

FIRE AND SECURITY

AUTRO SAFE[®]

Self Verify[®]

Interactive Fire Alarm System
Release 3



Commissioning Handbook

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Table of Contents

1. Introduction	4
1.1 About the Handbook	4
1.2 The Reader	4
1.3 Reference Documentation	4
2. Verifying the Loops	5
2.1 AS-2000 Loop Diagnostic Tool	5
2.2 Verification Procedure	5
3. Consistency Check of Configuration Data	6
3.1 Introduction	6
3.2 Parameters Used for the Consistency Check	6
3.3 Importing Loop Data from the AS-2000 Tool	7
3.4 Consistency Check Using the AS-2000 / Config Mismatch Tool	7
3.5 Generating Configuration Files	7
4. Commissioning Procedure	8
4.1 Verifying the System Before Startup	9
4.1.1 Recommended Equipment	9
4.1.2 Before You Begin	10
4.1.3 Required Strapping for System Units with Optional Printer	11
4.1.4 Verifying the AUTROLON Flash Memory on all System Units	11
4.1.5 Verifying Connections on the Operator Panel / Repeater Panel and Information Panel	12
4.1.6 Verification Procedure for Fire Alarm Control Panel / Controller	15
4.2 Addressing the System Units	16
4.2.1 General	16
4.2.2 Addressing System ID on All System Units (except for Controllers)	16
4.2.3 Addressing System ID on Controllers	17
4.2.4 Addressing Ring ID on the Fire Alarm Control Panel (Booting Panel)	17
4.2.5 Number Series - System ID and Ring ID	18
4.2.6 Examples of Addressing	19
4.2.7 Jumper Settings on the LON Interface Board	20
4.3 Startup Procedure	21
4.3.1 Preparing the Fire Alarm Control Panel / Controller	21
4.3.2 Entering Programming Mode	22
4.3.3 Configuration Files	23
4.3.4 Communication Setup	24
4.3.5 Locating Configuration Files	24
4.3.6 Downloading Configuration Files	25
4.3.7 Booting the System from the Fire Alarm Control Panel BS-320 (Booting Panel)	26

- 4.3.8 If the Configuration Data Must be Reconfigured 28
- 5. Entering Required Access Levels29**
- 6. Verifying System After Download31**
- 7. Troubleshooting.....32**
 - 7.1 Distributed System 32
 - 7.1.1 AUTROLON Service Diode Status After Reset 32
- 8. Upgrading System Software33**
 - 8.1 Overview 33
 - 8.2 Jumper Positions and Computer Connections 34
 - 8.2.1 Display Board BSR-310 34
 - 8.2.2 Operator Board BSZ-310 36
 - 8.3 Entering Programming Mode 37
 - 8.4 Installing the AutoSafe Download Tool 38
 - 8.5 Startup Procedure 38
 - 8.5.1 Communication Setup..... 38
 - 8.5.2 About System Software Files 39
 - 8.5.3 Locating System Software Files 40
 - 8.5.4 Downloading System Software Files to the Display Board..... 40
 - 8.5.5 Downloading System Software Files to the Processor Board..... 40
 - 8.5.6 Re-placing the Jumpers 41
 - 8.5.7 Rebooting the System..... 42
- 9. Guidelines When Expanding to Distributed System.....43**
- 10. Inserting / Feeding Paper for the Optional Printer.....44**
- 11. Reader’s Comments47**

1. Introduction

Important – removing/changing Loop Units

If it is necessary to remove/change loop units for any reason during normal operation, never remove more than one loop unit at the time.

1.1 About the Handbook

This handbook is intended to provide all necessary information for the commissioning of the AutoSafe Interactive Fire Alarm System.

The handbook covers both the commissioning of a *standalone* system (Fire Alarm Control Panel), as well as the commissioning of a *distributed* system with several system units (including the Fire Alarm Control Panel, Operating Panel, Repeater Panel, Information Panel and the Controller) operating on the local operating network; AUTROLON.

1.2 The Reader

The handbook is intended to be used by Autronica Fire and Security service and technical personnel who are responsible for the commissioning of the system.

For information on the configuration of the system, refer to the *AutoSafe Configuration Tool Help System*. For information on the verification of loops, refer to the *User Guide, Loop Diagnostic Tool, AS-2000*.

1.3 Reference Documentation

In addition to this handbook, Autronica Fire and Security offers the following documentation:

Handbook	Item Number
System Specification	P-ASAFE/XE
Installation Handbook, Fire Alarm Control Panel (BS-310/320) / Controller (BC-320)	P-ASAFE-FA/DE
Installation Handbook, Operator Panel (BS-330)	P-ASAFE-OP/DE
Installation Handbook, Repeater Panel (BU-320) / Information Panel (BV-320)	P-ASAFE-RI/DE
Installation Handbook, Battery Cabinet (SY-310)	P-ASAFE-BC/DE
Operator's Handbook, Fire Alarm Control Panel (BS-310/320) / Operator Panel (BS-330)	P-ASAFE-FO/FE
Operator's Handbook, Repeater Panel (BU-320)	P-ASAFE-FB/FE
Operator's Handbook, Information Panel (BV-320)	P-ASAFE-IN/FE
Shortform User Guide	P-ASAFE-SH/LE
Wall Chart	P-ASAFE-WE/LX
Wall Chart	P-ASAFE-CH/LX
Menu Structure	P-ASAFE/MX
User Guide, Loop Diagnostic Tool, AS-2000	P-ASAFE-AS/FE
User Guide, Loop Simulator Tool	P-ASAFE-LS/FE
User Guide, Loop Calculator Tool	P-ASAFE-LC/FE
User Guide, Merge Tool	P-ASAFE-MT/FE
User Guide, Power Calculator Sheet	P-ASAFE-PC/FE

2. Verifying the Loops

2.1 AS-2000 Loop Diagnostic Tool

All loops should be verified with the *AS-2000 Loop Diagnostic Tool* before startup. Although this is presumably already done at an earlier stage (shortly after the installation), it is recommended that all loops are verified once again in case minor changes have been done. By doing this, you will eliminate possible problems during the startup procedure and downloading of configuration data.

The AS-2000 allows you to find all points connected to the selected loop driver, and present them graphically.

You will find detailed information on the installation and use of AS-2000 in the *User Guide, AS-2000 Loop Diagnostic Tool*.

AS-2000 can be run when connected to an AutoSafe operating panel (Fire Alarm Control Panel BS-310/320), or standalone Fire Alarm Control Panel / Controller connected to a selected loop with a separate interface unit.

2.2 Verification Procedure

Pressing the START button in the Topology window (AS-2000) tells AS-2000 to find all points connected to the selected loop driver, and present them graphically in a correct electrical sequence. Points will be presented with unique symbols for each type of *Loop Unit*, and with important information such as *Production Number (PN)*, and the *Loop Sequence Index (LSI)*. In case of illegal topologies, like multiple branch-off and loop break, these will be presented with self-explaining symbols.

Use the AS-2000 to:

register all loop units on each loop, including:

- the *Loop Unit type*
(detector type, manual call point, electronic sounder, I/O unit)
- *Loop Sequence Indexes LSI*
(order/location)
- register all branch offs and loop break positions
- locate any breaks on the loop wire (both positive and negative wires)
- measure the loops' total resistance, current consumption and voltage drop

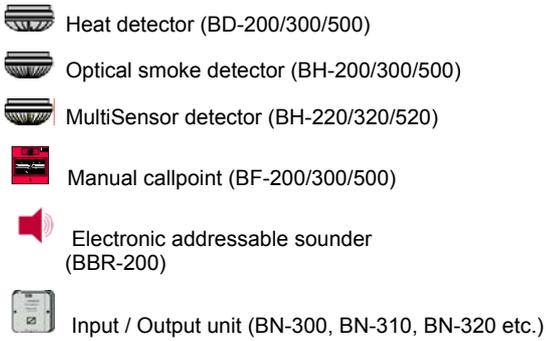
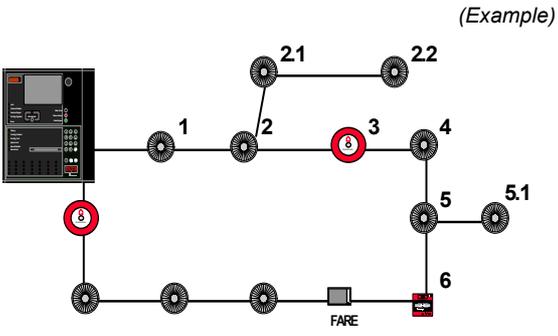
3. Consistency Check of Configuration Data

3.1 Introduction

NOTE:
To ensure a problem-free download of configuration data, always perform a consistency check, using the results from the AS-2000 verification and the data that has been configured by means of the AutoSafe Configuration Tool.

3.2 Parameters Used for the Consistency Check

The table below provides a description of two of the parameters that are used for the consistency check. These parameters are shown in the Topology View in AS-2000, as well as in the topology view in the AutoSafe Configuration Tool.

Parameter	Abbreviation	Description	Illustration
Loop Unit		The loop unit can be a detector, a manual call point, a loop sounder or an I/O unit.	<p><i>(Examples)</i></p>  <ul style="list-style-type: none">  Heat detector (BD-200/300/500)  Optical smoke detector (BH-200/300/500)  MultiSensor detector (BH-220/320/520)  Manual callpoint (BF-200/300/500)  Electronic addressable sounder (BBR-200)  Input / Output unit (BN-300, BN-310, BN-320 etc.)
Loop Sequence Index	LSI	<p>A loop specific index telling the exact Loop Unit order on the loop (sequentially numbered).</p> <p>A branch-off is described by a decimal followed by a sequential index.</p>	<p><i>(Example)</i></p> 

3.3 Importing Loop Data from the AS-2000 Tool

The *AutoSafe Configuration Tool* features an Import command allowing you to import loop data directly from the AS-2000 Loop Diagnostic tool. In this way, it is possible to ensure that the point types and sequence indexes in the configuration will be identical to the real loop. Tag Names and optional Detection Zones (DZs) will be assigned to the points during import.

For further information, refer to the *Help System for AutoSafe Configuration Tool* and the *User Guide for the AS-2000 Loop Diagnostic Tool*.

3.4 Consistency Check Using the AS-2000 / Config Mismatch Tool

The AutoSafe Configuration Tool allows you to do a consistency check of configuration data by means of a menu called AS-2000 / Config Mismatch Tool (in the Tool menu).

This feature allows you to easily compare the actual configuration data downloaded from a detection loop and imported to the AutoSafe Configuration Tool (using the AS-2000) with the configuration data you have entered in the AutoSafe Configuration Tool.

3.5 Generating Configuration Files

System configuration is done from a computer by the means of the *AutoSafe Configuration Tool*. This tool allows you to generate configuration files, which then can be downloaded to target (the Fire Alarm Control Panel, Operator Panel, Repeater Panel, Information Panel) after the system has been verified.

You will find detailed information on how to generate configuration files in the *AutoSafe Configuration Tool Help System*.

4. Commissioning Procedure

This chapter covers the commissioning of both a standalone system and a distributed system with several system units operating on the local operating network; AUTROLON.

The commissioning procedure deals with all system units that are available in the AutoSafe Interactive Fire Alarm System, including:

- Fire Alarm Control Panel, BS-320
- Operating Panel, BS-330
- Repeater Panel, BU-320
- Information Panel, BV-320
- Controller, BC-320

The following chapters describe how to verify all system units, units, download configuration data to all system units, and finally how to perform the startup procedure..

As a general rule and for your convenience when commissioning a distributed system, always perform the necessary tasks step 1-5 (shown below), starting with, for example, the Operator Panel, then continue with the Repeater Panel, Information Panel or Controller. Note that, the last system unit should always be the Fire Alarm Control Panel (the *booting* panel).

STEP	Actions to Perform
1	Start verifying the first system unit (for example, the Operator Panel)
2	Address this system unit.
3	Prepare this system unit before startup.
4	Apply power to this system unit
5	Download configuration data to this system unit
6	Go to the next system unit(s) and repeat step 1-5.
7	At last, go to the Fire Alarm Control Panel*, and repeat step 1-5.
8	Perform the startup procedure from the Fire Alarm Control Panel (the <i>booting</i> panel).

