


 **Pietro
Fiorentini®**
HMCom

Modem GSM/GPRS



User manual

Edition 0.4	Date 25/02/2016
-----------------------	---------------------------


 Pietro Fiorentini®	HMCom User Manual	ENGLISH

ENGLISH

Edition	Revision	Date
0	4	2/25/2016

Index

1. Introduction	2
1.1 Description	2
1.2 Safety Information	2
1.3 Block Diagram/external connections	3
1.4 Electrical characteristics / IS parameters	3
1.5 Marking	4
1.6 Safety instructions for installation in the hazardous area	5
1.7 Models	5
2. Technical characteristics	6
2.1 Environmental	6
2.2 Mechanical	6
1.1 2.2.1 Case	6
2.3 Electrical	6
1.2 2.3.1 Power supply	6
2.4 Communication	6
2.4.1 Local Communication	6
2.4.2 Remote communication	6
2.4.3 Antenna	6
2.4.4 SIM	6
3. Installation.....	7
3.1 Mechanics installation	7
4. Replacing the battery.....	11
4.1 Battery Features	11
4.2 Replacement Procedure	11
5. Communication settings.....	12

 Pietro Fiorentini®	HMCom User Manual	ENGLISH

1. Introduction

1.1 Description

HMCom is a GSM/GPRS modem device provided with compatible optical serial interface with the gas meters produced by Fiorentini with a rating capacity of 10, 16 and 25 m³/h. According to the needs dictated by adequate GSM coverage for HMCom, two installation types are planned, described in the block diagrams indicated in the follow paragraph:

In particular, there is a distinction between:

Local installation: models HMCom and HMCom-RA

Remote Installation: model HMCom-R

When inside the niche where the gas meter is installed there is not sufficient GSM coverage, you can install HMCom outside of this niche.

HMCom-R is the optical probe that, when connected via a cable with maximum length of 10 meters to HMCom, allows you to make the local optical communication with the gas meter.

HMCom-R uses the same container forecast for HMCom.

More details about the types of installation forecast are available in paragraph 3 of this document.

1.2 Safety Information

HMCom is a system suitable for interfacing with an electronic system Ex-i installed in an hazardous area.

The following section provides the safety instructions regarding the requirements of the ATEX regulations.

HMCom can be installed in hazardous area (area 1) in compliance with the requirements of standard 94/9 EC, category 2G type of protection Ex ib IIB, temperature class T3, ambient temperature -25/70 °C.

All models in the range HMCom are IS systems designed and manufactured in compliance with the following standards:

EN 60079-0: 2009 Electrical apparatus for potentially explosive atmospheres. General requirements.

EN 60079-11: 2012 Electrical apparatus for potentially explosive atmospheres. Intrinsic safety.

1.3 Block Diagram/external connections

HM Com is a system installed in a hazardous area that communicates with another Ex certified system in hazardous area via optical communication; it also performs remote communication via a GSM/GPRS module. HCom consists of a single card, powered by a lithium battery; no connections with other systems in the safe area have been forecast.

