ABB i-bus® EIB

Detector Base
B412NL, GH Q305 0001 R0001

Application
The detector base B412NL can be used together with the optical smoke detector ORM2151, the thermal static detector WMM4451 or thermal rate-of-rise detector DMM5451 for the early detection of fires in buildings. It enables the connection of VdS-certified smoke and thermal detectors to intruder alarm zones or circuits used in 12 V systems.

Function
When an alarm is triggered, the normally closed contact of the relay is opened and the zone is disrupted. Due to the integrated self-resetting mechanism, the detector base periodically interrupts the supply voltage for the detector and checks if an alarm is active. If an alarm is no longer present, the detector resets itself.
An optional reed relay in the last detector base of the zone can be used to check the power supply and monitor whether one of the detectors has been removed from its base.

Technical Data

Operational voltage	10 … 15 V DC
Closed-circuit current (without detector)	20 µA
Power consumption when device is triggered	45 mA at 12 V
Contact	Changeover contact
Contact load	30 V DC, 0.1 A
Temperature range	–10° … +60° C
Relative humidity	0% … 93%
Diameter	127 mm
Height	29 mm
Weight	96 g

Installation
The detector base can be used for permanent indoor installations and in dry rooms.
To achieve the optimum level of detection, the detector base should be installed on the ceiling in the middle of the room so that smoke and heat can reach the detector unhindered. The national requirements and norms (VDE 0833 section 2) should be observed.
In residential buildings, it is advisable to install a detector in each living room and bedroom. The optical smoke detector should not be installed in rooms where steam or smoke is normally present (e.g. bathrooms and kitchens).

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Test
The functional test is carried out by:

1. Exposing the optical smoke detector to smoke or the test aerosol 25D
2. Blowing hot air into the thermal detector (e.g. with a hairdryer or fan)
3. Interrupting the power supply (only if optional reed relay is present in the zone)
4. Removing a detector from the base (only if optional reed relay is present in the zone)

The detector then resets itself after approx. 4 seconds.

Connection

The connection of the detector base takes place in a 4-wire system. Two cores are required in each case for the power supply and for connection to the zone.

The zone should be equipped with an EOL resistor of 2.7 kΩ.

A reed relay RL is required in the last detector base of the zone to check the power supply and to monitor if a detector is removed from the base. The reed relay coil is connected to the power supply. The normally open contact should be looped into the zone.

Terminal 2: Power supply ”–“

Terminal 3: For terminal 2 of a further detector or on the reed relay coil ”–“

Terminal 5: Power supply ”+“ and reed coil ”+“

Relay contact ”NC“ and ”C“: normally closed contact of the zone

The monitoring of the power supply and the removal of a detector from its detector base can also be carried out in a separate technical detector zone if required. The normally open contact of the reed relay should then be looped into the technical detector zone instead of the fire detector zone.

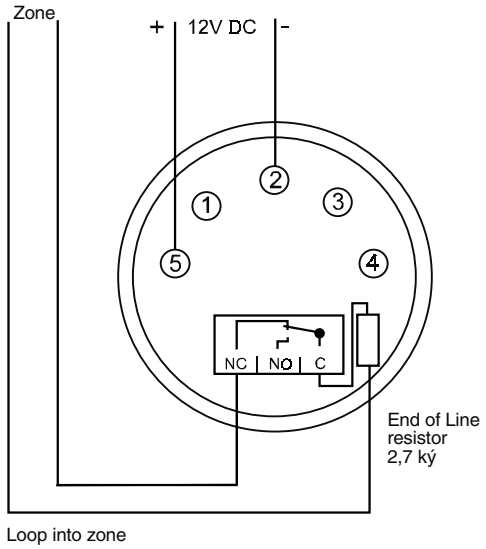
Connection to intruder alarm zones

It is advisable to loop the detectors into a separate zone which also triggers an alarm when the system is deactivated (e.g. fire detector zone L208/L840 or tamper zone L102/S). It is possible to select the programming options ”yes“ or ”no“ for the internal alarm in the case of the fire detector zone (from software version 3.04 on).

