FIRE AND SECURITY

Fire Alarm Control Panel
BS-60

Commissioning handbook
Program version
P1-BS60-202E-0

$C \in$

Contents

Page

Introduction

0. Introduction

The program version P1-BS-60-201E-O is only to be implemented on
BSA-60 board labeled 7212-197-0003.

BSA-60 boards 7212-197-0001 and 7212-197-0002 has to be modified and labeled BS-991.

"Updateing-kit" to BSA-60 has art.no. BST-10.

Checking

1. Pre-commissioning checks

1.1 Recommended checking equipment

High-ohmic universal measuring instrument.
(internal resistance about 5 Mohm).

Test procedure

1.2 Test procedure

a) Check that all the cables are properly connected to List 1, 2 and 3.

b) Disconnect the ribbon cables on List 1 and 2 check that the mains and battery fuses are removed. See fig. no. 1.

c) Measure the total resistance in the loop is the following manner:

   Measure between the cable ends on terminal List 1.1 and 2 (A and A') and between 3 and 4 (B and B').
   Total resistance must not exceed 30 Ohm.

   If the loop contains BK-30 loop break units, they must be bypassed in order to make it possible to measure the resistance.

d) Check all cables for "stray voltage".

e) Check for proper earth (that the control panel is earthed).

f) On systems when mains have "grounded" 0V point, ensure that the mains live is connected to "L", List 3, terminal 3. (This input has a fuse).

Connections

2. Connections

a) When the checking procedure has been carried out, connect the ribbon cables for List 1 and 2.

b) Place the batteries on the bracket and connect them to the wires in the cabinet.

c) Connect the fuses in accordance with fig. no. 1.

Placement of fuses on the BSA-60 circuit board and on the BSS-100 power supply unit.

LIST 2

LIST 1

BSS-103

Battery

Main fuse: (BSS-103, F1) 1,4AT

Not in use.

Ext. 24V outp. (BBS-103, F3):1AT

LIST L3

BSA-60 circuit board

R54: For display contrast adjustment

D4: EPROM for programme

R54

F4 F3 F2 F1   X4

X3

D4

X6

Reverse side of the BSA-60 circuit board

X5

S18   X7

S17

X1

X9

F9 F5 F6   X2

Front plate

+ -
Control 3

Fig. no. 1

Rotating switch S17
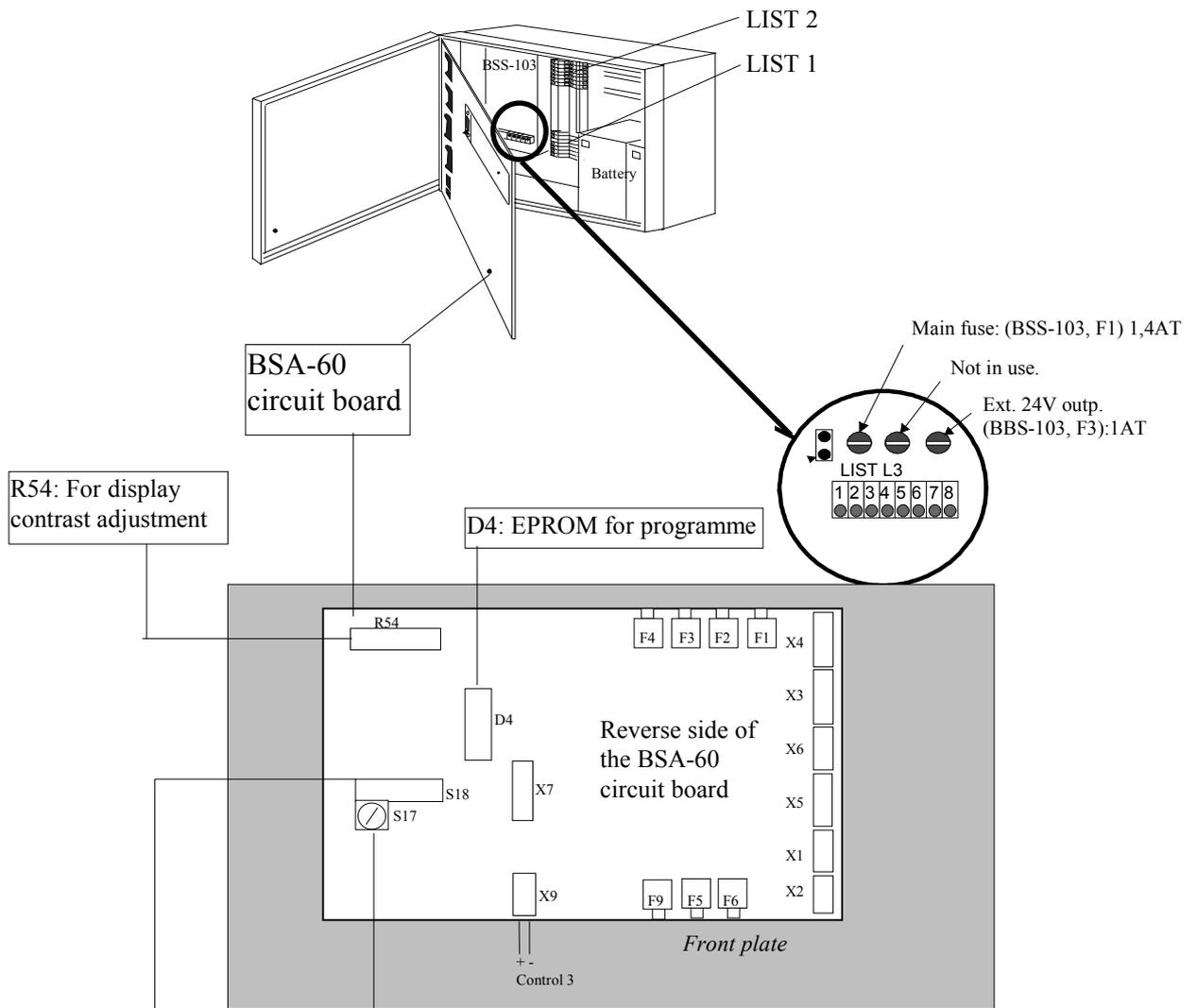
DIP-switch S18

Fuses, sounders circuit:

F1	0,63A T	AK1
F2	0,63A T	AK2
F3	0,63A T	AK3
F4	0,63A T	AK4

F5	4A T	24V DC in
F6	4A T	Battery
F9	1A T	Output SSK Control 1 and 3

Switch setting

3. Switch setting

3.1 Setting the S18 DIP switch on the BSA-60 circuit board

The S18 switch is located on the reverse side of the front panel.
To get access to this switch, open the front panel by unscrewing the large screw to the right of it.

