



1 Field of application

The LON-WA1/B2 is a function module specially designed for monitoring motorised fire dampers/smoke extraction dampers fitted with plug-in 24 V actuators (e.g. those manufactured by Belimo). This makes assembly considerably easier.

Two motorised fire dampers or one smoke extraction damper may be controlled with one LON-WA1/B2. This is done by mounting the module on a fire damper or smoke extraction damper and connecting it to the 24 V actuator by means of plugged contacts (e.g. those manufactured by Belimo).

The plug-in 24 V actuator for the second fire damper is connected through a LON-WA1/B2-AD or LON-WA1/B2-AD230 junction box.

Where the LON-WA1/B2 is combined with a LON-WA1/B2-AD, a 24 V AC power supply and a separate LON lead are required. The LON-WA1/B2-AD junction box is connected to the LON-WA1/B2 module using a 6-pin lead. Numbered terminals make wiring easier.

Where the LON-WA1/B2 is combined with a LON-WA1/B2-AD230, a 230 V AC power supply and a separate LON lead are required. The LON-WA1/B2-AD230 junction box includes a transformer which provides the 24 V power supply to the actuators and the LON-WA1/B2. The LON-WA1/B2-AD230 junction box is connected to the LON-WA1/B2 module using an 8-pin lead. Numbered terminals make wiring easier.

Standard Network Variable Types (SNVT) only are used to implement the functionalities so that the LON-WA1/B2 can be linked flexibly and easily into host systems. The LONMARK "Fire and Smoke Damper Actuator Functional Profile 100.01" has been implemented in full. The device is LONMARK-certified.



2 Technical Data

LON-WA1/B2

Power supply:
20.0 – 28.0 volts AC/DC 50/60 Hz
Double terminals for through connections

Power consumption:
3.12 VA or 1.32 W without actuators

Inputs:
4 digital inputs for potential-free switch contacts

Outputs:
3 digital outputs via relays
Damper 1 (fire damper or smoke extraction damper)
centre-zero relay: maximum switch capacity at 24 V AC:
120 VA (5 A ohmic load)
Damper 2 (second fire damper) NO relay: maximum switch capacity at 24 V AC: 144 VA (6 A ohmic load)
FireChain NO relay: maximum AC switch capacity:
1500 VA (250 V AC; 6 A ohmic load)

LON interface:

4 LON connection terminals
FTT10 free topology

Degree of protection:

IP54

Operating temperature

+10°C...+60°C

Humidity:

20...95 % non-condensing relative humidity

Connection terminals:

Actuator control,
MATE-N_LOK 3-pin AMP socket
Actuator end positions,
MATE-N_LOK 6-pin AMP socket

LON, LON-WA1/B2-ADxxx supply voltage:

90° plug-in terminals for 0.08 mm² – 2.5 mm²

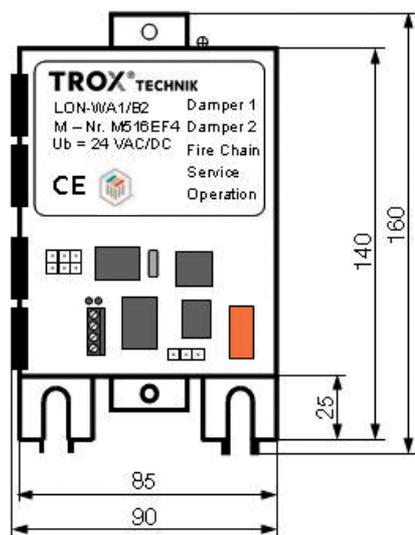
FireChain signal

90° plug-in terminals for 0.08 mm² – 1.5 mm²

Software application:

The applications available for the LON-WA1/B2 (xif/apb-file) may be downloaded from the Internet at www.troxtechnik.com.

Casing:



3 General operating information

A maximum of *two fire dampers* or *one smoke extraction damper* may be managed using the LON-WA1/B2.

