DURAN® electrónica

IR DIREX-X

Infrared flameproof detector for explosive gases, CO_2 and N_2O

⟨Ex⟩ II 2G Ex db IIC T6 Gb

⟨Ex⟩ II 2G Ex db IIC T6 Gb
II 2D Ex tb IIIC T85ºC Db

CE

Detector of explosive gases, CO_2 and N_2O by infrared technology, with a flameproof housing, for use in explosive gas atmospheres and offering a high level of protection.

There is a version of the detector, also ATEX certified, with a high level of protection and moreover intended for use in explosive **dust** atmospheres.

Available formats:

- **RS485** addressable, 4-wire connection, compatible with **DURGAS** control units, with up to 16 detectors installable in parallel in the same loop, up to a distance of 1km.
- **4-20mA** 3-wire connection, compatible with any system with this type of input.

Internal optical indicators of sensor and loop faults
Optional alarm relay output **(RS485)**
Optional programmable alarm relay module **(4-20mA)**

LOM 08ATEX2059 X

	Explosive gases	CO_2	N_2O
Range	0-100% L.E.L.	0-2% vol (0-20,000ppm)	0-1,000ppm
Resolution	>0.5% L.E.L.	>1.2% of measurement range	±2% measurement range

AVAILABLE GASES

Explosive gases: Methane, Natural Gas and Propane.

Toxic gases: Carbon Dioxide CO_2 and Nitrogen Oxide (I) N_2O.

APPLICATIONS

Detection of explosive gases, CO_2 and N_2O.
- Livestock installations and in intensive farming processes in general.
- Installations with the presence of inhibitor or poisonous gases of catalytic detectors – pellistors-.
- Atmospheres with a lack of oxygen.
- Installations where maintenance operations must be reduced to a minimum.

LOCATION / HEIGHT OF THE INSTALLATION

In areas where gas tends to accumulate, at a distance of 1.5m from any gas outlet point and avoiding any draughts.

The coverage area is 16 m² for explosive gases, 75m² for CO_2 and 30m² for N_2O

Recommended height of installation:
- 30 cm from the ceiling: Methane, Natural Gas.
- 100 cm from the floor: Propane.
- 75/100 cm from the floor: CO_2
- 30/50 cm from the floor: N_2O

MAINTENANCE

The **DIREX-X** detectors have been factory-calibrated with span gas and do not require recalibration during the initial start up of the installation.
Easy sensor replacement in the installation by incorporation of factory calibration.
Revise **DIREX-X** detectors at least once every 3 years and follow the installation manual's instructions for verification and recalibration operations whenever necessary or in accordance with current standards.

WARNING

Use the appropriate diameter of cable hose for the cable gland's inlet.
Do not under any circumstances immerse in water or in any other liquid.

TECHNICAL CHARACTERISTICS

Technology	Dual wavelength infrared sensor with thermal compensation and microprocessor	**Humidity range**	0 to 95% HR no condensation
Supply voltage	From 10V to 30V DC	**Atmospheric pressure limit**	80 to 110kPa (0.8 to 1.1 bar)
Maximum consumption	80mA at 12V DC/100mA activated relay	**4-20mA connections**	3 wires + earthing mesh
Max. loop resistance	250Ω 4-20mA	**RS485 connections**	4 wires
Max. output current	21.3 mA (Tip) 4-20mA	**Optical indicators of sensor and loop failures**	4-20mA internal / RS485 digital
Loop fault current	< 2mA 4-20mA	**Optical indicator of communication statuses**	Internal, 4-20mA digital in RS485 models
EXP gases measurement range	0-100% L.E.L. (5% vol. Methane) - linear full scale -	**Optional 4-20 mA programmable alarm relay**	Choose between 2 programmable alarm levels immediate/delayed with delayed disconnection programming. Initial idle mode relay programming.
CO_2 measurement range	0-20,000 ppm (0-2% v/v) - linear full scale -		
N_2O measurement range	0-1,000ppm linear full scale	**Coverage area**	EXP 16 m² approx. CO_2 75 m² approx. N_2O 30 m² approx.
Resolution	Exp: >0.5% L.E.L. CO_2 >1.2% of measurement range N_2O >2% of measurement range	**Protection grade**	IP65
		Box material	Aluminium / Stainless steel
Zero drift	Exp: ±3% L.E.L. max / year at 20ºC CO_2: ±0.7% / year N_2O ±1% F.S year	**Standard code for explosive atmospheres (gas/dust)**	Ex db IIC T6 Gb /Ex tb IIIC T85ºC Db
Span drift	EXP: ± 3% L.E.L. / year at 20ºC CO_2: ±0.7% F.S./ year N_2O ±1% F.S year	**Cable diameter**	10.1-13mm²
		Cable type (4-20mA)	Shielded 3 x 1.5mm ø
Stabilisation time	< 30 min. -all specifications-	**Cable type (RS485)**	4 wires 2 x 1.5mm - 2 x 0.25mm ø
Resistance to H_2S	Yes totally immune	**Installation max. distance**	1,000m (RS485) 300/400m (4-20mA)
Response Time T50/T90	<15s and 30s respectively	**Dimensions (mm)**	155 x 180 x 110
Useful life (MTBF)	> 5 years	**Weight (g)**	1,700 approx.
Maintenance periods	Every 3 years -recommended-		
Temperature range	-20ºC to +50ºC		

WARRANTY

DIREX-X detectors are guaranteed against any manufacturing defect for 1 year from the date of purchase. The warranty conditions are set out in the equipment's installation manual.

ORDER INFORMATION

When placing your order please provide the correct code for the product required and verify that its description is in order. In the case of explosive gases (HC) remember to also indicate the gas to be detected (methane, propane or natural gas).

DIREX X RS485 Detectors

CODE	DESCRIPTION
DIRYLXCO2	Infrared flameproof RS485 detector for CO2
DIRYLXCO2r	Infrared flameproof RS485 detector for CO2 with relay output
DIRYLX***	Infrared flameproof RS485 detector for explosive gases
DIRYLX***r	Infrared flameproof RS485 detector for explosive gases with relay output

*** available gases: N2O, NAT (Natural Gas or METHANE) or PRO (PROPANE-BUTANE)

DIREX X 4-20mA Detectors

CODE	DESCRIPTION
DIRY4LXCO2	Infrared flameproof 4-20mA detector for CO2
DIRY4LXCO2r	Infrared flameproof 4-20mA detector for CO2 with relay module
DIRY4LX***	Infrared flameproof 4-20mA detector for explosive gases
DIRY4LX***r	Infrared flameproof 4-20mA detector for explosive gases with relay module

*** available gases: N2O, NAT (Natural Gas or METHANE) or PRO (PROPANE-BUTANE)

Note: Add a "t" after the "X" in the code to request ATEX-certified detectors for combustible dust.
e.g.: for RS485 carbon dioxide detectors for combustible dust, the code would be DIRYLXtCO2
e.g.: for 4-20mA carbon dioxide detectors for combustible dust and relay, the code would be DIRY4LXtCO2r

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