EXTINGUISHING CONTROL UNIT - BN-221/01

AutroSafe interactive fire detection system
Product datasheet

Features

- Two open and short circuit monitored inputs
- One monitored relay output
- Fully monitored for power failure or loss of power
- Screw terminals for easy connection of cables
- Directly connected to an AutroSafe (AI_Com) detection loop
- Requires separate 24 VDC supply for control electronics
- Designed to meet EN 54 and conforms to CE standards

Description

The extinguishing control unit BN-221/01 is an interface unit which monitors and controls extinguishing equipment. Note that the extinguishing control application requires feedback within 10 seconds after the release of the extinguishing media to avoid a faulty release message.

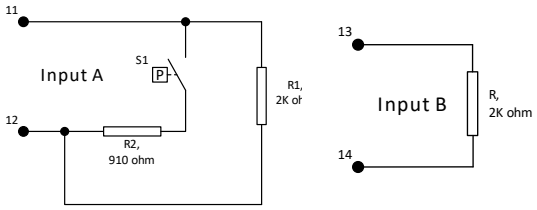
The extinguishing equipment is powered from a separate 24 VDC supply. The interface unit is used in the AutroSafe interactive fire detection system, and it is connected directly to a detection loop. BN-221/01 monitors the presence of power supply. The unit will give a fault warning in case of power failure or loss of power.

Inputs

The unit has two monitored inputs - input A: extinguishing media and input B: trigger gas. If the system does not have trigger gas, input B can be disabled by connecting a 2k resistor on the terminals.

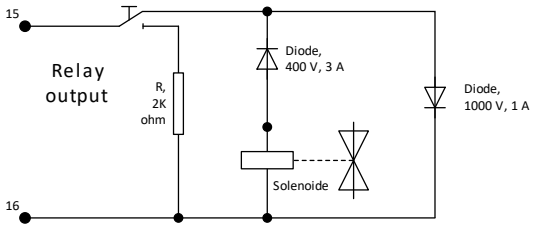
Input A and input B have the following properties:

- Open circuit monitoring and short circuit monitoring
- End of line resistor is 2k ohm



Relay output

The BN-221/01 unit has one monitored relay output, which is controlled by a 2-pole relay with changeover contacts. The relay coil is supplied from the 24 VDC supply for control electronics. In the non-activated position, the output is connected to the monitoring circuitry by means of the relay contacts.





When the output is OFF, the board monitors the line and detects short and open circuit. When it is ON, it connects 24 VDC to the line, and at the same time, disconnects the monitoring circuitry. The following errors are detected:

- Open circuit and short circuit (including load)
- Earth fault

Connections and termination

The maximum cable dimension is 2,5mm^2.

Screw Terminal no.	Signal
1	Detection loop + IN (AI_Com)
2	Detection loop + OUT (AI_Com)
3	Detection loop - IN (AI_Com)
4	Detection loop - OUT (AI_Com)
5	+24 VDC power supply IN
6	0V IN
7	+24 VDC power supply OUT
8	0V OUT
9	External power
10	External power
11	Input A +
12	Input A -
13	Input B +
14	Input B -
15	Output +
16	Output -
17	+24V supply for output load
18	Collector output (not used)
19	Spare terminal (connected to 20)
20	Spare terminal (connected to 19)

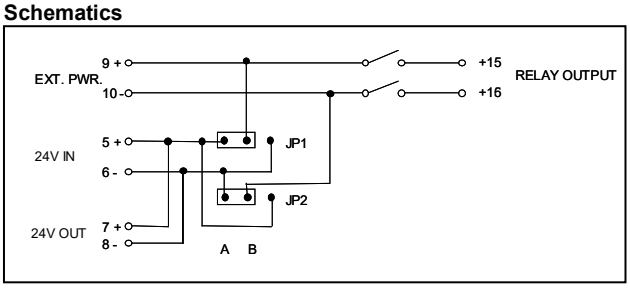
If inductive load is used, a protection diode is required.

