# INSTALLATION AND USER GUIDE ACOUSTIC / OPTO-ACOUSTIC SIGNALS IN ATEX EXPLOSION-PROOF HOUSING – GAS AND DUST

# KLM214A – SGV214A



## AND IN A WATERPROOF HOUSING

KLM344E – SGV344E











NFC214A\*KLM2 -UK

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## 1. PRESENTATION OF ALARM UNITS



EXPLOSIONPROOF ALARM UNITS

AUDIO-VISUAL ALARM UNIT SGV 214 A

WEATHERPROOF ALARM UNITS



VISUAL ALARM UNIT FEF 344 E6 AC/DC AUDIO-VISUAL ALARM UNIT SGV 344 E



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#### **EQUIPMENT FOR INDUSTRIAL SITES**

#### **EXPLOSION-PROOF ALARM UNITS**

## TYPE KLM 214A AND SGV 214A

These devices can be installed in explosive atmospheres (surface industries) and comply with the ATEX 2014/34 / EU directive.

Check the compatibility between the information on the nameplate, the explosive atmosphere present, the area of use and the ambient and surface temperatures.

#### Ex db IIB T6 Gb ou Ex db IIB+H2 T6 Gb for the category II2G Ex db IIB T6 Gb / Ex tb IIIC T85°C Db IP6X for the category II2GD

SEE THE INSTRUCTION GUIDE ON PAGE 7

## WEATHERPROOF ALARM UNITS

TYPE KLM 344E AND SGV 344E

IP RATING : IP66

#### NOTE

#### **CAUTION !**

EACH AND EVERY COMPONENT PART IS INTEGRAL TO THE METHOD OF PROTECTION AND CANNOT BE MODIFIED IN ANY WAY WHATSOEVER, INCLUDING THE CABLE ENTRIES.

> WARRANTY IS ONLY VALID WHERE THE PRODUCTS ARE INSTALLED AND USED STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS DESCRIBED IN THIS MANUAL.

NO GUARANTEE CAN BE INVOKED IN THE EVENT OF A DETERIORATION RESULTING FROM EXTERNAL FACTORS OR DUE TO LACK OF ADHERENCE TO USER INSTRUCTIONS.

IN THE DESIRE FOR CONSTANT IMPROVEMENT, THE INFORMATION CONTAINED IN THIS DOCUMENT AND THE CHARACTERISTICS OF THE EQUIMENT MAY BE SUBJECT TO MODIFICATIONS WITHOUT PRIOR NOTICE.

EUROPÉAN STANDARDS

UNITS BEARING THE CODE "CE" CONFORM TO EMC DIRECTIVE (2014/30/EU) AND THE DIRECTIVE RELATING TO LOW VOLTAGES (2014/35/EU) FORMULATED BY THE EUROPEAN COMMUNITY.

UNITS BEARING THE CODE " EX " CONFORM TO ATEX DIRECTIVE (2014/34/EU) AND CONFORM TO EUROPEAN STANDARDS

EN IEC 60079-0 : 2018 « General rules » / IEC 60079-0: 2017 EN 60079-1 : 2014 « Explosion-proof housing d » / IEC 60079-1: 2014 EN 60079-31 : 2014 « Housing t » / IEC 60079-31: 2013

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#### **1.2 CONTENTS OF THE PACKAGE**

#### The equipment supplied includes :

- An audio or visual, or audio-visual alarm unit.
- A user guide.
- A plastic sachet including for type :

#### **<u>KLM 214A</u>** (ATEX) :

1 cable gland type EGM8ATX for cable diam.7 to 12 max + 1 cable gland type EGM8ATX not mounted.

#### **SGV 214A** (ATEX) :

1 cable gland type EGM8ATX for cable diam.7 to 12 max + 1 cable gland type EGM8ATX not mounted.

#### **KLM / SGV 344E :**

A pocket for the wall fixing ref: GM208A12 Comprising:

• 4 sealing washers Ø6 Ref: RIX79 to be assembled imperatively with the screws (not provided) to fix the box.

cable glands Ref : GM208A10.