The LON-WA1/B2-AD or LON-WA1/B2-AD230 junction boxes must be used to connect the second fire damper.

If only one fire damper is connected, a jumper must be set between terminals 5 and 6 (OPEN end position) on the 8-pin terminal block provided for the connection of the second damper. This prevents an alarm message for the non-existent second damper being generated.

The fire damper or the smoke extraction damper is controlled using the ActuDrive input variable.

The ActuPosn output variable indicates the current position of the damper.

The assignment is as follows:

Normal = fire damper in the open position
Fire = fire damper in the closed position
Normal = smoke extraction damper in closed position
Fire = smoke extraction damper in open position

Once a voltage is applied to the LON-WA1/B2 module, the connected dampers move automatically to their normal position.

The test button in the module may be used to move the dampers connected to the fire position and back to the normal position after expiry of the OffTime + 10 seconds.

The following is specified in the event of a fault in accordance with VDMA standard 24200-1 "Automated Fire Protection and Smoke Extraction Systems":

Safe positions

Fire damper = closed position
Smoke extraction damper = remains in the last position

Where the LON-WA1/B2 is incorporated in a fire protection system, the heartbeat function should be switched on for safety reasons.

Setting the MacRcvTime parameter for the ActuDrive variable and the MaxSendTime parameter for the ActuPosn variable ensures that the LON-WA1/B2 sends its information and receives information at regular intervals.

This ensures that the transmission paths are monitored. In the event of a fault, the dampers will be moved to the safe position and an alarm will be generated.

A damper function test can be triggered over a control system using the FT_Test input variable. This moves the dampers to the fire position. The FT_Test output variable is used to determine whether a test run has been activated. The test condition is maintained for the duration of the TestHoldTime. The damper remains in the fire position until it receives a new command through ActuDrive. The test is automatically aborted if ActuDrive switches to fire during the course of a test.

The FireChain variables can pass a signal from the first to the last damper, but do not trigger it if the dampers are chained. The corresponding FireChain relay in the LON-WA1/B2 module is controlled and can be used as a collective fault message or to shut down systems. This function is only available for fire dampers.

The pulse variables are used to monitor a LON network. If the input variable is set, the LON-WA1/B2 module changes the output variable after a period of 1 second. Thus a trigger pulse is generated where the modules are chained. This pulse can then be read at the end of the chain after a period of $N \times 1$ seconds (N = number of LON-WA1/B2 modules).

LON-WA1/B2-AD

4 Field of application

The LON-WA1/B2-AD junction box is used to connect a second fire damper equipped with a plug-in 24 V actuator. The junction box is connected to the LON-WA1/B2 module using a 6-pin lead. Numbered terminals make wiring easier.

5 Technical Data

LON-WA1/B2-AD

Connection terminals:

Actuator control,
MATE-N_LOK 3-pin AMP socket
Actuator end positions,
MATE-N_LOK 6-pin AMP socket

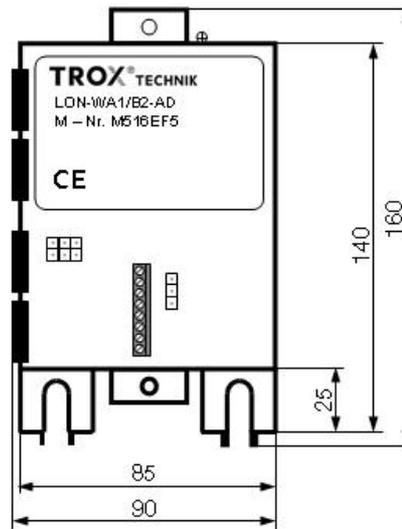
LON-WA1/B2 connector lead:

90° plug-in terminals for $0.08 \text{ mm}^2 - 2.5 \text{ mm}^2$

Degree of protection:

IP54

Casing:



LON-WA1/B2-AD230

6 Field of application

The LON-WA1/B2-AD230 junction box is used to connect a second fire damper equipped with a plug-in 24 V actuator.

