BRC 535

Beamdetector Remote Control

Operating Manual
Version 1.0

Document history

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1   Terminal presentation BRC 535

The BRC 535 is an aid tool for the installation, start up and maintenance of the SEFI linear smoke detector, version C02 and up. The terminal is also used to set up and test the gas detectors in series DRS900 and GD1XXC and GD1XXA.
These instructions describe :

- The operation of the BRC 535 terminal when it is not linked to a BSD 535 ;
- The operation of the terminal when it is linked to the BSD 535.

1.1   Contents of the BRC 535 kit

The BRC 535 kit is contained in its transport suitcase and includes

- A BRC 535 terminal
- A charger
- 4 AA / 1.2V / NiMH batteries whose unit capacity is 2300mAh
- A strap
- 2 link cables (to connect the gas detector and the smoke detector)

1.2   Description of the BRC 535 terminal

Front view of the BRC 535 terminal

The terminal is made up of :

- A 2×16 character display
- 16 keys (10 keys of a digital keyboard + 6 navigation keys)
- A « LINK » green led
- 3 signal LEDs (1 red led (LED 1), 1 yellow led (LED 2), 1 green led (LED 1))
- A buzzer.

1.3   Powering up

To start the terminal, press the ENTER key. The terminal software version is displayed on the screen.
To turn the terminal off, press the ENTER key for more than 2 sec.
If there is no handling or communication with the outside for 2 minutes, the terminal turns off automatically to maintain its batteries.
When starting up and stopping, or vice versa, the ENTER key should remain inactive for at least 3 seconds.

1.4 Presentation of the main menu

The terminal has a main menu. It is active when no detector is connected.
That menu is used to :
- Select the detector type
- Select the language
- Display the level of battery charging
- Display the terminal lot number.

1.4.1 Description of main menu

	Smoke detector	Communication attempt with the linear smoke detector
	Gas detector	Communication attempt with the gas detector of the GD1xx or DRS-9xx range
Main menu	Language	Français
		English
		Italiano
		Deutsch
		Dutch
	Battery level	Displays the battery charge level expressed in %
	Lot number	Displays the terminal lot number

1.5 Battery management

To recharge the batteries, connect the charger to the terminal, using the connector located on the right hand side of the terminal.
For batteries with a unit capacity of 2200mAh, the charging time is 15 hours. That time can vary depending on the battery capacity and their discharging.
In all cases, it is not advised to recharge the batteries more than 24 hours. Charging the batteries too long may damage them.
The terminal can be supplied by:
- The batteries
- The batteries when the charger is connected
- The mains, if the charger is connected.

If the terminal is supplied by the batteries, it displays the level of batteries charge upon start up.
If the charger is connected to the terminal, the connexion is displayed on the screen upon start up.

⚠️ **Warning**

The use of non rechargeable batteries is not allowed with the BRC 535. In all cases, the use of non rechargeable batteries with the BRC 535 linked to the charger may cause an explosion.
In no case will the batteries supplied with the BRC 535 be taken back or exchanged.

1.5.1 Battery change:

To change the batteries proceed as follows:
- Remove the BRC 535 from its protection drawer,
- Remove the used batteries accessible through the back of the BRC 535,
- Inset the new batteries,
- Slide the BRC 535 into its protection drawer.

2 General presentation of the BSD 535 – BRC 535 system

2.1 Introduction

This section and the following ones describe the operation of the SEFI linear smoke detector version C02 and above with the BRC 535 terminal.

The main functions of the terminal are as follows :
- Making it easier to install the detector (BSD 535 setting and check tests)
- Helping the user start up and maintain the BSD 535
- Replace entirely the use of the push buttons of the BSD 535.

2.2 Operating mode of the system : Terminal Mode

The terminal has only one operating mode : the TERMINAL MODE. That mode has two separate access levels, in the form of menus, depending on the users :
- Menu 1 is for the installation of the BSD 535. It is accessible by all users
- Menu 2 is for the starting up and maintenance of the BSD 535. Its access is protected by a password.

Fonctions	Accessibilité	
	Menu 1	Menu 2
Display of on-board soft version	×	×
Normal / Fine calibration	×	×
Target test	×	×
Efficiency test	×	×
Resetting	×	×
Selection of alarm sensitivity		×
Fault filtration management		×
Dazzle filtration management		×
Relay setting		×
Setting and control of DEFNET address		×
Date and time		×
Display of active configuration		×
Return to factory settings		×
History		×
Detector status information (outlet information, measuring parameters)		×

2.3 Language on the display

By default the language used is English in the menus and sub-menus displayed on the terminal.

Prior to any terminal connection, it is possible to change the language of the information displayed on the screen as described below :
- Press the ENTER key to turn the terminal on
- Press the MENU key to show the terminal menu
- Press the scroll down key ↓ until the « Language » text is displayed
- Press the ENTER key to enter in the « Language » sub-menu
- Select the desired language and confirm by pressing the ENTER key

2.4 BRC 535 terminal connexion

The terminal has a wire link. It can be connected :
- To the detecteur ;
- To the connection box (BRU 535)

In both cases, the terminal connection is done through a cable.
The connection can be done with the terminal on or off.

Handle

Pin

Bridge

Terminal cable connector

Detector or connection box
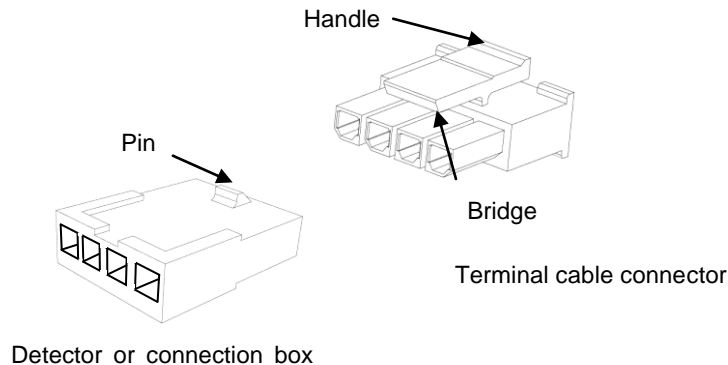
2.4.1 Connexion

The connector of the terminal cable should be connected to that of the BSD 535 on the wall mounting. It has a clickable locking system with a valve bridge followed by a tipping lever. Connect both connectors until they click into locking position.

2.4.2 Disconnection

In order to disconnect the terminal from the BSD 535 or from the connection box, exert pressure on the base of the lever to release the pin of the valve bridge before removing the cable from the terminal. When the terminal cable is disconnected from the BSD 535 (or from the connection box), the latter is reset.

