



TROXNETCOM

Functional module LON-WA1/B3

For the control of up to two fire damper actuators

For use with connection module WA1/B3-AD230 or WA1/B3-AD

For use in LON networks



TROX[®] TECHNIK

The art of handling air

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1 General

About this manual

This manual enables operating or service personnel to correctly install the product described below and to use it safely and efficiently.

Functional module LON-WA1/B3

This manual is intended for use by fitting and installation companies, in-house technicians, technical staff, instructed persons, and qualified electricians or air conditioning technicians.

It is essential that these individuals read and fully understand this manual before starting any work. The basic prerequisite for safe working is to comply with the safety notes and all instructions in this manual.

The local regulations for health and safety at work and general safety regulations also apply.

This manual must be given to the system owner when handing over the system. The system owner must include the manual with the system documentation. The manual must be kept in a place that is accessible at all times.

Illustrations in this manual are mainly for information and may differ from the actual design.

Symbols used in this manual

Safety notes

Symbols are used in this manual to alert readers to areas of potential hazard. Signal words express the degree of the hazard.

Comply with all safety instructions and proceed carefully to avoid accidents, injuries and damage to property.

DANGER!

Imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING!

Potentially hazardous situation which, if not avoided, may result in death or serious injury.

CAUTION!

Potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE!

Potentially hazardous situation which, if not avoided, may result in property damage.

ENVIRONMENT!

Environmental pollution hazard.



Tips and recommendations



Useful tips and recommendations as well as information for efficient and fault-free operation.





Specific safety notes

The following symbols are used in safety notes to alert you to specific hazards:

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

Additional markers

In order to highlight instructions, results, lists, references and other elements, the following markers are used in this manual:

Marker	Explanation
 1., 2., 3. ...	Step-by-step instructions
	Results of actions
	References to sections in this manual and to other applicable documents
	Lists without a defined sequence
[Switch]	Operating elements (e.g. push buttons, switches), display elements (e.g. LEDs)
'Display'	Screen elements (e.g. buttons or menus)

Limitation of liability

The information in this manual has been compiled with reference to the applicable standards and guidelines, the state of the art, and our expertise and experience of many years.

The manufacturer does not accept any liability for damages resulting from:

- Non-compliance with this manual
- Incorrect use
- Operation or handling by untrained individuals
- Unauthorised modifications

The actual scope of delivery may differ from the information in this manual for special constructions, additional order options or as a result of recent technical changes.


Copyright

This document, including all illustrations, photos, etc., is protected by copyright.

Any use of this document without the written consent of the manufacturer is an infringement of copyright; this applies in particular to disclosing this document to third parties, to publishing, copying, microcopying, or translating content, and to saving content on electronic systems or modifying it.

Violators will be held liable for any damage. We reserve the right to make further claims.

Replacement parts

 **WARNING!**

Safety risk due to incorrect replacement parts

Incorrect or faulty replacement parts may affect the safety of people and cause damage to property or even total failure of the system.

If you intend to use a replacement part that has not been approved by TROX, make sure beforehand that it is safe to use.

Buy replacement parts from TROX or from an authorised supplier. See the address on page 2.

Defects liability

For details regarding defects liability please refer to Section VI, Warranty Claims, of the Delivery and Payment Terms of TROX GmbH. The Delivery and Payment Terms of TROX GmbH are available at www.troxtechnik.com.

Customer service

TROX Technical Service

To ensure that your request is processed as quickly as possible, please keep the following information ready:

- Product name
- TROX order number
- Delivery date
- Brief description of the fault

Online	www.troxtechnik.com
Phone	+49 2845 202-400

2 Safety

Dangers and risks

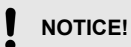


NOTICE!

Risk of damage to property due to large temperature differences

If any electronic components have been kept in an unheated area, condensation may form and damage the electronic components beyond repair.

- Before you start commissioning, make sure that all devices have warmed up to ambient temperature. Only after about 2 hours will the system have reached room temperature.

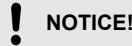


NOTICE!

Risk of damage to property due to electrostatic charge

Electrostatic charge can damage the electronics.

- Avoid skin contact with any components or printed circuits.
- Touch an equipotentially bonded metal surface before you touch any printed circuit boards.
- Wear conductive footwear and antistatic clothing.

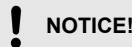


NOTICE!

Risk of damage to property due to foreign matter and liquids!

Foreign matter and liquids that get into the unit may damage the electronic parts.

- Do not use any liquids for cleaning.
- Remove foreign matter, if any.
- If the device emits a smell or smoke, have it checked by the manufacturer.
- If liquid gets into the module, let the module completely dry before commissioning.



NOTICE!

Risk of damage to property!

Over tightening the fixing screws may damage the casing.

- Tighten the screws only hand-tight.