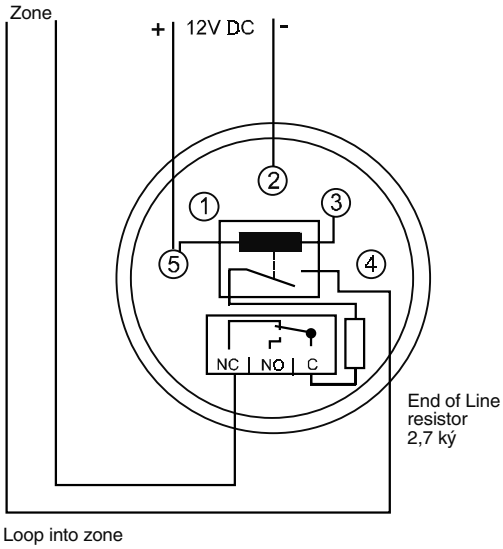
Control unit	Terminals for zones	Terminal ”+“	Terminal ”–“
L102/S	7 – 8	3	4
L208	1 – C to 6 – C	V+	V–
L840/MG4 (external)	3 – 4 to 9 – 10	1	2
L840/MG8 (internal)	9 – 10 to 23 – 24	7, 8, 27, 28	5, 6, 25, 26
MT/S 4.12.1 (zone terminal, EIB)	1 – 2 to 7 – 8	12	11
MT/U 2.12.1 (zone terminal, EIB)	1 – 2 to 3 – 4	7	8

Circuit diagrams

Note: Alarm and reed relays are disconnected from the supply.



Connection of a detector base without monitoring



Connection of a detector base with monitoring of both the power supply and the removal of a detector from the detector base

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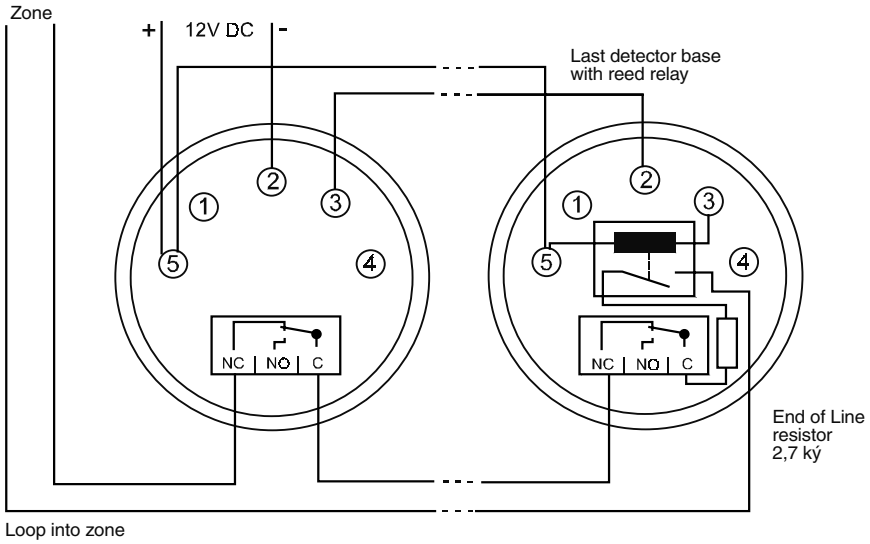
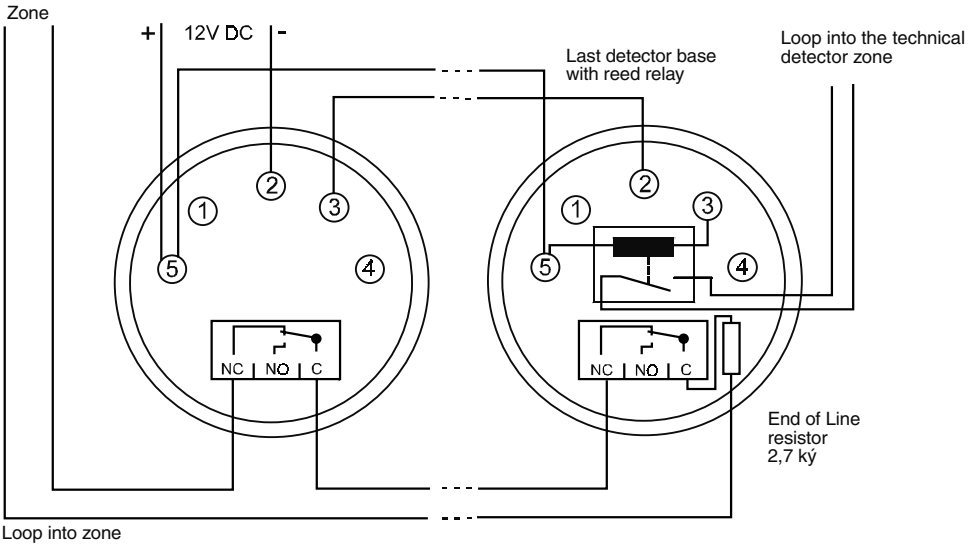
Circuit diagrams



Connection of several detector bases with monitoring of both the power supply and the removal of a detector from the detector base



Connection of several detector bases with monitoring of both the power supply and the removal of a detector from the detector base in a separate technical detector zone

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