

ALARM CONTROL UNIT FOR FLAMMABLE GASES

INSTRUCTION MANUAL



DALEMANS® GAS DETECTION



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1 GENERAL REMARKS

1.1 Responsibilities - guarantees

The installer is required to respect $\boldsymbol{\varepsilon}$ standards and installation provisions.

The installation must be conducted by qualified personnel.

All our equipment is tested and inspected in our workshops before shipping.

This manual must be read carefully by anyone who is or will be responsible for the installation, use and/or maintenance of this equipment. The guarantee offered by **DALEMANS sa/nv** will be void if this equipment is not installed, used, and maintained in compliance with these instructions, warnings, and limits of use.

By following these instructions, you guarantee the proper working of the equipment. Please contact **DALEMANS sa/nv** for any information about the use or maintenance of this product.

ONLY use original **DALEMANS** sa/nv parts when performing maintenance on the equipment as described in this manual. Otherwise, you may seriously alter the equipment's performance.

Any repair or maintenance performed without respecting the procedures described in this manual or without help from our after-sales service may prevent the equipment from working correctly and, as a result, prevent guaranteeing the safety of the occupants of the building and installations.

This equipment must be installed indoors, in a clean and dry area. Please use a screen (box) to avoid any projections of water of polluting agents. Do not hesitate to contact **DALEMANS sa/nv** for any additional information concerning the use of maintenance of this product.

DALEMANS sa/nv cannot be held responsible for any direct or indirect damage as well as any direct and indirect monetary damages resulting from the failure to comply with these guidelines.

DALEMANS sa/nv guarantees that this product is free from manufacturing defects and agrees, at its sole discretion, to repair or replace any component which is defective or likely to become so in the context of normal use during the warranty period specified in the general terms of sale.

This guarantee does not cover elements such as batteries, fuses or any other component provided by a third party.

Claims concerning the **DALEMANS sa/nv** product guarantee must be made in the guarantee period specified above and within five calendar days of the discovery of the problem. Please contact your **DALEMANS sa/nv** after-sales service to register your claim.

For any additional information, please refer to **DALEMANS sa/nv** general conditions available on request.

1.2 Safety information

Symbol	Description
	Protective ground terminal
<u> </u>	Warning: risk of electric shock
\triangle	Warning: refer to instruction manual

⚠ Do not open the equipment without disconnecting the mains power supply first!

The installation and commissioning of U•H6 control unit must be performed by qualified personnel only. Qualified personnel are trained and accredited by **DALEMANS sa/nv** During installation, refer to the standards in application.

Should the equipment be installed or used in a manner not specified by **DALEMANS sa/nv**, the protection provided by the equipment may be impaired.

Modification, disassembling and total or partial destruction of this equipment may invalidate the essential safety requirements of the whole plant.

For commissioning, please contact DALEMANS sa/nv to arrange an appointment.

1.3 Environment



The presence of the crossed-out wheelie bin logo on this product means that you are required to respect the regulations in force concerning the collection and recycling of waste electrical and electronic waste.

These provisions aim to preserve the natural resources used to produce this product and to avoid the dispersal of substances which are potentially harmful to the environment and human health.

Once this product reaches the end of its life, you MUST discard it by taking it to an approved collection center for the recycling of electrical and electronic equipment.

For more information on collection and recycling centers in your region, please contact your local or regional administration.

1.4 Device targeted by the document

This document has been redacted specifically for U•H6 gas detection control unit (reference 01253) in its V2 version. The version of the associated firmware is v3.03.

Device	Reference	Device version	Firmware version					
CENTRAL U•H6	01253	V2R0	v3.03					

For all information on the installation, use and configuration of a U•H6 in V1 version, please refer to the U•H6 instruction manual in its V1 version.

1.5 Operating principle

The U•H6 is a fixed device for automatic alarm management related to explosive gas detection. The D-TEX 3F+ detector is a fixed device that continuously transmits a signal to the U•H6 control unit proportional to the concentration of gas detected in the air.

Before the LEL¹ of the observed gas is reached in the atmosphere, this electronic control unit has the possibility to act on safety equipment such as:

- the closure of a gas valve,
- the cut-off of the electrical current,
- the triggering of an alarm.



It is strongly recommended to place the control unit outside the zone being protected!

Two adjustable alarm thresholds are respectively associated with the actions on the relays. These are relays controlling the safety equipment connected thereto.

A U•H6 control unit output specifically adapted for the connection of a sounder, or a flash lamp is automatically activated in case of alarm. At any time, it may be reset from the U•H6 control unit. The U•H6 control unit also has internal fault management. Once detected, any abnormal operation of a detector or the control unit is indicated by an action on the relay signaling the technical fault. This function guarantees the reliability of gas detection.

¹ LEL: Lower explosive limit: the concentration from which an air/gas mix becomes hazardous.

The U•H6 unit also has internal fault management. Notification is sent via a relay signaling a technical fault once any unusual use of the unit or a detector is detected. This function thus ensures the reliability of the gas-detection system installed.

The status of the U•H6 unit and the triggering of each of the functions presented may be viewed via the front panel of the unit at any point in time:

- The display has a backlight that varies in color depending on the status of the U•H6 unit and shows a message explaining the status.
- There is a set of color LEDs.
- There is a resettable buzzer which is triggered when the fault or alarm functions are triggered.

Image: Display Image: Display</p

1.6 Display interface

1.6.1 LED indicators

LED indicators								
« Power » LED	The control unit is powered on							
« Battery » LED	ON : A battery is installed and correctly detected BLINKING : A battery is present but is discharged, or failing, or battery voltage is too low.							
« Fault » LED	There is at least one active fault condition.							
« Inhibit » LED	The control unit is in a special state: gas concentration measurements and alarm management are still running; the alarm statuses are not updated. This mode automatically exits after 15min without any user interaction.							



~	Allows the user to move around a menu or a selection						
\checkmark	Allows the user to move around a menu or a selection						
>	Allows the user to enter a sub-menu or launch the action associated with the menu item selected						
<	Allows the user to exit a sub-menu and return to the parent menu						
ENTER	Allows the user to enter configuration mode, to confirm a change of settings or to launch the action associated with the menu item selected						
ESC	Allows the user to exit the configuration menus entirely or cancel the modification of the settings in progress and return to the parent menu						
RESET 1 x	Allows the user to turn off the buzzer and the siren output						
RESET 2 x	Allows the user to do the following: - reset an alarm, on the condition that the alarm is no longer active - reset the faults for which there are still notifications, but which are no longer valid.						

1.6.3 Display

The status of the U•H6 unit is indicated by the **messages** on the display and the color of the backlighting.

Backlighting	Backlighting Off Green		Yellow	Red				
Mode	Standby	No Alarm	Maintenance	Alarm				
Message	 No Alarm in there are not set of the set o	ndicates that active alarms.	Maintenance interval exceeded: <i>Maintenance required</i> .	Looped display of the alarms that have been triggered. The highest alarm level per type of gas monitored is displayed. The ID of the detector, the				
	 Maintenand Next Main 	e Date: tenance	Technical Fault					
	Gas Conce Values for detectors.	entration each of the	Looped Display: • List of faults and technical faults	alarm level and the gas concentration measured is shown for each of the alarms displayed.				

- (i) Only alarm messages are displayed when an alarm has been triggered, so any messages associated with technical faults are no longer shown.
- (i) The display's backlighting goes into sleep mode after 60 seconds. As soon as the keypad is used, as soon as an alarm is detected or as soon as a technical fault appears, the U•H6 control unit goes out after sleep mode.

a) Alarm mode (gas detected)

The unit enters alarm mode when one or more alarm conditions have been met. The screen turns RED, indicating the alarm level of the highest active alarm.



