

TROX GmbH

Heinrich-Trox-Platz
D-47504 Neukirchen-Vluyn
Telephone +49/28 45/2 02-0
Telefax +49/28 45/2 02-2 65
e-mail trox@trox.de
www.troxtechnik.com

Automation/System Technology TROXNETCOM LON-WA1/FT2, .../PL2

PI/7.2/14/EN/3



Post-Tower, Bonn

1 Field of Application

The LON-WA1/FT2 and LON-WA1/PL2 are functional modules specially designed for monitoring motorised fire/smoke dampers.

Up to four motorised fire/smoke dampers can be operated with a single LON-WA1/FT2 or LON-WA1/PL2. The connections for the fire and smoke drives are designed for 230 V.

An FTT10A transceiver is used as the LON[®] interface with the LON-WA1/FT2. A separate bus line using the LON[®] standard must be used for the communication line.

Powerline technology is used in the LON-WA1/PL2, i.e. by using the Powerline transceiver, the LON[®] data are modulated to the 230 V AC power supply line and transmitted. No separate bus line is required.

Suitable routers, e.g. from the Sysmik and WHO companies, are available for conversion to other communication lines.

When functions were being implemented, only standard network variables (SNVT) were used. This enables the LON-WA1/FT2 and LON-WA1/PL2 to be flexibly and easily integrated into higher-order systems.

The Functional Profile 100.01 Fire and Smoke Damper Actuator from LONMARK[®] was used to the fullest extent possible.

The unit is certified by LONMARK[®].



2 Technical Data

LON-WA1/FT2 or PL2

Power supply:
230 V AC $\pm 10\%$, 50/60 Hz
Double terminals for looping through

Power consumption:
Approx. 3.5 VA without actuators

Inputs:
8 digital inputs for potential-free switch contacts

Outputs:
5 digital outputs via relays
Changeover relay

LON-WA1/FT2 LON interface:

4-pole 90° plug-in terminals for 0.3 mm² – 1.3 mm²
FTT10 free topology

LON-WA1/PL2 LON interface:

Powerline

Type of protection:

IP54

Operating temperature:

+10 °C to +60 °C

Humidity:

20 to 95 % relative humidity, non-condensing

Connection terminals:

Actuator control, 3-pole 90° plug-in terminals for
0.3 mm² – 1.5 mm²

Actuator end positions, 4-pole 90° plug-in terminals for
0.3 mm² – 1.5 mm²

Distribution voltage, LON-WA1/FT2/PL2:

2 x 3-pole 90° terminals for 0.08 mm² – 2.5 mm²

FireChain signal:

3-pole 90° plug-in terminals for 0.3 mm² – 1.5 mm²

Housing:

Synthetic, 254 mm x 180 mm x 90 mm

Software application:

The available applications (xif/apb file) can be downloaded for the LON-WA1/FT2 and LON-WA1/PL2 from the Internet under www.trox.de.

3 General Information on Functionality

In principle, up to four *fire dampers* or *smoke dampers* can be administered via the LON-WA1/FT2 or LON-WA1/PL2.

If fewer than four fire/smoke dampers are connected, a jumper is to be put in place between the terminals (E1, E3, E5 and E7) with end position OPEN on the 4-pole terminal blocks. This prevents alarm indications being generated for non-existent dampers.

The fire damper or smoke damper is operated via the ActuDrive input variable.

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

The following allocation applies:

Normal = fire damper open
Fire = fire damper closed
Normal = smoke damper closed
Fire = smoke damper open

When voltage is applied to the LON-WA1/FT2 or LON-WA1/PL2 module, the connected dampers move to the normal position automatically.

If the test button in the module is pressed, the connected dampers are moved to the fire position and then back to the normal position once the OffTime + 10 sec. passes.

If a fault occurs, the following provisions have been made in accordance with VDMA standard sheet 24200-1 "Automated Fire and Smoke Systems".

Safe positions

Fire damper = closed position

Smoke extraction damper = remains in the last position

Where the LON-WA1/FT2 or LON-WA1/PL2 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/FT2 or LON-WA1/PL2 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.