Setting of DIP-switches must be carried out <u>with no</u> power connected to the system. (Does not affect switch S18 element 1.)
(Do NOT use a pencil to operate the switches!)

Switch elements:

Element 1	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7
ON	OFF	OFF	ON	OFF	OFF	OFF
(Config. data protection)	External control of alarm delay from input EXT.3(L1.25) ON= active OF = passive	(Remote/local mode). OFF= Local mode ON= Remote mode	Communication speed. OFF= 9600 baud ON= 1200 baud			ON=Custom designed test event log is active. Normal position. OFF= Access to the config. menu.

Rear side of the front panel

Rotating switch S17   DIP-switch S18
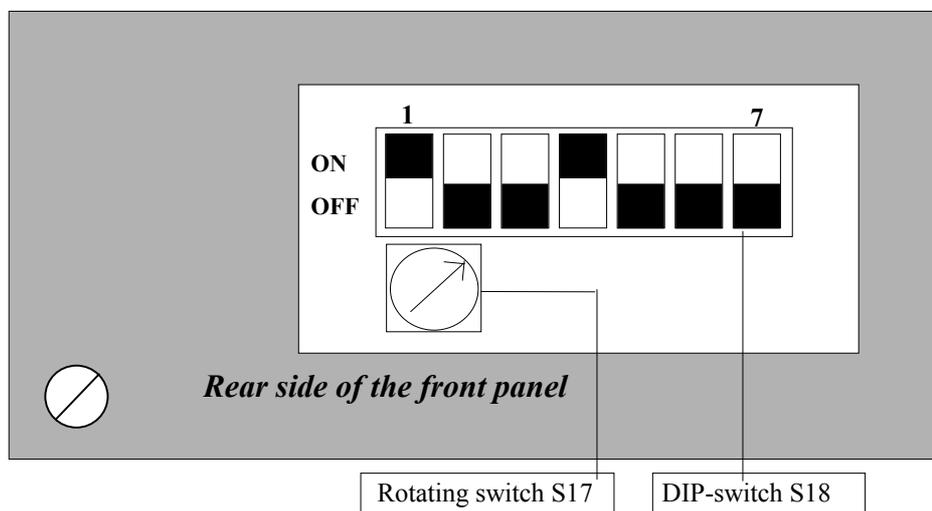
Fig. no. 2

3.2 Setting the control panel's ASSP address on S17 switch

If the control panel is a sub panel connected to BS-100, set the ASSP address (2-F) of the control panel on the S17 switch.
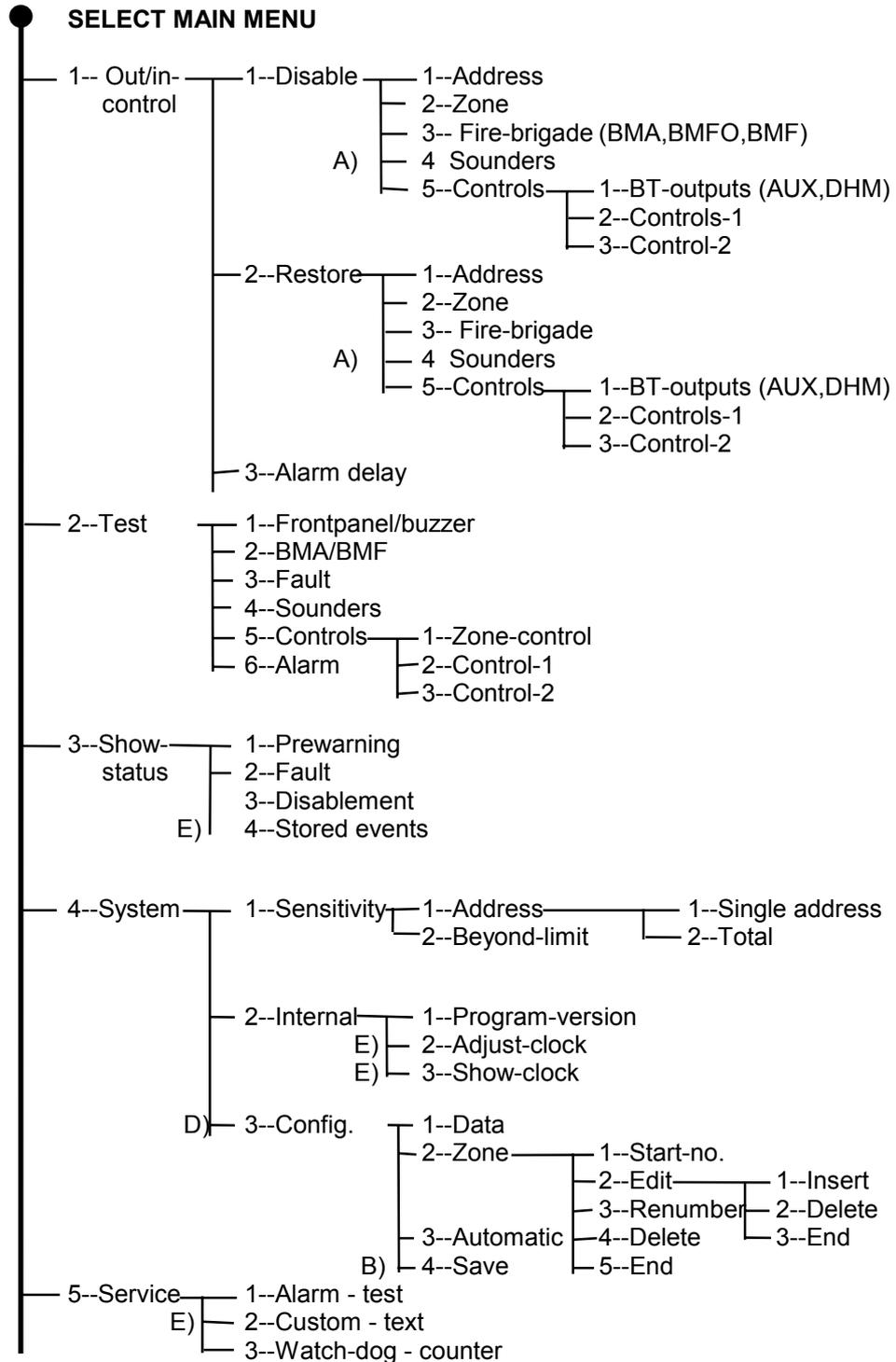
If the control panel is an independent unit the switch must be in the **"0"-**position. The switch is located under the S18 switch on the rear side of the front panel. See fig. 2.

