



# Connecting Loop Units

Interactive fire detection systems



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# 1. Introduction

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## 1.1 About the Handbook

This document provides information on how to connect detectors and other loop units to the interactive fire detection systems **Autroprime** and **AutroSafe**.

Note that some loop units can be connected to AutroSafe only (the indication "AutroSafe only" is written in the beginning of these chapters).

Autronica's interactive fire detection systems offer a wide range of fire alarm detectors, manual call points and input/output units, control units and alarm units that are developed and approved according to European directives (CPD) requiring EN 54 compliance.

Both input and input/output units are also available with the SV-function. Input units can also be delivered in series 500 and 500/Ex.



## 1.2 Reference Documentation

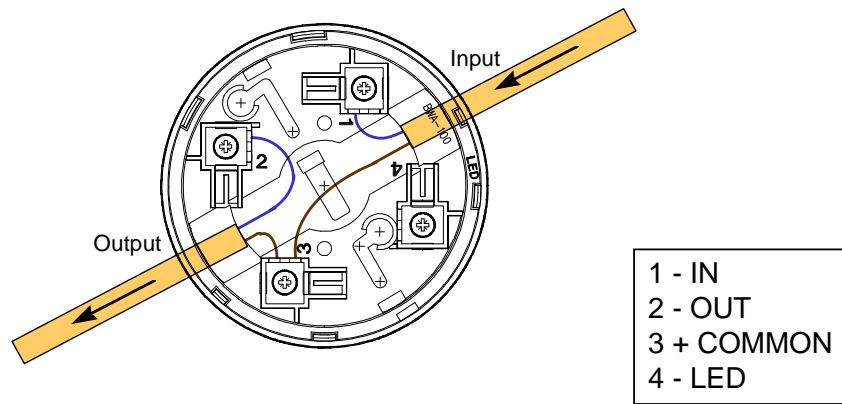
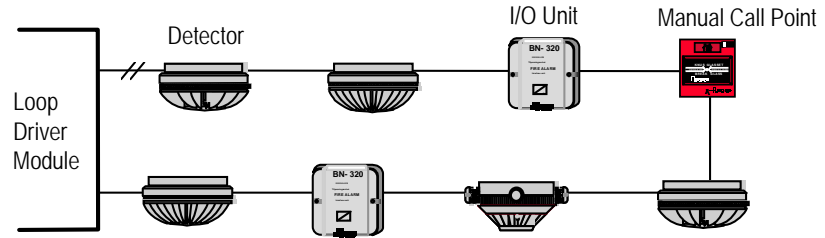
Detailed information for each loop unit is provided on separate data sheets.

## 1.3 The Reader

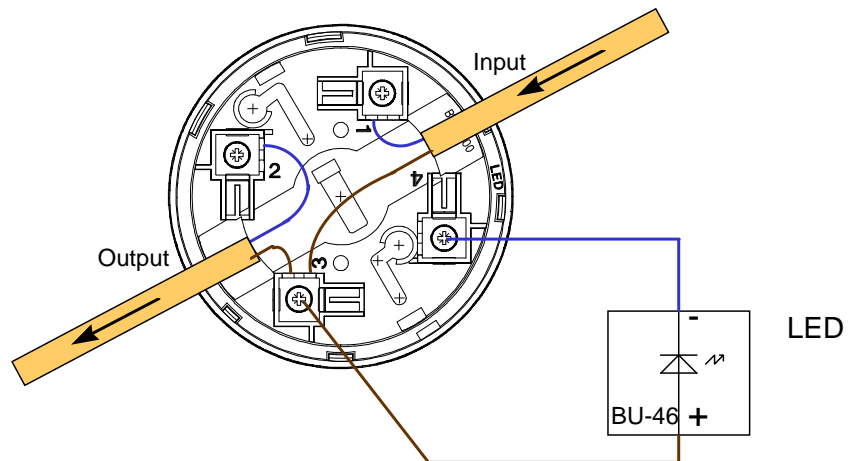
This handbook is intended for technical personnel.

# 2. Detectors

## 2.1 Connecting Detectors



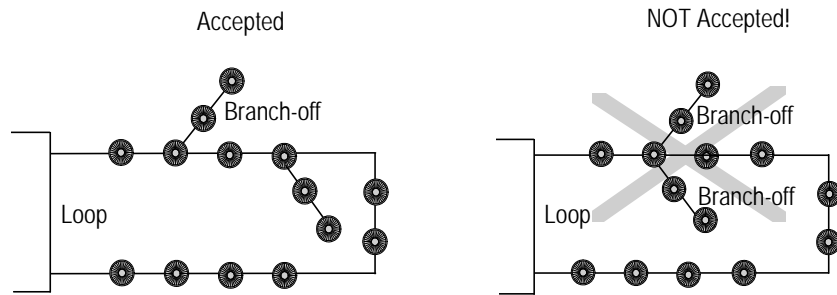
## 2.2 LED Connection on Detector



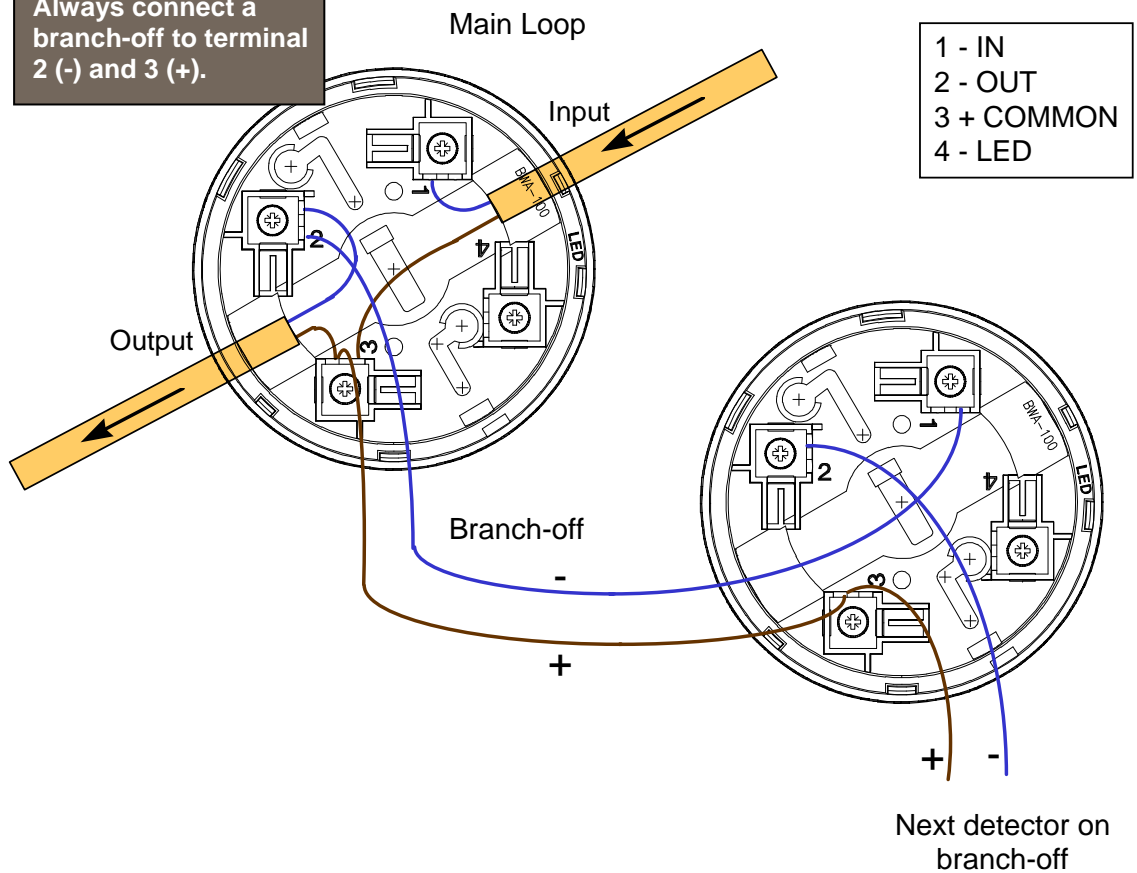
## 2.3 Connection of Branch-off

If necessary, a *branch-off* can be connected to a detection loop if the existing cable layout requires this, but this is *not* recommended, as the safety will be reduced.

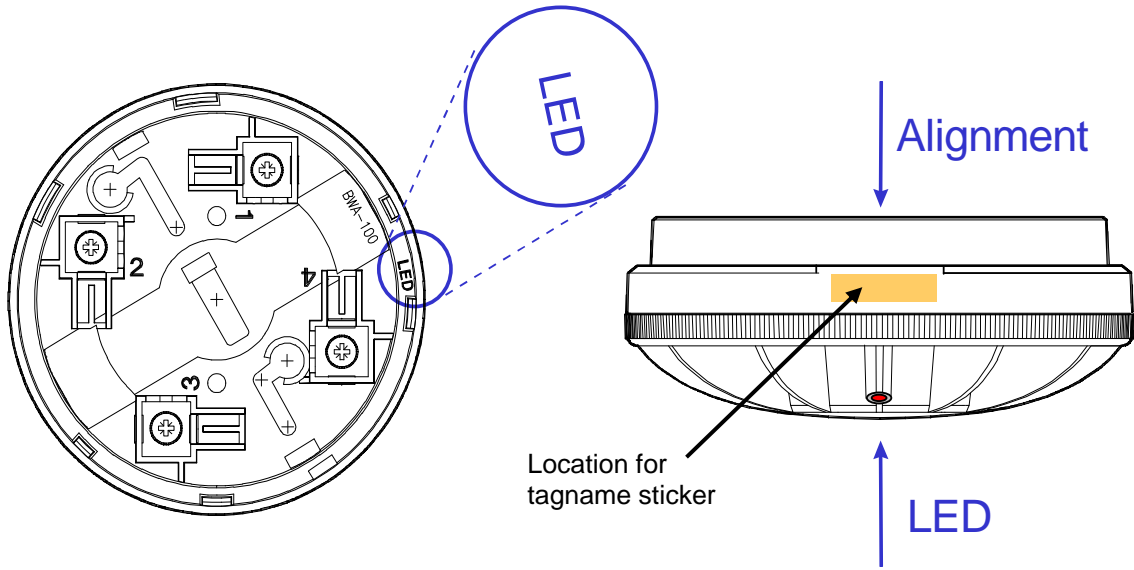
To ensure a correct addressing of the detectors on a branch-off when configuring the system, *there can not be more than one branch-off per detector*. For safety reasons, the number of detectors on each branch-off must be kept to a minimum, as the detectors on a branch-off will not operate in case of a break or shortcircuit on the branch-off. The absolute maximum number of detectors on a branch-off (or an open loop) is 32.



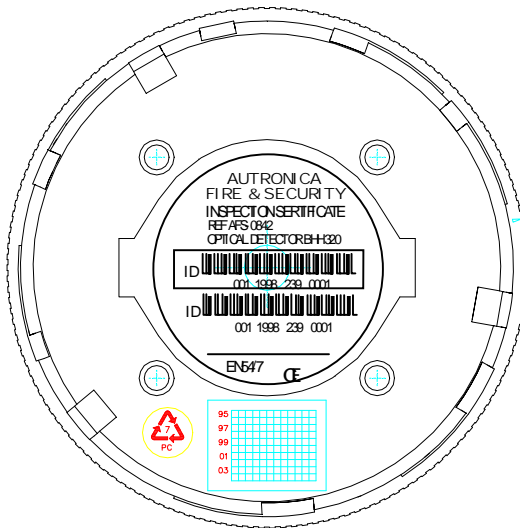
**NOTE:**  
Always connect a branch-off to terminal 2 (-) and 3 (+).



## 2.4 Detector Head / Base Alignment



## 2.5 Detector Label

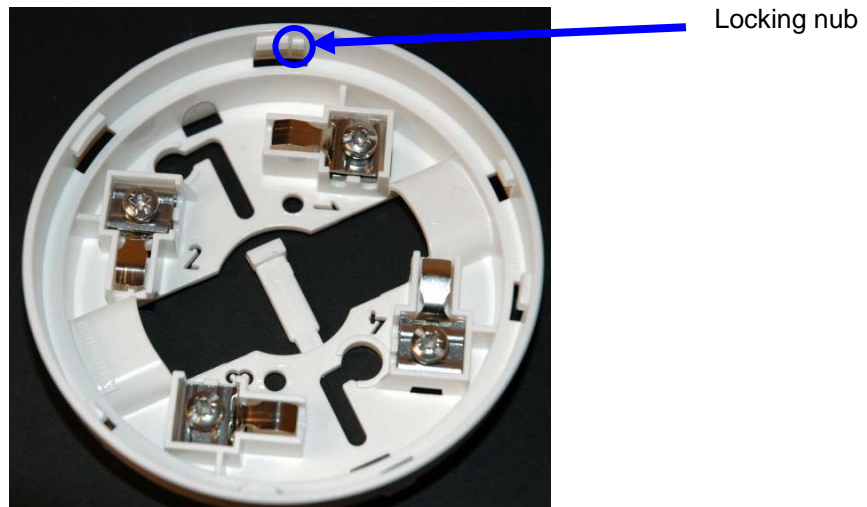




## 2.6 Detector Locking Mechanism

### 2.6.1 Detector Base

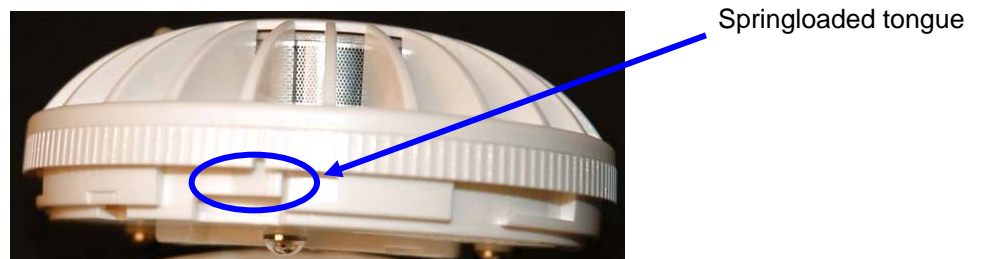
In the detector base a small locking nub will keep the springloaded tongue in an open position to prevent the detector head from being locked. If the locking nub is removed before mounting with a pair of cutting nippers or similar, the detector head will enter a locked position.



Detector base with locking nub

### 2.6.2 Detector head

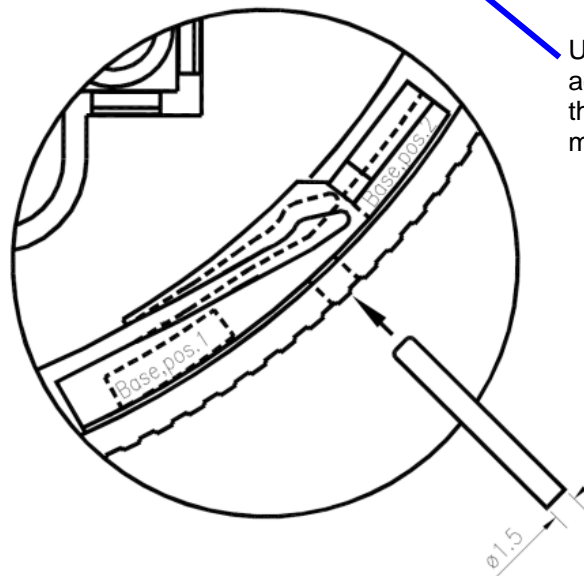
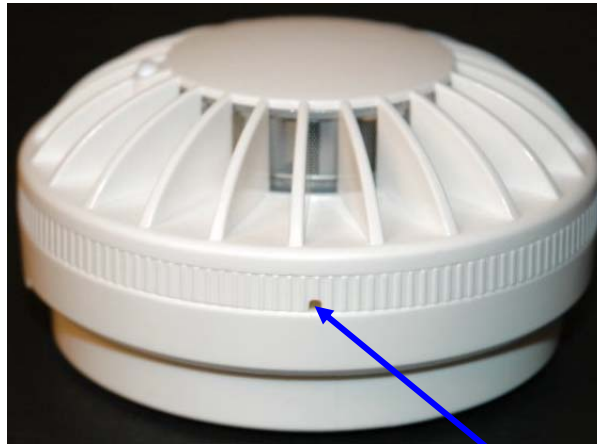
The new springloaded tongue (figure 3) on the detector head will lock the head in a correct position if the locking nub has been removed before mounting.



Detector head with springloaded tongue

### 2.6.3 Removing a locked detector head

- To remove a locked detector head, use a suitable tool (for example a paper clip or similar) to push the springloaded tongue in, and simply turn the detector head counter-clockwise.



Use this hole to access and release the locking mechanism.

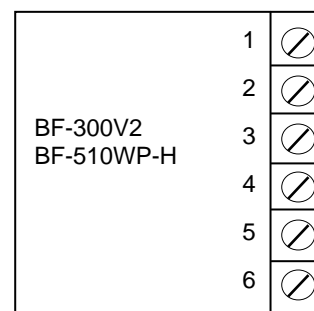
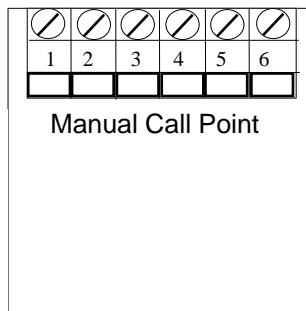
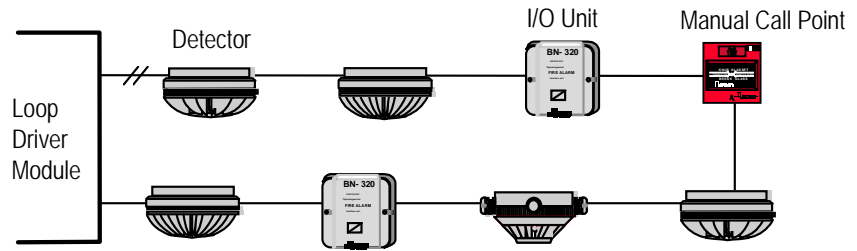
## 2.7 Detector Dust Covers

Autronica detectors are supplied with a dust cover. To avoid possible contamination of the detector chamber during installation, these should remain in place on the detector until commissioning is started.