Includes :

- 1 cable entry type ESL11C8\*10 for diam. 8/10 max cable
- 1 cable entry type ESL11C8\*10 for diam. 12/14 max cable
- 1 cable entry reducer PE16/11
- 2 sealing caps

#### **1.3 GENERAL PRESENTATION OF ALARM UNITS**

The explosion-proof or weatherproof alarm units are designed to trigger remotely audible signal (SOUNDER) or audible and visual (SOUNDER + FLASHING BEACON).

The powerful audible signal is adjusted by a jumpers.

The include a power supply, conforming to the technical features and an optional trigger signal which can be the telephone ring current, or a low voltage (<60V).

Optionally, remote controls TC2 and TC3 can be used to change remotely the different types of signalling, to expand the capabilities of the unit .

## 2. <u>TECHNICAL FEATURES</u>

## **AUDIO ALARM UNITS**

- Operational voltage : 230VAC or 115VAC or 48VDC or 24VDC
- Power consumption :  $\leq 450$ mA on 48VDC
  - $\leq$  500mA on 24VDC
- Sound power : 15 Watts
- Audio level max at 1m for Weatherproof sounder:
  - $\geq$  110 dB (48vdc on bi-tone mode 1100Hz 1300Hz)
  - $\geq$  110 dB (230vac on ringing mode Lelas1 and 2)
- Audio level max at 1m for Explosion-proof sounder:
  - $\geq$  100 dB (48vdc on bi-tone mode 1100Hz 1300Hz)
  - $\geq$  100 dB (230vac on ringing mode Lelas1 and 2)
  - -2 dB step by step adjustable level.
- Frequency : Low : 350Hz ± 10% and 450Hz ± 10% High : 1100Hz ± 10% and 1300Hz ± 10%
- Tow-tone frequency : approx. 1Hz Lelas 1 ringing melodie : high frequencies chaining Lelas 2 ringing melodie : low frequencies chaining
- Operating temperature without degradation : -40°C ; +70°C (Waterproof version)
- Storage temperature : -40°C ; +80°C

## AUDIO-VISUAL ALARM UNITS

- Operational voltage : 230VAC or 115VAC or 48VDC or 24VDC
- Remote control voltage :  $35V \le TC1 \le 100V$  AC or DC
- Powerful Consumption : ≤ 500mA on 48VDC
   ≤ 1A on 24VDC
- Max flash power delivered : approx. 15 Joules (Version A6 /E6)
- Max flash power delivered : approx. 21 Joules (Version A7 / E7)
- Frequencies : 1 flash/s cadencer 1, 2, 3, flash/3s
- Frequency : Low : 350Hz  $\pm 10\%$  and 450Hz  $\pm 10\%$ 
  - High : 1100Hz  $\pm$  10% and 1300Hz  $\pm$  10%
- Two-tone frequency : env. 1Hz
- Operating temperature without degradation : -40°C ; +70°C (Waterproof version)
- Storage temperature : -40°C ; +80°C

## 3. USER INSTRUCTIONS FOR EXPLOSION-PROOF ENCLOSURE

#### **IMPORTANT**

# THE FIRST PUTTING INTO SERVICE SHOULD BE REALISED BY WORKERS WITH SUFFICIENT AND APPROPRIATE TRAINING WITH REGARD TO HAZARDOUS AREAS.

#### ANY REPAIR OR MODIFICATION OF THE UNIT BY THE USER IS NOT ALLOWED WITHOUT A FORMAL MANUFACTURER AGREMENT.

#### MARKING ACCORDING TO ATEX DIRECTIVE 2014/34/EU

The marking includes the following information:

• Adress :	<b>LE LAS</b> 99, Rue Alexandre Fourny F94500 Champigny sur Marne
• Marking : <b>CE0080</b>	
• Designation type :	214A5G (gas) or 214A5GD (gas and dust)
• Manufacturing year :	20
• Specific marking :	Ex II2G (gaz)
	(gas and dust) in IIB only
• Additional marking :	Ex db IIB T6 Gb for the category II2G or Ex db IIB+H2 T6 Gb
	Ex db IIB T6 Gb Ex tb IIIC T85°C Db IP6X for the category II2GD
• Ambient temperature of use :	Tamb20°C to +50°C
• EU-TYPE examination certificate :	INERIS 03ATEX0238X
• IECEx certificate of conformity :	IECEx INE 20.0071X

#### • The specification : **AVERTISSEMENT / WARNING:**

#### NE PAS OUVRIR SOUS TENSION / DO NOT OPEN WHILE ENERGIZED DANGER POTENTIEL DE CHARGES ELECTROSTATIQUES - VOIR INSTRUCTIONS POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS

• special specification :

- version with porthole :

DELAI D'ATTENTE AVANT OUVERTURE 12MN WAITING TIME PRIOR OPENING

- Threads: 3/4" NPT
- product reference
- Serial number

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Marking conforms to CENELEC standard:

- EN IEC 60079-0 : 2018 « General Rules » / IEC 60079-0: 2017
- EN 60079-1 : 2014 « Explosion proof Housing d » / IEC 60079-1: 2014
- EN 60079-31 : 2014 « housing t » / IEC 60079-31: 2013

#### SET-UP / USAGE

The allowing instructions must be read in conjunction with :

- 1- standard NF C 15 100.
- 2- European ATEX 2014/34/EU and annexes
- 3- standard EN 60079-14 (electrical installations in gaseous explosive atmospheres).
- 4- standard EN 60079-17 (inspection and maintenance in hazardous environments).
- 5- Decrees, orders laws directive, applications circulars, standards, rule book and every other document regarding the location of its installation.
- 6- EN 61241-14 : Installation and selection
- 7- EN 61241-17: Inspection and maintenance of electrical installations located in hazardous locations (other than mines).

Failure to comply with these does not engage our responsibility. The installation of the equipment must be carried out by qualified, competent and authorized personnel.

These devices can be installed in explosive atmospheres (surface industries) and comply with the ATEX 2014/34 / EU directive.

Check the compatibility between the information on the nameplate, the explosive atmosphere present, the area of use and the ambient and surface temperatures.

#### ELECTRICAL CHARACTERISTICS

The maximum operational current is 250 Volts. The maximum power dissipated withing the enclosure is no greater than 50 watts.

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#### SPECIAL CONDITIONS FOR SAFE USE

For installation in dusty explosive atmospheres, the user must lubricate the cover gasket face and carry out regular cleaning in order to avoid dust deposits.

For IIB+H2, the enclosure shall be cleaned with an antistatic or damp cloth.

Use screws (ØM8) of grade 8.8 minimum or grade A2 stainless steel and grade 70.

The gaps and lengths of the explosion-proof joints are detailed on the plan. TLH214A5ACE rev.B.

#### **MAINTENANCE INSTRUCTIONS**

The following points should be checked at least once a year

- Exterior equipment and faces must not be damaged.
   No drilling or machining operation should be carried out.
- ¬ The cable entries and blanking plugs must be of an appropriate certified type suitable for the intended area of use and screwed to the box with at least 5 threads engaged using a suitable wrench.
- $\neg$  Check that the parting line has no scratches or impacts.
- ¬ Check the tightness of the terminals and other connections; rewire if necessary.
   The terminal blocks are designed for wires of 1.5mm<sup>2</sup> or 2.5mm<sup>2</sup> max.
- ¬ The external earth terminal must be connected to an equipotential earth circuit and lubricated with an oxidation-resistant grease.
- Before closing, check the cleanliness of the joint surface (absence of chips or filings).
   Lubricate the gasket face with an oxidation-resistant grease.
- ¬ Secure the cover to the box using ØM8 screws of class 8-8 minimum or stainless steel of grade A2 and quality 70. Make sure that all the screws are present.
- After tightening, insert a shim of: 15/100 mm for group IIB 4/100 mm for group IIB + H2

on the perimeter of the parting line, its non-penetration is the assurance of the product's compliance with standards.

