OCTOPLUS

WARNING AND MEASUREMENT CONTROL UNIT FOR TOXIC AND FLAMMABLE GASES

USER'S MANUAL

DALEMANS
GAS DETECTION

THE BELGIAN PIONEER IN GAS DETECTION

QUICK GUIDE

1X

10"

1X

1X

10"

10"

Front Panel key switch

■ Hidden key switch (inside the Control Unit - see page 19)

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ENVIRONMENT

The crossed-out wheelie bin logo on this product indicates that you are held to respect the regulation in force on the collection and recycling of waste electrical and electronic equipment (WEEE).

These provisions are intended to preserve the natural resources used for manufacturing this product and to avoid the dispersion of substances potentially harmful for the environment and human health.

Therefore, to dispose of your end-of-life product, you MUST hand it over to a designated collection point for the recycling of electrical and electronic equipment. For further information about the collection points in your area, contact your local city authority.

WARNINGS

The fitter commits himself to comply with EC standards and with the installation instructions.

The installation must be carried out by qualified personnel.

All our products are tested and inspected before shipping.

These instructions must be read carefully by any person who has or will have the responsibility for the installation, the use and/or the maintenance of this equipment.

The warranty provided by Dalemans will be voided if installation, use and maintenance of this equipment are not in accordance with the instructions given in this manual.

By respecting these instructions you guarantee the correct operation of the apparatus. Should you require any further information about the use or the maintenance of this product, do not hesitate to contact Dalemans PRIOR to carrying out installation works.

Each apparatus must be installed, operated and maintained according to the instructions, the warnings and the operational limits detailed in this manual.

Use only Dalemans original parts when you assume the maintenance of this product as specified in this manual. The use of non-Dalemans spare parts may seriously impair the performances of the apparatus.

Repair or maintenance attempts carried out without observing the procedures described in this manual or without the assistance of our after-sales service may prevent the equipment from working properly and, consequently, from ensuring the safety of the occupants of the building and of the plants.

This product must be installed in a dry and clean place. Install a protective screen or enclosure to avoid any direct exposure to the sun or possible projections of water or of polluting agents.

Do not hesitate to contact Dalemans for any additional information about the use or the maintenance of this product.

Dalemans reserves the right to modify its products in the advent of technical or other developments, at any moment and without warning.

DISCLAIMER

Dalemans cannot be liable for direct or indirect damages arising out of the non-observance of its instructions.

Every effort has been made to ensure the accuracy of the information given in this document. Nevertheless, Dalemans s.a. declines any responsibility in the event of errors or omissions in this document.

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A. INTRODUCTION

a. Start-up, standby screen

OFF

ON

OctoPLUS

V 2.0.1
DALEMANS S.A.

OctoPLUS

Scan Control Units

Control unit Nr 1 - Detector Nr 3   *Location (user modifiable)*

D1.3:Detector 3
    6 PPM CO

MENU   RESET   STOP

Measured Gas level

Function keys
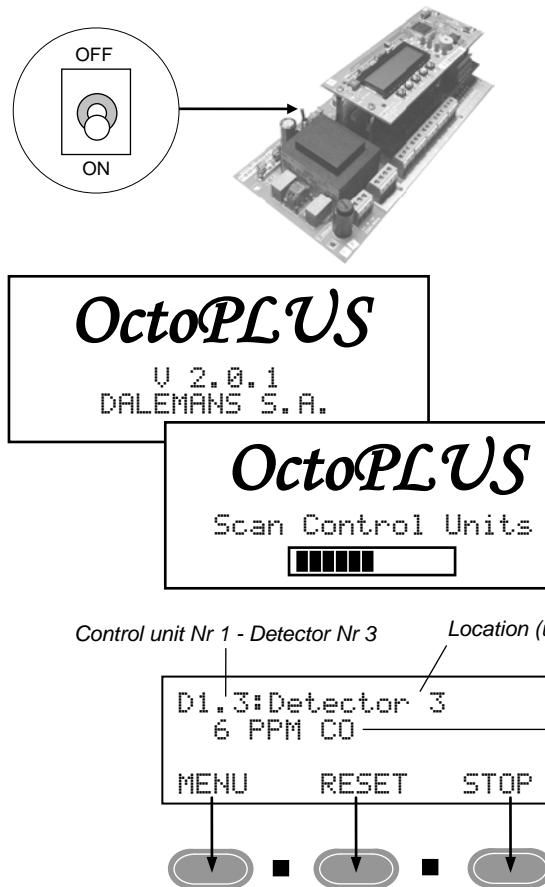
Turn ON the power switch of the mother board to power on the Control Unit.

At start-up, the screen displays :

- Software version

- Scanning of the Control Units.

After start-up, the screen scans and displays the data of the detectors in sequence.

The display is updated every 3 seconds.

b. Notes

The zoom frame shows the key to press to perform the function.

ESC   No Alarm
CUnit: 1
Det : 1234
 ↓   →
                    VALID

Press matching key to perform function

■ Symbols

VALID	Validate selection
↓ →	Navigate through the menu
ESC	Exit menu
□	Press key 1X
□••••	Keep key pressed for at least 5 seconds.
■	Hidden key (inside the Control Unit - see page 19)
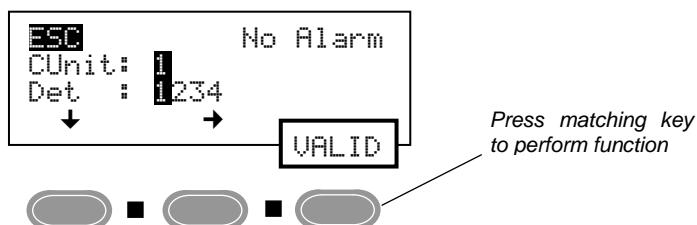
The screen can display up to 4 rows. Last row is dedicated to the function keys.

When stopping the display on a particular detector, data are displayed for 30 seconds then the screen starts again scanning the detectors in sequence.

Ensure to always validate selection.

You can navigate through menu or screen using the arrow keys :

- ←
- →   Move selection horizontally
- ↑   Move selection vertically
- ↓   Increase/decrease value

B. DATA VIEWING

Measures, levels of alarm, averages, measuring ranges, faults…

Data of detectors can be displayed in two ways :

■ STOP 1X

- Press key STOP when the desired detector appears on the display.

```
D1.3:Detector 3
   6 PPM CO

MENU    RESET
```
STOP

■ MENU 1X

- Press key MENU
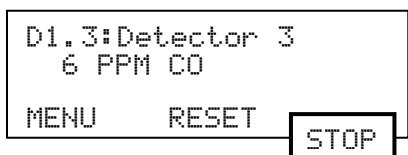
```
D1.3:Detector 3
   6 PPM CO
         RESET   STOP
MENU
```

- Use keys ↓→ to select Control Unit and detector then press VALID to view data of the selected detector.

