

# RECOM

INDUSTRIALE s.r.l.

Datasheet 2013

FIXED DETECTION SYSTEMS



**EXPLORER**

NE PAS OUVRIE SOUS TENSION  
DO NOT OPEN WHEN CIRCUITS ALIVE

A1 OK A2  
GAS POINT  
GENOVA RECOM ITALY  
INDUSTRIALE s.r.l.  
FALUT

Industriale srl - Genova  
Gas Sensor Type C 2004 - S/N  
II GD EEx d IIC T6 IP6X T 85°C  
ISseP 04ATEX 036

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# LEL Gas Detector

4-20 mA Transmitter and RS485 MODBUS RTU

Continuous monitoring gas detectors

Continuous monitoring of combustible gases (%LEL), Exd classified Areas.

The internal display helps the periodic control procedures, the tests, the calibration.

Range and Sensor setting, watertight, die-cast aluminum enclosure.

ATEX Certification  
Marine Approval

**Certifications:**  
ATEX – RI.NA - ABS

**Simple to calibrate**

**Inside display**

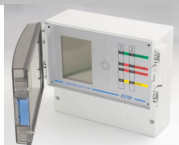
**30 setting correction factors**

**Automatic calibration and setting through function buttons and display**



<b>Range</b>	0 ÷ 100 % LEL
<b>Sensor</b>	Catalytic: VQ01-VQ21-VQ25 Termoconducibility: VQ6
<b>Sensitivity</b>	1%
<b>Linearity</b>	100%
<b>Connection</b>	4/20 mA /RS485 MODBUS RTU
<b>Power supply</b>	24 Vc
<b>Operating temperature</b>	- 20° ÷ + 55° C
<b>Protection Level</b>	IP 6X
<b>Reading time</b>	T 90 < 25 sec
<b>Connection type</b>	3 wires
<b>Measurement</b>	Diffusion
<b>Display</b>	Internal 7 segments, 4-digit LCD
<b>Certifications</b>	ATEX II GEx D IIC T6 Gb R.I.NA (Italian Marine Register) ABS

Combustible Gases	Range	Risolution	Item Code
VQ1	0 ÷ 100% LEL	1% LEL	102111
VQ21	0 ÷ 100% LEL	1% LEL	102154
VQ25	0 ÷ 100% LEL	1% LEL	102160
VQ6	0 ÷ 100% Vol.	1% Vol	102153



BOX 2



BOX 4



GAS SCREEN



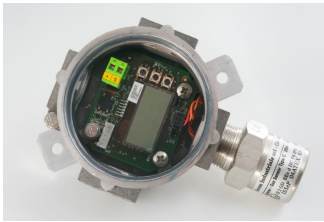
EXPLORER 4

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C.C.I.A.A. 38999 GE  
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# Toxic gases and O<sub>2</sub> Gas Detectors

4-20 mA Transmitter and RS485 MODBUS RTU

Continuous monitoring gas detectors

They permit to monitor in continuous toxic gases and O<sub>2</sub>, inside classified Exd Areas. The inside display permits the periodic procedures of checks, tests and calibration. Watertight, die-cast aluminum container that matches to ATEX specific details.

**Certifications:**  
ATEX – RI.NA - ABS

Simple to calibrate

Internal Display

30 correction selecting factors

Automatic Calibration and setting with function buttons and display



Sensor	Electrochemical
Sensitivity	1% - 1/0,1 ppm
Linearity	100%
Connection	4/20 mA /RS485 MODBUS RTU
Power supply	24 Vc
Operating temperature	- 20° ÷ + 55° C
Protection level	IP 6X
Reading time	T 90 < 25 sec
Connection time	2 wires
Measurement	Diffusion
Display	Internal with 7 segments, 4-digit LCD
Certifications	ATEX II G Ex D IIC T6 Gb R.I.NA (Italian Marine Register) ABS

