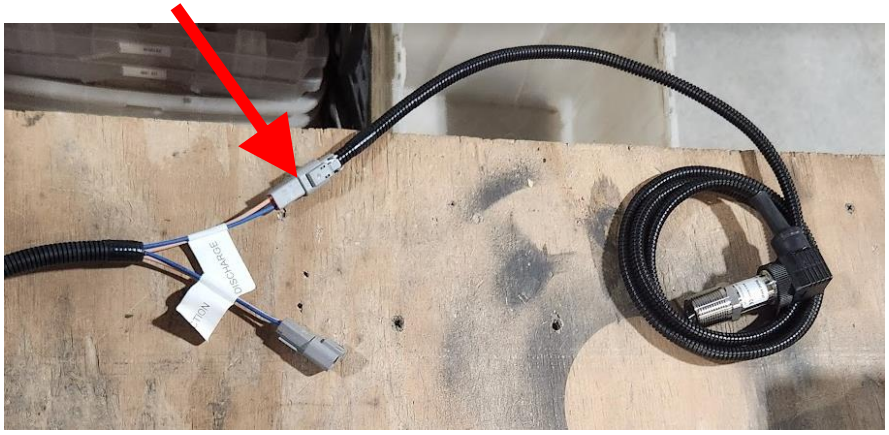
- Inlet (suction) pressure sensors are generally located higher, where the plumbing goes into the center of the pump

- Outlet (discharge) pressure sensors are generally located on the lower “side” of the pump

ECS/Nexus pressure sensor harness

- Locate the 31-pin connector on the underneath side of the ECS/Nexus panel
- Harness will extend 3 feet to where it splits into 2 connectors
- Each connector should be labeled suction and discharge
- In some scenarios there maybe harness extensions in-between the main harness and sensor end to extend length.
- Troubleshooting: Unplug the failed sensor connection and check for any visual damage, like burnt pins, corrosion, or damaged connector





ECS/Nexus pressure sensor types

- Identify which one of these sensors below that you have
- Plug into the suction or discharge connector at the end of the harness
- Don’t install the sensor in the pipe until you've tested the sensor with your panel

70-1910-KIT	**70-3029-KIT**	**70-2148-KIT**	**70-1608**
-14 to 500 psi	-14 to 1500 psi	0 to 1000 psi	-14 to 500 psi
"Ashcroft"	“Transducers Direct"	“Murphy"	“Wika"
Inlet (or outlet)	Outlet (or inlet)	Outlet (or inlet)	OBSOLETE

ECS/Nexus pressure sensor types

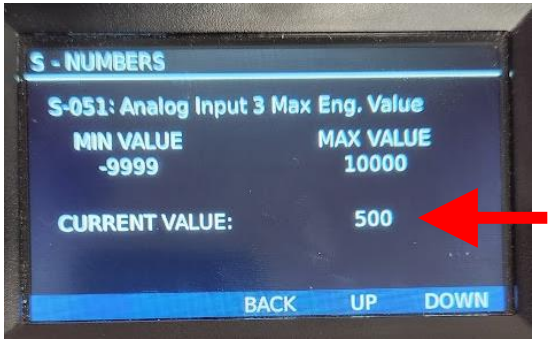
- If you don't have one of those sensors as shown on the previous page, identify the pressure range, minimum and maximum, indicated on the side of your sensor:

Each sensor should have an indicator as to what pressure range it is capable of reading

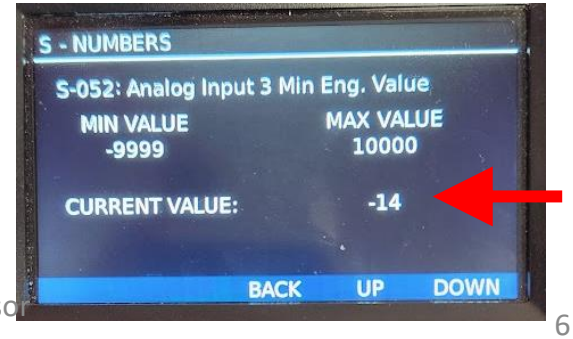
ECS/Nexus Inlet sensor configuration

- Go to the “OEM MENU” on your ECS/Nexus panel, enter passcode 6400.