**IMPORTANT:  
LEAVE DETECTOR DUST  
COVERS ON UNTIL  
COMMISSIONING IS  
STARTED**



# 3. Manual Callpoints

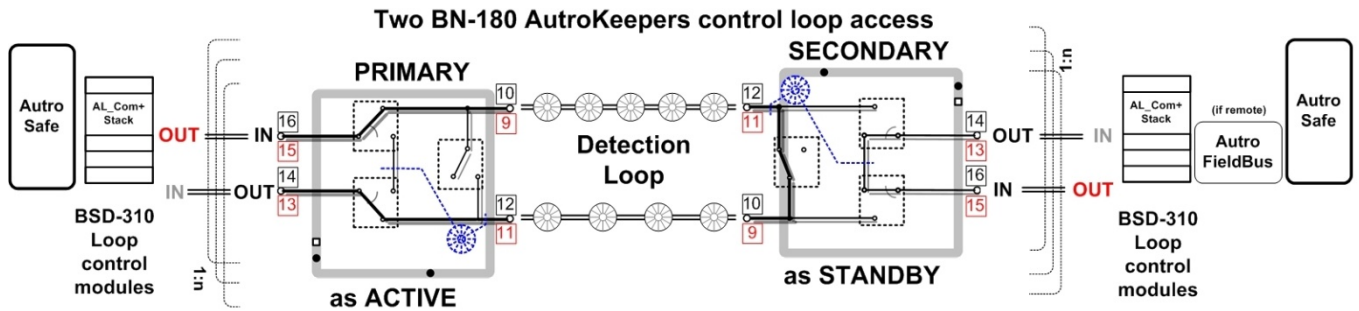


Connector on Manual Call Point	Wires on Detection Loop	Wires on detection loop BF-300V2/ BF-510WP-H
1	Pos (+) in	Pos (+) in
2	Pos (+) out	Neg (-) in
3	Neg (-) in	Pos (+) out
4	Neg (-) out	Neg (-) out
5	Internal connection	Internal connection
6	Internal connection	Internal connection

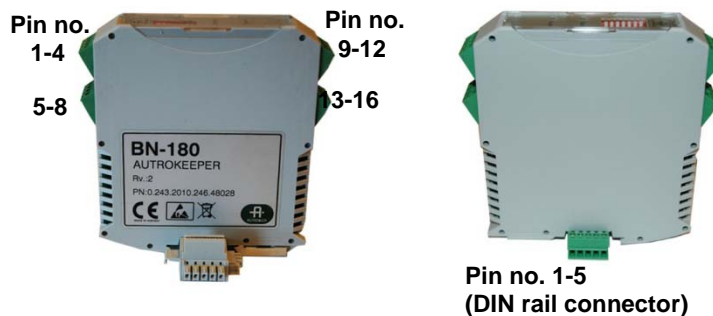
# 4. Input and Output Units

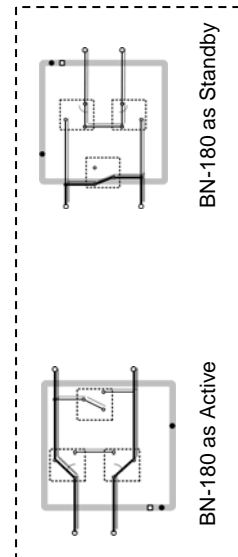
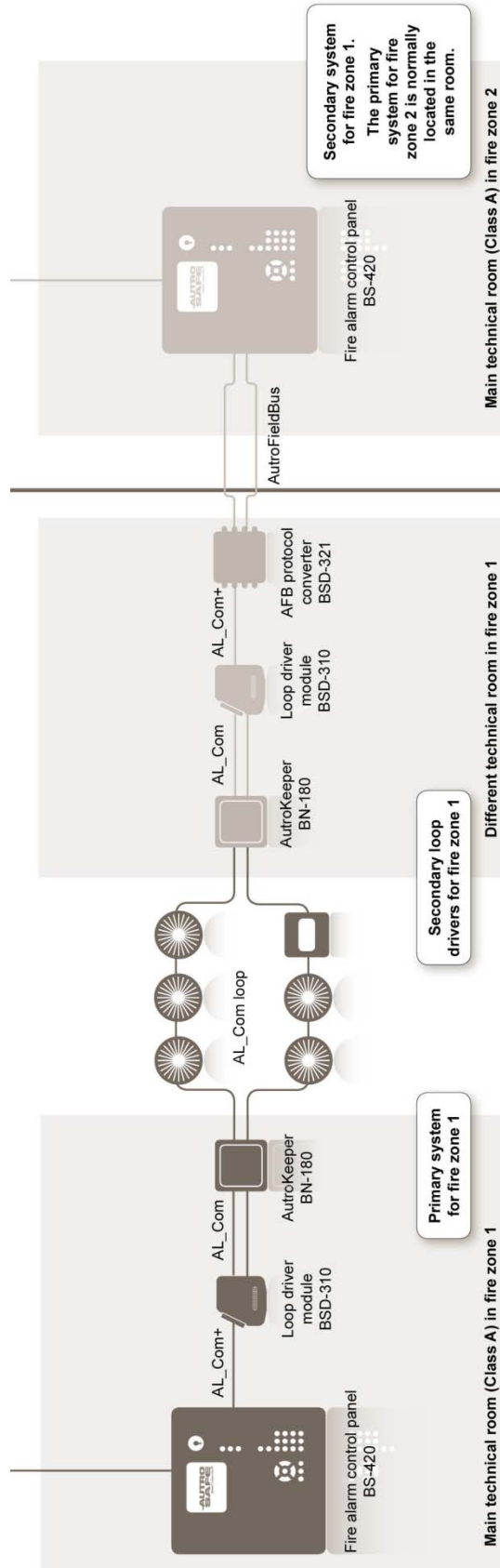
## 4.1 BN-180 AutoKeeper

The AutoKeeper is physically placed between the loop controller (BSD-310) and the detection loop and thus controlling/providing the loop controller access to the loop.



Pin number	Description	
1	TTL COM	Debug port (internal use only)
2	TTL IN	Debug port (internal use only)
3	TTL OUT	Debug port (internal use only)
4	GND	
5	24V IN	Power In (Green LED)
6	0V IN	Power In
7	FAILSAFE COM	FailSafe Rel. (future)
8	FAILSAFE NO	FailSafe Rel. (future)
9	OUTLOOP +	To "first" Loop Unit
10	OUTLOOP -	--"--
11	INLOOP +	To "last" Loop Unit
12	INLOOP -	--"--
13	OUT +	To Loop Driver's IN +
14	OUT -	To Loop Driver's IN -
15	IN +	To Loop Driver's OUT+
16	IN -	To Loop Driver's OUT -
DIN rail conn. 1	24V IN	Power In
DIN rail conn. 2	0V IN	Power In
DIN rail conn. 3	Not used	
DIN rail conn. 4	Not used	
DIN rail conn. 5	GND	



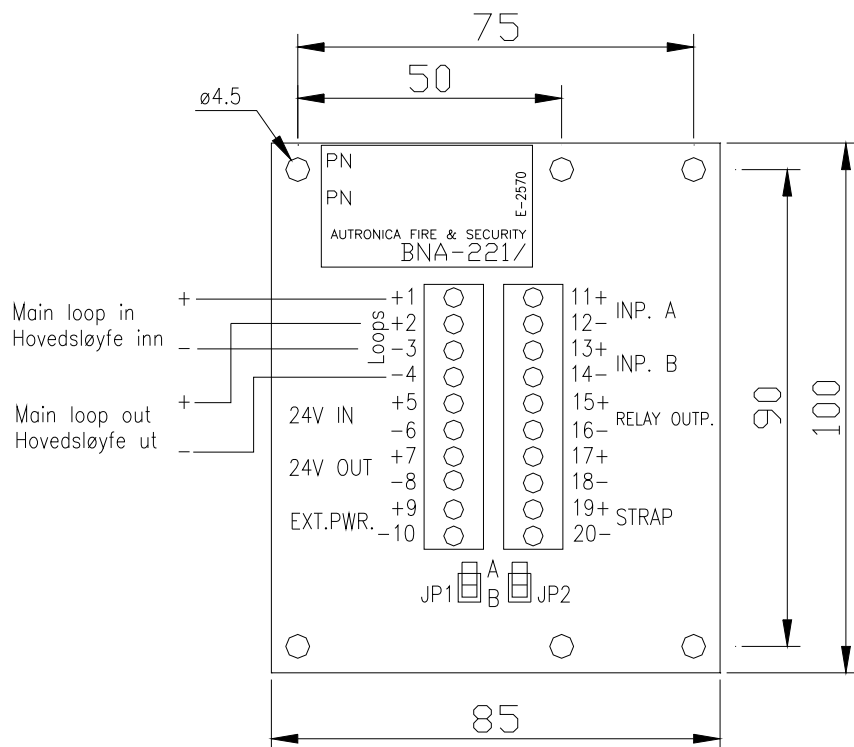




## 4.2 BN-221/01 Extinguishing Control Unit

The extinguishing control unit BN-221/01 is an interface unit which monitors and controls extinguishing equipment. The extinguishing equipment is powered from a separate 24 VDC supply. The interface unit is used in the AutoSafe interactive fire detection system, and it is connected directly to a detection loop.

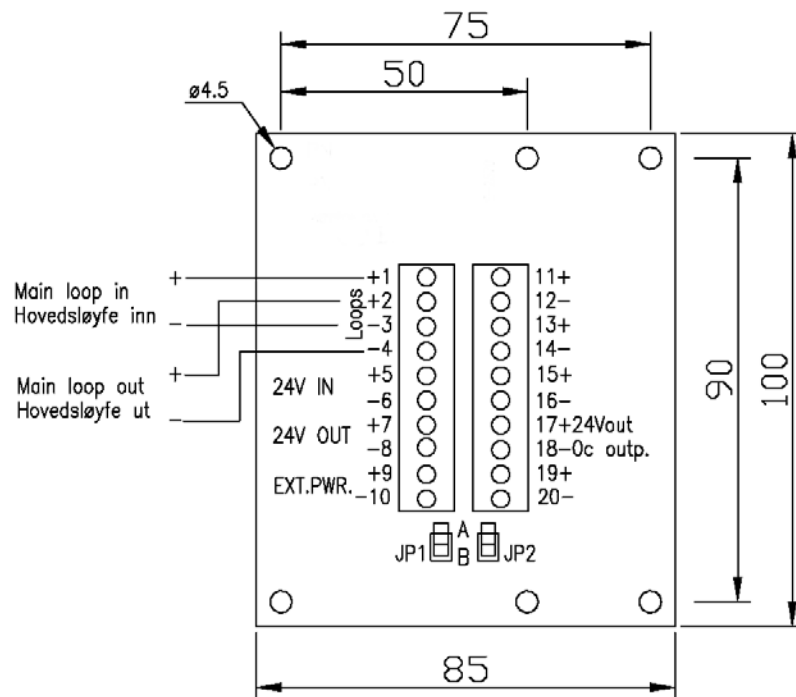
The extinguishing equipment is powered from a separate 24 VDC supply. The interface unit is used in the AutoSafe interactive fire detection system, and it is connected directly to a detection loop.





### 4.3 BN-221/02 Monitored Output Unit, 7A Relay

The monitored output unit, 7A relay (BN-221/02) is connected directly to the detection loop in the AutoSafe interactive fire detection system. It controls and monitors external equipment. Typical applications are notification devices such as horns, strobe lights, indicating light etc.

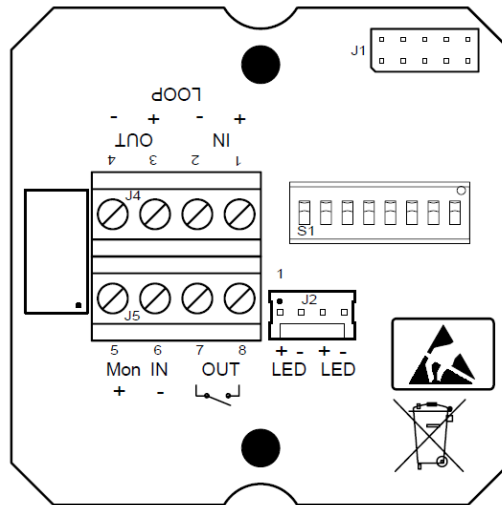


## 4.4 BN-303 Single Monitored Input Unit

The Single Monitored Input Unit BN-303 has been designed for use with Autronica's fire detection systems, Autroprime (version 1.1.0 or newer) and AutoSafe (version 4.3.1 or newer), and includes the SelfVerify function.

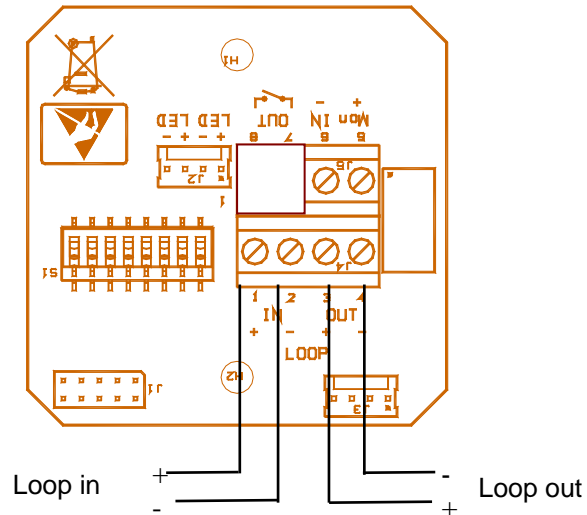
All connections are made to the screw terminals numbered 1-8.

Screw terminal	Description
1	AL_Com In (+)
2	AL_Com In (-)
3	AL_Com Out (+)
4	AL_Com Out (-)
5	Input (+)
6	Input (common)
7	Not in use
8	Not in use



## 4.5 BN-303/LS Local Alarm Delay Unit

The local alarm delay unit BN-303/LS enables delay of alarm routing outside the local area which the unit is connected to (Autroprime; 1 detection zone, AutoSafe; up to 10 detection zones), plus temporary stop of smoke detection in the local area.

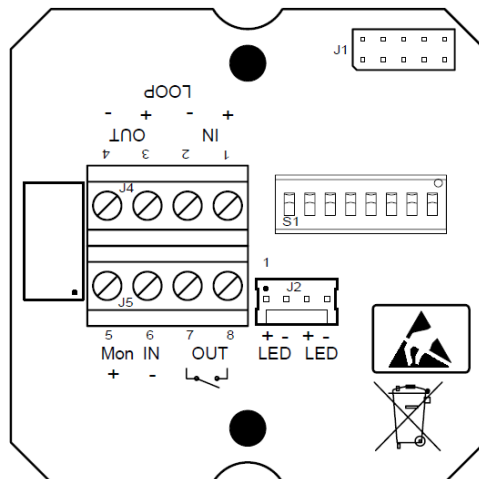


## 4.6 BN-304 Single Monitored Input/Output Unit

The Single Monitored Input/Output Unit BN-304 has been designed for use with Autronica's fire detection systems Autroprime (version 1.1.0 or newer) and AutoSafe (version 4.3.1 or newer), and includes the SelfVerify function.

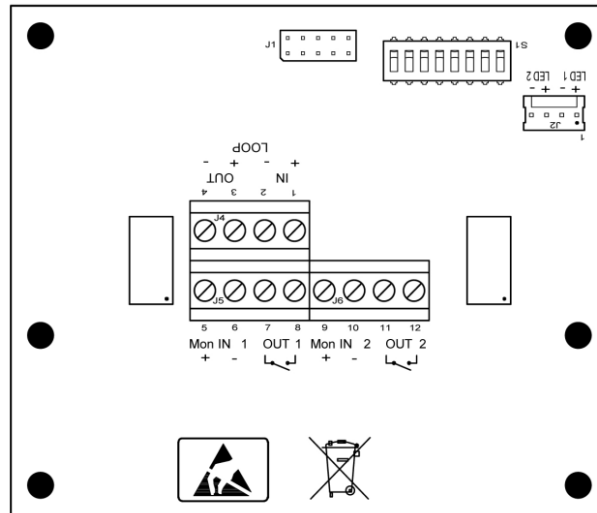
All connections are made to the screw terminals numbered 1-8

Screw terminal	Description
1	AL_Com In (+)
2	AL_Com In (-)
3	AL_Com Out (+)
4	AL_Com Out (-)
5	Input (+)
6	Input (common)
7	Relay Contact
8	Relay Contact



## 4.7 BN-305 Dual Monitored Input/Output Unit

The Dual Monitored Input/Output Unit BN-305 has been designed for use with Autronica's interactive fire detection systems, Autroprime and AutoSafe, and includes the SelfVerify function.



All connections are made to screw terminals numbered 1-12.

Terminal	Function
1	AL_ Com In (+)
2	AL_ Com In (-)
3	AL_ Com Out (+)
4	AL_ Com Out (-)
5	Input 1 (+)
6	Input 1 (common)
7	Relay 1 contact
8	Relay 1 contact
9	Input 2 (+)
10	Input 2 (common)
11	Relay 2 contact
12	Relay 2 contact

LED connectors

Terminal	Function
J2.1	LED1 + (LED Activate)
J2.2	LED1 - (LED Activate)
J2.3	LED2 + (LED Fault)
J2.4	LED2 - (LED Fault)

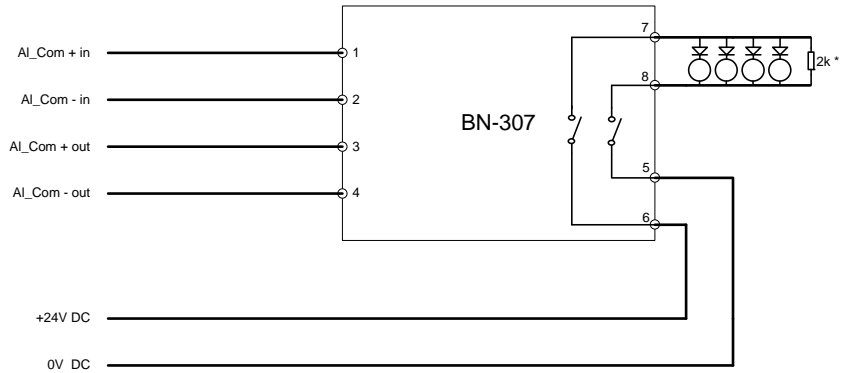
LED connector: A pin header enables the option to add LED indicators. The indication is a short blink at 0,5Hz period.

LED activate: The input or output is in Activation condition.