- * If there are several Fire Alarm Control Panels, only one can be defined as the booting panel by means of the AutoSafe Configuration Tool. The panel defined as the booting panel will be the last panel to prepare and perform the startup procedure from.

4.1 Verifying the System Before Startup

4.1.1 Recommended Equipment

When performing the verification procedure, we recommend that a high-ohmic universal measuring instrument is used. The internal resistance should be approximately 5 Mohm.

4.1.2 Before You Begin



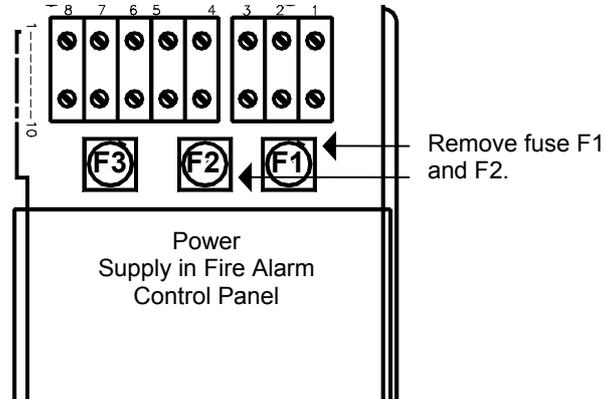
**Mains
Power
OFF!**

**Applies
to**

BS-320

BC-320

- Make sure that the mains power is OFF.
- Make sure that the mains inlet and the batteries are disconnected.
- Make sure that fuse F1 and F2 on the Power Supply BSS-103A/02 are removed.

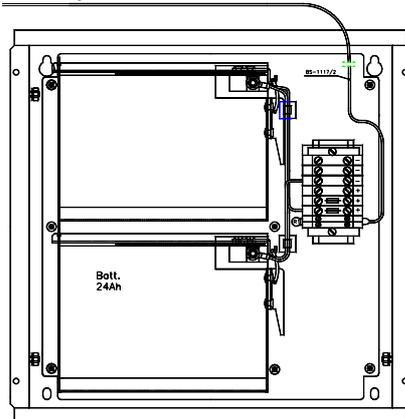


**Applies
to**

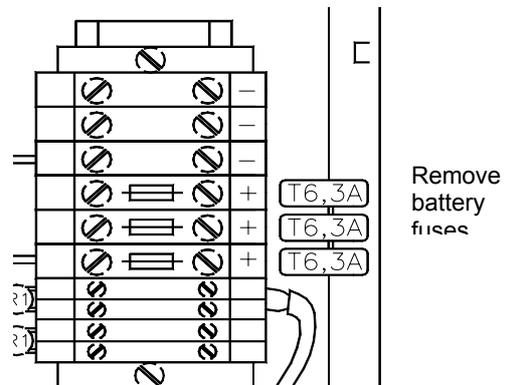
SY-310

- If external battery connection is used (external battery cabinet), make sure that the battery fuses in the connection block are removed as shown in the illustration below.

Battery Cabinet for external battery connection



Connection Block in Battery Cabinet



**Applies
to**

**BS-320
BC-320**

**and all
parts
and
internal
cabling
in all
system
units**

Before verifying the system, all parts in all system units must be installed and properly connected:

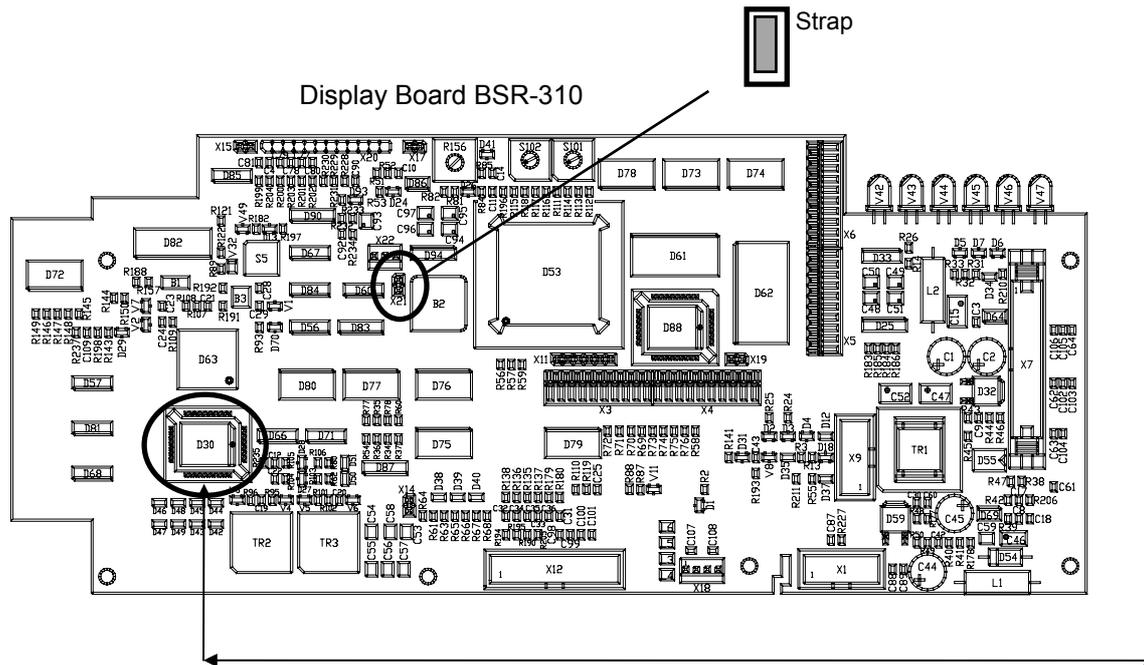
- All internal cabling in all system units must be done.
- The mounting plate and all IO modules in the Fire Alarm Control Panel and Controller must be installed in cabinet.
- All external connections in the Fire Alarm Control Panel and Controller (to detector loops, other input / output connections) must be made before the 0V to *Protective Earth* resistance is verified.
- The connection to *Protective Earth* in the Fire Alarm Control Panel and Controller (to the mains inlet) must be made.

4.1.3 Required Strapping for System Units with Optional Printer

Applies to
BS-310
BS-320
BS-330

To ensure that the printer functions after commissioning for system units provided with a printer, be aware of the following:

- Before Power ON, make sure that the strap (position X21) on the Display Board BSR-310 is in its correct position.
- Before downloading (at a later stage), remove the strap.
- After downloading (at a later stage), the power must be turned OFF.
- Before Power ON (at a later stage), reinsert the strap in its position.



4.1.4 Verifying the AUTROLON Flash Memory on all System Units

All system units are provided with Flash Memory (Flash devices). At this stage it is important to verify that the Flash devices are inserted into the correct sockets in all system units.

Applies to
BS-330
BV-320
BU-320

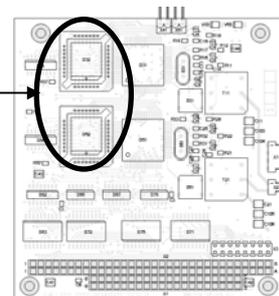
Operator Panel, Information Panel and Repeater Panel:

The single Flash device is inserted into socket D30 on the Display Board BSR-310 (refer to drawing above).

Applies to
BS-320
BC-320

Fire Alarm Control Panel / Controller:

The two Flash devices are inserted into their sockets D32 and D52 on the LON Interface Board (EAU-310).

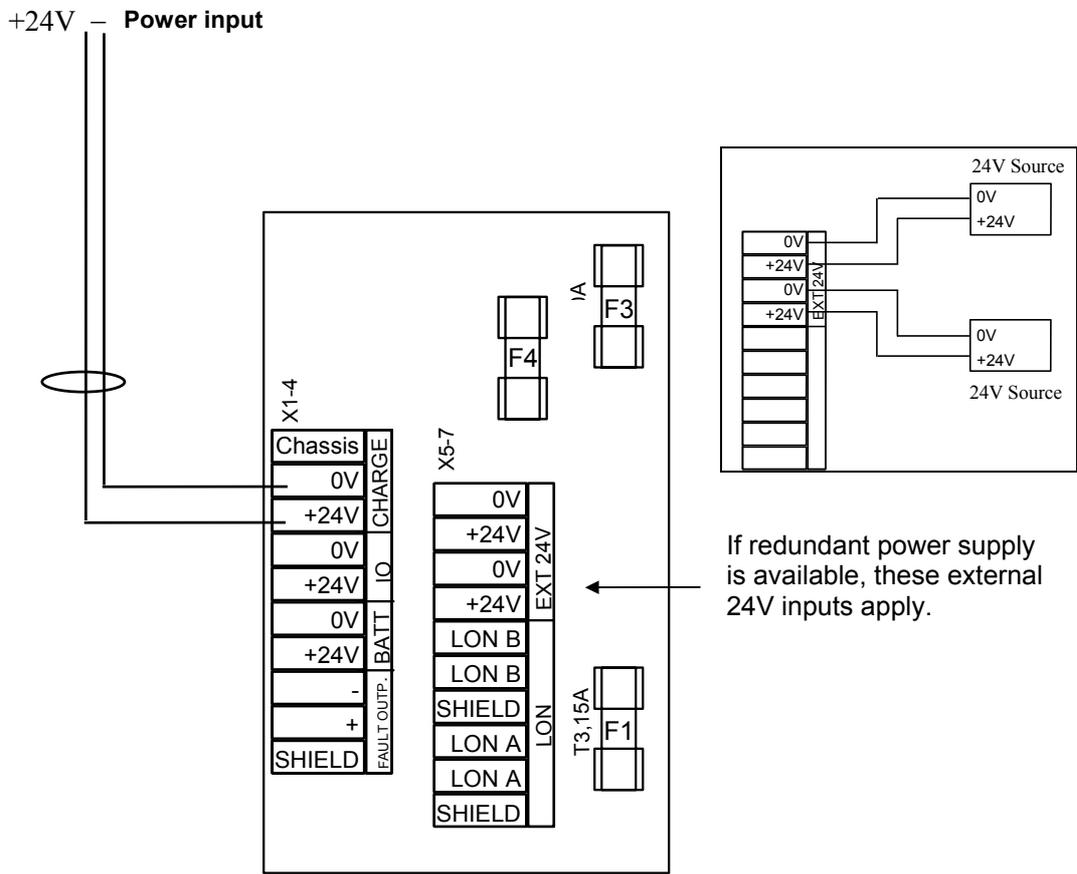


4.1.5 Verifying Connections on the Operator Panel / Repeater Panel and Information Panel

Before startup, make sure that all connections are properly done. Verify the following steps:

Applies to
 BS-330
 BV-320
 BU-320
 (applies also to
 BS-320
 BC-320)

