



**RIVELGAS
PLUS**

**RIVELGAS
COMBI**

**EX-PEX
PLUS**



User Manual

VERSION 3.0

OUR PRODUCTS

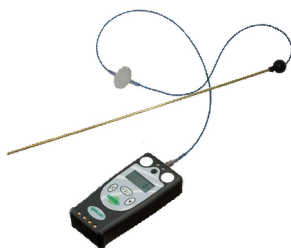
GAS SAFETY



HANDYGAS

The professional instrument for the detection and localization of gas leaks for CH₄ e C₃H₈ with Bluetooth and GPS. There is also a version with an Ethane sensor.

Set of probes for all purposes to use with HUBERG instruments: carpet probe, sucker probe, flexible probe, hand held probe and extendible probe.



RIVELGAS COMBI

The new portable instrument for gas leak detection and localization of gas leaks for CH₄ e C₃H₈ and for toxic gas (O₂, CO, H₂S)

Portable instrument for verifying the calibration and the flow rate.



EX-PEX PLUS

Instrument for the personal safety, for HC (CH₄ e C₃H₈) and toxic gases (O₂, CO, H₂S).

RIVELGAS PLUS CROMATECH

Portable instrument for the detection and localization of micro gas leaks (CH₄ e C₃H₈) and for personal safety (O₂, CO, H₂S).



RIVELGAS LIGHT VOLUMEX

Portable instrument for the detection of methane and propane.

The portable gas chromatograph for the measurement and analysis of odorants in gas distribution networks.



Explosion-proof vacuum aspiration pump to drain residual gas from the ground.

Instrument for the measurement of THT in network.

EX-PEX THT



Special vehicles for preventive and systematic gas leak survey in real-time (selectivity IR methane detection, GPS on board). System controlled by computer and all the survey can be connect to the company cartographical system.





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1 GENERAL DESCRIPTION

RIVELGAS plus / EX-PEX plus / Rivelgas Combi are a new family of portable devices for localization of gas leak and for personal safety. Depending on the device model, they are used either to check pipes, gas leak detection or for personal safety. It was conceived to be light for portability, and easy to use.

Measured gas concentration is shown on the display. Different scales are available according to the different models of device: PPM, LEL and VOL.

Alarm threshold can be set by user navigating menu options. Other informations are shown directly on the display (eg. Battery level, pump status, buzzer status, etc). Power is supplied by NiMH batteries, which guarantee between 8 to 14 hours of working in nominal conditions, depending on the model (see datasheet) and can be recharged using the proper battery charger.

The electronics were developed, certified and manufactured according to European Ex directive and and in compliance with international specifications for safety in environments with explosion risk.

In hazardous environment, the user must take care of the EN 1127-1:2007 (Explosive atmospheres. Explosion prevention and protection. Basic concepts and methodology) and the BGR 132 (German directive :“Vermeidung von elektrostatischer Aufladung”) .

Warning: battery has to be charged in a safe place.