The system can only exit alarm mode when all the alarm conditions have been reset.

b) Fault mode

The system can enter back-up mode when no alarm conditions have been met, but one or several fault conditions have been.



c) Normal mode

Normal mode is reached if, and only if, the following conditions have been met:

- No alarm conditions have been met.
- There are no faults.

In such a case, the screen is GREEN and states 'No alarm':



d) Standby mode

When there are no gas alarms or fault messages, the backlighting of the display enters standby mode after 60 seconds.

The system automatically exits standby mode when one of the following occurs:

- keyboard action
- detection of an alarm
- appearance of a technical fault

2 INSTALLATION

2.1 Precautions for use

For your safety, ensure that you are working **on a device that is powered off** before you do anything!

- ⚠ The housing of the U•H6 unit may only be opened by qualified technicians.
- The U•H6 unit must be placed in a room that does not have an explosive atmosphere and must always be easy to access.

The housing of the U•H6 unit can be inverted. It can be used in such a way that electric cables can be inserted from the top, or in such a way that they can be inserted from the bottom. However, to guarantee optimal sealing, it is recommended that you always insert the cables from the bottom.

The housing of the device is **IP65**-certified and is therefore protected against the presence of dust and water, provided that the installation instructions are followed.

The housing has several machined apertures. You will need to clear these machined apertures with a flat screwdriver and hammer to insert the cable glands.

A Before drilling these holes with a tool, it may be useful to remove the electronic part to avoid accidental damage.

Important note:

Never place the U•H6 control unit, the siren, and the detector cables in the vicinity of:

- a high-voltage cables or a power cable,
- coaxial cables or transmitters,
- welding stations or frequency regulators.

2.2 Placing the U•H6 unit

The U•H6 unit must be placed on a smooth, flat surface. Two fixing systems, a drilling plan and a quick installation guide are supplied with the device. You can choose to fix the unit using the housing or the four feet provided.







It is also possible to fix the U•H6 unit on a DIN rail (optional). Please contact your **DALEMANS sa/nv** representative for more information.

If you choose to fix the device without using the feet, attach the housing via the four holes provided for this purpose to the four corners of the housing using a PZ2 screwdriver that is at least 150 mm long.

See the quick installation guide provided for the different steps.

2.3 Connecting the control unit

The unit must be installed, and the electrical connections hooked up by a qualified technician, in accordance with the instructions given in this manual and on the diagram on the back of the cover of the U•H6 unit.

A circuit breaker (2 pins, 6A, 250V (AC)) must be placed on the live and the neutral. See the wiring example below.

It is recommended that the circuit breaker to be in the vicinity of the equipment.

Any installation must comply with the applicable local standards and regulations, as they pertain to the type of cable and the cross-sectional area of the wires to be used.

Ensure that the wires are securely connected to the connectors when connecting the electrical terminals. Use a maximum torque of 0.60 Nm. To ensure electrical safety, the wires that go from the cable glands on the housing to the terminals on the board must not be longer than 70 mm.

It is recommended that you always use wires with crimp ends to avoid any risk of bad electrical contact.

Example Connection Diagram for the U•H6 Unit:







2.4 Connecting the detectors

It is recommended to use a stranded, 3 wire cable with a conductor cross section from 0.75 to 1.5mm².

Į					TO DI	ISF	PLAY	RJ45		NOT	USED
Т			Max	3A - 240V (AC)		1	6	X DETECTORS 3F	+		
L	FUSE T 2A	NC NO C	NC NO C NC NO	C NC NO C NC NC	C NC NO C		SENSOR 4	SENSOR 5	SENSOR 6		
L	250V						31 32 33	34 35 36	37 38 39		
L	220-240V~(AC) 50Hz						V+ V- S	V+ V- S	V+ V- S		
L	L1 N 🕀						SENSOR 1	SENSOR 2	SENSOR 3	24 VDC	24VDC/200mA
L	1 2 3	4 5 6	7 8 9 10 11	12 13 14 15 16 17	18 19 20 21		22 23 24	25 26 27	28 29 30	40 41	42 43
L	MAINS	FAULT	1	ALARMS			V+ V- S	V+ V- S	V+ V- S	V+ S	s v-
L	POWER	RELAY				то	DTEX 3F+ DETECT	ORS	EXTERNAL	SIREN	
L	Power: 20W max		RELATI RELAT	Z RELATS RELAT	AL. REPEATER		v+ v- s	v+ v- \$	v+v- \$	INPUT	

The terminals coming from each detector must be connected to the U•H6 unit in the following order:

Detector terminals (Version V1R3)	CU Terminals (Version V2Rx)	Detector terminals (Version V1Rx)	CU Terminals (Version V1Rx)				
V+	V+	24V	24V				
V-	V-	GND	GND				
S S		OUT	IN				

Current marking of electronic boards

Former marking of electronic boards

- (i) The cables that connect the detectors and the U•H6 unit should not be more than 300 m long.
- (i) If the U•H6 unit is installed in an environment that contains sources of strong electromagnetic interference (transmitters, welding stations, switching relays, HF transmitters, cable runs or computer networks, etc.), it is preferable to use shielded cables to connect the detectors.
- ▲ Never use two or more wires to increase the cross-sectional area of the wire. The cable must be one length of cable (without connections) and properly connected to the appropriate terminals. Use a maximum torque of 0.60 Nm.
- Never place a detector cable next to a coaxial cable or a power cable and never in the same bundle or cable run.

2.5 Connecting the power supply

Connect the earth to terminal 3 and then the 230V mains voltage to terminals 1 and 2 on the terminal; see the box below.

Į				ТО D	DIS	SPLAY	RJ45		NOT	USED
L			Max 3A - 240V (AC))		6 X DETECTORS 3F	+)	
L	FUSE T 2A	NC NO C	NC NO C NC NO C NC NO C NC N	IOC NC NOC		SENSOR 4	SENSOR 5	SENSOR 6	1	
L	2500					31 32 33	34 35 36	37 38 39		
L	220-240V~(AC) 50Hz					V+ V- S	V+ V- S	V+ V- S	1	
L	L1 N 🕀					SENSOR 1	SENSOR 2	SENSOR 3	24 VDC	24VDC/200mA
L	1 2 3	4 5 6	7 8 9 10 11 12 13 14 15 16 1	7 18 19 20 21	.	22 23 24	25 26 27	28 29 30	40 41	42 43
L	MAINS	FAULT	ALARMS			V+ V- S	V+ V- S	V+ V- S	V+ S	Ś V-
	POWER SUPPLY Power: 20W max	RELAY	RELAY 1 RELAY 2 RELAY3 REL	AY 4 RELAY 5		тс V+ V- Š	D DTEX 3F+ DETECT	• V+ V- S	EXTERNAL ALARM INPUT	SIREN OUTPUT

It must be possible to electrically isolate the U•H6 unit for maintenance (protection via a circuit breaker or double pole switch).

The power supplies for the U•H6 unit and the different devices must be connected to the same circuit. Ensure that the power conductors are always attached together and kept separate from the low-voltage conductors.

The power cables for the 230 V part must have a minimum cross-sectional area of 1.5 mm².

The U•H6 unit is a Class-I device. The U•H6 unit must always be connected to the earth, in accordance with the instructions given in this manual.

2.6 Connecting the siren

Connect the **S** and **V**– terminals on the siren to the U•H6 unit (Terminals 42 and 43, respectively). Respect the polarity to avoid damaging the siren.

