

**ECO 410****O<sub>2</sub> analyzer / oxygen measuring device**

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- Modern and functional housing
- Waterproof (IP65 / IP67)
- Convenient air adjustment at the touch of a button
- Sport diver version „T“: with MOD calculation for Nitrox
- Long-life and maintenance-free sensor3-line display / overhead display at the push of a button
- Backlight
- Robust, long battery life
- Hold-function to freeze measured values
- Min/Max-function for minimum and maximum recorded measured values
- Made in Germany

**DESCRIPTION**

The ECO410 deliberately focuses on the essential functions of measurement technology for reliable measurement of the O<sub>2</sub> concentration in gases. The sensors used, GOEL 370 and GOEL 381, which are especially suitable for wet environments, are essential for reliability and durability.

The devices also impress with their ergonomics, water protection and display lighting.

This makes the ECO410 an inexpensive and precise immersion gas detector, but it is also an inexpensive yet high-quality entry-level device for many other oxygen measurements - for example inert gas measurements.

## Family Datasheet

### ECO 410

### O<sub>2</sub> analyzer / oxygen measuring device

#### ATTENTION:

The device is used for additional control. It does not replace an approved measuring device or safe methods for creating gas mixtures!

#### Display

Thanks to the backlight, the three-line LCD display offers ergonomic wide-angle visibility - by day and by night.

The HOLD function enables the display values to be frozen.

#### Power supply

2 powerful AA batteries, the energy-saving design and the configurable automatic switch-off function ensure long operation.

Configurable LCD backlight for further energy saving options.



ECO 410 GOEL Sensor

## TECHNICAL DATA

### Measurement specifications

|                                | ECO420(T)-35 (GOEL370)  | ECO420(T)-MAX (GOEL381)   |
|--------------------------------|---|---|
| Measuring range                | 0,0 ... 100.0 % by volume O <sub>2</sub><br>recommended for 0.2 ... 35.0 % vol. O <sub>2</sub> (outside reduced accuracy) | 0,0 ... 100.0 % by volume O <sub>2</sub><br>(also for values ≤0.2 and over 36 vol.% O <sub>2</sub> )  |
| Application area               | Standard for diving gas for recreational diving, protective gases with increased CO <sub>2</sub> content and much more.   | for shielding gases with the lowest O <sub>2</sub> content or high-percentage oxygen mixtures with a low CO <sub>2</sub> content            |
| Sensor cable                   | 0.95 m, audio plug, elastic sensor protector  |   |
| Accuracy (nominal temperature) | < 35 Vol.-% O <sub>2</sub> : -0,2 ... +0,35 Vol.-% O <sub>2</sub><br>Not specified beyond this                            | < 35 Vol.-% O <sub>2</sub> : ±0,25 Vol.-% O <sub>2</sub><br>35...100 vol.-%O <sub>2</sub> : ±2%*(measured value 20.9 vol.-%O <sub>2</sub> ) |
| Sensor service life            | at 20.9% O <sub>2</sub> by volume approx. 2 years   | at 20.9% O <sub>2</sub> by volume > 3 years   |
| Sport diver version            | MOD calculation for nitrox up to 36%  |   |
|                                | 0 bis + 169 ft. MOD   | Resolution 1ft.   |
|                                | 0 bis + 60m MOD   | Resolution 1m   |

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### O<sub>2</sub> analyzer / oxygen measuring device

#### General specifications

|                      |   |
|----------------------|---|
| Display              | 3-line with battery status indicator, Backlight, protected by shatterproof screen, overhead display at the push of a button |
| Power supply         | 2 x AA-Alkaline batteries (scope of delivery)   |
| Power consumption    | < 1 mA  |
| Battery life         | > 3000 h typ. continuous operation (without backlight)  |
| Automatic Power-Off  | Yes, configurable by the user   |
| Operating conditions | -20 ... +50 °C (recommended 5..30 °C); 0 ... 95 % r.h. (short-term condensation possible)                                   |
| Storage temperature  | -20 to 50 °C (without batteries)  |
| Protection class     | IP65 / IP67, sensor IP54  |
| <b>Dimensions</b>    | <b>108 x 54 x 28 mm</b>   |
| Weight               | approx 175 g (including sensor)   |
| Housing              | break-proof ABS, polyester (front panel)  |

