Safety Instructions
Supplement to User´s Manuel

for

GMH 31xx - ex

Typen/Types:

GMH 3111 - ex,	**GMH 3151 - ex,**
GMH 3156 - ex	
GMH 3161-01 - ex,	**GMH 3181-01 - ex,**
GMH 3161-07 - ex,	**GMH 3181-07 - ex,**
GMH 3161-12 - ex,	**GMH 3181-12 - ex,**
GMH 3161-13 - ex,	**GMH 3181-13 - ex,**
GMH 3161-07B - ex,	**GMH 3181-07B - ex,**
GMH 3161-07H - ex,	**GMH 3181-07H - ex**

0081

GREISINGER electronic GmbH
D - 93128 Regenstauf, Hans-Sachs-Straße 26
☎ +49 (0) 9402 / 9383-0 🖷 +49 (0) 9402 / 9383-33 ☞ info@greisinger.de

Safety Instructions:

- **Battery operation:**

  Only the usage of approved batteries is allowed!
  Battery exchange must only be made outside of the hazardous area!
  Approved batteries are:

Battery type	Manufacturer	Battery name
6F22	GP	GREENCELL , 9V (1604G)
6LF22 *or* 6LR61	GP	SUPER Alkaline, 9V (1604A)
	Duracell	DURACELL PLUS, Alkaline, 9V
	Varta	**power**one alkaline, 9V (No. 4122)
	Varta	INDUSTRIAL, Alkaline, 9V (No. 4022)

- **Mains operation:**

  only use power supply's of the type GNG 10/3000!
  The operation with external power supply is not allowed in ex Protection-Zone!

- **Pressure sensor:** (for GMH 3111 - ex, GMH 3151 - ex and GMH 3156 - ex)
  1) You must only use sensors of the GMSD...-ex or GMXD...-ex series!
     Usage of other sensors may result in destruction of sensor and device.
  2) When using a **GMH 3156-ex** with **2 stainless steel sensors** take care, that the sensors are not screwed in or have contact to surfaces with different electrical potentials.

- **Internal pressure sensor:** (at GMH 3161 - ex and GMH 3181 - ex)

  The sensors are suitable for use with air and non-corrosive and non-ionic working gases!
  It cannot be permitted to use the sensor in liquids, even if there is a different statement in the manual of the device!

- **Output = serial interface:**

  Only use interface converters of the type GRS3100, USB3100 and GRS3105!
  The operation of serial interface is not allowed in Ex Protection-Zone.

- **Output = analog output:**

  Only use the analog output with passive voltmeter !
  The operation of the analog output is not allowed in Ex Protection-Zone.

- **Ex-Zone operation:**

  The operation in Ex-Zone is only allowed in the accompanying leather case!

- **Temperature range:**

  The operation is not allowed below -10°C.
  The permissible ambient temperature range is deviant to the device manual: -10°C to +50°C

- **Ambient conditions:**
  Take care that the device is not exposed to environments that make the intrusion of humidity, water, conducting liquids or dust possible.

- **Potential equalisation:**
  All components (pressure sensor, power supply unit, interface, etc.) connected to the device must be on the same potentials! If this is not guaranteed, you have to connect them for a potential equalisation.

- **Non intrinsically safe use:**
  The devices can also be used as non intrinsically safe device for connection of non intrinsically safe devices (i.e. power supply unit, interface converter, etc.).
  Only approved accessories must be used at this operation mode, too!
  Before the device is used as intrinsically safe device again, you have to check for visible damages and control functionality before you put it to the leather bag.

General Safety Instructions:

This device has been designed and tested in accordance with the safety regulations for electronic devices. However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advises given in the operating manual will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if the device is not subjected to any other climatic conditions than those stated under "Specification" in the operating manual.
   If the device is transported from a cold to a warm environment condensation may cause a failure of the function. In such a case make sure the device temperature has adjusted to the ambient temperature before trying a new start-up.
2. **Consider the operating instructions and the regulations referring the use of electrical equipment for hazardous areas (e.g. VDE0165)**
3. If device is to be connected to other devices (e.g. via serial interface) the circuitry has to be designed most carefully. Internal connection in third party devices (e.g. connection GND and earth) may result in not-permissible voltages impairing or destroying the device or another device connected.
4. If there is a risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.
   Operator safety may be risk if:
   - there is visible damage to the device
   - the device is not working as specified
   - the device has been stored under unsuitable conditions for a longer time.

   In case of doubt, please return device to manufacturer for repair or maintenance.
5. Any changes or repair of the device is not allowed.
   Please return device to manufacturer for repair or maintenance.