Į							ТО	DI	SPLAY		(RJ45				NOT	USED
L				Max 3	A - 240V (AC)				\square		5 X DE	ECTORS 3	-+				
L	FUSE T 2A	NC NO C	NC NO C	NC NO	C NC NO	C NC NO	C NC NO (2	SEN	SOR 4	SE	NSOR 5	SE	NSOR 6			
L	2307			·	<u> </u>		_ ·	ı İ	31 3	32 33	34	35 36	37	38 39	9		
L	220-240V~(AC) 50Hz)	/				V+	v- s	v+	v- s	v+	v- s			
L	L1 N 🕀								SEN	SOR 1	SE	NSOR 2	SE	NSOR 3	24	VDC	24VDC/200mA
L	1 2 3	4 5 6	789	10 11 1	12 13 14	15 16 17	18 19 20 2	1	22 2	23 24	25	26 27	28	29 30) 40	41	42 43
L	MAINS	FAULT	1		ALARM	s			V+	v- s	v+	v- s	V+	v- s	_ V+	s	Ś V-
l	POWER SUPPLY Power: 20W max	RELAY 1	RELAY 2	RELAY3	RELAY	4 RELAY 5	2	V+	тс V- \$	OTEX V+	SF DETEC	TORS	v- s		RNAL RM PUT	SIREN OUTPUT	

The cables used to connect the siren must meet the same requirements as the detector cable (see Connecting the Detectors).

See the operation manual for the siren for instructions on how to connect the siren and configure its tone.

2.7 Connecting the relays

The U•H6 unit has four relays that can be addressed by the alarms, a technical-fault relay, and an alarm repeater relay. Diverse types of devices can be wired to these relays, such as air blowers or extractors, sirens, LED warning signs or flashing lights, etc.

Į				TO D	DI	SPLAY	RJ45		NOT USED
L		\square	Max 3A - 240V (AC)		ר		6 X DETECTORS 3F	+	
L	FUSE T 2A	NC NO C	NC NO C NC NO C NC NO C NC NO C NC N	ос	:	SENSOR 4	SENSOR 5	SENSOR 6	
L	2304					31 32 33	34 35 36	37 38 39	
L	220-240V~(AC) 50Hz					V+ V- S	V+ V- S	v+ v- s	
L	L1 N 🕀					SENSOR 1	SENSOR 2	SENSOR 3	24 VDC 24VDC/200mA
L	1 2 3	456	7 8 9 10 11 12 13 14 15 16 17 18 19 2	0 21	1	22 23 24	25 26 27	28 29 30	40 41 42 43
L	MAINS	FAULT	ALARMS			V+ V- S	v+ v- s	V+ V- S	V+ S S V-
l	POWER SUPPLY Power: 20W max	RELAY	RELAY 1 RELAY 2 RELAY3 RELAY 4 REL AL. RE	AY 5 PEATER	J	тс V+ V- Š	V+ V- S	V+ V- S	EXTERNAL SIREN

2.8 Connecting a battery

The U•H6 unit has a 'smart' battery charger. A proportional, controlled charge prevents early wear and tear, or damage of the battery connected.

A compatible battery, which is sold separately, comes as standard with the U•H6 unit. Please contact your DALEMANS sa/nv representative to order a battery.

The "Battery" LED on the U•H6 central unit flashes only if:

- The battery voltage is too low.
- The battery is discharged.
- The battery is defective.

(1) The useful lifespan of a standard battery is estimated to be four years. It is essential to replace it after that. If a battery is defective, its charge is inhibited to avoid damaging it.

Ensure that the U•H6 unit is not under power before starting the installation procedure.

Clear the front panel by unscrewing the four corners and disconnecting the flat connection cable.

Then, place the battery in the housing provided for this purpose, before following the steps below:

1. Connect the battery, respecting the polarity.

The U•H6 unit turns on.

The Power LED stays off.

The "Power Failure" message appears, and the Fault LED lights up.

The Battery LED lights up as soon as the U•H6 unit detects the battery.

- This detection operation may take a few sections.
- 2. Reconnect the flat connection cable.
- 3. Turn the power for the U•H6 unit back on.
- 4. The fault message disappears after a few seconds. The Power and Battery LEDs light up.

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- 5. The fault message disappears after a few seconds. The Power and Battery LEDs light up.
- (1) The U•H6 unit may place itself in an unknown status during this operation. As a result, it may be necessary to restart it correctly by pressing the Reset button on the motherboard.

2.9 First start-up

Before you power on your U•H6 unit, please ensure that the terminals have been tightened properly and the power voltage is in the acceptable operating range_for the U•H6 unit.

Please contact **DALEMANS sa/nv** to set up a commissioning appointment.

The LEDs on the motherboard must light up when the device is powered on. It is important that the user checks that these are all green and not flashing, except for the yellow LED on the right-hand side of the motherboard, which should flash on and off at one-second intervals.

Immediately after the unit is powered on, the LCD screen on the unit must turn blue and the buzzer should make a short, uninterrupted sound.

3.1 Configuration mode

The configuration mode for the U•H6 unit comprises a set of menus that allows the system settings to be configured. The user can access these menus, regardless of the status of the U•H6 unit, by pressing **ENTER** on the keyboard (if the display is in standby, the user should first exit standby mode by pressing any key). Once in this mode, the display backlighting **turns blue**.

The U•H6 unit automatically exits configuration mode after an idle period of 60 seconds (a period in which no action is performed using the keyboard) and returns to the appropriate mode: normal mode, if no faults or alarms have been signaled; fault mode, if a fault, but no alarms, have been signaled; or alarm mode if an alarm has been signaled.

3.2 Configuration principle

The factory settings for the U•H6 unit are intended for underground car parks and may be changed depending on the intended use.

All the channels are deactivated in the factory. A detector-detection script must be run, so that all the channels to which detectors have been connected can be activated (see § 5.3.1 Detecting the detectors).

A gas-detection system controlled by the U•H6 unit must be configured as follows:

- 1. Detect the detectors and activate the input channels.
- 2. Select the appropriate "standard config."
- 3. [Optional] Adjust the settings specific to the installation.
- (i) These operations require the intervention of qualified technicians. Contact **DALEMANS sa/nv** for more information.

3.3 Factory configuration

The U•H6 control unit comprises a factory configuration which can be adapted based on the installation in question.

By default, the U•H6 control unit is configured as follows:

- 6 detectors placed in a single zone,
- 2 relays per alarm level, functioning simultaneously:
 - o 2 first relays (terminals 7 12 on the diagram) associated with alarm of level 1,
 - \circ 2 final relays (terminals 13 18 of the diagram) associated with alarm of level 2,
 - relays not in failsafe mode, i.e., not powered at rest and powered in case of alarm,
- Gas concentration thresholds set at:
 - o 20% LEL for alarm level 1

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- o 40% LEL for level 2,
- operation with no battery,
- the input for an external alarm is disabled,
- The alarm repeater relay is associated with the level 1 alarm.

Defau		F	R1	R2	R3	R4	AR	SO	
Channel #	Measurement range	FAULT	>						
Channel 1	0 > 100%/151	A1		>	>			>	S
Channel I	0 -> 100%LEL	A2				>	>		S
Channel 2	0 > 100% El	A1		>	>			>	S
Channel 2	0 -> 100% LEL	A2				>	>		S
Channel 2	0 -> 100% LEL	A1		>	>			>	S
Channel 3		A2				>	>		S
Channel 4	0 > 100% 51	A1		<	<			>	S
Channel 4	0 -> 100% LEL	A2			V V V V V V	S			
Channel F	0 > 100% 51	A1		>	<			~	S
Channel 5	0 -> 100% LEL	A2				~	~		S
Channel C	0 > 100% 51	A1		~	~			>	S
channel 6	0 -> 100% LEL	A2				>	>		S

Where:

- A1 = alarm level 1, set on 20%LEL by default
- A2 = alarm level 1, set on 40%LEL by default
- SO = siren output
- F = Fault relay
- Rx = Alarm relay x
- **AR** = Alarm repeater
- I selected column
- S = the alarm level from the selected row is mapped to the relay/output from the selected column in siren mode

(i) For more information about all the standard configurations available, please contact **DALEMANS sa/nv**.