Gas	Range (ppm)	Risolution (ppm)	Item code
Oxygen O <sub>2</sub>	0 ÷ 30 %vol.	0,1%	102302
Oxygen O <sub>2</sub> KE25	0 ÷ 100 %vol.	0,1%	102301
Carbon Monoxide CO	0 ÷ 2.000	1	102306
Hydrogen Sulfide H <sub>2</sub> S	0 ÷ 200 / 1.000	0,1	102311
Nitrogen Oxide NO	0 ÷ 100	0,1	102351
Nitrogen Bioxide NO <sub>2</sub>	0 ÷ 20	0,1	102331
Ammonia NH <sub>3</sub>	0 ÷ 100	0,1	102392
Sulphur dioxide SO <sub>2</sub>	0 ÷ 100	0,1	102322
Chlorine Cl <sub>2</sub>	0 ÷ 50	0,1	102341
Ethylene Oxide EtO	0 ÷ 100	0,1	102401
Cianhidric Acid HCN	0 ÷ 100	0,1	102371

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# EXPLORER



## ADVENTURE type Sensor

4-20 mA Transmitter and RS485 MODBUS RTU

Continuous monitoring gas detectors

### ADVENTURE

#### DETECTOR

has been planned in order to detect combustible gases and CO, civil application such as car parks and big storehouses.

4 ~ 20mA output - compatible with all 4 ~ 20mA input systems

RS485 Modbus compatible

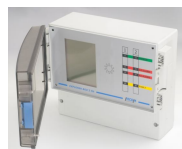
Protection Level: IP66

Power supply: DC24V±25%

Output relay for high-alarm and low-alarm

Sensor	CO Combustible Electrochemical Catalitic
Sensitivity	1% / 1 ppm
Linearity	100%
Connection	4/20 mA RS485 MODBUS RTU
Power supply	24 Vc
Operating temperature	- 20° ÷ + 50° C
Protection Level	IP 65
Reading time	T 90 < 60 sec
Connection time	2/3 wires
Measurement	Diffusion
Distance of connection	< 1 Km.
Certifications	CE

Gas	Output	Range	REsolution	Item code
Combustible	4 – 20 mA	0 ÷ 100% LEL	1% LEL	602002
Combustible	RS-485	0 ÷ 100% LEL	1% LEL	602022
Carbon Monoxide CO	4 – 20 mA	0 ÷ 1.000 ppm	1 ppm	602001
Carbon Monoxide CO	RS-485	0 ÷ 1.000 ppm	1 ppm	602021



BOX 2



GAS SCREEN

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# EXPLORER



## I.R. CO<sub>2</sub> Sensor

4-20 mA Transmitter

Continuous monitoring gas detectors

**CO<sub>2</sub> DETECTOR** has been planned in order to detect CO<sub>2</sub>, IR Sensor for Safety Areas

**Output 4 ~ 20mA, compatible with all the 4 ~ 20mA input control systems**

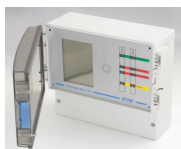
**Protection Level: IP65**

**Power supply: DC24V ± 25%**

**90x85x65 mm Aluminum case**

Sensor	Infrared
Sensitivity	+/- 2% f.s.
Linearity	100%
Connection	4/20 mA 0,1-10 V
Power supply	24 Vdc
Operating temperature	- 10° ÷ + 50° C
Protection Level	IP 65
Reading time	T 90 < 30 sec
Connection time	3 wires
Measurement	Diffusion
Case	Aluminum, wall mounting
Certifications	CE

Gas	Range	Resolution	Item code
Carbon Dioxide CO <sub>2</sub>	0 ÷ 3.000 ppm	1 ppm	102495
	0 ÷ 5.000 ppm	1 ppm	
	0 ÷ 10.000 ppm	1 ppm	
	0 ÷ 5 % Vol.	0,1 %	
	0 ÷ 10 % Vol.	0,1 %	



**BOX 2**



**BOX 4**



**GAS SCREEN**



**EXPLORER 4**

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# EXPLORER



## I.R. Combustible Gas Sensor

4-20 mA Transmitter and RS485 MODBUS RTU

Continuous monitoring gas detectors

Stand alone sensor that permits to monitor in continuous, in Exd classified Areas, combustible gases (also inside inactive atmosphere), in %LEL or in % Volume with I.R.Sensor. The display shows the measured concentration and helps the periodic procedures of checks / test alarm setting and calibration.