Correct use

Functional module LON-WA1/B3 is used to monitor and control motorised fire dampers in a LON network. LON-WA1/B3 can be used for one or two fire dampers. Connecting a second fire damper requires connection module WA1/B3-AD or WA1/B3-AD230. The dampers then have to be fitted with a suitable 24 V AC/DC actuator (TROX or Belimo).

Incorrect use

Do not use the functional module for areas of application that are not described in this manual.

Do not use the functional module:

- outdoors
- in wet areas
- in areas with potentially explosive atmospheres

Qualified staff**WARNING!****Danger of injury due to insufficiently qualified individuals!**

Incorrect use may cause considerable injury or damage to property.

- Only skilled qualified personnel must carry out work.

The following degrees of qualification are required for the work described in the operating manual:

Skilled qualified electrician

Skilled qualified electricians are individuals who have sufficient professional or technical training, knowledge and actual experience to enable them to work on electrical systems, understand any potential hazards related to the work under consideration, and recognise and avoid any risks involved.

3 Transport and installation**Supply package**

Check delivered items immediately after arrival for transport damage and completeness.

Properly dispose of packaging material.

Supply package

LON-WA1/B3

Installation and commissioning manual

Transport

- If possible, take the functional module in its transport packaging up to the installation location.
- Do not remove the protective wrapping until just before installation.

Storage

For temporary storage please note:

- Leave the product in its packaging and do not expose it to the effects of weather.
- Store the product in a dry place and away from direct sunlight.
- Temperature -10 °C to $+70\text{ °C}$, humidity 90% max. (no condensation)

4 Structure and functional description

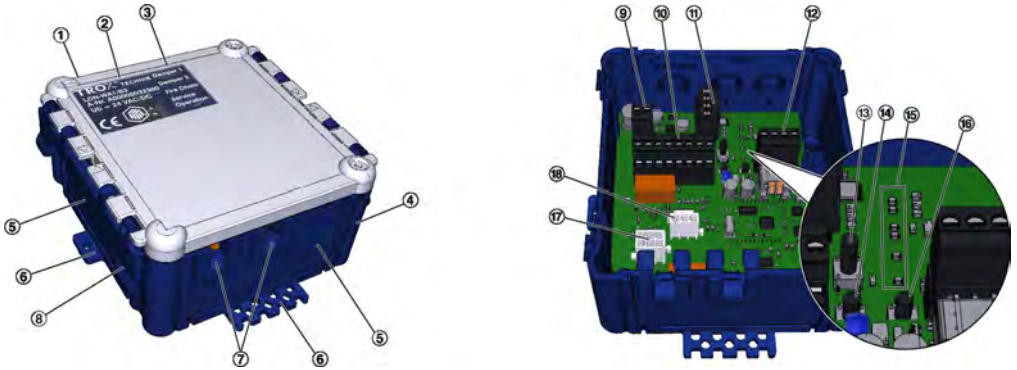


Fig. 1: Functional module LON-WA1/B3

- ① Cover
- ② Rating plate
- ③ LED description (LEDs ⑮)
- ④ Casing
- ⑤ Removable side parts
- ⑥ Fixing lugs
- ⑦ Cable entry points (actuator)
- ⑧ Cover fixing
- ⑨ Terminal block for the FireChain relay

- ⑩ Terminal block for wiring a second fire damper using connection module WA1/B3-AD or WA1/B3-AD230
- ⑪ Terminal block for supply voltage, input/output
- ⑫ Terminal block for connection to the LON network
- ⑬ 'Test' push button
- ⑭ 'Service' push button
- ⑮ LEDs
- ⑯ 'Reset' push button
- ⑰ Plug base for the limit switches on the fire damper actuator
- ⑱ Plug base for the supply voltage to the fire damper actuator

Push buttons on the main PCB

Push button	Function
Test	Starts a functional test for the damper: The damper is moved from the 'Normal' position to the 'Fire' position and back to the 'Normal' position.
Service	Sends the neuron ID for system integration
Reset	Reboot

LEDs on the main PCB

Display	Description	LED	State
Damper 1	Relay with change-over contact for fire damper 1	Green	Relay open
		Red	Relay closed
Damper 2	Relay with NO contact for fire damper 2 (with connection module WA1/B3-AD or WA1/B3-AD230)	Green	Relay open
		Red	Relay closed
FireChain	FireChain relay (NO contact)	Yellow	Relay closed

Display	Description	LED	State
Service	Operating status	Yellow	Status
Operation	LEDs	Green	Ready

Functional description

Functional module LON-WA1/B3 is used to monitor and control motorised fire dampers in a LON network. LON-WA1/B3 can be used for one or two fire dampers. A second fire damper has to be connected with connection module WA1/B3-AD or WA1/B3-AD230. The suitability for use with smoke control dampers has not been demonstrated.