2.5 Keys description

MENU key	sends the user to the main menu
	That key is not functional during the calibration function
ESC key	is used to exit some functions
Digital keys	are not functional, other than to enter the address, the date and time
ENTER key	has two separate functions :
	• ON / OFF function : when the terminal is off, pressing this key turns the terminal on. When the terminal is on, a long press (> 2s) on the key turns the terminal off
	• Navigation / validation function : pressing this key – when the terminal is on – allows to reach the lower treeing level or confirming an action
F1 key	scrolls the menu upwards
F2 key	scrolls the menu downwards
F3 key	is used to come back to the upper treeing level menu

Notice

A beep is heard every time a key is pressed

Notice

The user should wait for a « key depression » to be taken into account by the display before completing the next « key depression ». The interval between two « key depressions » is about 1 sec.

A sequence of too close « key depressions » can jeopardise the good communication between the detector and the terminal. The « COMMUNICATION ERROR » message is displayed in the screen of the terminal and the BSD 535 is reset.

2.6 Detector supply

The terminal has batteries that allow to supply the BSD 535 when it is not supplied by an ECS.
If the detector is already supplied by a loop or a DI line, the terminal does not supply the BSD 535.
The terminal cannot supply the BSD 535 unless it is directly connected to the BSD 535. In the event of a connexion to the connection box, the BSD 535 cannot be supplied by the terminal.

🖝	**Notice** This supply function allows to set the BSD 535 without it being supplied by the DI loop. However the electrical connections should be done before the setting.

2.7 Turning the terminal on

Connect the terminal to the BSD 535.
To turn on the terminal, press the ENTER key
When the terminal is turned on :
- The number of the BSD 535 software version is displayed on the terminal screen ;
- The « LINK » green led is turned on continuously ;
- The Detector – Terminal system switches to Terminal mode.

⚠	**Warning** As soon as the terminal is connected to the BSD 535 and the communication is established : • If the detector exit status is different from the standby condition, it is no longer reported. (Extinguishing of the VI and removal of the central unit status reporting) The BSD 535 declares a fault to the central unit.

⚠	**Warning** As a result, prior to any use of the terminal, it is advised to turn off the point or zone.

🖝	**Notice** If the BSD 535 is no longer powered by an external source (loop, line…), you should wait for the BSD 535 initialization before seeing the software version number displayed on the terminal screen.

2.8 Terminal Mode

In this mode, the BSD 535 reports a fault to the central unit.
For each of the versions, the VI (visual indicator) does not show the fault information relating to the switching of the detector into Terminal Mode.
The terminal after being connected to the BSD 535 and turned on, is the only control component of the detector : no depression on the push buttons will be taken into account.
In that mode, the various functions of the terminal are accessible though a scroll down menu that is displayed after the user presses the MENU key.

SECURITON

2.9 Terminal Mode

In this mode, the BSD 535 reports a fault to the central unit.

For each of the versions, the <u>VI</u> (visual indicator) does not show the fault information relating to the switching of the detector into Terminal Mode.

The terminal after being connected to the BSD 535 and turned on, is the only control component of the detector : no depression on the push buttons will be taken into account.

In that mode, the various functions of the terminal are accessible though a scroll down menu that is displayed after the user presses the MENU key.

2.10 Turning the terminal off

To turn the terminal off, the user should press the ENTER key until the display is turned off (key depression time of about two seconds).

When turning off the terminal, the BSD 535 is reset.
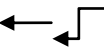
3 Description of scrolling menus

3.1 Acronyms used

The menu navigation of the terminal is described by diagrams.
The menu navigation is not circular.
The following table shows all the acronyms used in the various diagrams

SIGLE UTILISE	DESCRIPTION
	The text inside the rectangle is displayed on the screen
→	Pressing the ENTER key. Allows to reach the lower level menu or confirming an action
↑	Pressing the **F1** key. Scrolls the scrolling menu up
↓	Pressing the **F2** key. Scrolls the scrolling menu down
←⌐	Pressing the **F3** key. Is used to return to the upper treeing menu
—○—	Confirms the depression on a digital key
⤶	Switches from one display to another without any action by the user
⁊	Or exclusive
•••	Multiple repeat of a depression on a digital key followed by a display of the text until a full display of the requested entry
•••/•••	In Calibration, multiple repeat of a wait phase followed by a vertical and horizontal setting phase
✛	Horizontal and vertical setting of the BSD 535 carried out by the user

3.2 Main Menu

Press the MENU key to enter the main menu (MENU 0). This menu regroups the two level accesses 1 and 2, displayed in the form of menus, respectively called Menu 1 and Menu 2. Access to MENU 2 is blocked by a password. (password = 1234)
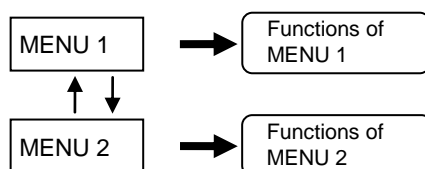
Main menu diagram

3.3 Menu 1
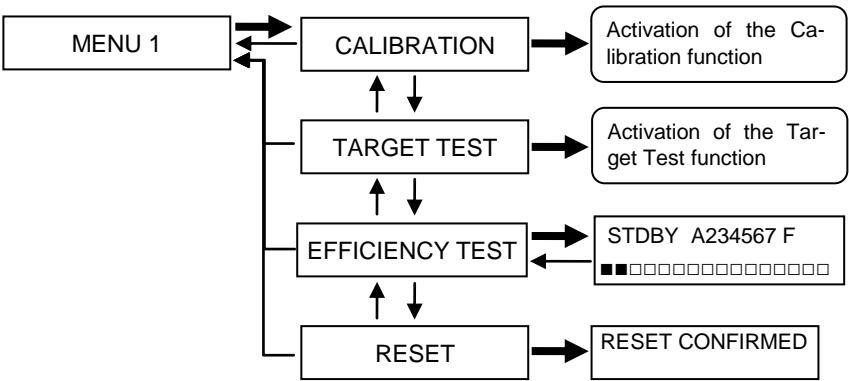
MENU 1 Diagram

3.4 Menu 2

3.4.1 Access to Menu 2

To access the functions of MENU 2, the user should dial a 4 digit code.

After the code is dialled, access to the functions of Menu 2 is available without redialling the code until the terminal is disconnected from the BSD 535.