State of alarm of the selected detector

```
ESC          No Alarm
Cards: 12
Det  : 1234
  ↓       →      VALID
```

Selected control unit   *Selected detector*

```
D1.3:Detector 3
   6 PPM CO

  ↓       →      START
```
Return to displaying detectors in sequence

View configuration of the selected detector   *View next detector*

```
D1.3:Detector 3
DetNr:D0003
Range:0 - 300
  ↓       →      START
```

```
Range:0 - 300
Lev. F:2.50 mA
Lev.A1:50 ppm
Lev.A2:100 ppm
Lev.A3:150 ppm
Lev.A4:200 ppm
Avg.  :6 ppm
```
Measuring range
Fault Level

Levels of alarm

Measure average according to configuration

a. Alarms

The front panel of the OctoPLUS has yellow and red LED's to give failure and/or alarm warning.

Main Power failure

General failure

Main Power ON

Battery failure

Levels of Alarm (A1 - A4)
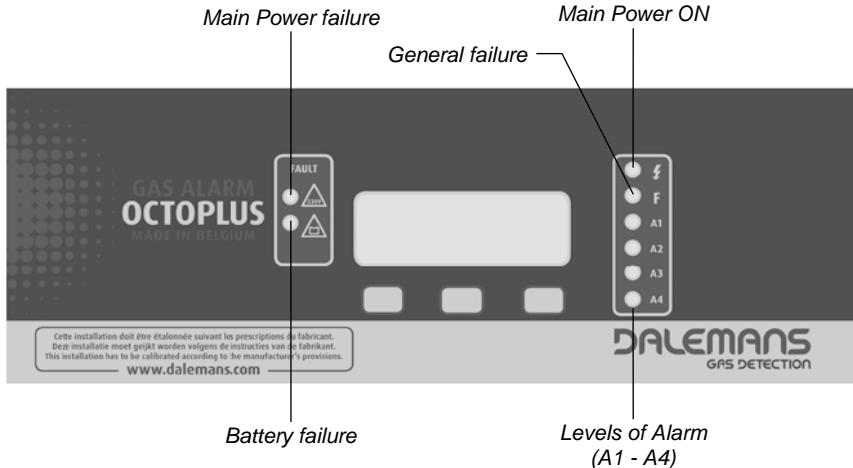
■ LED indicators

- **General failure** : yellow LED ON when general failure and/or battery failure is detected.

  e.g. : broken cable, battery voltage too low, …

- **Main Power failure** : yellow LED ON when OctoPLUS switches on battery upon main power supply failure (230 Vac).

- **Battery failure** : yellow LED ON when battery failure is detected (e.g. battery voltage too low).

- **Levels of Alarms** : red LED ON when an alarm is detected (gas concentration over level of alarm).

Failures and alarms can be read in the scanning screen or by **MENU** function.

Use **STOP** or **MENU** function to display a detector (see previous page).

■ Scanning screen

Control unit Nr 1 - Detector Nr 3

```
D1.3:Detector 3
    6 PPM CO
Alarm:F A1 A2
  ↓       →      START
```

Fail

Active levels of alarm

■ Explorer menu

State of alarm of the detector

```
ESC              Alarm
Centr: 12
Det  : 1234
 ┌───┐
 │ ↓ │      →      VALID
 └───┘
```

Selected control unit

Selected detector

```
D1.3:Detector 3
    6 PPM CO
Alarm:F A1 A2
  ↓       →      START
```

Fail
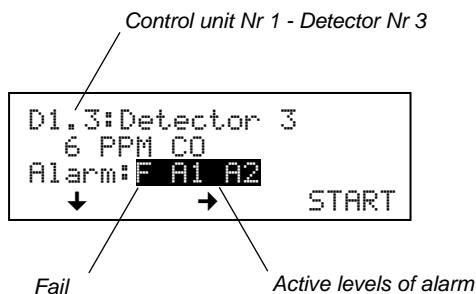
Active levels of alarm
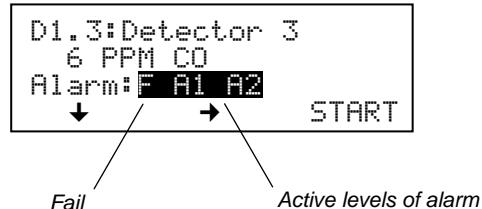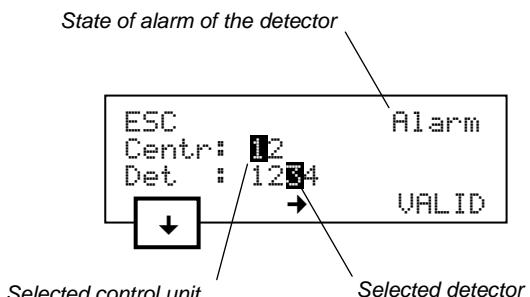
C. RESET

This function allows alarm cut-off and reset of levels of alarm and of measured values.

■ RESET 1X

```
 ┌─────────────────────────────┐
 │ D1.3:Detector 3             │
 │   6 PPM CO                  │
 │                             │
 │ MENU        ┌──────┐  STOP  │
 │             │RESET │        │
 └─────────────┴──────┴────────┘
```

The OctoPLUS can be configured in two different modes :

- Normal mode
- Alarm cut-off mode

● **Normal mode**

RESET 1X : stops alarm and reset level of alarm if gas concentration is below level of alarm.

● **Alarm cut-off mode**

RESET 1X : stops alarm.

REST 2X : output relays return to normal position if gas concentration is below level of alarm.

Note :
"Normal" and "Cut-off alarm" mode configuration requires OctoPLUS configuration software.

