

ECO 410 / ECO 410T

O₂ analyzer / oxygen measuring device



- Modern and functional
- 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 sensor 3-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 ECO 410 / 410T deliberately focuses on the essential functions of measurement technology for reliable measurement of the O₂ 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 backlight.

This makes the ECO 410 / 410T 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.

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

Family Datasheet

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TECHNICAL DATA

Measurement specifications

	ECO410(T)-35 (GOEL370)	ECO410(T)-MAX (GOEL381)
Measuring range	0.0 ... 100.0 % by volume O ₂ recommended for 0.2 ... 35.0 % vol. O ₂ , outside reduced accuracy	0.0 ... 100.0 % by volume O ₂ (as well for values ≤0.2 and over 36 vol.% O ₂)
Application area	Standard for diving gas for recreational diving, protective gases with increased CO ₂ content and much more.	for shielding gases with the lowest O ₂ content or high-percentage oxygen mixtures with a low CO ₂ content
Sensor cable	0.95 m, audio plug, elastic sensor protector	
Process connection	Thread M16x1	
Accuracy (nominal temperature 25 °C)	< 35 Vol.-% O ₂ : -0,2 ... +0,35 Vol.-% O ₂ Not specified beyond this	< 35 Vol.-% O ₂ : ±0,25 Vol.-% O ₂ 35...100 vol.-%O ₂ : ±2%*(measured value 20.9 vol.-%O ₂)
Sensor service life	at 20.9% O ₂ by volume approx. 2 years	at 20.9% O ₂ 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

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	ca. 0.8 mA, ca. 2.8 mA with backlight
Battery life	> 3000 h typ. continuous operation (without backlight)
Automatic Power-Off	Yes, configurable by the user
Operating conditions	-20 ... +50 °C; 0 ... 95 % r.h. (short-term condensation possible)
Operating conditions sensor	0 ... 45 °C (recommended 5 ... 30 °C) 600 ... 1750 hPa abs. Permissible differential pressure diaphragm / environment: max ±0.25 hPa)
Storage temperature	-20 to 50 °C (without batteries)
Storage note	Storage recommended max. 6 months. Avoid exceeding the storage period!
Protection class	IP65 / IP67, sensor IP54
Dimensions	108 * 54 * 28 mm (instrument without cable and sensor)
Weight	ca 175 g (including batteries and sensor)
Housing	break-proof ABS, polyester (front panel)

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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

ORDERING CODES

ECO410		
O ₂ analyzer / oxygen measuring device (earlier G 1690)		
1	Version	
	-	Device with permanently mounted cable and sensor protection cover, replaceable sensor
	-T	Device with permanently mounted cable and sensor protection cover, exchangeable sensor, MOD calculation NITROX
2	Sensor	
	-35	GOEL 370: 0 ... 100 vol.-% O ₂ , recommended 0.2 ... 35 % vol. O ₂ (outside reduced accuracy)
	-MAX	GOEL 381: 0 ... 100 vol.-% O ₂ (also for values ≤0.2 and > 35 vol.-% O ₂)
	-GL	Without sensor
3	Set-Option	
	-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	Delivery state	
	-00	Mounted ready for operation
	-CAN	Sensor packed in can, not mounted

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STANDARD ARTICLES

ECO410-35	O ₂ -Analyzer / air oxygen meter Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369	Art no. 486766
ECO410T-35	O ₂ -Analyzer / air oxygen meter Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369	Art no. 487082
ECO410-MAX	O ₂ -Analyzer / air oxygen meter Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369	Art no. 486767
ECO410T-MAX	O ₂ -Analyzer / air oxygen meter Set-Option: Instrument, battery, manual, ESA 369 + ZOT 369	Art no. 487092
ECO410-GL	O ₂ -Analyzer / air oxygen meter Set-Option: Set-Option: Instrument, battery, manual	Art no. 487074
ECO410T-GL	O ₂ -Analyzer / air oxygen meter Set-Option: Set-Option: Instrument, battery, manual	Art no. 487088

ACCESSORIES

Replacement parts:

GOEL 370	Replacement sensor element, recommended 0.2 ... 35 % Vol. O ₂	Art no. 601490
GOEL 381	Replacement sensor element, recommended 0 ... 100 % Vol. O ₂	Art no. 610035

Further accessories:

GZ-5826	Combi adapter for compressed air (G5/8) and Nitrox DIN M26	Art no. 482473
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G1000-Cover	ECO-line/G 1000 rubber protection cover, incl. 2 neodymium magnets	Art no. 483958
GOG-TerminalAdapt	Test adapter for medical gas terminals	Art no. 486256
ST-G1000	Protection bag with belt clip	Art no. 611373
GCLIP1000	Metal belt clip self-adhesive	Art no. 475820
G1000-BASE	ECO-line/G 1000 combined table base / wall suspension	Art no. 481885
GKK 252	Carrying case, universal foam lining	Art no. 601056

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