#### 

## 4. DESCRIPTION OF THE UNITS

#### 4.1 DESCRIPTION OF THE EXPLOSIONPROOF ALARM UNITS

Enclosure including an EPIKOTE painted cast aluminium backing case and cover. The hinged cover is secured by means of 8 stainless steel screws Ø8. Explosion-proof classification : Ex d IIB T6 II2GD. Certificate of conformity : INERIS 03ATEX0238X/01 IP rating : IP65.



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#### 4.2 DESCRIPTION OF WEATHERPROOF ALARM UNITS

Enclosure including an EPIKOTE painted cast aluminium backing case and cover.

The cover is secured on a weatherproof seal by 4 hollow hexagonal stainless steel screws  $\emptyset$ 6 of which 2 are used as hinges. The heads are recessed. IP rating : IP66.

Weight : 5.5Kg.

AUDIO ALARM UNIT TYPE KLM344E



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## 5. <u>CONNECTIONS AND ADJUSTMENTS OF THE ALARM UNITS</u>

#### 5.1 OPENING THE ALARM UNITS

#### **EXPLOSIONPROOF UNITS**

To open the back, unscrew the 8 screws of the enclosure with a ALLEN key #6.

#### WEATHERPROOF UNITS

To open the back, unscrew the 4 screws of the enclosure with a ALLEN key #5.

#### 5.2 EARTHING THE ALARM UNITS

The unit can be earthed either externally by the earth screw situated at the bottom of the unit with the  $\stackrel{(=)}{=}$  symbol, or internally via connector  $\stackrel{(=)}{=}$  on terminal BR3 of PCB WK258KLM.

## **IMPORTANT**

After connection, do not forget to refit the high voltage protection plate on the howler PCB.

#### 5.3 INCREASED IP RATING FOR EXPLOSIONPROOF ALARM UNITS

The IP54 rating of the explosion-proof unit may be increased to IP65 to conform to NFC 20010 level, by greasing the sealing surfaces of the cover and the backing case with silicon grease.

On initial installation and again on each and every occasion that the unit is opened, this precaution must be taken prior to re-sealing.

#### 5.4 CARD USING FACILITIES

This board produce audio emergency signals delivered to a high-power loudspeaker. The board may be main powered (230v/50/60Hz) or connected to a 24/48VDC.

- Two different using modes may be used to activate the sound, the first one is to connect a phone line on the line connecting block, the other one is to drive directly the power on the board.
- Due to a microprocessor based conception, the board is able to produce different tones through a strap moving facility. This board may be connected to a flashing unit board in order to add a visual effect to the sound one.

#### 5.5 DEVICE'S CARACTERISTICS

The board may work on stabilised power unit or directly on the main power.

#### IMPORTANT NOTE ! NEVER MOVE ANY SHUNT WHILE POWERED. BE SURE TO SWITCH OFF MAIN POWER BEFORE NEW SETTING.

#### 5.6 **POWER SETTING** :

- Main 230VAC or 115VAC : strap JP13 on position (1)
- > 24VDC power : strap JP13 on position (1)
- > 48VDC power : strap JP13 on position (0)

Connect power line (**230 or 115VAC**) on **BR3** Connect power line on **BR5**, connecting block, while checking + and – polarity when DC powered.

#### 5.7 ACTIVATING SETTING :

To produce sound, the board may be directly connected to power or activated remotely.

#### > <u>Phone activated</u> :

Place JP5 strap on « ON » position.

The sound will follow rings when JP4 is on « SYNC » position and may be during rings when JP4 is on « ASYC » position (in this case, sound will stop only 4 to 5 sec. after last ring).

Then connect phone line on BR4 connecting block (REN 1) with or without a parallel phone connected (REN of board=1).

#### > <u>Power activated</u> :

Place JP5 on OFF position. As soon as power is switch on, sound will be produced on pre-selected tone options.