BUREAU VERITAS

(1) EC-Type Examination Certificate

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EC**

(3) EC Type Examination Certificate Number

EPS 09 ATEX 1 227 X

(4) Equipment: Handheld pressure gauge
GMH 3111 ... ex, GMH 3151 ... ex, GMH 3156 ... ex
with sensor GMSD…-ex and GMXD…-ex and the devices
GMH 3161 ... ex, GMH 3181 ... ex

(5) Manufacturer: GREISINGER electronic GmbH

(6) Address: Hans-Sachs-Strasse 26, 93128 Regenstauf
Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) Bureau Veritas Consumer Product Services Germany GmbH, Notified Body No. 2004 in accordance with Article 9 of the Council Directive 94/9/EC of March 23rd 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive. The examination and test results are recorded in the confidential report 09TH0333.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006 **EN 60079-11:2007**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

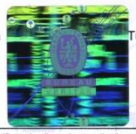
(11) This EC Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

Ex II 2G Ex ib IIC T4

Certification department of explosion protection Türkheim, February 26, 2010

G. Kuttler



Page 1 / 3

Certificates without signature are void. This certificate is allowed to be distributed only if not modified.
Extracts or modifications must be authorized by Bureau Veritas Consumer Product Services Germany GmbH.
This certificate is internally administrated under the following number: 10-018

(13) **Annexe**

(14) **EC Type Examination Certificate EPS 09 ATEX 1 227 x**

(15) Description of equipment:

The GMH 3111 ... ex, GMH 3151 ... ex, GMH 3156 ... ex, GMH 3161 ... ex and GMH 3181 ... ex is a pressure measurement device for gauge pressure, absolute pressure and differential pressure measurement with external or internal sensors. There are different type variations possible. The equipment is handheld with battery supply. All devices have a communication port. The equipment is only allowed for use with the communication devices GRS 3100, GRS 3105 and USB 3100 outside of hazardous locations. For measurement the associated certified sensors GMSD...-ex, and GMXD…-ex can be attached. For reduction of electrostatic charge hazard the devices are only allowed for use in hazardous area together with the appropriate leather bag. The leather bag is also used as special fastener to secure the battery from falling out. The devices can be charged outside hazardous area with the associated power supply with not intrinsically safe circuit. When the device is used in hazardous area the intrinsically safety characteristics must not be tested again but a visible inspection for external damage and a functional test is required. The allowed ambient temperature range is from -10°C to +50°C.

Electrical data:

Battery supply:
U_bat_max = 10,38 V
I_k_max = 0,093 A,
P_max = 0,24 W, linear characteristic

The device has either one internal sensor or one respectively two intrinsically safe output circuits for the connection of one or two certified sensors for pressure and differential pressure measurement with following maximum values:

Uo = 10,38 V
Io = 0,093 A
Po = 0,24 W
Co = 1240 nF
Lo (conc) ~ 0
The summation of internal capacities of the sensors and wiring shall not exceed Co. The presence of concentrated inductances is not allowed. It is recommended to use the sensor types stated in the manufacturers datasheet.

BUREAU VERITAS

(16) Test report: 09TH0333

(17) Special conditions for safe use:

In hazardous area the device is only allowed for use with the appropriate leather bag. Only batteries which are stated in the instructions manual are allowed for use. The battery change and the connection to external devices is only allowed outside hazardous locations. The environmental conditions in the instructions manual are mandatory for safe use. Before use the equipment must be inspected for visible or functional damage.

(18) Essential health and safety requirements:

Met by standards.

Certification department of explosion protection Türkheim, February 26, 2010

G.Kuttler

CE

EC – Declaration of Conformity

For the following identified products

GMH 3111 - ex, GMH 3151 - ex, GMH 3156 - ex, GMH 3161-... - ex, GMH 3181-... - ex

and

GMSD … .. - ex, GMSD … ..E- ex

will certified herewith, that the device corresponds to the essential protection ratings established in the Regulations of the Council for the Approximation of Legislation for the member countries regarding electromagnetic compatibility (2004/108/EG), the low voltage directives (2006/95/EG) and the Ex directive (RL 94/9/EG).

The conformity to EMC and Ex are verified under observance of following standards:

EMC: **EN 61326-1 : 2006**

Ex: **EN 60079-0**
EN 60079-11

This declaration is responsible for the manufacturer

GREISINGER electronic GmbH
Hans-Sachs-Straße 26
D - 93128 Regenstauf

released by

Hinreiner, Alois
Director BU

Regenstauf	*11.03.2010*	i. A.
place	*date*	*signature*