

# RDO PRO<sup>®</sup> Optical Dissolved Oxygen Sensor

## Specifications – Controller Requirements and Connections

### Controller Requirements and Connections

The RDO PRO sensor may be connected to a controller or logger for communication via:

- Analog (4-20 mA) provides a configurable 4-20 mA current loop output
- SDI-12
- RS485 Modbus
- RS232 Modbus

### Wiring Overview

Refer to diagrams on the following pages. Trim back and insulate unused wires. The shield should be wired to a chassis ground or earth ground.

	Signal	Color	Pin
	Ground/Return	Black	6
	External Power	Red	5
	4-20 mA	Brown	4
	RS485 (-)	Green	3
	RS485 (+)	Blue	2
	SDI-12	White	1

### Analog (4-20 mA) 3-wire

Cable length must not exceed 4000 ft.

Signal	Color	Pin
Ground/Return	Black	6
External Power (12-36 VDC)	Red	5
4-20 mA	Brown	4

### SDI-12 (3 wire)

Cable length must not exceed 200 ft.

Signal	Color	Pin
Ground/Return	Black	6
External Power (9.6-16 VDC)	Red	5
RS485 (-)	Green	3
RS485 (+)	Blue	2
SDI-12	White	1

### Modbus Master with Built-in RS485

Cable length must not exceed 4000 ft.

Signal	Color	Pin
Ground/Return	Black	6
External Power (12-36 VDC)	Red	5
RS485 (-)	Green	3
RS485 (+)	Blue	2

### Modbus Master with Built-in RS232 (Converter Required)

Cable length must not exceed 20 ft.

Signal	Color	Pin
Ground/Return	Black	6
External Power (12 VDC, voltage limited by converter)	Red	5
RS485 (-)	Green	3
RS485 (+)	Blue	2

### Additional Information

For additional information on Modbus and SDI-12 communications, including the SDI-12 commands and Modbus registers, see the In-Situ Modbus Communication Protocol technical note, or the RDO PRO Process Optical Dissolved Oxygen Sensor Operator's Manual available at [www.in-situ.com](http://www.in-situ.com).