

TYPE APPROVAL CERTIFICATE
No. **ELE0197005CS**



This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Automatic gas detection system
<i>Type</i>	Explorer 4
<i>Applicant</i>	RECOM INDUSTRIALE S.R.L. VIA PIETRO CHIESA 25 R 16149 GENOVA (GE) ITALY
<i>Manufacturer</i>	RECOM INDUSTRIALE S.R.L.
<i>Place of manufacture</i>	VIA PIETRO CHIESA 25 R 16149 GENOVA (GE) ITALY
<i>Reference standards</i>	Chapter VII of 1974 SOLAS Convention as amended; Section B Parts III and IV of RINA Rules

Issued in **ELE** on **January 22, 2007**. This Certificate is valid until **January 22, 2012**

RINA

Andrea Cogliolo

This certificate consists of this page and 1 enclosure



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Explorer 4

Product description

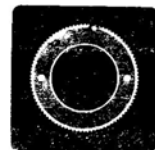
The Explorer analyzer is a multi-channel, microprocessor controlled gas detection system, designed for the continuous monitoring of gas and other parameters, composed by:

Case	rack for 4 – 8 – 16 channels
Display	LCD 2 x 16 digit, with back light, heated if ambient temperature is < 0°C
Power supply	12 VDC / 110 – 220 VAC with transformer
No. of channels	from 1 to 4 for each rack
Analog input signals	2 for each channel (0+10 V / 4+20 mA)
I/O Digital	connector RS232 to BUS for connection I/O to PC
Visual alarm	4 LED for each channel (1 fault and 3 alarm levels) + 1 LED for power
Audible alarm	1 internal buzzer activated in case of alarm
Output alarms	3 output for each channel (1 for each alarm level), 1 relé for general alarm and 1 relé for fault, common to the four channels NC and NO
Key pads	3 multifunction keys
Analog output	0-10 V, protected (one for each channel)
Sensor power	13,5 VDC / 100 mA, or 24 VDC / 30 mA
Programming	Languages menu: English, Italian, French, Spanish, German, Portuguese (others on request)
Set up	(adjustment for each channel): gain, offset and full scale, 3 alarm levels, average of the reading time, kind of alarm (beeps or continuous)
Firmware	FW4CH 04/06

Programming of parameters (gain, offset, full scale, alarm levels (3), fault of the sensors, etc.) makes it possible to check any measurement detectable with sensors 0+10 V or 4+20 mA.

Reference Documents

- Operating / Installation Manual for EXPLORER 4 Gas Sampling System issued Gennuary 2006 ver.1.0
- Data Sheet of Hydrogen Sulfide Sensor H2S 2E 30
- Data Sheet of Hydrogen Sulfide Sensor H2S 3E 100
- Data Sheet of E2V Technologies VQ1 - A1A-VQ1 3 September 2002
- Data Sheet of E2V Technologies VQ21T Series - A1A-VQ21 3 September 2002
- Data Sheet of GS Oxigen Figaro Sensor KE- Series - Revised August 2003
- Test report TesLab n° 061008F dated 26-07-06
- Test report TesLab n° 061008E dated 26-07-06
- Test report TesLab n° 061008F dated 26-07-06



Test Carried Out

Simulation of gas detection of:

Combustible Gas/Vapour the following 3 different type of gasses, with VQ1 Sensor type :

- 2.01% Vol of Air/Methane
- 0.696% Vol of Air/Acetilene
- 0.598% Vol of Air/1.3 Butanide

Oxigen Gas with 7OX-V Sensor type :

- 20.9% Vol of Air/Oxigen
- 99,999% Vol of Nitrogen

H2S Gas/Vapour with 7HH Sensor type :

- 26.7 ppm of Air/H2S

Note

For each specific installation on board, the system configuration drawings are to be always sent for approval.

The test of the system will be carried out with simulation of functionality in normal, emergency and single failure condition.

Final acceptance of the system is subject to the good result of functional test to be carried out on board.

Genoa 22/01/2007

