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TROXNETCOM – LON-WA1 / B2
User Handbook - Plug-In

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1. Introduction

In this handbook the LNS-based TROX LON-WA1B2_01 plug-in for the LON-WA1 / B2 LON[®] module will be described.

The installation and operation of the plug-in will be documented in detail.

Moreover, the network variables and configuration parameters of the LON[®] objects will be explained.

The LON-WA1 / B2 module serves for the monitoring and controlling of automated fire and smoke extraction dampers that are equipped with 24V plug-in actuators (i.e. make: Belimo).

It is possible to control two automated fire dampers or one smoke extraction dampers with one LON-WA1 / B2 with the help of the additional components LON-WA1/B2-AD or LON-WA1/B2-AD230 (for more information see product info)

With the help of the plug-in, the necessary configurations for the LON[®] module can be executed in a simple and user-friendly manner.

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2. Installation: Plug-In

The requirements and the steps for installation are explained in the following.

2.1 System Requirements

The TROX LON-WA1B2_01 plug-in is a LNS-compliant plug-in based on the standard of the LonMaker[®]3 network management tool.

Before you install the plug-in on your PC, please review the following system requirements:

- PC recommended: Pentium III
1GHz or faster
- Operating System Microsoft[®] Windows[®] 2000[®];
Microsoft Windows XP[®];
- RAM storage min. 256 MB
- Hard Disc Storage min. 30 MB
- Screen Super VGA (1024x768)
- LNS Version 3 with Service Pack 8
or higher

Before the plug-in can be installed, the Device Resource Files should be checked.

2.2 Device Resource Files (DRF)

The definitions of the various network variable types are stored in the Device Resource Files.

Standard network variables are exclusively used with the application for the LON-WA1 / B2 so that no manufacturer-specific definitions are required.

Current LONMARK[®] Device Resource Files (data version 13.0 or higher) must, however, be installed on the PC.

2.3 Installation

In order to install the plug-in, start the set-up program (Setup.exe). Follow the instructions given there and the set-up program will install the required data automatically on your PC and will place the "TROX LNS PlugIn's" program group under *Windows/Start upMenu/Programs*. The installation path given should be followed.

2.4 Registration

The one-time registration of the plug-in must be conducted on the PC.

If the plug-in is not registered during the installation, it is possible to register it later.

In order to do so, select the LON WA1B201.exe program under *Windows/Start upMenu/Programs/TROX LNS PlugIn's* and complete the registration according to the program instructions.

The plug-in will be made available in the Windows system after registration.

The plug-in must be additionally registered for each project.