2 DEVICE LAYOUT

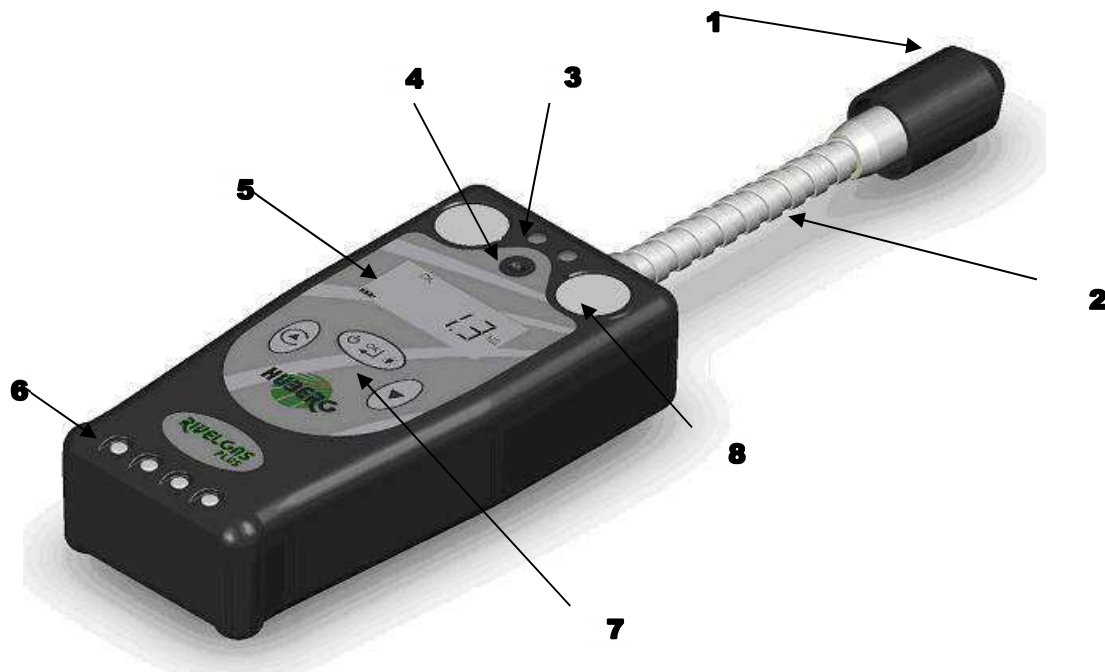


Fig. 1

1. Sensor (if present)
2. Flexible pipe (if present)
3. Alarm led
4. Buzzer
5. LCD Display
6. Battery charger connector
7. Keyboard
8. Gas output

Some parts models could be different depending on the models.

2.1 Keyboard and display layout

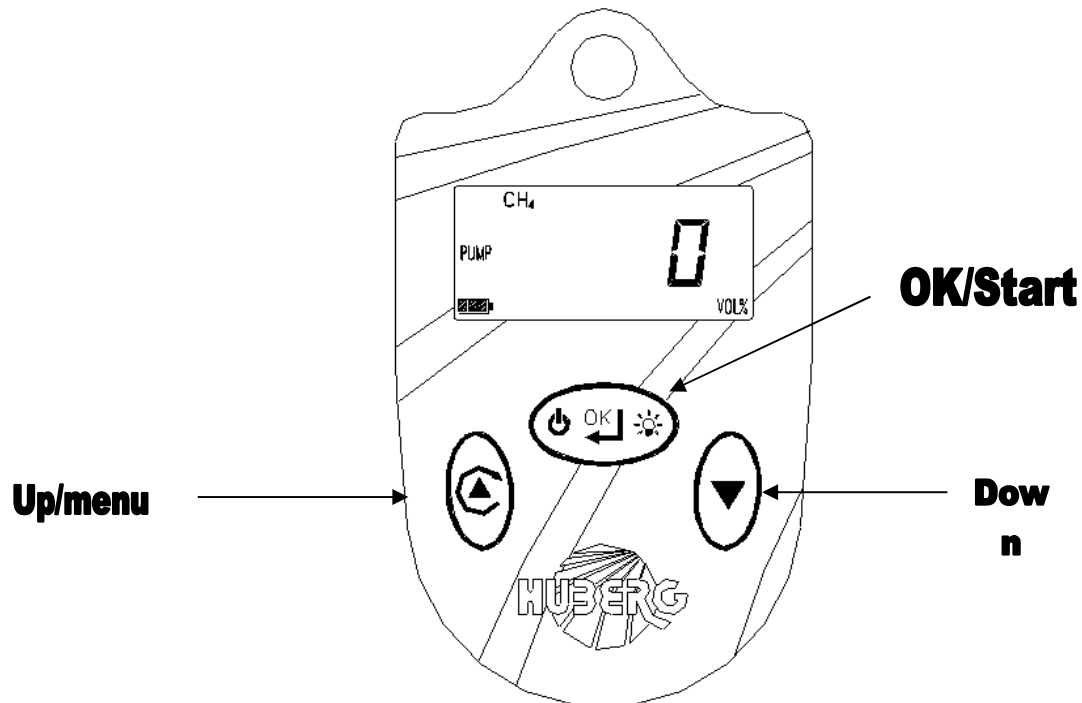


Fig. 2

The device has a keyboard with three keys in order to enter the menu.