3.4.2 General presentation of Menu 2
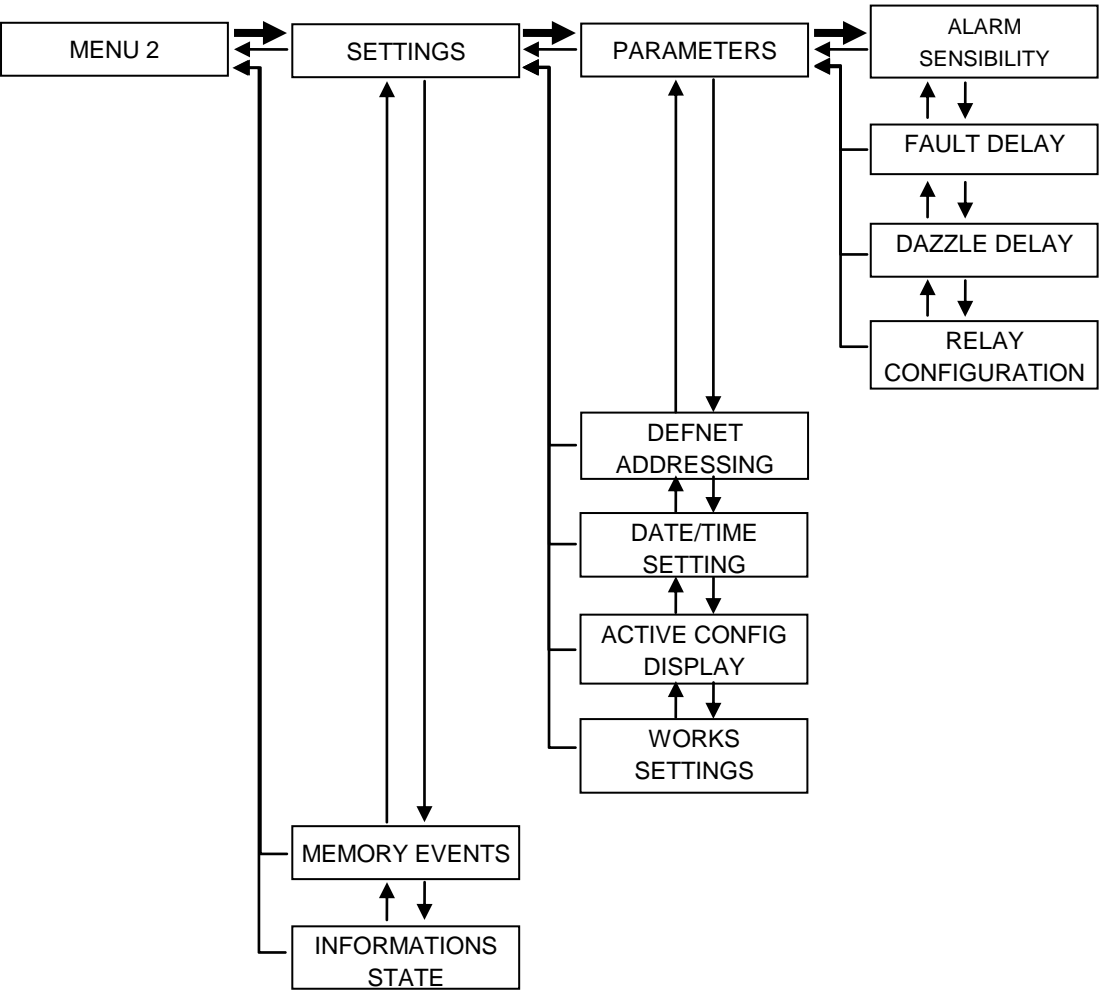
MENU 2 Diagram

The setting of the DEFNET address only displayed in the DEFNET and CONVENTIONAL versions.
The « Relay setting » is only displayed on the RELAY version.

4 Detailed function description

4.1 Soft version display

This function informs the user about the on-board software version of the BSD 535. The version number is displayed on the terminal screen after connecting it to the BSD 535 and turning on. The soft version display means that the terminal is communicating with the BSD 535.

4.2 Calibration

```
┌──────────────┐         ┌─────────────────┐      ┌─────────────┐        ┌─────────────┐
│ CALIBRATION  │ ⇄       │ DISABLING ZONE  │  →   │     PRE     │   ↕    │  REFLECTOR  │
└──────────────┘         └─────────────────┘      │ ADJUSTMENT  │        │   CAUGHT    │
                                                  │    .....    │        └─────────────┘
                                                  └─────────────┘

        ┌──────────────┐        ┌───────────────────────┐      ┌───────────────────────┐
   ↻    │     WAIT     │   ↻    │   DETECT.ADJUSTING     │  ↕   │   DETECT.ADJUSTING     │
        └──────────────┘        │ ■■■■■■■■□□□□□□□□        │      │ ■■■■■■■■■■■■■■■         │
                                └───────────────────────┘      └───────────────────────┘

        ┌──────────────┐        ┌───────────────────────┐
   ↻    │     WAIT     │   ↻    │   DETECT.ADJUSTING     │  ↕   •••/•••  →
        └──────────────┘        │ ■■■■■■■■□□□□□□□□        │
                                └───────────────────────┘

        ┌──────────────────┐        ┌───────────────────┐      ┌─────────────┐
        │ CALIBRATION EXIT │   ↻    │ CALIBRATION EXIT  │  ↻   │ CALIBRATION │
        │ IN PROGRESS····  │        │    SUCCEDED       │      └─────────────┘
        └──────────────────┘        └───────────────────┘
                                    ┌───────────────────┐
                                    │ CALIBRATION EXIT  │
                                    │      FAILED       │
                                    └───────────────────┘
```
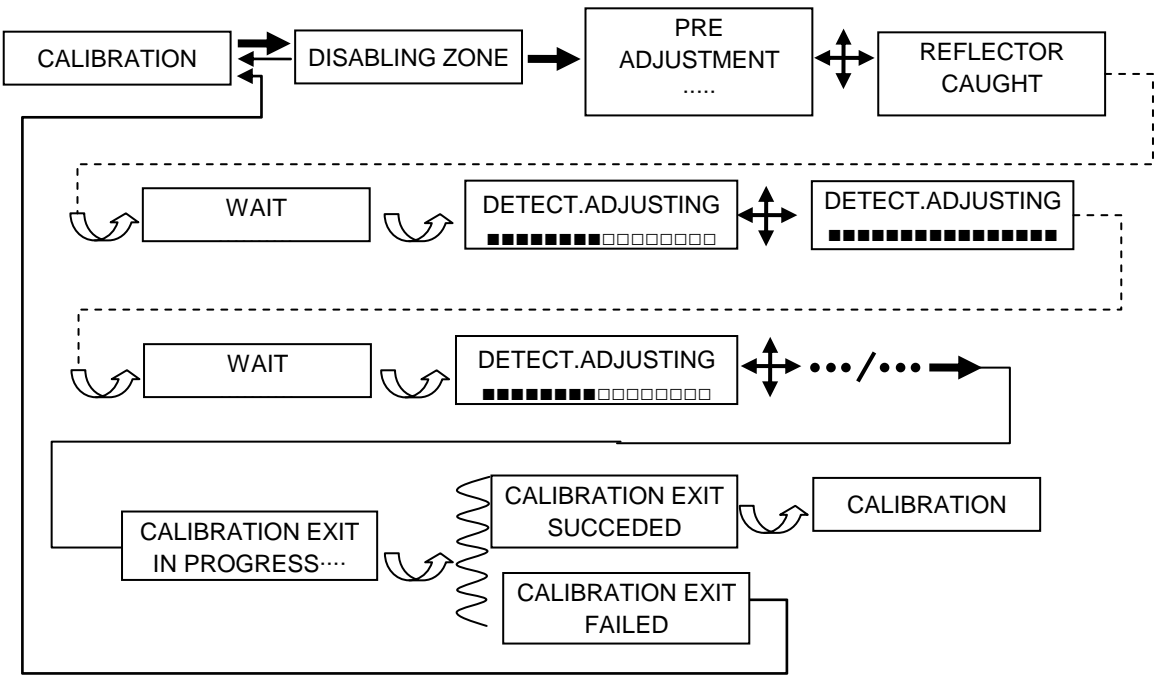
Calibration function diagram