**Output 4 ~ 20mA, compatible with all the 4 ~ 20mA input control systems**

**RS485 compatible**

**Protection Level: IP66**

**Power supply: DC24V±25%**

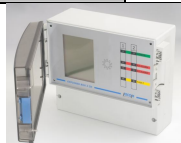
**Output relay for high-alarm and low-alarm**

**Local display**

**Checks that are not intrusive through IR function**

Sensor	Infrared
Sensitivity	1% LEL 1% Volume
Linearity	100%
Connection	4/20 mA RS485 MODBUS RTU
Power supply	24 Vcc
Operating temperature	- 20° ÷ + 50° C
Protection Level	IP 66
Reading time	T 90 < 60 sec
Connection type	3 wires
Measurement	Diffusion
Connection distance	< 1 Km.
Certifications	CE ATEX II 2G Ex d IIC T6

Gas	Range	Resolution	Item Code
Methane CH <sub>4</sub>	0 ÷ 100% Vol. 0 ÷ 100% LEL	1% Vol. 1% LEL	602003
Propane C <sub>3</sub> H <sub>8</sub>	0 ÷ 100% Vol. 0 ÷ 100% LEL	1% Vol. 1% LEL	
Acetilene C <sub>2</sub> H <sub>2</sub>	0 ÷ 100% Vol. 0 ÷ 100% LEL	1% Vol. 1% LEL	



BOX 4



EXPLORER 4

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# Stand Alone Gas Point

4-20 mA Transmitter



Continuous monitoring gas detectors

The stand alone Gas Point detectors permit to monitor in continuous, inside Exd classificate Areas, combustibile gases, toxic ones and oxygen.

The graphic display helps the periodic check procedures / tests and calibration. The display shows the measured concentration and helps the periodic procedures of checks / test alarm setting and calibration.

**ATEX Certification**

**Simple to calibrate**

**Graphic Display**

**30 %LEL correction selecting factors**

**Automatic non intrusive calibration and parameters setting through external magnetic function**

<b>Sensor</b>	Electrochemical Catalitic
<b>Sensitivity</b>	1% - 1/0,1 ppm
<b>Linearity</b>	100%
<b>Connection</b>	4/20 mA
<b>Power supply</b>	24 Vcc
<b>Operating temperature</b>	- 20° ÷ + 55° C
<b>Protection level</b>	IP 65
<b>Reading time</b>	T 90 < 25 sec
<b>Connection Type</b>	3 wires
<b>Measurement</b>	Diffusion
<b>Display</b>	Backlit Graphic
<b>Certifications</b>	ATEX II 2GD - EEx d IIC T6 IP 6X - T85°C

Gases	Range	Resolution	Item Code
<b>Combustible VQ1</b>	0 ÷ 100% LEL	1% LEL	100300+108110
<b>Combustible VQ21</b>	0 ÷ 100% LEL	1% LEL	100300+108150
<b>Oxygen O<sub>2</sub></b>	0 ÷ 30 %vol.	0,1%	100300+108300
<b>Oxygen O<sub>2</sub> KE25</b>	0 ÷ 100 %vol.	0,1%	100300+108302
<b>Carbon Monoxide CO</b>	0 ÷ 2.000	1	100300+108305
<b>Sulphuric Oxide H<sub>2</sub>S</b>	0 ÷ 200 / 1.000	0,1	100300+108310
<b>Nitrogen Oxide NO</b>	0 ÷ 100	0,1	100300+108350
<b>Nitrogen Dioxide NO<sub>2</sub></b>	0 ÷ 20	0,1	100300+108330
<b>Ammonia NH<sub>3</sub></b>	0 ÷ 100	0,1	100300+108391
<b>Hydrogen Sulphide SO<sub>2</sub></b>	0 ÷ 100	0,1	100300+108320
<b>Chlorine Cl<sub>2</sub></b>	0 ÷ 50	0,1	100300+108340
<b>Ethylene Oxide EtO</b>	0 ÷ 100	0,1	100300+108400
<b>Cianhidric Acid HCN</b>	0 ÷ 100	0,1	100300+108370

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## Explorer 4

Rack or panel control unit 4 channel 4-20 mA

**Explorer 4** is a multi-channel control unit collects in one only rack till 4 acquisition channels. The system is studied to monitor gases and other different parameters in continuous, through the check of the correspondent alarms. Everything is inside a rack; it's easy to install at wall. In order to monitor more points, also 8 and 16 channels racks are available. The setting is done by 3 buttons you find on the front cover. The unit gives power to the 4 - 20 mA transmitter sensors, and can be supplied by a serial RS232 unit for the configuration.