Configuration

4. Configuration

4.1 Menu structure

The whole menu structure is shown here, but only "CONFIGURATION", and "SERVICE" is described in this handbook. For information about the other functions, see "Operators handbook" for BS-60.

SELECT MAIN MENU

- **1-- Out/in-control**
  - **1--Disable**
    - 1--Address
    - 2--Zone
    - 3-- Fire-brigade (BMA,BMFO,BMF)
    - A) 4 Sounders
    - 5--Controls
      - 1--BT-outputs (AUX,DHM)
      - 2--Controls-1
      - 3--Control-2
  - **2--Restore**
    - 1--Address
    - 2--Zone
    - 3-- Fire-brigade
    - A) 4 Sounders
    - 5--Controls
      - 1--BT-outputs (AUX,DHM)
      - 2--Controls-1
      - 3--Control-2
  - **3--Alarm delay**
- **2--Test**
  - 1--Frontpanel/buzzer
  - 2--BMA/BMF
  - 3--Fault
  - 4--Sounders
  - 5--Controls
    - 1--Zone-control
    - 2--Control-1
    - 3--Control-2
  - 6--Alarm
- **3--Show-status**
  - 1--Prewarning
  - 2--Fault
  - 3--Disablement
  - E) 4--Stored events
- **4--System**
  - **1--Sensitivity**
    - 1--Address
      - 1--Single address
      - 2--Total
    - 2--Beyond-limit
  - **2--Internal**
    - 1--Program-version
    - E) 2--Adjust-clock
    - E) 3--Show-clock
  - D) **3--Config.**
    - 1--Data
    - 2--Zone
      - 1--Start-no.
      - 2--Edit
        - 1--Insert
        - 2--Delete
        - 3--End
      - 3--Renumber
      - 4--Delete
      - 5--End
    - 3--Automatic
    - B) 4--Save
- **5--Service**
  - 1--Alarm - test
  - E) 2--Custom - text
  - 3--Watch-dog - counter

REMARKS A) IN ABOVE MENU STRUCTURE

A) The "DISABLE SOUNDERS" function is password protected for the English version.

B) The "SAVE" function is always password protected (spesial requirements are set to OFF, SOLAS or LPC).

C) The "SERVICE" function is always password protected (spesial requirements are set to OFF, SOLAS or LPC).

D) The DIP-switch 18.7 has to be in position "OFF" to reach the "CONFIGURATION" function.

E) The DIP-switch 18.7 has to be in position "ON" to reach the "STORED-EVENTS","CUSTOM-TEXT", "ADJUST-CLOCK" and "SHOW-CLOCK" functions. **DEFAULT POSITION.**

Config. preaction

4.2 Configuration preaction

Before the configuration procedure is started, please check that S18.1 switch is set in position "ON" (can be changed without powering down the panel).

To active the "CONFIGURATION"-menu, do as follows:
- Power down the panel.
- Set switch S18.7 in position "OFF".
- Power up the panel.

This operation changes the menu structure and gives access to "CONFIGURATION" (3) under the "SYSTEM"-menu.

SYSTEM:	1:SENSITIVITY	2:INTERNAL
	2:CONFIGURATION	

System Configuration

4.3 System Configuration

Select "CONFIGURATION" by pressing "3" in the "SYSTEM"-menu, and the following text will appear in the display:

SYSTEM CONFIGURATION: 1:DATA	2:ZONE
3:AUTOMATIC	4:SAVE

NB! Saving of configuration changes is password portected. See sec. 4.3.4.

4.3.1   Configuration - DATA

All default values set from the factory, can be edited.

Select "DATA" by pressing "1" in the "SYSTEM CONFIGURATION"-menu, and the following text will appear in the display:

> **SPESIAL REQUIREMENTS: 00**
> **OFF = 00, SOLAS = 01, LPC =02**

Select special requirements value and press ↵.
The following text will appear in the display:

> **RESET-NUMBER: 100**

Verify or correct the reset-number (number of detectors in the loop + 1),
and press ↵.

The following text will appear in the display (SOLAS program version will jump directly to "Alarm Delay T2"):

> **ALARM DELAY T1 (0 - 10) MIN: 02**

By us of D/N-function switch S18.2 must be in "ON" position and 0 voltage must be connected to pt. L1.25.
The alarm delay T1 of sounder output 1 - 4 (and BMA, alarm output) can be selected in the 0 - 10 minute range. A second or manual alarm will not have this delay.

Press ↵ and the following text will appear in the display:

> **ALARM DELAY T2 (0-30) MIN: 10**

The alarm delay T2 of sounder output 1 - 4 (and BMA, alarm output) can be selected in the 0 - 30 minute range. A second or manual alarm will not have this delay.
The "SOLAS" program version has always 2 minutes delay after 1st alarm, also for manual call-points.

Press ↵ and the following text will appear in the display:

> **NUMBER OF CELLWARN: 00**

Enter number of zone operating units (BK-50, if mounted) and press ↵.

The following text will appear in the display:

> **MAINS FAILURE DELAY (1 - 35) MIN: 35**

The mains failure can be delayed within the 1 - 35 min. range. If 35 min. is selected the mains failure is disabled.

Press ↵, and the following text will appear in the display:

> **FIRE BRIGADE ALARM DELAY: 1**
> **ON = 1, off = 0**

ON - Any delay (T1 + T2) selected above.
OFF - There will be no alarm delay.
Select ON / OFF.

Press ↵, and the following text will appear in the display:

> **SOUNDER OUTPUT-1 ALARM DELAY: 1**
> **ON = 1, OFF = 0**

Only delay time of sounder output-1 can be turned ON/OFF.
ON - Any delay (T1 + T2) selected above.
OFF - There will be no alarm delay.
Select ON / OFF.
This function gives possibility to direct alarm on sounder output 1 and delay on outputs 2-4.

Press ↵, and the following text will appear in the display:

> **CONSTANT ALARM SIGNAL: 0**
> **ON = 1, OFF = 0**

Concern both sounders and internal buzzer.

ON - Constant alarm signal.
OFF - Pulsating alarm signal.
(SOLAS program version gives always constant signal on output 4 (AK4).
Select ON/OFF.

Press ↵, and the following text will appear in the display:

> **SHORT CIRCUIT SOUNDER MONITOR: 1**
> **ON = 1, OFF = 0**

This funciton has to be turned off when low-ohm sounders or sounders without a blocking diode (older installations) are connected.
Select ON/OFF.

Press ↵, and the following text will appear in the display:

> **SILENCE/RESOUND SOUNDER FUNCTION: 1**
> **ON = 1, OFF = 0**

This function is used when the BS-60 control panel serves as a slave to master.
When selecting OFF, it will only be possible to stop the sounder from a master.
IF BS-60 is the main panel (independent), then select ON:
Switch S18.3 OFF: Silence sounder both from BS-60 and BS-100.