The junction box includes a transformer which provides the 24 V power supply to the actuators and the LON-WA1/B2. The junction box is connected to the LON-WA1/B2 module using an 8-pin lead. Numbered terminals make wiring easier.

7 Technical Data

LON-WA1/B2-AD230

Input supply voltage:

200 – 240 V AC/DC 50/60 Hz
Double terminals for through connections

Output voltage:

24 V AC

Output current:

750 mA

Operating temperature:

-10°C...+60°C

Connection terminals:

Actuator control,
MATE-N_LOK 3-pin AMP socket
Actuator end positions,
MATE-N_LOK 6-pin AMP socket

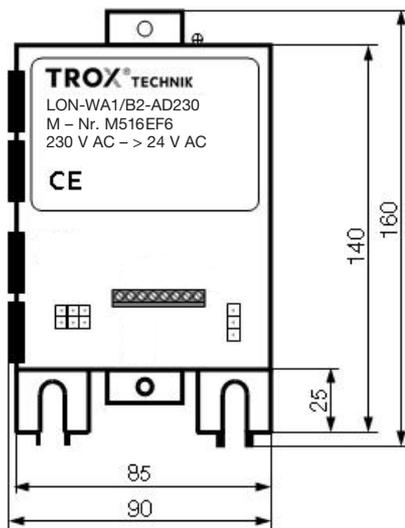
LON-WA1/B2 connector lead:

90° plug-in terminals for 0.08 mm² – 2.5 mm²

Degree of protection:

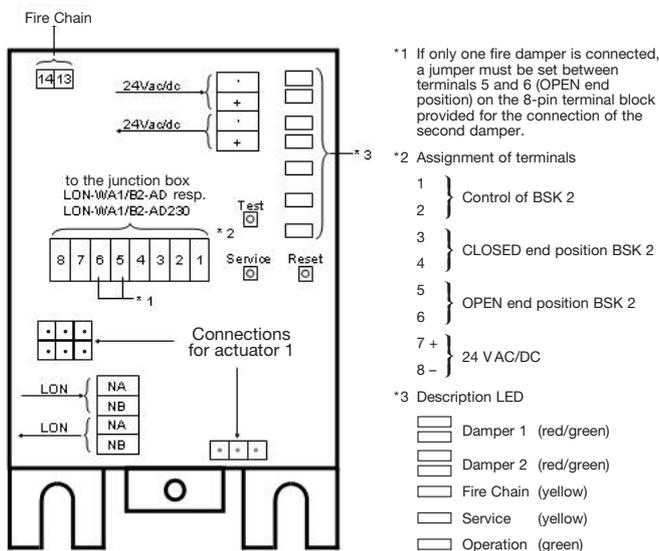
IP54

Casing:

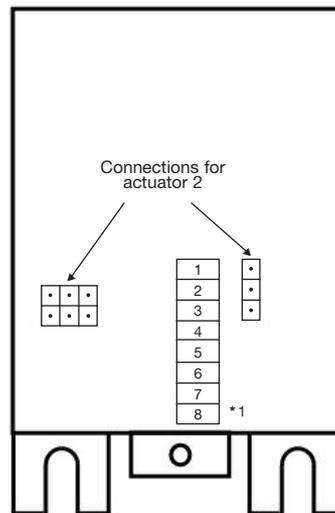


8 Wiring diagrams

LON-WA1/B2



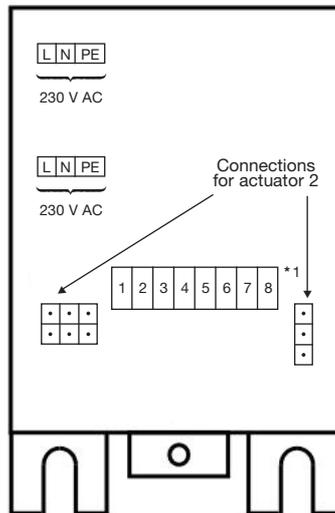
LON-WA1/B2-AD



*1 Assignment of terminals

- 1 } Control of BSK 2
- 2 }
- 3 } CLOSED end position BSK 2
- 4 }
- 5 } OPEN end position BSK 2
- 6 }
- 7 + } 24 VAC/DC not required
- 8 - }

