Model 5740 sc Galvanic Membrane Dissolved Oxygen Sensor

Dissolved Oxygen

Hach's galvanic membrane dissolved oxygen sensor has a replaceable membrane cartridge that simplifies the task of installing new membranes.

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Features and Benefits

Replaceable Membrane Cartridge

Hach's 5740 sc Galvanic Dissolved Oxygen (DO) sensors feature a replaceable cartridge, simplifying the delicate and time-consuming task of installing a new membrane. Each cartridge assembly includes a pre-installed, semi-permeable membrane, electrolyte, and electrodes.

Rugged, Foul-resistant Membrane

An extremely durable 40 micron thick hydrophobic membrane ensures that the DO sensor resists fouling and withstands the harsh environments found in wastewater treatment plants.

Automatic Self-cleaning Accessories

Self-contained air blast cleaning systems, complete with air compressor, are offered to automatically clean the sensor membrane. A separate washer head air blast assembly is also available.

Galvanic Technology

The Hach 5740 sc DO sensor uses a unique galvanic measurement technique. When its lead anode and nickel-chrome cathode are immersed in a filling solution, a spontaneous voltage develops between the two electrodes. A membrane encapsulates the sensor. Oxygen that crosses the membrane is reduced at the cathode. As the oxygen is reduced, the voltage across the electrodes increases in proportion to the amount of oxygen that is consumed.

Less Contamination

Hydrogen sulfide contamination is greatly reduced because of the unique manufacturing process used in making the sensor. The Hach 5740 sc sensor outperforms similar systems at a greatly reduced price.

Complete Encapsulation

Fully-encapsulated construction protects the sensor's built-in electronics from moisture and humidity problems, extending the working life of the sensor.

Versatile Mounting Styles

The Hach 5740 sc DO Sensor can be installed using pole or ball-float mounting kits. (For other mounting options, please contact your Hach representative.)

Advanced Diagnostics

When used with an sc Digital Controller, the sensor will provide an alarm signal for a punctured membrane, or depleted or contaminated electrolyte.

Full-Featured "Plug and Play" Hach sc Digital Controllers

There are no complicated wiring or set up procedures with any Hach sc controller. Just plug in any combination of Hach digital sensors and it's ready to use— it's "plug and play."

One or multiple sensors—The sc controller family allows you to receive data from up to eight Hach digital sensors in any combination using a single controller.

Communications—Multiple alarm/control schemes are available using the relays and PID control outputs. Available communications include analog 4-20 mA, digital MODBUS® (RS485 and RS232) or Profibus DP protocols. (Other digital protocols are available. Contact your Hach representative for details.)

Data logger—A built-in data logger collects measurement data, calibration, verification points, and alarm history.

HACH®

Be Right™

Specifications*

Operational

Measuring Range
0.0 to 40.00 ppm (0 to 40 mg/L)
or 200% saturation

Sensitivity
±0.5% of span

Accuracy
Measurement: ±2% of span

Temperature: ±0.2°C

Repeatability
± 0.5% of span

Response Time at 20ºC
To 90% in 120 seconds

Resolution
Below 10 ppm:
±0.01 ppm or mg/L, ±0.1% saturation

Above 10 ppm:
±0.1 ppm or mg/L, ±0.1% saturation

Operating Temperature
0 to 50ºC (32 to 122ºF)

Flow Rate
0.5 cm/s (0.016 ft./s), minimum

Probe Immersion Depth and Pressure Limits
107 m (350 ft.), 1050 kPa (150 psi), maximum

Transmission Distance
100 m (328 ft.) maximum

1000 m (3280 ft.) maximum when used with a termination box

Sensor Cable (integral)
10 m (33 ft.) terminated with quick-disconnect plug

Wetted Materials
Noryl® body, PVC mounting adapter, Viton® O-rings, polypropylene membrane, Noryl® and Ryton® cartridge assembly, and nylon cable grip/strain relief

Electrode Materials
Nickel-chrome cathode, lead anode

Membrane Thickness
40 µm

Dimensions
43.7 x 203.2 mm (1.72 x 8.00 in.)

Weight
0.26 kg (0.6 lb)

Warranty
1 year

Noryl® is a registered trademark of General Electric Co.
Viton® is a registered trademark of E.I. Du Pont de Nemours + Co.
Ryton® is a registered trademark of Phillips 66 Co.

