

# Dissolved Oxygen

LDOsc- Luminescent Dissolved Oxygen sensor (DataSheet DOC053.52.30177)



Hach's next generation LDO® Probe requires no calibration for the entire 2 year life of the sensor cap, which means it is ready to start measuring your DO (Dissolved Oxygen) right out of the box.

Extremely reliable - 36-month warranty on probe  
The optimised temperature sensor and the new 3D factory calibration make O2 measurement even more accurate  
No electrolyte or membrane changes necessary  
Remote functions for simple and convenient data transfer via Internet and SMS  
Constantly provides information on the current sensor status via PROGNOSYS early warning system

## Controller compatibility



sc200



sc1000

Technical Data	
Subject to change without notice	
	<b>LDOsc</b>
Designation	Dissolved Oxygen sensor, luminescence-time detection technology calibration-free, H2S-resistant
T-sensor	PT100 integrated, external sensor
Measuring range	
Dissolved Oxygen	0 - 20 mg/l (ppm), 0 - 200% Saturation
Temperature	0 ... 50°C (32...122°F)
Measuring accuracy	
Oxygen	± 0.05 mg/l @ DO < 1 mg/l; ± 0.1 mg/l @ DO < 5 mg/l; ± 0.2 mg/l @ ≥ DO 5 mg/l
Temperature	± 0.2°C
Repeatability	± 0.1 mg/l
Resolution	0.01 mg/l, 0.01 ppm, 0.1 % saturation
Response time T <sub>90</sub> / T <sub>95</sub>	< 40 sec at 20°C / < 60sec
Compensation	
Temperature	Automatic or manual
Pressure	Automatic or manual
Salinity	manual
Calibration	factory precalibrated
Calibration/Verification	Air Calibration: one point, 100% water saturated air; process calibration against reference instrument
Interferences	No Interferences from the following: H2S, pH, K+, Na+, Mg2+, Ca2+, NH4+, Al3+, Pb2+, Cd2+, Zn2+, Cr (total), Fe2+, Fe3+, Mn2+, Cu2+, Ni2+, Co2+, CN-, NO3-, SO42-, S2-, PO43-, Cl-, anion active surfactants, crude oils, Cl2 < 4 ppm
Process connection	1" NPT outer thread
Installation style	Immersion style using pole or chain mounting; Inline or Bypass using appropriate assembly
Min. Flow rate	not required
Max. sample pressure	Submersible to 35 m (115 ft)
Wetted Material	
Probe body	SS 1.4404 (AISI 316L) probe body and screws CPVC sensor end and cable end Polyurethane, over modling on cable end and cable jacket Noryl, nut on the cable end
Sensor	Acrylic
Enclosure rating	IP68
Certifications	ETL listed to ANSI/ISA, CSA and FM standards for use in hazardous location. Note: This product does not fulfill the requirements of the 94/9/EC Directive (ATEX Directive).
Haz location classification	Class I Division 2, Groups A-D, T4 / Class I, Zone 2 Group 2C, T4 Note: This product does not fulfill the requirements of the 94/9/EC Directive (ATEX Directive).
Weight	1.0 kg (2 lb, 3 oz.)
Dimensions	49.3 x 255.7 mm (1.9 x 10 inch) (Ø x L)
Sensor cable	10 m (optional with 30m, 60m, 100m), with encapsulated IP 68 connector, extendable up to 100 m using sc cables; up to 1000 m using junction box (for sc200 only)
Controller compatibility	sc200 or sc1000 digital controller
Power requirements	12VDC, 0.25A, 3W
Warranty	3 years for probe 2 years for sensor cap (typical application)

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Part No.	Designation
LXV416.99.20S01	LDOsc seawater version process sensor with 10m cable



**Note:** The **Class1 Division 2 and Sea Water LDOsc** models have the same measurement specifications as the standard LDOsc models. Please refer the LDOsc launch package for more details. The resistance to corrosion is ensured by a PVC outer sleeve that covers the Stainless Steel body of the probe. The temperature sensor is also protected against corrosion.  
**Class 1 Div2 model:** The probe is suitable for use in the Hazardous environment and is rated: Class I Division 2, Groups A–D, T4 / Class I, Zone 2 Group 2C, T4  
 This product does not fulfill the requirements of the 94/9/EC Directive (ATEX Directive). It can therefore only be sold in countries accepting the US Hazloc norms.

