Optical Miniature Dissolved Oxygen / Temperature Data Logger

COMPACT OPTODE

AOP-CMP

Dissolved Oxygen / Temperature

※6000m depth rated unit

Features

- Small and light with large memory capacity
- Stirring of measurement sample not required
- Resitant to bio-fouling
- Two depth ranges: 300m and 6000m
- Non-volatile flash memory
- Built-in calendar/time information
- Direct connection to PC
- Programmable calibration factors
- Convenient Windows software
- Robust titanium housing

The COMPACT-OPTODE is a small, precise data logger equipped with the optical DO sensor developed by Aanderaa Data. It is suitable for long-term, stable deployments. Oxygen is not consumed at the sensing surface, so stirring of the water surrounding the surface is not required. The measurement principle is based on dynamic flourescence quenching which makes the sensor less susceptible to bio-fouling than conventional sensors. In addition, the sapphire sensing window of the COMPACT-OPTODE is rated up to 6000 m. Since there is no membrane or electrolytic solution to change and moreover, since there is little drift, stable data measurements can be obtained without frequent re-calibration.

Our state-of-the-art technology allows for a compact design capable of storing up to 172,800 sets of 3-channels of data (DO, temperature and voltage). The non-volatile flash-memory prevents data loss in case of power failure or irregular battery voltage.

The operation of the COMPACT-OPTODE is managed through a PC's RS232-C port. The main unit records calendar and time information with each sample and the sensors' calibration coefficients are stored in the built-in memory. The basic measurement setup requires only the selection of the start time and the measurement parameters.

Data transfer after completion of deployment is easy. Since measurement start time and calibration coefficients are automatically transferred to the data acquisition software together with the measured data, it is not necessary to manually manipulate the data after download and data processing can be started immediately.

The data processing program offers clear and logical screens for easy operation.

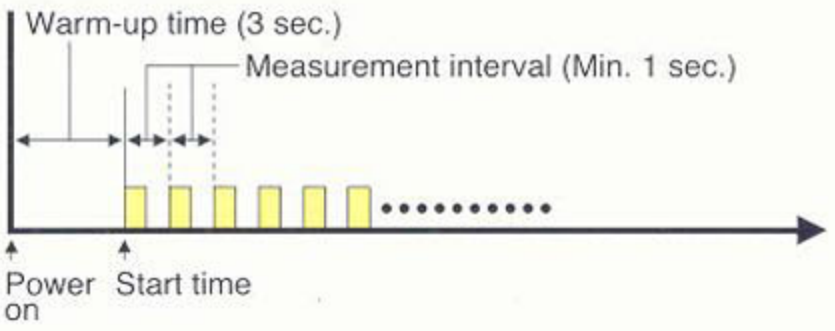
Main Unit Specifications

Parameter	DO	Temperature
Type	Fluorescence quenching	Themistor
Range	0～120%	0～36℃
Resolution	0.4%	0.01℃
Accuracy	Within 5%	±0.05℃
Memory type	2Mbyte non-volatile flash memory	
Capacity	172,800 data	
A/D conversion	16bits digital conversion	
Interval	1, 2, 5, 10, 15, 20, 30 seconds	
Burst time	1-1,440 minutes	
Sampling number	1,10,15,20,30,60,120,180,240,300,600,1200	
Battery capacity	Lithium battery 7AH	
Power consumption	90mA during measurement 140mA during data acquisition	
Materials	Titanium	
Size	54mm dia., 272mm in total length	
Weight	1,000g in air & 600g in water	
Depth rating	300m or 6,000m	

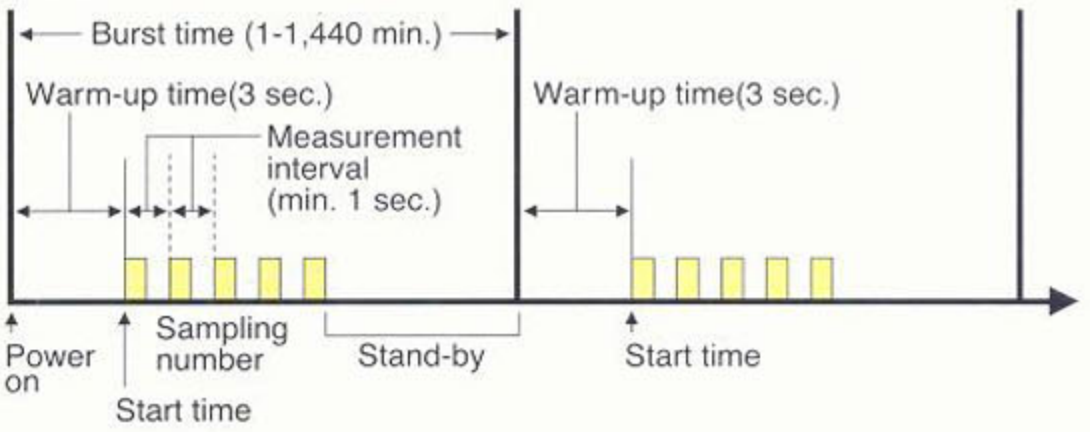
Sensor Picture

Measuring mode and Measurement period

1. Continuous mode



2. Burst mode



For 1-second measurement interval
Upper: Max. measurement period Lower: battery consumption

Burst interval		No.of samples				
		10	20	30	60	120
10min	days	98.5	54.4	37.6	19.5	9.9
	Ah	5.6	5.6	5.6	5.6	5.6
20min	days	197.1	108.9	75.2	39.0	19.9
	Ah	5.6	5.6	5.6	5.6	5.6
30min	days	295.7	163.4	112.9	58.5	29.8
	Ah	5.6	5.6	5.6	5.6	5.6
60min	days	365.0	326.8	225.8	117.1	59.7
	Ah	3.5	5.6	5.6	5.6	5.6
120min	days	365.0	365.0	365.0	234.3	119.4
	Ah	1.8	3.2	4.6	5.6	5.6

Remarks: The above calculations were made based on data & battery capacities. A safety factor of 0.8 was applied to the battery capacity of 7.0 Ah. Therefore, the available capacity is considered to be 5.6Ah. The maximum observation period is assumed to be one year.

Dimensions

※6000m depth rated unit