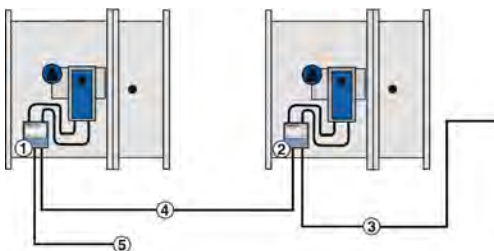


Fig. 2: Supply voltage 230 V AC

- ① WA1/B3-AD230, ready for connection to 24 V AC actuators
- ② LON-WA1/B3, ready for connection to 24 V AC actuators
- ③ LON FTT twisted pair
- ④ 8-wire cable
- ⑤ Supply voltage 230 V AC

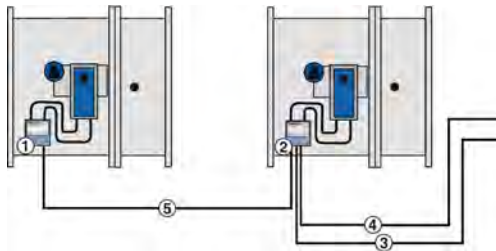


Fig. 3: Supply voltage 24 V AC

- ① WA1/B3-AD
- ② LON-WA1/B3
- ③ 24 V AC supply voltage connection
- ④ LON FTT twisted pair
- ⑤ 6-wire cable

Safe positions

In case of an error, the following safe positions apply, based on VDMA sheet 24200-1 (Automated fire protection and smoke extract systems):

- Fire damper - Closed
- Smoke control damper - Last position is maintained

Control input signal

Input variable *ActuDrive* is used to control the fire damper or smoke control damper.

Output variable *ActuPosn* is used to signal the current damper blade position.

- Normal - Fire damper in OPEN position
- Fire - Fire damper in CLOSED position
- Normal - Smoke control damper in CLOSED position
- Fire - Smoke control damper in OPEN position

When LON-WA1/B3 is supplied with voltage, the connected dampers move to their respective normal position.

Monitoring function

If LON-WA1/B3 is used as part of an overall fire protection system, the heartbeat function should be activated for safety reasons. Setting parameter `MaxRcvTime` for variable `ActuDrive`, and parameter `MaxSendTime` for variable `ActuPosn`, ensures that LON-WA1/B3 regularly sends and receives information. This ensures that the transmission path is being monitored. In case of an error, the damper moves to a safe position, and an alarm is output.

Pulse

The `Pulse` variable is used to check a LON network. If the input variable is set, LON-WA1/B3 will change the output variable after 1 second. If there is a chain of modules, a trigger pulse is generated which can be read out at the end of the chain after $N \times 1 \text{ s}$ (N = number of LON-WA1/B3 modules).

Damper blade functional test

Input variable `FT_Test` or the `Test` push button on the module can be used to initiate a functional test of the damper. This moves the dampers to the Fire position (fire damper = CLOSED / smoke control damper = OPEN) and back to the Normal position (fire damper = OPEN / smoke control damper = CLOSED). The output variable `FT_Test` indicates whether a test is being carried out. A test run that has been initiated remains active for the time defined with `TestHold-Time`. If `ActuDrive` switches to 'Fire' during a test, the test is automatically aborted.

FireChain

If there is a chain of modules (and hence fire dampers), the `FireChain` variables can transmit a signal from the first to the last but will not release a damper. The `FireChain` relay in the LON-WA1/B3 module receives a signal that can be used for consolidated alarms or to switch off systems. This function is only available for fire dampers.

5 Technical data

Supply voltage	20 – 28 V AC/DC, 50/60 Hz
Power consumption without actuators	3.12 VA or 1.32 W
Max. switch rating for Damper 1 relay (24 V AC)	120 VA (5 A resistive load)
Max. switch rating for Damper 2 relay (24 V AC)	144 VA (6 A resistive load)
Max. switch rating for Fire-Chain relay	AC: 1500 VA (250 V AC; 6 A resistive load)
LON interface	4 terminals, LON; FTT free topology
Operating temperature	+10 to +60 °C
Relative humidity (no condensation)	< 95%
IEC protection class (safety-low voltage)	III
Protection level	IP 54
Dimensions (B × L × H)	135 × 135 × 65 mm
Weight	0.130 kg
Software application	xif/apb-files under www.trox.de

Terminals

Supply voltage	Rising clamp terminals, for 0.08 – 2.5 mm ²
Connection module WA1/B3-AD or WA1/B3-AD230	Max. switch rating 5 A with 24 V AC/DC
LON network	Rising clamp terminals, for 0.08 – 2.5 mm ²
FireChain signal	Rising clamp terminals, for 0.08 – 1.5 mm ²
Actuator end positions	AMP-Mate-N-Lok socket, 6-pole
Supply voltage for actuator	AMP-Mate-N-Lok socket, 3-pole

6 Installing the functional module

Depending on the order, the functional module is shipped as follows:

- Mounted onto the fire damper (mounting bracket)
- As a separate device for retrofitting

Retrofitting

If you retrofit a functional module for a fire damper, you can choose any installation location; in the event of a fire, the damper blade will be moved to its safe position (closed) even if the module fails. We recommend you to use the TROX universal mounting bracket for fixing the module to a wall, for example.