■ RESET 10 seconds

```
 ┌─────────────────────────────┐
 │ D1.3:Detector 3             │
 │   6 PPM CO                  │
 │                             │
 │ MENU        ┌──────┐●●●● STOP│
 │             │RESET │        │
 └─────────────┴──────┴────────┘
```

This function is especially used for resetting max. values and latched alarms.

```
 ┌─────────────────────────────┐
 │       Reset Menu            │
 │ ESC                         │
 │ Siren            ↑          │
 │ ┌───┐                 VALID │
 │ │ ↓ │                       │
 └─┴───┴───────────────────────┘
```

```
 ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
   ESC
 │ Siren                    │
   Alarms
 │ Max. Value               │
 └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
```
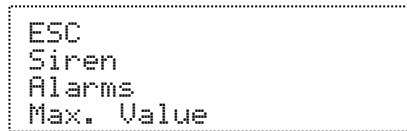
Select the item to reset with ↑↓ and press **VALID**.

Siren	: Cut off alarm
Alarms	: Reset levels of alarm
Max. Value	: Reset Max. measured values

Reset is immediately performed and confirmed by the following screen :

```
 ┌─────────────────────────────┐
 │                             │
 │                             │
 │          Reset              │
 │                             │
 │                             │
 └─────────────────────────────┘
```
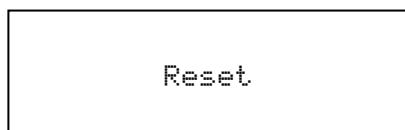
D. RESTRICTED MODIFICATIONS

Time, date, language, messages, alarm test, relays status, battery voltage, max. values.

a. Parameters

```
D1.3:Detector 3
    6 PPM CO

MENU ••••RESET   STOP
```

Hold key **MENU** pressed until General Menu appears.

```
      General Menu
ESC
Parameters
            ↑       VALID
  ↓
```

```
      General Menu
ESC
Parameters
  ↓         ↑
              VALID
```
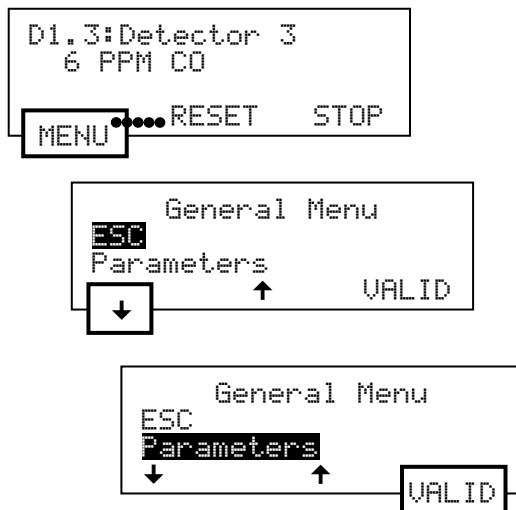
Select **Parameters** using keys ↓↑ and press key **VALID**. To exit menu select **ESC** and press key **VALID**.

■ Time

```
      General Menu
ESC
Clock
            ↑       VALID
  ↓
```

```
      General Menu
ESC
Clock
  ↓         ↑
              VALID
```
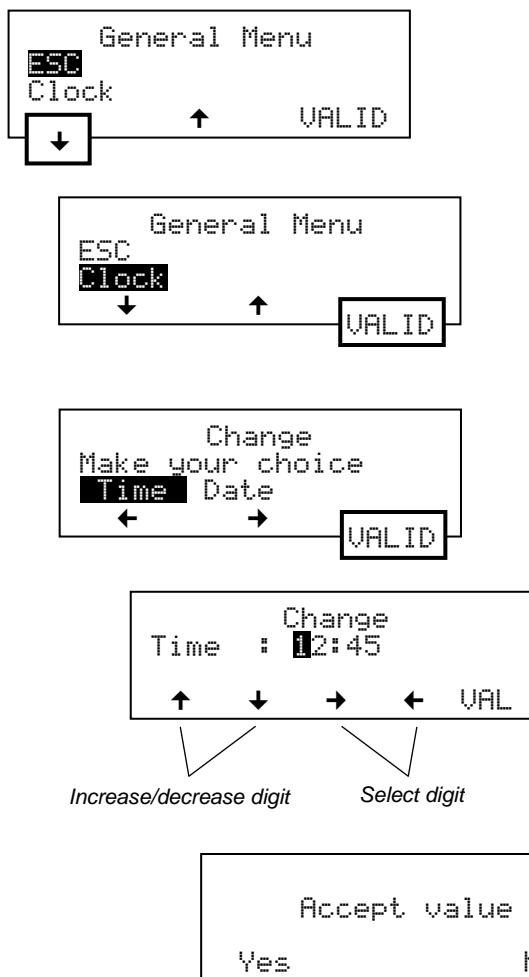
To change time, select **Clock** from the Parameters Menu (see above) using keys ↓↑ and press **VALID**.

```
        Change
Make your choice
  Time  Date
    ←       →
              VALID
```

Select **Time** with keys ←→ then press **VALID**.

```
        Change
Time  : 12:45

  ↑     ↓     →     ←   VAL
```

Increase/decrease digit   *Select digit*

Move selection using keys →←, then adjust digit value with ↑↓ and press key **VALID** to save.

Note :
Keys ↓← are inside the Control Unit enclosure (see page 19).

```
      Accept value

Yes                 No
```

Press **YES** to save or **NO** to discard the modifications.

■ Date

```
        Change
  Make your choice
   Time  Date
    ←        →
                   VALID
```
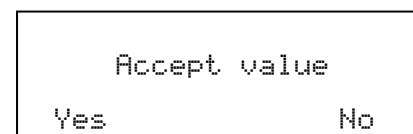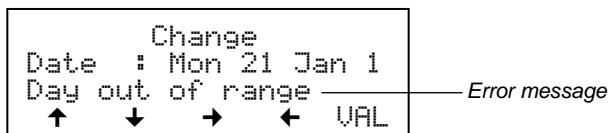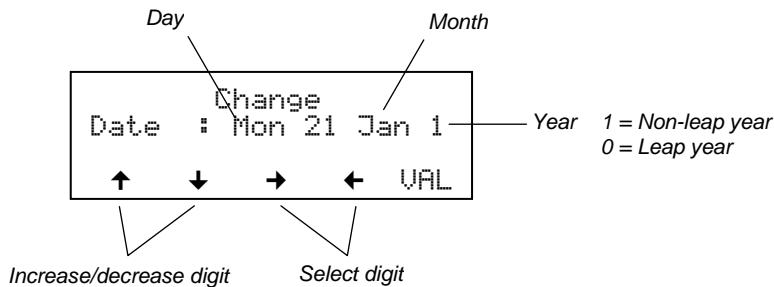
To change date select **Date** from the Clock Menu (see page 13) and press key **VALID**.