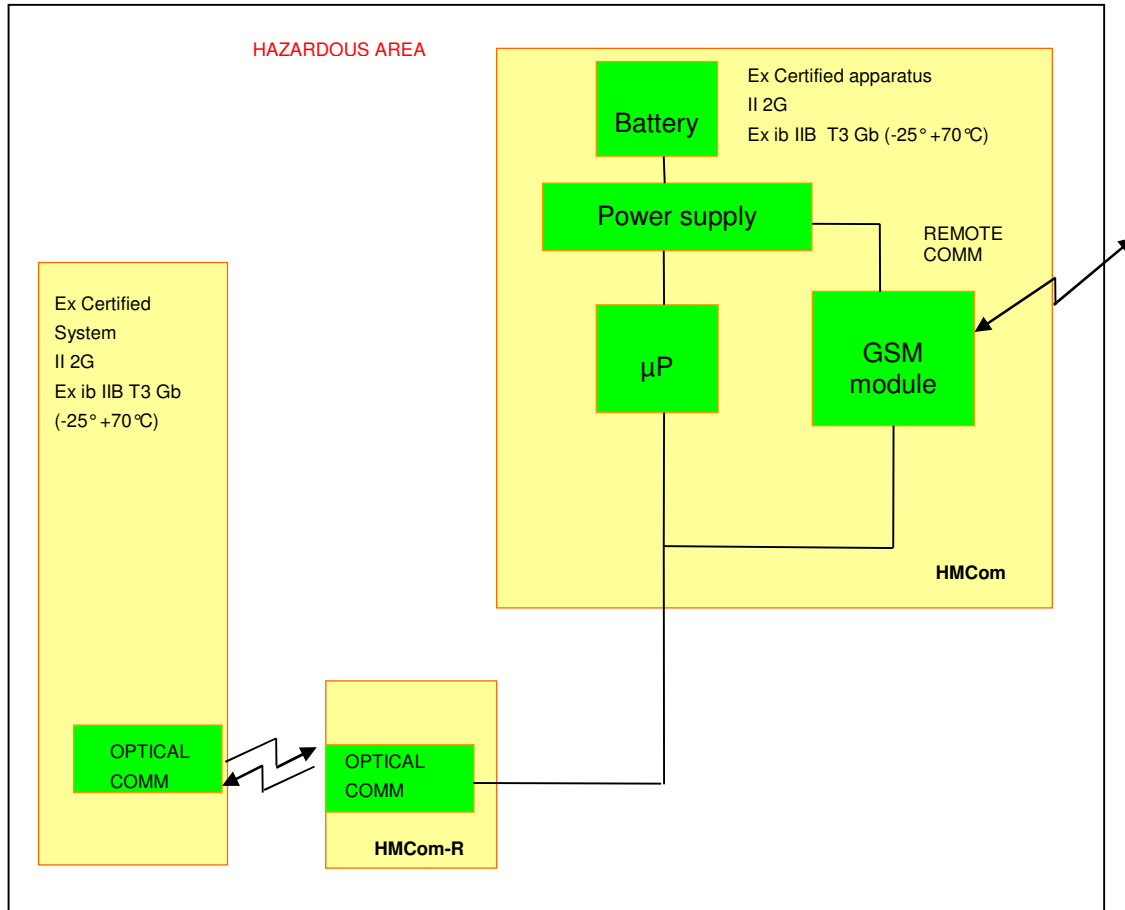


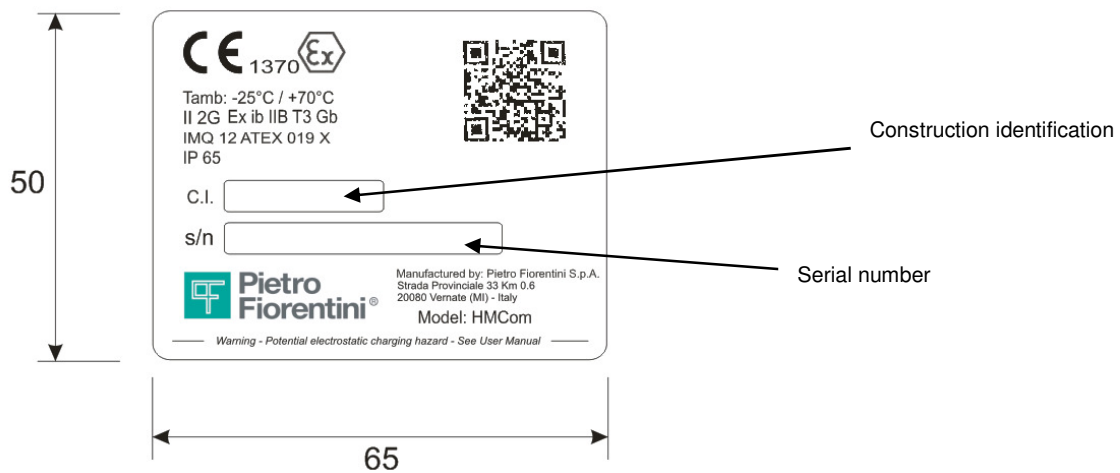
Fig.2 System's block diagram HCom-R

The optical interface is positioned on the HCom card, as shown in 1a. Alternatively the same optical interface is available on a separate card HCom-R, electrically connected with HCom, as shown in FIG. 1b. The parameters of the optical interface comply with the requirements of EN 60079-28. A special version of HCom (HCom-RA) is provided with a panel connector for the connection of an external antenna.