#### Scope of delivery

- Hand-held measuring device with sensor (Not for -GL)
- Flow-Diverter ESA 369, T-Piece ZOT 369
- 2xAA batteries
- Manual
- Additional accessories depending on Set-Option



Flowdiverter  
ESA369



T-Piece ZOT 369  
for connection to  
Ø 22mm hoses

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### O<sub>2</sub> analyzer / oxygen measuring device

#### ORDERING CODES

| ECO410   |                       |  |
|--|-----------------------|--|
| O <sub>2</sub> analyzer / oxygen measuring device (earlier G 1690) |                       |  |
| 1  | <b>Version</b>        |  |
|  | -                     | Device with permanently connected Cable and sensor protection cover, replaceable sensor                              |
|  | -T                    | Device with permanently connected Cable and sensor protection cover, exchangeable sensor, MOD calculation NITROX     |
| 2  | <b>Sensor</b>         |  |
|  | -35                   | GOEL 370: 0 ... 100 vol.-% O <sub>2</sub> , recommended 0.2 ... 35 % vol. O <sub>22</sub> (outside reduced accuracy) |
|  | -MAX                  | GOEL 381: 0 ... 100 vol.-% O <sub>2</sub> (also for values ≤0.2 and > 35 vol.-% O <sub>2</sub> )                     |
|  | -GL                   | Without sensor   |
| 3  | <b>Set-Option</b>     |  |
|  | -00                   | Device, battery, manual, ESA 369 + ZOT 369 (not -GL)   |
|  | -SET                  | Device, battery, manual, ESA 369 + ZOT 369, case GKK 252 (not -GL)   |
|  | -DIVE                 | Device, battery, instructions, case GKK 252, scuba tank adapter ESA 369 + ZOT 369 + GZ 5826 (not -GL)                |
|  | -00                   | Device, battery, manual (-GL only)   |
|  | -SET                  | Device, battery, manual, case GKK 252 (only -GL)   |
| 4  | <b>Delivery state</b> |  |
|  | -00                   | Mounted ready for operation  |
|  | -CAN                  | Sensor packed in can, not mounted  |

#### Standard-Articles

|             |   |                       |
|-------------|---|-----------------------|
| ECO410-35   | O <sub>2</sub> -Analyser / air oxygen meter<br>Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369 | <b>Art.Nr. 486766</b> |
| ECO410T-35  | O <sub>2</sub> -Analyser / air oxygen meter<br>Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369 | <b>Art.Nr. 487082</b> |
| ECO410-MAX  | O <sub>2</sub> -Analyser / air oxygen meter<br>Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369 | <b>Art.Nr. 486767</b> |
| ECO410T-MAX | O <sub>2</sub> -Analyser / air oxygen meter<br>Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369 | <b>Art.Nr. 487092</b> |
| ECO410-GL   | O <sub>2</sub> -Analyser / air oxygen meter<br>Set-Option: Set-Option: Instrument, battery, manual        | <b>Art.Nr. 487074</b> |
| ECO410T-GL  | O <sub>2</sub> -Analyser / air oxygen meter<br>Set-Option: Set-Option: Instrument, battery, manual        | <b>Art.Nr. 487088</b> |

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#### Accessories

##### Replacement parts:

|         |                             |                 |
|---------|-----------------------------|-----------------|
| GB-AA-2 | Replacement batteries 2x AA | Art.-Nr. 600704 |
|---------|-----------------------------|-----------------|

##### Further accessories:

|             |   |                 |
|-------------|---|-----------------|
| G1000-Cover | Rubber protection case, incl. 2 magnets | Art.-Nr. 483958 |
| ST-G1000    | Protection case, leather                | Art.-Nr. 611373 |
| GCLIP1000   | Metal belt clip, adhesive               | Art.-Nr. 475820 |
| G1000-BASE  | G 1000 table stand and wall suspension  | Art.-Nr. 481885 |
| GKK1000     | Case                                    | Art.-Nr. 611603 |

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