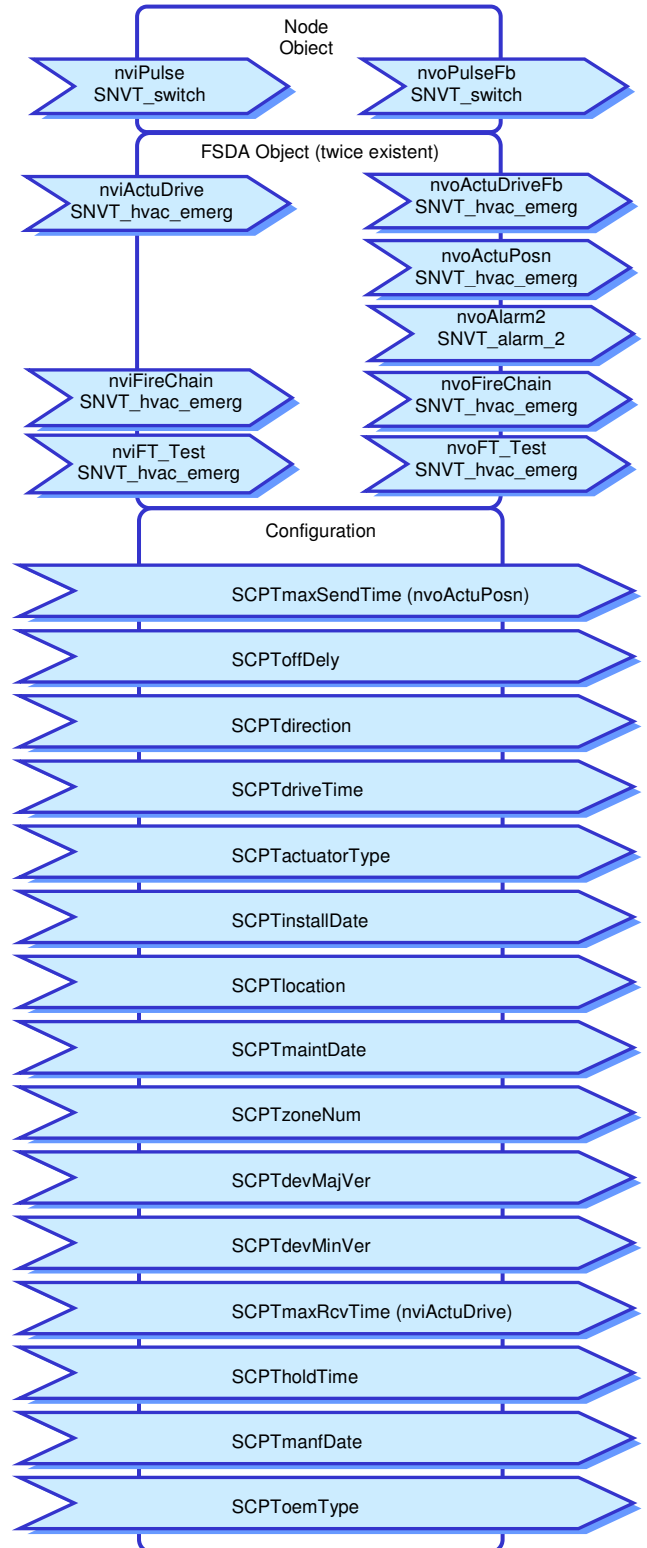
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3. Description: Function Object

The LON[®] node consists of a node object and two FSDA objects. The FSDA objects consist of network variables and configuration parameters. All variables and parameters are based on standard network variables (SNVT), which guarantees the easy integration of the LON-WA1 / B2 in a LONWORKS[®] network.



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3.1 Network Variables

➤ Node Object

nviPulse

SNVT Type: SNVT_switch

Function:

The *nviPulse* variable serves for the review of the LON[®] network. If the input variable is set to *nviPulse* = 1, the LON-WA1 / B2 module will change the output variable *nvoPulse* from 0 to 1 after one second has elapsed. By forming a chain of *nvoPulse* output variables with the *nviPulse* input variables of the follow-up module, a trigger impulse is created, which, after N x 1 second(s) have elapsed (N=number of LON-WA1 / B2 modules), can be read again at the end of the chain.

Valid values:

Switch.state	Function
1	Pulse Signal "High"
0	Pulse Signal "Low"

nvoPulseFB

SNVT Type: SNVT_switch

Function:

See: *nviPulse*

➤ FSDA Object

nviActuDrive

SNVT Type: SNVT_hvac_emerg

Function:

This entry controls the position of the damper. The input variables can be polled, whereby the refresh rate is to be defined with the *SCPTmaxRcvTime* parameter.

Valid values:

Value	Function
EMERG_NORMAL	Normal Position
EMERG_FIRE	Fire Position
EMERG_NUL	Normal Position

nviFireChain

SNVT Type: SNVT_hvac_emerg

Function:

The variables *nviFireChain* and *nvoFireChain* can pass a signal along the chain from the first to the last damper while not triggering them. In the event of fire, or when *nviFireChain* or *nviActuPosn* go to FIRE, the FC relay is de-energized. In this manner, for example, the ventilation system can be switched off.

Value	Function
EMERG_NORMAL	Normal
EMERG_FIRE	Fire

nviFT_Test

SNVT Type: SNVT_hvac_emerg

Function:

With the help of these input variables a damper functionality test can be activated at the operator level. The damper is thereby moved into the fire position.

The test remains active until the lapse of time allotted by the *SCPTHoldTime* configuration parameters. Afterwards, with the *nviActuDrive* variable the damper can be moved back into the normal position.

Valid values:

Value	Function
EMERG_NORMAL	no test
EMERG_FIRE	Test

nvoActuDriveFb

SNVT Type: SNVT_hvac_emerg

Function:

This output variable reflects the status of the *nviActuDrive*.

