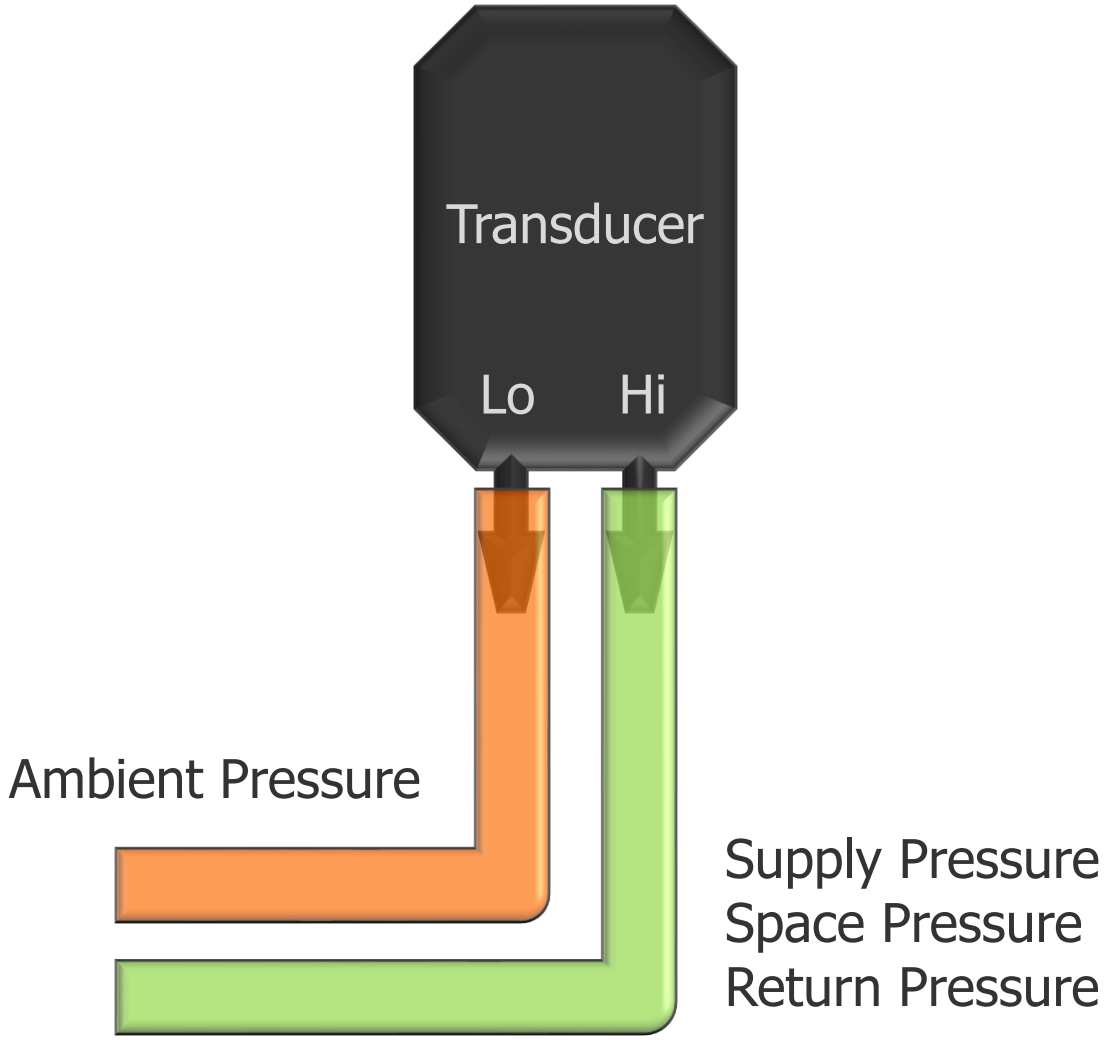
Transducer
Usage and Troubleshooting

What the Transducer Does

- The transducer is comparing one pressure to another pressure:
  - Supply to ambient
  - Space to ambient
  - Return to ambient
  - Inlet air to outlet air
    - Traq



Tubing Colors

Pressure Tubing Description	Tubing Color
High Pressure Pre-Evaporator Filter	Blue
Low Pressure Pre-Evaporator Filter	Green
High Pressure Final Filter	White
Low Pressure Final Filter	Black
High Pressure Traq	Purple
Low Pressure Traq	Yellow
Supply Air High	Red
Return Air High	Clear
Reference Pressure	Orange

Pressure Transducers

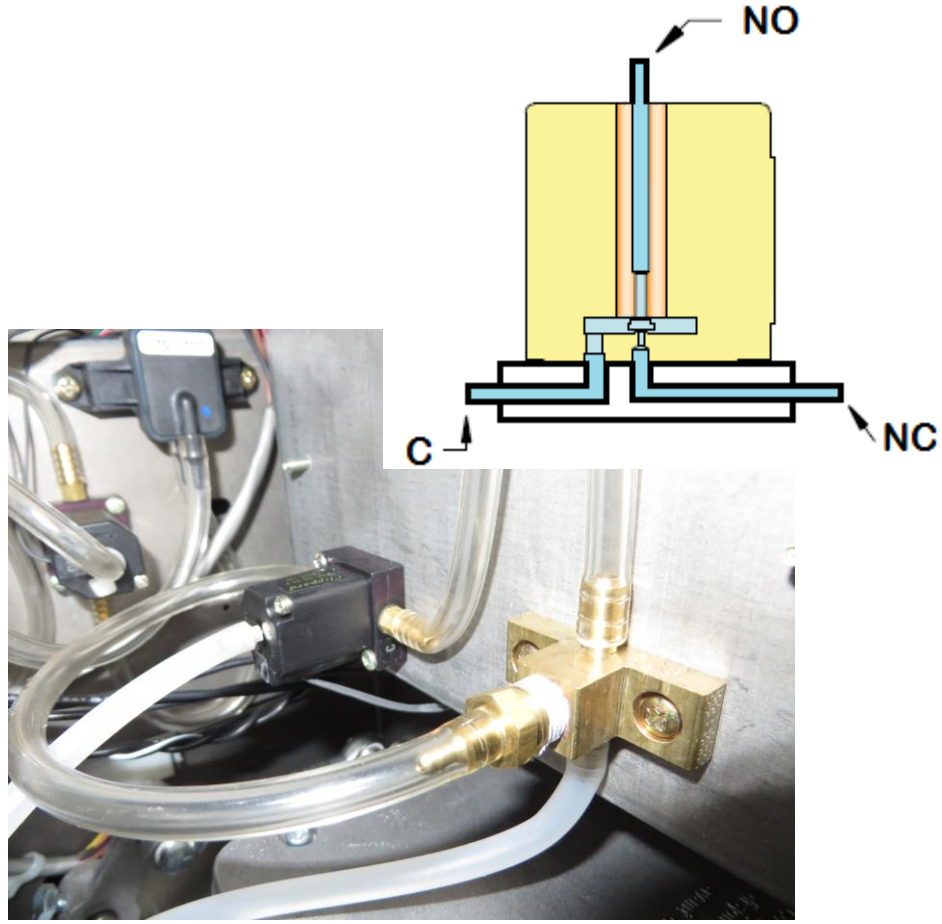
- -0.75” to 9” range
  - P992-5003
  - Null voltage 0.5VDC
    - Supply Air
    - Space Pressure
    - Return Plenum Pressure

Pressure Transducers

- -0.2” to 5” range
  - P992-5002
  - Null voltage 0.25VDC
    - VCM Fresh Air Sensing
    - Filter monitoring