ON: Only from BS-100. Select ON/OFF.

Press ↵, and the following text will appear in the display:

> **RESET FUNCTION: 1**
> **ON = 1, OF =0**

This function is used when the BS-60 control panel serves as a slave to a master.
When selecting OFF, it will only be possible to reset the system from a master. If
BS-60 is the main panel (independent), then select ON:
Switch S18.3 OFF: Reset from both BS-100 and BS-60.
ON: Only from BS-100.

Select ON/OFF.
Press ↵, and the following text will appear in the display:

> **POWER LED SPECIAL FUNCTION: 0**
> **ON = 1, OFF = 0**

ON - The main lamp will light when the control panel has correct internal 24V power
supply.
OFF - The main lamp will only light when the control panel is connected to a voltage
supply (230V AC).

Select ON/OFF.
Press ↵, and the following text will appear in the display:

> **INVERT BMF OUTPUT: 0**
> **ON = 1, OFF = 0**

ON - The BMF (fault output) is activated when the control panel is powered, and
deactivated if any fault event occurs.
OFF - The BMF is activated if any fault event occurs.

Select ON/OFF.
Press ↵, and the following text will appear in the display:

> **PREWARNING, OUTPUT AT CONTROL-2: 0**
> **ON = 1, OFF = 0**

By selecting "ON" the Control-2 will operate as BMFO-output (prewarning-output) to the Fire brigade/Fighters.

Select ON/OFF.
Press ↵, and the following text will appear in the display:

> **BATTERY VOLTAGE, 25,5 VOLTS MONITOR: 1**
> **ON = 1, OFF = 0**

ON - A fault message is given if the voltage is less than 25,5 V.
OFF - No fault message is given.

Press ↵, and the following text will appear in the display:

> **DOOR OPEN, OUTPUT AT CONTROL-3: 0**
> **ON = 1, OFF = 0**

ON - A signal to the Control-3 is given when the front door is open.
OFF - No signal is given.

Select ON/OFF.
Press ↵, and the following text will appear in the display:

> **DISABLEMENTS, OUTPUT AT CONTROL-3: 1**
> **ON = 1, OFF = 0**

ON - A signal to the Control-3 is given when parts of the panel are disabled.
OFF - No signal is given.

Select ON/OFF.
Press ↵, and the following text will appear in the display:

> **EXT SILENCE SOUNDER (ON) / RESET (OFF): 0**
> **ON = 1, OFF = 0**

ON - The external reset acts as a silence sounder function.
OFF - The external reset acts as a normal reset.

Select ON/OFF.
Press ↵, and the system will return to the "SYSTEM CONFIGURATION"-menu. (Remember to save the configured data before leaving the "SYSTEM CONFIGURATION"-menu.

4.3.2   Configuration - ZONE

Select "ZONE" by pressing "2" in the "SYSTEM CONFIGURATION"-menu, and the following text will appear in the display:

```
SYSTEM CONFIG. ZONE:     1:START-NUMBER
2:EDIT    3:RENUMBER     4: DELETE    5:END
```

4.3.2.1   START number

Select "START-NUMBER" by pressing "1" in the "SYSTEM CONFIG.ZONE"-menu, and the following text will appear in the display:

```
SYSTEM CONFIG. ZONE
SELECT START-NUMBER: 001
```

Select the number (1 - 190) for the first zone and press ↵. The "SYSTEM CONFIG. ZONE"-menu will appear again.

4.3.2.2   EDIT of zone configuration

Select "EDIT" by pressing "2" in the "SYSTEM CONFIG. ZONE"-menu, and the following text will appear in the display:

```
SYSTEM CONFIG. ZONE EDIT
SELECT ZONE-NUMBER: 000
```

Enter the number of the zone to be edited, and press ↵.
(By pressing ↵ on zone no. 000, the "SYSTEM CONFIG.ZONE"-menu will appear again).
The following text will appear in the display:

```
ZONE YYY:     1:INSERT-00  2:DELETE-00  3:END
X1, X2, X3,..........Xn
```

YYY is the selected zone to be edited.
X1, X2, X3 are addresses in the zone YYY.

If there are more addresses in the zone, press ↵ and a new line will appear.

INSERT adresses
Select "1" and enter the address to be inserted in the first zone (zone YYY).
Press ↵. The inserted address will appear in the second line.
The system will propose the following address. This address can be edited. The system will not accept to insert an address which already is defined in an another zone.
To terminate the "INSERT" function enter adress 00 and press ↵. The addresses in the zone (zone YYY) will appear on the second line in increasing order.

Be aware that if more than 12 adresses are programmed into the zone, the first addresses entered will be "pushed out" to the left of the display line.

DELETE adresses
Select "2" and enter the detector address to be deleted in the zone YYY. Press   .
The deleted address will appear in the second line.
The system will propose to delete the following address. This address can be edited.

The system will not accept to delete an address which is not in the zone.
To terminate the "DELETE" function, enter address 00 and press ↵.
The addresses in zone YYY will appear in the second line.

END of zone edit function
To end the "EDIT" function of zone YYY, select "END" by pressing "3", and the following text will appear in the display:

> **ZONE YYY, ALARM DELAY: 1**
> **ON = 1, OFF = 0**

YYY is the current zone.

The delay does not apply from the detectors to the control panel, but from the control panel to the alarm devices. The delay does not apply if manual call points are activated or if there are several detectors in alarm. In such a case all the alarm devices immediately will be activated. (This does not apply to the SOLAS version).
ON - Any delay (T1 + T2) selected in section 4.3.1.
OFF - There will be no alarm delay.

Press ↵, and the following text will appear in the display:

> **ZONE YYY, FILTER CONSTANT LONG: 0**
> **ON = 1, OFF = 0**

YYY - is the current zone.

ON - Filter constant long.
OFF - normal filter constant.

Press ↵, and the following text will appear in the display:

> **SYSTEM CONFIG. ZONE EDIT**
> **SELECT ZONE-NUMBER: YYY**

The system will propose to edit the following zone.
To terminate the "SYSTEM CONFIG. ZONE EDIT", select zone-number 000 and press ↵.

The system will return to the "SYSTEM CONFIG. ZONE"-menu.
If all necessary configuration is done, continue the configuration procedure at sec. 4.3.2.5.

4.3.2.3   RENUMBER of zones

If it is necessary to renumber a zone, select "RENUMBER" by pressing "3" in the "SYSTEM CONFIG. ZONE"-menu, and the following text will appear in the display:
Enter the zone to be renumbered, and press ↵.