#### 5.8 SOUND MELODIES SETTING

Due to the microprocessor based technology, this board allows differents. Emergency sound melodies liheas :

- Standard mode : strap JP1 on mode MS (1)
  - Evacuating sound 440Hz -330Hz strap JP3 on GRAV (1) and JP2 on BI (1)
  - Evacuating sound 1100hz-1300hz strap JP3 on AIGU (0) and JP2 on BI (1)
  - Mono tone 440Hz strap JP3 on GRAV (1) and JP2 on MONO (0)
  - Mono tone 1100Hz strap JP3 on AIGU (0) and JP2 on MONO (0)
- Extended mode : strap JP1 on mode ME (0)
  - Lelas 1 ringing melodie, high frequencies chaining, strap JP3 on AIGU.
  - Lelas 2 ringing melodie low frequencies chaining, strap JP3 on GRAV.

#### NOTE ! : DO NOT USE MONO TONE SETTING WITH EXTENDED MODE.

#### Note : Respect strap setting as previously explained

#### 5.9 STRAP REMOTE SETTING : WITH EXTENSION CARD WK026EXT

BR102 (TC2) and BR101 (TC3) connecting blocks allow by 24VDC remote voltage to change the melody type.

- Standard mode : JP1 on position MS (1)
  - If BR102 24V powered, forces sound to evacuating mode 440Hz -330Hz
  - If BR102 non powered, melody follows JP2 on position 1 settings already set.
  - If BR101 24V powered forces sound to mono tone (grave or aigu following JP3 setting or TC2 setting remote control).
  - If BR101 non powered, melody follows JP3 settings already set.
- ➤ Extended mode : JP1 on position ME (0)
  - If BR102 24V powered, forces sound to melody
  - If BR102 non powered, melody follows JP3 settings. Never connect any DC voltage on BR5 in this mode.

#### 5.10 VOLUME LEVEL ADJUSTMENT

Level may be modified by mean of JP6 and JP7 straps by 12db steps up to -36db attenuation.

#### 5.11 EXTRA CONTACT SEC

Wire a wire between the (-) terminal of the BR1 connector and the (-) terminal of the BR2 connector.

Move jumper located in "JP9" to "JP8"

A dry contact is obtained by connecting to the terminal block (+) of BR1 and (+) of BR2 "

#### 5.12 CONNECTION AND ADJUSTMENTS OF AUDIO ALARM UNITS



JPI	I - MS :	Standard mode
	0 - ME ;	Extented mode
JP2	1 - BIwith TC	3 : Remote changes to mono-tone
	v	without TC3 : TWO-TONE

TD 4

1 10

	without 105	. I WO IONL
0 - MONO	with TC3	: MONO-TONE

JP3	1 - GRAV	without TC2	: Low Frequencies
	0 - AIG	without TC2	: High Frequencies
		with TC2	: Remote changes Low frequencies

JP4 1 - ASY : Continuous Signal 0 - SYN : Signal to ringing rhythm

JP5	1 - OFF	without TC1 : Permanent
	0 - ON	with EXT. remote control TC1

	Min	Max		
JP6	0 - 0 -	1 - 1	: $JP6+JP7 = R$	Linging level
JP7	0 - 1 -	0 - 1		
JP8	= : Re	mote cor	ntrol direct curren	nt

- JP9 ~ : Remote control telephone ringing current
- **R7** : Volume speaker setting

#### POWER SUPPLY 24/48Vdc or 230Vac or 115Vac

- **BR3** : Power supply 230Vac or 115Vac
- **BR5** : Power supply 24/48Vdc
- **JP12** : Reset (jumper on position 1)
- **JP13** : Chose 24V or 48V

