# Signet 2610 Process Optical Dissolved Oxygen Sensor +GF+



The Signet 2610 RD0® Pro is a rugged, reliable sensor designed to deliver accurate dissolved oxygen (D0) data across a wide measuring range while reducing maintenance costs. It features the latest optical technology for D0 measurement and eliminates the replacement of membrane and reference solutions.

The Signet 2610 optical sensor cap is calibrated at the factory and requires no field calibration. The optical measurement technology resists abrasion and bleaching allowing for a long life in many harsh applications. The DO sensor has a built in Modbus RS485 and 4 to 20 mA current loop outputs for ease of interface to existing control systems. The 3-2610-41 version includes the Signet (S³L) digital interface for direct connection with the 9900 SmartPro™ Transmitter and 8900 Multi-Parameter Controller. Additional features include a 10 m (32.8 ft) cable with stripped and tinned ends as well as a titanium thermistor for improved compatibility in salt water applications.

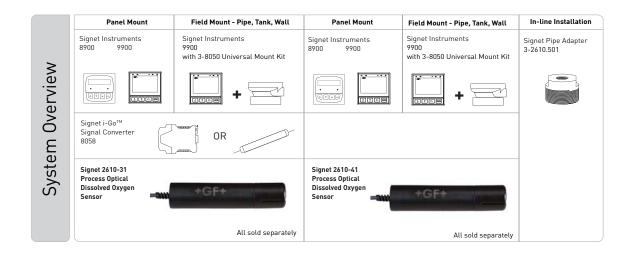
#### **Features**

- Optical DO measurement no flow requirements
- · Rugged construction
- Calibration built into the measurement cap 2% of range 0 to 20 mg/l
- One year measurement cap life
- No membranes or filling solutions
- Flexible communications
   4 to 20 mA or Modbus 3-2610-31
   (S<sup>3</sup>L), 4 to 20 mA or Modbus 3-2610-41
- Measurement Range: 0 to 20 mg/L
- 3-2610-41 compatible with 9900 SmartPro Transmitter and 8900 Multi-Parameter Controller
- 3-2610-31 compatible with 9900 SmartPro Transmitter and 8900 Multi-Parameter Controller with use of iGo device



## **Applications**

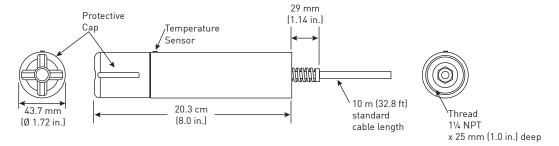
- Municipal and Industrial Wastewater Treatment
- Drinking Water Reservoir Monitoring
- Environmental Water Discharge Monitoring
- Aquatic Life Support