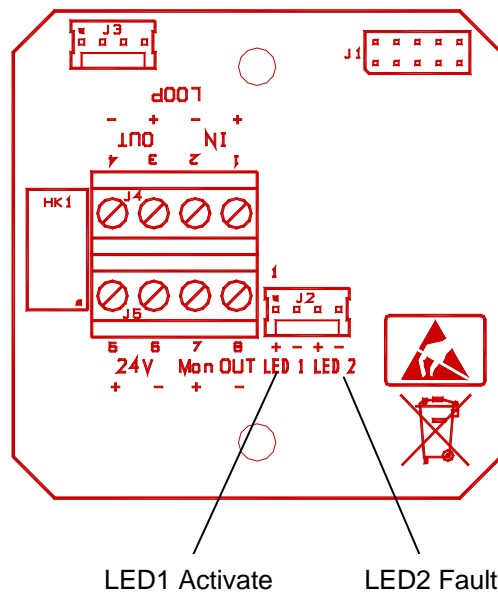
LED fault: There is a fault on the input or the unit itself.

## 4.8 BN-307 Monitored Fire Alarm Device Control Unit

The Monitored Fire Alarm Device Control Unit BN-307 has been designed for use with Autronica's fire detection systems, AutoSafe and Autoprime.

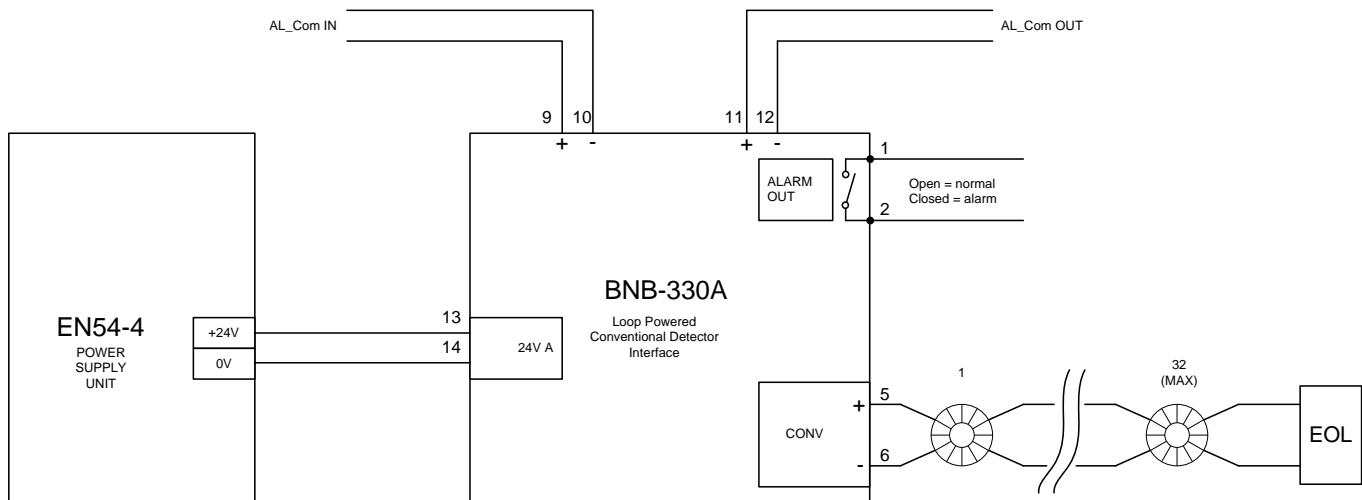


\*End-of-line resistance 2kohm (+/- 5%)



## 4.9 BNB-330A Conventional Loop Interface

The Conventional Loop Interface BNB-330A is a 2 wire interface unit for interfacing conventional detectors and manual call points onto Autronica's interactive fire detection systems. BNB-330A replaces BNB-330 and may be used on all the same systems.



### Connectors

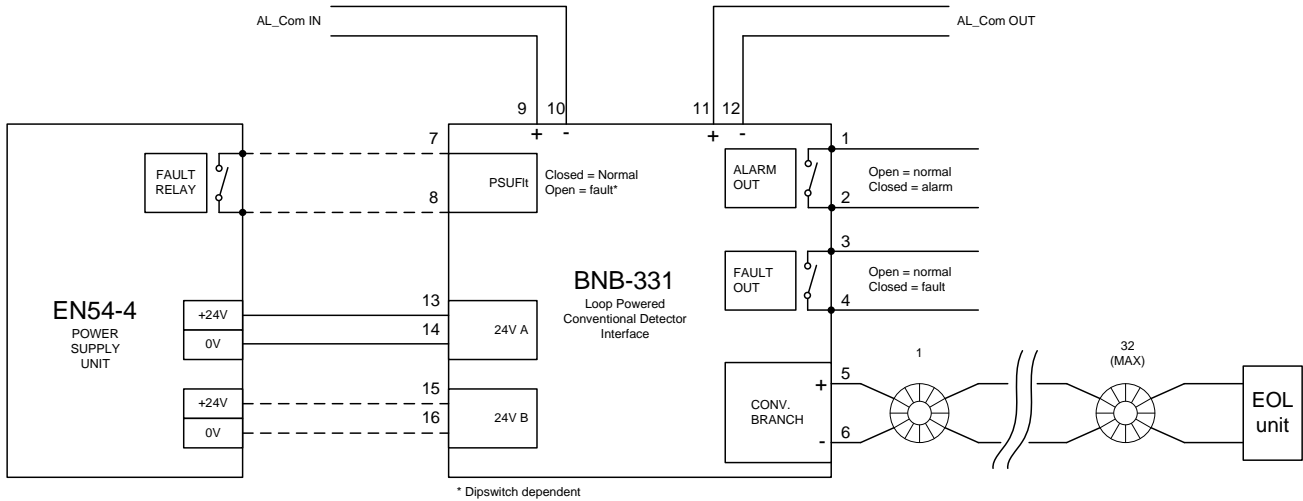
Terminal	Function
1	Alarm Out1
2	Alarm Out2
3	N.A.
4	N.A.
5	Conv +
6	Conv -
7	N.A.
8	N.A.
9	Loop+
10	Loop In-
11	Loop+
12	Loop Out -
13	24V
14	0v
15	N.A.
16	N.A.

### Bottom connectors

Terminal	Function
1	24V
2	0V
3	N.A.
4	N.A.
5	Chassis ground

## 4.10 BNB-331 Conventional Loop Interface

The Conventional Loop Interface BNB-331 is a 2 wire interface unit for interfacing conventional detectors and manual call points onto Autronica's interactive fire detection systems.



### Connectors

Terminal	Function
1	Alarm Out1
2	Alarm Out2
3	Fault Out 1
4	Fault Out 2
5	Conv +
6	Conv -
7	PSUFit_IN*
8	PSUFit_0V*
9	Loop In + (Al_Com)
10	Loop In - (Al_Com)
11	Loop out + (Al_Com)
12	Loop Out - (Al_Com)
13	24V A
14	0v A
15	24V B*
16	0v B*

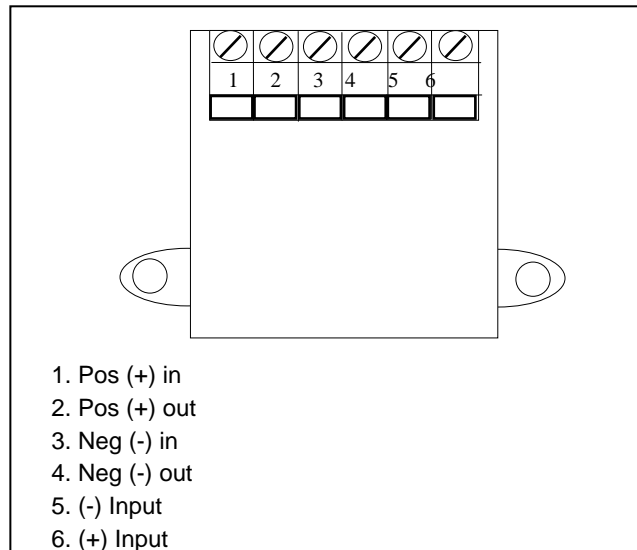
### Bottom connectors

Terminal	Function
1	24V A
2	0V A
3	24V B
4	0V B
5	Chassis ground

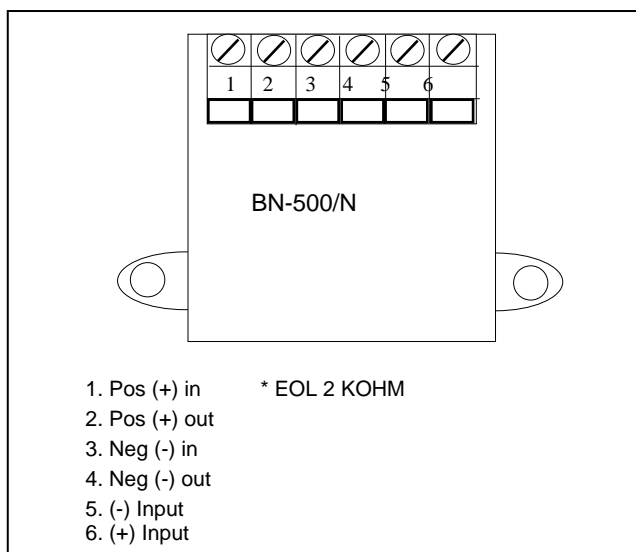


## 4.11 BN-500/EX Input Unit with SelfVerify

BN-500/EX is an input unit for use in hazardous area zone 0, 1, 2. It must be connected to the approved barrier BZ-500.

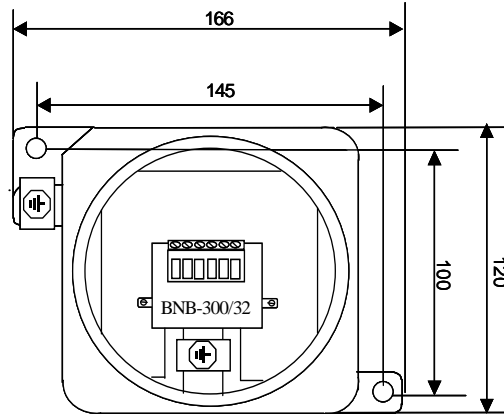


## 4.12 BN-500/N Input Unit with SelfVerify

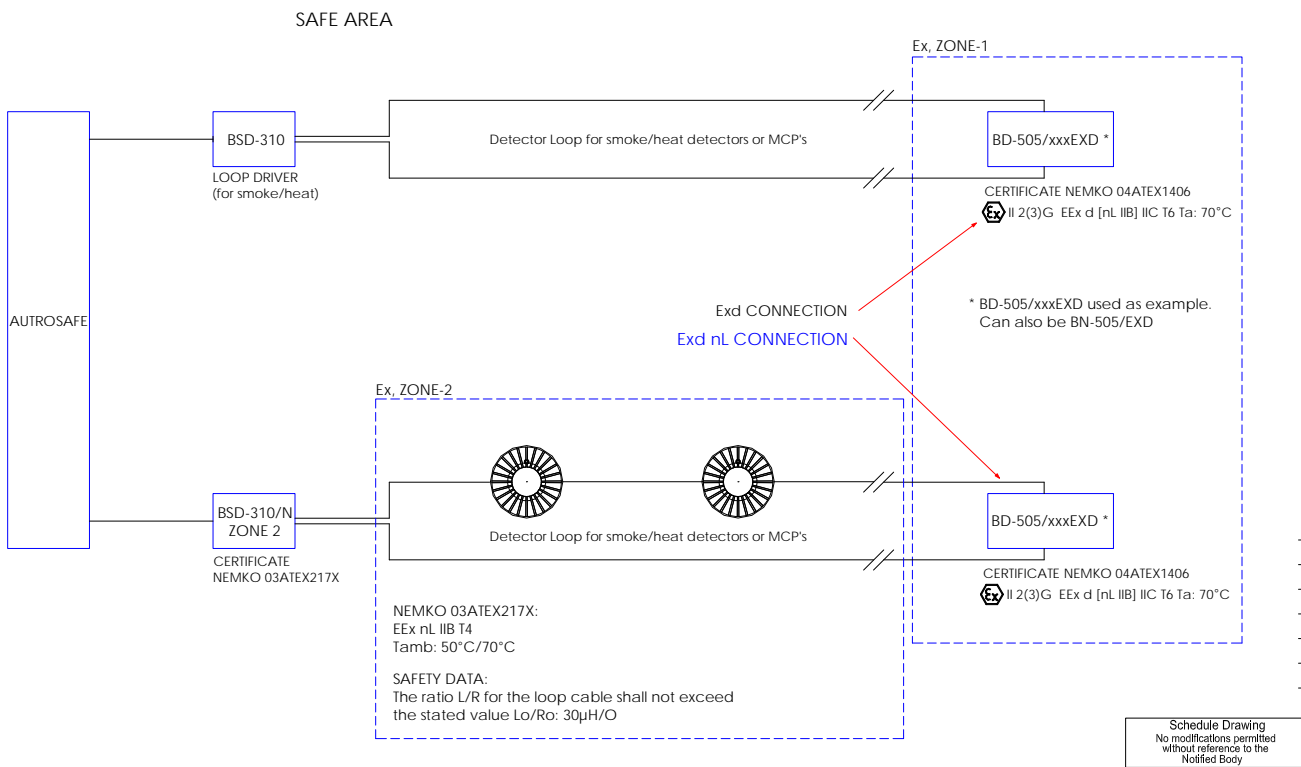


## 4.13 BN-505/EXD Input Unit with SelfVerify

BN-505/EXD is an input unit for use in hazardous area zone 1 or 2.



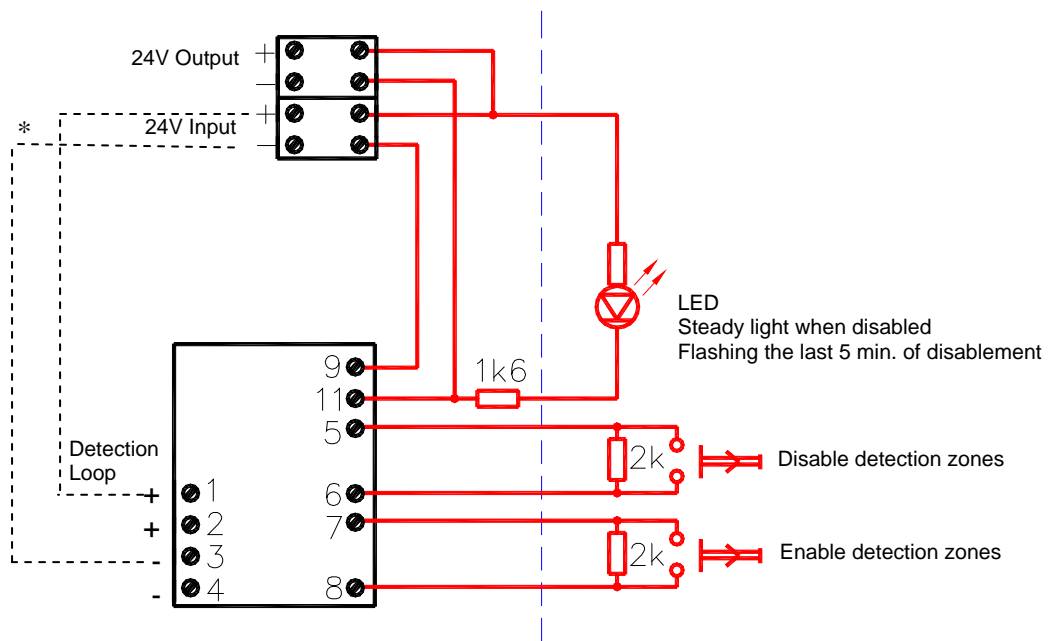
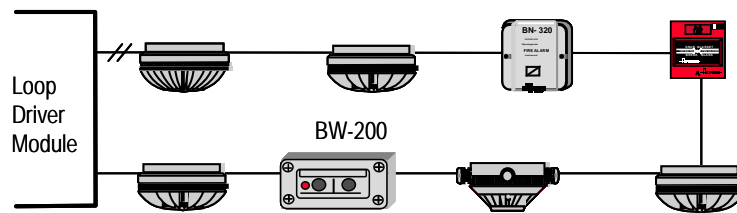
- 1. + in
- 2. + out
- 3. - in
- 4. - out
- 5. - input
- 6. + input



# 5. Control Units

## 5.1 BW-200 Disable Input with Pushbuttons

The Disable unit is used to disable one or a number of detection zones. The unit is connected to and powered from the detection loop. The disablement time is configurable.



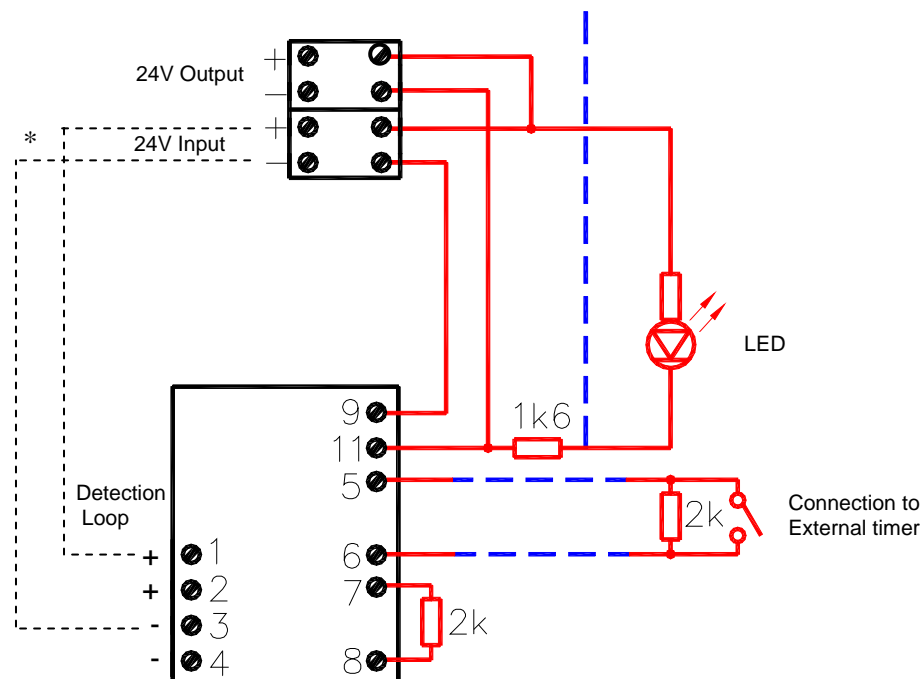
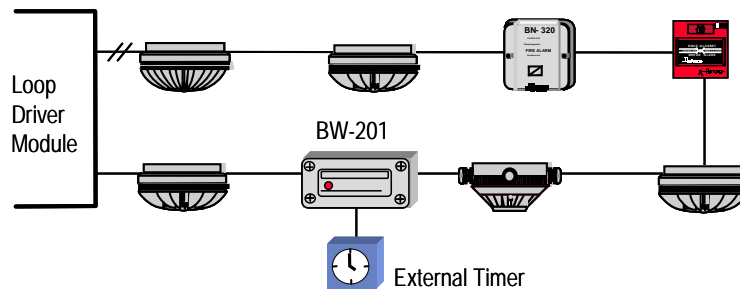
- \* 1 or 2 units on each loop: Connect detector loop + (1), and detector loop – (3) to 24V input.
- More than 2 units on each loop: Use external 24V supply

Separate 24V DC must always be used when if more than 2 units are connected to the loop, or if the 24V output is used.