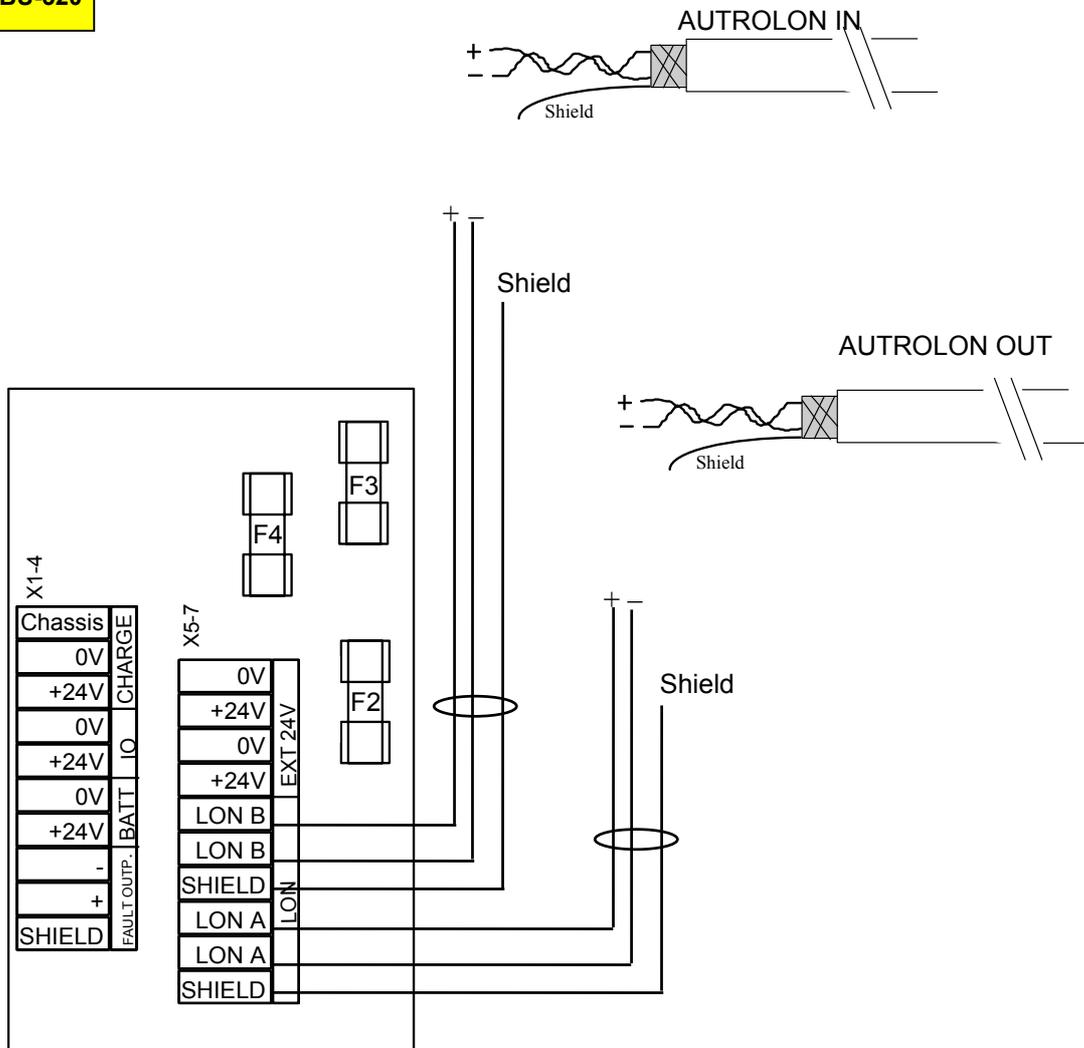
1. Verify the connections to 24V DC to the Connection Module BSF-310B.



If redundant power supply is available, these external 24V inputs apply.

Applies to
BS-330
BV-320
BU-320

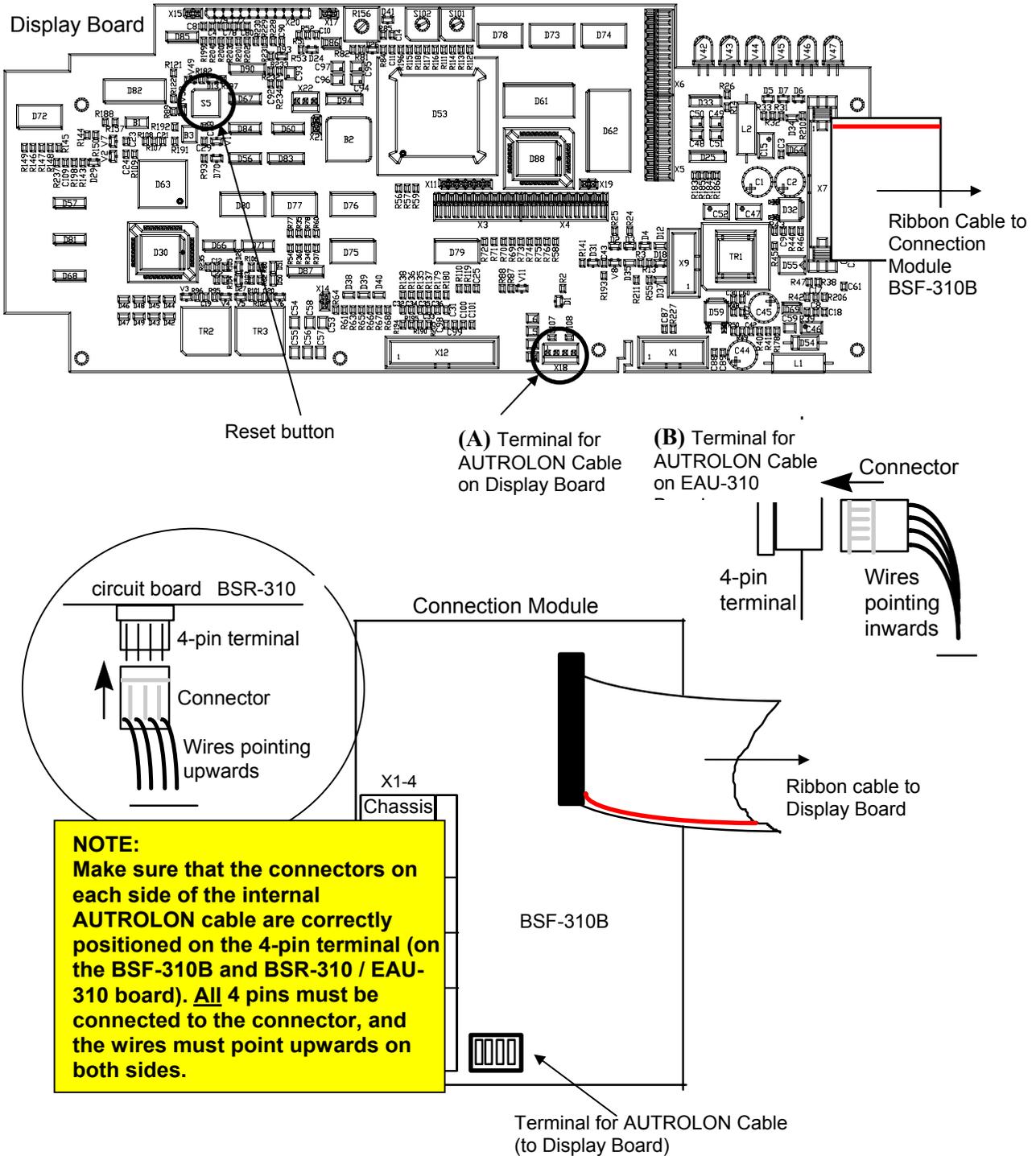
2. Verify the connections from the AUTROLON to the Connection Module BSF-310B.



Applies to
BS-330
BV-320
BU-320

- Verify the connections of the internal AUTROLON cable and the ribbon cable between the Connection Module BSF-310B and;
 - the Display Board BSR-310 (BS-330/BU-320/BV-320) or
 - the EAU-310 Board (BS-320/BC-320).

NOTE: On the Operator Panel BS-330, there are two connectors inside the front panel door for the ribbon cable. Make sure to connect the ribbon cable to the *uppermost connector on the Display Board*.



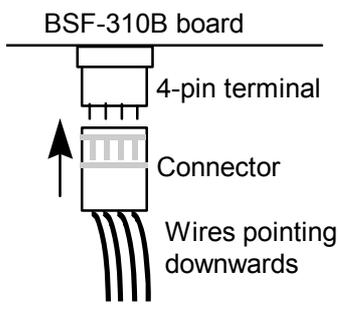
4.1.6 Verification Procedure for Fire Alarm Control Panel / Controller

Applies to BS-320 and BC-320

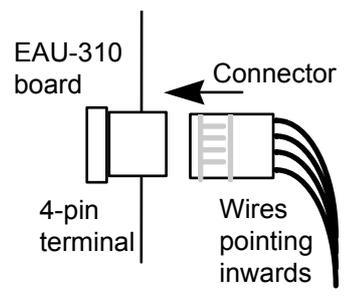
Consult if necessary the relevant drawings and perform the steps:

1	Verify that the ribbon cable from the front panel to the Connection Module (BSF-310B) in the cabinet is fitted.																
2	Verify that the ribbon cable from Connection Module (BSF-310B) to Communication Module (BSL-310) is fitted.																
3	Verify that the ribbon cable from Communication Module (BSL-310) to the Power Supply (BSS-103A/02) is fitted.																
4	Verify that the earth strap soldered to the upper right corner of the Power Supply to the <i>Protective Earth to cabinet</i> connection (right side wall, upper attachment of front panel) is connected.																
5	Verify that the strap from the <i>Protective Earth to cabinet</i> connection to the <i>Chassis</i> connection is connected.																
6	Verify that the resistance between 0v to <i>Protective Earth</i> is >50k ohm. Measure between connection X5 to X1 on the Power Supply (BSS-103A/02).																
7	If batteries are installed internally or in a separate cabinet, disconnect the batteries electrically by disconnecting battery wires (remove connector X3 on BSF-310B).																
8	Verify that the 24V polarity is kept correct between Power Supply (BSS-103A/02), Connection Module (BSF-310B) and the internal Power I/O Module (BSS-310). Correct connection is verified by means of the measuring instrument. Verify the connected circuits point-to-point:																
	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Signal</th> <th>Power Supply BSS-103A/02</th> <th>Connection Module BSF-310B</th> <th>Internal Power I/O Module BSS-310</th> </tr> </thead> <tbody> <tr> <td>+24V (Battery)</td> <td>X4</td> <td>X1.1</td> <td>Pin 1</td> </tr> <tr> <td>0V (Battery)</td> <td>X5</td> <td>X1.2</td> <td>Pin 3</td> </tr> <tr> <td><i>Protective Earth / Chassis</i></td> <td>X1</td> <td>X1.3</td> <td>Pin 5</td> </tr> </tbody> </table>	Signal	Power Supply BSS-103A/02	Connection Module BSF-310B	Internal Power I/O Module BSS-310	+24V (Battery)	X4	X1.1	Pin 1	0V (Battery)	X5	X1.2	Pin 3	<i>Protective Earth / Chassis</i>	X1	X1.3	Pin 5
Signal	Power Supply BSS-103A/02	Connection Module BSF-310B	Internal Power I/O Module BSS-310														
+24V (Battery)	X4	X1.1	Pin 1														
0V (Battery)	X5	X1.2	Pin 3														
<i>Protective Earth / Chassis</i>	X1	X1.3	Pin 5														
9	Verify the external connections from the AUTROLON to the Connection Module BSF-310B.																
10	Verify the internal AUTROLON connections between the Connection Module BSF-310B and the; <i>Fire Alarm Control Panel's</i> Display Board BSR-310 (see previous page <i>and/or</i> the <i>Controller's</i> LON Interface Board EAU-310 (see drawing below).																

Top view: BSF-310B board



Side view: EAU-310 board



4.2 Addressing the System Units

4.2.1 General

Note that in a standalone system where BS-310 is used, the switches must be set to 0 for the System ID and the Ring ID.

A distributed AutoSafe system requires a correct addressing of all system units on the AUTROLON. The addressing, which is set with rotary switches on each system unit, must correspond to the addressing that is defined for the specific configuration (defined by means of the AutoSafe Configuration Tool).

The addressing comprises the following:

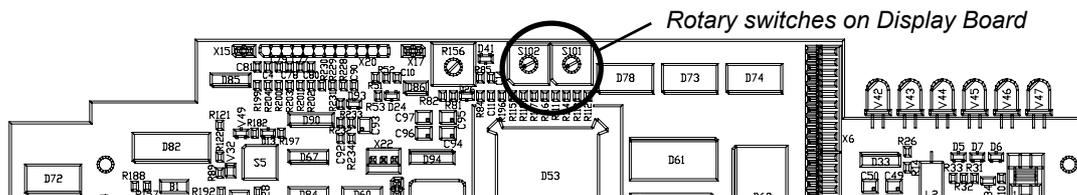
- System Identification numbers (*System ID*) - all system units must be given a System ID
- AUTROLON Ring Identification numbers (*Ring ID*) - only the Fire Alarm Control Panel (which is defined as the *Booting Panel*) is given a Ring ID

The addressing of each system unit is done by setting *hexadecimal* numbers on rotary switches. The AutoSafe Configuration Tool applies also the *hexadecimal* system of notation.

4.2.2 Addressing System ID on All System Units (except for Controllers)

System ID numbers are set by means of two rotary switches (S102 and S101) on the Display Board BSR-310* (see illustration below).

* Note: The Controller uses two rotary switches on the Operator Board BSZ-310, as this system unit does not have the Display Board (see next chapter).