Installation

Fix the functional module on at least two fixing lugs, e.g. with screws.

7 Wiring

Safety notes

Personnel:

- Skilled qualified electrician

DANGER!

Danger of death due to electric current!

Danger of electric shock! Do not touch any live components!

- Switch off the supply voltage and secure it against being switched on accidentally before working on the unit.
- Ensure that no voltage is present.
- Work on the electrical system must only be carried out by skilled qualified electricians.

CAUTION!

Malfunction due to incorrect wiring

For wiring please note:

- Do not connect the 24 V supply voltage if the WA1/B3-AD230 supply voltage has already been connected.
- Do not connect 24 V AC and 24 V DC supply voltage at the same time.

Notes on wiring

Use only cables that are designed for the supply voltage for which they will be used. The length and cross section as well as any contact resistance may increase voltage losses. The power rating of each unit must also be considered. A skilled qualified electrician has to select the correct cable types and sizes. This job must only be carried out by specialist electrical companies.

- For the electrical connection comply with any applicable regulations and follow the code of good practice. Be sure to comply with the applicable guidelines for working on electrical and electronic equipment as well as with any applicable local regulations.
- For electrical connection data refer to the 'Technical data' chapter.
- Protect any connections from physical damage.
- Feed cables through the cable entry points into the casing. Feeding the cable may be easier if you pull out the side parts of the casing.

Voltage supply for a limited number of modules

If the supply voltage is 24 V AC/DC, you must not connect more than two LON-WA1/B3 modules with the double stack terminals as otherwise the load current on the PCB and the terminals will become too high.

Polarity of the power supply

Be sure to maintain the correct polarity when you wire up modules to a 24 V DC supply.

Strain relief

Use a wire clamping bracket or other type of strain relief (by others) for all cables.

Terminal connections

LON-WA1/B3

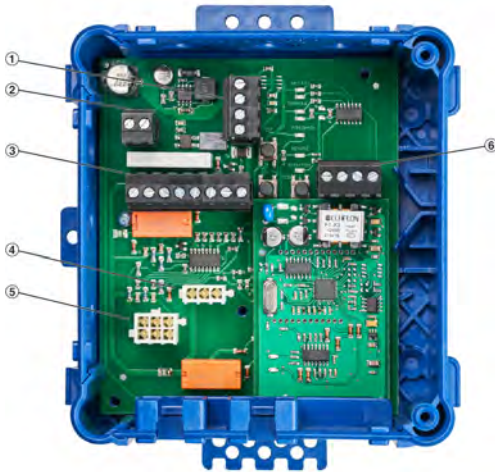


Fig. 4: LON-WA1/B3

- 1 Connection for the supply voltage
- 2 Connection for the FireChain relay
- 3 Actuator for 2nd fire damper
- 4 Plug base for the supply voltage to the fire damper actuator
- 5 Plug base for the limit switches on the fire damper actuator
- 6 LON network

Connection of the supply voltage (Fig. 4/1)

Terminal	Used for	Description
+	+ 24 V AC	Do not connect the supply voltage for LON-WA1/B3 if the supply voltage is provided by connection module WA1/B3-AD230.
-	- 24 V AC	
+	+ 24 V AC	
-	- 24 V AC	

Connection of the FireChain relay (Fig. 4/2)

Terminal	Description
13	The relay can be used to switch off a ventilation system, for example.
14	

Connection of the actuator for the 2nd fire damper (Fig. 4/3)

Terminal	Used for	Description
1	24 V	Control input signal for fire damper 2
2	0 V	Output, control signal for fire damper 2
3	24 V	Input, limit switch for fire damper 2
4	0 V	CLOSED position of fire damper 2
5	24 V	Input, limit switch for fire damper 2
6	0 V	OPEN position of fire damper 2
7	+ 24 V AC	Supply voltage for LON-WA1/B3 when connection module WA1/B3-AD230 is being used
8	- 24 V AC	

Connection of the LON network (Fig. 4/6)

Terminal	Connection
NA	LON-A
NB	LON-B
NA	LON-A
NB	LON-B

Connection of data cables

LON-WA1/B3 has terminals for two LON data bus cables.

- Strip the insulation from the bus cable (at least two wires), insert the bare wires into the terminals and tighten the screws by hand.
- Make sure that the polarity of the conductor pairs is correct. Incorrect polarity will result in inverted data signals and hence communication errors.
- Support the bus cables with a wire clamping bracket or other strain relief (by others).
- A maximum of 32 units can be operated on one network segment.
- To avoid cable reflections, network segments must be terminated at both ends with 120 Ω bus terminal resistors.

