

DURTOX RS485 DUAL IP65

TOXIC GAS AND OXYGEN DETECTOR BY ELECTROCHEMICAL TECHNOLOGY.

It is manufactured to detect the following gases:

Hydrogen Sulfide (H₂S), Hydrochloric Acid (HCl), Ammonia (NH₃), Chlorine (Cl₂), Sulfur Dioxide (SO₂), Nitrogen Dioxide (NO₂), Formaldehyde (CH₂O), Carbon Monoxide (CO), Nitric Oxide (NO), Oxygen (O₂), Ozone (O₃), and Hydrogen (H₂).

It is a detector with RS485 connection, compatible with the DURGAS control panel manufactured by Durán Electrónica and with any system equipped with this type of input.

This detector is also manufactured in a standalone version, powered from 12V to 24V, with the possibility of programming the alarm levels of each sensor, with 8 different levels, and with 2 alarm outputs through 2 relays C, NO, NC.



DURTOX DUAL UPPER INSTALLATION CONFIGURATION TABLE

AVAILABLE GASES	STANDARD RANGE	INSTALLATION HEIGHT	COVERAGE AREA	ALARM RELAY LEVEL
Formaldehyde (CH ₂ O)	0-5 ppm	1.70m to 2m from floor	Consult	1 ppm
Carbon Monoxide (CO)	0-300 ppm	1.50 m to 2 m from floor	Consult	50 ppm
Oxygen (O ₂)	0-25% vol.	1.70 m to 2 m from floor	Consult	17%
Hydrogen (H ₂)	0-500 ppm	1.70 m to 2 m from floor	Consult	150 ppm

DURTOX DUAL LOWER INSTALLATION CONFIGURATION TABLE

AVAILABLE GASES	STANDARD RANGE	INSTALLATION HEIGHT	COVERAGE AREA	NIVEL 1/NIVEL 2
Hydrogen Sulfide (H ₂ S)	0-100 ppm	30 cm to 1.5 m from floor	Approx. 100 m ²	20 ppm
Hydrochloric Acid (HCl)	0-50 ppm	30 cm to 1.5 m from floor	Approx. 25 m ²	10 ppm
Ammonia (NH ₃)	0-100 ppm	30 cm to 1.5 m from floor	Approx. 75 m ²	20 ppm
Chlorine (Cl ₂)	0-10 ppm	30 cm to 1.5 m from floor	Approx. 100 m ²	3 ppm
Sulfur Dioxide (SO ₂)	0-20 ppm	30 cm to 1.5 m from floor	Approx. 75 m ²	4 ppm
Nitrogen Dioxide (NO ₂)	0-20 ppm	30 cm to 1.5 m from floor	Approx. 100 m ²	4 ppm
Nitric Oxide (NO)	0-100 ppm	30 cm to 1.5 m from floor	Approx. 25 m ²	20 ppm
Ozone (O ₃)	0-10 ppm	30 cm to 1.5 m from floor	Approx. 25 m ²	1,5 ppm



Levels 1 and 2 of models with relay output are factory programmed.
Consult for other available levels.

**Any combination of 2 gases available on request.

SPECIAL FUNCTIONS:

- ◊ Equipped with a 12-bit microprocessor that allows total and precise control over the condition of the sensor and its electronics.
- ◊ Thermal compensation ensures the correct response of each electrochemical sensor to temperature variations.
- ◊ Hardware testing.
- ◊ Digital filter based on variable sampling of the average sensor values.
- ◊ Precise automatic zero adjustment. This special function monitors the zero point in relation to the sensor and electronics response. The following protocol is used: every 30 minutes an automatic test is performed; if the drift is $\pm 2\%$ of the full-scale value, the detector will readjust to zero, otherwise it will be displayed as a real reading.
- ◊ Other functions, accessible through the methodology used at the factory, allow verification of the remaining sensor lifetime, manufacturing date, last calibration date, and serial number.

APPLICATIONS:

DURTOX detectors are designed for use in environments where the formation of toxic atmospheres or vapors is likely, ensuring a high level of protection: laboratories, cogeneration plants, pharmaceutical industry facilities, fermentation rooms, climatic chambers, wastewater treatment plants, etc.

