

## GRIDSCAN 5000 Hydrogen Sensor

### Quick-Start Guide



### **i** Important

Installation and maintenance of the GRIDSCAN 5000 Hydrogen Sensor should only be completed by certified field installers/electricians with authority from their organization to install monitoring equipment on their electrical transformer apparatus.

### **!** Warning

Turn off electric power before making any electrical connections and ensure a proper ground connection is made before connecting line voltage.

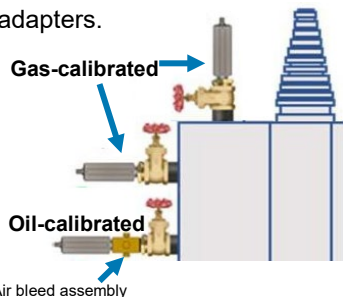
Read all warnings and considerations in the GRIDSCAN 5000 Operating Manual before getting started. All procedures must be strictly adhered to as any deviation may lead to property damage, personal injury and/or death.

### Prior to Install

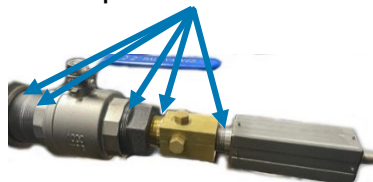
- Determine valve location, valve size and required adapters.
- Identify cable path and connection points for DC power and communications.

### Installation Steps

- 1 Attach the sensor to the transformer valve using a 3/4" -14 NPT fitting.
  - **Gas-calibrated** – horizontal/vertical mount
  - **Oil-calibrated** – horizontal mount with air bleed assembly



Apply liquid thread sealant or Teflon® tape on these locations

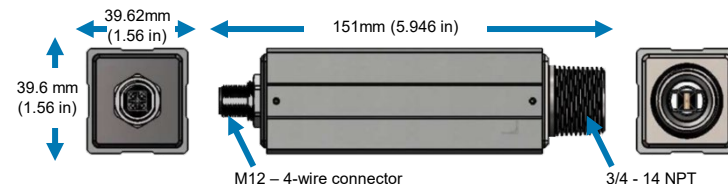


**!** Warning: Do not use galvanized fittings.

- 2 Check for any leaks.
  - Ensure fittings are tight and threads are properly sealed.
  - Close all valves and plugs.

### Box Contents

- Sensor and Certificate of Conformance



### Required Items

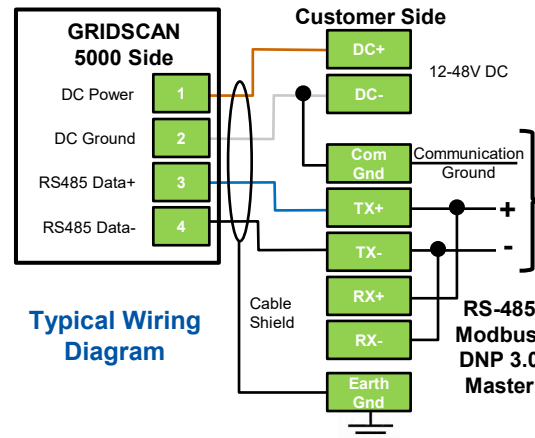
- Wrench to tighten GRIDSCAN 5000 body to max 50 lb. torque
- 4 conductor cable with shield and shield wire that:
  - Includes 4-pin M12 Female connector at one end
  - Is rated IP 67 or IP 68, for substation environment
  - Includes 4/18 AWG wire with shield wire (ground at one end only)
- Liquid thread sealant or Teflon® tape
- RS485, 2-wire, half duplex connection for Modbus RTU or DNP 3.0
- 10-watt industrial power supply with 12-48 VDC power output
- 3/4" gate or ball valve ≥ DIN20 and small container for air bleed liquid\*

\*For oil-calibrated sensors

- 3 If **gas calibrated**, fully open the transformer valve.

If **oil calibrated** (using air-bleed assembly):

- Place container under assembly and partially open the transformer valve.
- Open the top valve/plug on the air-bleed assembly and then close once you see stream of bubble-free liquid. Then fully open the transformer valve.



- 4 Install and connect the cable.

- Place the cable between the sensor and the power/communication equipment in the transformer control cabinet.
- Connect the cable (4/18 AWG) to the power/communication equipment.
- Connect the cable (M12 connector) to the sensor.

## Installation Steps continued

- 5** Turn power on and check communications.
- The default Modbus address is 1.
  - The default DNP 3.0 source address is 4 and destination address is 3.
  - The default UART setting is RS485 (half-duplex), 19,200 baud rate, 8 data bits, and no parity.
- i Important:** The sensor startup sequence can last up to 16 hours.

During the startup sequence, the system:

- Performs a power on system self-test
- Starts measuring oil temperature and hydrogen
- Runs an autocalibration sequence to stabilize sensor as needed

- 6** Charge the internal capacitor that supports the real-time clock prior to placing the sensor in operation.
- Connect the sensor to power for at least 5 minutes to recharge the capacitor.
  - Reset the date/time per the steps in the GRIDSCAN 5000 Operating Manual or use the ScanH2 configuration software.
  - Cycle the power to clear any errors.
- 7** Perform final commissioning by using:
- GRIDSCAN 5000 Operating Manual
  - ScanH2 configuration software
- i Important:** Contact [help@h2scan.com](mailto:help@h2scan.com) with any questions.