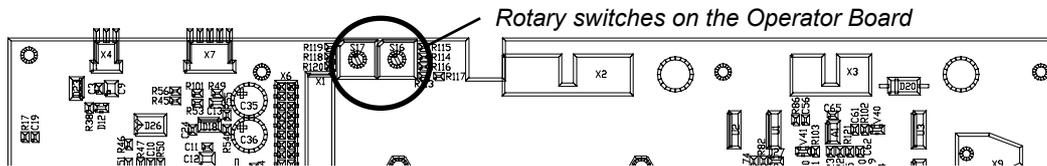


NOTE!

When setting hexadecimal numbers on the two rotary switches on the Display Board, always read the numbers from left towards right, i.e. from S102 to S101 (except addresses 01=S102=0, S101=1).

4.2.3 Addressing System ID on Controllers

System ID numbers are set by means of two rotary switches (S17 and S16) on the Operator Board BSZ-310 (see illustration below).



NOTE!

When setting hexadecimal numbers on the two rotary switches on the Operator Board, *always read the numbers from left towards right, i.e. from S17 to S16 (except addresses 02=S17=0, S16=2).*

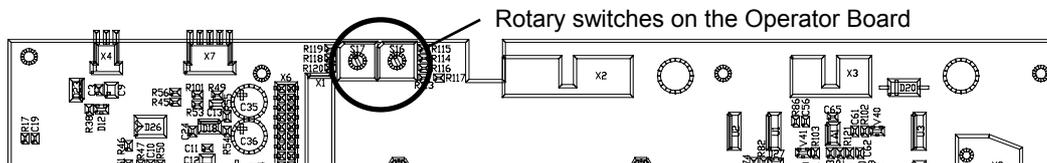
4.2.4 Addressing Ring ID on the Fire Alarm Control Panel (*Booting Panel*)

Note that only the Fire Alarm Control Panel (*Booting Panel*) must be given a Ring ID.

The Ring ID number is set by means of two rotary switches (S17 and S16) on the Operator Board BSZ-310 (see illustration below).

NOTE!

When setting hexadecimal numbers on the two rotary switches on the Operator Board, *always read the numbers from left towards right, i.e. from S17 to S16.*



4.2.5 Number Series - System ID and Ring ID

Note that in a *standalone system* where BS-310 is used, the switches must be set to 0 for the System ID and the Ring ID.

As there can be several system units of the same type in a *distributed system*, for example, two Operator Panels, three Information Panels etc, there are defined System ID number series for each System Unit type.

A general rule is that the Fire Alarm Control Panel, which is considered as the *Booting Panel*, is always given System ID = 01.

The Ring ID is used to address the Fire Alarm Control Panel to the AUTROLON ring. The Ring ID for a single AUTROLON ring is always Ring ID = 01.

* Several AUTROLON rings can be interconnected as Multiple AUTROLON rings. The Ring ID is used to address the Fire Alarm Control Panel to the correct AUTROLON ring. This handbook deals with a single AUTROLON ring only.

The number series for System ID's for all System Units and the Ring ID for the Fire Alarm Control Panel are listed in the table below. The table gives hexadecimal values (the prefix 0x is not used in the hexadecimal notation).

Number Series

System Unit	System ID no. series	Ring ID no. Series*
	Hexa-decimal	Hexa-decimal
Fire Alarm Control Panel (BS-320)	01 (Booting Panel) 01 -20	01
Controllers (BC-320)	21 - 40	
Operator Panels (BS-330)	41 - 60	
Repeater Panels (BU-320)	61 - A0	
Information Panels (BV-320)	A1 - E0	

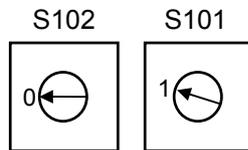
The number series for each switch are listed in the table below.

Switchsettings	Switches			
	BSR-310 board		BSZ-310 board	
	S102	S101	S17	S16
<u>Booting Panel:</u> Fire Alarm Control Panel (BS-320)	0 - 2	0 - F	0	1
Controllers (BC-320)			2 - 4	0 - F
Operator Panels (BS-330)	4 - 6	0 - F		
Repeater Panels (BU-320)	6 - A	0 - F		
Information Panels (BV-320)	A - E	0 - F		

4.2.6 Examples of Addressing

Example 1:

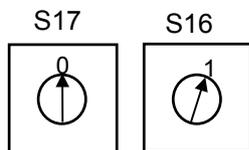
A Fire Alarm Control Panel is to be given System ID = 01.
The correct hexadecimal numbering on the rotary switches on the Display Board BSR-310 is shown on the drawing below.



Read from left towards right

Example 2:

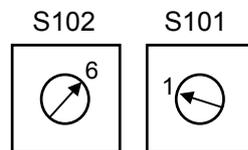
The Fire Alarm Control Panel is to be given Ring ID = 01
The correct hexadecimal numbering on the rotary switches on the Operator Board BSZ-310 is shown on the drawing below.



Read from left towards right

Example 3:

The Repeater Panel is to be given System ID = 61
The correct hexadecimal numbering on the rotary switches on the Display Board BSR-310 is shown on the drawing below.



Read from left towards right

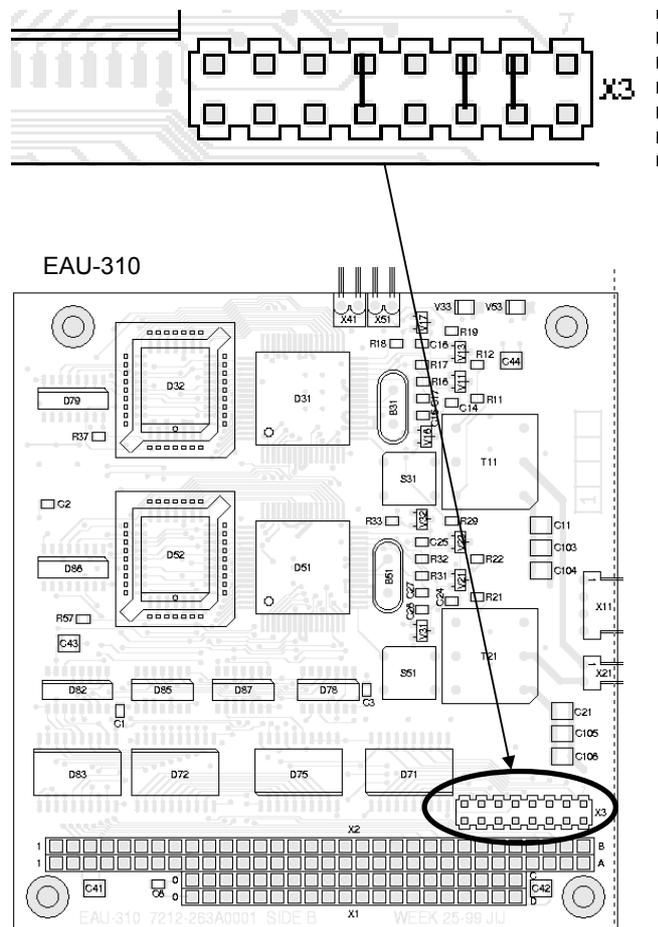
4.2.7 Jumper Settings on the LON Interface Board

The Fire Alarm Control Panel and the Controller are both provided with the necessary LON Interface Board (EAU-310). The board must have the correct jumper settings (factory set).

This is done by setting jumpers in the correct positions on the connector located at the right bottom side of the LON Interface Board (see drawing below).

The LON Interface Board is shown as it is mounted onto the Processor Board EAC-300 in the Fire Alarm Control Panel or Controller.

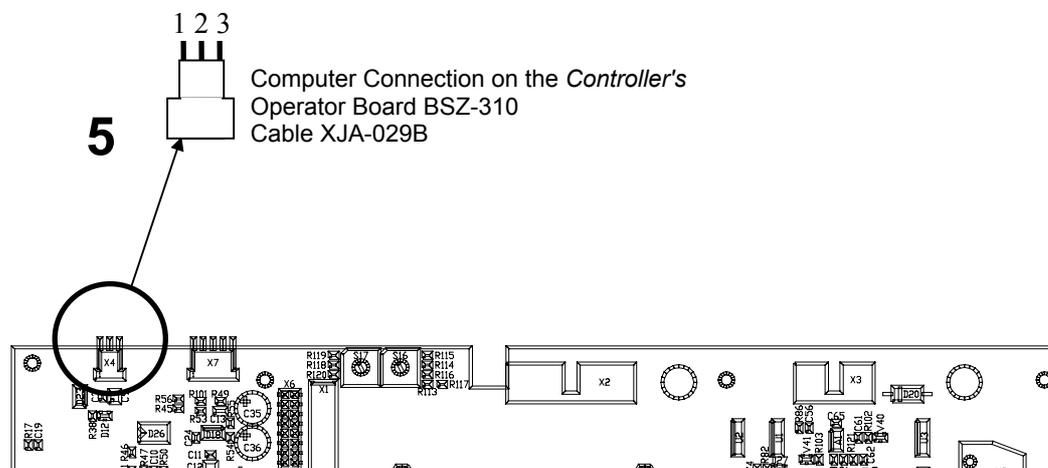
- *Counting from left to right*, the jumpers must be placed on connectors 4, 6 and 7, when viewing the board inside the system unit.



4.3 Startup Procedure

4.3.1 Preparing the Fire Alarm Control Panel / Controller

1	Connect the mains inlet on the Power Supply (BSS-103/02) to the external source.
2	Measure the voltage (230V) across X2-X3 on the Power Supply (BSS-103/02).
3	Check that you have the correct addressing according to the configuration data.
4	<i>The following applies to the Fire Alarm Control Panel only:</i> Move the jumper at position X17 on the Display Board BSR-310 temporarily to the rightmost pin. The jumper is to be replaced in its original position at a later stage. Jumpers on circuit boards for other options are factory set and should <i>not</i> be moved.
5	<i>Applies to the Fire Alarm Control Panel.</i> Connect a computer to the connector X22 on the Display Board (BSR-310) board. <i>Applies to the Controller (see drawing below):</i> Connect a computer to the connector X4 on the Operator Board (BSZ-310) board. At the computer side the cable is connected to one of the serial ports.
6	Move the jumper at JP1 on the Processor Board EAC-300 one position down (so that the two lowest pins are used). The jumper is to be replaced in its original position (the two uppermost pins) at a later stage.
7	Replace fuse F1 and F2 on the Power Supply (BSS-103/01).
8	If you have <i>internal mounted batteries</i> ; Connect the battery leads to the correct battery poles. Connect the + and -- connections to the Connection Module (BSF-310A). <i>Note: Be careful to avoid short-circuiting battery circuits!</i>
9	If you have an <i>external battery connection</i> ; 9a) Check polarity of wires - (color code or numbering). 9b) Replace the battery fuses on the connection block in the battery cabinet. 9c) Check the temperature sensor connection to the Power Supply (BSS-103/01) - (twisted wire pair, no polarity). <i>Note: Be careful to avoid short-circuiting battery circuits!</i>



4.3.2 Entering Programming Mode

When the necessary preparations are made, you can enter programming mode.

This is done by pressing the reset button on the Display Board BSR-310. As the Controller is not equipped with the Display Board, reset is performed by pressing the reset button on the Processor Board EAC-300.

- Press the Reset button (S5 on BSR-310, X1 on EAC-300)

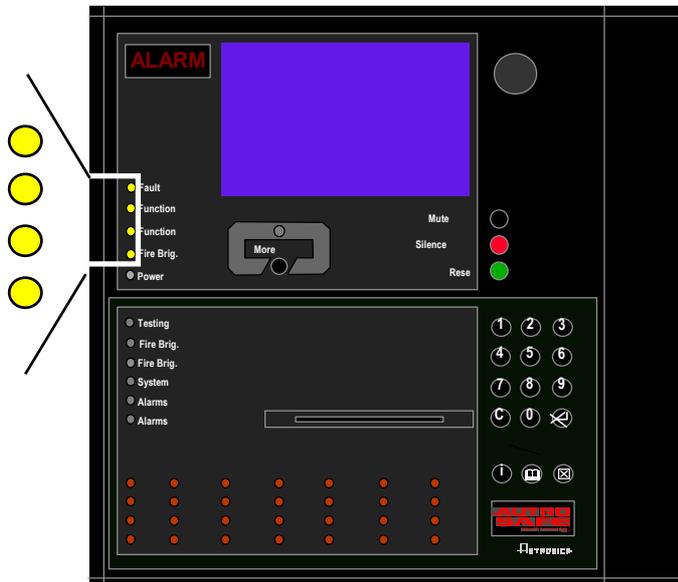


Applies to
BS-310
BS-320
BS-330
BV-320
BU-320

Observe the four uppermost indicators on the left hand side of the Fire Alarm Control Panel (Fault, Function Disabled, Function Delayed, Fire Brig. Signalled).