**Approvations:**  
CE-RI.NA-ABS

**3 relays each channel referred to 3 different alarm thresholds**

**Rack mounting at 19"**

**Easy installation**

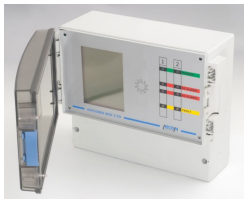
**Modular till 16 channels**

**Backlit Display LCD**

**3 alarm leds each channel and in addition a generic alarm led**

**Optional temporary measure battery**

<b>Case</b>	4 - 8 - 16 channels rack and wall mounting option
<b>Dimensions</b>	depth 105mm (21U), height 132,5mm (3HE) weight 1,7kg.
<b>Display</b>	LCD 2x16 digit
<b>Measurement Range</b>	%, ppm, and other settable parameters
<b>Power supply</b>	18-28 VDC/110-220 VAC
<b>Consumption</b>	5 - 25 W
<b>Nr. channels</b>	4 and multiples
<b>Alarms</b>	3 levels, from 0 a 100% f.s. Fault alarm and sensor disconnection 3 Relais each channel
<b>Analogic inputs</b>	4-20mA 2 or 3 conductors
<b>Digital inputs</b>	RS 232 a BUS per I/O a PC
<b>Optical alarms</b>	4 LED each channel (1 fault and 3 alarm levels) + 1 LED for the power supply; 1 general alarm relay, 1 for fault, common to the 4 NC and NO channels
<b>Sound Alarms</b>	1 active buzzer if the alarm is activated
<b>Analogic output</b>	4-20mA 2 or 3 conductors
<b>Sensor power supply</b>	24 Vdc
<b>Temperature</b>	-20°C / + 55°C
<b>Umidity</b>	0% - 95% HR (non-condensante)
<b>Setting parameters</b>	Language: Italian/English Gain, offset and full scale for each channel; Alarm levels; Channel sample time



## Explorer BOX 2

Wall-panel mounting multichannel touch screen control unit  
2 channel 4-20mA  
247 channel RS485 modbus

**Explorer Box 2 CH** is a 2-channel touch screen reading control system in continuous. It can be connected sensors for combustible gases (% LEL and/or %VOL), oxygen (% O<sub>2</sub>), toxic gases (ppm) and CO<sub>2</sub>. Input and output in RS485 MODBUS RTU in order to connect 247 sensors. It's available also the configuration to connect RS485/4-20mA interfaces and I/O in order to connect 50 sensors. The first 4-20 mA channel is active for the direct catalytic with no transmitter sensor connection. Each parameter is possible to be set in a simple instinctive way through the touch screen display and an advanced managing software.

### Connections:

- LEL% direct sensors
- LEL%, oxygen and 4-20 MA toxic gases sensors (2-3 conductors)
- 247 channel LEL%, oxygen and RS485 toxic gases sensors
- suitable with I/O OUTPUT RS 485 modules
- suitable with RS485/4-20mA modules
- retransmission of the 4-20mA signal

### Touch screen display

### Alarm Relay for channel

### Simple installation

### Wall or panel mounting

### IP65 Protection Level

### CE Certificate

Case	Wall mounting
Dimensions	210x180x120 mm
Display	Touch Screen
Measurement range	%, ppm, and other settable parameters
Power supply	18–28 VDC/110–220 VAC
Consumption	5 – 25 W
Number of channels	4
Alarms	3 levels, Fault Alarm from 0 to 100% f.s. and sensor disconnection of 3 Relays for each channel
Analog inputs	4-20mA 2 or 3 conductors
Digital inputs	From RS 232 to BUS for I/O to PC
Optical Alarms	4 LED for each channel (1 fault and 2 Alarm levels) + 1 LED for the power supply; 1 generic Alarm relay, 1 for fault, common to the 4 NC and NO channels
Sound Alarms	1 active buzzer for the Alarm situations
Analog Output	4-20mA 2 or 3 conductors
Sensor Power supply	24 Vdc
Temperature	-20°C / + 50°C
Umidity	0% - 95% HR (non-)
Settable parametri	Language: Italian/English Offset gain and full scale for each channel; Levels of alarms; Channel sample time