LXV416.99.20xx1	LDOsc luminescent DO process sensor
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## Warranty option

Standard Warranty .....	0
5 Years Warranty ..... TSELTW01 ..... for 10 m cable length .....	W
5 Years Warranty ..... TSELTW02 ..... for cable lengths > 10 m .....	W

## Cable length option

10 m ..... Standard .....	0
30 m .....	3
60 m .....	1
100 m .....	2

**Note:** Standard delivery comprises  
 LDOsc - Dissolved Oxygen sensor with appropriate cable length,  
 1 Sensor cap, 2 calibration bags and user manual.  
 Extended warranty: Please order warranty extension package (TSELTW0x) separately  
 Delivery time for special sensor cable length will be appr. 10 ... 12 weeks; please contact HACH LANGE.  
 sc Digital Controller and sc connection/extension cables (must be ordered separately).  
 For technical data and interfaces, refer to the chapter sc controller/display units.  
 The maximum cable length between the sensor and controller is limited to 100m using sc digital extension cables. Using different cables instead of the below mentioned, will void the warranty.  
 If the total length exceeds 100m, a digital termination box 5867000 is required (not suitable for sc1000) .  
 The maximum cable length is limited to 1000 m in total.  
 For suitable Mounting hardware, please refer to the chapter "E-Chem Mounting Hardware".

## Special Item /LDO II sc Luminescent DO Process sensor Retrofit package

LXV416.99.2UP01	LDOsc process sensor, 10 m cable, HACH LANGE, including Adapter 1 7/8" / 1" FNPT (PN 92534000) used mount LDOsc to existing LDO series I installations
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## Consumables & Replacements

9021150	LDOsc - Sensor replacement cap, pk/1 including sensor setup cap
9253800	Cleaning head for LDOsc

## Digital Extension Cables

LZX848	Digital Extension Cable, 5 m
LZX849	Digital Extension Cable, 10 m
LZX850	Digital Extension Cable, 15 m
LZX851	Digital Extension Cable, 20 m
LZX852	Digital Extension Cable, 30 m
LZX853	Digital Extension Cable, 50 m

5867000	Digital Termination Box, for sc200
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The Digital Termination Box is only used when the desired length of cable between the digital sensor/digital gateway and sc200 digital controller is between 100 m (328 ft) and 1000 m (3280 ft) (used in conjunction with digital extension cables).

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## Part No. Designation

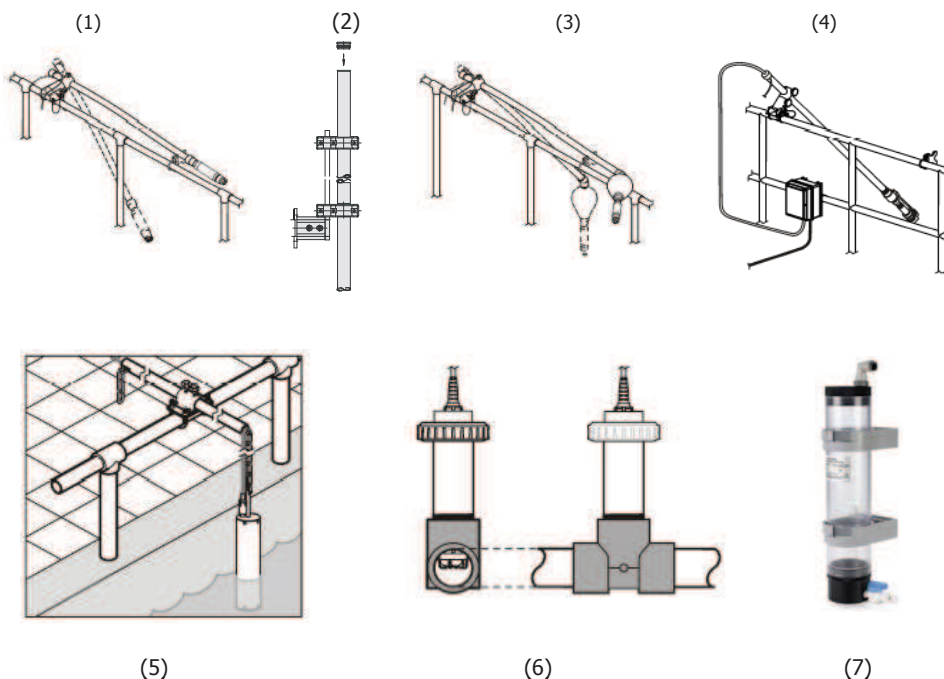
### Optional accessories

9253900

LDOsc - Sensor guard

used to avoid mechanical damage of sensor cap in harsh environment, e.g. for fish farming applications