These indicators will turn on (yellow light), indicating that the system has entered *programming mode*.

(The green *Power* indicator will go off).



4.3.3 Configuration Files

The AutoSafe Configuration Tool generates the following configuration files:

System Unit	Configuration Files (binary)
Fire Alarm Control Panel BS-320	BsrFlash.bin EacEeprom.bin EacFlash.bin
Controller BC-320	EacEeprom.bin EacFlash.bin
Operator Panel BS-330	BsrFlash.bin
Repeater Panel BU-320	BsrFlash.bin
Information Panel BV-320	BsrFlash.bin

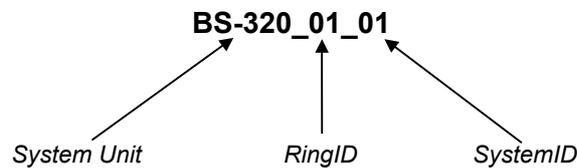
When the configuration files are generated, they are automatically sorted in different folders in the *Installation/Config_Bin* directory.

Each folder indicates;

- the type of system unit (for example, BS-320)
- the Ring ID (hexadecimal numbers, for example, 01)
- the System ID (hexadecimal numbers, for example, 01)

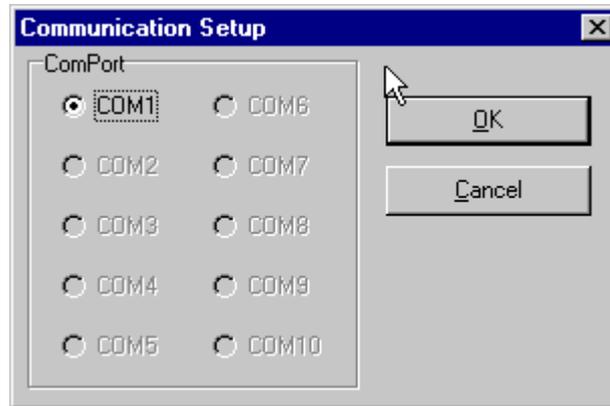
Example:

The folder for a Fire Alarm Control Panel will typically have the following identification:



4.3.4 Communication Setup

- Double-click the AutoSafe Download Tool *icon* and the communication setup menu will appear on screen.



- Select the communication port that is used.
- Click OK.

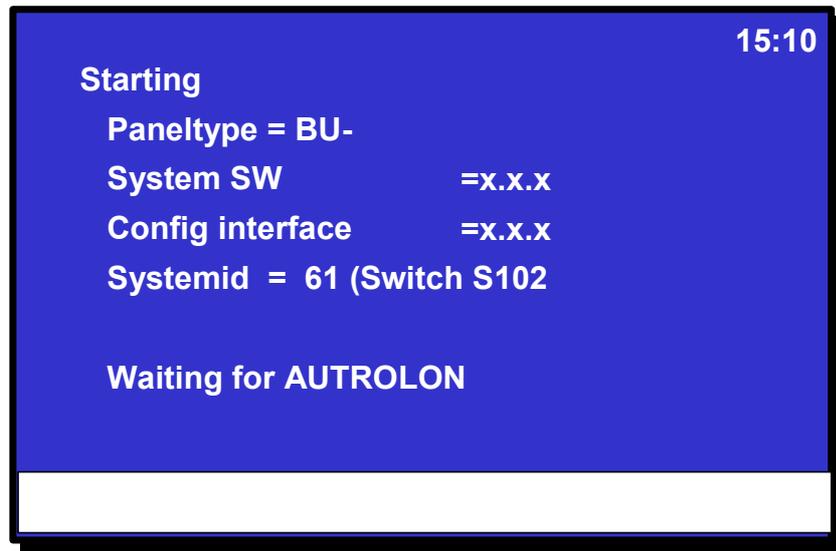
4.3.5 Locating Configuration Files

- The configuration files are automatically sorted in different folders in the *Installation/Config_Bin* directory. Refer to chapter 4.3.3.
- Use the browser to locate the configuration files for the Display Board BSR-310 (does not apply to the Controller BC-320). Click on the search box to search for the file in the dialog box, then press Open.
- Use the browser to locate the configuration files for the Processor Board EAC-300 (does not apply to the Operator Panel BS-330, Repeater Panel BU-320 and Information Panel BV-320). Click on the search box to search for the file in the dialog box, then press Open.

4.3.6 Downloading Configuration Files

- When downloading configuration data to the different system units in a distributed system, make sure to download the configuration files from the correct folders (see previous chapter).
- *After* download, do the following:
 - move the jumper on the Display board BSR-310 back to its original position (applies to all panels with display)
 - move the jumper on the Processor Board EAC-300 back to its original position (applies to BS-320/BC-320)
 - press the Reset button (X1) on the Processor Board EAC-300 (applies to the Controller BC-320)
 - press the Reset button on the Display Board (applies to all panels with display)
 - press the Reset button (S5) on the Display Board on the *Booting Panel (always the last system unit to reset)*

When all system units are ready for initialization, the following will appear on the screen on each system unit, except for the Controller which has no display*):

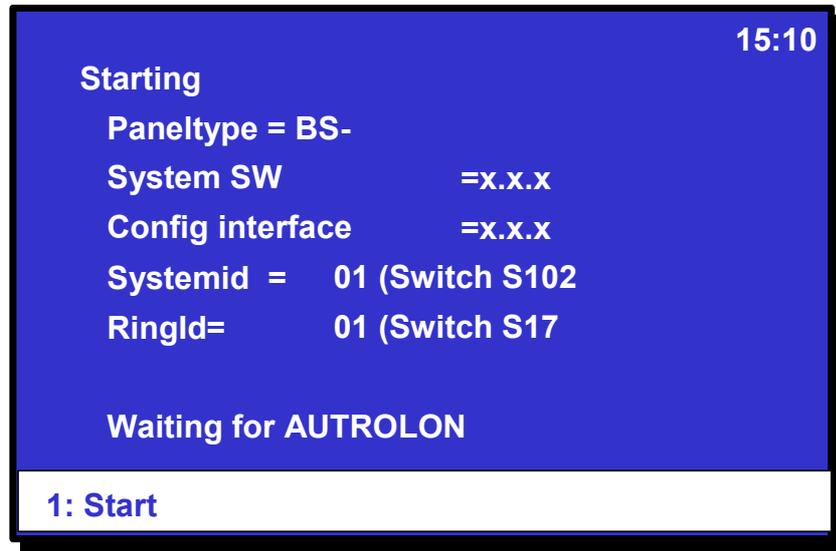


The example above shows a Repeater Panel BU-320 (If such a screen picture is not shown, press the reset button once more. The version is indicated with x.x.x in this example.

- * To make sure the Controller is ready for initialization, verify that the relay on the BSF-310 clicks twice rapidly.

4.3.7 Booting the System from the Fire Alarm Control Panel BS-320 (Booting Panel)

The initialization of the system is done from the Fire Alarm Control Panel (the *booting* panel). Refer to chapter 4.2.4 and 4.2.5. When the *downloading* procedure is complete and the reset button on the Display Board BSR-310 is pressed, the following will appear on the booting panel's screen (*example*):



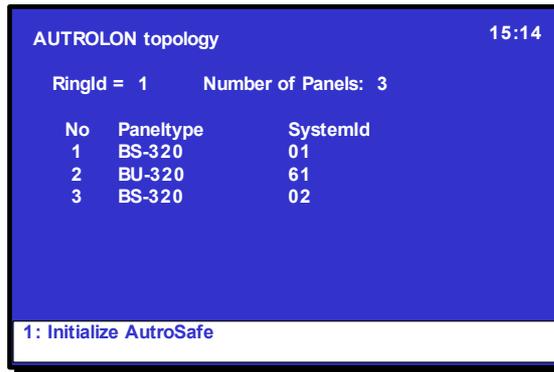
- To start AUTROLON, press digit 1 (Action Digit) on the alphanumeric keyboard.

As soon as digit 1 has been pressed, the booting of the distributed system will start. The system units are polled by the *Booting Panel*. At this stage, only the network function is started. No AutoSafe system functions are involved, and no configuration data is yet involved. The interface version is checked.

The display will show the number of panels that are found. When the AUTROLON start is complete, the following is shown in the bottom information field:

1: Initialize AutoSafe
2: View AUTROLON topology

- To view the AUTROLON topology before initializing, press digit 2.



- To initialize AutoSafe, press digit 1 (Action Digit) on the alphanumeric keyboard.

When the initialization is completed, the following display message will appear on all panels in the system:



4.3.8 If the Configuration Data Must be Reconfigured

If the distributed system has been changed in some way, for example, new system units or loop units have been added, the configuration data must be reconfigured according to the changes.

Before reconfiguring the ac-file or mbd-file (this file is the original file you use when you configure the AutoSafe configuration data) always do the following:

- **On your local computer, create a new directory for the new ac-file (plus Installation/Config_Bin)**
- **Start the AutoSafe Configuration Tool, then open the ac-file that is to be reconfigured.**
- **Go to the *File* menu, click *Save As*, and save the ac-file with a new name under the new directory you have just created.**

When you have completed the reconfiguring, do the necessary tasks:

- generate the new configuration files
- use the ConfigProgrammer to download the new configuration files to target
- repeat the entire booting procedure for all system units on the AUTROLON ring.

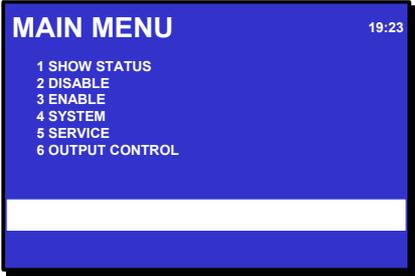
5. Entering Required Access Levels

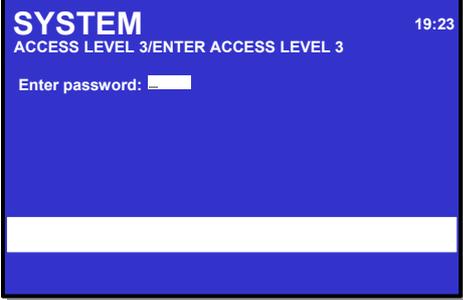
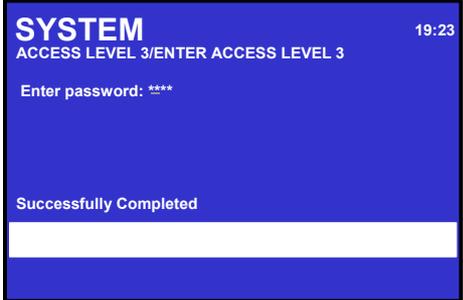
All user interface controls are classified as belonging to one of the four different access levels described below:

Access Level	Access Remedy	Description
1	No key or password required.	Accessible by members of the general public. All mandatory indications are visible at access level 1 without prior manual intervention.
2	Access by key. 	Accessible by persons having a specified responsibility for safety.
3	Password restricted.	Accessible by persons trained and authorized to do reconfiguration of site specific data and maintenance according to the manufacturer's published instruction.

To be able to *verify the system after download*, Access Level 2 must be entered. Access Level 2 is accessed by the key (turn the key counter-clockwise).

Access level 3 is entered as described in the procedure below.

Step	Actions to be taken	Display Indication
1	To enter the <i>Main Menu</i> from normal Operation Mode, press 	
2	To select SYSTEM, press 4.	

Step	Actions to be taken	Display Indication
3	To select ACCESS LEVEL 3, press 3.	
4	To enter ACCESS LEVEL 3, press 1.	
5	Enter the password, then press  twice.	

