

CONVENTIONAL LOOP INTERFACE BNB-331

Interactive fire detection systems Product Datasheet

Features

- Local-powered (requires external 24 V power supply)
- Short and open circuit monitoring on conventional detection loop
- Ground fault detection on conventional detection loop via fire panel ground fault detection
- Up to 32 detectors/manual call points on one conventional detection loop
- Detection of removed detector head (will be reported as open circuit)
- 24 V or 15 VDC nominal detector voltages
- Interfaces conventional detectors and manual call points from Autronica and other leading manufacturers
- Short-circuit isolator in each unit
- Proven technology
- TS35 DIN rail mounted
- Indicators for Power, Alarm and Fault on the conventional detection loop
- Local Fault outputs
- Galvanic isolation between power supply and detector interface
- Redundant and monitored power inputs. Fault signalled if <18 V
- Backbone bus distributing external 24 V bus via DIN rail to up to 20 units, reducing installation time
- Support for EN 54-4 power with fault relay output
- Designed to meet the requirement of the major maritime classification societies

Description / Application

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.

Switch Settings

DIP switches (S1) are available to set up the unit into different modes of operation.



Note that the switches must be set before the detection loop is powered up.

Switch	Position	Function
S1.1	ON	Short-circuit = Alarm
S1.1	OFF	Short-circuit = Fault
S1.2	ON	Do not report power redundancy fault
S1.2	OFF	Report power redundancy fault
S1.3	ON	24V conventional loop output
S1.3	OFF	15V conventional loop output
S1.4	ON	Do not report PSU fault
S1.4	OFF	Report PSU fault
S1.5	ON/OFF	Detector Type (see table 1)
S1.6	ON/OFF	Detector Type (see table 1)
S1.7	OFF	Not in use. Must be set to OFF.
S1.7	OFF	Not in use. Must be set to OFF.

Table 1

S1.6	S1.5	Detector type branch limits
OFF	OFF	Autronica Fire & Security (S1.3 OFF)
OFF	ON	Reserved
ON	OFF	Others (user defined)
ON	ON	Reserved

Table 2

Technical specifications	
Dimensions (mm)	22,5 x 114,5 x 99
Weight (g)	192
Housing material	Polyamide 6.6.
Mounting	DIN rail mount
Power	Connects to AL_Com loop only
Galvanic isolation	50 VDC to supply voltage
Idle current from AL_Com detection loop	345 µA
External power supply	20 – 30 V
Current consumption from external power supply	Current consumption depends on the loop units that are used. Maximum 60 mA
Idle current conventional detection loop	Maximum 10 mA
Alarm current conventional detection loop	Minimum 20 mA
Short-circuit current conventional detection loop	> 37 mA @ 15 V > 43 mA @ 24 V
Operating temperature range	-25 to +70 °C
Storage temperature range	-40 to +85 °C
Humidity	10% - 95% RH (non-condensing)
Approvals	EN 54-18 / EN 54-17
Cable terminals	Max 2.5 mm ² single core wires
Cable requirements conventional loop	Maximum resistance 30Ω Non-shielded or shielded.
Alarm/fault relay output rating	0,6 A 60 V
IP grade	IP20
Bottom connector – maximum current	I _{max} = 8 A

Table 3

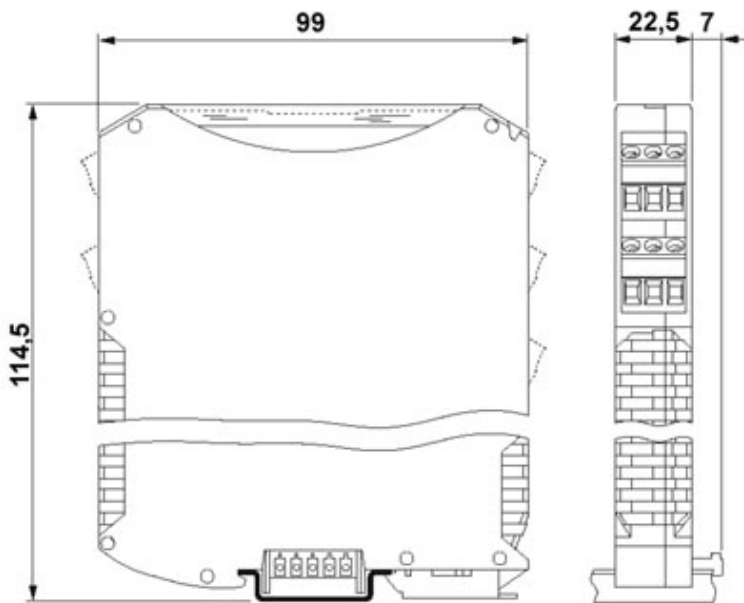
 0470
Autronica Fire and Security AS, NO-7483 Trondheim 11 0470-CPD-0031
EN 54-17:2005 Short circuit isolators EN 54-18:2005 Input/output devices