WA1/B3-AD230



Fig. 5: WA1/B3-AD230

- ① Plug base for limit switches on the actuator for fire damper 2
- ② Plug base for the supply voltage to the actuator of fire damper 2
- ③ Connection of LON-WA1/B3
- ④ Connection of 230 V AC supply voltage; double terminals for looping through

Connection of LON-WA1/B3 (Fig. 5/③)

Terminal WA1/B3-AD230	Terminal LON-WA1/B3	Used for
1	1	Input, control input
2	2	signal for fire damper 2
3	3	Signal output for damper blade position CLOSED
4	4	
5	5	Signal output for damper blade position OPEN
6	6	

Terminal WA1/B3-AD230	Terminal LON-WA1/B3	Used for
7	7	24 V AC supply voltage for LON-WA1/B3
8	8	

Connection of LON-WA1/B3 with 8-wire cable.

Connection of supply voltage (Fig. 5/④)

Terminal	Used for	Description
1	L	Supply voltage 230 V AC
2	N	
3	PE	

WA1/B3-AD

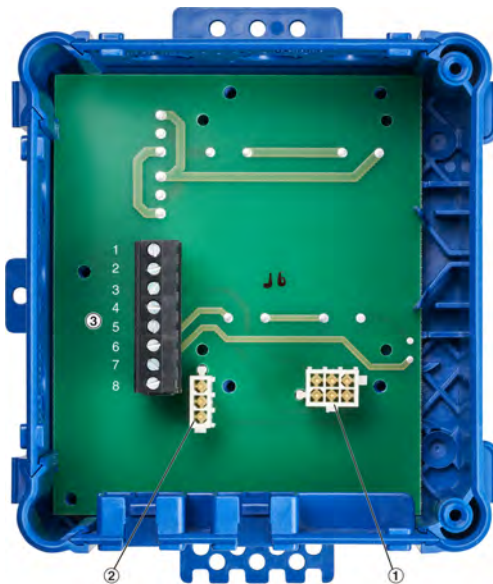


Fig. 6: WA1/B3-AD

- ① Plug base for limit switches on the actuator for fire damper 2
- ② Plug base for the supply voltage to the actuator of fire damper 2
- ③ Connection of LON-WA1/B3

Connection of LON-WA1/B3 (Fig. 5/③)

Terminal WA1/B3-AD230	Terminal LON-WA1/B3	Used for
1	1	Input, control input signal for fire damper 2
2	2	
3	3	Signal output for damper blade position CLOSED
4	4	
5	5	Signal output for damper blade position OPEN
6	6	
7	–	Not used
8	–	

Connection to LON-WA1/B3 with 6-wire cable.

8 Commissioning the functional module

Before commissioning, the functional module has to be configured with the LonMaker® plug-in and according to the following specifications

↳ 8.2 'Configuration with the LonMaker® plug-in' on page 22.

Commissioning of the functional module in conjunction with a fire damper is to be performed by the system installer as part of commissioning of the overall fire protection system.

Description of functional objects

The specification of the node is based on LonMark profile 11001, Fire Smoke Damper Actuator (FSDA), and has been extended to cover the special functions of the functional module.

The LON node consists of the node object and four FSDA objects. The FSDA objects consist of network variables and configuration parameters. All variables and parameters are based on standard network variables (SNVT) to facilitate the integration of LON-WA1/B3 with a LonWorks network.

