

These probes are designed for measuring dissolved oxygen using the fluorescence phenomenon.

OD 8325 probe is for submersible installation.

OD 8525 probe is for overflow and in-line installation.

Thanks to the analog and digital outputs, the probes can be connected to the most common PLC's or data acquisition boards.

B&C Electronics offers MC 6587 and MC 7687 multi-channel controllers that allow complete management of up to three probes, displaying the measurements and the messages that guide calibration and configuration.

Main features

Ranges

The probes can be configured in % of air saturation or in ppm with automatic temperature compensation. Through the digital commands it is possible to set the parameters of pressure compensation, salinity, relative humidity and associate a scalability factor from 10% to 150% to obtain intermediate and higher full-scale values on the 4/20 mA current loop.

Operating mode

The probes can be configured to operate in analog or digital mode. If connected to a master device it is possible to carry out all probe management operations through specific digital commands.

Analog output

The 4/20 mA current loop is proportional to the main measurement value. The current loop is galvanically isolated, for the interface to PLC or data acquisition boards.

Serial interface

The RS485 isolated serial interface allows for calibration and configuration of the probes, the simultaneous transmission of oxygen measurements, temperature and secondary parameters of compensation. The boot loader function allows the user to update the probe's firmware.

Communication protocols

The B&C ASCII protocol coexists with the MODBUS RTU protocol (03, 06, 16 function) for the transmission of the measurements, the configuration and calibration of the probe.



OD 8325



OD 8525

Filter software

A filter software operates on the sensor input signal with two selectable time constants. In order to obtain good reading stability and fast response to the changes in the process, the user can set the response time for both the small or large variation signals.

Autocleaning

OD 8325 model is equipped with an automatic cleaning device. A blast of pressured air is sent onto the sensing element keeping it clean from deposits of organic substances.

Temperature compensation

The probes include a temperature sensor for automatic compensation using an internal table.

Power supply

The probes are powered with 9/36Vdc voltage on the current loop, supplied by a PLC or data acquisition boards or by a power supply placed in series between the analog output and the acquisition device. Even in digital mode the power is supplied by the current loop.

Measuring method

A light pulse of a specific wavelength hits a special substance deposited on a transparent layer in contact with the liquid (or air).

The light energy is absorbed and partially re-emitted in the form of a light pulse at a longer wavelength. This phenomenon is called fluorescence.

The oxygen molecules in contact with the sensitive layer attenuate the fluorescence (quenching) in relation to their concentration.

The digital processing of the fluorescence allows the measurement of oxygen concentration.

The measuring method does not require electrolytes.



Technical specifications

Ranges:	0/200.0 % air saturation – 0/20.00 ppm	
Scalability factor 4/20 mA:	10/150 %	
Resolution:	0.1 % sat. – 0.01 ppm	
Accuracy:	± 1.0 % sat. < 10.0 % sat.	± 2.0 % sat. > 10.0 % sat.
Repeatability:	± 0.5 % of the scale	
Drift:	< 1 % year	
Response time:	95 % < 60 seconds	
Temperature limit:	0/50 °C	
Temperature compensation:	Table	
Salinity compensation (chlorides):	0/600 x 100 ppm (100 ppm step)	
Atm. pressure compensation:	500/800 mmHg	
Relative humidity compensation:	0/100 %	
Dual filter software:	8/220 seconds	
Power supply:	9/36Vdc	
Current loop:	4/20 mA isolated	
Load:	600 Ohm max. a 24Vdc	
Digital output:	RS 485 isolated	
Protocols:	B&C ASCII e Modbus RTU (03, 06, 16 functions)	
Baud rate:	2400 / 4800 / 9600 / 19200 baud	
Probes ID:	01/99 (B&C protocol) 01/243 (Modbus protocol)	
Probes network:	32 max.	
Operating temperature:	60 °C max.	
Operating pressure:	6 bar at 25 °C (OD 8525) 1 bar at 25 °C (OD 8325)	
OD 8525 dimensions:	L=143 mm, D=40 mm	
OD 8325 dimensions:	L=165 mm, D=60 mm	
OD 8525 weight:	Body 160 g, cable 640 g	
OD 8325 weight:	Body 420 g, cable 640 g	
Body:	PVC-C	
Cable:	10 m (100 m max.), PVC sheath	
Protection:	IP 68	
EMC/RFI conformity:	EN 61326-2-3/2013, EN 55011/2009	

The technical specifications could be changed without notice.

Submersible installation

Both probes can be installed in a tank. B&C Electronics offers a series of accessories that guarantee the correct inclination of the probe and the protection of the cable and connector from organic deposits.

SZ 7521 Adapter for OD 8525. It can be glued to an extension pipe having DN20 or DN32.

0012.450043 Adapter for OD 8325. It requires an extension pipe with 1" FNPT thread.

0012.000624 Swivel mount to fix the probe to a standard handrail on the side of the tank. The supply includes 0012.450043

0012.440040 Hose for automatic air injection. Can be used with OD 8325 only.



Typical installation of the probes with adapter and installation pipe.

In-line installation



YAT75M0021

OD 8525 probe can be mounted in a pipeline directly with a flow Tee adapter.

YAT75M0021 (with 1892702 adapter + 2713118 O-Ring) guarantees perfect installation and maintenance safety.

This fitting is glue type and must be installed to the bypass pipe having an outer diameter of 2".

Overflow installation



TU 920

The OD 8525 probe can be installed in overflow with TU 920 cell.

The cell is supplied with a wall mounting bracket.

Technical specifications

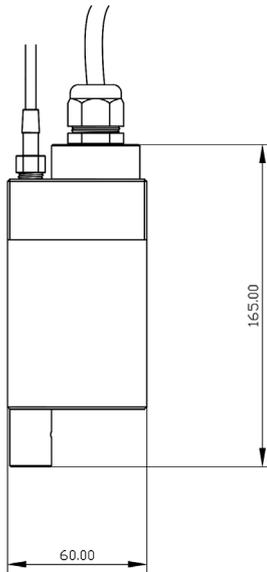
Sample flow	0.2 ÷ 0.5 l/min
Temperature	0 ÷ 50 °C
Sample temperature	0 ÷ 50 °C
Sample pressure	max 6 bar at 20 °C
Body material	PVC
Seals material	NBR
Fittings	1/8" for 6x8 mm pipe

PC connection

Customers that use the probes in analog mode can also take advantage of the functions available through the digital mode.

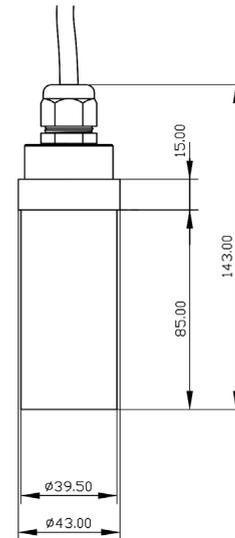
B&C Electronics offers BC 8701 a RS485/USB converter to connect the probes to a PC. An easy-to-use software, supplied on demand and free of charge, guides the user through configuration and calibration operations.

OD 8325 dimensions



Dimensions in mm

OD 8525 dimensions



Dimensions in mm

Applications

- Drinking water
- Aquaculture
- Food and Beverage
- Paper and Pulp
- Chemical Industry
- Pharmaceutical Industry
- Electroplating
- Printing Industry
- Textile Industry
- Fertirrigation
- Drinking Water
- Waste Water Treatment
- Surfaces Treatment