4 USER MENU

The user can access the menus presented in this section, since they do not require any restricted access privileges.

4.1 Main menu

The user can access the main menu by simply pressing ENTER:



4.2 Info menu

The Info menu provides information about all the components of the U•H6 unit.

All these items can only be accessed in read-only mode, except for the date.



(1) The user can navigate the menus using the arrow keys on the keyboard and then make their selection by pressing ENTER.

4.2.1 History

View History allows the user to view the events that have been logged by the unit. These are given in chronological order.

4.2.2 Calibration age

The *Calibration Age* menu allows the user to view the time that has passed since the detectors were last calibrated. This allows the unit to generate a maintenance alert once the maintenance interval has been exceeded (see § 5.2 Advanced tests).

4.2.3 Battery age

Battery Age on the Info Menu allows the user to view the age of the battery, counted in days.

4.2.4 Firmware version

The Firmware Version on the *Info Menu* allows the user to view the version number of the firmware (the operating system for the unit).

4.2.5 Date and time

The date and time of the U•H6 unit are stored in Non-Volatile memory. They are only updated when the unit is powered.

If the date or time of the U•H6 unit is incorrect, the user can press **ENTER** on the keyboard to enter edit mode.

- *Edit Date & Time* appears.
- The cursor flashes on the value to be modified in the date or time field:



The user can change the field to be modified using the **Right** and **Left** arrow keys:

The user can change the value in the selected field using the Up and Down arrow keys.

Once the date and time has been updated, the user can confirm the modification by pressing **ENTER**.

The user can cancel the modification and return to the info menu by pressing ESC.

4.3 Configuration information

All the configuration items for the U•H6 unit can be consulted using the *Configuration Info* sub-menu, i.e.:



4.3.1 Base standard configuration



This is the base standard configuration, based on which the device was configured. The U-H6 is a device that allows a wide range of configurations.

Modifications to the configuration can be made following this selection.

(i) Please contact a **DALEMANS sa/nv** representative for more details about custom configurations.

4.3.2 Alarm thresholds

This item from the Con figuration info menu allows to view the configured alarm thresholds, for each alarm level, beyond which the control unit goes into alarm mode.

4.3.3 Relays failsafe modes

The safety mode of a relay defines its status when it is at rest:

- Not in failsafe mode: the relay is not powered at rest.
- Failsafe mode: the relay is powered at rest.

The failsafe mode of an alarm relay is unset by default. The failsafe mode of each alarm relay is independently configurable.

() By default, all relays are 'Not failsafe,' except for the fault relay which is always 'Failsafe.'

4.3.4 Reset mode for level 1 alarms

The reset mode for an alarm specifies the way in which it is reset:

- Latching mode: when the cause of the alarm has disappeared, the alarm remains activated until a manual action (RESET 2x) is performed on the control unit.
- Non-latching mode: when the cause of the alarm has disappeared, the alarm is automatically reset and disappears.

Only the reset mode for the level 1 alarms can be configured. A level 2 alarm always needs to be manually reset.

In manual reset mode, the U•H6 control unit can display an alarm message when the gas concentration has already returned to under the alarm threshold.



This configuration element applies to all level-1 alarms.

4.3.5 'Siren' mode for level 1 alarms

The '**Siren**' mode designates a specific behavior like that of the "Siren" output of the U•H6 control unit or its audible indicator: while the alarm is still active (the gas concentration is still greater than the alarm threshold), it is possible to reset the actions on the relays.

(i) This mode does not apply to level-2 alarms.

This configuration element applies to all level-1 alarms.

4.3.6 Channels information



The 'Channels info' item allows you to view the status list of the input channels.

The possible states are as follows:

- **Disabled**: Even if a detector is connected to this channel, it will be ignored by the central unit. No measurement or error status will be reported.
- Enabled: the measurement channel is active; the central unit reads the signal and acts accordingly.

4.3.7 External alarm menu



The *External alarm menu* allows the user to view the settings associated with the external alarm input, i.e., its behavior and the actions that are triggered when it switches.



- (1) The external alarm status must be enabled to display the other items in the '*Ext. alarm info*' menu.
 - a) Configuration of the external alarm

The external alarm can have the following configurations:

- Disabled: a status change on the input will not have any effect
- Set alarm level 1: a status change on the input will trigger alarm level 1
- Set alarm level 1: a status change on the input will trigger alarm level 2
- Set alarm levels 1&2: a status change on the input will trigger alarm levels 1&2

Ext. alarm config.



(i) Any enabling or disabling of settings should be conducted by a technician certified by **DALEMANS sa/nv**.

b) External alarm alternate name

An alternate name allows to give a specific name to the external alarm, so that it can be displayed on the screen in the event of an alarm is triggered.

Below is an example of what the display will show if an external alarm has been activated, where the alternate name has been set to "Fire alarm":



c) Latching mode

Latching mode allows the user to configure the latching mode for the external alarm:

- Latching: when the cause of the alarm is gone, the alarm remains active until manual action is taken on the unit (RESET button pressed twice).
- Non-latching: when the cause of the alarm is gone, the alarm is automatically reset and disappears.

(1) Only the reset mode for the level 1 alarms can be configured. A level 2 alarm always needs to be manually reset.

d) Siren addressing from the external alarm

Siren Addressing allows the user to define how the siren behaves when the external alarm is triggered.

The following statuses are possible:

- Addressed: the buzzer and the output siren of the unit are activated when the external alarm is activated.
- Not addressed: the buzzer and the output siren of the unit are not associated with the status of the external alarm input.

(i) Unaddressed Siren mode is useful when the actions taken on the relays must depend on what is connected to the external alarm input, without this being interpreted as a gas alarm (e.g., a fire-detection system).

e) Normal state of the external alarm

The external alarm, when enabled, is triggered by a change in status of its dedicated input on the U•H6 unit. This configuration item specifies the status of the input when idle and, as a result, the nature of the change in status that triggers the alarm.

The following statuses are possible:

- **Normally Closed**: the circuit connected to the input is closed when idle. Therefore, the external alarm is activated when the circuit opens.
- **Normally Open:** the circuit connected to the input is open when idle. Therefore, the external alarm is activated when the circuit closes.

4.3.8 Alarm repeater

The alarm repeater relay can be activated when an alarm of a specific level is activated. Configurations are as follows:

- Not addressed: the alarm repeater relay is never activated.
- Addressed by the level 1 alarm: The alarm repeater relay is activated when a level 1 alarm is activated regardless of the zone in which the alarm appears.
- Addressed by the level 2 alarm: the alarm repeater relay is activated when a level 1 alarm is activated regardless of the zone in which the alarm appears.
- Addressed by both levels: the alarm repeater relay is activated as soon as an alarm is activated regardless of its level and regardless of the zone in which the alarm appears.

4.3.9 Errors reset mode

The U•H6 Control Unit has an internal fault management. Once detected, any abnormal operation of the U•H6 Control Unit or detector is notified by an action on the relay indicating a technical fault.

The mode to reset a technical fault specifies how it is reset:

• Automatic reset:



When the cause of the error restored, the message is automatically reset and disappears.

Manual reset:



When the cause of the error disappears, the message remains visible until the user manually acknowledges it by pressing **twice** on the **MUTE/RESET** button.

Changing the error reset mode should be conducted by a technician certified by DALEMANS sa/nv.

4.3.10 Network info

Network Info is only available if the Ethernet interface has been enabled. This allows the user to view the following:

- The IP address of the U•H6
- The IP address of the network gateway
- (1) This menu is only available if the network interface is activated. Activation of the network interface is to be performed by a technician approved by **DALEMANS sa/nv**.
- (i) The MAC address is unique to each device and is in the form : 02 44 61 6C xx xx Where "xx xx" is a sequentially attributed number. The MAC address cannot be read or modified.