KEY "OK/START" is used to:

1. turn on/off the device
2. enable/disable backlight of display
3. confirm/look through menu.

KEY "Up/menu" is used to:

1. enter the menu
2. increase set values.

KEY "Down" is used to:

1. decrease set values.
2. Save measured data (Optional)
3. Start the pump again when it is in POFF

3 FUNCTIONING

3.1 Turning on

In order to turn on the device, press “OK/Start” key until display shows “On”, then release the key. After switching on the instrument, and before operational use, the instrument performs these check tests:

- Display lights on to test proper functioning.
- The word “SOFT” appears on screen, followed by the software release version number (eg.: “2.0”).
- The word “Sn” appears on screen, followed by the instrument’s serial number (eg.: “7734”).
- The word “tAr” appears on screen, followed by the month and year of date of last calibration (eg.: “11” and “2009” meaning November and 2009 respectively).
- Multi-process instruments only (mono-process instruments skip to next step): a scrollable menu appears on screen, with the process abbreviations
 - “EXPL”, used for personal safety 100%, diffusion mode
 - “1” and “VOL” symbol, for Rivelgas Plus 1% with pump
 - “100” and “VOL” symbol, for Rivelgas Plus 100% with pump
 - “AUTO”, for RIVELGAS plus 1% - 100% with pump
 - “OFF”, to turn off the instrument without activating any process.
 - “GAS TYPE” for multigas instrument

To choose the desired process, scroll the menu with “Down” key and then press “Ok”. Note: available processes may differ through different device models.

- The word “CAL” appears on screen, which means that the instrument has started and auto calibration step. Auto calibration steps include:
 - Pump powered processes only: pump stops and restart, to check proper pump functioning.
 - Moving dashed lines appear on screen
 - Led blinks, to check proper led functioning
 - Buzzer beeps, which means end of auto calibration steps.

- In case the instrument notices sensor malfunctioning, the word “S Er” appears on screen, and buzzer beeps for 5 seconds, before the instrument switches off.
- Device is ready to use and measure is shown.

WARNING: in order to have a correct calibration of the device, it has to be turn on in a place with no gas.

3.2 Switching process mode

Multi-process instruments only: to switch current instrument process, device must be turned off and on.

3.3 Turning off

To turn off the instrument, press “OK/Start” key until the end of counter 4 – 3 – 2 – 1 – OFF. If the key is released before “OFF”, turning off process is stopped.

Device turns off automatically when batteries are discharged, after showing “C-OFF” on display.

3.4 Backlight

To turn on or off backlight, press “OK/Start” key: if the light is off, it will be turned on and vice versa.

3.5 Alarm

After turning on, the instrument measures continuously gas concentrations in medium. When the measure exceeds alarm threshold, leds flash and buzzer sounds.

The device has two alarm thresholds: one called system alarm (not modifiable by user) and one called user alarm, set by user. Device sets itself in alarm condition when one of the two alarm thresholds is reached. When user alarm is exceeded, buzzer can be turned off entering menu and disabling buzzer

(system alarm cannot be turned off). Led alarm will flash independently. When system alarm is reached, buzzer will sound and it cannot be turned off. Led alarm will flash.

For Ex-Pex 09 model: once measurement exceeds system threshold (generally 2,2%VOL), the display will show a blinking value of 2,2% (indicating that true measurement may fall above that value), and buzzer will sound with higher frequency.

3.6 Toxic gases

For devices with toxic gas sensor, the display shows alternatively gas or toxic gas concentrations. If one of these will exceed alarm threshold, the display shows only the one which is over threshold. If the other gas will exceed its threshold too, display will show again both gases switching alternatively.

3.7 Autozero

It is possible reset the zero of device only if gas measurement falls under 2000ppm, by pressing "Up/Menu" key and then "Down" key. "AU-0" is shown on display when applied.