## **Specifications**

Transmitter/Local Display  Optional, not required. Compatible with 8900 and SmartPro instruments  Communications Options  Modbus (RS485), 4 to 20 mA 3-2610-31 and -41, [S³L) 3-2610-41  Maximum Cable Length  Up to 1219 m [4000 ft] (Modbus and 4 to 20 mA), 38 m [125 ft] (S³L)  Internal Mounting Thread  1½ NPT  Power Requirements  12 to 24 VDC ±10% regulated  4 to 20 mA output span  0 to 20 mg/L  Performance  Salinity Range  0 to 42 PSU, fixed or real-time capable  PH Range  2 to 10 pH  Barometric Range  507 to 1115 mbar, fixed or real-time capable  Maximum Pressure  300 psi  Range  0 to 20 mg/L concentration, 0 to 200% saturation  Accuracy (DO)  ±0.1 mg/L, 0 to 8 mg/L, ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap  T90: 30 sec  T95: 37 sec @ 25 °C	General			
Communications Options Modbus (RS485), 4 to 20 mA 3-2610-31 and -41, (S³L) 3-2610-41  Maximum Cable Length Up to 1219 m (4000 ft) (Modbus and 4 to 20 mA), 38 m (125 ft) (S³L)  Internal Mounting Thread 1½ NPT  Power Requirements 12 to 24 VDC ±10% regulated 4 to 20 mA output span 0 to 20 mg/L  Performance  Salinity Range 0 to 42 PSU, fixed or real-time capable  PH Range 2 to 10 pH  Barometric Range 507 to 1115 mbar, fixed or real-time capable  Maximum Pressure 300 psi  Range 0 to 20 mg/L concentration, 0 to 200% saturation  Accuracy (DO) ±0.1 mg/L, 0 to 8 mg/L, ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap T90: 30 sec  T95: 37 sec @ 25 °C	Sensor Type	Luminescent dissolved oxygen sensor		
Communications Options Modbus (RS485), 4 to 20 mA 3-2610-31 and -41, (S³L) 3-2610-41  Maximum Cable Length Up to 1219 m (4000 ft) (Modbus and 4 to 20 mA), 38 m (125 ft) (S³L)  Internal Mounting Thread 1½ NPT  Power Requirements 12 to 24 VDC ±10% regulated 4 to 20 mA output span 0 to 20 mg/L  Performance  Salinity Range 0 to 42 PSU, fixed or real-time capable  PH Range 2 to 10 pH  Barometric Range 507 to 1115 mbar, fixed or real-time capable  Maximum Pressure 300 psi  Range 0 to 20 mg/L concentration, 0 to 200% saturation  Accuracy (DO) ±0.1 mg/L, 0 to 8 mg/L, ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap T90: 30 sec  T95: 37 sec @ 25 °C	Transmitter/Local Display	Optional, not required. Compatible with 8900 and SmartPro instruments		
Internal Mounting Thread  1½ NPT  Power Requirements  12 to 24 VDC ±10% regulated  4 to 20 mA output span  0 to 20 mg/L  Performance  Salinity Range  D to 42 PSU, fixed or real-time capable  pH Range  2 to 10 pH  Barometric Range  507 to 1115 mbar, fixed or real-time capable  Maximum Pressure  300 psi  Range  0 to 20 mg/L concentration, 0 to 200% saturation  Accuracy (DO)  ±0.1 mg/L, 0 to 8 mg/L,  ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap  790: 30 sec  T95: 37 sec @ 25 °C	Communications Options			
Power Requirements  12 to 24 VDC ±10% regulated  4 to 20 mA output span  0 to 20 mg/L  Performance  Salinity Range Salinity Range Description  12 to 12 VDC ±10% regulated  0 to 20 mg/L  Performance  Salinity Range Solve to 10 pH  Barometric Range Solve to 1115 mbar, fixed or real-time capable  Maximum Pressure Solve to 1115 mbar, fixed or real-time capable  Maximum Pressure Solve to 20 mg/L concentration, 0 to 200% saturation  Accuracy (DO) ±0.1 mg/L, 0 to 8 mg/L, ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap T90: 30 sec T95: 37 sec @ 25 °C	Maximum Cable Length	Up to 1219 m (4000 ft) (Modbus and 4 to 20 mA), 38 m (125 ft) (S³L)		
4 to 20 mA output span 0 to 20 mg/L  Performance  Salinity Range 0 to 42 PSU, fixed or real-time capable  pH Range 2 to 10 pH  Barometric Range 507 to 1115 mbar, fixed or real-time capable  Maximum Pressure 300 psi  Range 0 to 20 mg/L concentration, 0 to 200% saturation  Accuracy (D0) ±0.1 mg/L, 0 to 8 mg/L,  ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap 790: 30 sec  T95: 37 sec @ 25 °C	Internal Mounting Thread	11/4 NPT		