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4.4 Status menu

The Status menu allows the user to view the status of the components of the U•H6 unit.



4.5 Test menu

This *Test menu* allows the user to check that the display or the LEDs on the front panel are working correctly. Gas detection works as usual while a test is being conducted.



5 SERVICE MENU

Service menus allow us to modify the settings of the U•H6 unit that do require any knowledge regarding gas detection, or which cannot cause a gas-detection-related risk in the event of a fault or omission.

Please contact a technician certified by **DALEMANS sa/nv** for a more in-depth analysis of your individual situation.



5.1 Protected access

The Service Menu is protected by the following password:



▲ Do not use this password without reading the information contained in this manual. The functions on the Service Menu may affect the configuration of the unit!

When the user enters the Service menu, the display enters password-entry mode:



The **Up** and **Down** arrow keys allow the user to change the value of the character selected. The **Right** arrow key allows the user to move to the next character and the **Left** arrow key allows them to return to the previous character.

When the user moves from one character to another, the character that is no longer selected is hidden. This means that only the character being entered is visible.

ENTER password **<mark>0</mark>

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Certified ISO9001 • VCA www.dalemans.com The user can confirm the password they have entered by pressing **ENTER**. If it has been entered correctly, the Services Menu is activated and the *Tests Menu* sub-menu is displayed.

If the password entered is incorrect, the main menu remains active and the *Service menu* is displayed again.

5.2 Advanced tests

5.2.1 Outputs testing



This item on the *Test menu* allows the user to temporarily force the outputs to activate, to verify that they are working correctly (relays and siren).

▲ Testing an output of the U•H6 unit means that it is activated, along with the servos that are connected to it (a gas valve or siren, etc.).

(1) This test does not allow the user to disable an output that has already been enabled.

Once the output test option has been selected, the user must select the output to be tested using the **UP** and **DOWN** arrow keys.

The status of the selected output is displayed each time.





Transistorized output for the siren

In a second step, the control unit offers to select an adjustable delay after which the target output is activated for a configurable duration.

The possibilities are as follows:

- '*Immediate*': (no delay, the output is activated after confirmation)
- *'1 min'*
- '2 min'
- '3 min'
- *'5 min'*
- '10 min'
- '15 min'

Select	delay	
	3 min	

The user can confirm their selection by pressing ENTER.

In a third step, the control unit offers to select an adjustable duration for which the target output will be activated for.

Select	duration	
	5 s	

The possibilities are as follows:

- '5s'
- '15s'
- '30s'
- *'1 min'*
- '5 min'
- '15 min'

The system then asks for confirmation before switching the output.

```
General fault relay
Ready to activate?
```

The user can confirm the activation of the selected output by pressing **ENTER**. It is then activated, along with the equipment that is connected to it.

General fault relay Activated

The output remains activated for the duration of the output test.

This test ends:

- upon manual action by user (pressing the ESC key).
- when the maximum activation time for the output (15 minutes) has expired.

The user may interrupt and cancel the **Output Test** function at any time by pressing **ESC** key. The test sub-menu is then re-enabled and displays the output test function.

5.2.2 Simulating a detector

Navigation:				
Service menu	→	Tests menu	→	Sensor simulation

A gas-detection simulation can be conducted without disconnecting a detector that is connected to a measurement channel on the U•H6 unit.

Once the function has been selected, the user must select the detector for which the simulation should be conducted.

The simulation starts when the detector has been selected:

- The initial value for the simulation is the actual gas concentration read by the detector.
- The cursor flashes on the digit being modified (tens or units).

The user can modify the simulated gas-concentration value using the **Up** and **Down** arrow keys.

The user can use the **Right** and **Left** arrow keys to move from one digit of the gasconcentration value to the other, with the first digit changing the tens and the second digit changing the units.

The user can end the simulation by pressing ESC.

Alarm management operates as per usual during a simulation. This means that, if the simulated gas concentration exceeds an alarm threshold, the alarm is triggered and the associated outputs are activated, along with the servos connected to them.

5.2.3 Switching to the battery



This test forces the U•H6 unit to switch to battery power, as if there were a mains power outage.

The user can activate this function by pressing the **ENTER** key. The system then asks for confirmation before switching the power source.

Switch to battery Switch to battery? The user can confirm their request to switch power sources by pressing ENTER.

Switch to battery Switched to battery

The U•H6 unit then reacts as if it were powered by the battery only:

- The **POWER** LED turns off.
- The BATTERY LED lights up, but the power fault is not activated, i.e., the FAULT LED stays off.

This transition to battery-power operation is ended by one of the following:

- the user pressing **ESC**.
- the menu idle time expiring.

5.3 Configuration menu

5.3.1 Detecting the detectors



The factory settings of the U•H6 unit disable all the channels. The U•H6 unit then needs to be told how many detectors are connected.

This sub-menu can be used to get the U•H6 unit to verify the channels and display the situation as it sees it.

Detection and calibration phase

- A rotating symbol shows the progress of the calibration.
- A "-" (hyphen) symbol indicates a channel that does not have a detector or a channel that is connected to a detector for which the zero-calibration failed (too much signal interference).
- A "*" (asterisk) symbol indicates a channel that is connected to a detector that has been zero calibrated successfully.

The number of detectors detected and calibrated is also displayed:

The U•H6 unit asks for confirmation of the detected configuration:

New sensors config.? * * * * - -

Once the user has confirmed this by pressing **ENTER**, the detected configuration is loaded into the U•H6 unit. It is now operational. The user can cancel the modification and return to the info menu by pressing **ESC**.

5.3.2 Configuring the measurement channels

Once a measurement channel has been selected, the *Channels Menu* allows the user to do the following:

- assign a location to the detector.
- set the detector offline.
 - a) Setting a detector location



The location in the U•H6 unit allows the user to identify the detectors that are connected. By default, it is in the form **Detector x**, where x is the number for the detector input on the U•H6 unit.

The user may assign a location to a detector in two ways:

- Preset Location
- Custom Location

These two methods may be combined by customizing a location that has previously been chosen from the list of preset locations.

i) Preset locations

The U•H6 unit proposes a list of preset locations. This is available in three languages (English, Dutch and French). For details of the list, see **Annex E: Predefined locations**

The user selects the location from the list using the **Up** and **Down** arrow keys.

When the title of the location allows it (display is limited to 20 characters), an index from 1 to 9 may be added using the **Right** and **Left** arrow keys. Depending on the item selected, it may also be possible to select other variants. See **Annex E: Characters available for text edition**

The user confirms their choice of location by pressing ENTER.

The user may interrupt and cancel their choice of location by pressing ESC.

ii) Custom location

The location of a detector can be customized or completely modified. The U•H6 unit enters Location Edit Mode when the Custom Location function has been selected.

Location channel 3 Channel 3

The cursor flashes on the character being edited.

The **Up** and **Down** arrow keys allow the selected character to be edited. The user confirms their choice of location by pressing **ENTER**. The user can interrupt and cancel the editing of the location by pressing **ESC**.

b) Setting a detector to "Out of order"



It may be useful to set a detector offline while waiting for an authorized person to conduct a maintenance operation. When the **Out of order** function has been selected, the U•H6 unit shows the status of the selected detector.



The user can set the detector to "Out of order" by pressing **ENTER**. Confirmation is then requested.



The user confirms that the detector should be set offline by pressing **ENTER**. The technical-fault relay then switches on if it has not already switched.

```
Out of order setting
Out of order
```

The user may interrupt and cancel the procedure for setting the detector to offline at any time by pressing **ESC**. The configuration menu for the selected detector is then enabled once more.

The user can set a detector to online again in the same way.

A detector being "out of order" is a technical fault. This means that the fault relay switches on!

5.3.3 Configuring the external alarm



The *External alarm menu* allows the user to configure the settings associated with the external alarm input, i.e., its behavior and the actions that are triggered when it switches.