CE

Technical specifications	
Weight	75 g
Material	Polycarbonate
Colour	Light grey
Mounting	Directly connected to a detection loop
Temperature	-20^0 to +70^{0}C
Voltage detection loop (AI_Com)	16 - 26 V DC
Current consumption detection loop (AI_Com)	< 0,3 mA
Supply voltage	20 - 28 V DC
Standby current	7mA
Operating current	25mA + load
External power	Maximum 28 VDC
Maximum load current - **with JP1 and JP2 mounted** - **with JP1 and JP2 removed**	 1A @ 24 VDC 6A @ 24 VDC
Maximum cable length to input	100 m
Max. capacitance on input	40 nF
Maximum cable length to output	100 m
Serial impedance ZC Max	250mΩ
Service	Replace if faulty
Maintenance	None
Degree of protection	IP66/IP67
Communication loop Protocol	Autronica loop communication protocol (AL_Com)
Approvals	See website

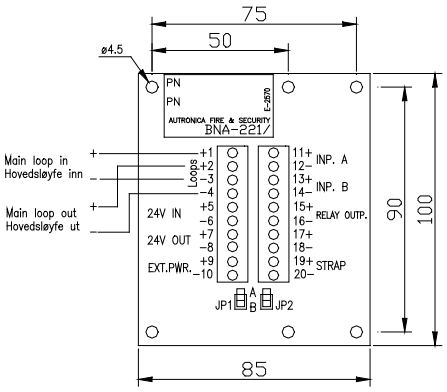
Part number	Description
116-BN-221/01	Extinguishing control unit (plastic box)

Schematics

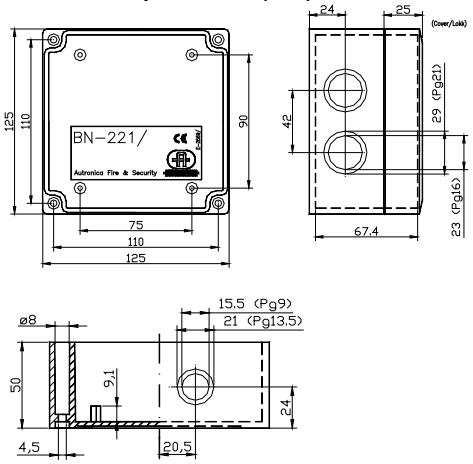


Note that the 7A output load is only permitted if external power is fed to terminals 9 and 10. The jumpers JP1 and JP2 should then be removed. If fed from external 24V, through jumpers JP1 and JP2, the maximum current output is derated to 1A.

Screw terminals/dimensions (mm)

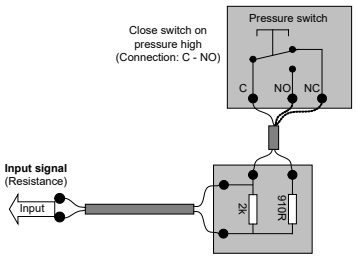


Dimensions – plastic box (mm)



Connections to input ports

The illustration below shows the connection to the input ports (Input A and B) in an extinguishing system. The pressure switch has common (C), normally open (NO) and normally closed (NC) terminals. When the pressure is low, the switch has connection between C and NC. The inputs are connected to the pressure switch in such a way that they are open in normal operation.



Input A: Extinguishing media
For input A (extinguishing media), the normal situation is with pressure low (e.g. low pressure gives connection between C and NC). The input is then connected between C and NO. When the extinguishing media pressure gets high, the 910R is connected in parallel with the 2k resistor.

Input B: Trigger gas
For input B (trigger gas), the normal situation is with pressure high (i.e. high pressure gives connection between C and NO). The input is then connected between C and NC. When the trigger gas pressure gets low, the 910R is connected in parallel with the 2k resistor. Input B can be omitted by using a 2k resistor on the terminals.

Connections to output port

The illustration below shows the connection of the output port in an extinguishing system. The output port can be set ON (24V) or OFF (0V). When it is turned off, the port functions as an input and monitors the line. The input line indicates one of the following conditions:

- Normal: the board is activated or it measures normal condition on the line.
- Isolate: the extinguishing media release solenoid is physically disconnected from the output port (the 2k resistor and switch is required only if this function is to be applied).
- Open circuit or short circuit: there is a problem with the connection.