Calibration Solenoid

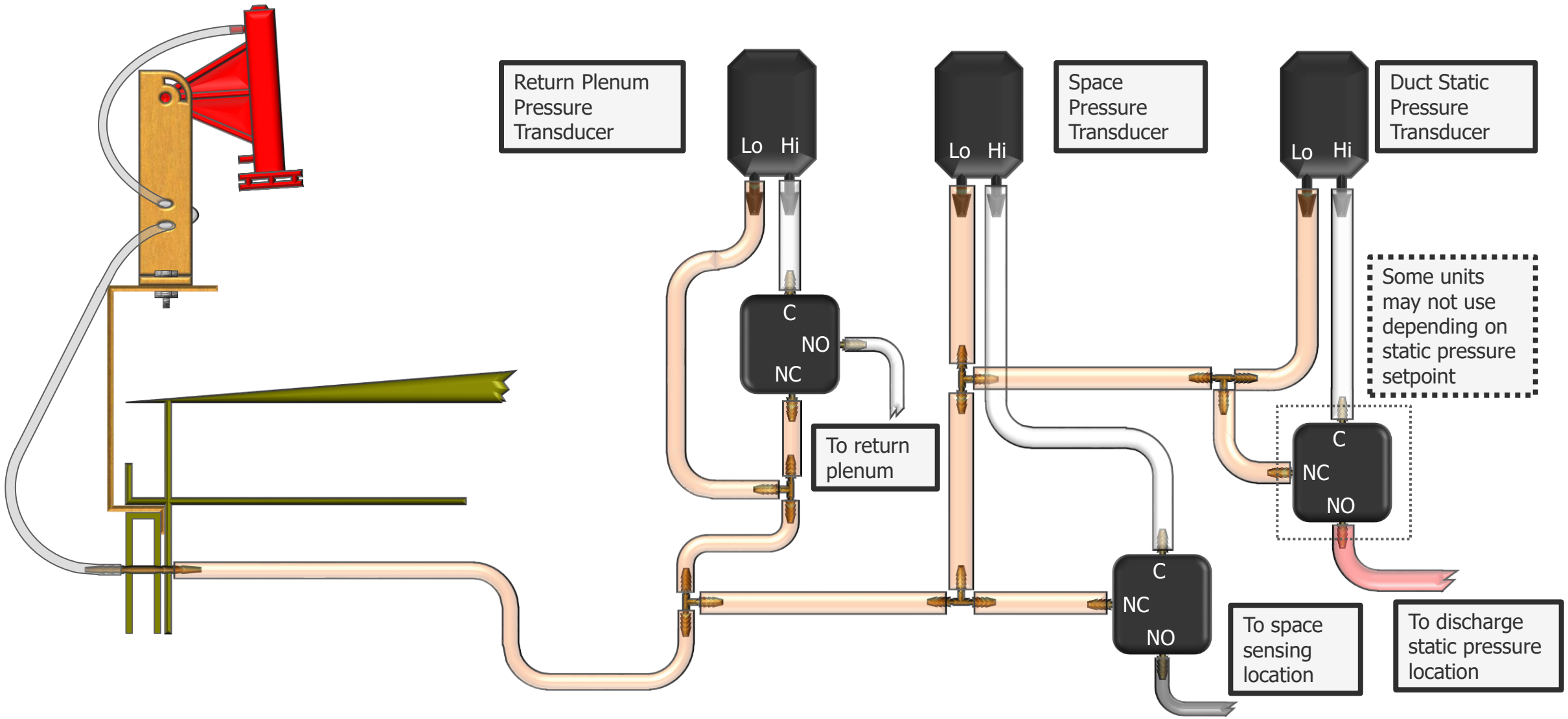
- Used to calibrate transducer
- 24VDC solenoid
  - Energizes every 57 seconds for 3 seconds
  - Flow is normally open (NO) to common (C) when not energized
  - Flow is normally closed (NC) to common (C) when energized



Outside Air Sensing Kit

- Used for outside air pressure reference
  - Mounted external to the unit
  - Connects to brass connection on side of unit
    - Tubing can be cut to length
  - Ports to low side on the transducers