(i) The external alarm status must be enabled to display the other items in the *Ext. alarm menu*, except for the *Normal state* item. Normal state can be configured before enabling the external alarm to avoid false alarms.

a) Configuration of the external alarm

The external alarm can have the following configurations:

- Disabled: a status change on the input will not have any effect
- Set alarm level 1: a status change on the input will trigger alarm level 1
- Set alarm level 2: a status change on the input will trigger alarm level 2
- Set alarm levels 1&2: a status change on the input will trigger alarm levels 1&2

Ext.	alarm	config.
Disal	oled	

b) External alarm alternate name

An alternate name allows to give a specific name to the external alarm, so that it can be displayed on the screen in the event of an alarm is triggered.

External alarm <mark>E</mark>ire alarm The cursor flashes on the character being edited.

The **Up** and **Down** keys are used to change the selected character.

The **ENTER** key is used to confirm the choice of location.

The ESC escapes key interruptions and abandons the modification of the location.

c) Latching Mode

Latching mode allows the user to configure the latching mode for the external alarm:

- Latching: when the cause of the alarm is gone, the alarm remains active until manual action is taken on the unit (RESET button pressed twice).
- Non-latching: when the cause of the alarm is gone, the alarm is automatically reset and disappears.

(i) Only the reset mode for the level 1 alarms can be configured. A level 2 alarm always needs to be manually reset.

d) Siren addressing from the external alarm

Siren Addressing allows the user to define how the siren behaves when the external alarm is triggered.

The following statuses are possible:

- **Addressed**: the buzzer and the output siren of the unit are activated when the external alarm is activated.
- Not addressed: the buzzer and the output siren of the unit are not associated with the status of the external alarm input.

(1) By default, the external alarm is addressed to the siren output of the unit.

e) Normal state of the external alarm

The external alarm, when enabled, is triggered by a change in status of its dedicated input on the U•H6 unit. This configuration item specifies the status of the input when idle and, as a result, the nature of the change in status that triggers the alarm.

The following statuses are possible:

- **Normally Closed**: the circuit connected to the input is closed when idle. Therefore, the external alarm is activated when the circuit opens.
- **Normally Open:** the circuit connected to the input is open when idle. Therefore, the external alarm is activated when the circuit closes.

The user can begin to modify the currently defined normal status by pressing **ENTER**. The change to the opposite normal status is then proposed.

External alarm state Set normally opened?

The user can confirm the change in the normal status for the input for the external alarm by pressing **ENTER**. The user can cancel the modification and return to the info menu by pressing **ESC**.

5.3.4 Configuring the battery



This sub-menu allows the user to tell the unit that they have done something with the battery, namely:

- battery removed.
- new battery installed.
 - a) Removing the battery

A fault will be generated when there was a battery in the unit, and it has been removed. This then activates the technical-fault relay. The user then needs to tell the unit that it is now OK to work without a battery.

This menu allows you to configure two parameters related to the behavior of the backup battery:

- Set no battery: allows you to place the exchange in an operating mode that ignores the battery.
- New battery: this function resets the battery age counter. To be used during a replacement operation with a new, fault-free battery.

Once the function has been selected, the system asks the user to confirm that the battery has been removed.



The user can cancel the modification and return to the info menu by pressing ESC.

The user can confirm that the battery has been removed by pressing **ENTER**. The battery fault is cleared.



(1) Using this function when the battery is connected will not do anything, since the battery will automatically be detected again.

b) Installing a new battery

When a new battery is installed, it is automatically detected by the U•H6 unit and **smart** charging is started. The **Battery** LED on the front panel lights up (after a detection time of a few seconds).

However, the user needs to tell the U•H6 unit that it is a new battery, and that the batterymaintenance interval needs to be reset.

(1) This function is not available if no battery is installed in the U•H6.

When the function is enabled, the battery age is also displayed in days since it was installed.



Once the function has been selected, the system asks the user to confirm that a new battery has been installed.



The user can cancel the modification and return to the info menu by pressing **ESC**. The user can confirm that a new battery has been installed by pressing **ENTER**. The maintenance deadline for the battery is reset.

New battery 0 days

5.3.5 Configuring the network interface



This menu is only available if the ethernet interface has been enabled. This allows the user to modify the following:

- the IP address of the U•H6 unit
- the IP address of the network gateway

It is intended to work on a private network with mask 255.255.255.0. This means that only the last byte of the IP address of the gateway can be configured (the first three bytes are identical to the IP address and automatically updated).

(i) This menu is only available if the network interface has been enabled. The network interface may only be enabled by a technician certified by **DALEMANS sa/nv**.

It should be noted that a Network Link Down fault is displayed if the ethernet interface of the U•H6 unit has been enabled and there is no connection upon start-up:

Network link down

This fault is not critical, and the technical-fault relay does not switch. The user can press **Reset** twice to clear the message from the screen. The ethernet interface is not operational in this case. If a cable has just been connected to it, the U•H6 unit should be restarted.

a) The IP address of the device

Once this function has been selected, the IP address of the U•H6 unit is displayed in edit mode. The cursor flashes on the digit being edited:



The **Up** and Down arrow keys change the value of the digit being edited.

The **Right** and **Left** arrow keys allow the user to move from one digit in the IP address to the next. The first digit of each byte allows the user to modify the hundreds, the second digit allows the user to modify the tens and the third digit allows the user to modify the units.

Pressing **ENTER** ends the editing process for the network address. Confirmation is then requested:



The user can cancel the modification and return to the info menu by pressing ESC.

Pressing ENTER confirms the configuration of the network address.



- (i) The editing of a network-configuration item requires the U•H6 unit to be restarted for it to take effect. This is why a request for the unit to be restarted is displayed.
- (i) The unit does not need to be restarted after editing each network-configuration item individually. Several items may be edited before the U•H6 unit is restarted.

b) Network gateway IP address

The procedure for configuring the IP address for the network gateway is identical to the procedure for configuring the IP address for the U•H6 unit, except for the fact that only the last byte of the address can be edited. Since the network configuration has been streamlined, the first three bytes are identical to those of its IP address.

- (1) The editing of a network-configuration item requires the U•H6 unit to be restarted for it to take effect. This is why a request for the U•H6 unit to be restarted is displayed.
- () Several items may be edited before restarting the U•H6 unit.

5.4 Maintenance menu

The maintenance menu allows the user to configure the functions associated with the maintenance-management alert, i.e.:

- the maintenance interval
- renewing the detector-calibration validity.
- It is recommended that you maintain your installation on a yearly basis to guarantee optimal monitoring. The user is therefore **strongly discouraged** from changing the value of this interval.
- (1) The maintenance alert does not indicate a system malfunction but is merely a reminder. However, renewing the detector-calibration validity may have a significant impact on the gas-detection function and may cause the unit to not work properly if the detector is not correctly calibrated any more.

5.4.1 Maintenance interval



By default, the maintenance interval of detectors is set at 13 months.

It may be useful to adapt the maintenance interval under some conditions (specific atmospheres, set or variable temperature and humidity conditions, etc.). It can be edited to any interval ranging from **3** to **26 months**.

Once the maintenance-interval modification has been selected, the current interval configured in the U•H6 unit is displayed and the cursor flashes on the first digit of the value in months.



The user can change the interval value using the Up and Down arrow keys.

The user can use the **Right** and **Left** arrow keys to move from one digit of the interval value to the other, with the first digit changing the tens and the second digit changing the units.

The user can select the value chosen for the calibration interval using the **ENTER** key. Confirmation is requested.

Set	interval?	
	09 months	

The user can **confirm the modification** of the calibration interval by pressing **ENTER**. The user can cancel the modification and return to the info menu by pressing **ESC**.

(1) If a battery has been installed, a maintenance alert is also generated after four years. This interval cannot be modified.