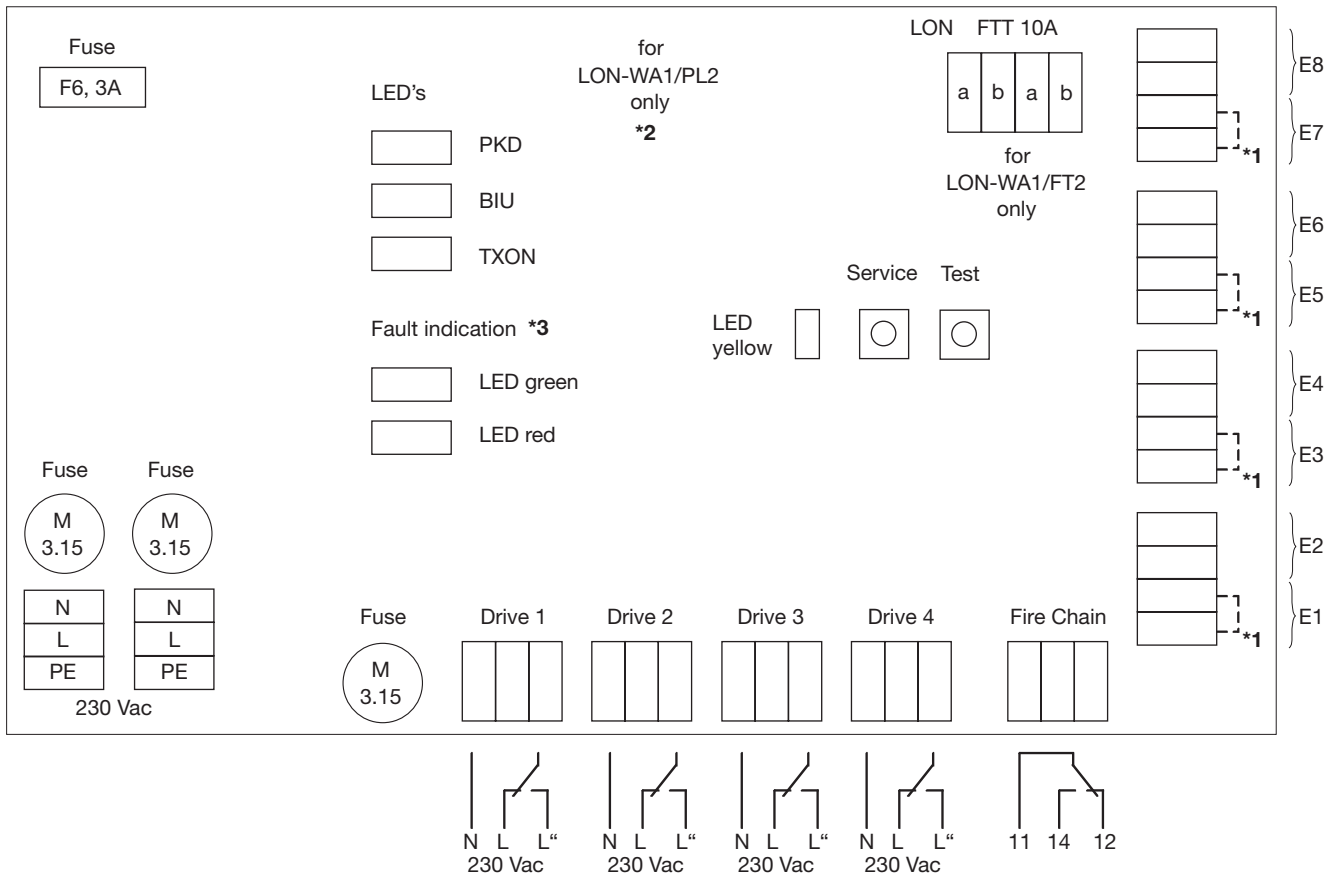
The test condition is maintained for the duration of the TestHoldTime. The damper remains in the fire position until it receives a new command through ActuDrive.

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/FT2 or LON-WA1/PL2 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/FT2 or LON-WA1/PL2 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 x 1 seconds (N = number of LON-WA1/FT2 or LON-WA1/PL2 modules).

4 Wiring Diagrams



Legend

E1 = Drive 1 end position OPEN
 E2 = Drive 1 end position CLOSED
 E3 = Drive 2 end position OPEN
 E4 = Drive 2 end position CLOSED
 E5 = Drive 3 end position OPEN
 E6 = Drive 3 end position CLOSED
 E7 = Drive 4 end position OPEN
 E8 = Drive 4 end position CLOSED

Designation of the Belimo drives:

Position of cable designation CLOSED S1 + S2
 Position of cable designation OPEN S4 + S6

N = neutral conductor
 L = phase
 L'' = phase connected

11 = common contact
 12 = normally closed contact
 14 = normally open contact

*1 Set a jumper (Damper OPEN)
 at not used the inputs

*2 Transmission-LED's Powerline
 PKD = Packet detect (Detection)
 BIU = Band in use (Waveband covered)
 TXON = Data send

*3 Error indication of the module
 green = all okay
 red = error in the module/application

Connection 230 V fire damper – spring return drive to N and L''
 Connection 230 V smoke damper – reversible actuator to N, L and L''

5 Specification Texts

LON-WA1/FT2

LON[®] module for operating up to four motorised 230 V fire or smoke dampers.

Control of the drives and detection of the end positions “Open” and “Closed”.

Transmission of all signals to higher-order systems and operation of the motorised dampers via “Standard Network Variable Types” using LON[®] field bus FTT10A; transmission of the system status; integrated watchdog and heartbeat circuit.

Compliance with LONMARK[®] specification 110.01 “Fire and Smoke Damper Actuator”. LONMARK[®] certificate.

The following parameters can be defined:

- max. time interval for sending data
- min. time interval for receiving data
- max. time interval for sending system status
- zone numbers
- damper name
- date and time of installation
- date and time of the last inspection, max. time to move the damper to the CLOSED position
- max. time to move the damper to the OPEN position
- max. time for test run

Connections:

- 8 digital inputs
- 5 digital outputs via relays, changeover contact 250 V / 5 A
- 230 V AC voltage supply
- bus connection to LON[®] via FTT10A transceiver
- type of protection: IP54

Make: TROX

Type: LON-WA1/FT2

LON-WA1/PL2

LON[®] module for operating up to four motorised 230 V fire or smoke dampers.

Control of the drives and detection of the end positions “Open” and “Closed”.

Transmission of all signals to higher-order systems and operation of the motorised dampers via “Standard Network Variable Types” using Powerline technology via the 230 V AC supply line; transmission of the system status; integrated watchdog and heartbeat circuit.

Compliance with LONMARK[®] specification 110.01 “Fire and Smoke Damper Actuator”. LONMARK[®] certificate.

The following parameters can be defined:

- max. time interval for sending data
- min. time interval for receiving data
- max. time interval for sending system status
- zone numbers
- damper name
- date and time of installation
- date and time of the last inspection, max. time to move the damper to the CLOSED position
- max. time to move the damper to the OPEN position
- max. time for test run

Connections:

- 8 digital inputs
- 5 digital outputs via relays, changeover contact 250 V / 5 A
- 230 V AC voltage supply
- Powerline transceiver, no separate bus line
- type of protection: IP54

Make: TROX

Type: LON-WA1/PL2

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