LON-WA1/B2-AD230



*1 Assignment of terminals

- 1 } Control of BSK 2
- 2 }
- 3 } CLOSED end position BSK 2
- 4 }
- 5 } OPEN end position BSK 2
- 6 }
- 7 + } 24 VAC/DC
- 8 - }

9 Specification text

LON-WA1/B2

LON module for the control of up to two motorised 24 V fire dampers or one motorised 24 V smoke extraction damper.

Damper actuators connected via AMP Mate-N-LOK connectors.

Suitable for direct mounting on the manufacturer's fire damper or smoke extraction damper using a bracket.

Drive control and detection of the OPEN and CLOSED end positions.

Transmission of all signals and control of the motorised dampers using Standard Network Variable Types over a LON fieldbus to host systems; transmission of the system status; integrated watchdog and heartbeat units:

Compliance with LonMark specification 110.01 "Fire and Smoke Damper Actuator".

LonMark certificate.

The second motorised fire damper is connected using accessory: LON-WA1/B2-AD or LON-WA1/B2-AD230.

The following parameters may be defined:

- maximum data send time interval
- minimum data receive time interval
- maximum system status send time interval
- compartment number
- damper identification
- date and time of installation
- date and time of last inspection
- maximum time to position damper in the CLOSED position
- maximum time to position damper in the OPEN position
- maximum time for test run

Connections:

- 4 digital inputs, 2 of which by way of AMP Mate-N-LOK socket
- 3 digital outputs by relay contacts, one of which is a centre-zero relay using an AMP Mate-N-LOK socket
- 8-pin plug-in terminal strip for connection to the LON-WA1/B2-AD or AD230
- 3-pin AMP Mate-N-LOK socket
- 6-pin AMP Mate-N-LOK socket
- 24 V AC/DC supply voltage
- bus connection to LON using FTT10A Transceiver
- degree of protection IP54

Manufacturer: TROX
 Type: LON-WA1/B2

LON-WA1/B2-AD

Junction box for the connection of the second motorised 24 V fire damper to the LON-WA1/B2.

Damper actuator connected via AMP Mate-N-LOK connector.

Suitable for direct mounting on the manufacturer's fire damper using a bracket.

The LON-WA1/B2-AD junction box is connected to the LON-WA1/B2 module on site using a 6-pin lead.

The 24 V power supply for the actuator is provided from the LON-WA1/B2.

Connections:

- 8-pin plug-in terminal strip for connection to the LON-WA1/B2
- 3-pin AMP Mate-N-LOK socket
- 6-pin AMP Mate-N-LOK socket
- degree of protection IP54

Manufacturer: TROX

Type: LON-WA1/B2-AD

LON-WA1/B2-AD230

Junction box with integrated 230/24 V PSU for the connection of the second motorised 24 V fire damper to the LON-WA1/B2.

24 V supply voltage for the actuators and the LON-WA1/B2 is provided by the integrated PSU. Damper actuator connected via AMP Mate-N-LOK connector.

Suitable for direct mounting on the manufacturer's fire damper using a bracket.

The LON-WA1/B2-AD230 junction box is connected to the LON-WA1/B2 module on site using an 8-pin lead.

Connections:

- 8-pin plug-in terminal strip for connection to the LON-WA1/B2
- 3-pin AMP Mate-N-LOK socket
- 6-pin AMP Mate-N-LOK socket
- 6-pin plug terminal for 230 V supply
- 230 V AC power supply
- degree of protection IP54

Manufacturer: TROX

Type: LON-WA1/B2-AD230