5.4.2 Renewing the validity of the calibration

Usually, the validity of the calibration settings for a detector are renewed automatically when it is calibrated by a technician certified by **DALEMANS sa/nv**. The maintenance interval for the calibrated detector is then reset.

In some specific cases, a detector may need to be verified by a certified control authority and the validity of the calibration of this detector may then be extended.

The user can select the detector for which the validity of the calibration is to be renewed using the **Up** and **Down** arrow keys. Each detector is displayed with the number of days that have lapsed since its last calibration and the full-scale value of the gas concentration that the detector is able to estimate.



The user can confirm their selection of detector by pressing **ENTER**. The system then asks the user to confirm the renewal of the validity of the calibration for the selected detector.



The user can confirm the renewal of the validity of the calibration for the detector by pressing **ENTER**. The next maintenance date may have been modified at this point. The user can cancel the modification and return to the info menu by pressing **ESC**.

6 SPARE PARTS AND OPTIONS

A list of available spare parts that can be purchased is given below:

Designation	Item reference
U•H6 unit (without battery)	01253
U•H6 cover with display	00926
U•H6 motherboard	03129
U•Line Display 30cm ribbon cable	00793
Housing for U•Line unit (base)	01036
Feet kit for fixing U•Line units	01040
DIN rail fixing kit for U•Line units	01041
Standard battery kit for U•Line units	00939

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7.1 Generalities

The explosive power of a gas-air mixture depends on the gas concentration in the air. If this concentration is too low, it is said that the mixture is too weak to explode. If, by increasing the gas concentration, the mixture becomes rich enough to explode, we have reached the **Lower Explosive Level** – **L.E.L**.

At the **Upper Explosive Level - U.E.L**., the mixture becomes too rich and cannot explode due to a lack of oxygen and simply burns.



A **DALEMANS sa/nv** gas detection control unit helps you to prevent any risk of explosion in an atmosphere where the risk of a gas leak exists.

7.2 Target gases

The U•H6 control unit has been specially designed to be placed in a heater room environment where there is a risk of leakage of the following gases:

Gaz *	Formula	Density (air = 1)	CAS N°	Position
Cracked gas	-	0,47	-	
Natural gas	-	0,68	-	High
Hydrogen	H ₂	0,069	1333-74-0	nign
Methane	CH4	0,55	74-82-8	
Butane	C4H10	2,05	74-98-6	1
Propane	C3H8	1,56	106-97-8	LOW

* List not exhaustive

8 PRODUCT SPECIFICATIONS

This product has been designed and manufactured in Belgium according to the quality charter of **DALEMANS sa/nv**.

	U•H6 control unit		
Power supply	Mains	220-240 V (AC) ~ 50Hz	
	Power	20 W max.	
	Overvoltage category	Category II	
	Smart battery management	12 V (DC) auto-adaptive - 500mA max.	
	Autonomy in sleep mode	4h with battery 2.3 Ah	
External	Primary-secondary isolation	3600 Vrms	
circuits	Relays isolation between contacts and coil	4000 V (AC)	
Isolation	Ethernet transformer isolation	1500 Vrms	
Enclosure	Material	Plastic ABS-PC UL 94 V-0	
	Dimensions (excluding PE)	265 x 230 x 125 mm	
	Weight without battery	1,5 kg	
	Ingress Protection - Pollution degree	IP65 – degree 2	
	Reversibility	Rotation of 180°	
	Location of backup battery	Format standard 2.3 Ah	
	Standard mounting	4 screws or mounting lugs	
	Optional mounting	Mounting on DIN rail	
Connection	Cable inlets	11 x M20 and 8 x M16	
	Screwed terminals	1 x 2.5 mm ² or 2 x 1.5 mm ² per terminal	
Inputs	Detectors	6	
	Type pf detector	D•TEX 3F+ (analog 3 wires)	
	Wiring length	Up to 300 m	
	Self-powered external alarm input 24V (DC)	1	
Outputs	Alarms: Addressable changeover relays Max. 230V / 3A	4	
	Fault: changeover relay Max. 230V / 3A	1	
	Alarm repeater: relay Max. 230V / 3A	1	
	Transistor alarm	24 V (DC) - 200 mA max.	
	Optional Ethernet	1	
Interface	Display	LCD backlighting of a variable color	
	Power indicator & Battery indicator	Green LED	
	Inhibition indicator & Fault indicator	Yellow LED	
	Navigation and configuration	Using a membrane keypad	
Key features	Configurable alarm levels	2	
-	Access protection using password	YES	
	Maintenance alert	YES	
	Display of events and statuses	YES	
	Customizable detector locations	YES	
	Test and inhibition functions	YES	
Operating		-10°C to +40°C	
conditions	Humidity	10 to 90% RH (non-condensing)	
	Pressure	90-110 kPa	
	Altitude	Max. 2000 m	
Certifications	Electromagnetic compatibility (EMC)	EN 50270 (type 1)	
	Low-voltage safety (LVD)	EN 61010-1	
	Marking	CE RoHS	
	Marking		

The information contained in this document is non-contractual and subject to change.

A. BATTERY AUTONOMY

When the U•H6 is equipped with a 12V 2.3Ah battery, it can continue to operate without interruption despite a loss of mains power. The detectors and any connected siren also continue to function.

The following table gives an estimate of the expected autonomy of the control panel, depending on its configuration and operating mode.

(1) The information contained in this table is given as an indication. The autonomy of the device can be influenced by many factors in real conditions.

U•H6 control unit Battery life vs. Use cases	No Alarm, no siren [h]	Failsafe mode, no siren [h]	All alarms, w/ siren [h]
U•H6 - 1 Detector	10.2	4.3	2.7
U•H6 - 2 Detectors	8.0	3.8	2.5
U•H6 - 3 Detectors	6.6	3.5	2.3
U•H6 - 4 Detectors	5.6	3.2	2.2
U•H6 - 5 Detectors	4.8	2.9	2.1
U•H6 - 6 Detectors	4.3	2.7	2.0

B. EVENT MESSAGES

Message
System startup
System configuration updated
Core configuration updated
Set General Fault relay
Reset General Fault relay
Set alarm relay 1
Set alarm relay 2
Set alarm relay 3
Set alarm relay 4
Reset alarm relay 1
Reset alarm relay 2
Reset alarm relay 3
Reset alarm relay 4
Set siren
Reset siren
Set alarm repeater
Reset alarm repeater
Reset alarms action
Reset errors action
History cleared
Menu timeout expired
Configuration saved
Date & time setting
Date & time saved
Calibration starts
Calibration done
Calibration saved
Calibration failure
Calibration timeout
Calibration cancelled
Maintenance interval setting
Calibration data renewed
Calibration ages saved
Channel enabled
Channel disabled
Channel out of order
Channel in order
Enable alarm Relay 1
Enable alarm Relay 2
Enable alarm Relay 3
Enable alarm Relay 4
Enable alarm repeater relay
Disable alarm relay 1
Disable alarm relay 2
Disable alarm relay 3
Disable alarm relay 4

Message
Disable alarm repeater relay
Set location preset
Set custom location
Set standard configuration
Language modified
User configuration level
Technician configuration level
Factory configuration level
Invalid password entered
Maintenance requested
Battery change needed
General Fault relay test started
Alarm relay 1 test started
Alarm relay 2 test started
Alarm relay 3 test started
Alarm relay 4 test started
Siren test started
Alarm repeater relay test started
Output test terminated
Output test timeout
Outputs inhibited
Outputs de-inhibited
Simulation started
Simulation stopped
Switch to battery
System halted
System restarted
Switch back to AC supply
Unset battery
New battery installed
Battery age reset
Alarm relay x: new failsafe configuration
Alarm repeater relay: new failsafe configuration
Set threshold value for level 1 alarms
Set threshold value for level 2 alarms
Set new latching mode for level 1 alarms
Set a new Siren mode for the level 1 alarms
Set new external alarm configuration
Set the normal state for the external alarm
Set new alarm repeater configuration
Automatic sensors detection
Sensor detected
No sensor detected
Sensors detection interrupted
The network interface is activated
The IP address is changed
The gateway IP address is changed