## Explorer BOX 4

Wall mounting 4 channel 4-20mA control unit

**Explorer BOX 4** permits to monitor till 4 flammable gas, toxic and/or oxygen sensors/transmitters. It's studied to monitor gases in continuous and to check the Alarms. Allocated in a wall tin panel, it includes universal 110/220Vac power supply, electronic managing for the 4 cannals and the display show card and alarm thresholds. Display gives for each of the 4 channals the concentration of gas and measurement unit

### Connections:

- LEL%, oxygen and 4-20 MA toxic gases Sensors (2-3 conductors).  
- retransmission of the 4-20mA signal

### Backlit LCD display

### Alarm Relay for channel

### Simple installation

### Wall or panel attaching

### IP65 protection level

### CE Certification

Case	Wall mounting
Dimensions	290x250x120 mm
Display	LCD 2x16 digit
Measurement range	%, ppm, and other settable parameters
Power supply	18–28 VDC/110–220 VAC
Consumption	5 – 25 W
Number of channels	2
Alarms	3 levels, from 0 to 100% f.s. Fault Alarm and sensor disconnection 3 Relays for each channel
Analog inputs	4-20mA 2 or 3 conductors
Digital Inputs	NO
Optical Alarms	4 LEDs for each channel (1 fault and 3 alarm levels) + 1 LED for power supply; 1 generic alarm relay, 1 for the fault, common to the 4 NC and NO channels
Sound Alarms	1 active buzzer if the alarm is active
Analogic output	4-20mA 2 or 3 conductors
Sensor power supply	24 Vdc
Temperature	-20°C / + 50°C
Umidity	0% - 95% HR (non-condensing)
Settable parameters	Language: Italian/English Offset gain and full scale for each channel; Alarm levels; Channel sample time

# EXPLORER



## Gas Screen

Wall mounting multichannel colour  
touchscreen control unit

### Explorer GasScreen

160 permits the 16 4-20mA channel connection and 494 RS485(2x247) channels. In order to have the monitoring in continuous of combustible gases (%LEL), oxygen (% O<sub>2</sub>) and toxic gases (ppm). The calibration, the parameter changes and the sensor setting, are done on a comfortable and big coloured touch screen display in a simple and immediate way.

A base plate for the fixing at wall ensures an easy installation on any kind of surface.

The inlet number can be defined at multiple of two till 16 4-20mA channels.

CPU is arranged for the wireless local or GPRS connection by putting the optional card inside the instrument; For internet connection, you can find an Ethernet inlet.

### Connections:

- direct LEL% Sensors
- LEL%, oxygen and 4-20 MA toxic gases sensors (2-3 conductors).
- 2x 247 channel LEL%, O<sub>2</sub> and RS485 MODBUS RTU toxic gases sensors
- compatible with I/O OUTPUT RS 485 modules
- compatible with RS485/4-20mA modules
- retransmission of the 4-20mA signal

### Coloured touch screen display

### Alarm relay di for each channel

### Simple installation

### Wall mounting or panel fixing

### IP65 protection level

### CE Certification

Case	Wall mounting
Dimensions	350x310x120 mm
Display	Coloured touch Screen
Measurement Range	%, ppm, and other settable parameters
Power supply	24 VDC/110–220 VAC
Consumption	100 W
Number of channels	Nr. 16 4/20 mA Nr. 2X247 RS485 16 LEL% direct sensors
Alarms	3 levels, from 0 to 100% f.s. Fault Alarm and sensor disconnection 3 Relays each channel
Analog inlets	4-20mA 2 or 3 conductors
Digital inlets	USB
Optical alarms	4 LED for each channel (1 fault and 3 alarm levels) + 1 LED for power supply; 1 alarm generic relay 1 for the fault, common to the 4 NC and NO channels
Sound Alarms	1 active buzzer if the Alarm is active
Analog output	4-20mA 2 or 3 conductors
Sensor power supply	24 Vdc
Temperature	-20°C / + 50°C
Umidity	0% - 95% HR (non-condensing)
Settable parameters	Language; Offset gain and full scale for each channel; Alarm levels; Channel sample time



rev 1 – feb. 2013