TROLL® Net Hub

Part number 0092160 (4-port bulkhead) | 0092170 (8-port bulkhead) | 0092180 (4-port strain relief) | 0092190 (8-port strain relief)

TROLL Net Hub Overview

The TROLL Net Hub allows a cabled network of up to 16 instruments connected by up to five TROLL Net Hubs. Each cable within the network has a maximum length of 1290 m (4000 ft), per Modbus (RS485) protocols.

The TROLL Net Hub is available in four models.

- 8-port with bulkhead connectors (and 1 strain relief)
- 4-port with bulkhead connectors (and 1 strain relief)
- 8-port with strain relief connectors (9 strain relief total)
- 4-port with strain relief connectors (5 strain relief total)

Changing the Device Address

When networking multiple Level TROLL, Aqua TROLL, Rugged TROLL, or RDO PRO Instruments, each device requires a unique device address.

Complete the following steps with the instrument connected to the software.

1. Click the **Device Setup** tab.
2. Click the **Modbus Setup...** button.
3. Select the **Device Address** box and change the number to the desired value.
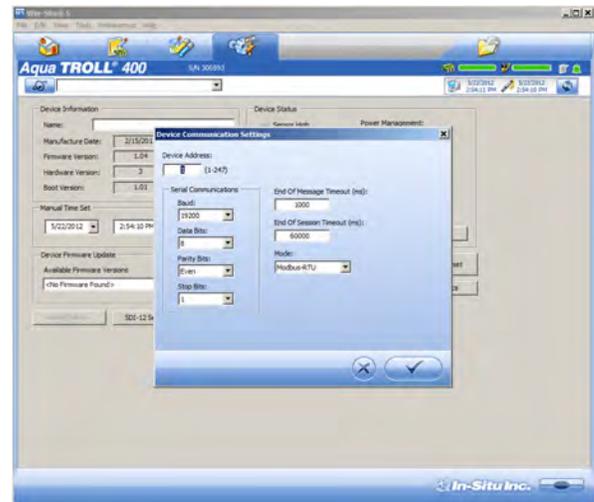
4. Click the **check mark** to save changes. Click **Yes** when asked to proceed.
5. Click **No** when prompted to save the changes as the new default settings.

⚠️ You must change Win-Situ Software communication settings to match the device address next time you connect the instrument. See page 4.

Attaching Strain Relief Connectors to the Enclosure

The number of strain relief connectors attached to the housing depends on the model. All models have at least one strain relief to attach (the master port, shown below)
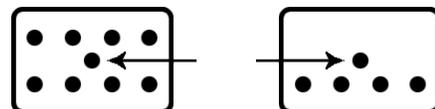
1. Unscrew the strain relief from the nut and the grommet as shown below.
Make sure that there is an O-ring present on the grommet.

2. Twist the grommet through the drilled hole in the housing **with the O-ring against the outside of the housing**. Tighten the grommet to finger-tight, then turn it an additional half-turn with a 15-mm wrench.

3. Place the nut over the threads of the grommet inside the housing. Use an 18-mm wrench to fully tighten the nut.

4. Place the strain relief over the end of the stripped-and-tinned cable.

5. Thread the cable through the grommet. Ensure there is enough cable inside the enclosure to reach the appropriate connector.

6. Tighten the strain relief with a 15-mm wrench.

7. Repeat this section for any remaining strain relief connectors that need to be installed. If the strain relief is housing an instrument cable, ensure the instrument device address has been correctly changed prior to installing the cable into the strain relief.

Plugging Unused Strain Relief Connectors

Plug unused strain relief connectors to prevent moisture ingress into the enclosure.

1. Follow steps 1-3 from the section **Attaching Strain Relief Connectors to the Enclosure**

2. Insert a plug into the grommet.

3. Place the strain relief over the plug and grommet, and tighten the strain relief with a 15-mm wrench.

Number	Description
1	Plug
2	Grommet
3	Plug & Grommet
4	Plug, Grommet, & Strain Relief

Externally Powered 4-port or 8-port TROLL Net Hubs

Each screw terminal of an externally powered TROLL Net Hub is wired the same way.
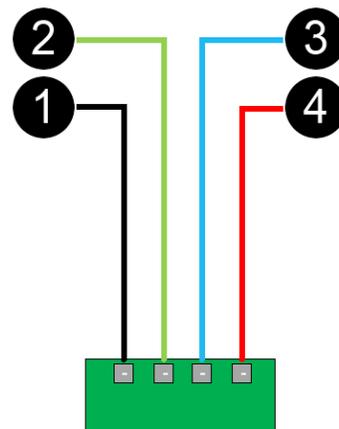
Number	Wire Color	Function
1	Black	Ground
2	Green	RS485 (-)

Number	Wire Color	Function
3	Blue	RS485 (+)
4	Red	Power DC+

The center screw terminal block is the master, which connects to the TROLL® Link Telemetry System or PLC. On 8-port TROLL Net Hubs, which has two circuit boards, one circuit board master screw terminal is wired to the second circuit board master screw terminal.
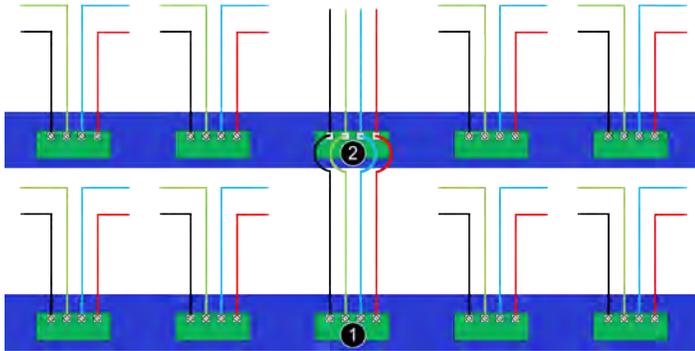
Number	Description
1	Board 1 Master Terminal (to board 2 Master)
2	Board 2 Master Terminal (to telemetry, PLC, or other TROLL Net Hub)

For bulkhead connector models, disconnect the Red Power DC+ wire from the screw terminal of any port that is not being used.