Message
New alarm level 1 threshold
New alarm level 2 threshold
New Alarm level 3 threshold
New Alarm level 4 threshold
New failsafe configuration
Latching mode changed
Latching mode changed for level 1 alarms
Latching mode changed for level 2 alarms
Latching mode changed for level 3 alarms
Latching mode changed for level 4 alarms
Not addressed by external alarm
Addressed by external alarm
Addressed as siren by external alarm
Alternate name changed
Siren addressing changed
Normal state changed
Configuration changed
Sensors detection
Sensor detected
No sensor detected
Sensors detection interrupted
Addressing of alarm relay changed
Addressing from the measurement channel changed
Not addressed by fault
Addressed by fault
Addressed as siren by fault
Not addressed by power failure
Addressed by power failure
Addressed as siren by power failure
ADC reset
Password changed
Calibration renewal authorized
Calibration renewal not authorized
Set new gas type
New gas configuration
New alarm level 1 type
New alarm level 2 type
New alarm level 3 type
New alarm level 4 type
Enable alarm level 1
Enable alarm level 2
Enable alarm level 3
Enable alarm level 4
Disable alarm level 1
Disable alarm level 2
Disable alarm level 3
Disable alarm level 4

C. ERROR MESSAGES

MESSAGE	PROBABLE CAUSE	TROUBLESHOOT
No error	-	-
Flash memory integrity error	Troubles occurred with the non-volatile memory	U•H6 control unit maintenance
Display not ready		U•H6 control unit maintenance
Display initialization error		
Display error	Troubles occurred with the display board	
Keys & LEDs not ready		
Keys & LEDs initialization error		
EEPROM not ready		U•H6 control unit maintenance
EEPROM reading error		
EEPROM integrity error		
EEPROM writing error		
Date saving error		
Lowest temperature saving error	An operation with the EEPROM failed	
Highest temperature saving error		
Temperatures saving error		
Password loading error		
Password saving error		
Password update error		
Date & time setting error	The operation failed	Retry. If the error is persistent, U•H6 control unit maintenance
System configuration initialization error		Reboot. If the error is persistent, U•H6 control unit maintenance
Core configuration load error	Something went wrong during	
History initialization error	Initialization	
Date initialization error		
ADC calibration error		U•H6 control unit maintenance
ADC conversion (internal) error		
ADC conversion (config.) error	Data acquisition failed	
ADC conversion (DMA) error		
ADC conversion timeout		
Power failure	The control unit is not correctly supplied by the main power	Check the main power supply
Battery missing	The control unit does not view the battery	U•H6 control unit maintenance
Battery low voltage	The battery needs to be charged. The main power supply is expected	If the error is persistent, U•H6 control unit maintenance
Battery discharged	The battery needs to be charged. The main power supply is expected. The control unit shall halt	If the error is persistent, U•H6 control unit maintenance
Defective battery	The battery cannot be managed by the control unit	U•H6 control unit maintenance

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MESSAGE	PROBABLE CAUSE	TROUBLESHOOT
Invalid core configuration		U•H6 control unit maintenance
Corrupted core configuration		
Corrupted calibration data		
Corrupted system configuration		
Corrupted password	Something went wrong in memory	
Corrupted info (PS)	Something went wrong in memory	
Corrupted info (core)		
Corrupted info (system)		
Corrupted info (error)		
Corrupted password loaded		
Network link down	A network connection is expected. The fault relay is not affected	Check the network connection. Once the problem is solved, the U•H6 control unit must be restarted
All channels disabled	No channel is active. The control unit is unemployed	Connect a gas detector and proceed to a detector detection
External alarm inhibited	The external alarm can no more be managed (due to a power supply failure)	If another trouble is observed, resolve it first. If the error is persistent, U•H6 control unit maintenance
Invalid system configuration		For technician only
Core configuration update failure	-	
Calibration renewal authorize failure	The operation failed	Retry. If the error is persistent, U•H6 control unit maintenance
Sensor error	The detector is in error	Check the detector and its connection to the U•H6 control unit
Out of order	The detector has been put out of order	For technician only Detector maintenance
Calibration timeout	The detector calibration failed for	Retry. If the error is persistent, U•H6 control unit maintenance
Calibration failed	the given reason The fault relay is not affected	
Calib. interrupted		

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D. ALARM MESSAGES

Message
No alarm
Gas presence
Gas alarm
External alarm

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E. PREDEFINED LOCATIONS

The following table contains a list of all the predefined locations available in the exchange's memory.

ENGLISH TEXT	TEXTE FRANÇAIS	NEDERLANDSE TEKST
Aisle +1 P \$	Allée +1 P \$	Gang +1 P \$
Aisle rez P \$	Allée rez P \$	Gang glv P \$
Gas boiler	Boiler	Gasboiler
Laundry room	Buanderie	Wasserij
Cellar	Cave	Kelder
Heater	Chaudière	Ketel
Heater room	Chaufferie	Stookplaats
Labo classroom	Classe Labo	Labo klaslokaal
Co-generation	Cogénération	Wkk
Gas meter	Compteur gaz	Gasteller
Gas pipe	Conduite gaz	Gasleiding
Corridor	Couloir	Gang
Kitchen	Cuisine	Keuken
Cooker	Cuisinière	Gaskeuken
Technical floor	Etage technique	Technisch verdiep
Oven	Four	Gasoven
Technical duct	Gaine technique	Technische schacht
Extractor hood	Hotte	Dampkap
Moistener	Humidificateur	Stoombevochtiger
Boiler room	Local boiler	Boiler lokaal
Gas room	Local gaz	Gas lokaal
Ext gas room	Local gaz ext	Gas lokaal buiten
Technical room	Local technique	Technische ruimte
Venting room	Local ventilation	Ventilatie lokaal
Rack +1 P \$	Rack +1 P \$	Rack +1 P \$
Rack rez P \$	Rack rez P \$	Rack glv P \$
Gas ramp ht \$	Rampe gaz ch \$	Gasstraat st \$
Dryer	Sèche-linge	Droogkast
Gas collector	Collecteur gaz	Gas collector
Transit	Transit	Transit
Gas valve	Vanne gaz	Gasklep
Ext gas valve	Vanne gaz ext	Gasklep buiten
Venting	Ventilation	Ventilatie
High venting	Ventilation haute	Hoge ventilatie
Venting duct	Vide ventilé	Kruipkelder

The predefined locations containing the '\$' symbol allow a numerical value to be selected using the **Left** and **Right** arrows on the keyboard.

The other predefined locations, without the '\$' symbol, can be completed with a suffix that can be selected using the **Left** and **Right** arrows.

ENGLISH TEXT	TEXTE FRANÇAIS	NEDERLANDSE TEKST
right	droite	rechts
rhs	drt	r
left	gauche	links
lhs	gch	1
middle	milieu	midden
mid	mil	mid
rez	rez	glv

Alternatively, for these same locations, numerical values are available by using the **Left** and **Right** arrows on the keyboard while scrolling past the list of suffixes (to the left for negative values, and to the right for positive values).

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- The numbers 0 9
- The letters of the **alphabet lowercase**
- The letters of the alphabet in uppercase
- Vowels with accents and ç in lowercase
- The dash and the special character @
- The plus sign '+' and the minus '-' sign

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G. USER MENU DIAGRAM





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H. SERVICE MENU DIAGRAM





ALARM CONTROL UNIT FOR FLAMMABLE GASES

INSTRUCTION MANUAL



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