3.8 Save data (OPTIONAL)

On request in the instrument of Rivelgas Family have the ability to save measured values, and download and store them on PC through appropriate software for later processing.

To save the value seen on display, you have to press "Down" key. "SAUE" word will appear on display, followed by a number, which represents memory position. This implies the value was successfully stored. Otherwise, if memory is full, the word "FULL" will appear on display, and the new value will not be stored. Memory sizes vary between models.

In order to manage device's memory, you should use the "Data Download Software for Ex-pex+/Rivelgas+".

3.9 Menu

To enter the menu, press "Up/Menu" key. A little wrench is shown on left side of display.

3.10 PoFF

In the instruments with pump if there is an occlusion of the tube the instrument block the pump in order to protect the instrument. In order to start the pump again you must click on “Down” key.

Description	OK/Start	Up/Menu	Down	Optional
“ALL” writing and then alarm threshold are shown	Confirm and show next entry	Increase threshold value	Decrease threshold value	
“b OFF” is shown if the buzzer is off or “b ON” if it is on. When “Up/Menu” key or “Down” key are pressed, writing changes in “b ON” or “b OFF” if the buzzer was off or on respectively. This is in order to silent the buzzer when user alarm threshold is exceed.	Confirm and show next entry	Change	Change	
“GAS” is shown and below selected gas symbol is shown. If the instrument is calibrated only for Methane this entry is not displayed. When “Up/Menu” key or “Down” key are pressed, gas switches to other configuration (f.e. C3h8)	Confirm and show next entry	Change	Change	Only for RIVELGAS plus/Combi and EX-PEX plus with more than one calibration gas (CH4 and C3h8)
“SCAL” writing is displayed showing the selected scale. User can choose ppm/vol or l/l/vol scale. For	Confirm and exit menu	Change	Change	Only for RVG+ 01, 02, 04, 05, 06 and 09 and for COMBI 01, 02, 04, 05, 06 and 10

4 BATTERY CHARGE

To charge batteries, switch off the instrument and insert it in the charger support (see fig. 3). A LED will indicate battery charge state.

Led flashes once per second: it means that it is charging batteries in fast-charge mode.

Led flashes twice per second: it means that it is charging in maintaining/trickle charge mode. Maintaining-charging is never stopped and it permits to have full charged batteries in order to have always the maximum device autonomy in operational situation.



Fig. 3

When the docking support is connected to the net, the led blinks two times quickly.

IMPORTANT: batteries has to be charged in safe places and without gas.

IMPORTANT: in case of unused device for long time, the device may not power on because of battery inactivity. could. If this happens, charge the device for at least 16 hours.

5 MAINTENANCE AND PERIODICAL CALIBRATION

For a proper operation and good reliability of the device, QED Environmental Systems Limited suggests to control and calibrate the instrument periodically, and at least, once a year.

It is reminded that QED Environmental Systems Limited releases a calibration certificate (ISO 9001) after each instrument calibration.

6 WARRANTY

The device is guaranteed against production defects according to law.

During warranty, QED Environmental Systems Limited will repair every defect in fabrication. Warranty does not cover damages if the device has been used improperly. Warranty will lose validity if repairs are not completed by QED Environmental Systems Limited or an authorized service distributor. This guarantee is valid in all countries where QED Environmental Systems Limited and/or an authorized agent are distributing RIVELGAS. **QED Environmental Systems Limited gives no warranty on the instrument calibration.**

IMPORTANT

Please read the instructions carefully before using the instrument to make it work perfectly. No guarantee is granted if the device is not handled according to the instructions written in this manual. QED Environmental Systems Limited is at your disposal for any further information you may want concerning use and maintenance of the instrument.

PLEASE NOTE

QED Environmental Systems Limited is constantly committed to develop and improve its products, thus accepts no liability for technical modifications carried out without notice. For the same reason we take no responsibility for rightness of information and images in this manual.

