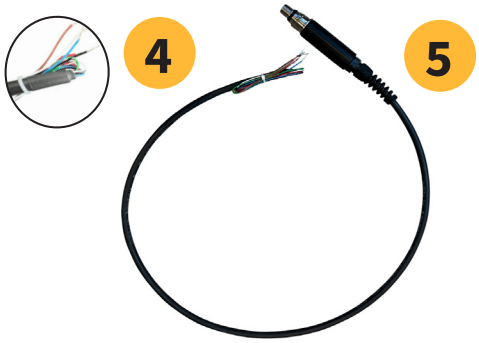
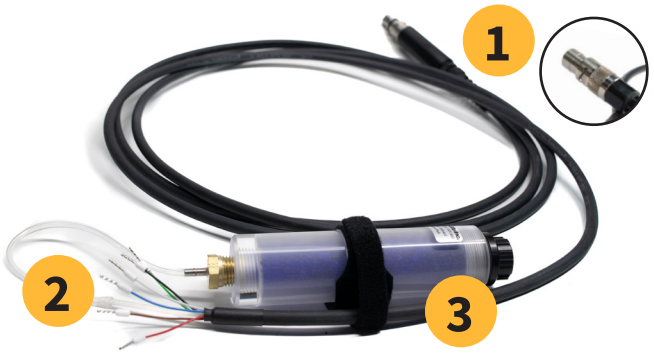
Rugged Cable (Flying Leads)

Quick Start Guide

Non-Vented Cable



Vented Cable



Overview

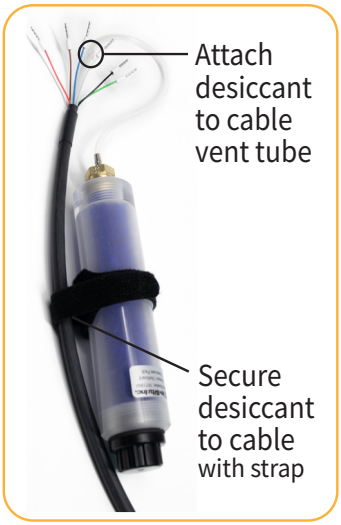
The Rugged Cable with Flying Leads connects an instrument to a controller or logger for communication via:

- RS485 Modbus
- Analog (4-20 mA)
- SDI-12
- RS232 Modbus (requires converter)

1. Twist-Lock connector (cable available with either male or female connector)
2. Flying leads with ferrules for wiring to a PLC or logger
3. Removable high-volume outboard desiccant protects cable vent tube from condensation in high-humidity environments
4. Flying leads with stripped and tinned terminations for wiring to a PLC or logger
5. Twist-lock connector

Specifications

Jacket Options	TPU (Thermoplastic Polyurethane) Tefzel (ETFE fluoropolymer)
Vent Options	Vented (includes outboard desiccant), non-vented
Conductors	6 conductors, 24 AWG, polypropylene insulation Available Stripped and Tinned or with Ferrules
Diameter	Cable, 6.7 mm (0.265 in); Connector, 18.5 mm (0.73 in)
Minimum bend radius	2x cable diameter (13.5 mm, 0.54 in)
Max. recommended cable lengths	SDI-12 61 m (200 ft) Modbus 1259 m (4000 ft) 4-20 mA 1259 m (4000 ft)
Desiccant pack (Vented Cables Only)	Clear acrylic, nylon, HDPE membrane
Desiccant (Vented Cables Only)	approx. 22 g silica gel, type 4



Vented cable comes with a vent and desiccant. Non-vented cables don't ship with desiccant. You can remove the desiccant from the vent tube for better access to the conductor wires. Pull the vent tube extender off the cable vent tube to remove. After connecting the wires, attach desiccant vent tube to cable vent tube and secure desiccant to cable with hook-and-loop strap.