Day   *Month*

```
         Change
  Date  : Mon 21 Jan 1
    ↑     ↓    →    ←   VAL
```

Year   *1 = Non-leap year*
         0 = Leap year

Increase/decrease digit   *Select digit*

Move selection using keys ←→ then adjust value with ↑↓ and press **VALID** to save.

Note :
Keys ↓← are inside the Control Unit enclosure (see page 19).

```
         Change
  Date  : Mon 21 Jan 1
  Day out of range
    ↑     ↓    →    ←   VAL
```

Error message

If wrong values are entered an error message will appear.

```
      Accept value

  Yes              No
```

Press **YES** to save or **NO** to discard the modifications.

■ Language

```
     General Menu
  ESC
  Clock
            ↑     VALID
  ↓
```
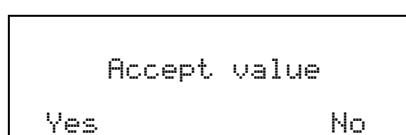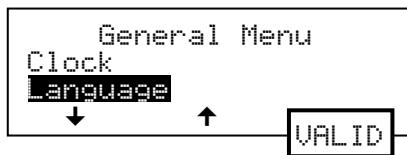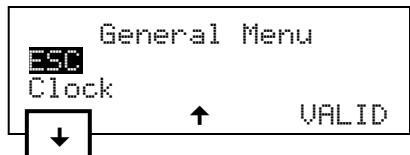
To change the menu language, select **Language** from the Parameter Menu (see page 13) using keys ↓↑ and press **VALID**.

```
     General Menu
  Clock
  Language
    ↓        ↑    VALID
```

```
        Change
  Select Language
    NL   FR   UK
    ←         →   VALID
```

Select desired language using keys → ← and press **VALID** to save :

NL : Dutch
FR : French
UK : English

```
      Accept value

  Yes              No
```

Press **YES** to save or **NO** to discard the modifications.

b. Messages

■ Failures

```
D1.3:Detector 3
   6 PPM CO
MENU••••RESET  STOP
```

To display failure messages hold key **MENU** pressed until General Menu appears.

```
  General Menu
ESC
Parameters
   ↓        ↑      VALID
```

```
  General Menu
ESC
Messages
   ↓        ↑      VALID
```
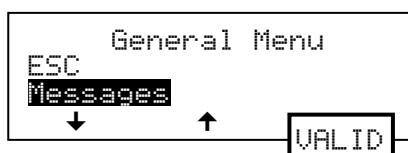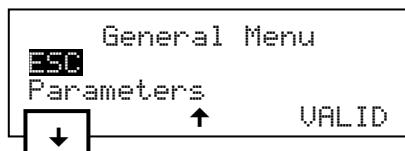
From the General Menu, select **Messages** using keys ↓↑ and press **VALID**. To exit menu select **ESC** and press key **VALID**.

```
    Messages
ESC
Faults
   ↓        ↑      VALID
```

```
    Messages
ESC
Faults
   ↓        ↑      VALID
```
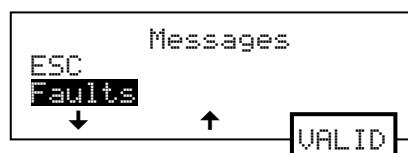
Select **Faults** using keys ↓↑ and press **VALID**.

Control unit Nr. *Detector Nr.* *Fault ID Code* *Fault description*

```
M1  :92,Batt. Conn.
M1.1:11,Fault zone
M2.3:13,Fault zone
   ↓        REF      ESC
```

Scroll down *Refresh display* *Exit menu*
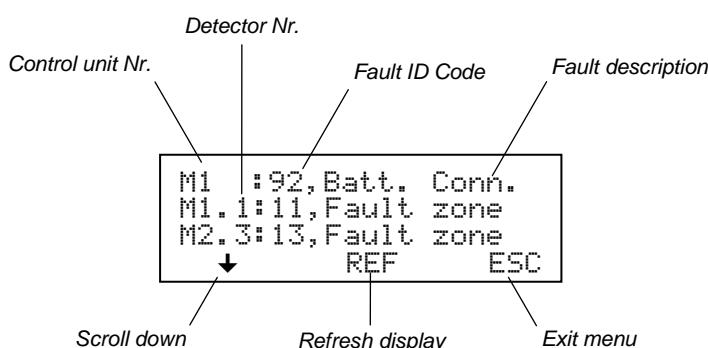
Scroll down using keys ↓↑ to see the list of failures (Faults) which occurred on the system.

- **REF** : even if a failure is no longer active it still appears in the list of faults until you refresh the display by pressing the key **REF**.

- **Fault ID Code** : every failure is identified by a code and a brief description. Faults ID Codes are listed at page 23.

```
    No Faults
```
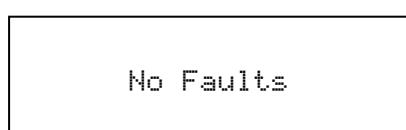
If there is no failure the message "No Faults" appears instead of the list of failures.

c. Test alarms

```
D1.3:Detector 3
  6 PPM CO
    ●●●●RESET   STOP
MENU
```

To perform alarm simulation, enter General Menu by holding the key **MENU** pressed.

```
    General Menu
ESC
Parameters
          ↑      VALID
  ↓
```
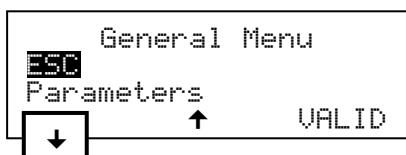
Scroll down and select **Test Alarms** using keys ↓↑ and press **VALID**.

```
    General Menu
Messages
Test Alarms
  ↓        ↑
              VALID
```

Control unit Nr

```
ESC    Select Sens.
Card: 1
Det : 1234
  ↓        →
              VALID
```
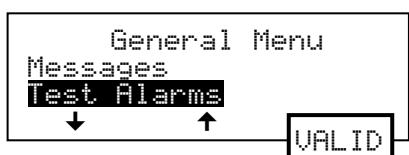
Detector Nr

Use keys ↓→ to select Control unit and Detector for which the alarm test has to be performed. Press key **VALID**.