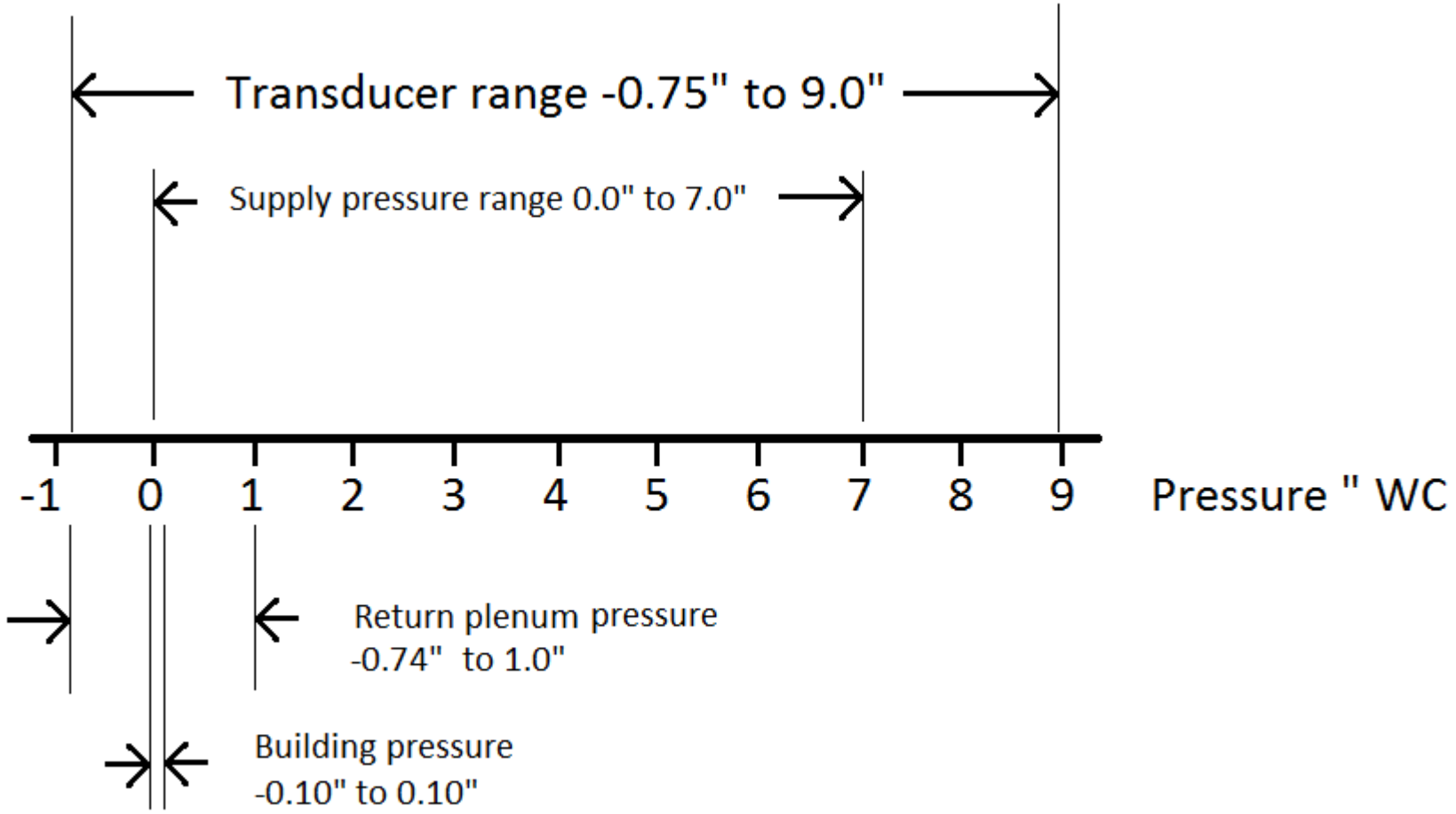
Unit Transducer Tubing



Traq Fresh Air Measurement

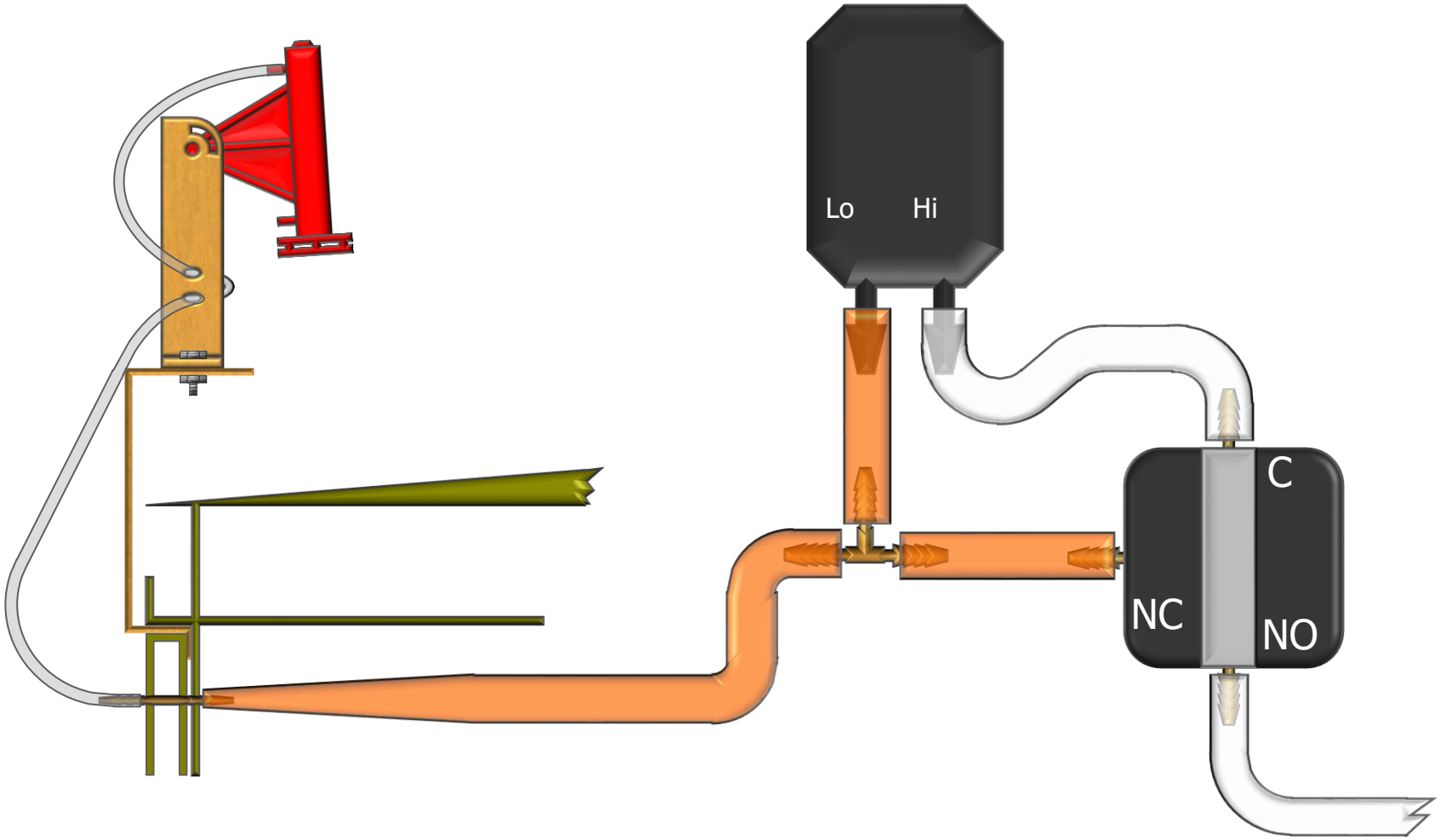
- Fresh air measurement
  - Monitor and control quantity of air fresh air entering unit
  - Transducer and circuit board located in filter section
    - Circuit board behind transducer plate