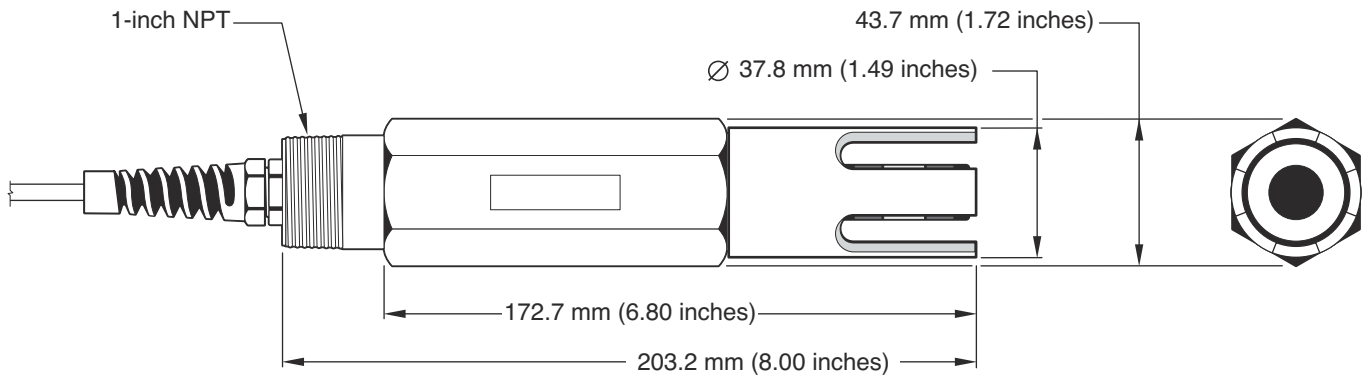*Specifications subject to change without notice.*

Engineering Specifications

1. The sensor shall use Galvanic technology.

2. The electrodes shall be in a replaceable cartridge filled with electrolyte and covered by a pre-installed, 40 micron thick gas permeable membrane. The membrane shall be constructed of polypropylene.

3. The sensor shall automatically compensate for changes in process temperature.

4. The sensor shall have an integral 10 m (33 ft.) long cable terminated with a quick-disconnect plug.

5. The sensor shall be provided with a dozen disposable calibration bags to perform "Saturation Method" air calibrations. These special bags shall provide a stable atmosphere around the sensor membrane for highly accurate calibration.

6. The sensor shall communicate with a Hach sc Digital Controller via RS-485 MODBUS® protocol.

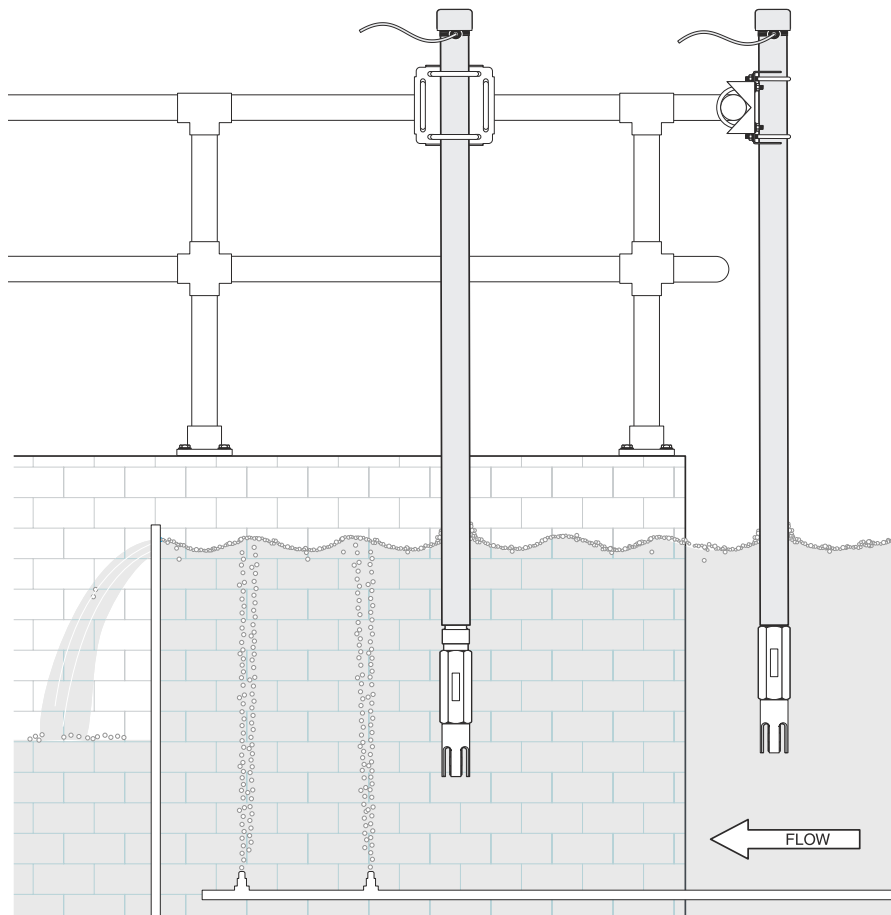7. The sensor shall be Hach Company Model 5740 sc Sensor.