4.2.1 Presentation

The calibration consists in setting the BSD 535 horizontally and vertically to collect, after reflexion on the reflector, the most intense part of the optical pulse released. An accurate setting of the BSD 535 allows to get an optimum signal-to-noise ratio.

4.2.2 Sequence

The « Calibration » function can be described by the successive phases show in the following table :

N°	LCD DISPLAY	DESCRIPTION	BUZZER	TL LED	MAXIMUM TIME
1	PRE ADJUSTMENT • • • • •	This phase consists in obtaining a small reflexion from the optical pulse on the reflector by acting on the setting wheel	/	Steady green	As long as the target has not been reached by the pulse
2	REFLECTOR CAUGHT	This transition step indicates that the target has been caught. The user does not touch the BSD 535 settings	discontinuous 2sec	Steady red	2s
3	WAIT • • • • • • • • • •	The BSD 535 sets his measuring parameters. The user does not touch the settings of the detector. If the setting cannot be done, return to step 1 ; otherwise, go to step 4	/	Steady red	< 16s
4	DETECT.ADJUSTING ■■■■■□□□□□	This step consists in handling the setting wheels so as to increase the number of greyed boxes on the bar graph	/	Steady green	• As long as not all the boxes are greyed • Until reset
5	DETECT.ADJUSTING ■■■■■■■■■■	The user has succeeded in greying all the boxes of the bar graph by acting on the setting wheels. He then stops handling the wheels. **Return to step n° 3**	discontinuous 2sec	Steady red	Transition display
5bis	DETECT.ADJUSTING ■■■■■■■□□□ (example)	All the boxes of the bar graph are not all greyed, whatever the handlings on the wheels. After getting the maximum number of greyed boxes, the user presses the ENTER key	/	Steady green	As long as the number of greyed boxes is not the maximum number
5ter	DETECT.ADJUSTING □□□□□□□□□□	There are no greyed boxes following improper wheel handling. Return to step n° 3	discontinuous 2sec	Steady red	Transition display
6	CALIBRATION EXIT IN PROGRESS• • • •	After pressing the ENTER key, the BSD 535 sets his measure parameters and memorises them. He also records the reference value of the optical intensity received	/	Steady red	< 30sec
7	CALIBRATION EXIT SUCCEDED	After a maximum wait of 30°sec, the BSD 535 informs the user that the calibration exit is correct	discontinuous 3sec	Steady green 3sec	Transition display
8	CALIBRATION EXIT FAILED	After a 30°sec wait, the BSD 535 informs the user that the calibration exit is not correct. The user should redo the settings	timed	Steady red	As long as the user does not press a key

The detector setting method is an **iterative method**. An iteration corresponds to the phases numbered from 3 to 5. During the setting, the user will have an average number of 2 to 5 iterations to be completed.

Notice

Following a proper calibration, it is possible to know the current and gain values recorded by the « detector status information° » function (see D.15). The gain value should be under 200, whatever the conditions and installation distances. Otherwise, resume the BSD 535 calibration.

Detailed function description

4.3 Target Test

4.3.1 Presentation

The « Target Test » should be done right after the BSD 535 calibration. Its two main functions are :
- To check that the BSD 535 is aligned with the reflector and not another reflecting item.
- To check that there is no interfering reflecting item on the optical pulse path.

4.3.2 Sequence

When the screen displays the message « TARGET TEST », press the ENTER key to start the function.
The VI (Visual Indicator) is red and blinking.
Conceal the reflector using a non reflecting obturator (mat black obturator for instance). The black part of the detector packaging can be used.

After a 5 sec period at most :
- The VI is green and steady. The TARGET TEST is OK ;
- The VI is red and blinking. The TARGET TEST is not OK :
    - The detector is not aligned on the reflector but on another reflecting object. In that case, re-start the calibration function and make sure the detector is properly aligned on the reflector ;
    - There are one or more interfering reflexions on the optical path of the optical pulse. In that case, those interfering reflexions should be eliminated.

Notice

The TARGET TEST confirmation (steady green VI) is also notified by the continuous buzzer sound.

4.4 Efficiency Test

This function is used to display the opacity of the free space crossed by the optical pulse let off by the BSD 535, in the form of a bar graph. The bar graph is shown below :

```
S T D B Y   A 2 3 4 5 6 7   F
■■□□□□□□□□□□□□□□
```
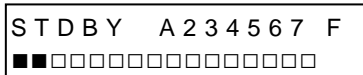
Efficiency test display

This function can be used when completing a test fire.
The first line of the display shows :
- The standby area
- The alarm thresholds numbered from 2 to 7
- The fault threshold (D).
On the second line, for each greyed box there is a level of free space opacity.

During that test :
- An optical pulse is sent and processed every 5 sec
- The detector reports an alarm to the user (by the IV and by the LED TL) after 3 successive Vpulse values under the active alarm threshold
- The detector reports a fault to the user (by the IV and by the LED TL) after 10 successive Vpulse values under the fault threshold.

4.4.1 Management of the signal by the IV and the LED TLs

The alarm signalling is functional until reset.

The reporting of that fault is cancelled after 3 successive Vpulse values over the fault threshold if the system is still in efficiency test.

The reporting of that fault is cancelled if the user exits the « efficiency test » function.