6. Verifying System After Download

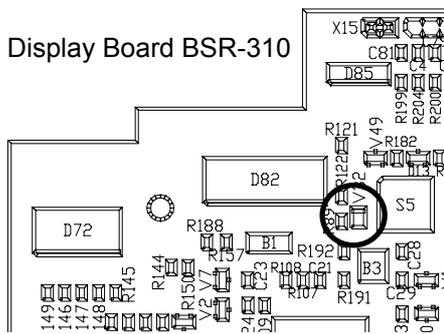
To ensure that the system works properly during normal operation, the whole system (control panel, detectors, control functions) should be verified after download.

Step	Description
1	Test the panel indicator lights and internal buzzer by pushing the Mute button more than 5 seconds.
2	<p>Test all operating keys by pressing each key:</p> <p>The following buttons will give a short "Beep" when pressed:</p> <p>All the <i>alphanumeric</i> buttons, plus;</p> <p>the red <i>Silence Alarms</i> , <i>Cancel</i> , <i>Enter</i> , <i>Help</i> , <i>Close</i> </p> <p>The green <i>Reset</i> button  should reset the system (requires access level 3), or start the lamptest (access level 1), bypressing it for more then 5sec.</p> <p>The <i>Menu</i> button  should allow you to switch between Menu Mode and Operation Mode.</p>
3	Perform a visual and functional inspection of manual call-points and automatic detectors.
4	Disable any alarm transference to the Fire Alarm Routing Equipment -FARE output.
5	Activate the alarm system. Test all sounders by activating an alarm from a corresponding manual call-point.
6	Test all control functions.
7	Activate alarms from at least one detector/manual call-point in each zone and a check that all respective outputs are activated.
8	Test the action of any auxiliary operating functions (disabling, cancelling and resetting buttons).
9	Check the alarm transference outputs by connecting from outgoing outputs (potential free relay and 24V output) activated by alarm in a zone.
10	<p>Check the fault warning function from detection zones by removing a detector in the corresponding zone.</p> <p>Activate a fault (remove battery fuse) and observe:</p> <ul style="list-style-type: none"> - the <i>Fault</i> indicator starts to blink - a fault warning is displayed - the internal buzzer is turned on - the Fault Warning Routing Equipment (FWRE) output is activated (if any)
11	<p>Verify all <i>conditions</i>, i.e.:</p> <ul style="list-style-type: none"> - Fire Alarm condition - Fire Warning condition - Fault Warning condition - Disablement condition - Test condition
12	On completion of checks, ensure that only the green "Power" indicator is on when the panel is in its idle state (normal operation).
13	Enable alarm transference to the Fire Alarm Routing Equipment -FARE output.

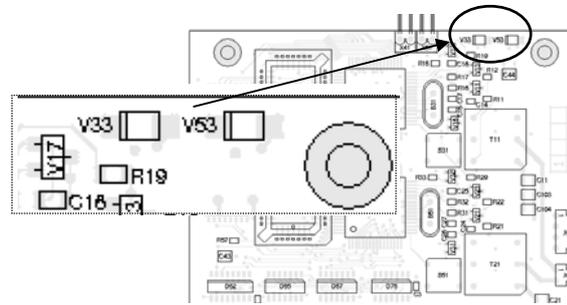
7. Troubleshooting

7.1 Distributed System

7.1.1 AUTROLON Service Diode Status After Reset



LON Interface Board EAU-310



Location of Diode(s)	Indication	Status	Actions to be taken
Display Board BSR-310 on BS-320	Steady red light. (V32)	Normal indication after reset.	-
Display Board BSR-310 on BU-320 BV-320 BS-330	Light turned off. (V32)	Normal indication after reset.	-
LON Interface Board EAU-310 on BS-320, BC-320	After two short beeps are heard, both LEDs should turn off. (V33 and V53)	Normal indication after reset.	-
LON Interface Board EAU-310 on BS-320, BC-320	Steady light. (V33 and V53)	Flash Memory missing or system not operating.	Insert Flash device(s) in correct position(s). Repeat the entire startup and initialization procedure.
LON Interface Board EAU-310 on BS-320, BC-320	Blinking rapidly. (V33 and V53)	LON Interface not communicating.	Repeat the entire startup and initialization procedure.
BSR-310 Board (BU/BV-320, BS-330)	Steady light. (V32)	Flash Memory missing or system not operating.	Insert Flash device(s) in correct position(s). Repeat the entire startup and initialization procedure.
LON Interface Board (BU/BV-320, BS-330)	Blinking rapidly.	LON Interface not communicating.	Repeat the entire startup and initialization procedure.

8. Upgrading System Software

8.1 Overview

When upgrading System Software versions, each panel has to be prepared before downloading. Note that new configuration files (generated by the matching version of the AutoSafe Configuration Tool) must be downloaded as well.

When performing the upgrading procedure on system units in a distributed system, disregard information in this chapter related to circuit boards which are not integrated parts of the actual system unit.

Depending on the type of system unit, you will have to connect the computer to the Display Board BSR-310 and then to the Operator Board BSZ-310. The jumpers on the Display Board BSR-310 and the Processor Board EAC-300 have to be temporarily moved to another position when performing this procedure.

Note the following:

- The Processor Board EAC-300 is not an integrated part of the Operator Panel BS-330, Repeater Panel BU-320 and Information Panel BV-320.
- The Display Board BSR-310 is not an integrated part of the Controller BC-320.

NOTE!

In distributed systems, the most convenient way to upgrade the entire system, is to do the necessary preparations on one system unit, download the System Software (and the Configuration files) to this system unit, then continue repeating the procedure on the next system unit.

To download System Software, the *AutoSafe Download Tool* is required. Note that this procedure has password restrictions.

Note that it is possible to use two download tools at the same time if the PC is equipped with several serial ports. In this way, it is possible to download files at the same time to both the Display Board BSR-310 and to the Operator Board BSZ-310 / Processor Board EAC-300.

The downloading of System Software to a system unit should be performed in the following order:

- Move the jumpers to the correct positions.
- Connect the computer to the system unit.
- Enter Programming Mode, and download the System Software to the correct target.
- When the downloading is completed, move the jumpers back to their original positions.
- Reboot the system unit.

All necessary actions are described in the following chapters.

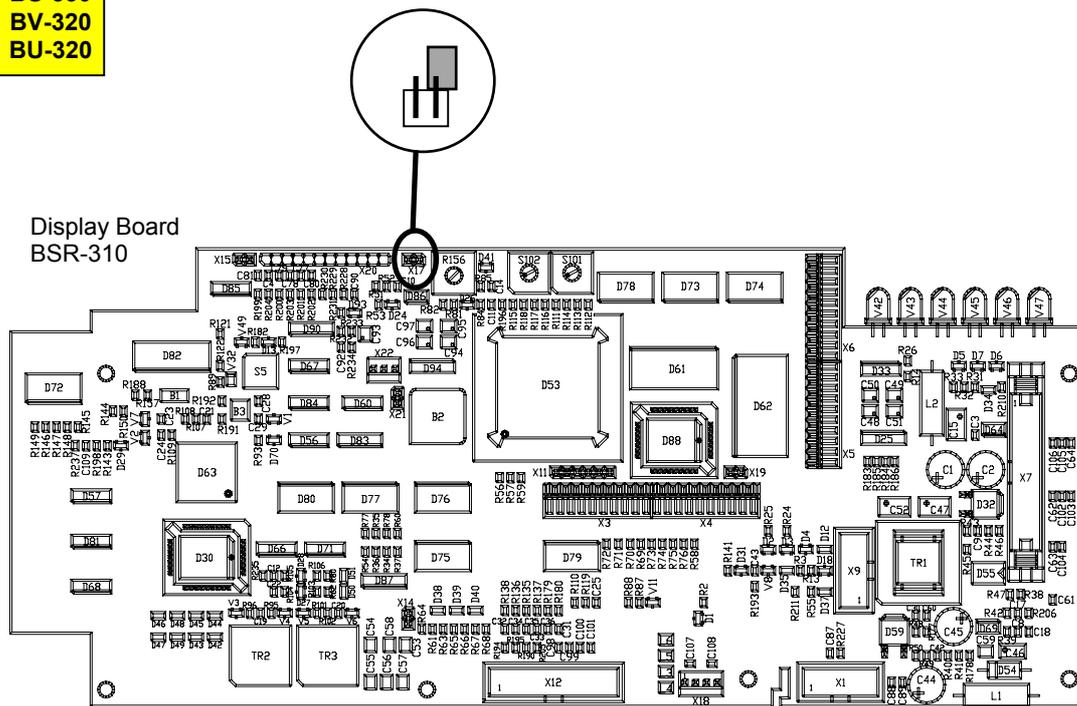
8.2 Jumper Positions and Computer Connections

8.2.1 Display Board BSR-310

Before downloading System Software to the Display Board BSR-310, the following applies:

Applies to
BS-320
BS-330
BV-320
BU-320

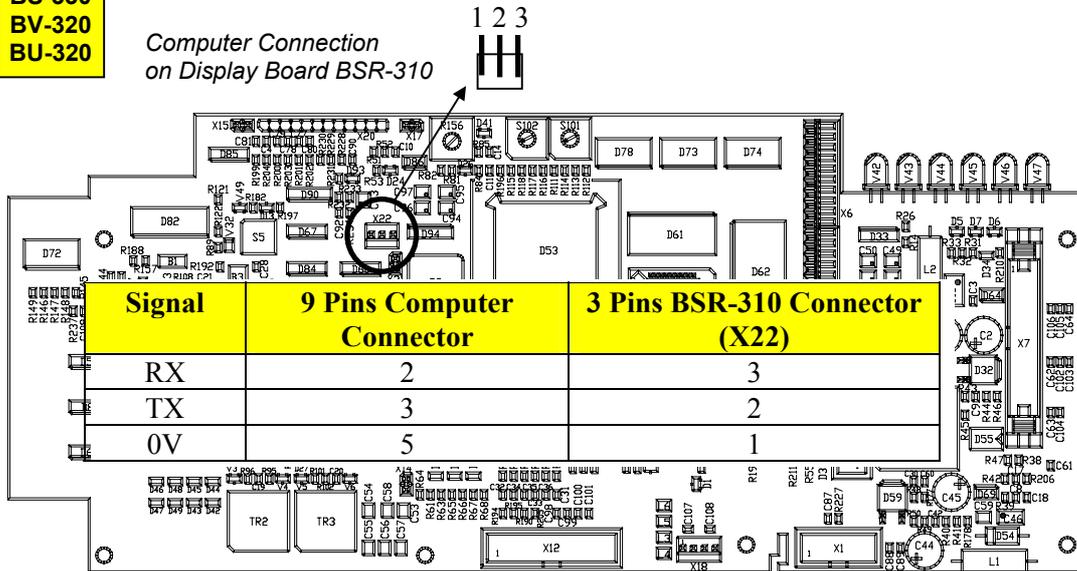
- Move the jumper at position X17 on the Display Board BSR-310 temporarily to the rightmost pin. The jumper is to be moved back to its original position at a later stage.