Pressure Transducer Range



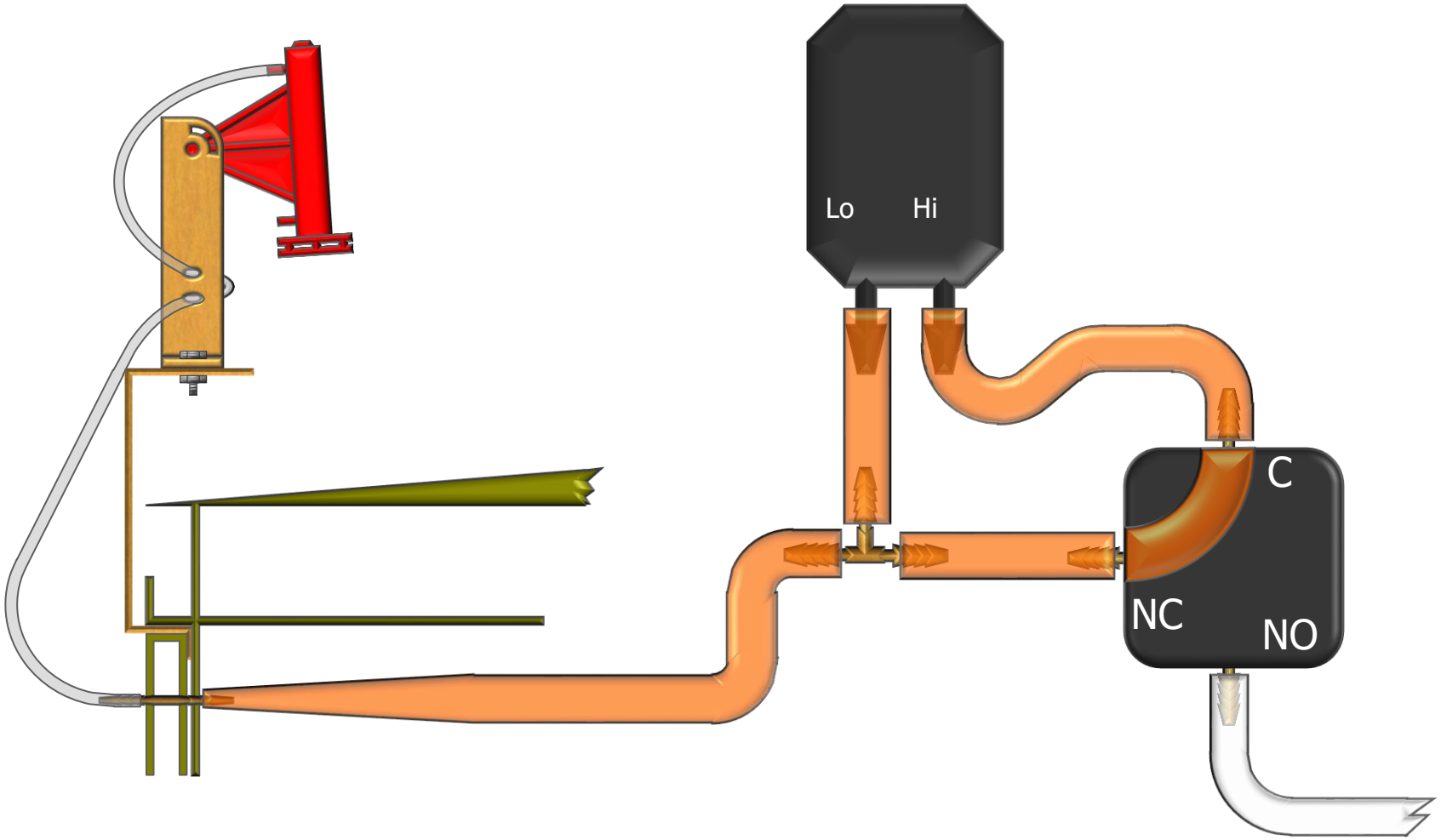
Space Pressure Control

- The unit is comparing space pressure to ambient pressure



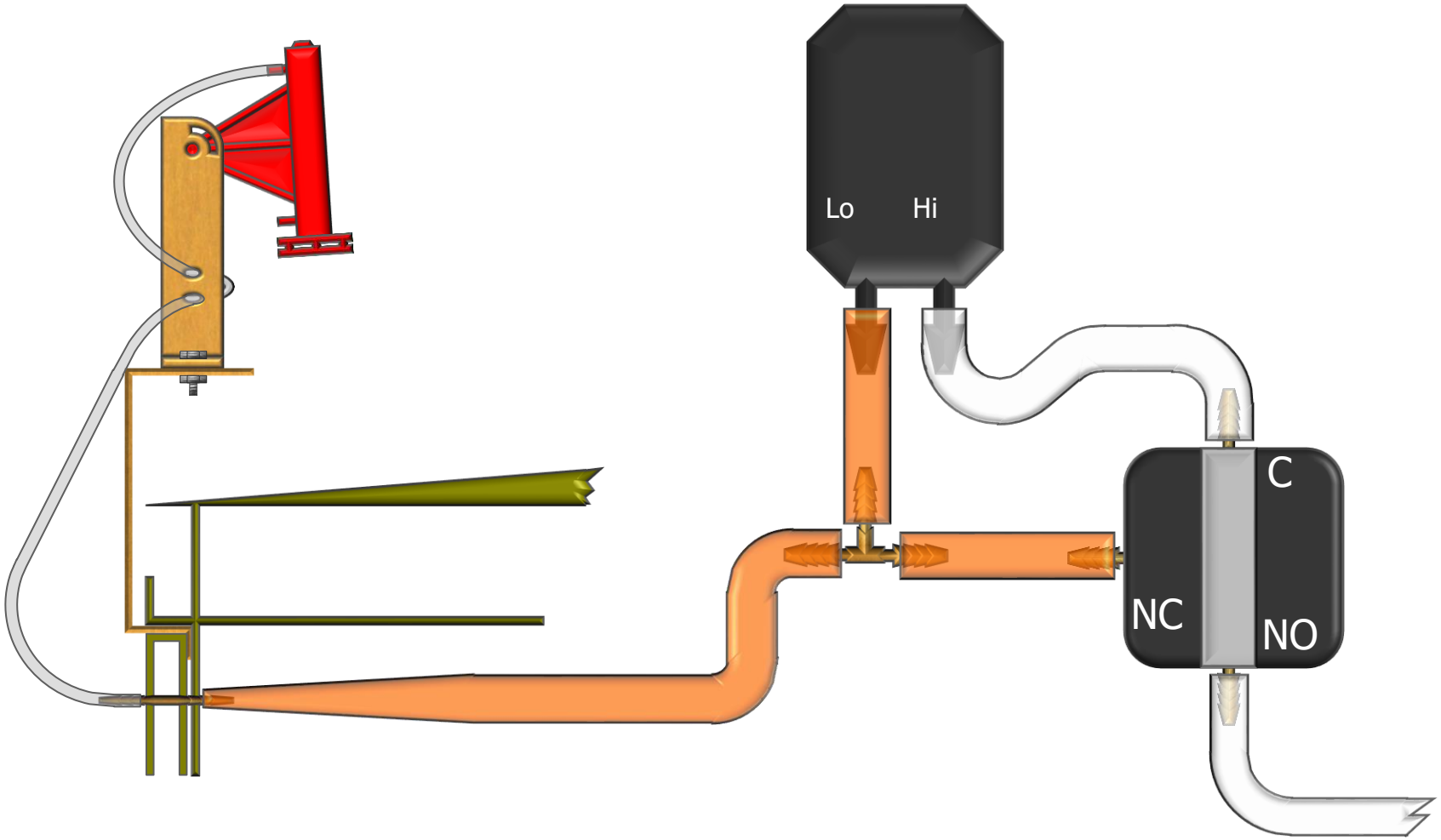
Space Pressure Control

- Every 57 seconds, the unit does a calibration



Space Pressure Control

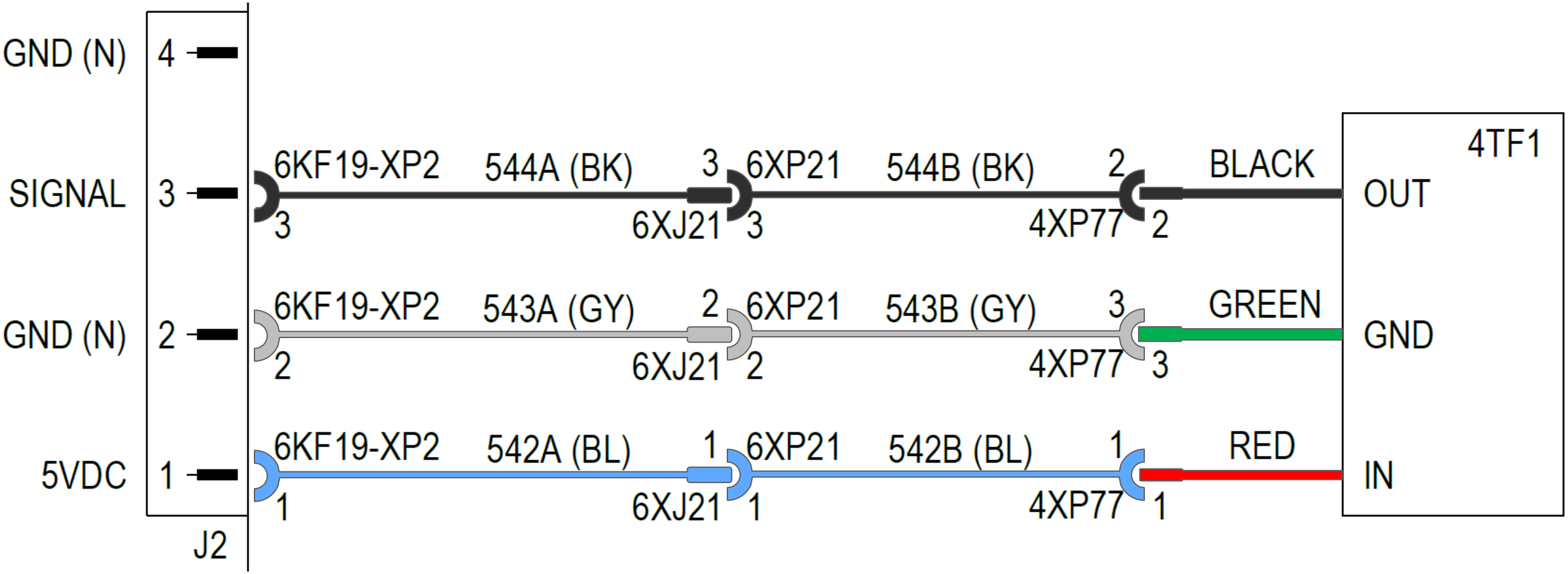
- After 3 seconds, calibration solenoid de-energizes