Gas level   *Loop current*

```
    Test Alarms
  0ppm I: 4,00mA
A1: No Alarm
START   STOP     ESC
```

Start test   *Stop test*   *Exit menu*
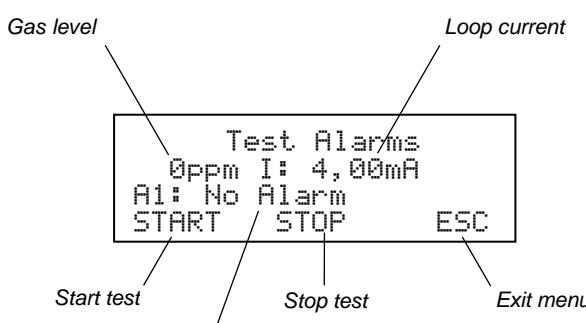
Press key **START** to start the test.

Press **STOP** to stop the test.

Press **ESC** to exit test.

No Alarm : no active alarm
D   : Fail alarm active
A1   : Level of alarm A1 active
A2   : Level of alarm A2 active
A3   : Level of alarm A3 active
A4   : Level of alarm A4 active

During alarm test, yellow and red LED's of the control panel and output relays operate according to software configuration.

d. View

Status of output relays, battery voltage, max. measured values, …

```
D1.3:Detector 3
  6 PPM CO

 ┌──────┐••••RESET   STOP
 │ MENU │
 └──────┘
```

To enter the View Menu, hold the key **MENU** pressed.

```
      General Menu
 ▇▇▇
 Parameters
 ┌───┐       ↑      VALID
 │ ↓ │
 └───┘
```
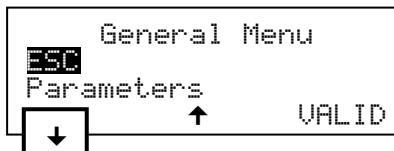
Select **View** using keys ↓↑ and press **VALID**.

```
      General Menu
 Test Alarms
 ▇▇▇▇
    ↓         ↑    ┌───────┐
                   │ VALID │
                   └───────┘
```

■ Status Relays

```
      Display values
 ▇▇▇
 Status Relays
 ┌───┐       ↑      VALID
 │ ↓ │
 └───┘
```
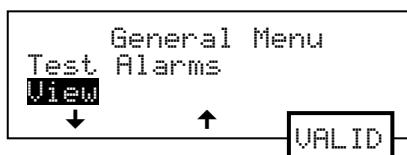
This function allows viewing the status of each output relay and checking whether it is activated or not.

```
      Display values
 ESC
 ▇▇▇▇▇▇▇▇▇▇▇▇▇
    ↓         ↑    ┌───────┐
                   │ VALID │
                   └───────┘
```

From View Menu, select **Status Relays** using the keys ↓↑ and press **VALID**.

Control unit Nr   *Relay board Nr*

Relay Nr

```
      Status Relays
 CR1.1.  12345678
         00000XXX
      →              ESC
```

View next Relay board

Exit menu

0 = Relay not activated
*1 = Relay activated*
X = Relay not installed
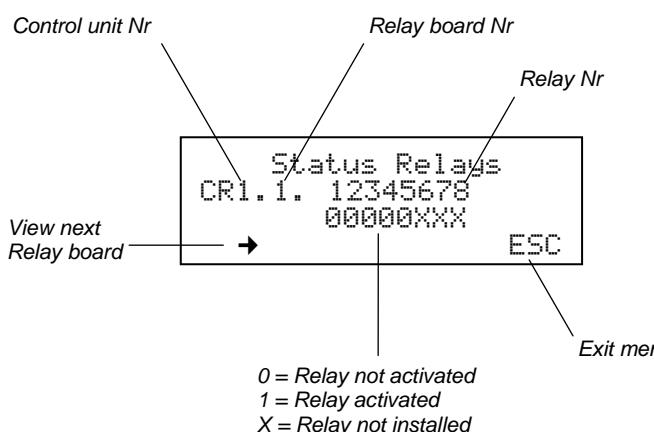
The screen displays status of output relays for each Control unit.

Press key → to view next Relay Board.

Relay Board Nr 1 relates to the 5 relays of the Mother Board of the Control unit.

Relay Boards from Nr 2 on relate to additional Relay Boards (8 relays).

■ Battery Voltage

```
    Display values
ESC
Status Relays
            ↑      VALID
  ↓
```
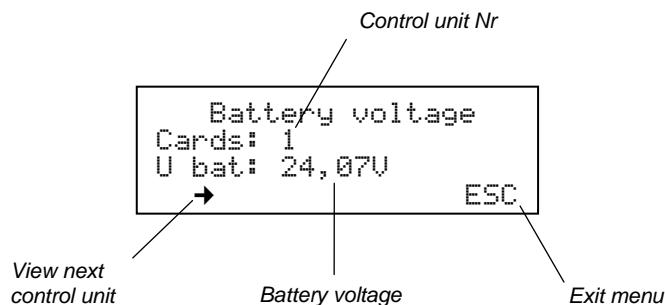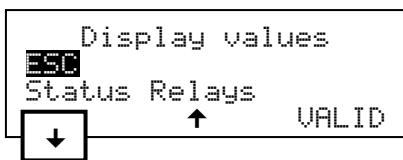
This function allows reading the battery level.

```
    Display values
Status Relays
Bat. voltage
  ↓         ↑
                 VALID
```

From View Menu (see above), scroll down and select **Bat. voltage** using the keys ↓↑. Press key **VALID**.

Control unit Nr

```
    Battery voltage
Cards: 1
U bat: 24,07V
  →              ESC
```

View next control unit   *Battery voltage*   *Exit menu*

The screen displays the battery voltage level for each Control unit.

Press key → to view next Control unit.

■ Maximum Values

```
    Display values
ESC
Status Relays
            ↑      VALID
  ↓
```
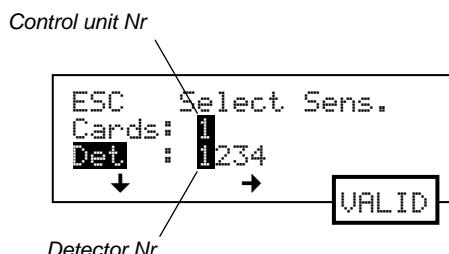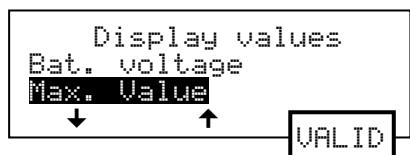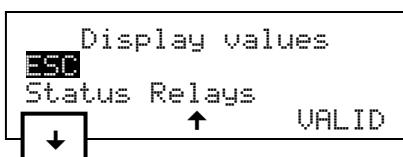
This function allows reading the maximum values measured by the detectors.

```
    Display values
Bat. voltage
Max. Value
  ↓         ↑
                 VALID
```

From View Menu (see page 17), scroll down and select **Max. Value** using the keys ↓↑. Press key **VALID**.