MAIN CHARACTERISTICS:

Technology	12-bit microprocessor and electrochemical sensors
Power supply voltage	12 to 24V DC
Approximate maximum consumption	70 mA at 24V DC, 1 output ON / 55 mA at 12V DC, 1 output ON
Service life	± 3 years in clean air for CO and O ₂ 2 years for other gases: NH ₃ , NO ₂ , H ₂ S, NO, Cl ₂ , SO ₂ , O ₃ , CH ₂ O and HCl
Resolution	0.5 ppm *CO and HCl / 2 ppm NH ₃ / 0.1 ppm *NO ₂ , H ₂ S, Cl ₂ , SO ₂ / 0.5 ppm *NO, CH ₂ O / 2% O ₂ / 0.3 ppm O ₃
Repeatability	$\pm 2\%$ of full scale
Initial stabilization delay	5 minutes – approx. –
T90 response times	CO, SO ₂ and NH ₃ ≤ 30 s - H ₂ S ≤ 20 s - O ₂ ≤ 15 s - NO ≤ 40 s - Cl ₂ , O ₃ ≤ 60 s - NO ₂ ≤ 20 s - HCl ≤ 70 s - CH ₂ O ≤ 90 s
Temperature and humidity ranges	-10°C to +50°C - 20–90% RH
Operating atmospheric pressure	90–110 kPa
Maximum permitted air velocity	<0.1–0.5 m/s (depending on gas)
Optical communication indications	By local LED (4–20 mA)
Alarm outputs	Two voltage-free dry contacts C, NO, NC 3A 250V AC protected by fuse (non-capacitive)
Housing material	Makrolon and ABS
Maintenance intervals	1 year – recommended –
Protection rating	IP65
Cable type	4-wire cable (3 x 1.5 mm ² Ø)
Cable entry diameter	6–10 mm ²
Recommended maximum installation distance	350/400 m
Dimensions (mm) and weight (g)	125 x 150 x 63 / 300 g

STANDALONE OPERATION MODE

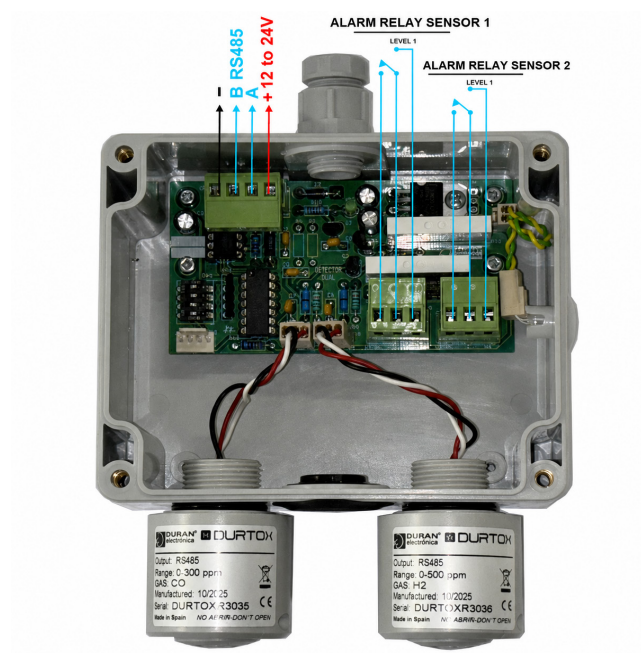
In standalone mode, the detector only requires a power supply between 12 and 24V DC. The alarm levels are programmed through SW1 according to the attached table.

1	2	3	CO	H2
ON	ON	ON	10ppm	20ppm
OFF	ON	ON	20ppm	40ppm
ON	OFF	ON	50ppm	60ppm
OFF	OFF	ON	70ppm	100ppm
ON	ON	OFF	100ppm	150ppm
OFF	ON	OFF	150ppm	250ppm
ON	OFF	OFF	200ppm	300ppm
OFF	OFF	OFF	250ppm	400ppm

Relay activation has a 5-second delay (5 consecutive measurements at alarm level) and a 60-second deactivation delay (60 measurements without alarm level).

During normal operation, the detector LED flashes once every second (reading interval). When either of the two relays is activated, the LED remains ON with a brief OFF flash every second.

CONNECTIONS:



WARRANTY

DURTOX detectors are warranted against any manufacturing defect for 1 year after the purchase of the equipment.

The warranty conditions are specified in the detector installation manual

Durán Electrónica reserves the right to make improvements or introduce modifications to this equipment without prior notice.