

TELEDYNE ANALYTICAL INSTRUMENTS

diving sensors



As a prime supplier of oxygen sensors to the military, commercial diving industry, and medical industry for more than 30 years, Teledyne Analytical Instruments is a recognized leader in the field of oxygen analysis for use in life support equipment. Whether it is an infant clinging to life in an incubator or a Navy Seal on a mission, Teledyne's sensors provide critical life sustaining information.

Teledyne has developed sensors and instrumentation specifically for measuring and controlling the oxygen levels for divers, descent vehicles, and deck chambers under hyperbaric conditions up to ten (10) atmospheres. Teledyne was selected by the US Navy to supply the monitoring and control instrumentation used in the "Man in the Sea" program and was selected as the prime supplier of oxygen sensors for use on the Mark 15 and Mark 16 rebreather.







Today Teledyne manufactures over 75 different types of galvanic oxygen sensors for use in a wide variety of applications including automotive emission testing

equipment, medical monitors, and life support equipment. We also produce sensors for process control analyzers, confined space monitoring, and closed circuit diving equipment.

Teledyne presently offers six oxygen sensors specifically for use in diving -- the R10DV, R10DS, R17D, R22D, R22HO and the K1. Many of these sensors utilize our newly patented temperature compensation system and patented Rhodium sensing cathode. These innovations provide superior response and tracking characteristics as well as long term stability. In addition, the sensors include hydrophobic membranes to reduce the effects of water condensation and conformal coated PC boards to protect internal components.

Recent comparison tests by rebreather manufacturers and government agencies have clearly demonstrated that Teledyne sensors provide superior performance in all critical areas including temperature tracking, response time, and long term stability.

Diving Sensor Specifications

Sensors	 R10DV	 R10DS	 R17D	 R22D	 R22DHO	 K1
Application	Military sensor for use in Mark 15/16	Commercial and sports diving; for use in Mark 15/16	Sports diving with mini phone jack connector	Sports diving with Molex 3 pin connector	High output with Molex 3 pin connector	Small sensor where size is critical
Output	25 ± 2 mV	25 ± 2 mV	10 ± 3 mV	10 ± 3 mV	20 ± 6 mV	12 ± 2 mV
Range	0-1 ATM PO ₂	0-1 ATM PO ₂	0-1 ATM PO ₂	0-1 ATM PO ₂	0-1 ATM PO ₂	0-2 ATM PO ₂
Accuracy*	±2% of FS	±1% of FS	±1% of FS	±1% of FS	±1% of FS	±1% of FS
Response time	90% in <30 sec.	90% in <6 sec.	90% in <6 sec.	90% in <6 sec.	90% in <6 sec.	90% in <10 sec.
Operating temp.	0-40°C	0-40°C	0-40°C	0-40°C	0-40°C	0-40°C
Storage temp.	0-50°C	0-50°C	0-50°C	0-50°C	0-50°C	0-50°C
Req. load	6K ohms	6K ohms	10K ohms	10K ohms	3.2K ohms	180K ohms
Expected life**	18 months	36 months	36 months	36 months	36 months	15 months
Shelf life	24 months	24 months	24 months	24 months	24 months	24 months
Warranty	12 months	24 months	24 months	24 months	24 months	24 months

*At constant temperature, pressure, and calibrated using 100% oxygen.

**In air at 25° and 50% RH

Note: To view the entire specifications on our diving sensors, please go to the OEM section of our web site at www.teledyne-ai.com

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Warranty

Sensors are warranted against defects in material and workmanship only. The warranty is void if sensor is damaged due to mishandling, abuse, or modification.

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. All specifications and features are subject to change without notice.