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#### 5.13 CONNECTION AND ADJUSTMENTS OF AUDIO-VISUAL ALARM UNITS



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#### 5.14 JUMPER POSITIONS AND FUNCTIONS ON SOUNDER PCB

JP1	1 - MS 0 - ME	: Standard mode ; Extented mode	
JP2	1 - BI 0 - MONO	with TC3 without TC3 with TC3	: Remote changes to mono-tone : TWO-TONE : MONO-TONE
JP3	1 - GRAV 0 - AIG	without TC2 without TC2 with TC2	: Low Frequencies : Hight Frequencies : Remote changes Low frequencies
JP4	1 - ASY 0 - SYN	: Continuous Signal : Signal to ringing rythm	
JP5	1 - OFF 0 - ON	without TC1 : Permanent with EXT. remote control TC1	
JP6 JP7	Min 0 - 0 - 1 - 0 - 1 - 0 -	Max 1 1	: JP6+JP7 = Ringing level
JP8 JP9	= : Remo ~ : Remo	note control direct current note control telephone ringing current	

R7 : Volume speaker setting

#### POWER SUPPLY 24/48Vdc or 230Vac

- **BR3** : Power supply 230Vac
- **BR5** : Power supply 24/48Vdc
- **JP13** : Chose 24V or 48V

#### JUMPERS POSITIONS AND FUNCTIONS ON FLASHING BEACON PCB

- TC1 OFF : Without remote control function ON : Rigger by telephone
- T SYN : Signal to telephone rhythm ASY : Continuous Signal
- AL.T = : Direct current

- EXT. remote control TC1
- **\$** : Alternating current (telephone line)

## 6. MAINTENANCE MODE

#### **MAINTENANCE**

The alarm units does not need much maintenance to remain in perfect operating condition. Carry out maintenance as follows, if necessary.

## **EXPLOSIONPROOF ALARM UNITS :**

#### EXTERNALLY

- Clean with a wet duster.
- If you use a high-pressure case (preferably 50 bars), keep jet 1.5m from unit, only if the IP rating as been increased to IP65.

#### INTERNALLY

No maintenance is required inside the enclosure.

> Do not pour any liquid inside the enclosure.

## WEATHERPROOF ALARM UNITS :

#### EXTERNALLY

- Clean with a wet duster.
- ▶ If you use a high-pressure case (preferably 50 bars), keep jet 1.5m from unit.

#### EXTERNALLY

No maintenance is required inside the enclosure.

- > Do not pour any liquid inside the enclosure.
- > Check the weatherproof seal and his right place.

## 7. <u>SPARE PARTS LIST</u>

•	Sounder PCB + extension card	WK 258 KLM/AV
•	Sounder PCB	WK084KLM
•	Extension card	WK026EXT
•	Converter board	WK 064 CFF
•	Flashing beacon PCB 15 Joules	WK 064 FEF2 /15J
•	Flashing beacon PCB 21 Joules	WK 064 FEF2 /21J
•	Loudspeaker 15 Ohms / 15W	CE 225 V7

## 8. PROBLEM SOLVING

Before calling in the after-sales service, we recommend to check the following points :

## SOUNDER PROBLEM

#### THE SOUNDER DOES NOT WORK.

- Check power supply 230VAC or 24/48VDC.
- Check the fuse F1.
- Check the loudspeaker and connections to it.
- Remove jumper JP5 in position « OFF ». The sounder should ringing continuously in this case. If not replace the board.

## THE SOUNDER DOES NOT STOP RINGING.

- Check that jumpers :
- JP5 is in position « ON ».
- JP9 is in position CA for a telephone line or JP8 in CC for direct current (DC) remote control.
- Without mains power send a ring signal 2 3 times to set in the remote control relay in the correct position.

## THE SOUNDER FOLLOWS RINGING RYTHM OR VICE VERSA.

• Check the position of jumper JP4.

## PROBLEM WITH THE FLASHING BEACON

- Check the connection between the sounder and the beacon (power supply and remote control).
- In case of direct current (DC) power supply, check that the converter board is connected (24/48VDC on 230VAC).
- Check the lamp.
- Remote jumper TC1 in position 1 and power the board. The beacon will flash once per second. If not, the flash signalling PCB is faulty and needs to be replaced.

## THE FLASH SHOWS CONTINUOUSLY.

- Check that jumper TC1 is in position 2.
- AL.T is in position  $\sim$ .if operating on telephone ringing current.

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