## 5.2 BW-201 Disable Input with Timer Input

Applies to AutoSafe only.

The Disable unit is used to disable one or a number of detection zones. The unit is connected to and powered from the detection loop. An external timer controls the disablement time.



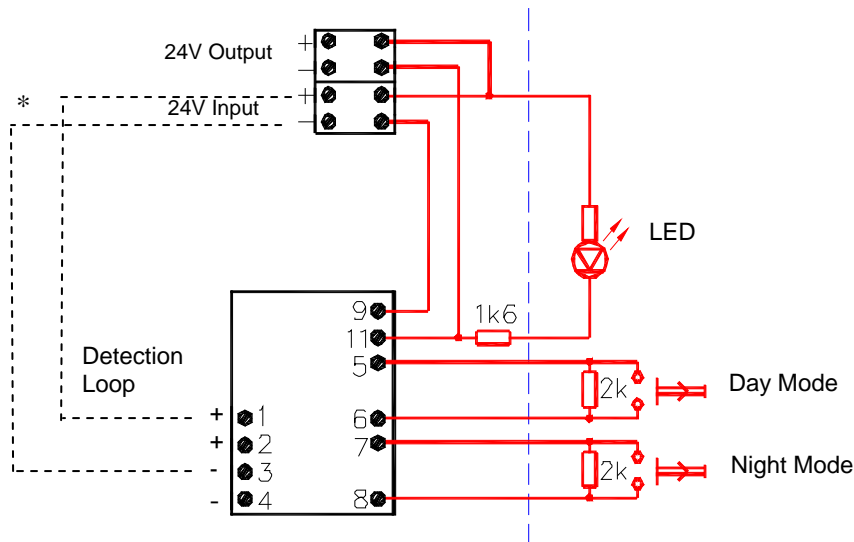
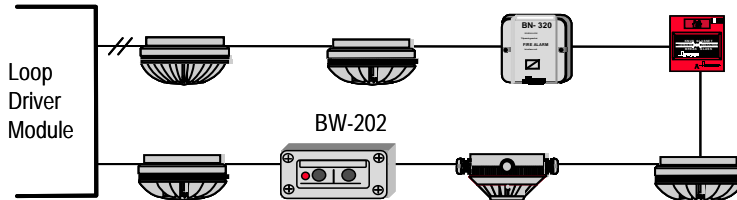
- \* 1 or 2 units on each loop: Connect detector loop + (1), and detector loop – (3) to 24V input.
- More than 2 units on each loop: Use external 24V supply

Separate 24V DC must always be used when if more than 2 units are connected to the loop, or if the 24V output is used.

## 5.3 BW-202 Day/Night Control Unit with Pushbuttons

Applies to AutoSafe only.

The Day/Night Control Unit is used for remote operation of the Disable/Enable 'Immediate Output Action' commands. The unit is connected to and powered from the detection loop.



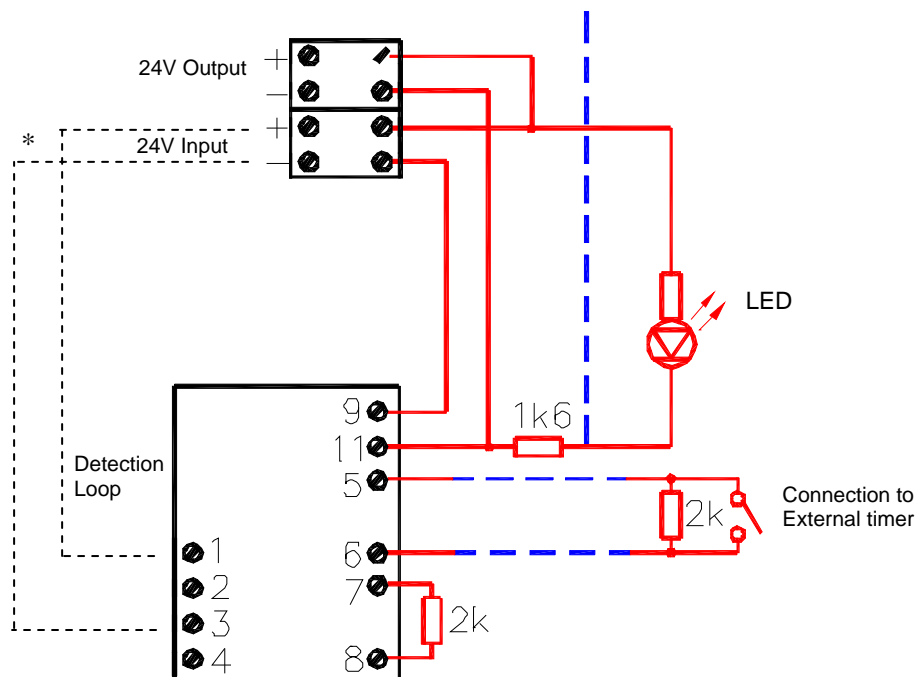
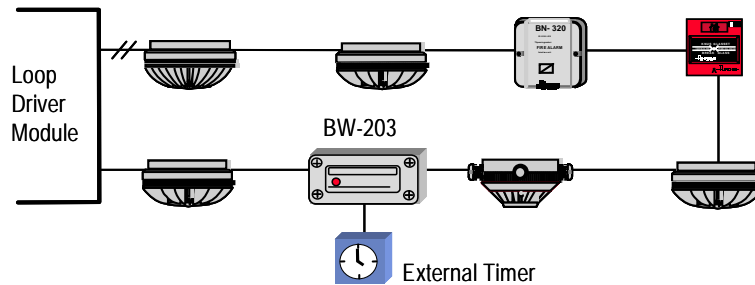
- \* 1 or 2 units on each loop: Connect detector loop + (1), and detector loop – (3) to 24V input.
- More than 2 units on each loop: Use external 24V supply

Separate 24V DC must always be used when if more than 2 units are connected to the loop, or if the 24V output is used.

## 5.4 BW-203 Day/Night Control Unit with Timer Input

Applies to AutoSafe only.

The Day/Night Control Unit is used for remote operation of the Disable/Enable 'Immediate Output Action' commands. The unit is connected to and powered from the detection loop. An external timer controls the monitored input.



- \* 1 or 2 units on each loop: Connect detector loop + (1), and detector loop – (3) to 24V input.
- More than 2 units on each loop: Use external 24V supply

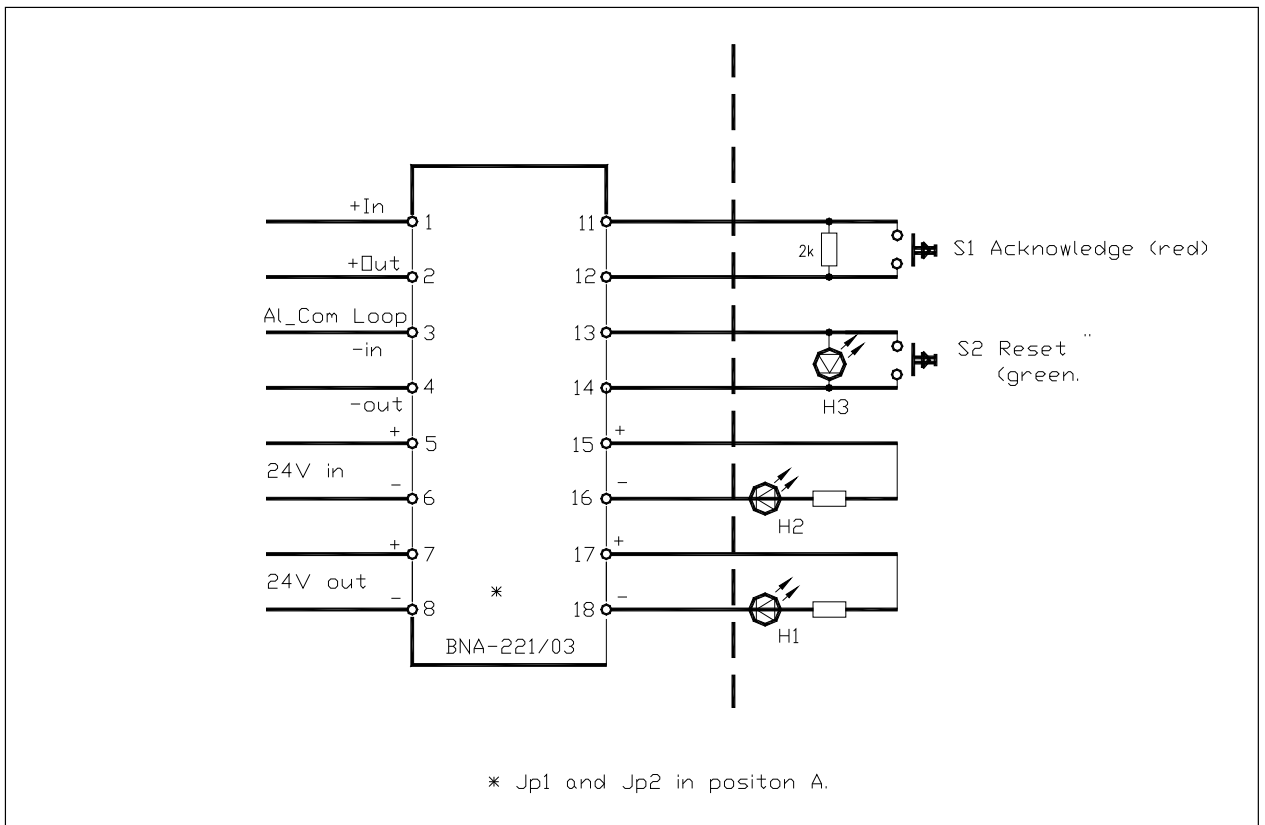
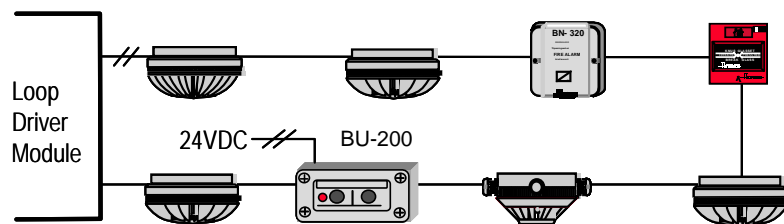
Separate 24V DC must always be used when if more than 2 units are connected to the loop, or if the 24V output is used.

## 5.5 BU-200 Remote Alarm Control Unit

Applies to AutoSafe only.

The Remote Alarm Control Unit is used for remote / local alarm handling from predefined areas / zones. The main purpose of the unit is to facilitate alarm handling without disturbance of people and unnecessary calls to rescue services, for example, the fire brigade.

The unit can send acknowledgement and reset to the Fire Alarm Control Panel. The Remote Alarm Unit is connected to the detection loop. Each loop unit can be connected to one Operation Zone. An Operation Zone can have one or more units, but requires separate 24V DC power.





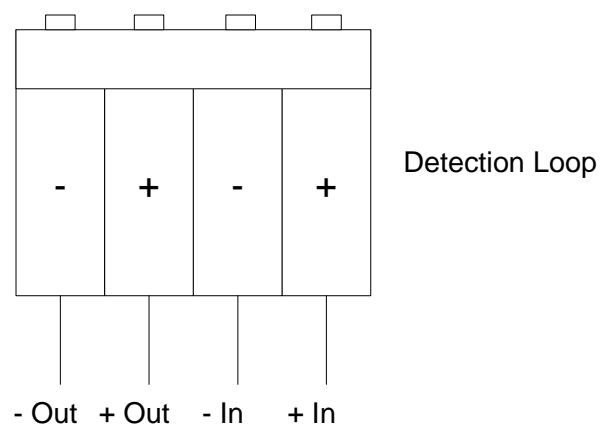
## 6. Alarm Units

### 6.1 Introduction

This chapter deals only with alarm units connected to the detection loop, not the ones that are connected to alarm outputs.

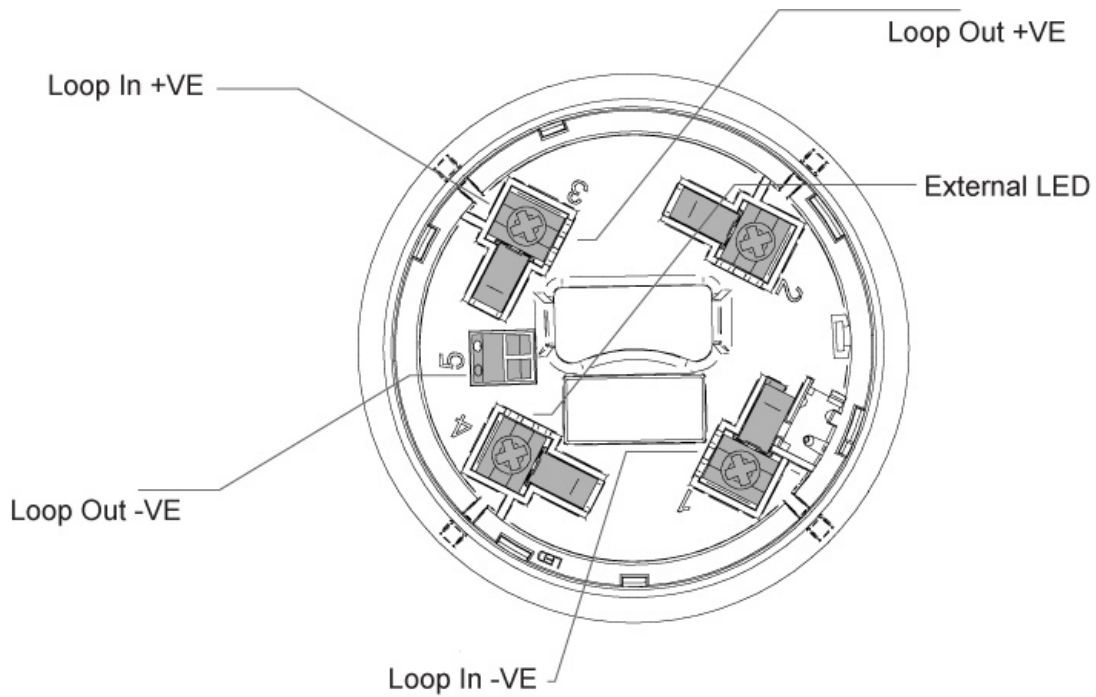
### 6.2 BBL-100 Beacon Indoor Addressable

Compact beacon for indoor use enclosed in an IP32C plastic casing. Reliable in operation and robust design. Simple mounting in all relevant directions.



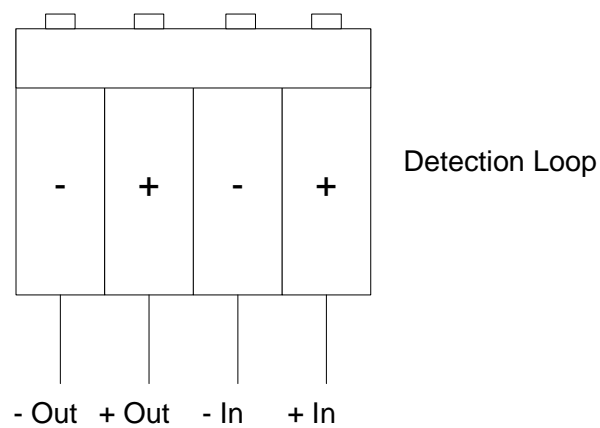
## 6.3 BBR-130 Sounder Addressable with Base

BBR-130 is a combined detector base and addressable sounder that is connected directly to the detection loop.



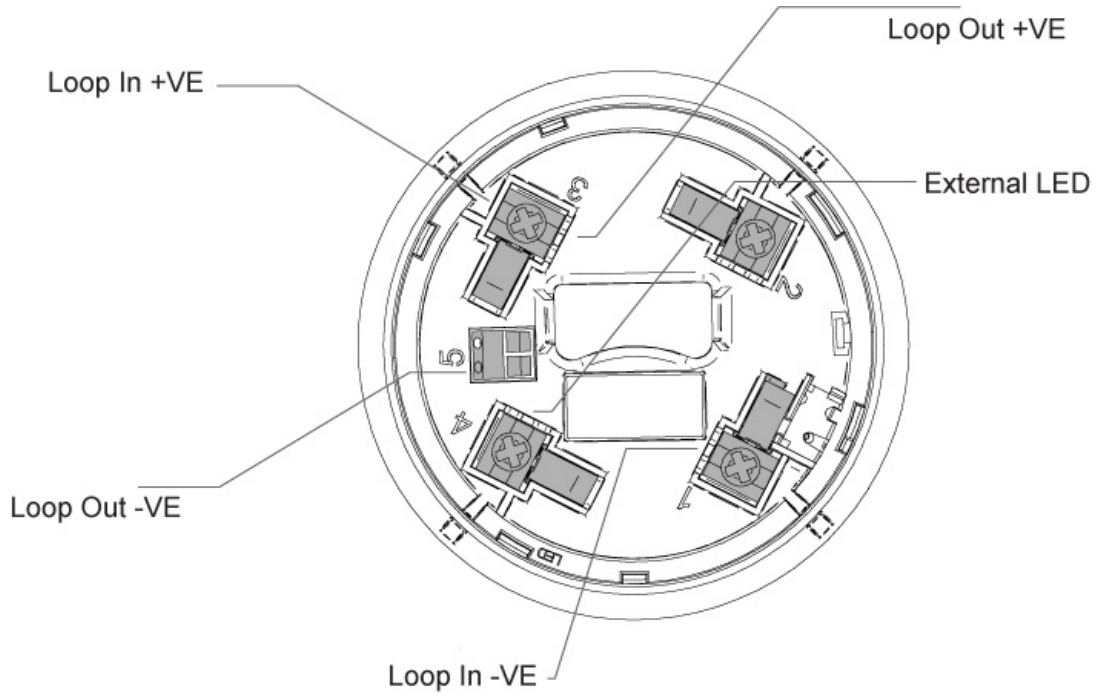
## 6.4 BBR-230 Sounder Indoor Addressable

BBR-230 is an addressable sounder that is connected directly to the detection loop.