4.4.2 Display management

After alarm level 2 and up to alarm level 7, the display of the efficiency test is memorised on the highest alarm threshold reached by 3 successive Vpulse values.

The maximum reached alarm level display is memorised until the BSD 535 is reset.

For fault level D, the display of the efficiency test is memorised when 10 consecutive Vpulse values have reached the fault threshold.

The fault memorisation is cleared after 3 successive Vpulse values over the fault threshold if the system is still in efficiency test.

The fault memorisation is cleared when the user exits the « efficiency test » function.

4.4.3 Error case

4.4.3.1 Dazzle status

If the detector is dazzled :
- the screen displays the « DAZZLE » message
- THE IV and THE LED TL light on to report a dazzle status
- the buzzer goes off with the 1 beep control parameter

The dazzle status is declared (display of the « DAZZLE » message) if the BSD 535 is previously in the following statuses :
- Standby
- Pre alarm (to be confirmed)
- Pre fault (to be confirmed)

The dazzle status declaration is not allowed if the detector is previously in the following statuses :
- Alarm
- Fault
- Fouling

4.4.3.2 Fouling status

If the detector is dirty :

- the screen displays the « FOULING » message
- the IV and the LED TL light on to report a fouling status
- the buzzer goes off with the 1 beep control parameter

r
4.5 Resetting

When the BSD 535 is in alarm status, it is possible to reset it from the terminal.

The resetting function clears the alarm status of the detector by removing the luminous signal of the IV and of the LED TL.

Notice

As a reminder when communication is established between the terminal and the BSD 535, it stops any communication with the ECS.

Detailed function description

4.6 Selection of alarm sensitivity

4.6.1 Navigation

```
┌──────────────┐     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
│    ALARM     │ ──► │  MINIMUM SENS.   │ ──► │  MINIMUM SENS.   │    ↻     │  PARAMETERS  │
│  SENSIBILITY │ ◄── │  ALARM LEVEL 6   │     │    CONFIRMED     │          │              │
└──────────────┘     └──────────────────┘     └──────────────────┘          └──────────────┘
                            ▲ │
                            │ ▼
                     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
                     │  MINIMUM SENS.   │ ──► │   INTERMEDIATE   │    ↻     │  PARAMETERS  │
                     │  ALARM LEVEL 5   │     │  SENS. CONFIRMED │          │              │
                     └──────────────────┘     └──────────────────┘          └──────────────┘
                            ▲ │
                            │ ▼
                     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
                     │  MINIMUM SENS.   │ ──► │  MAXIMUM SENS.   │    ↻     │  PARAMETERS  │
                     │  ALARM LEVEL 4   │     │    CONFIRMED     │          │              │
                     └──────────────────┘     └──────────────────┘          └──────────────┘
```
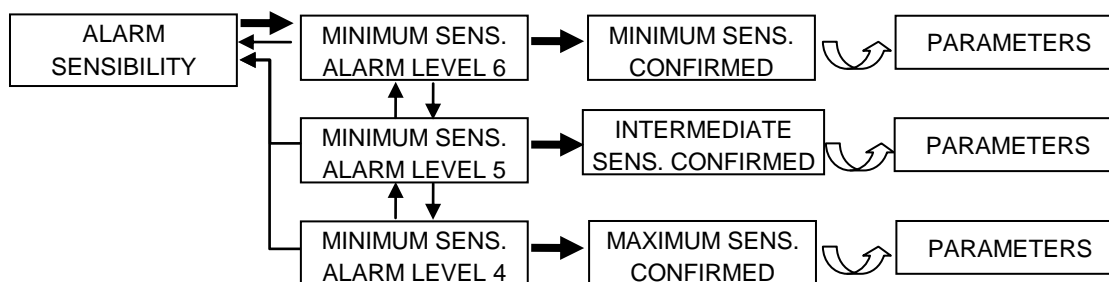
4.6.2 Description

By default, the alarm sensitivity of the BSD 535 is :
- Minimum for the RELAY, CONVENTIONAL, DEFNET C versions
- Level 6, for the DEFNET D version

That function allows to change the alarm sensitivity (or the alarm level) of the BSD 535. The terminal allows to choose between 3 separate sensitivity levels :
- Minimum sensitivity or Level 6
- Medium sensitivity or Level 5
- Maximum sensitivity or Level 4

4.7 Fault filtering management

4.7.1 Navigation

```
┌──────────────┐     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
│ FAULT DELAY  │ ──► │   FAULT DELAY:   │ ──► │   FAULT DELAY:   │    ↻     │  PARAMETERS  │
│              │ ◄── │       50 S       │     │  50 S CONFIRMED  │          │              │
└──────────────┘     └──────────────────┘     └──────────────────┘          └──────────────┘
                            ▲ │
                            │ ▼
                     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
                     │   FAULT DELAY:   │ ──► │   FAULT DELAY:   │    ↻     │  PARAMETERS  │
                     │      250 S       │     │       250 S      │          │              │
                     └──────────────────┘     └──────────────────┘          └──────────────┘
```
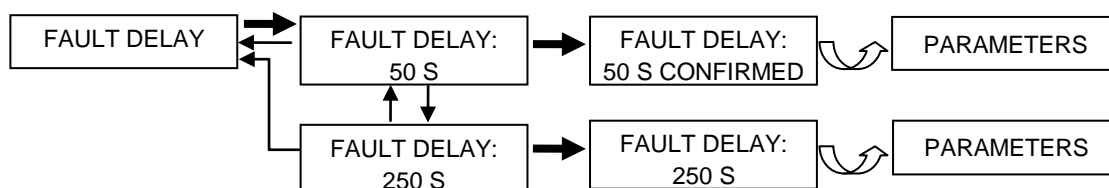
4.7.2 Description

By default, when the BSD 535 detects a fault (obstacle on the optical pulse path), it indicates the fault status after a 50 sec filtering.