Performance Salinity Range 0 to 42 PSU, fixed or real-time capable pH Range 2 to 10 pH  Barometric Range 507 to 1115 mbar, fixed or real-time capable Maximum Pressure 300 psi Range 0 to 20 mg/L concentration, 0 to 200% saturation Accuracy (D0) ±0.1 mg/L, 0 to 8 mg/L, ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap 790: 30 sec T95: 37 sec @ 25 °C	Power Requirements	12 to 24 VDC ±10% regulated		
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pH Range       2 to 10 pH         Barometric Range       507 to 1115 mbar, fixed or real-time capable         Maximum Pressure       300 psi         Range       0 to 20 mg/L concentration, 0 to 200% saturation         Accuracy (D0)       ±0.1 mg/L, 0 to 8 mg/L,         ±0.2 mg/L, 8 to 20 mg/L         Response Time of Cap       T90: 30 sec         T95: 37 sec @ 25 °C	Performance			
Barometric Range 507 to 1115 mbar, fixed or real-time capable  Maximum Pressure 300 psi  Range 0 to 20 mg/L concentration, 0 to 200% saturation  Accuracy (D0) ±0.1 mg/L, 0 to 8 mg/L,  ±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap 790: 30 sec  T95: 37 sec @ 25 °C	Salinity Range	0 to 42 PSU, fixed or real-time capable		
Maximum Pressure       300 psi         Range       0 to 20 mg/L concentration, 0 to 200% saturation         Accuracy (D0)       ±0.1 mg/L, 0 to 8 mg/L,         ±0.2 mg/L, 8 to 20 mg/L         Response Time of Cap       T90: 30 sec         T95: 37 sec @ 25 °C	pH Range	·		
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±0.2 mg/L, 8 to 20 mg/L  Response Time of Cap  T90: 30 sec  T95: 37 sec @ 25 °C	Range	0 to 20 mg/L concentration, 0 to 200% saturation		
Response Time of Cap T90: 30 sec T95: 37 sec @ 25 °C	Accuracy (DO)	±0.1 mg/L, 0 to 8 mg/L,		
T95: 37 sec @ 25 °C		±0.2 mg/L, 8 to 20 mg/L		
	Response Time of Cap	T90: 30 sec		
Repeatability 0.05 mg/l		T95: 37 sec @ 25 °C		
1. Control of the second of th	Repeatability	0.05 mg/L		
Resolution 0.01 mg/L	Resolution	0.01 mg/L		
Environmental	Environmental			
Wetted Materials ABS, Titanium and FPM	Wetted Materials	ABS, Titanium and FPM		
Usage Life of Cap 1 year from the first instrument reading	Usage Life of Cap	,		
Shelf Life of Cap 24 months from date of manufacture (install within 12 mo. of manufacture)	Shelf Life of Cap	24 months from date of manufacture (install within 12 mo. of manufacture)		
Operating Temperature 0 °C to 50 °C 32 °F to 122 °F	Operating Temperature	0 °C to 50 °C	32 °F to 122 °F	
IP Rating IP-67 with cap off, IP-68 with cap installed	IP Rating	IP-67 with cap off, IP-68 with cap installed		
Compliance Heavy industrial, IEC 61000-6-2:2005	Compliance	Heavy industrial, IEC 61000-6-2:2005		
Storage Conditions, Cap 1 °C to 60 °C 33 °F to 140 °F, in factory container	Storage Conditions, Cap	1 °C to 60 °C	33 °F to 140 °F, in factory container	
Storage Conditions, Sensor -5 °C to 60 °C 23 °F to 140 °F	Storage Conditions, Sensor	-5 °C to 60 °C	23 °F to 140 °F	
Warranty	Warranty			
Sensor 3 years from date of manufacture	Sensor	3 years from date of manufacture		
Standards and Approvals	Standards and Approvals			
CE, FCC		CE, FCC		
RoHS Compliant, China RoHS		RoHS Compliant, China RoHS		

### **Dimensions**



## **Ordering Information**

Mfr. Part No.	Code	Description	
3-2610-31	159 001 753	Optical Dissolved Oxygen Sensor (0 to 20 ppm) with Modbus, SDI, and 4 to 20 mA output	
3-2610-41	159 001 754	Optical Dissolved Oxygen Sensor (0 to 20 ppm) with S³L, Modbus, and 4 to 20 mA output	
3-2610.392	159 310 122	Replacement Optical Dissolved Oxygen Sensor Cap (0 to 20 ppm)	
3-2610.501	159 500 413	Dissolved Oxygen Threaded Pipe Adapter	