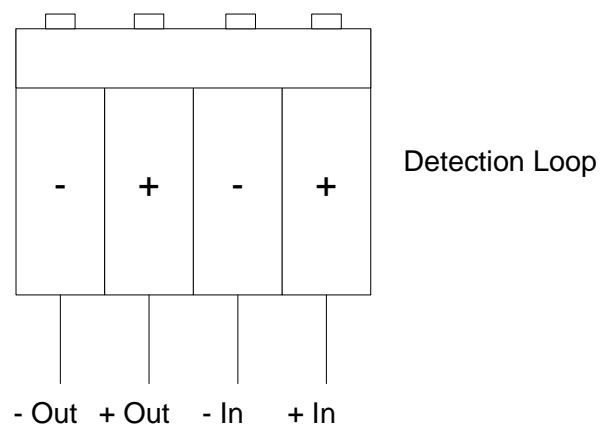
## 6.5 BBQ-130 Sounder/Strobe with Base

BBQ-130 is a combined detector base and addressable sounder/strobe that is connected directly to the detection loop.



## 6.6 BBQ-230 Sounder/Strobe Addressable

BBQ-230 is an addressable sounder/strobe that is connected to the detection loop.



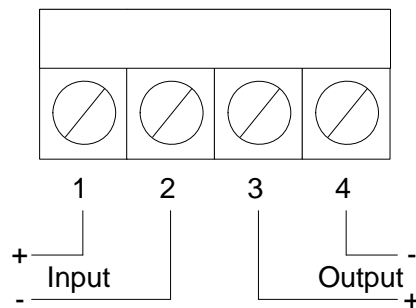
# 7. Detectors for Special Requirements

## 7.1 AutoFlame IR Flame Detector BG-201

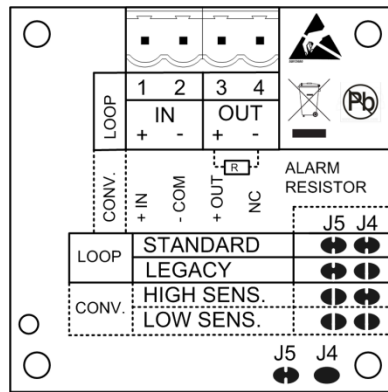
The detector is provided with a pluggable terminal block for ease of connection.

Wire: Max. 2,5 mm<sup>2</sup> / 14 AWG









Interactive detection loop connection:



Terminal:  
1 2 3 4

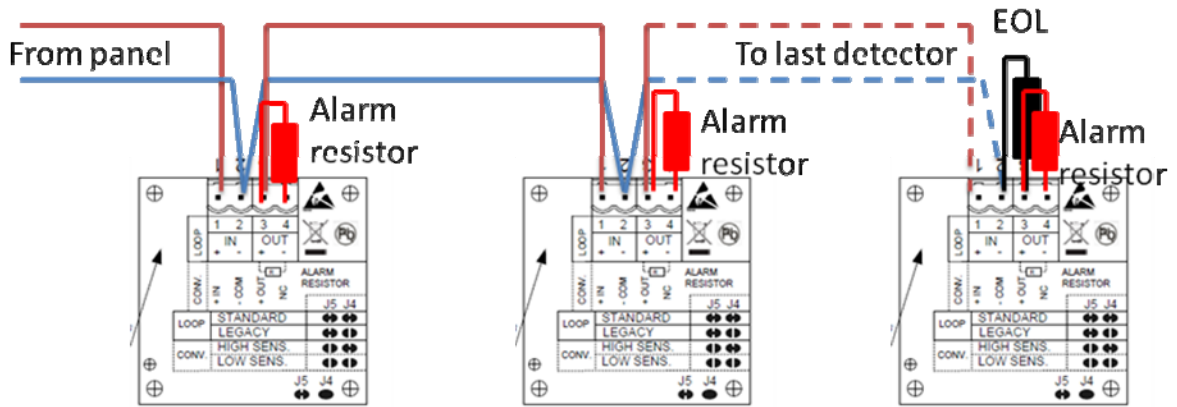


J5 J4

<b>STANDARD:</b> For AutoSafe / Autroprime (AI_Com) detector loop	 
<b>LEGACY:</b> Replaces the 601F detector mounted with the FDI for AutoSafe/Autroprime loop (Class 2)	 
<b>HIGH SENS:</b> When used with conventional system as a Class 1 (25m) detector	 
<b>LOW SENS:</b> When used with conventional system as a Class 3 (12m) detector	 

## 7.2 AutoFlame IR Flame Detector BG-21

NOTE: For use with conventional fire alarm systems only.



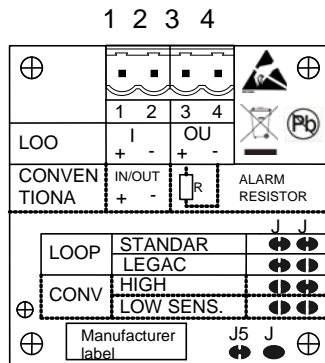
Connection to the first/  
between detectors:

Terminal	Connection
1	+ in
2	- in / out
3	+out / alarm resistor
4	alarm resistor

Connection to the last/single  
detector:

Terminal	Connection
1	+ in
2	- in / EOL
3	alarm resistor / EOL
4	alarm resistor

The above connection between detectors on a conventional loop will secure a fault activation at the panel if one of the connectors are unplugged.

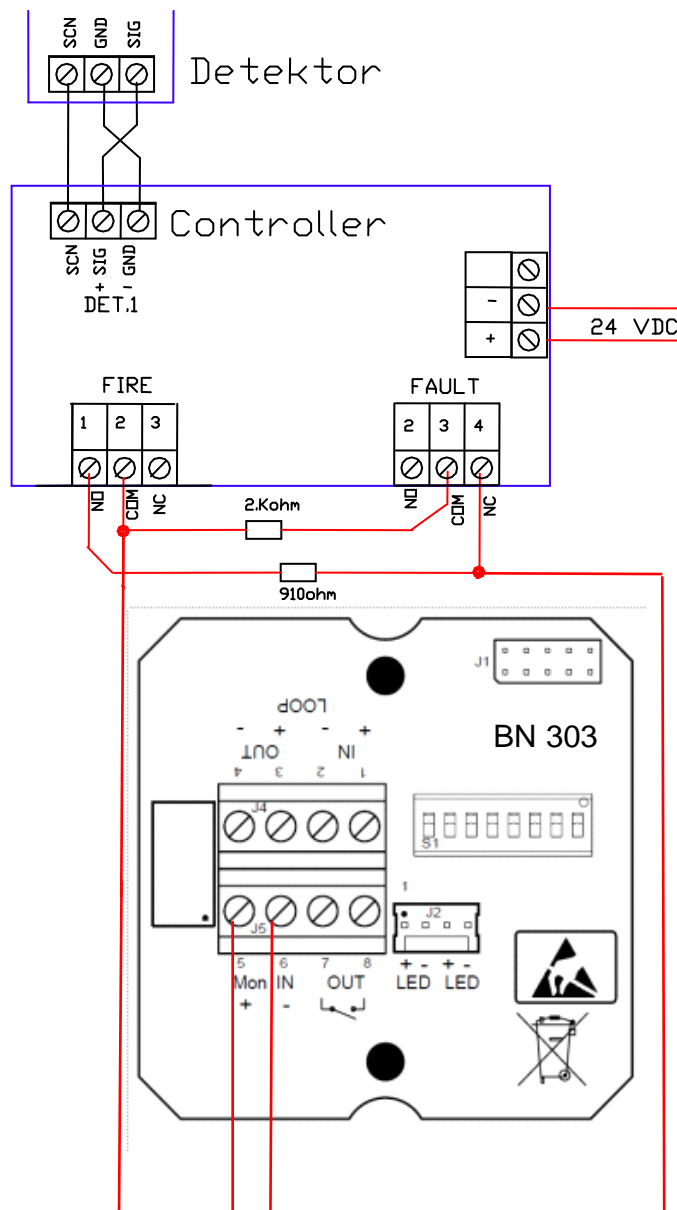


## 7.3 Fireray 5000

The FireRay® 5000 is a motorised infrared optical beam smoke detector.

The detector requires the use of the Single Input Monitoring Unit BN-303. The internal DIP switch S1 on the BN-303 unit selects the relevant function for the detector.

Function A is used (Alarm condition signalling input).

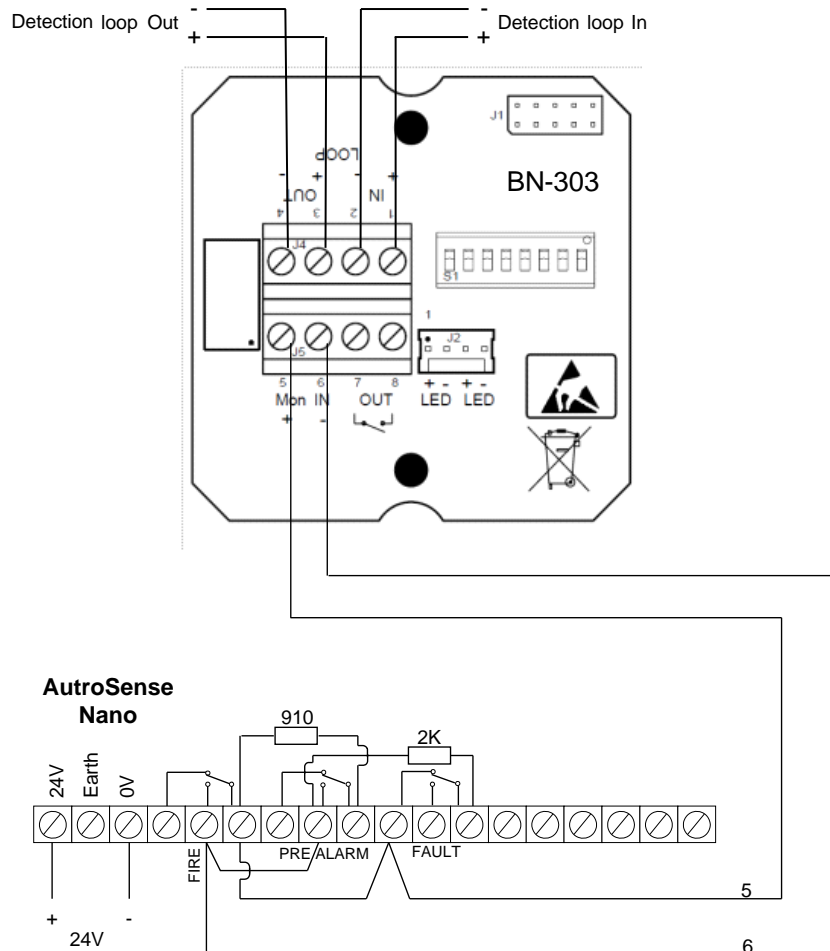
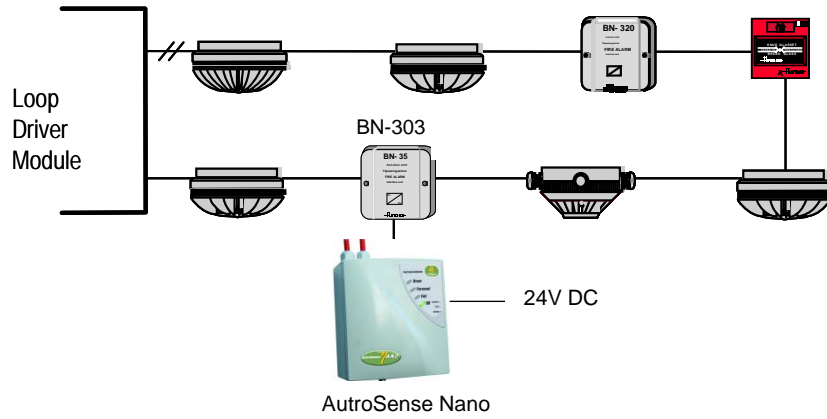




## 7.4 AutoSense Nano

The AutoSense Nano High Sensitivity Aspirating Detector requires the use of the Single Input Monitoring Unit BN-303. The internal DIP switch S1 on the BN-303 unit selects the relevant function for AutoSense Nano.

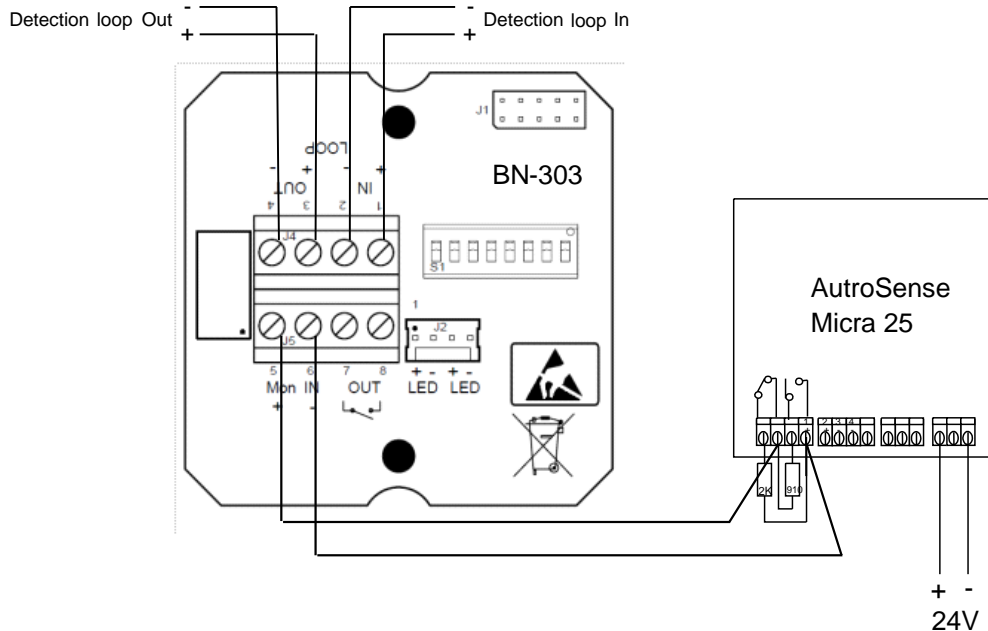
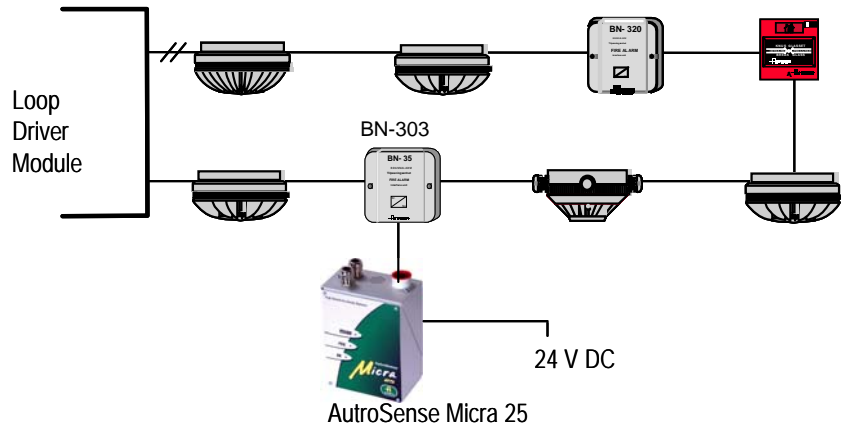
Function A is used (Alarm condition signalling input).



## 7.5 AutoSense Micra 25 High Sensitivity Aspirating Detector

The AutoSense Micra 25 High Sensitivity Aspirating Detector requires the use of the Single Input Monitoring Unit BN-303. The internal DIP switch S1 on the BN-303 unit selects the relevant function for AutoSense Micra 25.

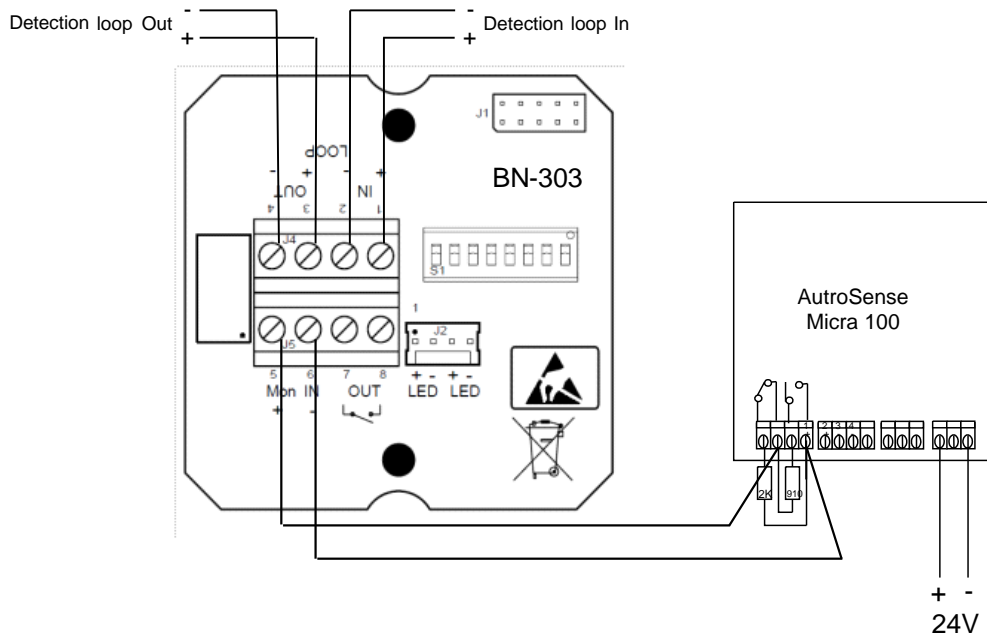
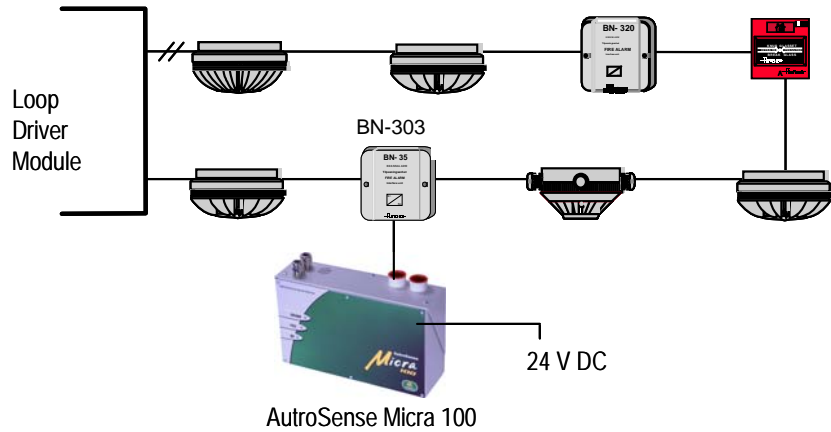
Function A is used (Alarm condition signalling input, non-latching).