Control unit Nr

```
ESC    Select Sens.
Cards: 1
Det  : 1234
  ↓        →
                 VALID
```

Detector Nr

Use keys ↓→ to select Control unit and Detector whose you want to view max. value then press key **VALID**.

Control unit Nr   *Detector Nr*

```
    Max. Value
Det. : D1.1
Value: 7 ppm
                 ESC
```

Max. measured Value   *Exit menu*
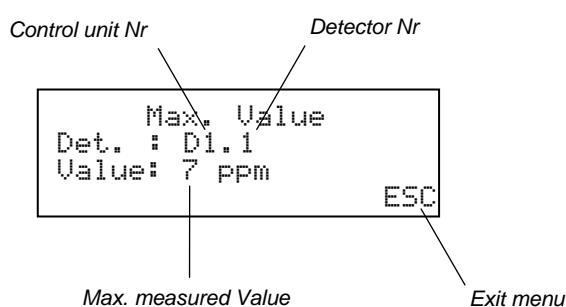
E. ADVANCED MODIFICATIONS

For modifying advanced parameters such as relays inhibition, level of alarm or detector number, a PIN code is required.
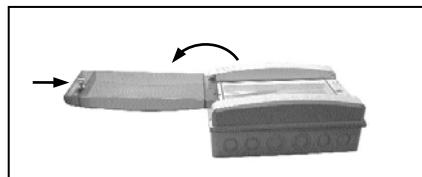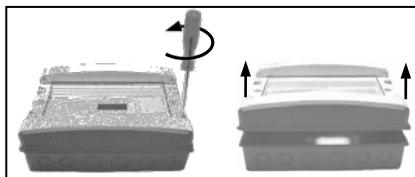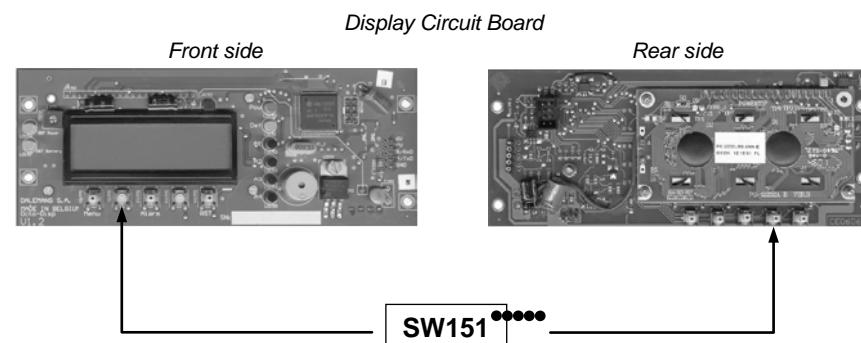
Advanced Modification Menu requires the use of a switch key which is inside the Control unit.

To open the OctoPLUS Housing :

1. Remove the transparent lid (Fig. 1).

2. Unscrew the 4 screws with a suitable flat screwdriver and remove the lid (Fig. 2).

Fig. 1

Fig. 2

Display Circuit Board

Front side

Rear side

SW151

Fig. 3

To enter Advanced Modification Menu hold the key **SW151** pressed. This key switch is on both sides of the Display Circuit Board (Fig. 3).

Password : 1234

```
Enter Password

  000          VAL
  ↑    ↓    →    ←
```

Increase/decrease digit   *Select digit*
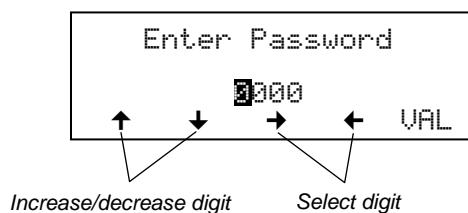
To enter password, move selection with keys ↑↓, change value of digit with keys →←, and press **VALID**.

```
  Adv. Modification
ESC
Modification
              ↑    VALID
      ↓
```
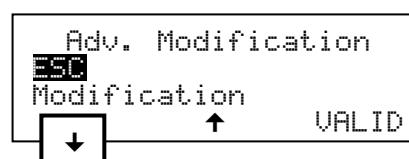
To proceed with advanced modification, select desired option with keys ↑↓ and press **VALID**.

```
ESC
Modification
Inhibit Relays
Version Info
```
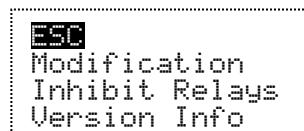
To exit menu, select **ESC** and press key **VALID**.

a. Parameters modification

Levels of alarm, detector location, detector number.

```
   Adv. Modification
ESC
Modification
   ↓         ↑
              VALID
```

```
      General Menu
ESC
Alarm Levels
              →      VALID
   ↓
```

```
ESC
Alarm Levels
Location
Sensor Nb
```
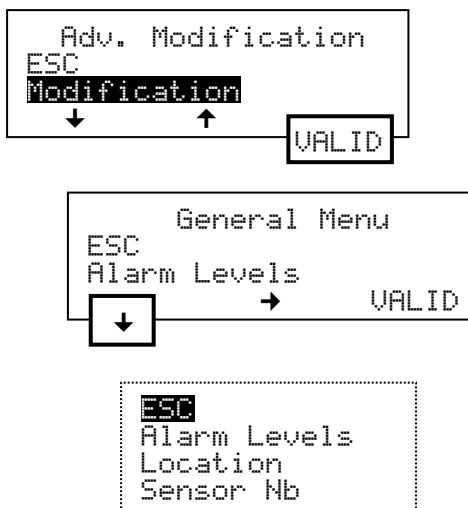
To enter Parameters Modification menu, from Advanced Modification menu (see previous page), select **Modification** with keys ↓↑ and press **VALID**.

To proceed with modification, select the parameter to modify with keys ↑↓ and press **VALID**.

To exit menu, select **ESC** and press key **VALID**.