> **SYSTEM CONFIG. ZONE RENUMBER**
> **FROM ZONE NO: YY1 TO ZONE NO: YY2**

Enter the new zone number, and press ↵.

The "SYSTEM CONFIG. ZONE"-menu will appear in the display.

4.3.2.4   DELETE zones

If it is necessary to remove the zone connection of all addresses in a zone, the zone has to be deleted. The addresses will act as single addresses.

Select "DELETE" by pressing "4" in the "SYSTEM CONFIG. ZONE"-menu, and the following text will appear in the display:

```
SYSTEM CONFIG. ZONE DELETE
SELECT ZONE-NUMBER: 000
```

The "SYSTEM CONFIG. ZONE" will appear in the display.

4.3.2.5   END of zone configuration

When configuration data/zone is entered/changed, select "END" by pressing "5" in the "SYSTEM CONFIG. ZONE"-menu.
The "SYSTEM CONFIG. ZONE"-menu will appear in the display.

Remember to save the configuration data before leaving the "SYSTEM CONFIGURATION"-menu. See sec. 4.3.4.

4.3.2.6   AUTOMATIC restore of default values

If it is necessary to restore default configured data (values set from the factory), select "AUTOMATIC" by pressing "3" in the "SYSTEM CONFIGURATION"-menu. The following text will appear in the display:

```
SYSTEM CONFIGURATION AUTOMATIC
WAIT ...
```

The system will automatically return to the "SYSTEM CONFIGURATION"-menu.

4.3.2.7   SAVE configuration data (password protected)

All changed configurated data must be saved to remain after a power down. Select "SAVE" by pressing "4" in the "SYSTEM CONFIGURATION"-menu, and the following text will appear in the display:

```
ENTER PASSWORD *****
```

(When configuraiton BS-60 the first time, the system demands that all configurations are confirmed before storing all activates. Verify or correct and press ↵.

The following text will appear in the display:

```
TURN OFF SWITCH S18.1
```

This is done by opening the front panel by unscrewing the large screw to the right. On the rear side of the panel there is a square cutout in the lower left corner from where the S18 switch can be accessed. Move the switch no. 1 (to the left) down (OFF) by means of a pen or simular object, and the following text will appear in the display after a brief moment:

> **TURN ON SWITCH S18.1**

Set the switch S18.1 in position "ON".
The configurated data has now been stored in the control panel, and the "SYSTEM CONFIGURATION"-menu will appear in the display.

Verify all stored data.

To activate the custom designed text/event log function, the following procedure must be carried out:

- Power down the panel.
- Set switch S18.7 in position "ON".
- Power up the panel.
- Close the door.

Service

5. Service (Password protected on service level)

Select "SERVICE" by pressing "5" in the main menu, and the following text will appear in the display:

> **ENTER PASSWORD:**

Enter the password and press ↵.

If the panel is in the "custom-text" mode (DIP switch 18.7 is set to position "ON") the following text will appear in the display:
If the panel is in the "CONFIGURATION"-mode (DIP switch 18.7 is set in position "OFF") the "CUSTOM-TEXT" selection is let out.

> **SERVICE:**   **1:ALARM-TEST**   **2:CUSTOM-TEXT**
> **3:WATCHDOG-COUNTER**

Alarm-test

5.1 Alarm-test

Select "ALARM-TEST" by pressing "1" in the "SERVICE"-menu, and the following text will appear in the display:

> **SERVICE ALARM-TEST**
> **SELECT ZONE-NUMBER: YY**

Enter the number of zone (YY) to be tested. Zone 00 has to be chosen to test all zones.
Tested zone is disabled during the test, but this will not be indicated on front.

Press ↵, and the following text will appear in the display:

> **SERVICE ALARM-TEST ACTIVE, ZONE: YY**

YY- is the current zone in test.

Test all the detectors in the zone with recommended test gas and the manual call point with the special test key. Not if the LED lights up.

Be sure that the detector/manual call point is defined in the selected zone to be tested.

Write down the address of the detectors and manual call points which is tested.

All detectors in the zone has to be tested before the test is ended.

Return to the control panel and the following text will appear in the display:

> **SERVICE ALARM-TEST ACTIVE, ZONE: YY**
> **AL N, ZONE NO: YY   ADDRESS NO: XX**

YY is the current zone in test.
n is the number of registered alarms. The number should be equal with number of detectors/manual call points which are tested.
XX is the address of the last tested unit.

Press ↵ to scroll the alarms and check if any addresses are missing.

5.2   Custom-text

Select "CUSTOM-TEXT" by pressing "2" in the "SERVICE"-menu, and the following text will appear in the display:

> **SERVICE CUSTOM-TEXT: 1:OFF   2:ON**

1 - OFF   Turn the custom-text OFF. Only the addresses will be displayed.
2 - ON   Turns the custom-text ON.

Select ON/OFF and press ↵.

5.3   Watchdog-counter

Select "WATCHDOG-COUNTER" by pressing "3" ("2" if S18.7 is in position OFF) in the "SERVICE"-menu, and the following text will appear in the display:

> **NUMBER OF WATCHDOG-RESTARTS: nn**
> **PRESS ENTER TO RESET**

nn is the number of watchdog-restarts since the last reset of the counter or reset of the panel.

Press ↵ to reset number of restarts.
Press "MENU" to return to the main menu.

6. Custom design text

The custom designed text must be entered from an IBM-compatible PC with serial and parallel output. To enter the text "Custom data tool for BS-60/BX-40", art.no. P1-PCSYS-102 is required. The switch S18.7 has to be set in position "ON" when entering custom designed text.

For more detailed information see document "How to make and verify customized text file BS-60".