## 7.6 AutoSense Micra 100 High Sensitivity Aspirating Detector

The AutoSense Micra 100 detector requires the use of the Single Input Monitoring Unit BN-303. The internal DIP switch S1 on the BN-303 unit selects the relevant function for AutoSense Micra 100.

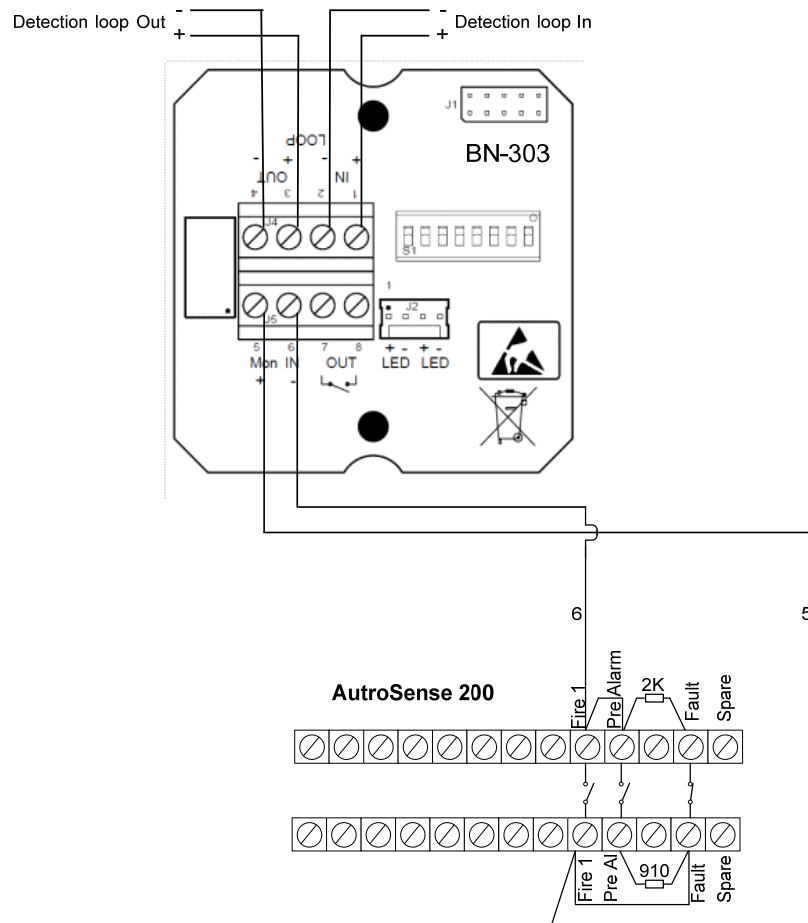
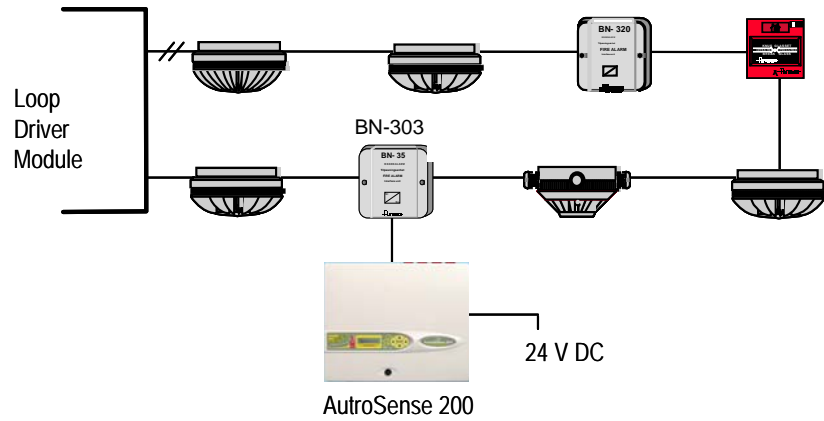
Function A is used (Alarm condition signalling input).



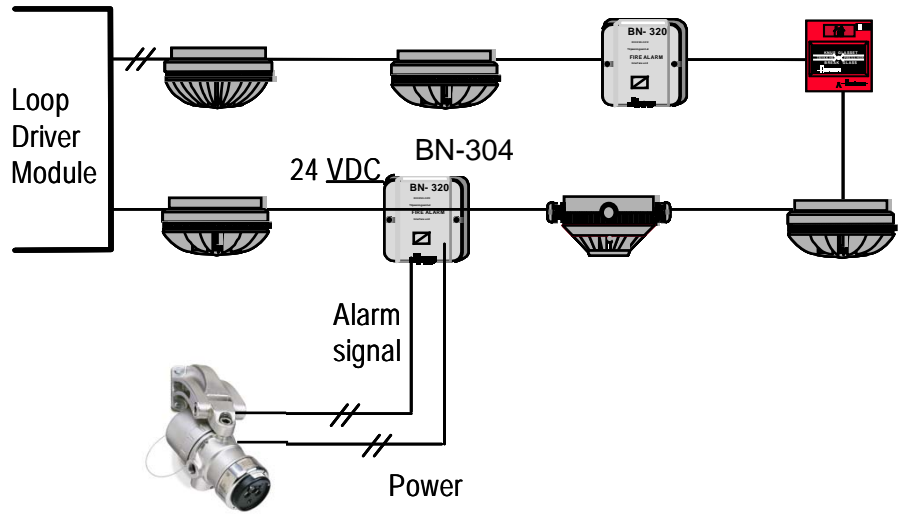
## 7.7 AutoSense 200 High Sensitivity Aspirating Detector

The AutoSense 200 detector requires the use of the Single Input Monitoring Unit BN-303. The internal DIP switch S1 on the BN-303 unit selects the relevant function for AutoSense 200.

Function F is used (Fault, Pre Alarm and Alarm condition signaling input, non-latching).

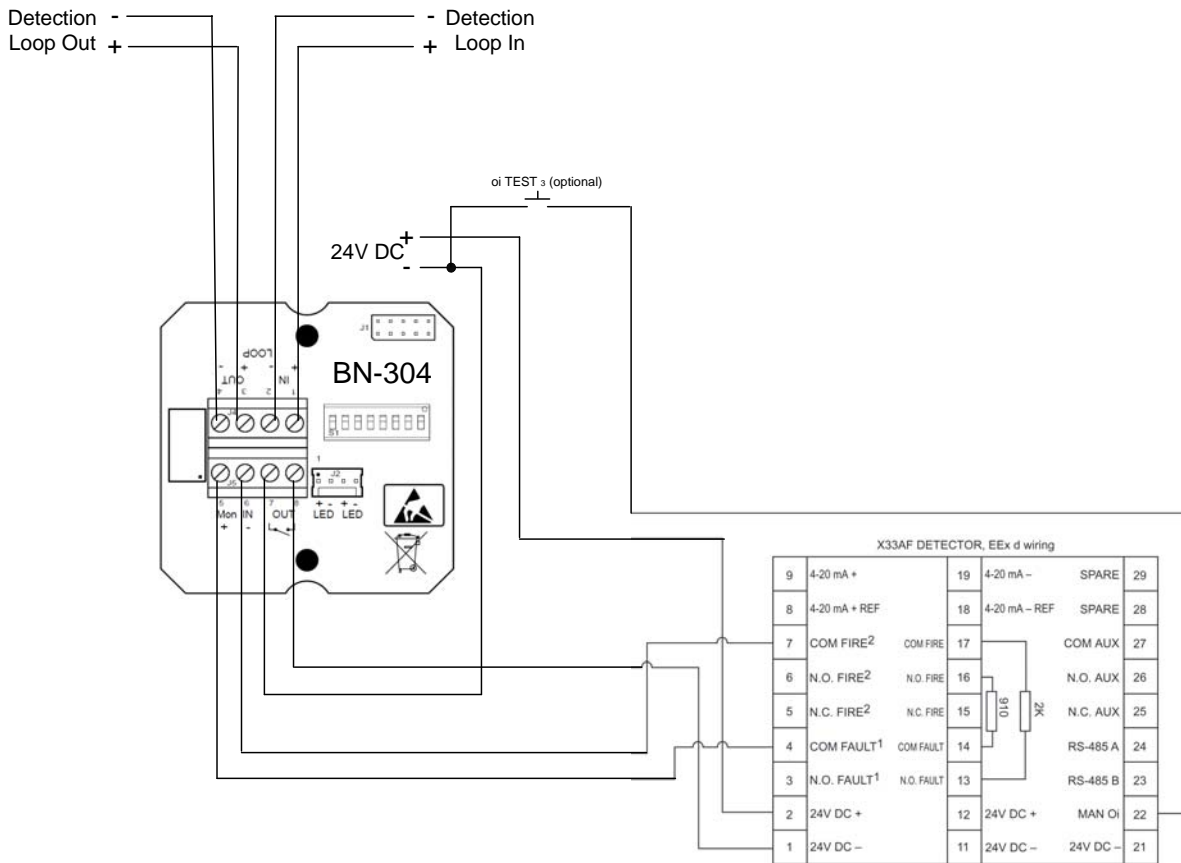


## 7.8 AutoFlame X33AF Multispectrum Infrared Flame Detector



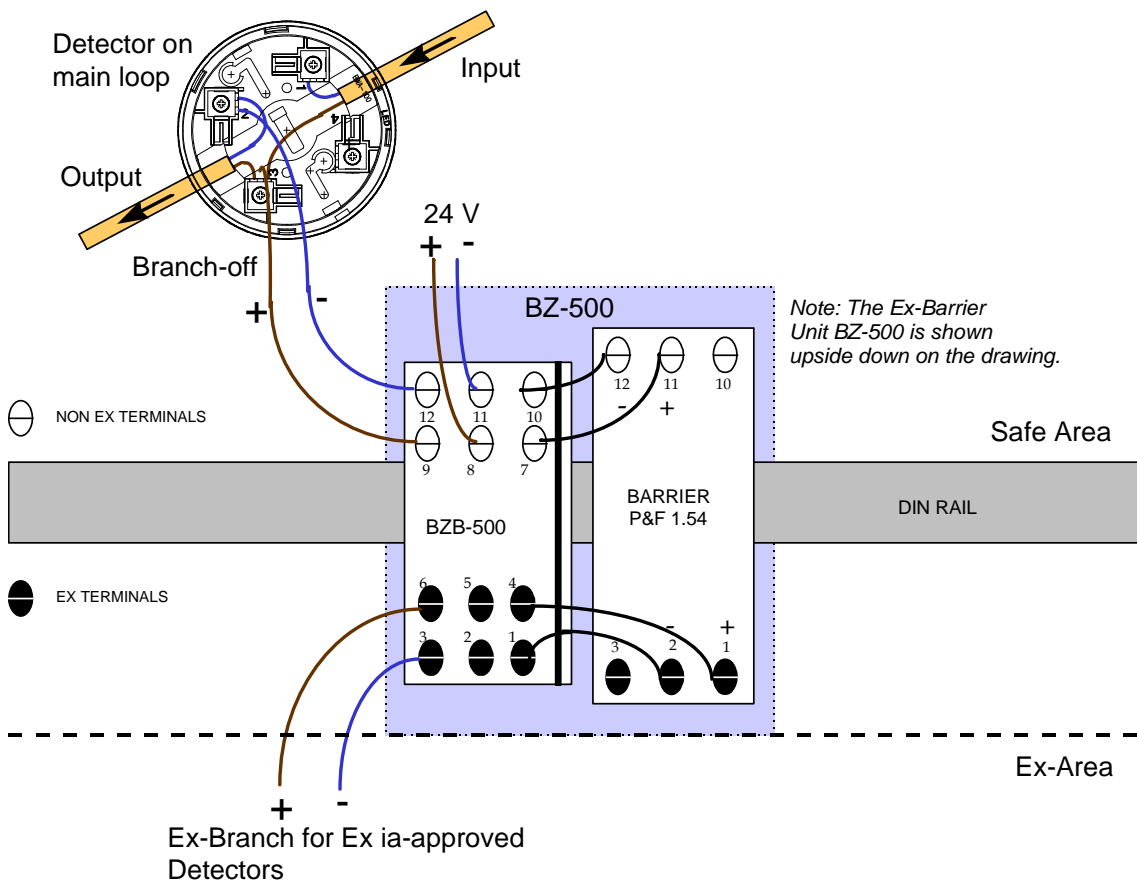
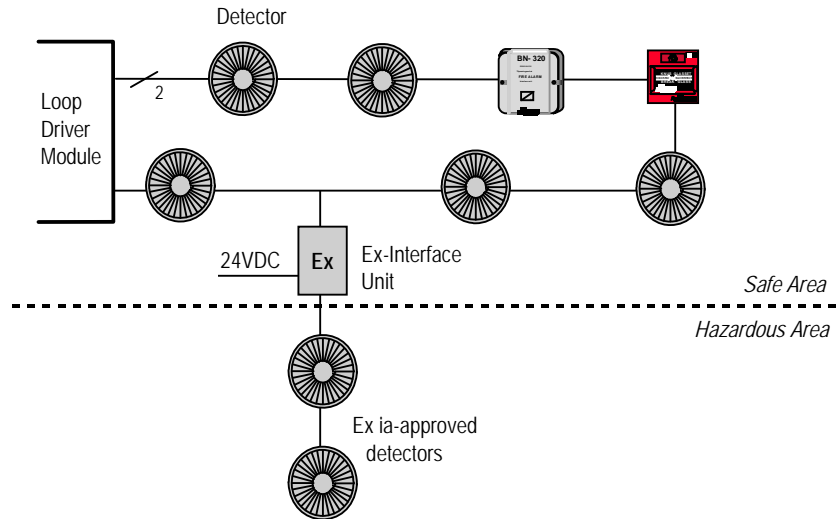
AutoFlame X33AF

The relay output is required only if the 24V supply for flame detectors needs to be controlled (e.g. latching alarms/faults). In this case BN-304 must be set to function G. If the 24V supply is to be permanently connected to X33AF, it is possible to use BN-303 function A, or BN-304 function A, or BN-304 function A or G.



## 7.9 Ex ia Approved Detectors

Ex ia-approved detectors can be connected to the system. The *Ex-Barrier Unit (BZ-500)* is used to separate the safe area from the hazardous (Ex) area. A maximum of 20 Ex ia-approved detectors can be mounted as a branch-off from the Ex-Interface Unit on the loop.

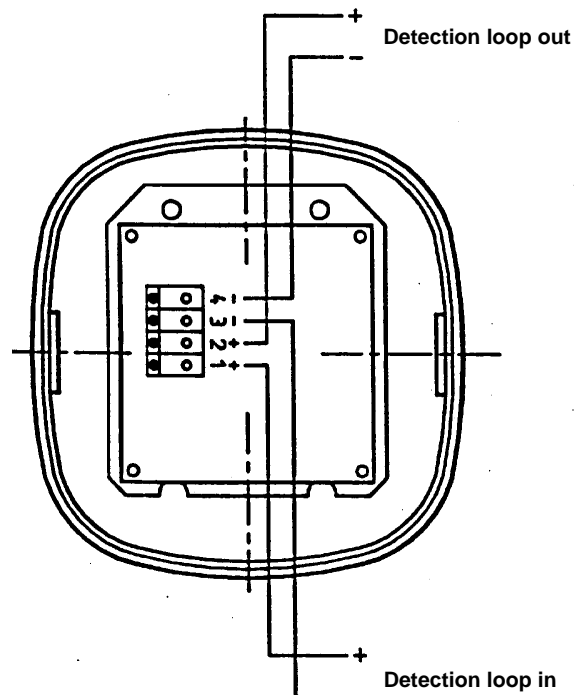
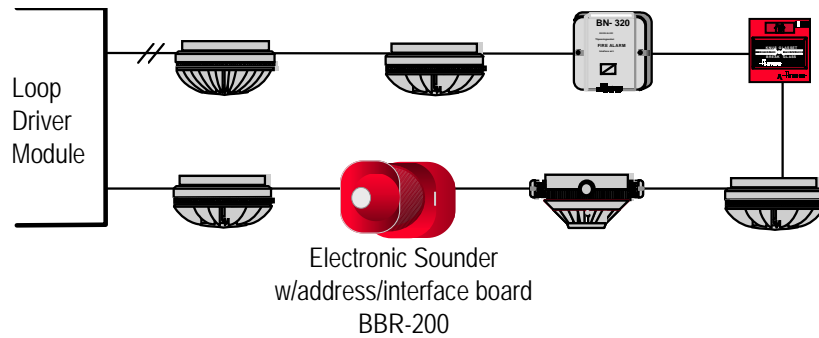


## 8. Discontinued Products

### 8.1 BBR-200 Programmable Electronic Sounders

**SUBSTITUTE PRODUCT: BBR-230**

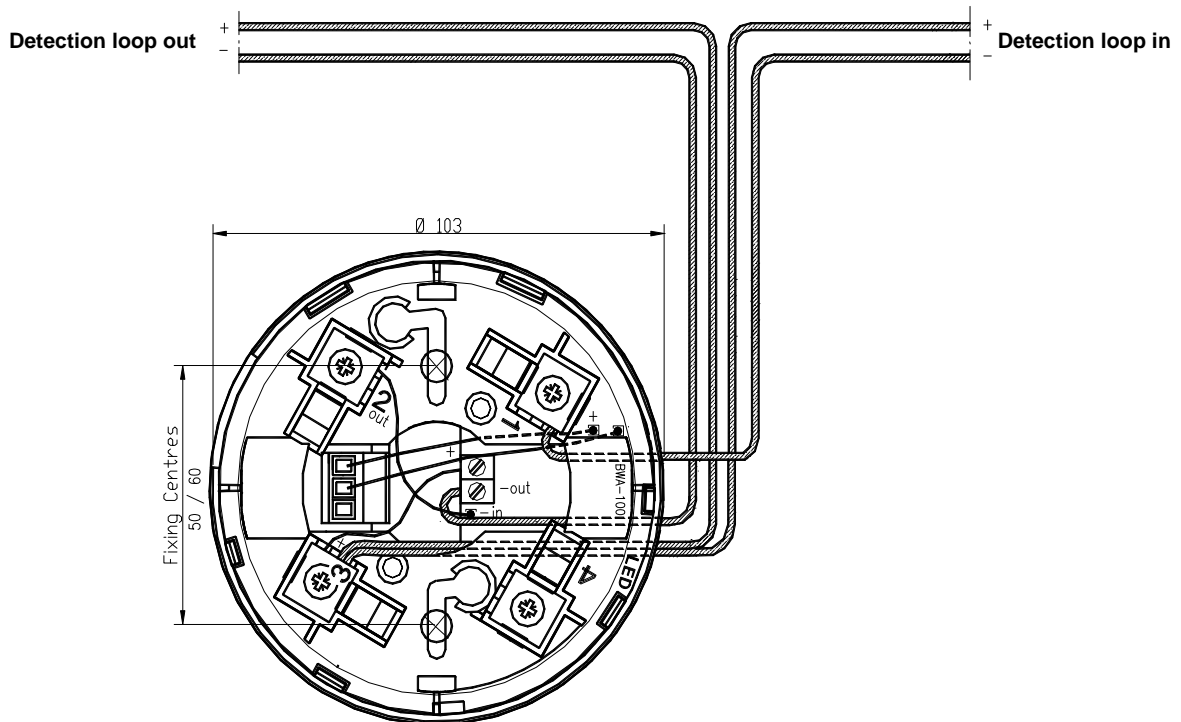
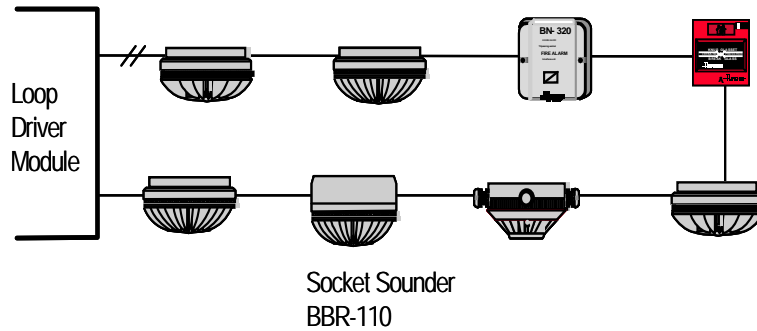
The Electronic Sounder (BBR-200) has its own address / interface board and can be connected directly to a detection loop. The unit is powered from the detection loop. No external power supply is required.