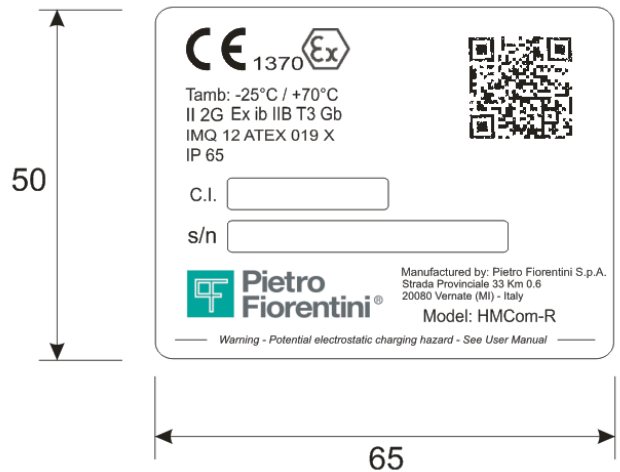
1.4 Electrical characteristics / IS parameters

No connections are forecast with the system in the safe are; it is forecast a connector for connecting the remote probe only (HCom-R).

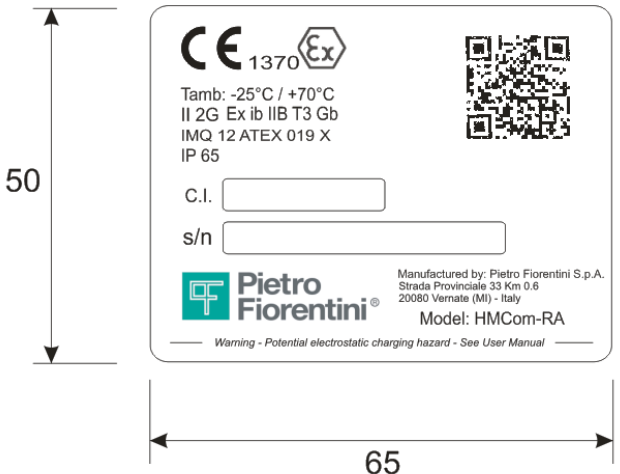
1.5 Marking



Marking HMCom




Marking HMCom-R



Marking HMCom-RA



CE  II 2G Ex ib II B T3 Gc Tamb: -25°C ÷ +70°C

II : group II
2G : category
Ex ib IIB : type of protection, gas group
T3 : temperature class
Gb : Equipment protection level
Tamb: -25°C ÷ +70°C : ambient temperatures

1.6 Safety instructions for installation in the hazardous area

HMCom must be installed and maintained according to the following reference standards:

EN 60079-14: Electrical installation in hazardous area

EN 60079-17: Inspection and maintenance of electrical installations in hazardous area

Pay particular attention to:

- environmental conditions, suitable for the installation of the devices mentioned above
- corresponding parameters (type, manufacturer, electrochemical system, rated voltage and the rated capacity of the battery) that allow a proper and safe battery replacement.

Although during normal operation there is no presence of dangerous potentials on the device, the use of dissipative footwear and of a damp cloth ($\rho\% > 65\%$) is recommended during the maintenance activity. For more information see CEI50404

1.7 Models

Field C.I. identifies the model of the system described below:

0A=HMCom

0B=HMCom-R (HMCom for remote installation)

0C=HMCom-RA (HMCom with connector for external antenna)

2. *Technical characteristics*

2.1 *Environmental*

Operating temperature	-25 ÷ +70 °C
Protection degree	IP65

2.2 *Mechanical*

1.1 2.2.1 *Case*

Material	PC-ABS
Size	L145xH150xP40mm
Weight	< 500g
Opening	Rear door

2.3 *Electrical*

1.2 2.3.1 *Power supply*

Power source: Primary battery, lithium-thionyl chloride (Li-SoCl₂), size D, 3.6V - 13Ah

Reorder Number: AS0639T01M01R00

Autonomy: Eight years at the following conditions:

- 4 messages of 5s duration on days 1,3,6,9,12,18,21,24,27 of each month
- 8 messages of 5s duration on days 15, 30 of each month
- Firmware Download: 40 seconds/year

Registration to the GSM network = 20sec.