7. Texting the front of the Fire Alarm Control Panel

Zone texts can be written on special stickers. The stickers have art.no. E-1981.
After the texts are written on the sticker, the sticker is placed in the pocket as shown in the figure below (between the metal plate and the front laminate).
A WordPerfect 5.1 text file is prepared for texting zone panels, with suitable fonts, line spaces etc. Separate instructions for using the text file is available from Autronica.
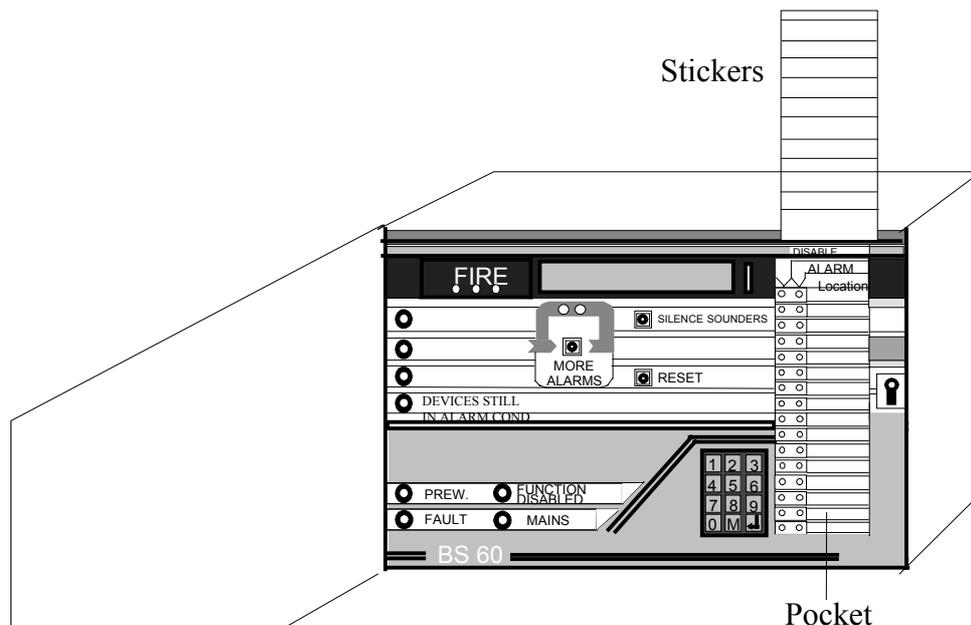
As a temporary solution the zonal text can be written in one of the three columns on the figure in Appendix A.
Cut the paper, remove the plastic plate in the pocket and put the paper sticker in the pocket.
The paper sticker might be adjusted.

APPENDIX A

Papertick no. 1   **Paperstick no. 2**   **Paperstick no. 3**

APPENDIX B

To make operating, service and maintenance more easy, this table can be filled in and left in the panel.

System configuration data:

Functions	Configurations
Special requirements OFF=00, SOLAS=01, LPC=2	
Reset- Number	
Alarm delay T1 (0-10) min.	
Alarm delay T2 (0-30) min.	
Number of cellwarn	
Mains failure delay (1-35) min.	
Fire brigade alarm delay ON=1, OFF=0	
Sounder output-1 alarm delay ON=1, OFF=0	
Constant alarm signal ON=1, OFF=0	
Short circuit sounder monitor ON=1, OFF=0	
Silence/resound sounder function ON=1, OFF=0	
Reset function ON=1, OFF=0	
Power led special function ON=1, OFF=0	
Invert BMF output ON=1, OFF=0	
Prewarning output at control-2 ON=1, OFF=0	
Battery voltage, 25,5 volts monitor ON=1, OFF=0	
Door open, output at control-3 ON=1, OFF=0	
Disablements, output at control-3 ON=1, OFF=0	
Ext. silence sounder (ON)/reset (OFF) ON=1, OFF=0	

APPENDIX C

To make operating, service and maintenance more easy, this table can be filled in and left in the panel.

Configuration zone:

ZONE	ADDRESS	ALARM DELAY ON=1,OFF=0	FILTER CONSTANT LONG ON=1,OFF=0
Zone 1			
Zone 2			
Zone 3			
Zone 4			
Zone 5			
Zone 6			
Zone 7			
Zone 8			
Zone 9			
Zone 10			
Zone 11			
Zone 12			
Zone 13			
Zone 14			
Zone 15			
Zone 16			

Appendix D -
BS-100 master / Control unit with BS-60 slaves

```
                                              ┌──────────────┐
                                          CL  │ BS-60        │
                                         ┌────┤ Fire alarm   │
                                         │    │ control panel│
                                         │    │ 1 loop       │
┌──────────────┐      ┌──────────────┐   │    └──────────────┘
│ BS-100       │  CL  │ KDL-26       │   │ CL ┌──────────────┐
│ Main fire alarm├────┤ Comm.        ├───┼────┤ BS-60        │
│ control panel│      │ line splitter│   │    │ Fire alarm   │
└──────────────┘      └──────────────┘   │    │ control panel│
                                         │    │ 1 loop       │
                                         │    └──────────────┘
                                         │ CL ┌──────────────┐
                                         ├────┤ BS-60        │
                                         │    │ Fire alarm   │
                                         │    │ control panel│
                                         │    │ 1 loop       │
                                         │    └──────────────┘
                                         │ CL ┌──────────────┐
                                         └────┤ BS-60        │
                                              │ Fire alarm   │
                                              │ control panel│
                                              │ 1 loop       │
                                              └──────────────┘
```
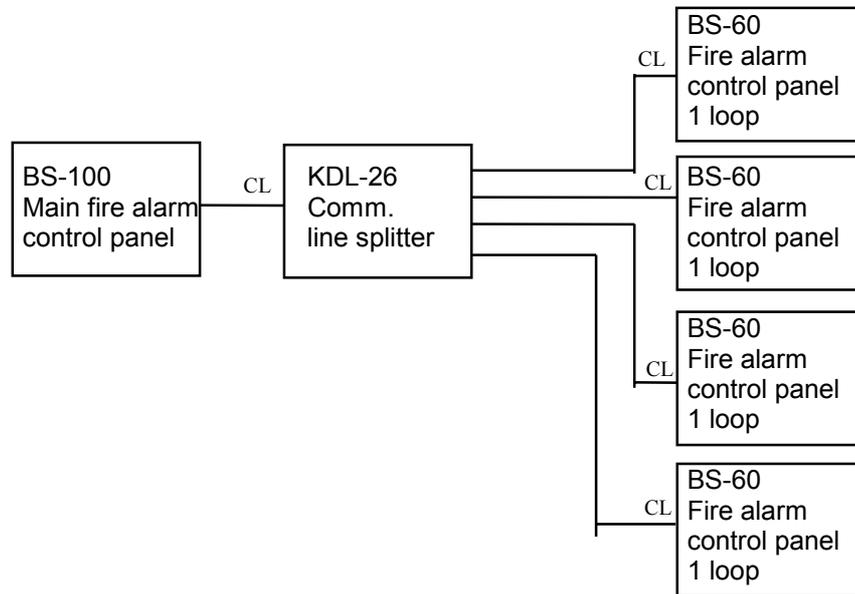
When a condition (fire, fault, prewarning) is registered on a control panel (BS-100 / BS-60), the indication lamps on the panel front will light, the outputs will be activated etc. in a normal way.

The custom texts presented in the display on both BS-100 and BS-60 has to be manually programmed in both control panels.

There are no communication between the BS-60 control panels.

D.1 Alarm / Prewarning / Fault / More alarms

D.1.1 Fire alarm

Fire alarm from the BS-100 control panel is only registered on the BS-100 control panel. There will be no display of info. on the BS-60 control panel(s).