- S51: Analog Input 3 Max Eng. Value
- Enter the <u>maximum</u> PSI range printed on the <u>inlet</u> sensor:
  - **Ashcroft: 500 PSI**
  - **Murphy: 1000 PSI**
  - **Transducers Direct: 1500 PSI**



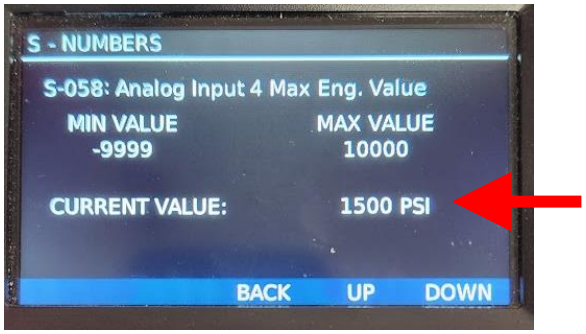
- S52: Analog Input 3 Min Eng. Value
- Enter the <u>minimum</u> PSI range printed on the <u>inlet</u> sensor:
  - **Ashcroft: -14 PSI**
  - **Transducers Direct: -14 PSI**
  - **Murphy: 0 PSI**



ECS/Nexus Outlet sensor configuration

- Go to the “OEM MENU” on your ECS/Nexus panel, enter passcode 6400.

- S58: Analog Input 4 Max Eng. Value
- Enter the <u>maximum</u> PSI range printed on the <u>outlet</u> sensor:
  - **Ashcroft: 500 PSI**
  - **Murphy: 1000 PSI**
  - **Transducers Direct: 1500 PSI**



- S59: Analog Input 4 Min Eng. Value
- Enter the <u>minimum</u> PSI range printed on the <u>outlet</u> sensor:
  - **Ashcroft: -14 PSI**
  - **Transducers Direct: -14 PSI**
  - **Murphy: 0 PSI**

ECS/Nexus testing

- Sensors should show 0 PSI if properly installed and configured correctly, this is after a few seconds of being powered on.
- Press on the sensor element GENTLY with something soft, like the eraser end of a pencil
  do not use anything with a point or hard end

Damage to the diaphragm can occur if sharp objects are used, this shortens the life of the sensor or causes a permanent offset

- The pressure should increase when pressed on.
- If this sensor does not react and no values change, refer to the troubleshooting sections.

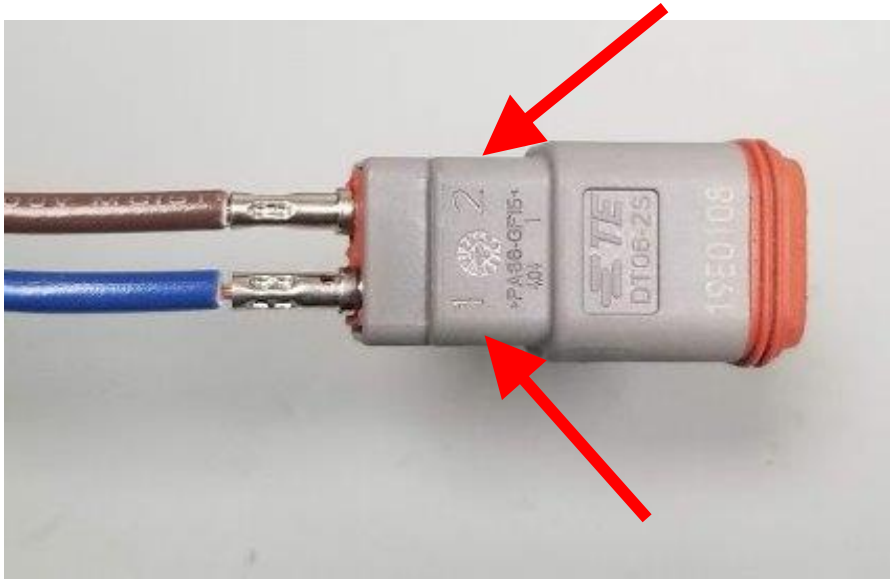
ECS/Nexus sensor zero

- When sensors are powered up, they may bounce around from -2 PSI to 2 PSI due to noise. This is normal.
- If desired, you can get closer to zero by adjusting the Min Eng. Value on either the inlet (S-52) or outlet (S-59) settings in the OEM menu (6400). This should only need minor adjustment.
- If there is a large negative value present on the inlet or outlet and does not fluctuate, but also matches the Min Eng. Value for that specific brand, then there is a problem with the sensor, wiring, or configuration.