That function allows to choose between 2 time filtering :
- 50 sec
- 250 sec

	Notice
☞	The 250 sec time filtering is not normative

4.8 Dazzle filtering management

4.8.1 Navigation

```
┌──────────────┐     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
│ DAZZLE DELAY │ ──► │  DAZZLE DELAY:   │ ──► │  DAZZLE DELAY:   │    ↻     │  PARAMETERS  │
│              │ ◄── │       50 S       │     │  50 S CONFIRMED  │          │              │
└──────────────┘     └──────────────────┘     └──────────────────┘          └──────────────┘
                            ▲ │
                            │ ▼
                     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
                     │  DAZZLE DELAY:   │ ──► │  DAZZLE DELAY:   │    ↻     │  PARAMETERS  │
                     │      250 S       │     │      250 S       │          │              │
                     └──────────────────┘     └──────────────────┘          └──────────────┘
                            ▲ │
                            │ ▼
                     ┌──────────────────┐     ┌──────────────────┐          ┌──────────────┐
                     │  DAZZLE DELAY:   │ ──► │  DAZZLE DELAY:   │    ↻     │  PARAMETERS  │
                     │      900 S       │     │      900 S       │          │              │
                     └──────────────────┘     └──────────────────┘          └──────────────┘
```
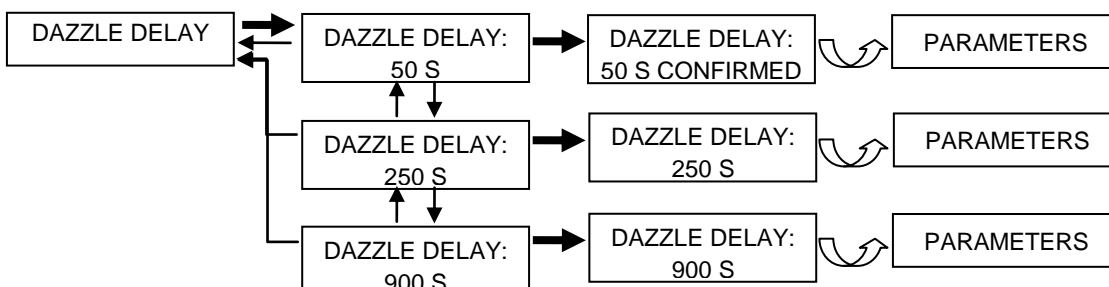
4.8.2 Description

By default, when the BSD 535 is dazzled (detector or reflector exposed to sun rays or intense light sources), it indicates a dazzle status after a 50 sec time filtering.

That function allows to choose between 3 time filtering :

- 50 sec
- 250 sec
- 900 sec

Notice

The 250 sec and 900 sec time filtering are not normative

4.9 Relay configuration

This function is only enabled by the RELAY version.

4.9.1 Navigation

```
┌─────────────┐     ┌─────────────┐     ┌─────────────┐
│   RELAY     │ ──▶ │ ALARM RELAY │ ──▶ │ PARAMETERS  │
│CONFIGURATION│ ◀── │   LOCKED    │     └─────────────┘
└─────────────┘     └─────────────┘
                    ┌─────────────┐     ┌─────────────┐
                    │ ALARM RELAY │ ──▶ │ PARAMETERS  │
                    │ AUTO-RESET  │     └─────────────┘
                    └─────────────┘
                    ┌─────────────┐     ┌─────────────┐
                    │  FAULT IN   │ ──▶ │ PARAMETERS  │
                    │ FAULT RELAY │     └─────────────┘
                    └─────────────┘
                    ┌─────────────┐     ┌─────────────┐
                    │  FAULT IN   │ ──▶ │ PARAMETERS  │
                    │ ALARM RELAY │     └─────────────┘
                    └─────────────┘
```
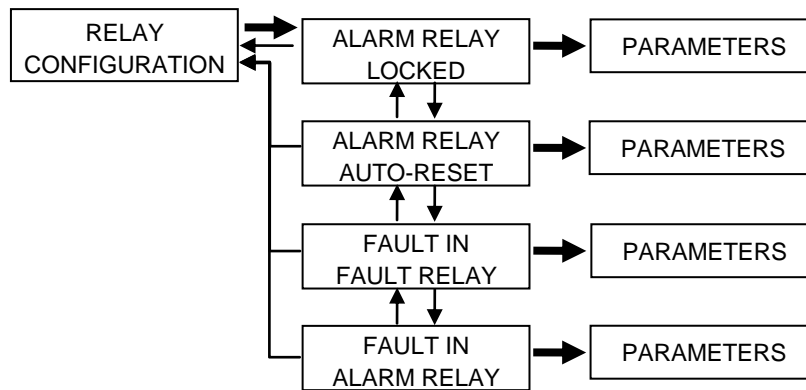
4.9.2 Setting of alarm relay

By default, the alarm relay is locked : even if the internal condition of the BSD 535 switches from the alarm condition to the standby condition, the contact of the alarm relay remains NC. The user should then reset the BSD 535 to clear the alarm condition (According to standard EN 54 – 12).

This function allows to clear the alarm relay locking. The two possible settings on the alarm relay are :

- Alarm relay locked
- Alarm relay self-reset (after 15sec)

In the self-reset alarm relay case, if the internal condition of the detector switches from the alarm condition to the standby condition, the contact of the alarm relay is repositioned in NO after a 15 sec time period.

comment :

Notice

The « self-reset » setting of the Alarm relay is non normative.

4.9.3 Fault on the fault relay / alarm relay

By default, the fault condition is indicated by the relay dedicated to the fault.

That function also allows to indicate the fault condition by the alarm relay. The two possible settings are :

- Fault on the Fault Relay
- Fault on the Alarm relay

Detailed function description

4.10 Setting and control of the DEFNET Address

4.10.1 Navigation

```
DEFNET          ADDRESS
ADDRESSING  →   READING   →   ADDRESS Nø

                ADDRESS       NEW ADDRESS:      NEW ADDRESS:     NEW ADDRESS:
                CHANGING  →   – – –        ⟲    0 – –      ⟲     0 6 –

                NEW ADDRESS:
                0 6 9     →   PARAMETERS
```
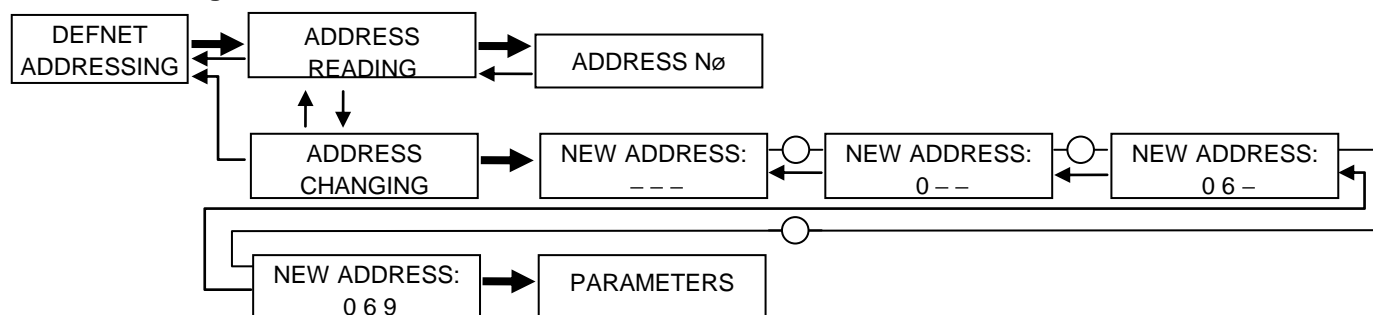
4.10.2 Description

This function allows to display and change the DEFNET address of the detector.