OPTIONAL:

1. Hardware to mount the sensor shall be:

   a) Economy Pole Mounting Kit (without swivel) consisting of a 1/2-inch diameter by 2.3 m (7.5 ft.) long straight pipe and straight handrail mount. Does not include pivot.

   b) Handrail Mounting Hardware consisting of a 1-1/2 inch diameter by 2.3 m (7.5 ft.) long PVC pipe, PVC straight coupling for sensor, swivel/pivot/pipe clamp assembly, and surface-mount NEMA 4X junction box with quick-disconnect receptacle for sensor with metal plug on its cable.

   c) Flotation Mounting Hardware consisting of a 1-1/2 inch diameter by 2.3 m (7.5 ft.) long PVC pipe, PVC angle coupling for sensor, ball float, swivel/pivot/pipe clamp assembly, and surface-mount NEMA 4X junction box with quick-disconnect receptacle for sensor with metal plug on its cable.

   d) Submersion Mounting Hardware consisting of a 1-1/2 inch diameter by 1.5 m (5 ft.) long PVC pipe, and surface-mount NEMA 4X junction box with quick-disconnect receptacle for sensor with metal plug on its cable.

   e) Flow-through Union Hardware consisting of a PVC 2-inch "Y" tee with socket-weld connections, and a 2-inch union.

Dimensions

1-inch NPT

43.7 mm (1.72 inches)

⌀ 37.8 mm (1.49 inches)

172.7 mm (6.80 inches)

203.2 mm (8.00 inches)

Installation Examples

The Hach 5740 sc DO Sensor can be mounted using the optional Economy Mounting Kit (P/N 57982-00). Other mounting kits are available.

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Ordering Information

5740DOB 5740 sc Galvanic DO Sensor with 10 m (32.8 ft.) integral cable

Accessories

58670-00 Termination Box, required for total cable lengths greater than 100 m (328 ft.)
61224-00 Extension Cable, 1 m (3.3 ft.)
57960-00 Extension Cable, 7.7 m (25 ft.)
57961-00 Extension Cable, 15 m (50 ft.)
57962-00 Extension Cable, 31 m (100 ft.)
61361-00 Air Blast Cleaning System for 5740 sc, 115 V
61362-00 Air Blast Cleaning System for 5740 sc, 230 V

Replacement Parts

61267-00 Replacement Cartridge
276M1210 Spare Calibration Bags

Mounting Kits

61308-00 Pole Mount Kit
61310-00 Ball Float Mount Kit
61309-00 Economy Pole Mount Kit
61363-00 Flow-through Union Mount Kit

To complete your dissolved oxygen measurement system, choose from these Hach controllers...

Model sc200 Controller

(see Lit. #2665)

sc200 for Hach Digital Sensors

LXV404.99.00552 sc200 controller, 2 channel, digital
LXV404.99.00502 sc200 controller, 1 channel, digital
LXV404.99.00542 sc200 controller, 2 channel, digital & mA input
LXV404.99.00512 sc200 controller, 2 channel, digital & pH/DO
LXV404.99.00522 sc200 controller, 2 channel, digital & Conductivity
LXV404.99.00532 sc200 controller, 2 channel, digital & Flow

sc200 for Hach Analog Sensors

LXV404.99.00102 sc200 controller, 1 channel, pH/DO
LXV404.99.00112 sc200 controller, 2 channel, pH/DO
LXV404.99.00202 sc200 controller, 1 channel, Conductivity
LXV404.99.00222 sc200 controller, 2 channel, Conductivity
LXV404.99.00212 sc200 controller, 2 channel, pH/DO & Conductivity
LXV404.99.00302 sc200 controller, 1 channel, Flow
LXV404.99.00332 sc200 controller, 2 channel, Flow
LXV404.99.00312 sc200 controller, 2 channel, Flow & pH/DO
LXV404.99.00322 sc200 controller, 2 channel, Flow & Conductivity

Note: Other sensor combinations are available. Please contact Hach Technical Support or your Hach representative.
Note: Communication options (MODBUS and Profibus DPV1) are available.

Model sc1000 Controller

(see Lit. #2403)

LXV402.99.00002 sc1000 Display Module
LXV400.99.1R572 sc1000 Probe Module, 4 sensors,
4 mA Out, 4 mA In, 4 Relays, 110-230V
LXV400.99.1B572 sc1000 Probe Module, 4 sensors,
4 mA Out, 4 mA In, 4 Relays, RS-485 (MODBUS), 110-230V
LXV400.99.1F572 sc1000 Probe Module, 4 sensors,
4 mA Out, 4 mA In, 4 Relays, PROFIBUS DP, 110-230V
LXV400.99.1R582 sc1000 Probe Module, 6 sensors,
4 mA Out, 4 mA In, 4 Relays, 110-230V

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

For current price information, technical support, and ordering assistance, contact the Hach office or distributor serving your area.

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