### Installation / Mounting options



- LZY714.99.21810 Pole mounting hardware DO with Swivel, 1"NPT, PVC pole, 2m (1)  
 LZY714.99.21820 Pole mounting hardware DO with Swivel, 1"NPT, SS pole, 2m (1)  
 LZY714.99.23820 Pole mounting hardware DO with wall bracket 10cm, SS pole, 2m (2)

on request

- LZX914.99.42200 Ball Float Mount Kit, PVC, 2.3 m adjustable (3)  
 typically for use in tanks or open channels with variable water levels  
 consisting of Pole kit (2.3 m pipe, float, screw cap, etc.),  
 Pivoting and swiveling bracket (276G1200), Sensor adapter (LZY276)

- 6860003.99.0001 High Output Air Blast Cleaning System 115V AC  
 6860103.99.0001 High Output Air Blast Cleaning System 230V AC (4)  
 LZY812 Air Blast Head set for LZY714 Mounting hardware (4)  
 compressor and air hose are not supplied with kit



- LZX914.99.12200 Chain Mount Kit, PVC, for 1" NPT threaded sensors (5)  
 LZX914.99.11200 Chain Mount Kit, SS, for 1" NPT threaded sensors (5)

- 9257000 Inline Flow-Through Assembly, Union Mount style, for LDOsc sensor (6)  
 Includes 2" all ends FNPT threaded pipe tee, made of CPVC and union adapter.

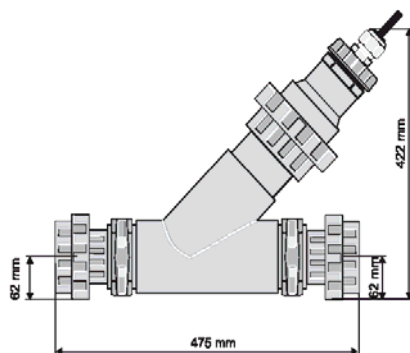
- 7300800 Flow cell for 1" NPT threaded sensors (7)  
 3/8 inch inlet and 1/2 inch outlet  
 Inlet pressure 20 PSIG (138 kPa) maximum 0–40 °C (32–104 °F). Do not exceed sensor  
 maximum operating pressure and temperature. Maximum flow rate: 2 gal/min (7.5 L/min).

to be continued

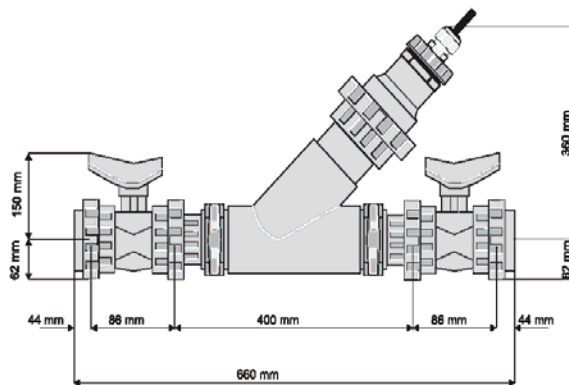
# Dissolved Oxygen

LDOsc- Luminescent Dissolved Oxygen sensor (DataSheet DOC033.72.03208)

Part No.	Designation
LZH052	Bypass for LDO Sensor PVC Box with d=90 mm
LZH076	Inline Bypass - also need LZY276
LZH077	2" PVC Inline armature incl 2 ball valves - also need LZY276



LZH076



LZH077

LZY276	Adapter 1 7/8" / 1", PVC
LZY003	1" pipe coupling, Stainless Steel for LZX914

## Warranty extended contracts

TSELTW01	5 years warranty contract for LDO (with 10m cable), without service and sensor replacement cap
TSELTW02	5 years warranty contract for LDO (with long cable), without service and sensor replacement cap