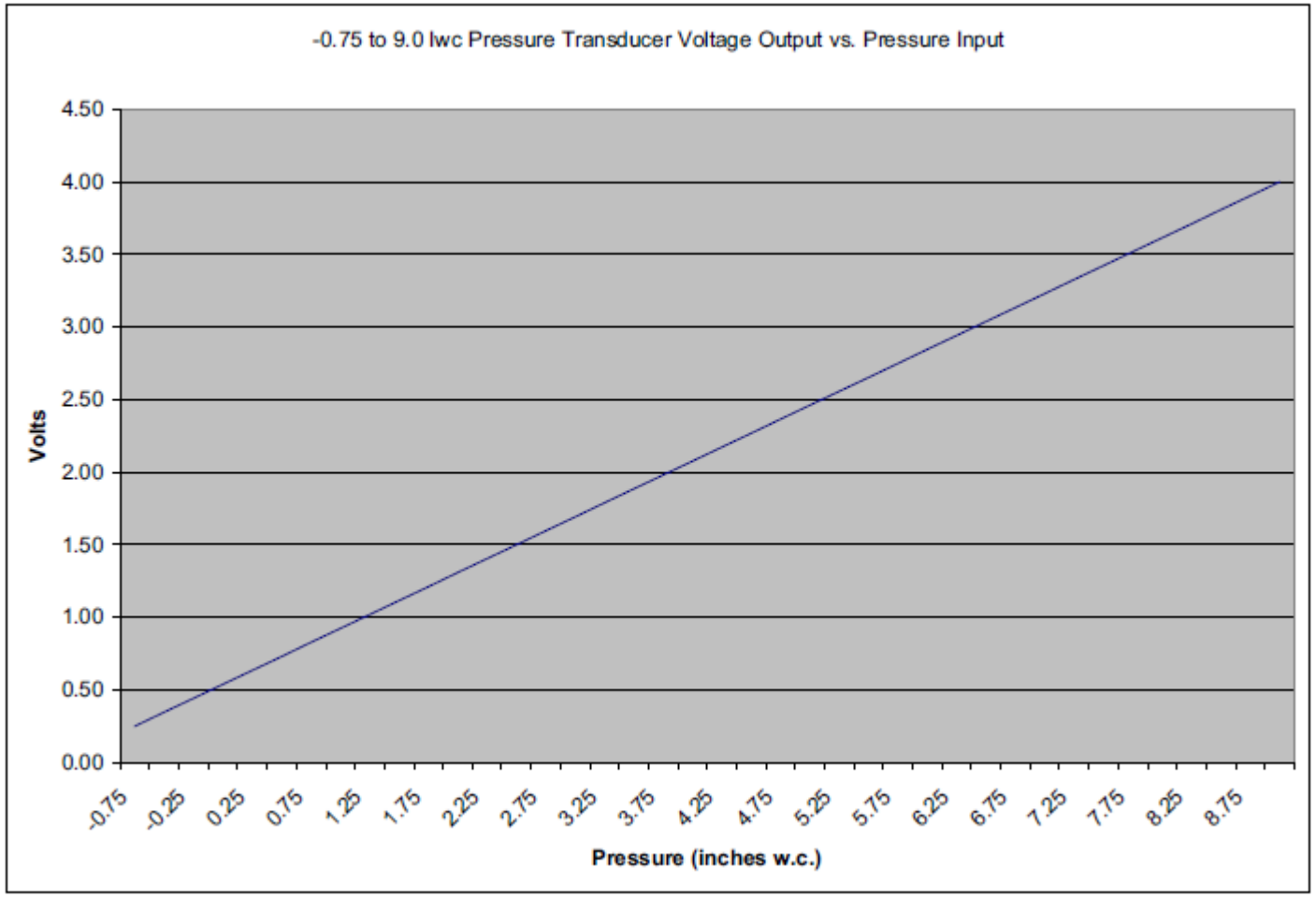
Transducer Wiring

- Transducer power is 5VDC
- Mounted to Hex IO
  - i.e. 6KF19
    - Supply Air Pressure
- Null voltage
  - Output voltage at 0” pressure
  - 0.5VDC
    - Supply Pressure, Return Plenum Pressure, Space Pressure
- As pressure goes up, output voltage goes up