Applies to
BS-310
BS-320
BS-330
BV-320
BU-320

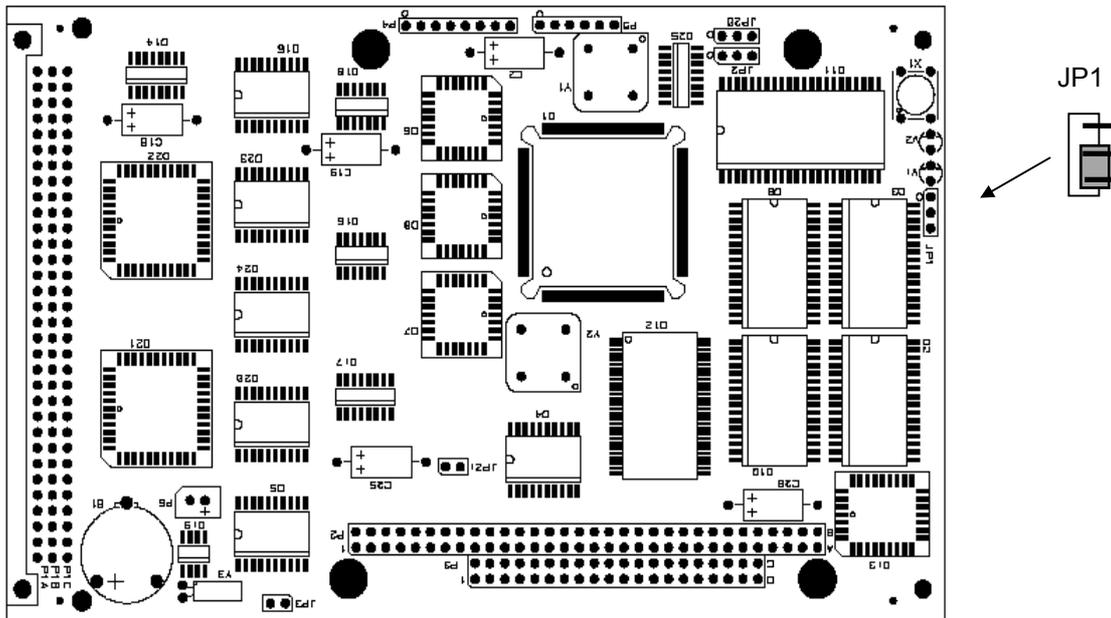
- Connect a computer to the connector X22 on the Display Board (BSR-310) board.
At the computer side the cable is connected to one of the serial ports.

Computer Connection on Display Board BSR-310



Applies to
BS-310
BS-320
BC-320

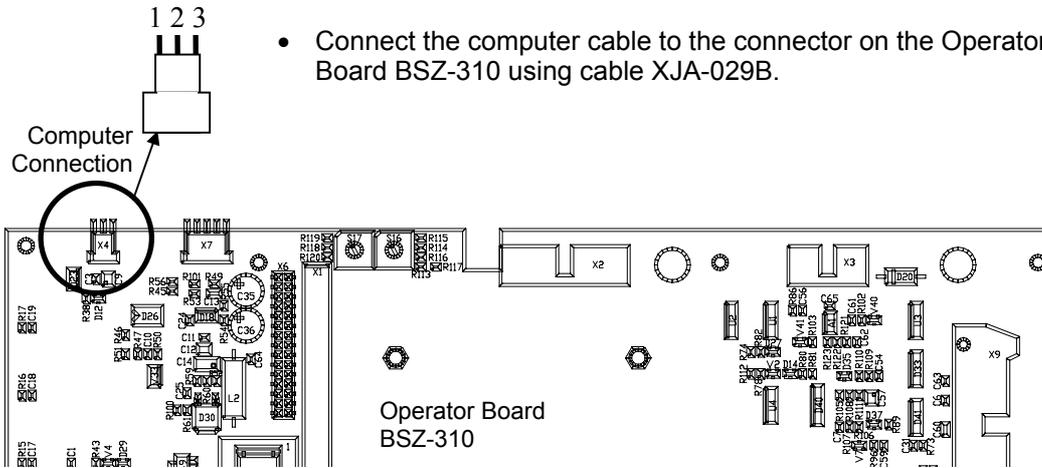
- Move the jumper at JP1 on the Processor Board EAC-300 temporarily one position down (so that the two lowest pins are used). The jumper is to be moved back to its original position (the two uppermost pins) at a later stage.



8.2.2 Operator Board BSZ-310

Before downloading System Software to the Operator Board BSZ-310, the following applies:

- Connect the computer cable to the connector on the Operator Board BSZ-310 using cable XJA-029B.



8.3 Entering Programming Mode

Applies to
BS-310
BS-320
BS-330
BV-320
BU-320

When the necessary preparations are made, you can enter programming mode.

- Press the Reset button (S5) on the Display Board BSR-310.



Applies to
BC-320

- As the Controller is not equipped with the Display Board, reset is performed by pressing the reset button (X1) on the Processor Board EAC-300.

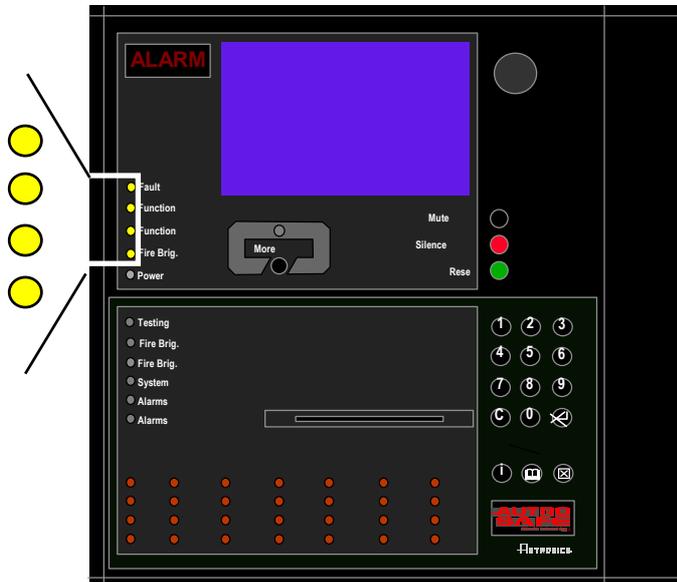


Applies to
BS-310
BS-320
BS-330
BV-320
BU-320

Observe the four uppermost indicators on the left hand side of the Fire Alarm Control Panel (Fault, Function Disabled, Function Delayed, Fire Brig. Signalled).

These indicators will turn on (yellow light), indicating that the system has entered *programming mode*.

(The green *Power* indicator will go off).



8.4 Installing the AutoSafe Download Tool

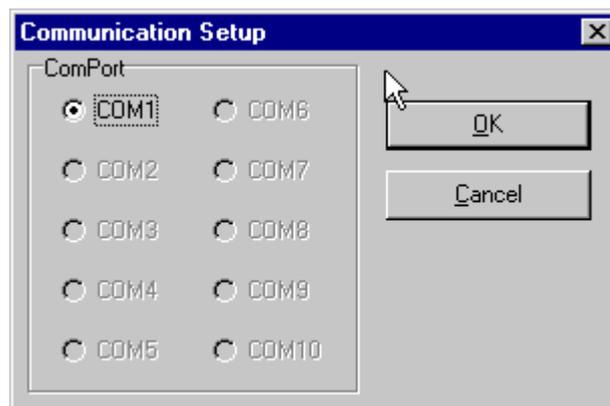


The AutoSafe Download Tool is already installed on your service computer and will appear as an icon on screen.

8.5 Startup Procedure

8.5.1 Communication Setup

- Double-click the AutoSafe Download Tool *icon* and the communication setup menu will appear on screen.



- Select the communication port that is used.
- Click OK.

8.5.2 About System Software Files

To upgrade system software, you have to download the system software files to target.

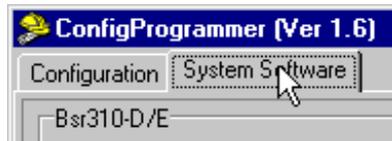
The System Software is located in the *System Software* directory, including the following two files:

- opeq_bin** which is to be downloaded to BSR-310 (computer connection to the BSR-310 board)
- facs_bin** which is to be downloaded to EAC-300 (computer connection to the BSZ-310 board)

System Unit	System Software Files	Downloaded to Target
Fire Alarm Control Panel BS-310/ 320	opeq_bin facs_bin	BSR-310 EAC-300
Controller BC-320	facs_bin	EAC-300
Operator Panel BS-330	opeq_bin	BSR-310
Repeater Panel BU-320	opeq_bin	BSR-310
Information Panel BV-320	opeq_bin	BSR-310

NOTE: When downloading, make sure that the jumpers are in the correct positions and that you have the correct computer connection.

- Click on System Software.



- In the dialog box that appears, enter the password.



8.5.3 Locating System Software Files

- Use the browser to locate the System Software files for the Display Board BSR-310 (does not apply to the Controller BC-320). Click on the search box to search for the **opeq_bin** file in the dialog box, then press Open.
- Use the browser to locate the System Software files for the Processor Board EAC-300 (does not apply to the Operator Panel BS-330, Repeater Panel BU-320 and Information Panel BV-320). Click on the search box to search for the **facs_bin** file in the dialog box, then press Open.

8.5.4 Downloading System Software Files to the Display Board

- Make sure that the jumper positions and computer connection are correct (refer to *Jumper Positions and Computer Connections*).
- Click on the Program button to download the opeq_bin file(s) to target, i.e. the Display Board (does not apply to the Controller BC-320).
- Observe the progress (0-100%) on the status line shown on the computer screen. (*AutroSafe Download Tool*).
- Click OK when the procedure is completed.
- Remove the computer cable from the connector on the circuit board.

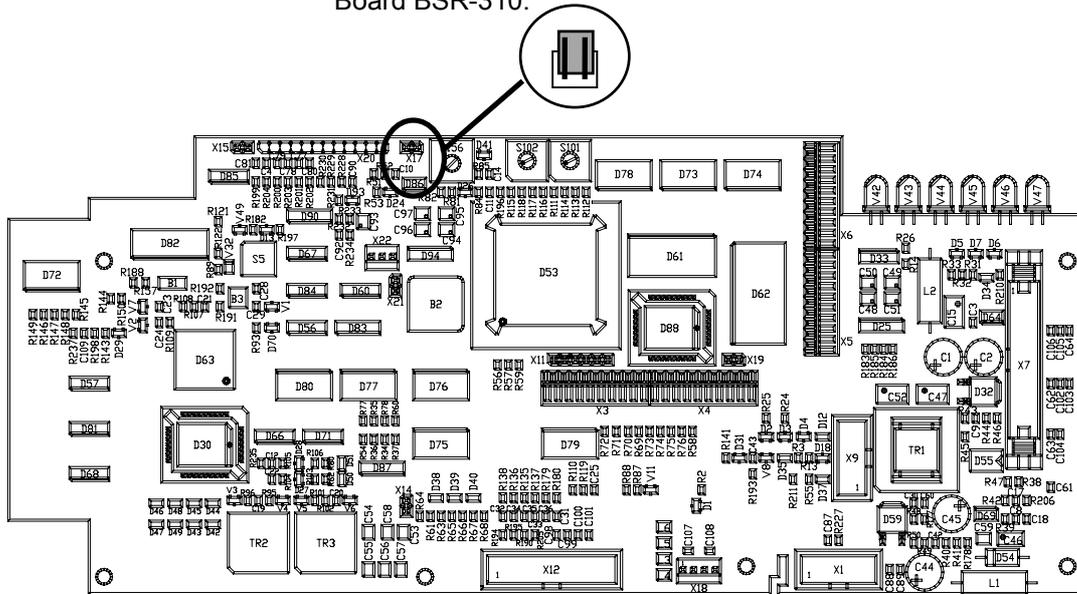
8.5.5 Downloading System Software Files to the Processor Board

- Make sure that the jumper positions and computer connection are correct (refer to *Jumper Positions and Computer Connections*).
- Click on the Program button to download the facs_bin file to target, i.e. the Processor Board (does not apply to the Operator Panel BS-330, Repeater Panel BU-320 and Information Panel BV-320).
- Observe the progress (0-100%) on the status line shown on the computer screen. (*AutroSafe Download Tool*).
- Click OK when the procedure is completed.
- Remove the computer cable from the connector on the circuit board.