## 8.2 BBR-110 Addressable Socket Sounder

**SUBSTITUTE PRODUCT: BBR-130**

The Socket Sounder (BBR-110) is a combined detector base and addressable sounder. The unit is powered from the detection loop. No external power supply is required.



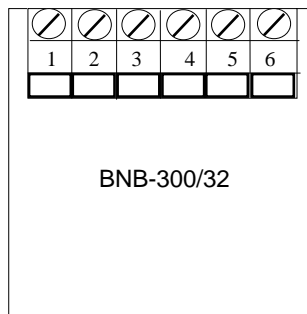
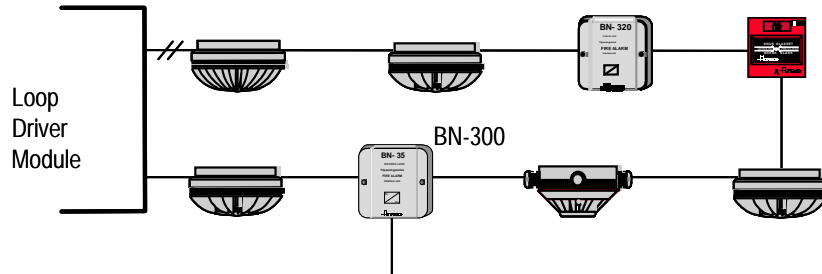
- |                          |  |
|--------------------------|--|
| - In:                    | Terminal connection 1                      |
| - Out:                   | Terminal connection - out on circuit board |
| Common (+ In and + Out): | Terminal connection 3                      |
| External LED:            | Terminal connection 4                      |



## 8.3 BN-300 Input Unit with SelfVerify

**SUBSTITUTE PRODUCT: BN-303**

BN-300 input unit is used to interface different types of signal devices of ON/OFF-type (for fire alarms) onto the detection loop.

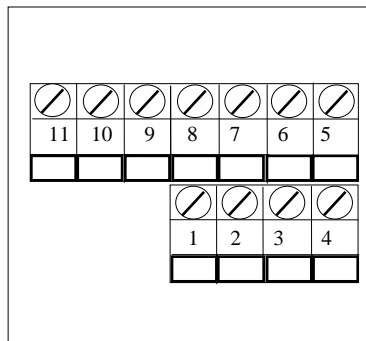
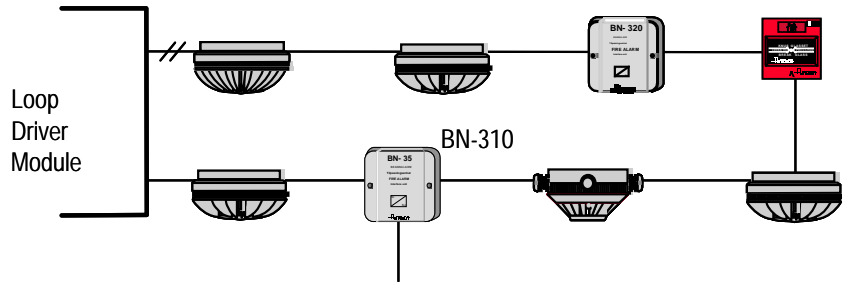


1. Pos (+) in
2. Pos (+) out
3. Neg (-) in
4. Neg (-) out
5. (-) Input
6. (+) Input

## 8.4 BN-310 Single Relay Output Unit

**SUBSTITUTE PRODUCT: BN-304**

BN-310 single relay output unit contains a potential free change-over contact which can be activated from a detector or a combination of several detectors in alarm.

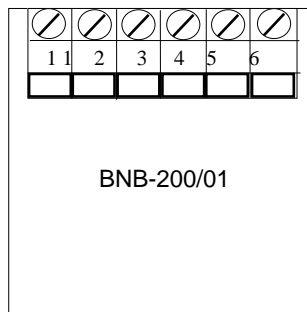
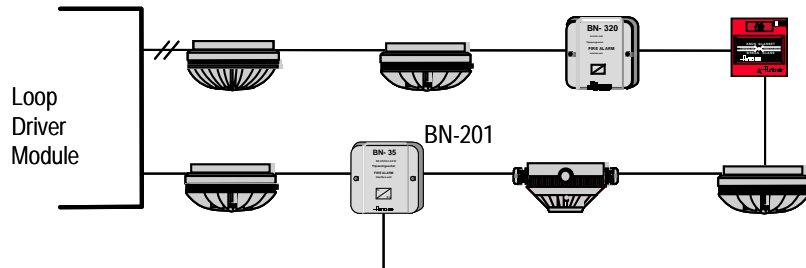


- |                |        |                     |                 |
|----------------|--------|---------------------|-----------------|
| 1. Pos (+) in  | } Loop | 5. N.A              | } Not for use.  |
| 2. Pos (+) out |        | 6. N.A              |                 |
| 3. Neg (-) in  |        | 7. N.A              |                 |
| 4. Neg (-) out |        | 8. N.A              |                 |
|                |        | 9. Normally open    | } Relay contact |
|                |        | 10. Normally closed |                 |
|                |        | 11. Common          |                 |

## 8.5 BN-201 Monitoring Input Unit

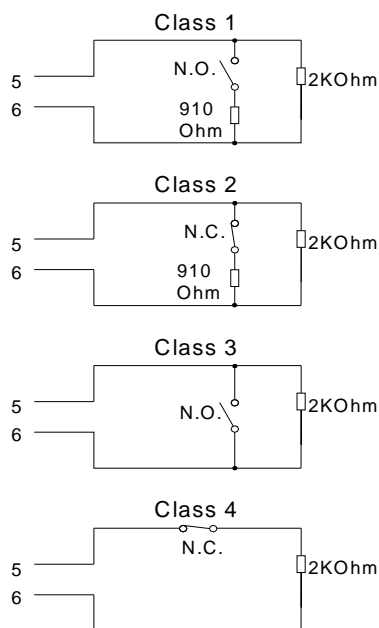
**SUBSTITUTE PRODUCT: BN-303**

The Monitoring Input Unit is used for monitoring of fault or other signal contacts from external equipment (technical alarms).



1. Pos (+) in
2. Pos (+) out
3. Neg (-) in
4. Neg (-) out
5. (-) Input
6. (+) Input

Four different classes can be configured in order to be able to monitor different setups of the fault contact (s). Each class can be set to latching or non-latching operation.



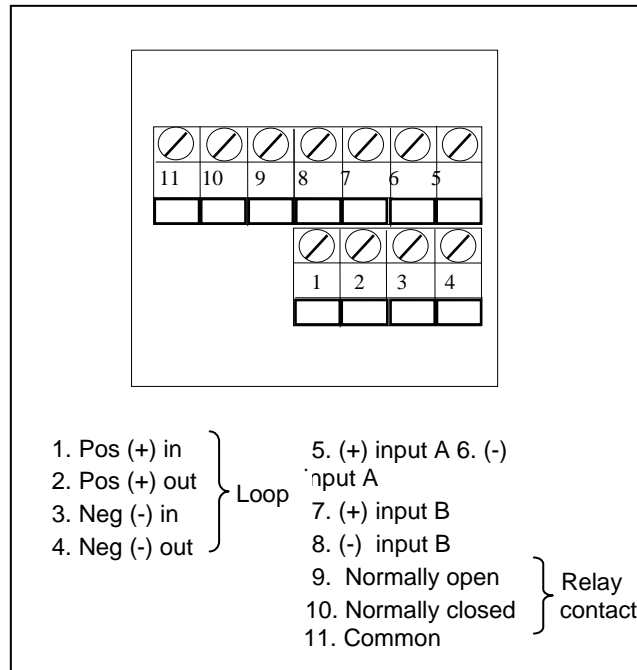
- Class 1: Normal Open contact with 'activate' resistor, fault monitored for open and short circuit.
- Class 2: Normal Closed contact with 'activate' resistor, fault monitored for open and short circuit.
- Class 3: Normal Open contact without 'activate' resistor, fault monitored for open circuit.
- Class 4: Normal Closed contact without 'activate' resistor, fault monitored for short circuit.

## 8.6 BN-320 Interface with SelfVerify

**SUBSTITUTE PRODUCT: BN-304/BN-305**

The I/O unit BN-320 is connected to the detector loop to control, monitor or identify external equipment. Typical applications are:

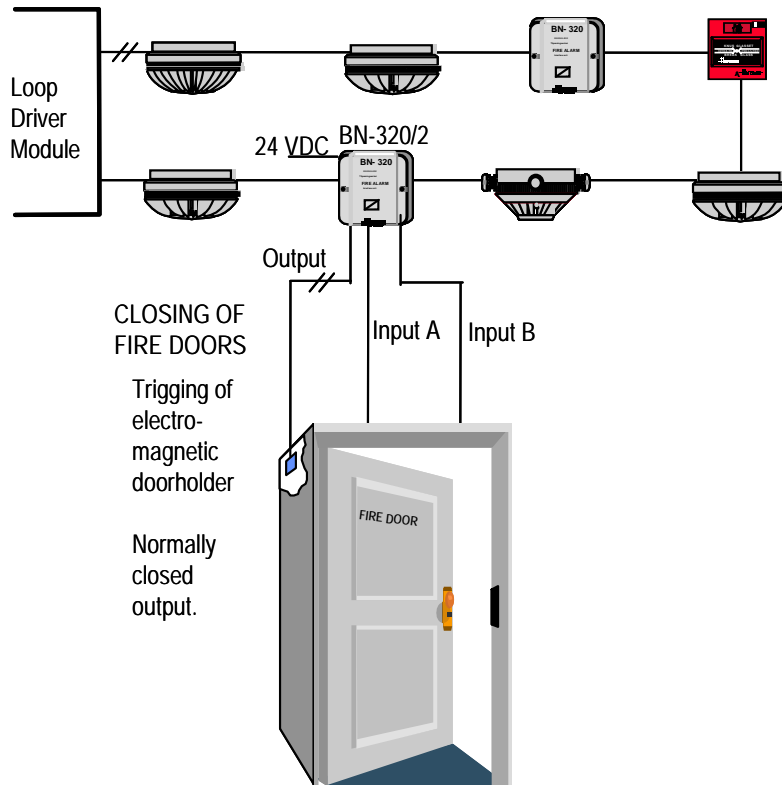
- Interface for AutoFlame detectors
- Interface for AutoBeam 25



## 8.7 BN-320/2 Door Control Unit

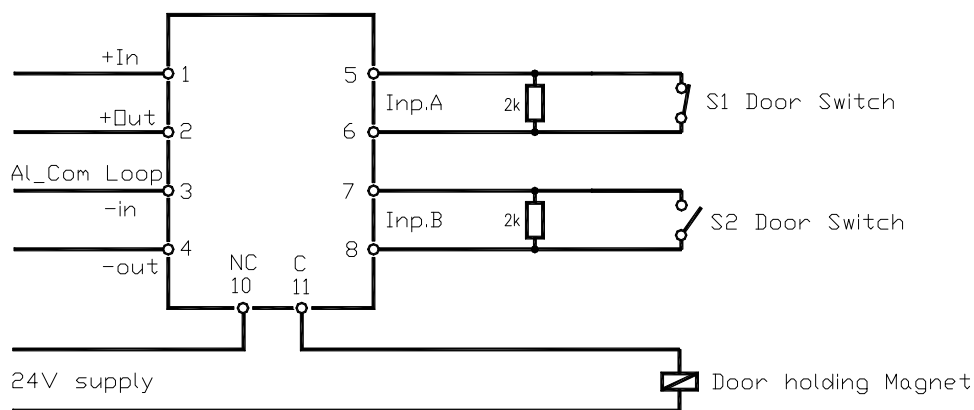
**SUBSTITUTE PRODUCT: BN-305**

The Door Control unit controls and monitors fire doors. The unit is connected to the detection loop, and powered from an external 24V DC power supply.



BN-320/2

(BNA-320/06)

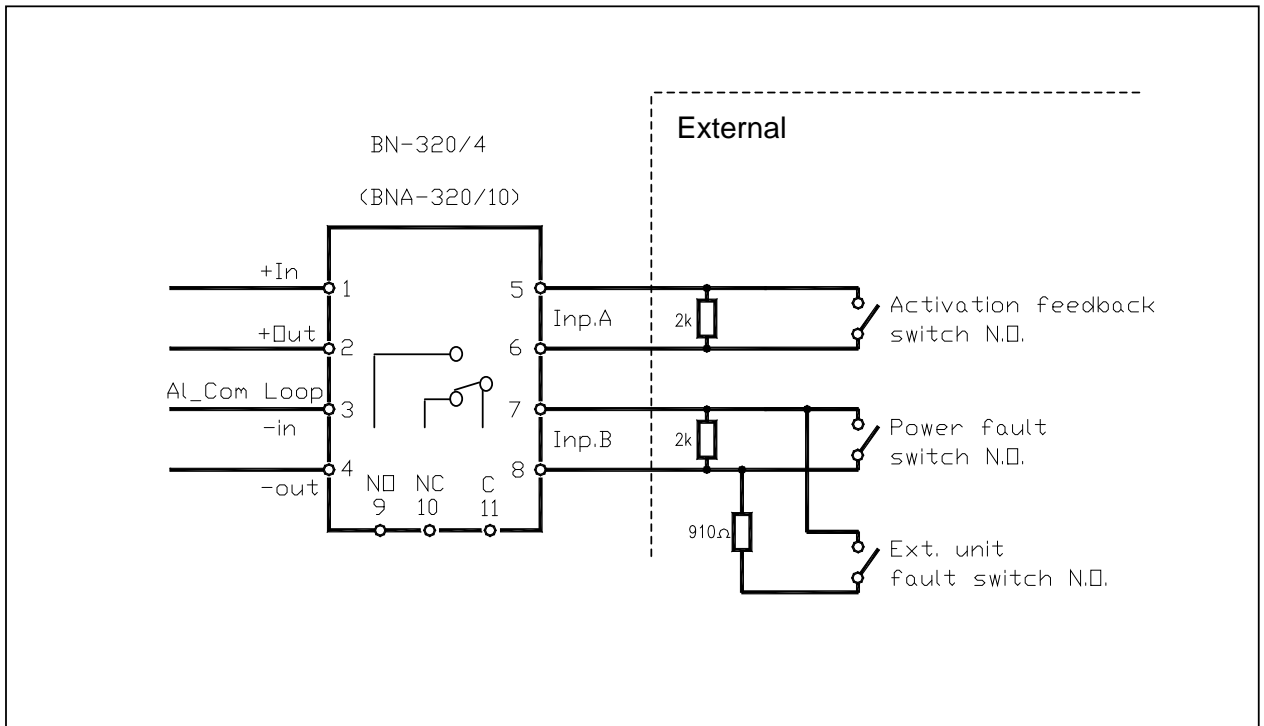
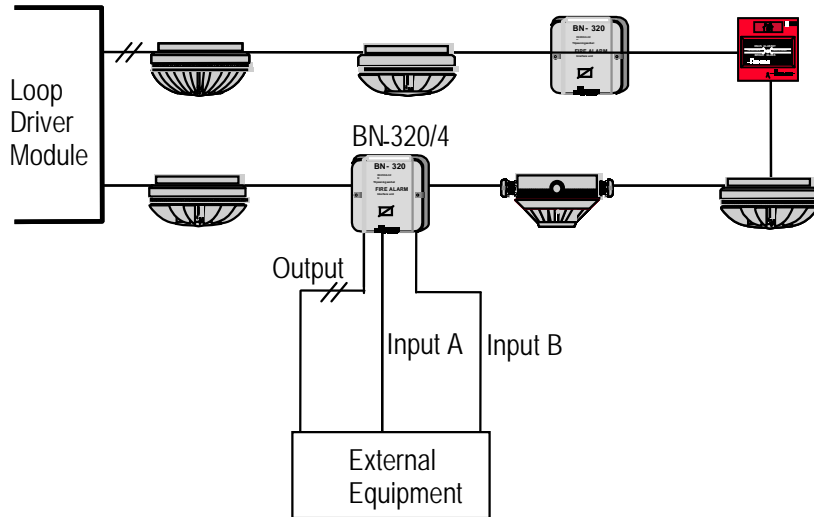


Switch 1	Closed	Open	Open	Closed
Switch 2	Open	Open	Closed	Closed
Status	Door Open	Door in transition	Door Closed	Illegal (fault)