Fire alarm from a BS-60 control panel is registered on the relevant BS-60 control panel and on the BS-100 control panel.
There will be no display of info. on any other BS-60 control panel.

D.1.2 Prewarning

Prewarning from the BS-100 control panel is only registered on the BS-100 control panel. There will be no registering on the BS-60 control panel(s).

Prewarning from a BS-60 control panel is registered on the relevant BS-60 control panel and on the BS-100 control panel.
There will be no display of info. on any other BS-60 control panel.

D.1.3   Fault

(The BS-100 control panel will look at the BS-60 control panels as ordinary loops).

Fault from the BS-100 control panel is registered on the BS-100 control panel. There will be no display of info. on BS-60 control panel(s).

Fault from a BS-60 control panel is registered on the relevant BS-60 control panel and on the BS-100 control panel.

D.1.4   More alarms

More alarms from the BS-100 control panel will only be registered on the BS-100 control panel. There will be no display of info. on the BS-60 control panel(s).

More alarms from a BS-60 control panel will also be registered as more alarms on the BS-100 control panel. There will be no display of info. on other BS-60 control panels.

2 alarms from 2 different control panels will be registered as more alarms on the BS-100 control panel.

D.2   Operating

D.2.1   Sounder silence

The "SOUNDER SILENCE" function will be dependent upon how it is configured within each of the BS-60 control panels.

When operating the "SOUNDER SILENCE" on the BS-100 control panel, all alarm devices will be switched off (also devices connected to the BS-60 control panels).

If the "SOUNDER SILENCE" function is set to "OFF", the "SOUNDER SILENCE" can only be operated from the BS-100 control panel.

If the "SOUNDER SILENCE" is set to "ON", the "SOUNDER SILENCE" can be operated from both the BS-60 and BS-100 control panel.

If the "SOUNDER SILENCE" is operated from a BS-60, alarm devices connected to the BS-60 control panel which is operated, will be switched off.

D.2.2 Reset

The "RESET" function will also be dependent upon how it is configured within each of the BS-60 control panels.

When operating the "RESET" from the BS-100 the entire system will be reset.

If the "RESET" function is set to "OFF", the "RESET" can only be operated from the BS-100 control panel.

If the "RESET" function is set to "ON", the "RESET" can be operated from both the BS-100 and the BS-60 control panel.

When operating the "RESET" from the BS-60 control panel, only the BS-60 which is operated will be reset.

D.3   Disable / Restore

When disabling on a BS-60 control panel, the "FUNCTION DISABLED" indication lamp will light only on this control panel.

This will be logged in "SHOW-STATUS-DISABLEMENTS" and in "STORED-EVENTS" only on the current control panel.

It is advisable to disable / restore BS-60 addresses from the BS-100.

D.3.1   Address

The BS-100 can disable / restore all addresses in the system. The BS-60 can only disable / restore addresses connected at the relevant BS-60 control panel.

D.3.2   Zone

Only zones defined in the BS-100 control panel can be disabled / restored from the BS-100 control panel. Zones defined in a BS-60 control panel can be disabled / restored only at the relevant BS-60 control panel.

D.3.3   Controls

Controls connected to the BS-100 control panel can only be disabled / restored from the BS-100 control panel.

Controls connected to the BS-60 control panel can only be disabled / restored at the relevant BS-60 control panel.

D.3.4   Sounders

Sounders connected to the BS-100 control panel can only be disabled / restored from the BS-100 control panel.

Sounders connected to a BS-60 control panel can only be disabled / restored at the relevant BS-60 control panel.

D.3.5   Fire brigade / fighters

BMA, BMF, BMFO outputs from the BS-100 control panel can only be disabled / restored from the BS-100 control panel.

BMA, BMF, BMFO outputs from the BS-60 control panel can only be disabled / restored at the relevant BS-60 control panel.

D.4   System

D.4.1   Sensitivity

All addresses in the system (including those connected to the BS-60 control panel(s))can be interrogated from the BS-100 control panel.

From the BS-60 control panel it is only possible to interrogate the addresses connected to it.

D.4.2   Internal

In all control panels the internal clock has to be set manually.

The internal clocks of all control panels are independent and must be set individually.
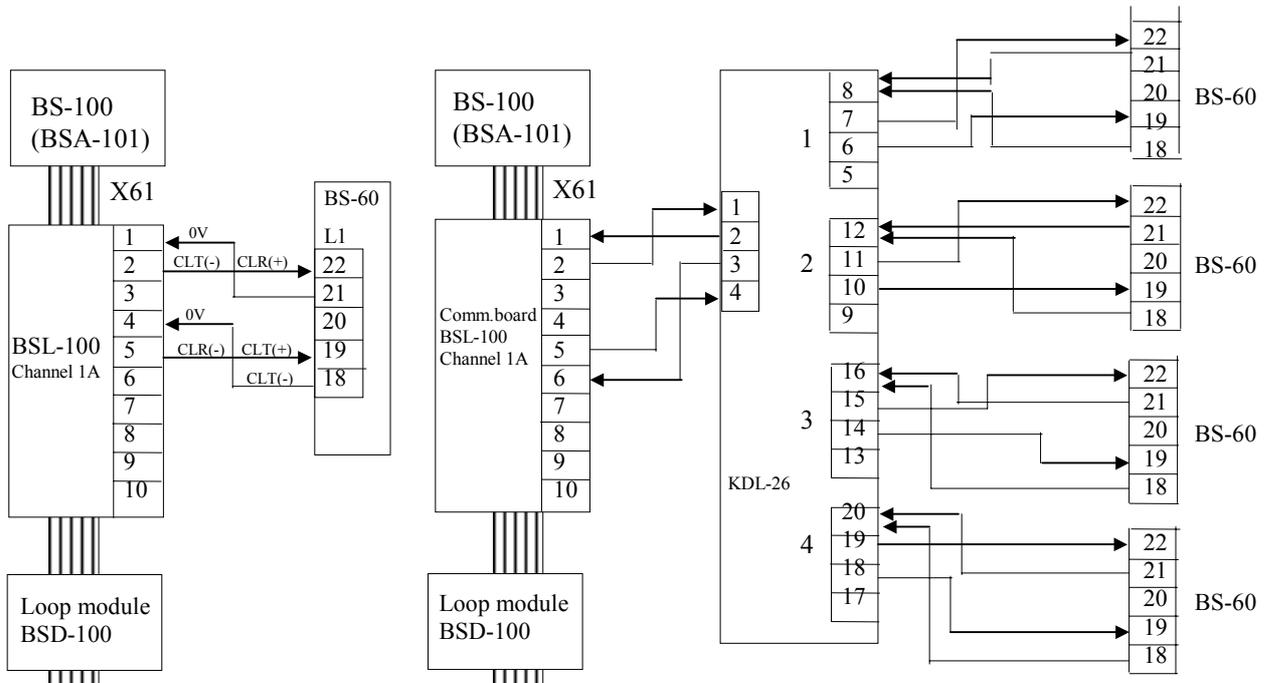
Appendix E - Fault messages