Product name	Part number	Description
BNB-331	116-BNB-331	Conventional Loop Interface, EOL included
	116-BNY-330	Active EOL unit (Spare)

Enclosure for field mounting

Part number	Description
116-6882-031.0008	Enclosure with DIN rail
116-6571-011.1920	Gland
116-6531-006.1920	Backnut for gland

Layout / Dimensions



Connectors

All connections are made to screw terminals numbered 1-16

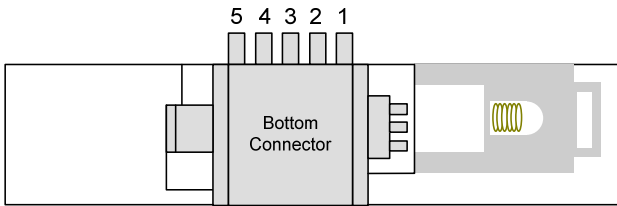
Terminal	Functions
1	Alarm Out1
2	Alarm Out2
3	N.A.
4	N.A.
5	Conv +
6	Conv -
7	PSUFlt_IN*
8	PSUFlt_OV*
9	Loop In + (AI_Com)
10	Loop In - (AI_Com)
11	Loop out + (AI_Com)
12	Loop Out - (AI_Com)
13	24V A
14	0v A
15	24V B*
16	0v B*

Table 4 *See table 1 for setting of fault monitoring

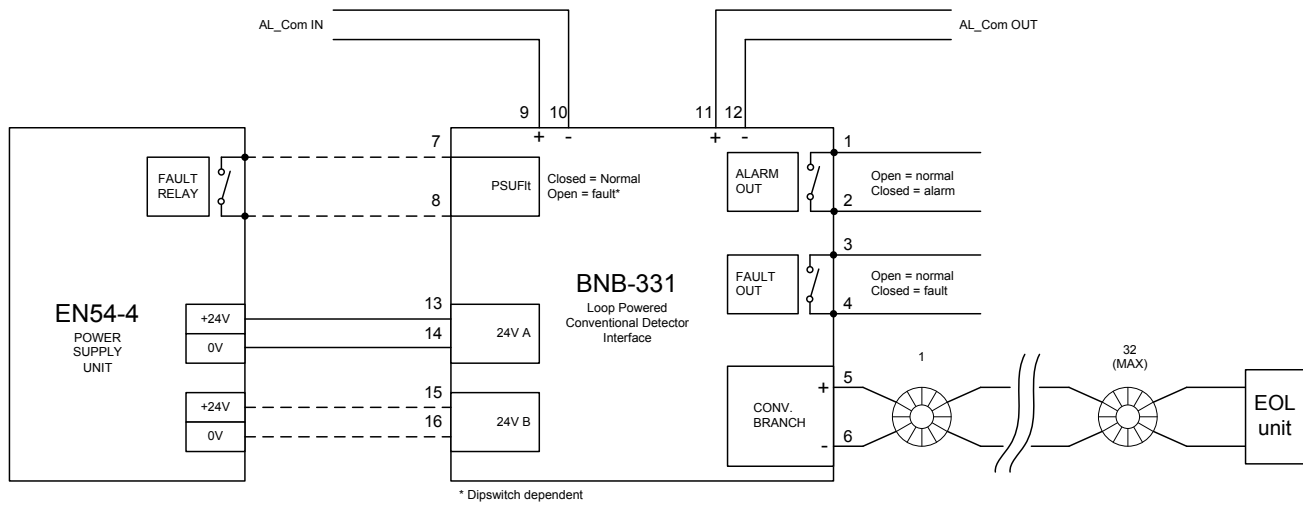
Bottom Connectors

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

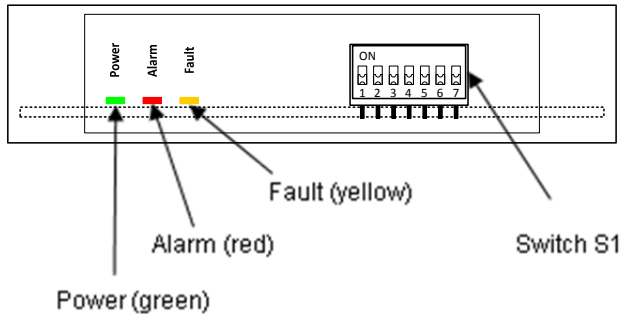
Table 5



Overview – Typical Installation



Description – Indicators and Switch S1



Indicator	Colour	Behaviour
Power	Green	Steady ON when unit is powered
Alarm	Red	Steady ON indicates that the unit is in Alarm Condition
Fault	Yellow	Steady ON: Memory fault
		Fast blink (5Hz): Open circuit or missing detector, short-circuit and detector chamber fault.
		Slow blink (1Hz): Power redundancy fault, internal fault and PSU fault read-back

Table 6

Note! PCB mounted LEDs are powered by an external 24 V power supply. If both 24 VDC input is missing no LEDs will be lit.