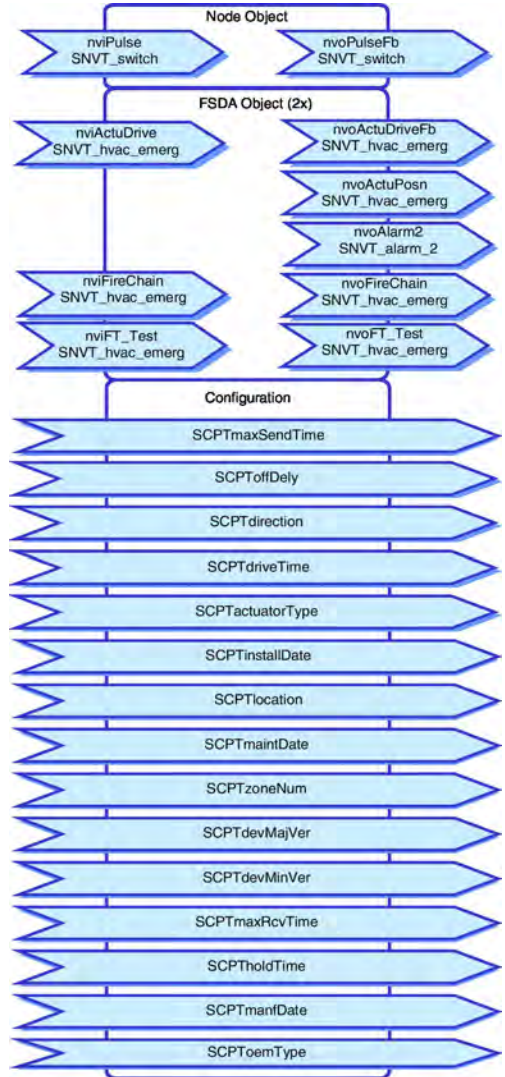


Fig. 7: LON functional objects

Network variables

Node object

nviPulse

SNVT type: SNVT_switch

Function: *nviPulse* is used to check a LON network. If input variable *nviPulse* = 1, LON-WA1/B3 will after 1 second change output variable *nvoPulse* from 0 to 1. If output variable *nvoPulse* and input variable *nviPulse* of the next module form a chain, a trigger pulse is generated which can be read out at the end of the chain after N x 1 second. (N = number of LON-WA1/B3 modules).

Valid values:

Value	Function
1	Pulse signal
0	No pulse signal

nvoPulseFB

SNVT type: SNVT_switch

Function: See *nviPulse*.

FSDA object

nviActuDrive

SNVT type: SNVT_hvac_emerg

Function: Input variable used to control the damper blade position. The input variable can be addressed in intervals; the number of repeats must be defined with *SCPTmaxRcvTime*.

Valid values:

Value	Function
EMERG_NORMAL	Normal position
EMERG_FIRE	Fire position
EMERG_NUL	Normal position

nviFireChain

SNVT type: SNVT_hvac_emerg

Function: If there is a chain of modules (and hence fire dampers), the *nviFireChain* and *nvoFireChain* variables can transmit a signal from the first to the last, but will not release a damper. In the event of a fire, i.e. when *nviFireChain* or *nviActuPosn* changes to FIRE, the chain relay contact opens. This effect can be used, for example, to switch off a ventilation system.

Valid values:

Value	Function
EMERG_NORMAL	Normal position
EMERG_FIRE	Fire position

nviFT_Test

SNVT type: SNVT_hvac_emerg

Function: Input variable used to initiate a functional test of the damper. The damper is then moved to the Fire position. The damper remains in the 'Fire' position for the time set with configuration parameter *SCPTholdTime*. The damper can then be moved back to its Normal position using variable *nviActuDrive*.

Valid values:

Value	Function
EMERG_NORMAL	No test
EMERG_FIRE	Test

nvoActuDriveFb

SNVT type: SNVT_hvac_emerg

Function: Output variable that shows the status of *nviActuDrive*.

Valid values:

Value	Function
EMERG_NORMAL	Normal position
EMERG_FIRE	Fire position
EMERG_NUL	Normal position

nvoActuPosn

SNVT type: SNVT_hvac_emerg

Function: Output variable that reflects the current damper blade position. If the position changes, the values are immediately reflected. Changes can also be transmitted in intervals; in this case the repeat intervals must be set using *SCPTmaxSendTime*.

Valid values:

Value	Function
EMERG_NORMAL	Normal position
EMERG_FIRE	Fire position
EMERG_NUL	Zero position (between Normal and Fire)

nvoFireChain

SNVT type: SNVT_hvac_emerg

Function: See *nviFireChain*.

nvoFT_Test

SNVT type: SNVT_hvac_emerg

Function: Output variable used to check whether a damper test is required. Valid values are the same as for *nviFT_Test*.

nvoAlarm2

SNVT type: SNVT_alarm2

Function: Alarm output used to signal an incorrect function of the LON node to a monitoring system. The message includes detailed information on the incorrect function. A message is issued as soon as an error occurs.

Alarm type	Description	Priority level	Explanation
AL_NO_COND	Normal	16	Damper blade is in Normal position.
AL_FIR_TRBL	Fire	4	Damper blade is in Fire position; this alarm type is also output during a test run.
AL_FIR_MONITOR_COND	TimeToNormal Position	6	The damper blade has required more time than the 'DriveTime' set in the 'Config' window in order to move from the Fire position to the Normal position.
	TimeToFire Position	6	The damper blade has required more time than the 'OffTime' set in the 'Config' window in order to move from the Normal position back to the Fire position.
AL_ERROR	ReceiveUpdate Error	6	The input variable nviActuDrive has not been updated within the 'MaxRcvTime' set in the 'Config' window.
	LimitSwitchFault	6	The damper has signalled that it is in Normal position and in Fire position at the same time.

Configuration parameters

SCPToffDely

SCPT type: SCPToffDely

Function: Used to define the maximum time for a damper blade to move to the Fire position. If this time is exceeded, alarm type

AL_FIR_MONITOR_COND will be output. If you enter 0 seconds, the running time will not be checked. (Note this when you use the module for non-motorised dampers.)

SCPTmaxSendTime

SCPT type: SCPTmaxSendTime

Function: Used to define the interval [seconds] for forwarding output variable *nvoActuPosn*. If you enter 0 seconds, the function will be switched off.