Fault Code	Text	Reason	Remedies	Comments
(60)	LOOP DISABLED	Short at both terminals/Loop output is open.	Remove short circuit. Restore loop.	Cold start
(75)	MISSING BK-50	The numbers of BK-50 discovered by the panel, are less then config. numb.	Correct the number of BK-50 (system-configuration)	Reset
(76)	TO MANY BK-50	To many BK-50 are discovered on the detectorloop.	Correct the number of BK-50 (system-configuration)	Reset
(83)	COMM.FAULT ASSP,HIGH PRIORITY	Communication break in more than 1 min.	Test the communication	Reset
(84)	COMM.FAULT ASSP, LOW PRIORITY	Communication break in more than 1 min. (For internal use).	Test the communication	Reset
(85)	SWITCH S18.1 IS OPEN	Switch S18.1 is open ("OFF")	Set switch S18.1 in position "ON"	Reset
(86)	SYSTEM CONFIG. MISSING	System config. is missing at first time "power up"	Configurate the control panel	Reset
(87)	"WATCHDOG" RESTART	The reason is given in front of the watchdog message	Replace the BSA-60 board	Reset
(88)	IIC1 EXTERNAL CIRCUIT DATA	Comm.fault between control panel and external IIC1 curcuit BSJ-100 board	Control the communication /Replace unit	Cold start
(90)	LOW INTERNAL 5 VOLT	Low internal 5 volt	Control fault/Replace main board (BSA-60)	Cold start
(91)	HIGH INTERNAL 5 VOLT	High internal 5 volt	Test fault/Replace unit (BSA-60)	Cold start
(92)	OPEN CIRCUIT SOUNDER OUTP..X	Open circuit in the alarm sounder output X(resistans> ca 1.2-1.6Ω)	Test the fuse for current sounder output / Repair	Reset
(93)	SHORT CIRCUIT IN ALARM SOUNDER OUTP..X	Short circuit in alarm sounder output X (resistor < ca. 30Ω)	Find and replace short circuit on sounder output	Reset
(96)	LOW EXTERNAL 24 VOLT OUTPUT	Low external 24 volt output X	Test fuses on BSS-103 and BSA-60 / Replace unit	Reset
(97)	BATTERY VOLTAGE. UNDER X VOLT	Low battery voltage (< 22,5V/25,5V) X is a internal set limit	Test battery voltage/connection/type of battery	Reset
(98)	BATTERY VOLTAGE OVER X VOLT	High batteri voltage (> 28,5V) X is a internal set limit	Test battery voltage/connection/type of battery	Reset
(99)	EARTH FAULT TOWARDS PLUS	Earth fault towards plus (resistor < 56Ω)	Disable the sounder outp., detector loop and ext. equipm	Reset
(9A)	EARTH FAULT TOWARDS MINUS	Earth fault towards minus (resistor 9.1KΩ)	Find the fault by connecting the unit step by step	Reset
(9B)	MAINS FAULT	The main has been away longer than (1-35 min.)	Test the main connection	Reset
(9C)	IIC1 EXTERNAL CIRCUIT X	Communication fault between control panel and external IIC1 circuit on the BSJ-100 board	Test the communication/Replace faulty unit	Cold start
(E0)	NO OR SHORT ANSWER PULSE	Detector in fault condition or missing. Resetno. fault.	Test fault/Replace faulty unit	Cold start
(E1)	DOBLE ADDRESSING	Two detectors with the same address / High loop capasitanse	Correct the address on det detector/test loop capasitanse	Reset
(E2)	ADDRESS ANSWER AT RESET NO.	Resetno. and the detector address with same value	Test the reset number	Reset
(E4)	NO ANSWER AT POWER UP	Detector that is not able to answer at power up.Only discovered at cold start	Followed by (E0)	Reset
(E5)	NOT VALID RESET NUMBER	Resetno. in area 101 - 128	Correct reset number	Reset
(E6)	RESET NUMBER TOO LOW	Resetno. is set in address area for detectors	Correct reset number	Reset
(E7)	RESET NUMBER TOO HIGH	Resetno. is set outside the addr. area	Correct reset number	Reset
(F0)	LOOP IS OK	The loop has been faulty but is now OK	Reset the message	Reset
(F1)	SUPPLY FROM B'-A'	The loop is fed from A' - B' terminals	Find the place of failure	Reset
(F2)	SUPPLY FROM B-A AND B'-A'	The loop is fed from A - B and A' - B' terminals	Find the place of failure	Reset
(F3)	B-A SUPPLY AT OPEN CIRCUIT	The loop is fed from A - B terminals	Find the place of failure	Reset
(F4)	HIGH CURRENT CONSUMPTION	Connect the loop /Faulty unit. The idle current is above 60mA	Test the connection/ Replace faulty unit	Reset

(F5)	Reset	VOLTAGE IN B IS ABOVE 16V	Voltage B above 16 V	Remove the fault source
(F6)	Reset	VOLTAGE IN B' IS ABOVE 16V	Voltage B' above 16 V	Remove the fault source
(F7)	Reset	VOLTAGE IN A' IS ABOVE 3 V	Voltage A' above 3V. External source is feeding voltage into the loop	Remove the voltage source
(F8)	Reset	VERY HIGH LOOP VOLTAGE	Connection fault on the loop/faulty unit. The idle current is above 120mA	Test the connection / Replace faulty unit
(XX)	Reset	CRASH FAULT	Fault type has not text	Note the fault message !

Autronica Fire and Security AS is an international company, based in Trondheim, Norway and has a world-wide sales and service network. For more than 40 years Autronica's monitoring systems have been saving lives and preventing catastrophes on land and at sea. Autronica Fire and Security's most important business area is fire detection & security. Autronica Fire and Security stands for protecting life, environment and property.

Quality Assurance

Stringent control throughout Autronica Fire and Security assures the excellence of our products and services. Our quality system conforms to the Quality System Standard NS-EN ISO 9001, and is valid for the following product and service ranges: marketing, sales, design, development, manufacturing, installation and servicing of:

- fire alarm and security systems
- petrochemical, oil and gas instrumentation systems for monitoring and control

In the interest of product improvement, Autronica Fire and Security reserves the right to alter specifications according to current rules and regulations.