WIKA/Ashcroft/Transducer Direct Wiring

- The Brown wire must be on the #2 terminal of the Deutsch connector
  - It should always measure system voltage (12V or 24V)
- The Blue wire must be on the #1 terminal of the Deutsch connector

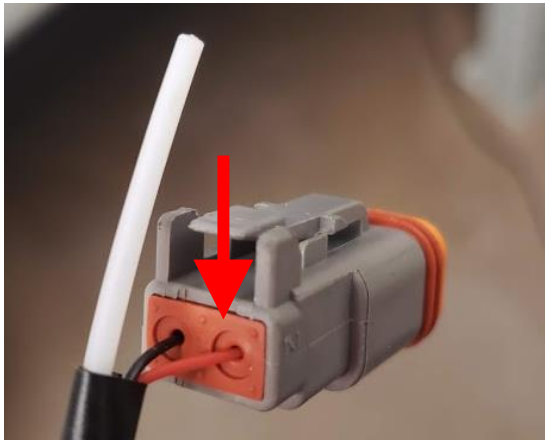
- Tug on wires and make sure they don't come out of the connector.



Murphy Sensor Wiring

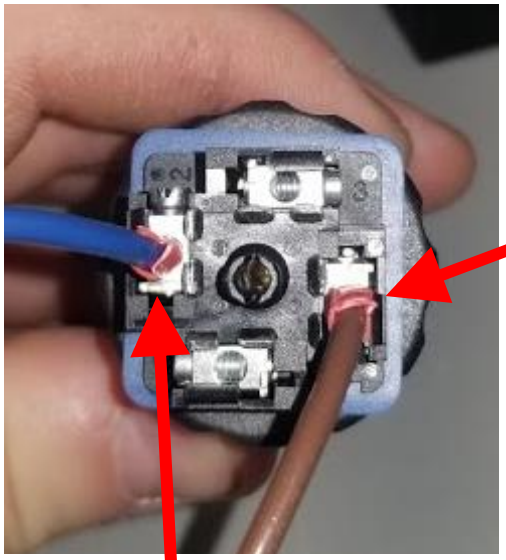
- The Red wire must be on the #2 terminal of the Deutsch connector.
- The Black wire must be on the #1 terminal of the Deutsch connector.
  - Red wire aligns with the brown wire on the harness
  - Black wire aligns with the blue wire on the harness

- Lightly tug on each lead going into the connector to see if crimp is good
- Check to make sure sockets are flush in the front of the connector housing like shown below