With the following temperature profile:

5% @ -25 °C
20% @ -10 °C
50% @ 22 °C
20% @ 55 °C
5% @ 70 °C

2.4 *Communication*

2.4.1 *Local Communication*

Physical interface	optical interface
Speed	9600baud

2.4.2 *Remote communication*

Modem	GPRS class8, GSM, SMS, dual band (900MHz/1800Mhz)
Format	Assembled Module SMD

2.4.3 *Antenna*

Type	pcb
Gain <0 dB	
Size	80x20mm (L x H)

2.4.4 *SIM*

SIM on chip and alternatively traditional SIM - 2FF format

3. Installation

3.1 Mechanics installation

The system is designed for wall or pole installation with dedicated support (HMCom-R) and for joint installation with the plastic totalizer of the gas meter produced by Fiorentini, caliber 10,16 and 25m³ / h

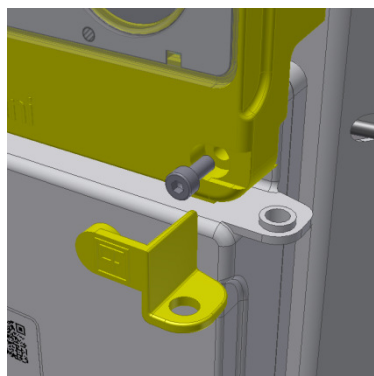
Install away from high voltage wires or interference sources such as inverters, high-power motors or backup systems.

For HMCom/HMCom-RA:

Install the system using the slide mechanical connection located in the upper part of the case and inserting it in the suitable seat on the lower side of the totalizer of the electronic meter.

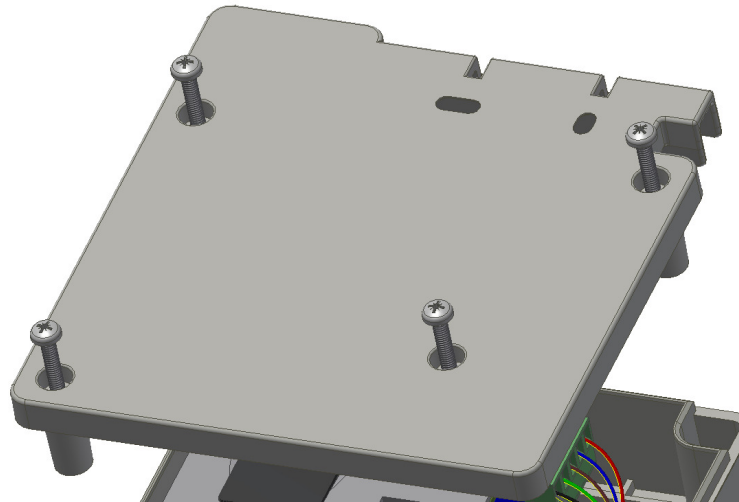


Then screw the M4x16 screw and insert the plastic cap for sealing as shown in the following figure:



For HCom-R :

1- Loosen the 4 screws on the bottom of the container of HCom and remove it.