Transducer Wiring



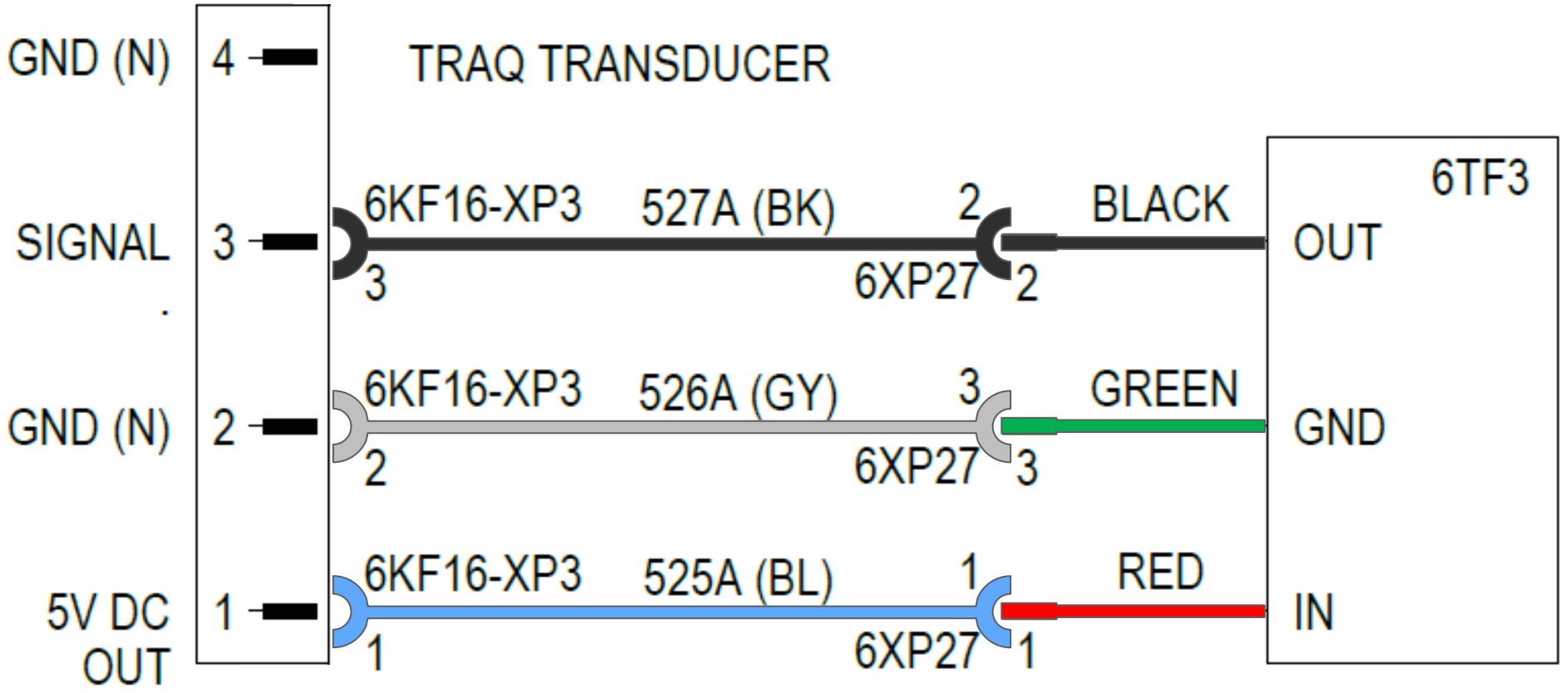
Transducer Output Versus Pressure



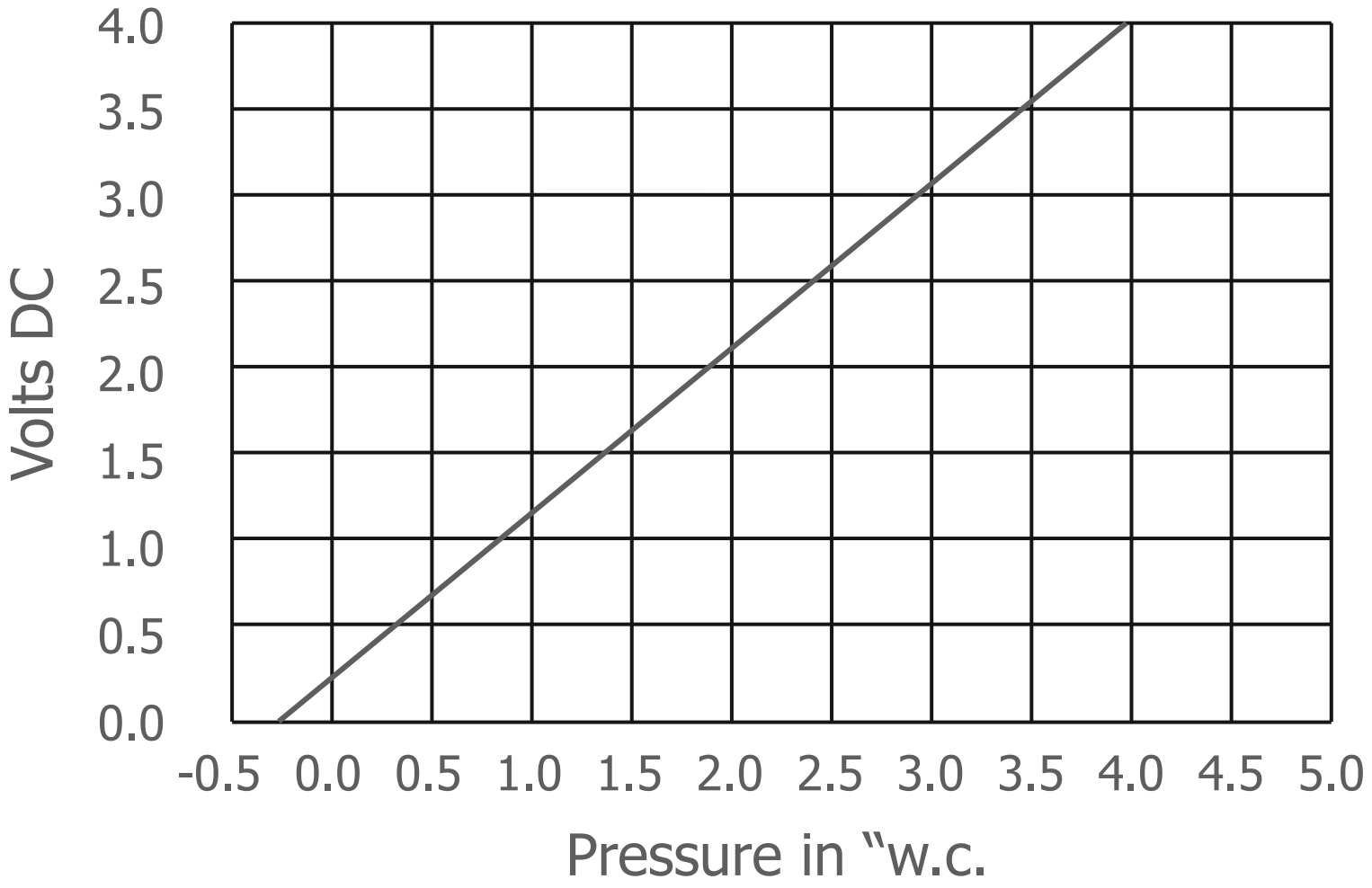
Transducer Wiring

- Transducer power is 5VDC
- Mounted on Hex IO
  - 6KF16
    - Space Pressure/Traq
- Null Voltage
  - Output voltage at 0” pressure
  - 0.25VDC Traq Fresh Air Measurement
- As pressure goes up, output voltage goes up