WIKA/Ashcroft/Transducer Direct Wiring continued

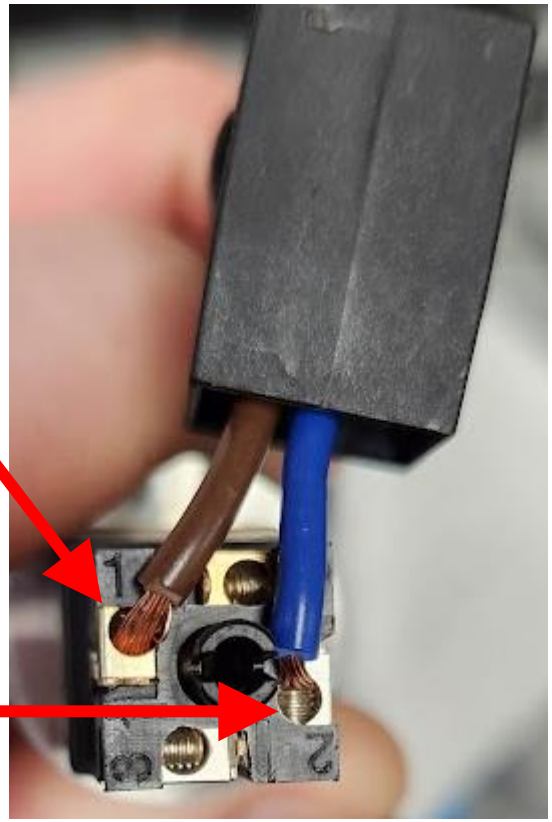
WIKA & Ashcroft



- The Brown wire goes in terminal 1 labeled on top of the sensor

- The Blue wire goes in terminal 2 labeled on top of the sensor

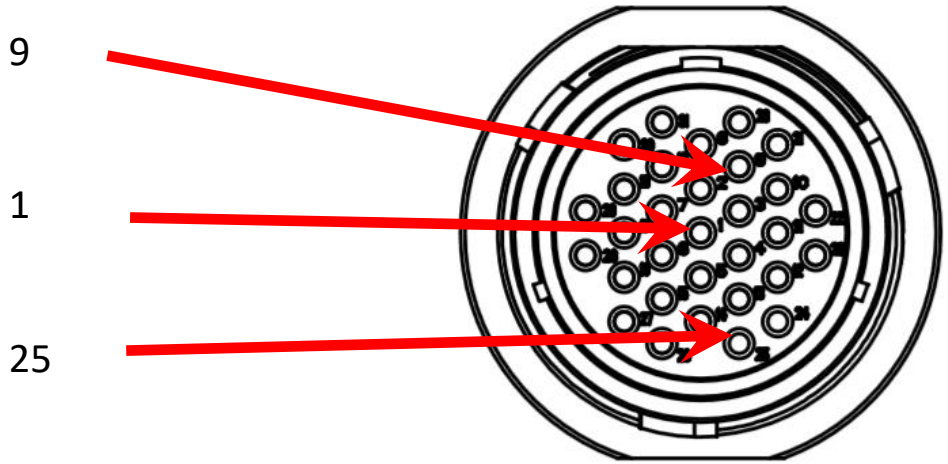
Transducer direct



Advanced Troubleshooting

You can use a multimeter to check continuity of the wires in the wiring harness.
On the 31-pin connector:

- Suction and discharge sensor power wires (brown) go to pin 1
- The discharge sensor's signal wire goes to pin 9
- The suction sensor's signal wire goes to pin 25



- 70-1480 – 31 pin pressure sensor harness

Isolator Troubleshooting

- Your pump may or may not have an isolator installed, as shown on the right.
- If pressures do not seem to be accurate or reach as high as the actual pressures in the hose, then there might be a problem with the isolator.
- Check the seal of the isolator to see if it is ruptured or leaking.
- Check to make sure that the top portion of the isolator is full of oil. Any oil can be used, typically hydraulic oil.
- Not having oil in the top half of the isolator will cause lower than normal readings

ECS/Nexus pressure sensor ordering

- The sensors can all work on inlet or outlets, but they have different ranges that are more useful in the different positions.

- If you need a new **inlet sensor**, place an order for a 70-1910-KIT (“Ashcroft”) (-14 PSI to 500 PSI)

- If you need a new **outlet sensor**, you have two choices:
  - 70-3029-KIT “Transducers Direct” – This sensor has a higher range and can handle more pressure spikes in your pump, but is not as precise, only accurate to 2 or 3 PSI. It will fluctuate 2-3 PSI on the display.
  - 70-2148-KIT “Murphy” – This sensor has a smaller range and may not be able to handle large surges in your pump, but it is more accurate.

Sensor replacement shipping

- If sensor is being replaced under warranty, please send the RMA paperwork and the failed sensor back to Bazooka for further analysis. Failure to do so will result in full charge for the sensor. Address to ship to:

- Shipped using **FedEx** or **UPS**

  Bazooka Farmstar
  800 E. 7th Street
  Washington, IA 52353

- Shipped using **USPS**

  Bazooka Farmstar
  PO Box 869
  800 E. 7th Street
  Washington, IA 52353

Other ECS/Nexus Pressure Parts

- 20-2859 – isolator for electronic transducers / ¾” NPT opening

- 20-2858 – isolator for manual gauges / X2 - ¼” openings

- 390330029 (0-300 PSI gauge)

- 70-1480 – 31 pin pressure sensor harness

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