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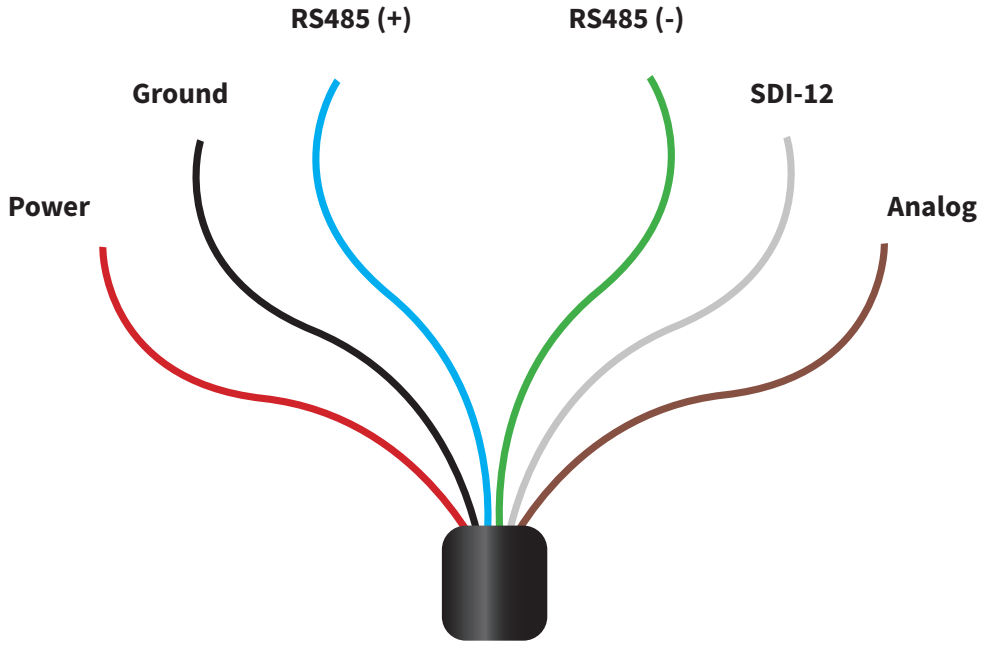
Connections

Refer to the diagrams on the following page for PLC wiring diagrams. Unused leads should not be touching. Refer to the instrument manual for more information about connecting to a PLC or data logger.

Aqua TROLL and RDO Power Connections. The Red wire provides power for all Aqua TROLL modes. The 4-20 mA current loop output can be continuous in Modbus or SDI-12 mode as long as analog output is enabled.

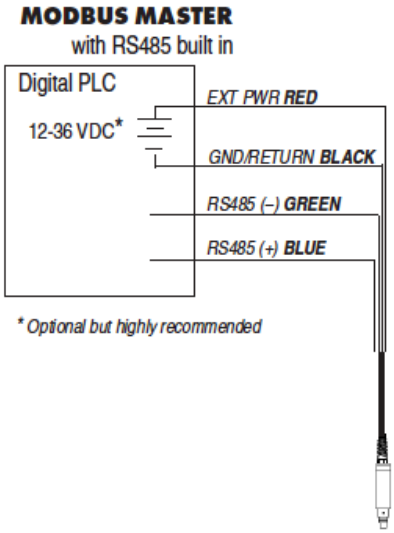
Level TROLL Power Connections. The Red wire provides power for Modbus and SDI-12 modes. The Brown wire provides power for the 4-20 mA mode. If power is present on the Brown wire and not on the Red wire, the device enters the 4-20 mA mode automatically and stays in the 4-20 mode until power is removed from the Brown wire or is applied to the Red wire. The Red wire has priority—if power is applied to both wires at the same time, the device will operate in Modbus or SDI-12 modes but not in 4-20.