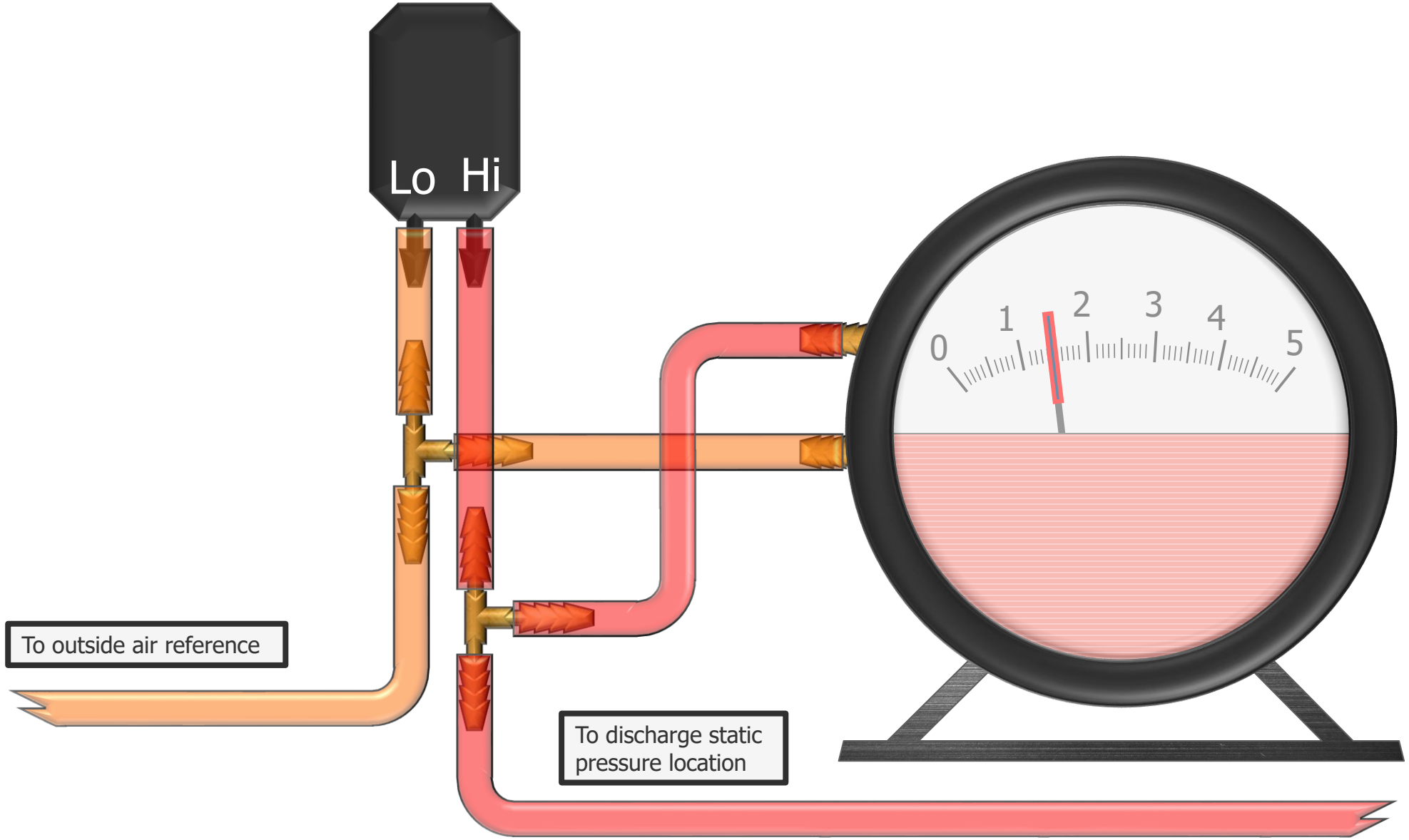
Transducer Wiring



Transducer Output Versus Pressure

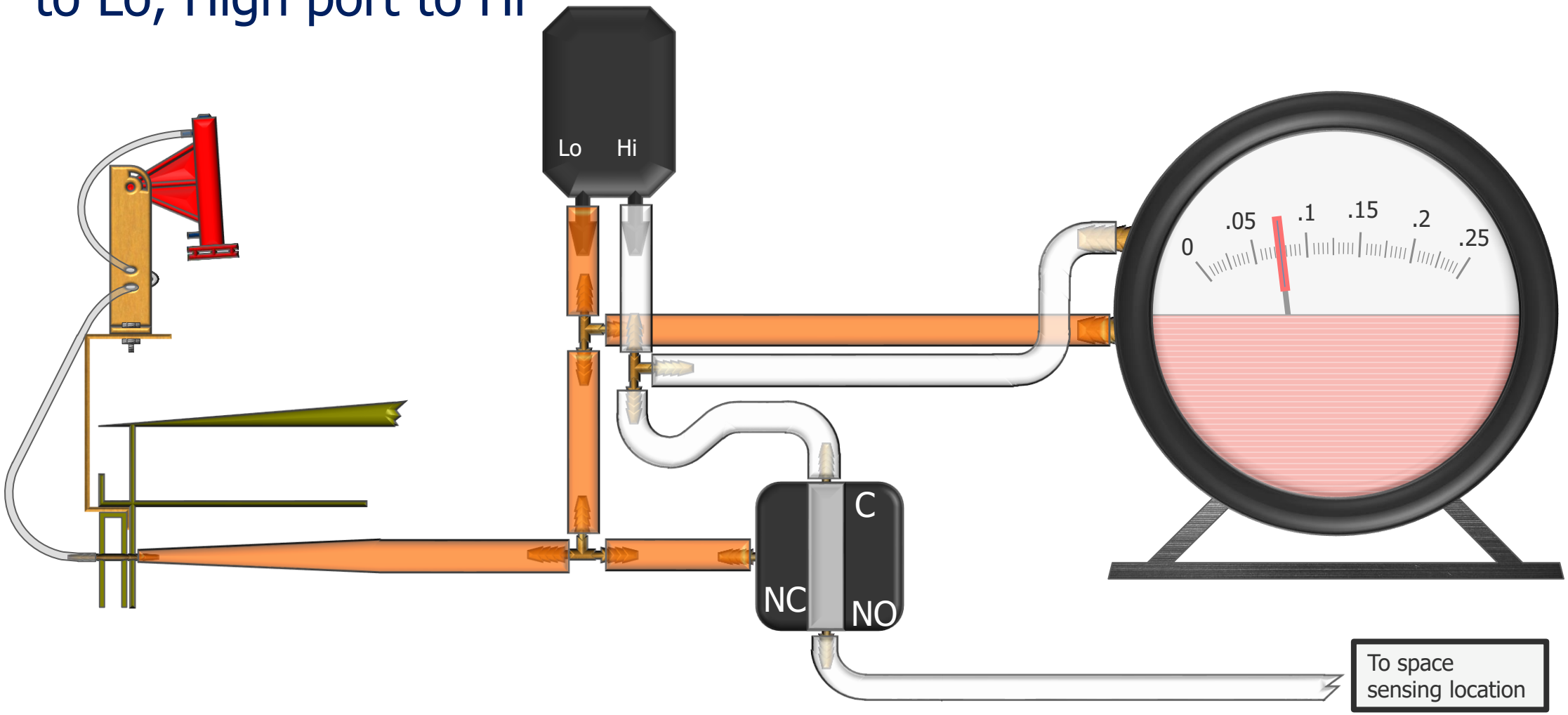


Troubleshooting Transducers



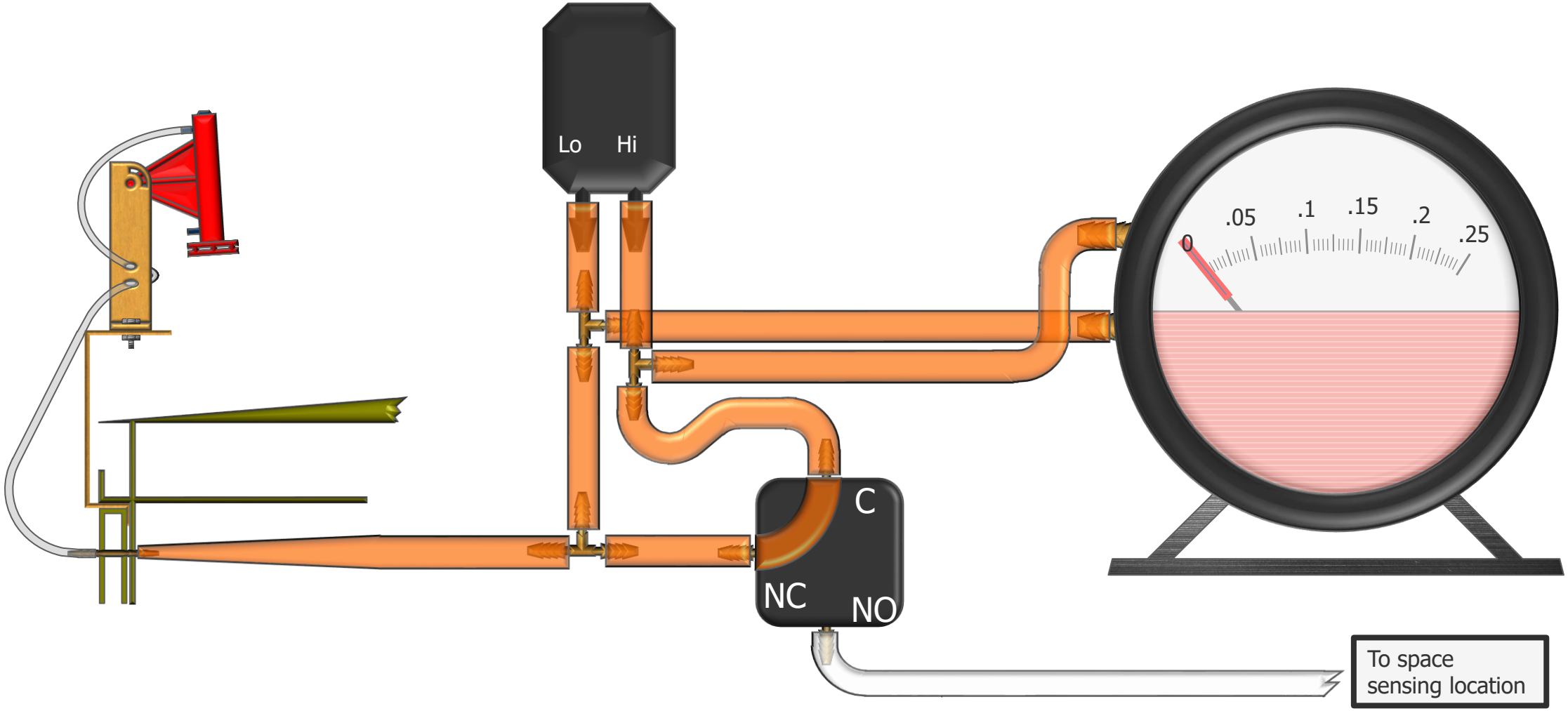
Troubleshooting StatiTrac or Return Plenum

- Connect a manometer to the transducer as shown, tee in Low port to Lo, High port to Hi



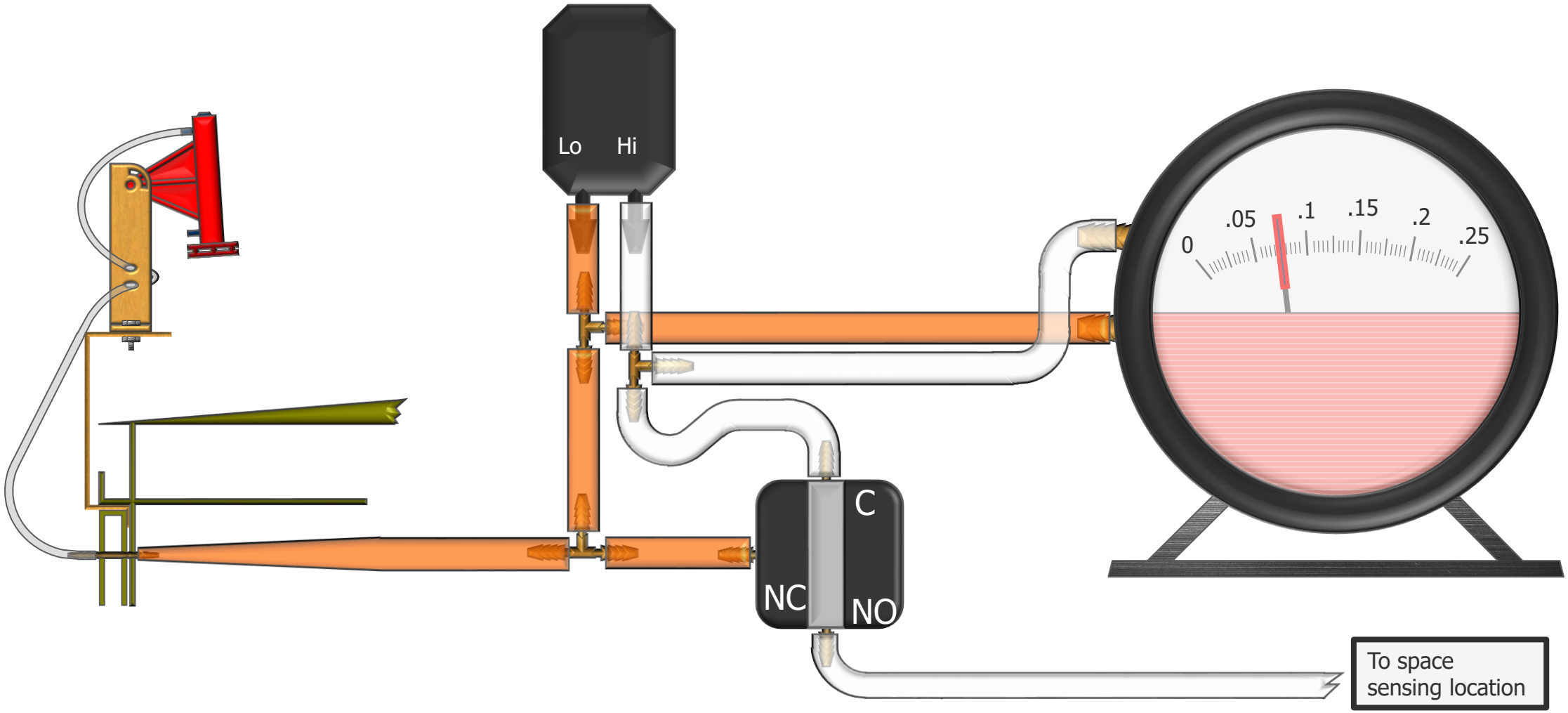
Troubleshooting StatiTrac or Return Plenum