■ Levels of alarm

```
      General Menu
ESC
Alarm Levels
   ↓         →
              VALID
```

Control unit Nr

```
ESC   Select Sens.
Cards: 1
Det.  : 1234
   ↓      →
              VALID
```

Detector Nr

```
         Change
      Select Level
DEF   A1   A2   A3
   ←      →
              VALID
```

```
Change alarm level
DEF: 02,50

   ↑      ↓    ←    →
                   VAL
```

Increase/decrease digit   *Select digit*

```
      Accept value

Yes              No
```
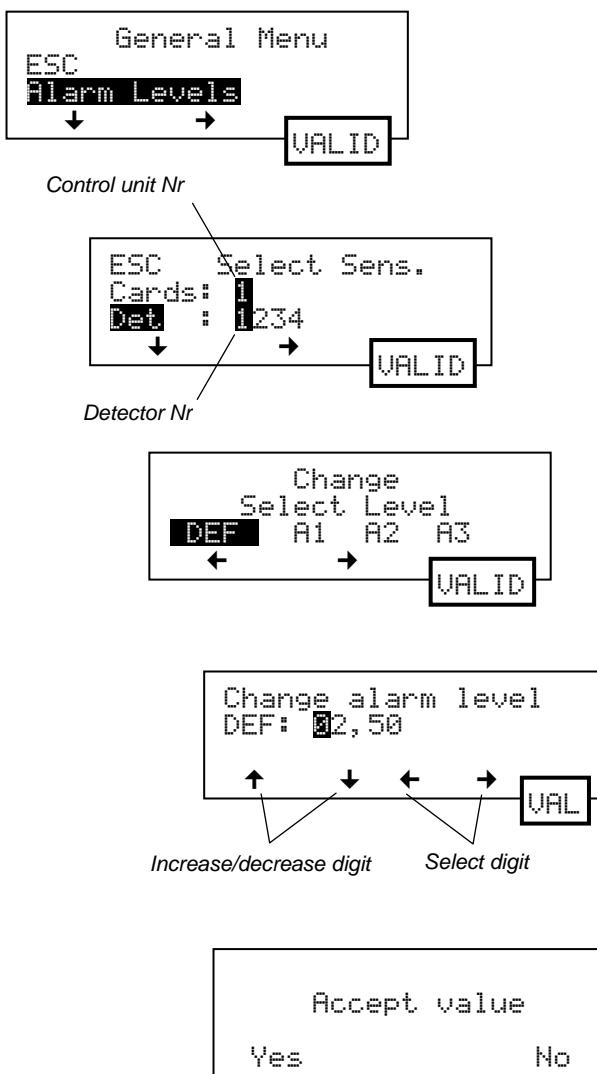
Use keys ↓→ to select Control unit and Detector you want to modify then press key **VALID**.

Select the level of alarm to modify with the keys ←→ then press **VALID**.

Note : scroll further levels with key →.

Move selection with keys →←, increase/decrease digit value with keys ↑↓ then press **VAL**.

DEF : Level of alarm Fail
A1 : 1st level of alarm
A2 : 2nd level of alarm
A3 : 3rd level of alarm
A4 : 4th level of alarm

Press **YES** to save or **NO** to discard the modifications.

■ Location
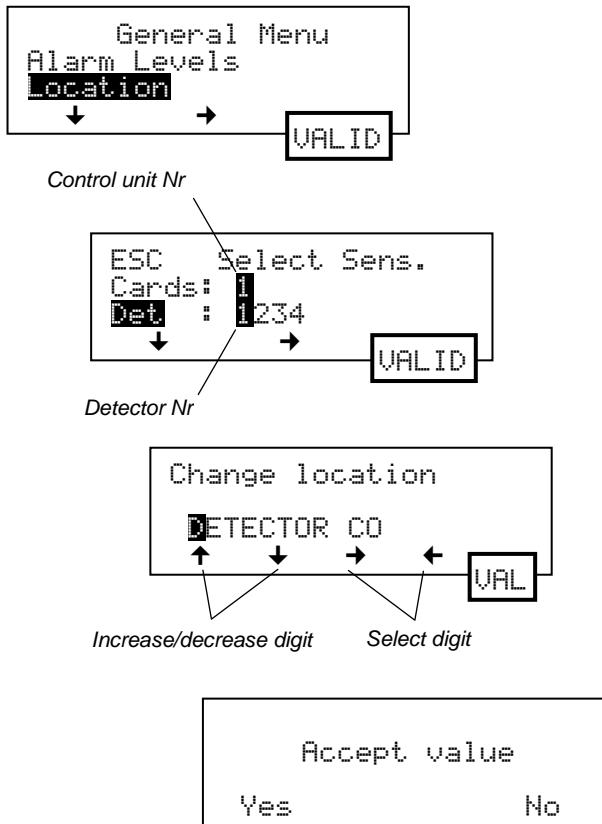
```
     General Menu
Alarm Levels
Location
    ↓        →
                  VALID
```

Control unit Nr

```
ESC    Select Sens.
Cards: 1
Det  : 1234
    ↓        →
                  VALID
```

Detector Nr

```
Change location

DETECTOR CO
  ↑    ↓    →    ←
                  VAL
```

Increase/decrease digit   *Select digit*

```
        Accept value

Yes                    No
```

Use keys ↓→ to select Control unit and Detector you want to modify then press key **VALID**.

Move selection with keys →←, change digit with keys ↑↓ then press **VAL**.

Press **YES** to save or **NO** to discard the modifications.

■ Sensor number
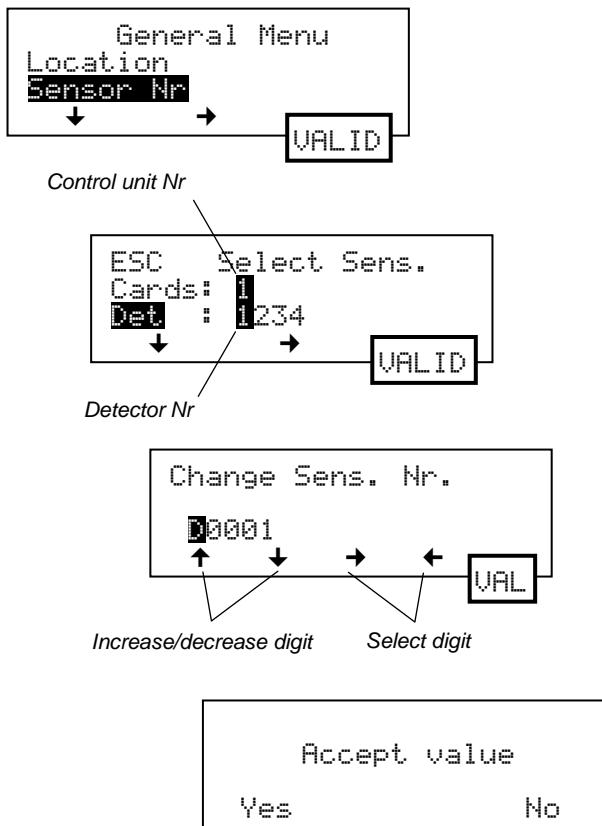
```
     General Menu
Location
Sensor Nr
    ↓        →
                  VALID
```

Control unit Nr

```
ESC    Select Sens.
Cards: 1
Det  : 1234
    ↓        →
                  VALID
```

Detector Nr

```
Change Sens. Nr.

00001
  ↑    ↓    →    ←
                  VAL
```

Increase/decrease digit   *Select digit*

```
        Accept value

Yes                    No
```

Use keys ↓→ to select Control unit and Detector you want to modify then press key **VALID**.