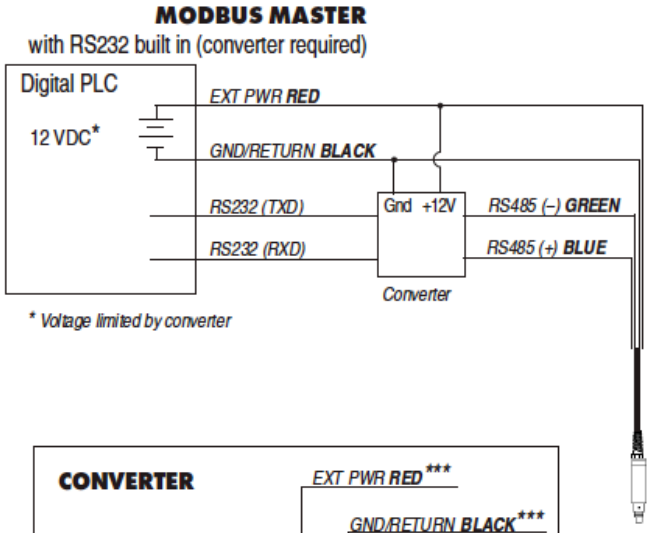
Digital Communications. The device automatically switches between Modbus and SDI-12 modes depending on which of the two interfaces has activity. Modbus and SDI-12 cannot be used at the same time — whichever one is currently in use will block communication on the other.

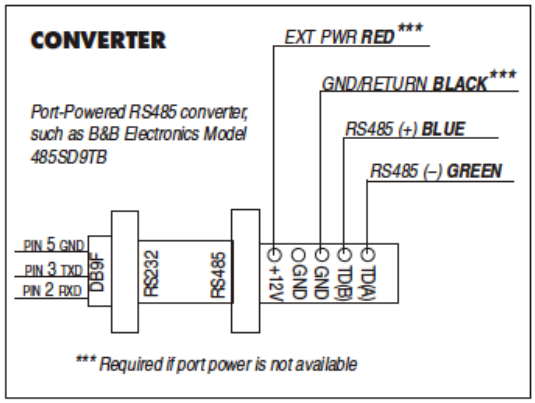


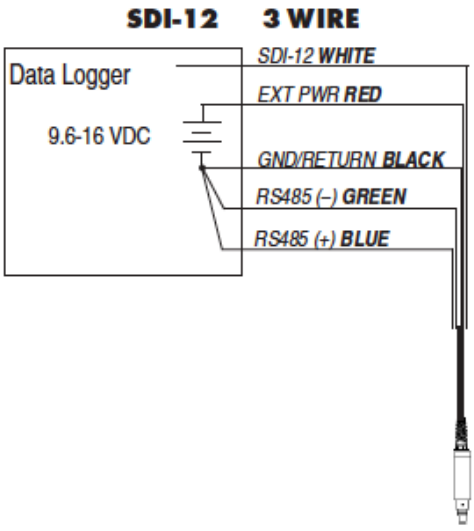
WIRE COLOR	SIGNAL - AQUA TROLLS	SIGNAL - LEVEL TROLLS
Red	External Power	External Power - Digital
Black	Ground	Ground, 4-20 mA Return
Blue	RS485 (+)	RS485 (+)
Green	RS485 (-)	RS485 (-)
White	SDI-12	SDI-12
Brown	4-20 mA	4-20 mA Power

Wiring Diagrams



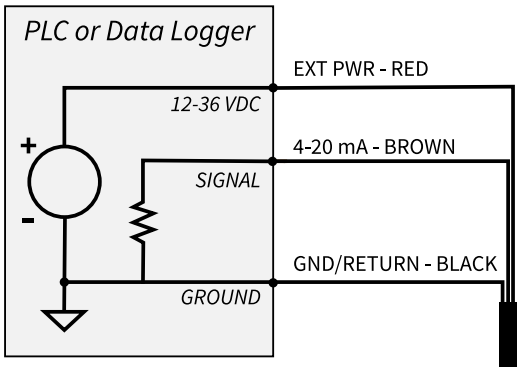






Aqua TROLLs and RDO Instruments

Analog (4-20 mA) 3 Wire



Level TROLLs

Analog (4-20 mA) 2 Wire