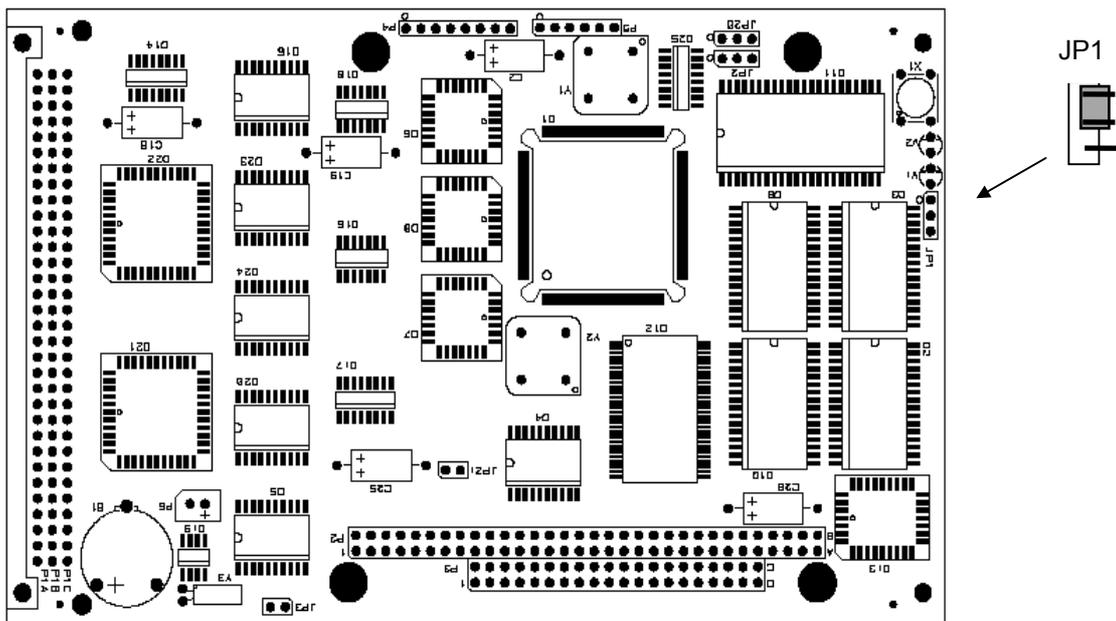
8.5.6 Re-placing the Jumpers

When the downloading is completed, the jumpers are to be moved back to their original positions.

- Move the jumper back to its original position X17 on the Display Board BSR-310.



- Move the jumper at position JP1 back to its original position (the two uppermost pins on the Processor Board EAC-300).



8.5.7 Rebooting the System

When the System Software is downloaded to target, the system unit has to be rebooted.

**Applies
to
BS-310
BS-320
BS-330
BV-320
BU-320**

- Press the Reset button (S5) on the Display Board BSR-310.



**Applies
to
BC-320**

- As the Controller is not equipped with the Display Board, reset is performed by pressing the reset button (X1) on the Processor Board EAC-300.



9. Guidelines When Expanding to Distributed System

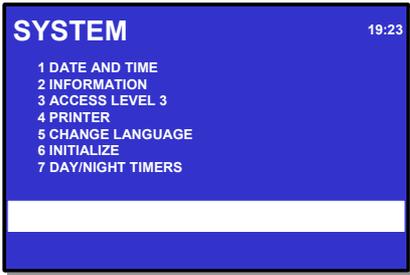
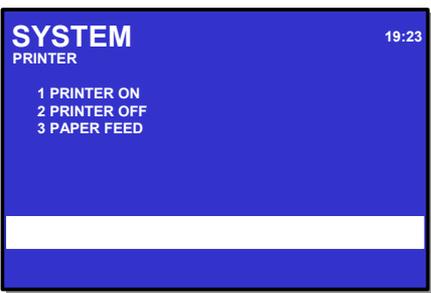
If you have a *standalone* AutoSafe system, you can easily upgrade and expand your system to a distributed system. The following guidelines apply:

Step	Action To Take	Remarks
1	Mount the required LON Interface Board EAU-310 onto the EAC-300 Board inside the Fire Alarm Control Panel BS-310	You will now actually have a BS-320 panel.
2	Do the necessary cabling: - external AUTROLON cables - internal AUTROLON cables - 24V DC to all system units connected to the AUTROLON	Refer to the Installation Handbooks and the Commissioning Handbook.
3	In the AutoSafe Configuration Tool, open the existing ac-file (or mdb-file).	The mbd-file is the original configuration file where you have the existing configuration.
4	Add new Controllers BC-320 and Fire Alarm Control Panels BS-320 panels to Domain Network in System View.	Note that the Export / Import functionality in the AutoSafe Configuration Tool allows you to merge several standalone configurations into one distributed system. Refer to Help System.
5	Add the new Operator Panels BS-330, Repeater Panels BU-320, Information Panels BV-320 to BS-320 in System View.	
6	Add all other system hardware in System View.	Loop Driver Modules, Closed Loops, Loop Units, I/O Modules, etc.
7	Reconfigure where necessary according to customer specifications.	Add new Detection Zones and Alarm Zones. Connect Loop Units to Detection Zones. Connect Fire Alarm Devices to Alarm Zones. Connect Detection Zones to Alarm Zones. Connect Fire Protection Equipment (FPE) to Points/Detection Zones. Also configure Fault Warning Routing Equipment (FWRE) and Fire Alarm Routing Equipment (FARE).
8	Connect all new system units to the Operation Zone(s) in Operation Zones View.	The Repeater Panel BU-320 and the Information Panel BV-320 are automatically allocated to the same Operation Zone as the BS-320 or BC-320 they are connected to in System View.
9	Define the <i>Booting Panel</i> .	The <i>Booting Panel</i> must be a Fire Alarm Control Panel BS-320. Refer to the Commissioning Handbook.
10	Address the system units.	Refer to the Commissioning Handbook.
11	Generate new configuration files, and download the appropriate files to the different system units.	Refer to the Commissioning Handbook.
12	Press the reset button on the Display Board BSR-310 to prepare each system unit for booting.	As the Controller does not have the BSR-310 board, use the reset button on the Processor Board EAC-300.
13	As the last system unit, press the reset button on the <i>booting panel</i> (BS-320), then press digit 1 (Start AUTROLON).	The Fire Alarm Control Panel will then be ready for the initialization of the distributed system.
14	Press digit 1 (Initialize AutoSafe) to start the initialization of the entire distributed system.	

Inserting / Feeding Paper for the Optional Printer

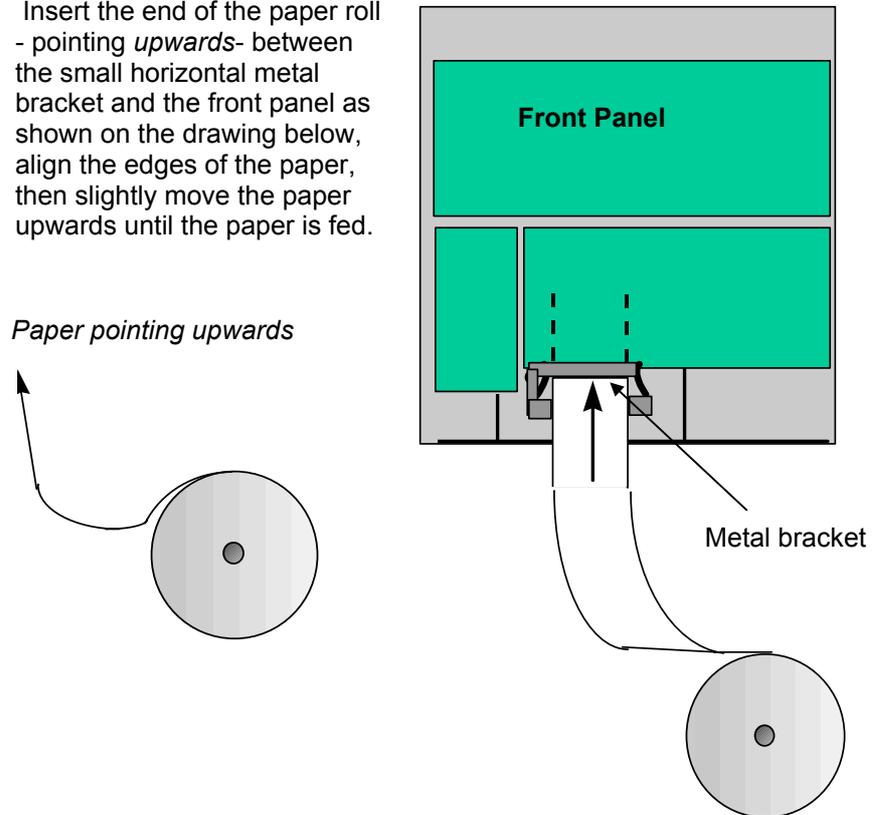
If the Fire Alarm Control Panel (Operator Panel) is equipped with an optional printer, the following must be done:

1. Enter the Printer selection in the System Menu as shown below.

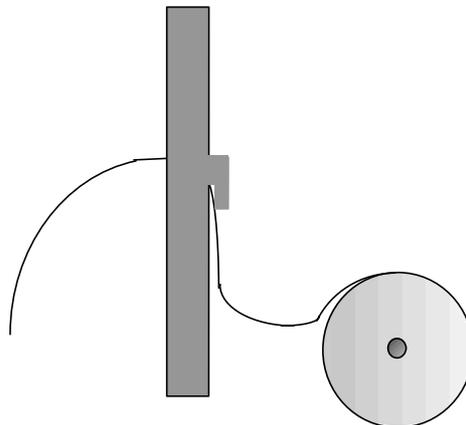
Step	Actions to be taken	Display Indication
1	To enter the Main Menu, press 	
2	To select SYSTEM, press 4.	
3	To select PRINTER, press 4.	
4	To start the PAPER FEED, press 3.	

2. Open the frontpanel.
3. Make sure that the end of the paper roll has a clean 90° cut.

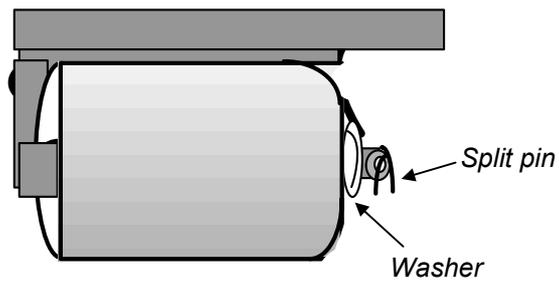
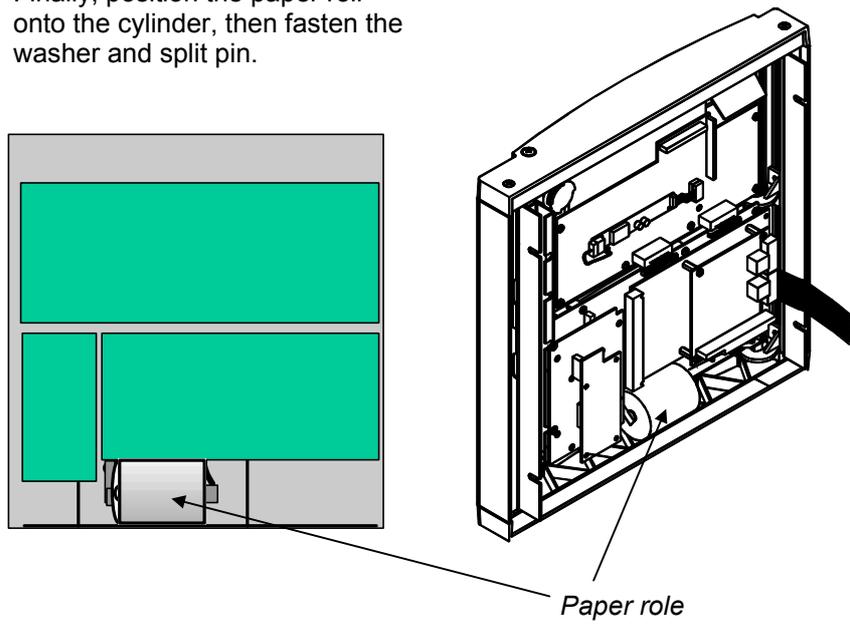
4. Insert the end of the paper roll - pointing *upwards*- between the small horizontal metal bracket and the front panel as shown on the drawing below, align the edges of the paper, then slightly move the paper upwards until the paper is fed.



5. When the paper comes through the paper slot on the front side, press 3 on the front side of the panel to stop the paper feeding.



6. Finally, position the paper roll onto the cylinder, then fasten the washer and split pin.



7. Close the front panel.
8. To return to the Main Menu, press  three times.

11. Reader's Comments

Please help us to improve the quality of our documentation by returning your comments on this manual:

Title: *Commissioning Handbook*
AutroSafe Interactive Fire Alarm System, Release 3,
Ref. No.: *P-ASAFE/EE Rev. E, 2005-02-16*

Your information on any inaccuracies or omissions (with page reference):

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Suggestions for improvements

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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 preservation of environment, life and property.

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