Move selection with keys →←, change digit with keys ↑↓ then press **VAL**.

Press **YES** to save or **NO** to discard the modifications.

b. Inhibit output relays

The purpose of this function is to inhibit output relays for 30 seconds in order to allow testing the detectors without any actuation of the output devices (e.g. valve, ventilation, …).

```
   Adv. Modification
ESC
Modification
            ↑      VALID
 ↓
```

Enter in Advanced Modification menu (see page 19).

```
   Adv. Modification
Modification
Inhibit Relays
 ↓        →
              VALID
```
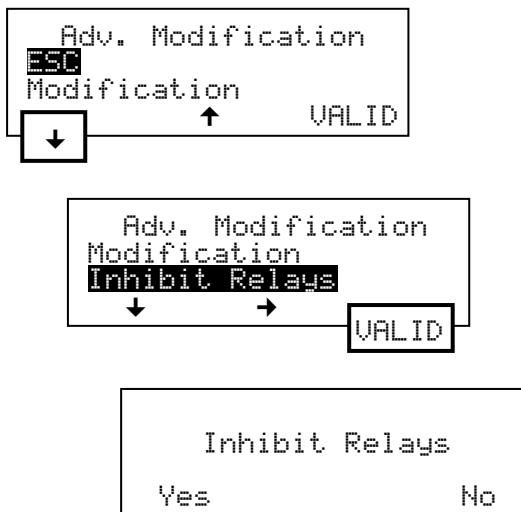
Select **Inhibit Relays** with keys ↓↑ and press **VALID**.

```
   Inhibit Relays

Yes             No
```

Press **Yes** to inhibit relays or **No** to abort and exit menu.

c. Versions

This function allows viewing the version of the software of the OctoPLUS.

```
   Adv. Modification
ESC
Modification
            ↑      VALID
 ↓
```

Enter in Advanced Modification menu (see page 19).

```
   Adv. Modification
Inhibit Relays
Version Info
 ↓        →
              VALID
```
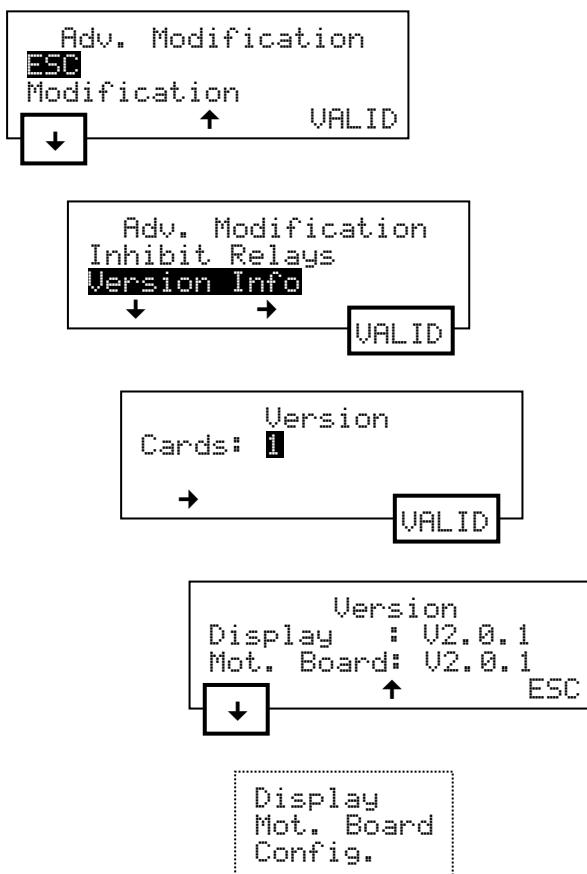
Select **Version Info** with keys ↓↑ and press **VALID**.

```
        Version
Cards: 1

   →
              VALID
```

Use key → to Select the Control unit to view and press **VALID**.

```
        Version
Display  : V2.0.1
Mot. Board: V2.0.1
            ↑      ESC
 ↓
```

Press key ↓ to scroll down.

```
Display
Mot. Board
Config.
```

Display   : Version of the software of the display board.
Mot. Board : Version of the software of the mother board.
Config.   : Version of the configuration.

F. FAIL CODES

■ Mother Board inputs

The first digit of the fail code gives the address of the mother board. The second digit gives the address of the input concerned by the failure.

***Examples** :*

18 : failure on input Nr 8 of mother board Nr 1.
25 : failure on input Nr 5 of mother board Nr 2.
61 : failure on input Nr 1 of mother board Nr 6.

- Possible fail codes for mother board Nr 1
    11 - 12 - 13 - 14 - 15 - 16 - 17 - 18
- Possible fail codes for mother board Nr 2
    21 - 22 - 23 - 24 - 25 - 26 - 27 - 28
- Possible fail codes for mother board Nr 3
    31 - 32 - 33 - 34 - 35 - 36 - 37 - 38
- Possible fail codes for mother board Nr 4
    41 - 42 - 43 - 44 - 45 - 46 - 47 - 48
- Possible fail codes for mother board Nr 5
    51 - 52 - 53 - 54 - 55 - 56 - 57 - 58
- Possible fail codes for mother board Nr 6
    61 - 62 - 63 - 64 - 65 - 66 - 67 - 68
- Possible fail codes for mother board Nr 7
    71 - 72 - 73 - 74 - 75 - 76 - 77 - 78
- Possible fail codes for mother board Nr 8
    81 - 82 - 83 - 84 - 85 - 86 - 87 - 88

■ Other

01	Communication failure on clock.
02	Communication failure on EEPROM.
03	Program failure with reference to configuration.
04	Communication failure on display.
08	EEPROM failure.
90	Battery too low.
91	Main power failure (230 Vac).
92	Battery not connected.

G. INDEX

NOTES

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THE BELGIAN PIONEER IN GAS DETECTION