The address range is from address 0 to address 252.

If the DEFNET address is incorrect (outside the address range), the BSD 535 keeps the previously memorised addres in its memory.

If the user presses the MENU key or the ESC key when entering, the BSD 535 retains the previously memorised address.

4.11 Time and date

4.11.1 Navigation

```
DATE   →   DATE DISPLAY  →   XX / XX / XXXX

           DATE SETTING  →   DD/MM/YYYY   ⟲   DD/MM/YYYY  •••  DD/MM/YYYY     →  PARAMETERS
                             – –/– –/– – –      0 –/– –/– –      03/11/2009

TIME   →   TIME DISPLAY  →   XX : XX

           TIME SETTING  →   HH:MM (24h)  ⟲   HH:MM (24h) •••  HH:MM (24h)    →  PARAMETERS
                             – – : – –          1 – : – –       1 6 : 4 2
```
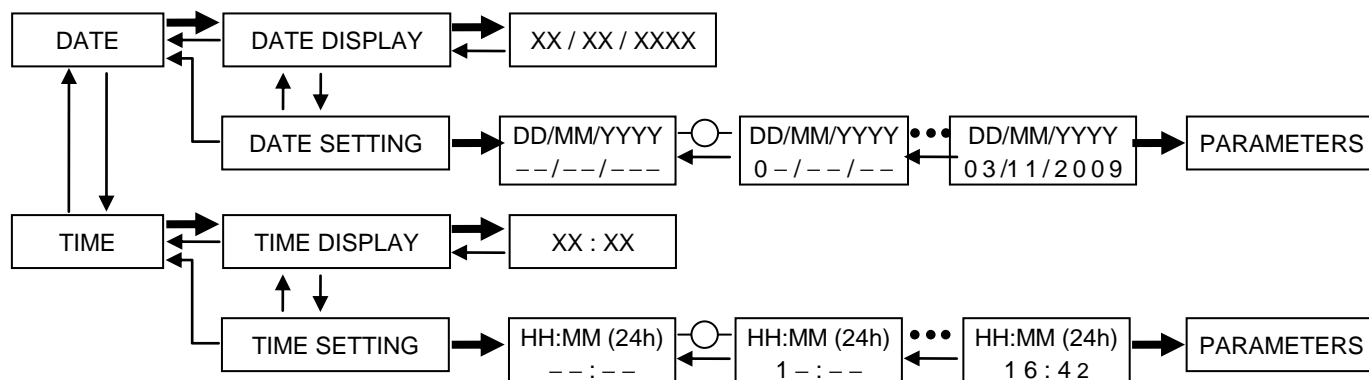
4.11.2 Description

This function allows to display and set the date and time of the detector. The setting is crucial when starting up the detector if the maintenance technicians want to have time information about each event of the history.

If the time and date marking entry is incorrect, the BSD 535 retains the previous time and date in memory.

If the user presses the MENU key or ESC key during the entry, the detector retains the previous time and date.

Notice

- The detector does not manage the summer and winter time change automatically.
- When the device is off, the current time is not updated. Once on, the date and time of the device need to be set.

Notice

The time display is a 0h-24h display

4.12 Display of active setting

4.12.1 Navigation

```
┌─────────────────┐         ┌─────────────────┐
│  ACTIVE CONFIG  │ ───────▶│  MINIMUM SENS.  │
│     DISPLAY     │◀─────── │  ALARM LEVEL 4  │
└─────────────────┘         └─────────────────┘
                                     ▲ │
                                     │ ▼
                            ┌─────────────────┐
                            │  FAULT DELAY:   │
                            │      50 S       │
                            └─────────────────┘
                                     ▲ │
                                     │ ▼
                            ┌─────────────────┐
                            │  DAZZLE DELAY:  │
                            │      900 S      │
                            └─────────────────┘
                                     ▲ │
                                     │ ▼
                            ┌─────────────────┐
                            │   ALARM RELAY   │
                            │     LOCKED      │
                            └─────────────────┘
                                     ▲ │
                                     │ ▼
                            ┌─────────────────┐
                            │    FAULT IN     │
                            │   FAULT RELAY   │
                            └─────────────────┘
```

4.12.2 Description

This function allows to display the setting of each parameter of the BSD 535.

> **Notice**
>
> The information regarding the relays (Alarm relay and Fault relay) are only visible for the RELAY version detectors.

4.13 Return to « works » settings

This function allows to reset the BSD 535 with the default setting with all the parameters of the « Setting » sub-menu.

4.14 Memory events

4.14.1 Navigation

```
┌──────────┐     ┌──────────┐     ┌──────────────┐     ┌──────────────┐
│  MEMORY  │────▶│  ALARMS  │────▶│ ALARMS       │────▶│ ALARMS NUMBER:│
│  EVENTS  │◀────│          │◀────│ COUNTER      │     │   ALARMS      │
└──────────┘     └──────────┘     └──────────────┘     └──────────────┘
                    ▲ │             ▲ │
                    │ ▼             │ ▼
                                  ┌──────────────┐     ┌──────────────────┐
                                  │ ALARMS LIST  │     │ Alarms scrolling in│
                                  │              │────▶│ chronological order│
                                  └──────────────┘     └──────────────────┘

                 ┌──────────┐     ┌──────────────┐     ┌──────────────┐
                 │  FAULTS  │────▶│ FAULTS       │────▶│ FAULTS NUMBER:│
                 │          │◀────│ COUNTER      │     │   FAULTS      │
                 └──────────┘     └──────────────┘     └──────────────┘
                    ▲ │             ▲ │
                    │ ▼             │ ▼
                                  ┌──────────────┐     ┌──────────────────┐
                                  │ FAULTS LIST  │     │ Faults scrolling │
                                  │              │────▶│ in chronological order│
                                  └──────────────┘     └──────────────────┘

                 ┌──────────┐     ┌──────────────┐     ┌──────────────────┐
                 │ FULL LIST│────▶│ CHRONOLOGICAL│────▶│ List scrolling   │
                 │          │◀────│ ORDER        │     │ in chronological order│
                 └──────────┘     └──────────────┘     └──────────────────┘
                    ▲ │             ▲ │
                    │ ▼             │ ▼
                                  ┌──────────────┐     ┌──────────────────┐
                                  │ ANTI-CHRONO  │────▶│ List scrolling   │
                                  │ ORDER        │     │ in anti-chronological order│
                                  └──────────────┘     └──────────────────┘

                 ┌──────────────┐ ┌──────────────┐     ┌──────────────┐
                 │ DELETE       │▶│ DELETION     │────▶│ PARAMETERS   │
                 │ MEMORY EVENT?│◀│ CONFIRMED ?  │     │              │
                 └──────────────┘ └──────────────┘     └──────────────┘
```
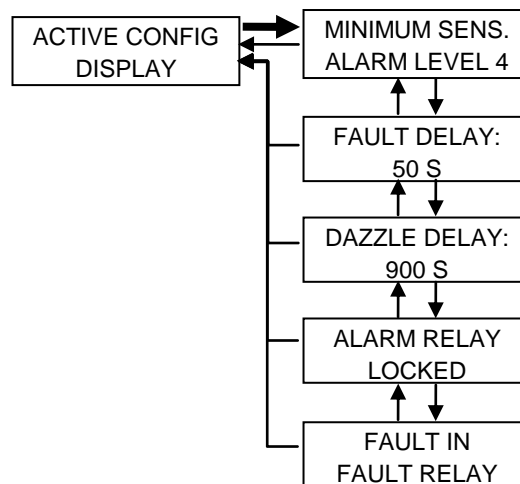
4.14.2   Description