- Watch for calibration solenoid to energize



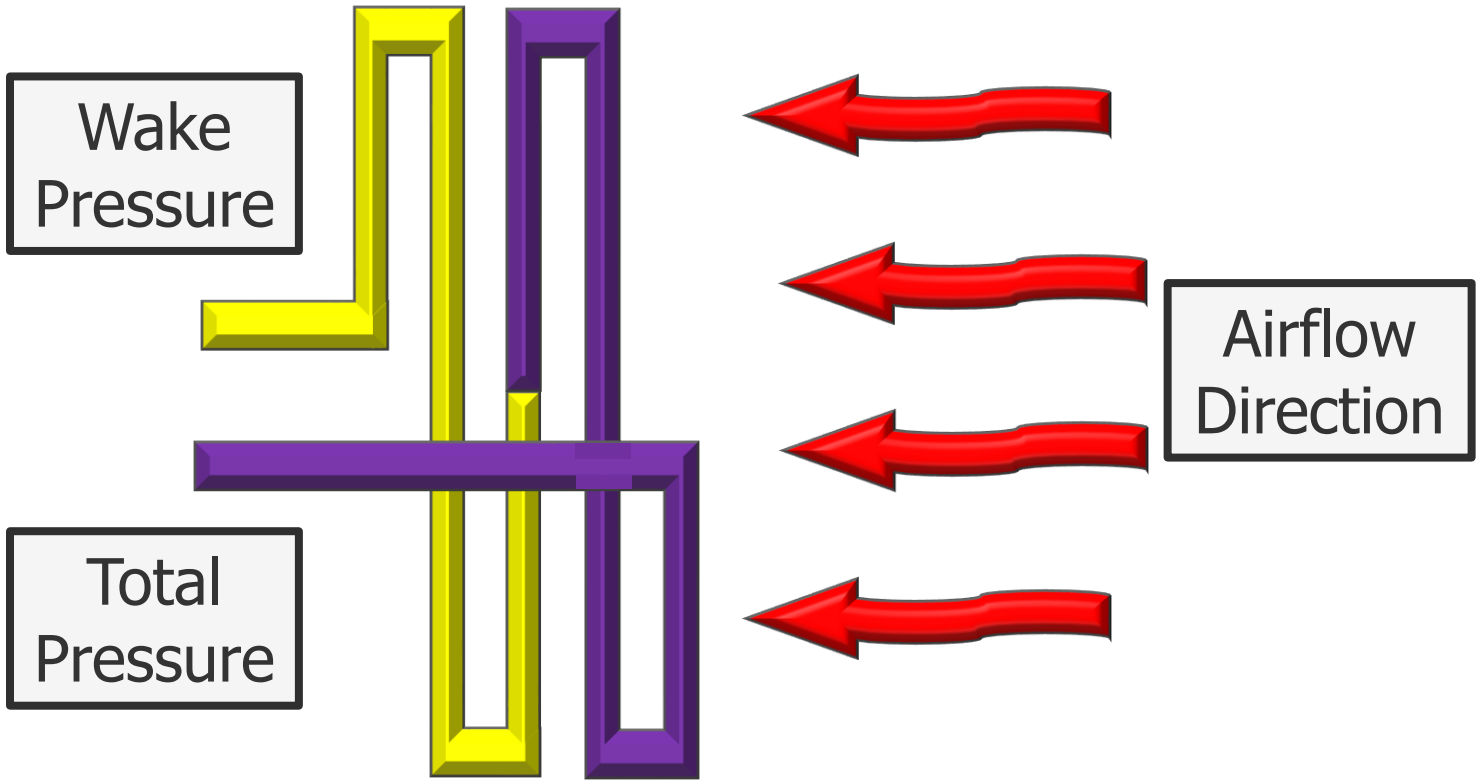
Troubleshooting StatiTrac or Return Plenum

- Return to normal reading after calibration



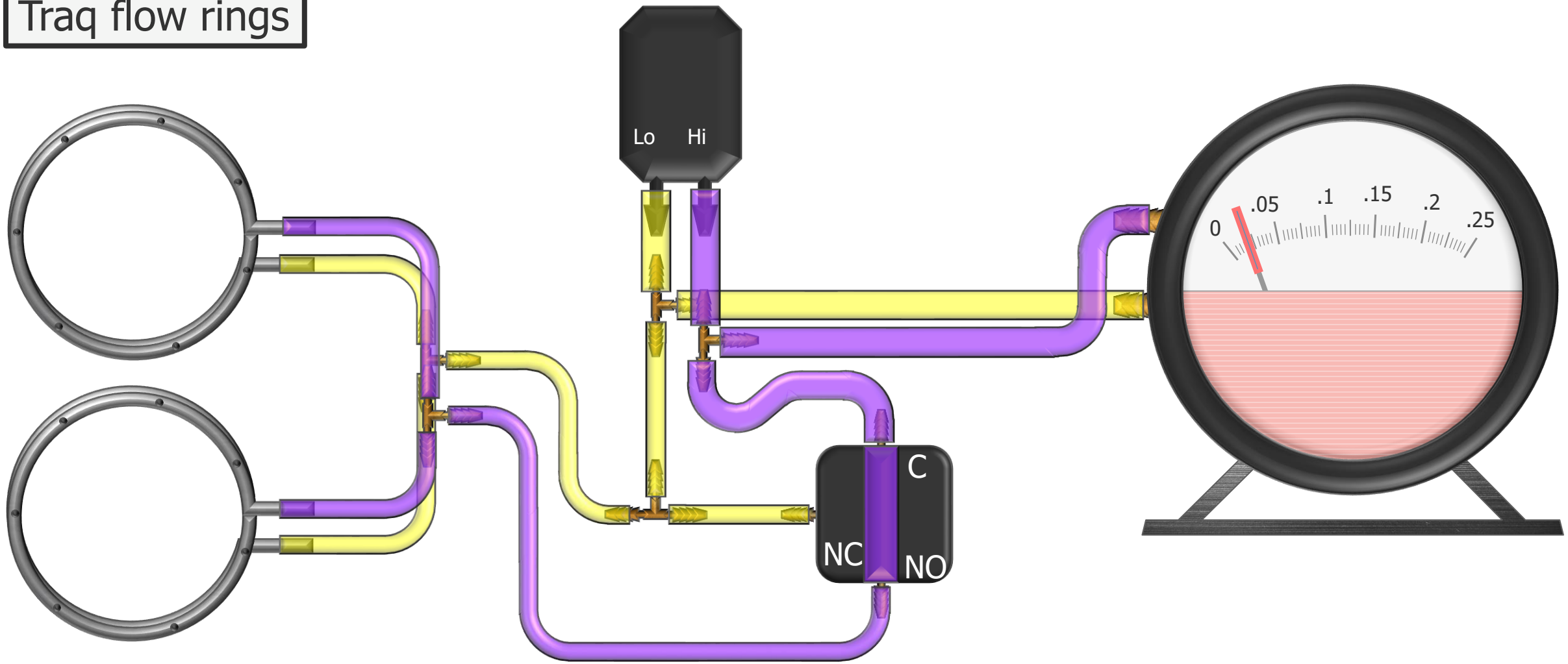
Troubleshooting Traq

- Unit is comparing total pressure with wake pressure



Troubleshooting Traq

Traq flow rings



Final Thoughts

- If the transducer output voltage is correct with the tubes disconnected, the transducer is probably good
- If the transducer output voltage is 0VDC
  - Verify power connections
- If the unit says the space pressure or return plenum pressure is 0” but it’s not
  - Verify that calibration is working

Final Thoughts

- Look for loose or leaking tubing
- Look for moisture in the tubing
- Least likely: Bad circuit board, bad transducer, bad calibration solenoid
- Most likely: Tubing problem