		Data creazione modulo: 01.04.2008 - SpKa Data creazione documento: 13.02.2017 - FoCe
3.0		
		Certificate UNI-EN-ISO 9001

EU Declaration of conformity



The company Huberg S.a.s. declares, that the product:

RIVELGAS plus, EX-PEX plus, RIVELGAS combi and ODORGAS*
is in conformity with the provisions of the following EC directives and that the standards and/or technical specifications referenced below have been applied:

2014/30/EU Directive (Electromagnetic Compatibility, EMC):

EN 61326-1 (2013)

2014/34/EU Directive (Equipment for explosive atmospheres, ATEX):

EN 60079-0:2012/A11 (2013)

EN 60079-11 (2012)

EN 60079-1 (2014)

EN 60079-29 -1 (2007)

EN 50271 (2010)



II 2G Ex ib d IIC T4 Gb

(TPS 11 ATEX 1 572 X) (FTZU 10 ATEX 0315)

Notified Body ATEX QM 0123

Manufacturer:

Authorized Representative:

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This declaration is exclusively issued under the responsibility of the manufacturer or, where appropriate, by the authorized representative.

Bolzano, 30/07/2018

ATEX-commissioner



*(Commercial name)



7 7 APPENDIX A – SAFE USE OF THE INSTRUMENT

INTRODUCTION

This safety instruction is for installing, working and for the maintains of the gas leak detector instrument RIVELGAS/EXPEX type and for use it in areas with potentially explosive atmospheres. The equipment covered by these instructions is characterized by the following marking:



The information contained in these safety instructions must be followed in addition to the warnings in the user manual supplied to the customer.

GENERAL

Instrumentation equipped with battery and sensors for the detection of gas leaks. Used for the detection of leaks on the gas meters and in the distribution gas network, and finally how to use it for personal safety.


INSTALLATION

Suitability of equipment into installation site

In the case of use in areas with danger of explosion must verify that the type of detector is suitable at the classification of the area and at the flammable substances in the system. The essential requirements of security against the risk of explosion in dangerous areas are established by the European Directive 2014/34/EU (in respect of equipment) and 1999/92/CE of 16 December 1999 (as regards facilities). The criteria for classifying areas at risk of explosion are explained in the norm EN60079-10. The technical requirements of electrical installations in dangerous areas are established in the EN60079-14.

In the label on the instrument, in addition to functional data, there are also a referred to the references to the notified responsible for certification.

Security Summary

II 2 G	Instrument for detecting the presence of gases or vapors of category 2 suitable for zone 1 with redundancy for zone 2
Ex ia d	Instrument with intrinsically safe circuits and chamber of analysis for Gas with explosion-proof enclosure
IIC	Equipment for gasses of group IIB and IIA
T4	Temperature class of equipment (surface temperature)
CE	Mark of conformity to the applicable European Directives
	Mark of conformity for Directive 2014/34/EU
CESlxxATEXyyy	Name of the laboratory that issued the CE certificate; xx = Year of issue; yyy = number of the certificate.
XXXX	Number of the Notified Organization conducting the surveillance system production

Notes:

- a) The devices for Group IIB are suitable also for group IIA;
- b) Equipment with temperature class T4 are also suitable for all the substances with higher class temperature (T3, T2, T1);

Other precautions for the usage

The charging of the batteries must be in a safe place with the appropriate external adapter.

Do not open the instrument by unauthorized personnel, the opening of which invalidate the certification.

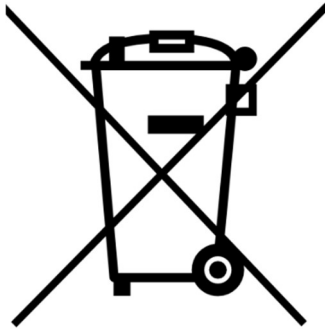
TESTING AND MAINTENANCE

The checks and maintenance of certified equipment should be performed according to the criteria of the standard EN60079-17.

REPAIR

In the event of malfunction or damage, it is recommended to send the equipment to QED Environmental Systems Limited or an authorized service distributor who will repair it.

8 APPENDIX B - INFORMATION ON DISPOSAL FOR USERS OF WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (PRIVATE HOUSEHOLDS)



This symbol on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste

handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.



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