NEVER disconnect the Red Power DC+ wire from a master terminal.

Internally (9V Battery) Powered 4-port or 8-port TROLL Net Hub

Each screw terminal of an internally powered TROLL Net Hub is wired the same way, with the exception of the master terminal(s).
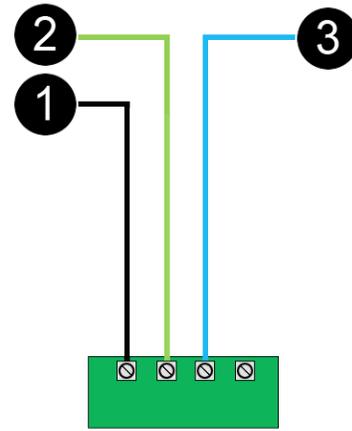
Number	Wire Color	Function
1	Black	Ground
2	Green	RS485(-)
3	Blue	RS485(+)

The center screw terminal block is the master, which connects to the TROLL® Link Telemetry System or PLC. On 8-port TROLL Net Hubs, which has two circuit boards, one circuit board master screw terminal is wired to the second circuit board master screw terminal.
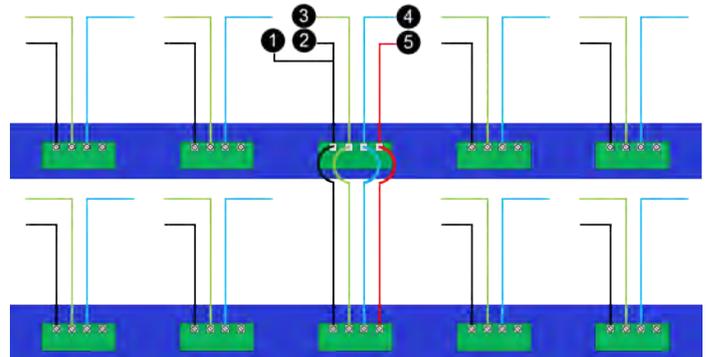
Number	Wire Color	Function
1	Black	**To 9V Battery (-)**
2	Black	Ground
3	Green	RS485(-)
4	Blue	RS485(+)
5	Red	**To 9V Battery (+)**

DO NOT connect the red Power DC(+) wire from an instrument cable to a screw terminal when the TROLL Net Hub is internally powered. Connecting this wire causes the instrument to use the 9V battery as an

external power source. This causes the TROLL Net Hub to cease functioning.

For bulkhead connector models, disconnect the red Power DC+ wire from the screw terminal of all ports **except** the master ports.

> **NEVER disconnect the red Power DC+ wire from a master terminal.**

Connections
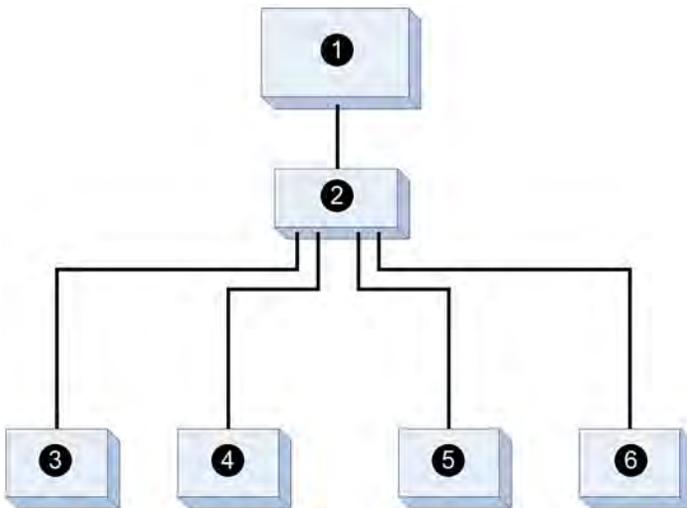
Number	Description
1	TROLL Link Telemetry System or PLC
2	TROLL Net Hub
3	Well 1 - In-Situ Inc. instrument 1
4	Well 2 - In-Situ Inc. instrument 2
5	Well 3 - In-Situ Inc. instrument 3
6	Well 4 - In-Situ Inc. instrument 4

Changing Win-Situ Software Device Address and Communication Settings

If you change an instrument's device address or other communication settings, you must change Win-Situ Software communication settings to reconnect and communicate with the instrument.

1. Connect an instrument to a laptop or PC.

2. Open Win-Situ Software. When it asks "*Connect to device now?*" click **No**.

3. In the top menu bar, click **Preferences**.

4. Click **Comm Settings**.

5. Enter instrument's device address into the **Device Address** box.*

6. Ensure the correct COM port is selected in the **Port Number** box. See page 1.

7. Ensure other communication settings (e. g., Baud, Data Bits, Parity Bits, Stop Bits, Mode) match the device settings.*

8. Click the **check mark**.

9. Click the **Connect** button in the lower right corner.

* If you do not know the device address or communication settings for an instrument, disconnect the instrument from the networking device. Connect the instrument directly to the PC. Click the **Search For Devices** or **Reset All Devices** button in the Comm Settings window. Clicking the **Reset All Devices** button restores device defaults.

> ⚠️ If the instrument is connected to a networking device when **Reset All Devices** is clicked, all other instruments connected to the network are restored to default settings.

Any device deployed in a network must have the appropriate device communication settings reapplied.