## 8.8 BN-320/4 Monitoring and Control Unit

**SUBSTITUTE PRODUCT: BN-305**

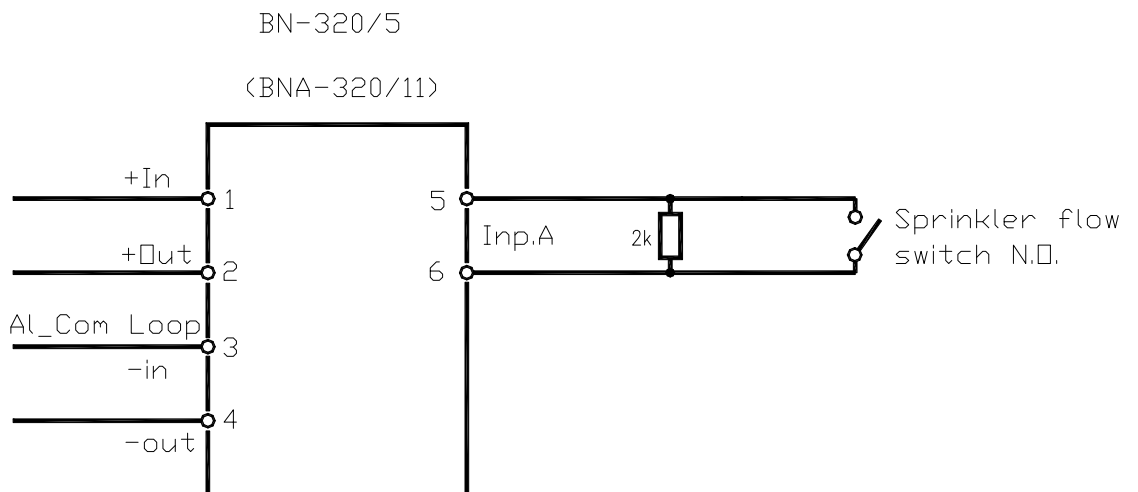
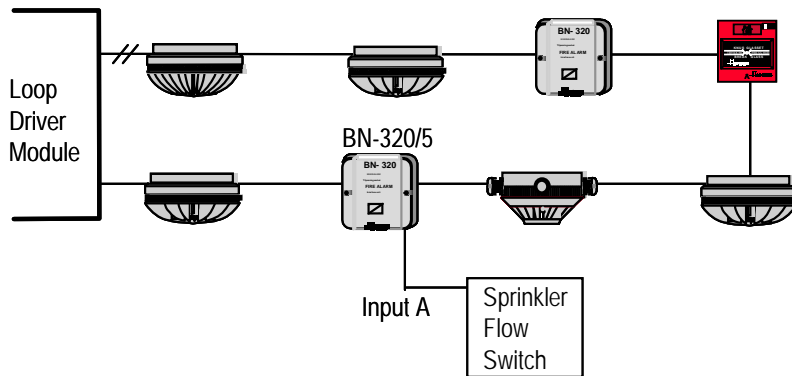
The Monitoring and Control Unit monitors and/or controls various external equipment such as control of fire dampers, ventilation valves, fans, lifts, plus fire and smoke hatches. The unit is connected to and powered from the detection loop. External equipment must have separate power supply.



## 8.9 BN-320/5 Sprinkler Control Unit

**SUBSTITUTE PRODUCT: BN-303**

The Sprinkler Control Unit is used for monitoring and control of sprinkler systems. The unit is connected to and powered from the detection loop.

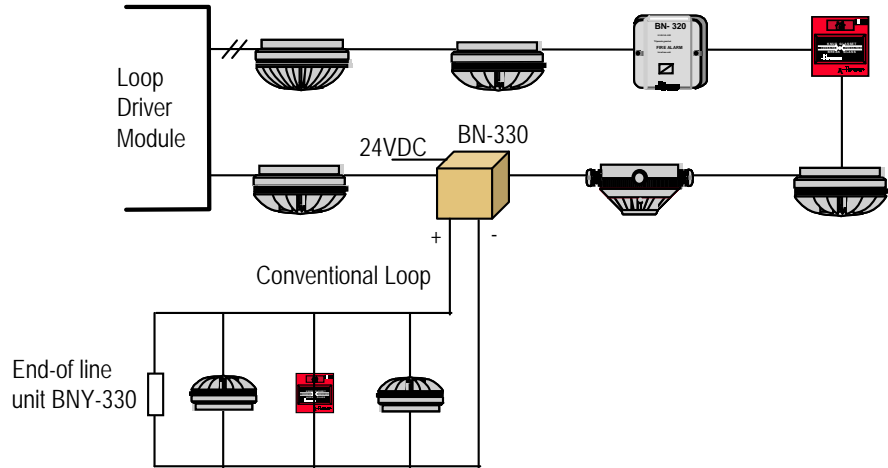


## 8.10 BN-330 Interface Unit for Conventional Loops

**SUBSTITUTE PRODUCT: BNB-331**

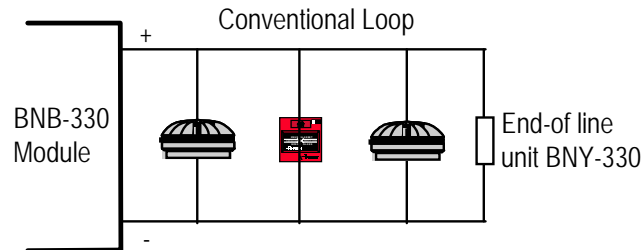
Applies to AutoSafe only.

The *Interface Unit for Conventional Loops BN-330* consists of a BNB-330 module\* mounted on a DIN-rail inside a PCM-box. The conventional detectors are connected to a two-wire sub loop. The sub loop is monitored for broken line by an end-of line unit BNY-330. The interface unit must have a separate 24V supply.



\* Variant:

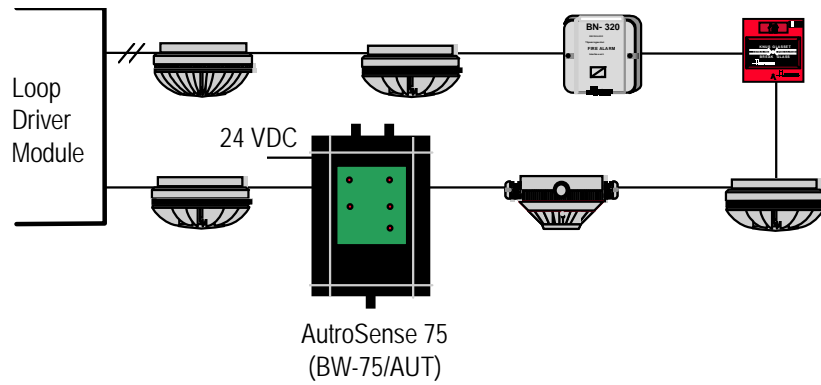
The internal *Conventional Loop Interface Module BNB-330* is mounted on a DIN-rail onto other internal modules inside the Fire Alarm Control Panel / Controller where it is powered with 24VDC.



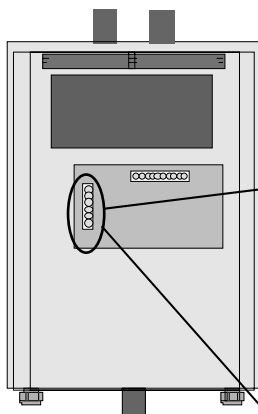
Terminal	Signal
1	+ AL-Com in
2	- AL-Com in
3	+ AL-Com out
4	- AL-Com out
5	+ 24V Input
6	0V
7	Conventional loop 15V/24V select
8	T-output / Open collector
9	+ conventional loop
10	- conventional loop



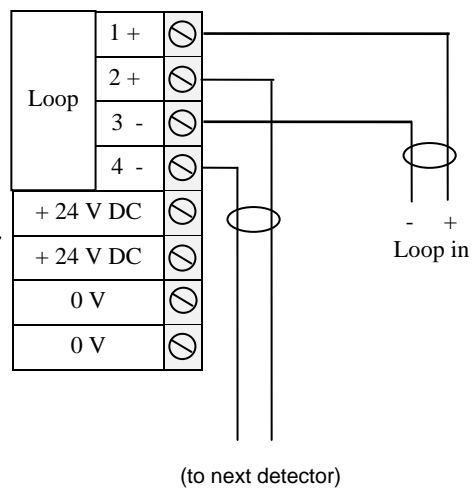
## 8.11 AutoSense 75 Aspirating Smoke Detector



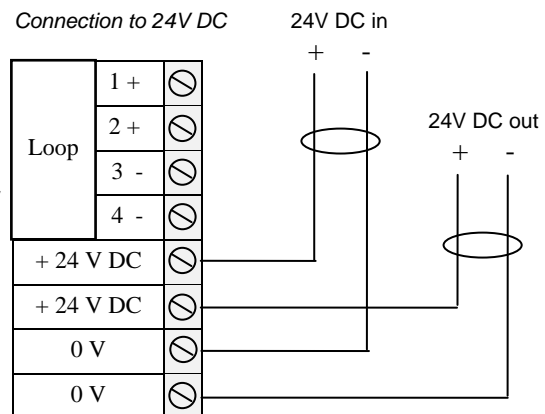
**AutoSense 75 (BW-75/AUT)**



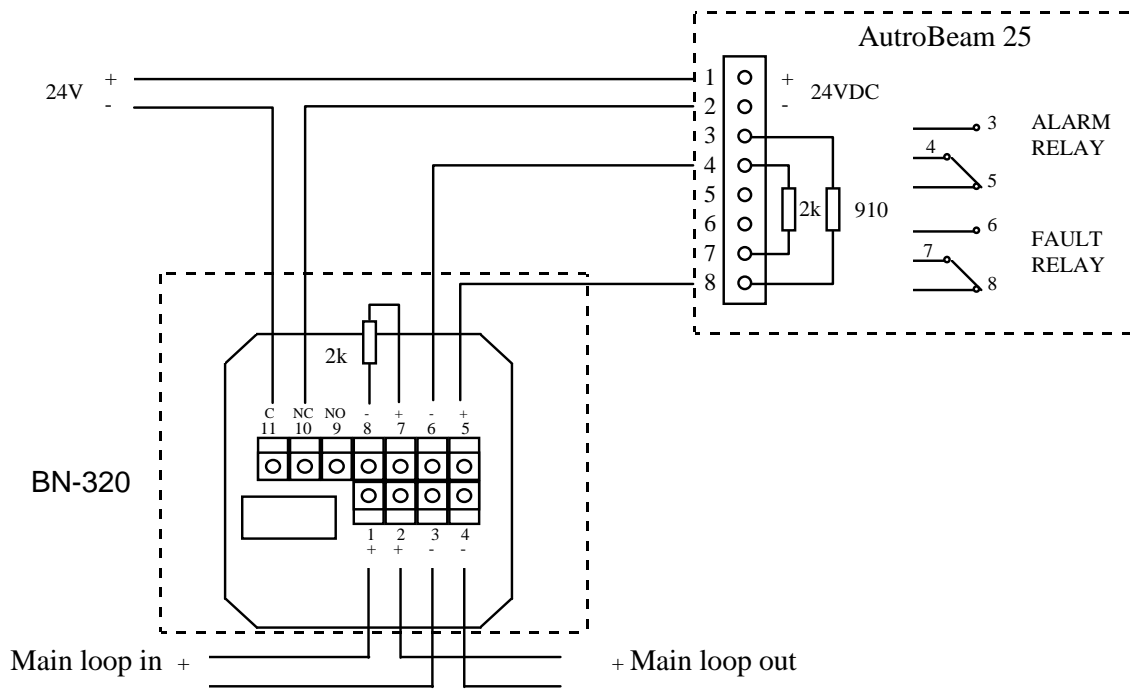
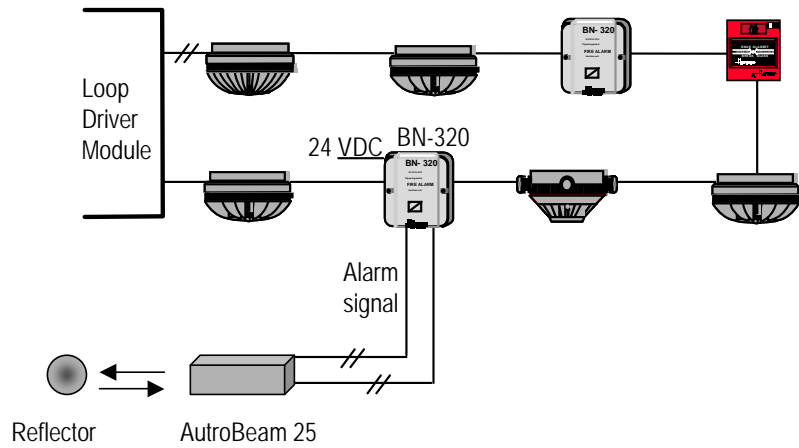
Loop Connection



Connection to 24V DC

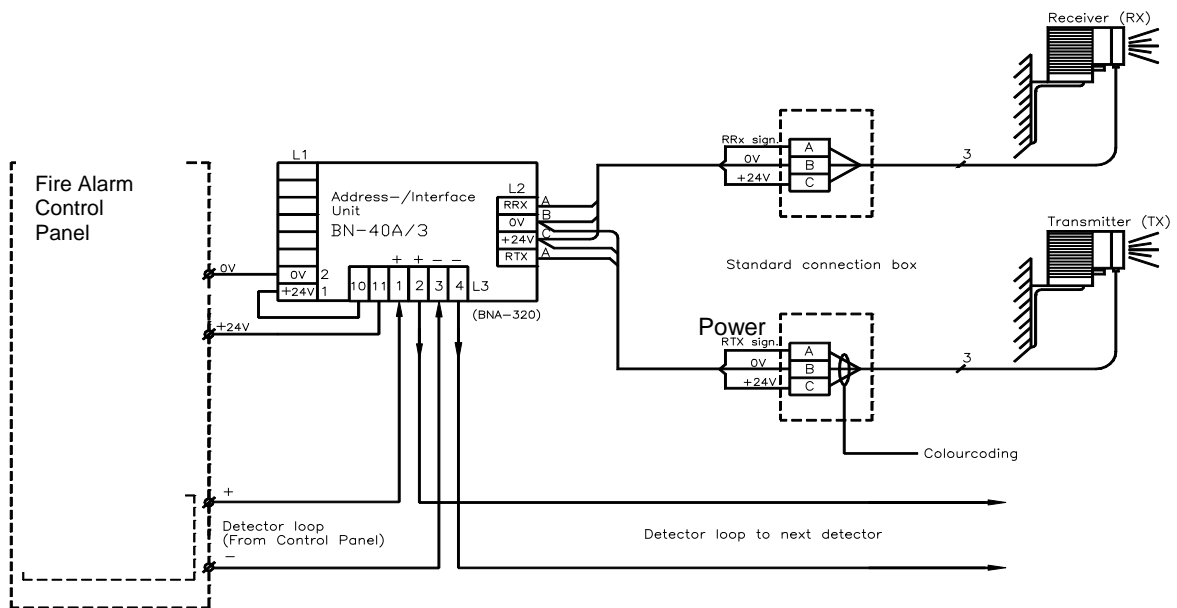
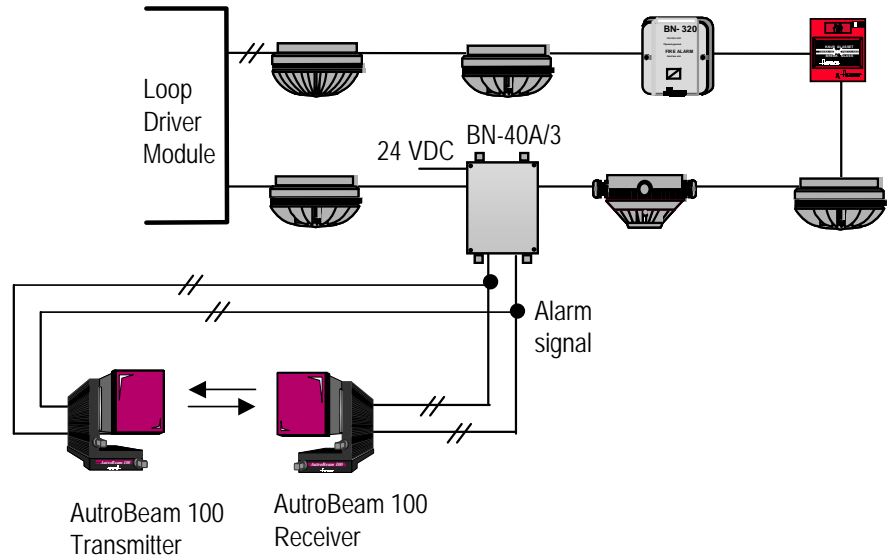


## 8.12 AutoBeam 25 Infrared Beamdetector



# 8.13 AutoBeam 100 Infrared Beamdetector System

**SUBSTITUTE PRODUCT: FIRERAY 5000**



(Drawing No. bs-1160)



## 9. Reader's Comments

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

Title: *Connecting Loop Units, Interactive Fire Detection Systems*,  
Ref. No.: *116-P-CONNECTLOOPUNIT/DGB, rev. D, 2013-02-21*

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

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Suggestions for improvements

Thank you! We will investigate your comments promptly.  
Would you like a written reply?    Yes    No

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Please send this form to:       Autronica Fire and Security AS  
  N-7483 Trondheim  
  Norway

Tel: + 47 73 58 25 00  
Fax: + 47 73 58 25 01

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**Autronica Fire and Security** is an international company, headquartered in Trondheim, one of the largest cities in Norway. Our products cover a broad range of systems for integrated solutions, including fire detection systems, integrated fire and gas detection systems, control and presentation systems, voice alarm systems, public address systems, emergency light systems, plus suppression systems.

All products are easily adaptable to a wide variety of applications, among others, hospitals, airports, churches and schools, as well as to heavy industry and high-risk applications such as power plants, computer sites and offshore installations, world wide.

The company's strategy and philosophy is plainly manifested in the business idea:  
*Protecting life, environment and property.*

#### **Quality Assurance**

Stringent control throughout Autronica Fire and Security assures the excellence of our products and services. Our products are CE marked and developed for worldwide standards and regulations, and conform with the CEN regulation EN54. Our quality system conforms to the Quality System Standard NS-EN ISO 9001:2000 and is valid for the following product and service ranges: marketing, sales, development, engineering, manufacture, installation, commissioning and servicing of suppression, integrated fire and gas detection and alarm systems, plus petrochemical, oil and gas instrumentation systems for monitoring and control.

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