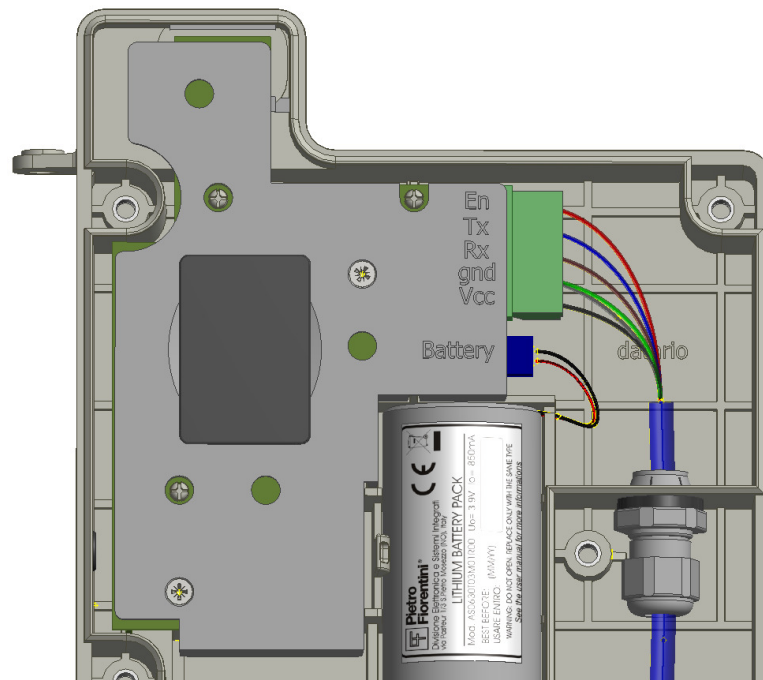
2-Remove the rubber grommet from its seat, pierce it and pass the cable.

Unscrew the cap of the grommet and insert the cable after removing the plug.

Pull the movable part of the 5-way connector visible inside the case and shown in the figure and wire it in accordance with the following image.

Use shielded cable 5ways 5x0,5mm² maximum outside diameter = 7mm; connect the screen of the cable to GND.

We indicate below the cable model recommended for the connection: p / n 20032 Tronic -CY manufacturer Helukabel



3-Reassemble the mobile part of the connector, tighten the grommet and reinsert the rubber grommet into place.

Close the case.

4-Repeat the same operations on HCom-R

5-Fix HCom to the wall or to a pole and cover the ram plugs/screws with the plastic cap provided and illustrated in the following image:



6-Install HMCom-RA to the totalizer of the meter as HMCom/HMCom-RA (see image below)



For HCom-RA

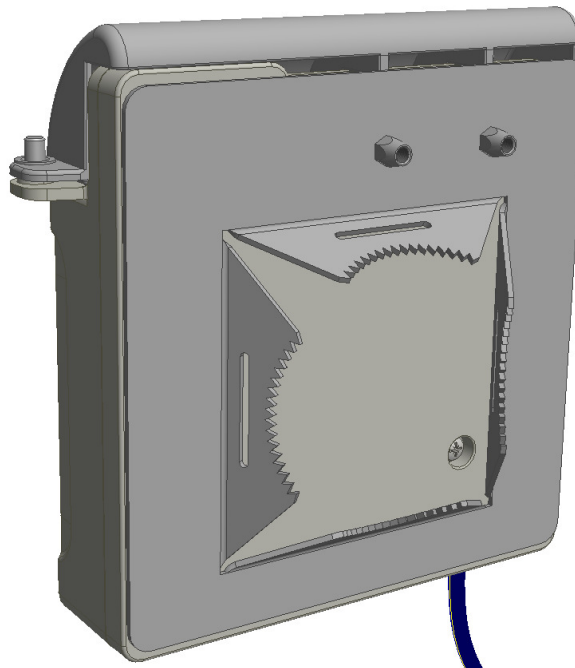
HCom-RA has, unlike HCom, a SMA female connector for remote antenna installation.

The installation procedure is the same as for HCom (see image below).



For pole installation, supports are required (not included in the package) to be placed on the back of the system and fastened to the same by means of 2 screws M4 x 6.

Use metal or plastic bands to attach the system to the pole.





4. Replacing the battery

4.1 Battery Features

HMCom and HMCom-RA have a proprietary battery pack; the supplied battery can only be replaced with a battery pack supplied by Pietro Fiorentini, code AS0639T01M01R00.

HM Com-R is not equipped with batteries

4.2 Replacement Procedure

1. Loosen the screws on the bottom of the container and remove it.
2. Extract the battery connector in the wiring compartment and visible when opening the case (see image at par. 3.1, paragraph 2)
3. Remove the battery from its housing
4. Replace the battery
5. Insert the connector (beware: the connector is polarized and can only be inserted in one direction)
6. Close the case.

 Pietro Fiorentini ®	HMCom User Manual	ENGLISH

5. *Communication settings*

For all communication settings please refer to the manual HM10-16-25 downloadable from www.fiorentini.com