SCPTmaxRcvTime

SCPT type: SCPTmaxRcvTime

Function: Used to define the period of time [seconds] within which a signal must be forwarded to the *nviActuDrive* input. If the input is not updated accordingly, the damper blade moves to the Fire position and alarm type AL_ERROR will be output. If you enter 0 seconds, no check will be carried out.

SCPTdirection

SCPT type: SCPTdirection

Function: Used to define the direction of movement of the damper blade (which depends on the type of damper).

Valid values:

Value	Function
0	Fire damper
1	Smoke control damper

Standard value: 0

SCPTdriveTime

SCPT type: SCPTdriveTime

Function: Used to define the maximum time for a damper blade to move to the Normal position. If this time is exceeded, the alarm type

AL_FIR_MONITOR_COND will be output, and the damper blade moves back to the Fire position. If you enter 0 seconds, the running time will not be checked. (Note this when you use the module for non-motorised dampers.)

SCPTholdTime

SCPT type: SCPTholdTime

Function: Used to define for how long [seconds] a test run that has been initiated using variable *nviFT_Test* shall remain active before the damper blade is moved back to the Normal position by variable *nviActuDrive*.

SCPTactuatorType

SCPT type: SCPTactuatorType

Function: Used to describe the connected damper with up to 30 ASCII characters.

SCPTinstallDate

SCPT type: SCPTinstallDate

Function: Used to define the date and time when the node was installed in the LON network.

SCPTlocation

SCPT type: SCPTlocation

Function: Used to describe the physical location of the LON module with up to 30 ASCII characters.

SCPTmaintDate

SCPT type: SCPTmaintDate

Function: Used to define date and time when the damper and actuator were last maintained or inspected.

SCPTzoneNum

SCPT type: SCPTzoneNum

Function: Used to define a zone number that may help to indicate the location of the LON module.

SCPTmanfDate

SCPT type: SCPTmanfDate

Function: Displays the creation date ('manufacturing date') of the LON-WA1/B3 software (cannot be changed).

SCPToemType

SCPT type: SCPToemType

Function: Displays the OEM type (cannot be changed).

SCPTdevMajVer

SCPT type: SCPTdevMajVer

Function: Displays the version of the LON-WA1/B3 software (x,...).

SCPTdevMinVer

SCPT type: SCPTdevMinVer

Function: Displays the subversion (minor version) of the LON-WA1/B3 software (...x).

Configuration with the LonMaker® plug-in

The TROX LON-WA1B3_01 plug-in is an LNS-enabled plug-in; it is based on the standard of network management tool LonMaker® 3 for Windows.

Installing the plug-in

Before you install the plug-in on your PC:

- Check the system requirements
- Install LonMaker® 3 on your PC
- Install the Device Resource Files (DRF)

Device Resource Files (DRF)

The Device Resource Files contain the definitions of the SNVTs. The application for LON-WA1/B3 uses only standard network variables (SNVTs); this means that no manufacturer-specific definitions are required.

However, the latest version of the Device Resource Files (version 13.0 or higher) from LONMARK® should be installed on your computer, see <http://www.lonmark.org>

Installation

Start 'Setup.exe'.

Follow the prompts to install the software; you should not change the default path and directory.

A new TROX LNS PlugIn group of applications will be installed under Start/Programs (Windows).

Starting the plug-in

LON-WA1/B3 configuration requirements:

- The functional module has been correctly installed, integrated with the LON network, and is working.
- The LonMaker software, the Device Resource Files and the plug-in have been correctly installed on your PC.

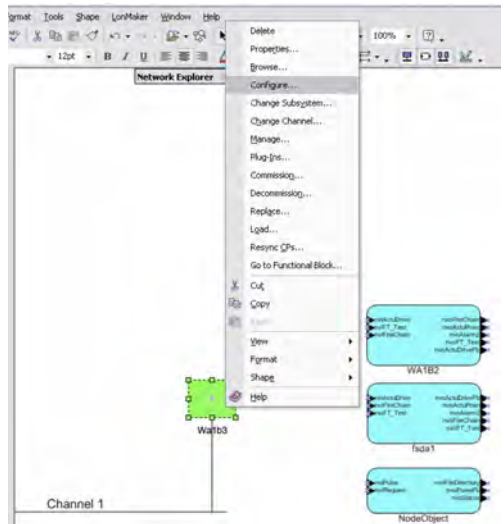


Fig. 8: Configuration

- ▶ Use the LonMaker® network management tool to start the plug-in for a module. To do so, select the 'node', then click right and select 'Configure'.

The plug-in is started for each new LON node, i.e. the plug-in is used to access each node. Do not open more than one plug-in at a time.

Configuring the module

'Main' window

The TROX LON-WA1B3_01 plug-in includes four windows that can be selected using tabs. Use each window to enter data for a functional module or to see current values.