The BSD 535 memory events can contain as many as 125 events. Beyond that, when a new event is recorded, the oldest one is deleted.

Each event of the memory event has its time and date.

The « Memory Events » function allows to display all the events in chronological order or in anti-chronological order. However not all events have the same level of relevance. The events are divided into two categories :

- 1st category of events. The events in this category are accessible to users. A text display describes the event on the terminal display
- 2nd category of events. The events of this category are accessible to the technical department. These events are displayed on the terminal with an event number.

The « Memory Event » function also allows to get information about 2 major events separately from others. Those events are :

- The alarm condition (alarm + threshold alarm n, n=2…7)
- Fault condition (fault, dazzle, fouling)

The possible actions on these 2 events are :

- A display of the number of each event since the last maintenance ;
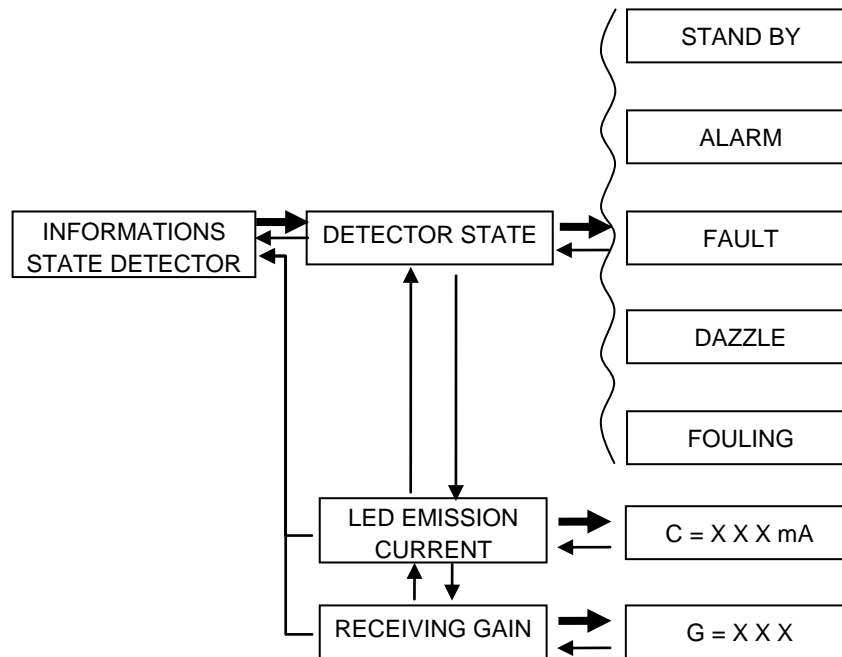- A display in chronological order of the date of occurrence of the events.

Notice

- To get the exact time and date of each event, the time of the BSD 535 has to have been set before the events, and the BSD 535 has to have remained on at all times.
- On the display, when the events are scrolled, the first line is dedicated to the description of the event and the second line to the time and date.

4.15 Detector state information

4.15.1 Navigation

```
                                                    ┌──────────────┐
                                                    │   STAND BY   │
                                                    └──────────────┘

                                                    ┌──────────────┐
                                                    │    ALARM     │
                                                    └──────────────┘
┌──────────────┐      ┌──────────────┐              ┌──────────────┐
│ INFORMATIONS │ ──▶  │ DETECTOR STATE│ ──▶        │    FAULT     │
│STATE DETECTOR│ ◀──  │              │ ◀──         └──────────────┘
└──────────────┘      └──────────────┘
                                                    ┌──────────────┐
                                                    │    DAZZLE    │
                                                    └──────────────┘

                                                    ┌──────────────┐
                                                    │   FOULING    │
                                                    └──────────────┘

                      ┌──────────────┐      ┌──────────────┐
                      │ LED EMISSION │ ──▶  │ C = X X X mA │
                      │   CURRENT    │ ◀──  └──────────────┘
                      └──────────────┘
                      ┌──────────────┐      ┌──────────────┐
                      │RECEIVING GAIN│ ──▶  │  G = X X X   │
                      │              │ ◀──  └──────────────┘
                      └──────────────┘
```

4.15.2 Description

This function has 2 sub-functions :

4.15.2.1 Display of detector condition

This function allows to display the detector condition on the terminal display
Currently the various detector conditions are :
- Standby condition
- Alarm condition
- Fault condition
- Dazzle condition
- Fouling condition

A optical pulse is sent and processed every 5 seconds
After each pulse, the BSD 535 sends back its condition to the terminal display.

4.15.2.2 Visualisation of measuring parameters

This function allows to receive information about :
- The supply current of the emitting LED
- The receiving gain

5 Terminology and acronyms used

BRU 535	Connection box of the linear smoke detector
BRC 535	**D**etector Terminal
Setting of the detector	Alignment of the detector on the reflector
NO	**N**ormally **O**pen
NF	**N**ormally **C**losed
LED d'émission	**LED** emitting the luminous impulse on the detector
LED TL	Terminal signalling **LEDs**. There are 3 of them (1 green one, 1 orange one and 1 red one)
VI	**V**isual **I**ndicator of the detector. This indicator has 3 colours : red, orange and green
Vpulse	Voltage received at end of the detector's reception line proportional to the intensity of the luminous impulse received on the sensor