Fig. 9: 'Main' window

Use the 'Main' window to see general information and to make basic settings:

- OEM type - Displays the OEM type.
- Manuf Date - Displays the software creation date ('manufacturing date'): YYYY, MM, DD, HH, MM, SS.
- Pulse In/Out - Used to check the LON network: 'Low' = 0, 'High' = 1
- Damper Type - Used to select the type of damper
 - 'BSK' = fire damper
 - 'EK' = smoke control damper

'Damper1' and 'Damper2' windows



Fig. 10: 'Damper1' window

The 'Damper1' window shows the input and output variables as well as the alarm status for the first fire damper or smoke control damper.

The 'Damper2' window shows that information for a second fire damper, if any.

Inputs

ActuDrive: LED that shows the status of input variable *nviActuDrive* ↪ 'nviActuDrive' on page 17

Colour	Meaning
Red	'Move damper blade to the Fire position' command
Green	'Move damper blade to the Normal position' command
Yellow	'Move damper blade to the Normal position' command
Grey	LON-WA1/B3 is offline

FireChain: Shows the status of input variable *nviFireChain*, ↪ 'nviFireChain' on page 17.

Value	Meaning
active	FireChain relay is open
inactive	FireChain relay is closed

FT_Test: Shows the status of input variable *nviFT_Test* ↪ 'nviFT_Test' on page 17

Value	Meaning
active	Damper functional test is running
inactive	No test

Actuating the 'Test' push button on LON-WA1/B3 does not affect this input ('inactive' will be displayed).

Outputs

ActuDriveFb: Status of output variable *nvoActuDriveFb* ↪ '*nvoActuDriveFb*' on page 18; *ActuDriveFb* outputs the status of input variable *ActuDrive*.

Colour	Meaning
Red	Damper blade in Fire position
Green	Damper blade in Normal position
Yellow	Damper blade in Zero position (between Normal and Fire)
Grey	LON-WA1/B3 is offline

ActuPosn: Status of output variable *nvoActuPosn* ↪ '*nvoActuPosn*' on page 18; *ActuPosn* outputs the status of the limit switches on the damper.

Colour	Meaning
Red	Fire position
Green	Normal position
Yellow	Zero position (between Normal and Fire)
Grey	LON-WA1/B3 is offline

FireChain: Shows the status of output variable *nvoFireChain*, ↪ '*nviFireChain*' on page 17.

Value	Meaning
active	FireChain relay is open
inactive	FireChain relay is closed

FT_Test: Status of output variable *nvoFT_Test* ↪ '*nviFT_Test*' on page 17.

nvoFT_Test indicates that a test has been initiated, either using input *FT_Test* or using the test push button on LON-WA1/B3.

Value	Meaning
active	Damper functional test is running
inactive	No test

Alarm

Shows the status of output variable *nvoAlarm2* ↗ '*nvoAlarm2*' on page 19.

Alarm type	Description	Priority level	Explanation
AL_NO_COND	Normal	16	Damper blade is in Normal position.
AL_FIR_TRBL	Fire	4	Damper blade is in Fire position; this alarm type is also output during a test run.
AL_FIR_MONITOR_COND	TimeToNormal Position	6	The damper blade has required more time than the ' <i>DriveTime</i> ' set in the ' <i>Config</i> ' window in order to move from the Fire position to the Normal position.
	TimeToFire Position	6	The damper blade has required more time than the ' <i>OffTime</i> ' set in the ' <i>Config</i> ' window in order to move from the Normal position back to the Fire position.
AL_ERROR	ReceiveUpdate Error	6	Input variable <i>nviActuDrive</i> has not been updated within the ' <i>MaxRcvTime</i> ' set in the ' <i>Config</i> ' window.
	LimitSwitchFault	6	The damper has signalled that it is in Normal position and in Fire position at the same time.

'Config' window



Fig. 11: 'Config' window

Use the 'Config' window to set configuration parameters for Damper1 and Damper2:

MaxRcvTime [seconds]: ↪ 'SCPTmaxRcvTime' on page 19

MaxSendTime [seconds]: ↪ 'SCPTmaxSendTime' on page 19

TestHoldTime [seconds]: ↪ 'SCPTholdTime' on page 20

DriveTime [seconds]: ↪ 'SCPTdriveTime' on page 20

OffTime [seconds]: ↪ 'SCPToffDely' on page 19

ActuatorType: ↪ 'SCPTactuatorType' on page 20

ZoneNr: ↪ 'SCPTzoneNum' on page 20

Location: ↪ 'SCPTlocation' on page 20

InstallDate: ↪ 'SCPTinstallDate' on page 20

MaintDate: ↪ 'SCPTmaintDate' on page 20

9 Removal and disposal

Removal

If the device is no longer used, it has to be removed and disposed of in an environmentally friendly manner.

1. ▶ Remove the mains cable.
2. ▶ Remove any other cables.

Disposal

If no return or disposal agreement is in place, any disassembled components should be recycled:

- ▶ Have electronic waste and electronic components disposed of by an approved specialist disposal company.

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