Valid values: Identical with the *nviActuDrive*.

nvoActuPosn

SNVT Type: SNVT_hvac_emerg

Function:

This output variable mirrors the current status of the damper. In the event of a change of this condition, the values will be spontaneously sent. This output variable can also be transmitted cyclically, whereby the refresh rate is to be defined with the *SCPTmaxSendTime* parameter.

Valid values:

Value	Function
EMERG_NORMAL	Normal Position
EMERG_FIRE	Fire Position
EMERGE_NUL	Zero position (between the normal and fire positions)

nvoFireChain

SNVT Type: SNVT_hvac_emerg

Function:

See: *nviFireChain*

nvoFT_Test

SNVT Type: SNVT_hvac_emerg

Function:

With the help of these output variables, it can be read at the operator level whether a damper functionality test is queued.

Valid values are identical with those of *nviFT_Test*.

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nvoAlarm2

SNVT Type: SNVT_alarm2

Function:

This alarm output sends a signal to the monitor system indicating a possible error on the LON[®] node. The message contains all information necessary for conclusions to be drawn concerning the type of error. They are spontaneously sent when the error occurs.

Possible messages:

AlarmType	Description	PriorityLevel	Comment
AL_NO_COND	Normal	16	The damper is in the normal position
AL_FIR_TRBL	Fire	4	The damper is in fire position; also shown during test run
AL_FIR_MONITOR_COND	TimeToNormal Position	6	The damper requires more time to come from the fire to the normal position than is indicated under the "config" tab for "DriveTime".
	TimeToFire Position	6	The damper requires more time to come from the normal to the fire position than is indicated under the "config" tab for "OffTime".
AL_ERROR	ReceiveUpdate Error	6	The <i>nviActuDrive</i> input variable was not updated within the time period indicated in the "config" tab under "MaxRcvTime".
	LimitSwitchFault	6	The damper signals that it is simultaneously in the normal and fire positions.

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3.2 Configuration Parameters**SCPToffDely**

Function:

This parameter defines the maximum time required by a damper to move into the *fire position*.

If this time is exceeded, the AL_FIR_MONITOR_COND *alarm type* will be issued.

If a value of 0 seconds is entered, no run time review will be conducted. This is to be kept in mind when installing dampers without actuator!

SCPTmaxSendTime

Function:

This parameter defines in which time interval the output variable *nvoActuPosn* will be cyclically sent.

A definition of 0 seconds switches this function off.

SCPTmaxRcvTime

Function:

This parameter defines within what amount of time the *nviActuDrive* input must be received. If the input is not updated, the damper will move into the fire position and the AL_ERROR alarm type will be issued. If a value of 0 seconds is entered, no review will be conducted.

SCPTdirection

Function:

This parameter describes the effective direction of the damper.

Valid values:

Value	Function
0	Fire / Smoke dampers
1	Smoke extraction damper

Standard value: 0

SCPTdriveTime

Function:

This parameter defines the maximum time required by a damper to move into the *normal position*.

If this time is exceeded, the AL_FIR_MONITOR_COND *alarm type* will be issued and the damper will move back into the *fire position*.

If a value of 0 seconds is entered, no run time review will be conducted. This is to be kept in mind when installing dampers without actuator!

SCPTHoldTime

Function:

This parameter indicates how long the test conditions should remain active during a test run, where the *nviFT-Test* variable was activated, before the damper can be returned to the normal position with the *nviActuDrive* variable.

SCPTactuatorType

Function:

Description of the connected damper with up to 30 ASCII characters.

SCPTinstallDate

Function:

Date and time of the installation of the node in the LON[®] network.

SCPTlocation

Function:

Description of the physical location of the LON[®] module with up to 30 ASCII characters.

SCPTmaintDate

Function:

Date and time of the last maintenance or inspection of the damper and/or the actuator.

SCPTzoneNum

Function:

Here the user can enter a zone number, which allows for conclusions to be drawn on the situation of the LON[®] module.

SCPTmanfDate

Function:

Here the manufacturing date for the LON-WA1 / B2 software can be read (fixed).

SCPToemType

Function:

Display the OEM type (fixed).

SCPTdevMajVer

Function:

Display the version of the LON-WA1 / B2 software.

SCPTdevMinVer

Function:

Display LON-WA1 / B2 revised software version.

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4. Description: Plug-In

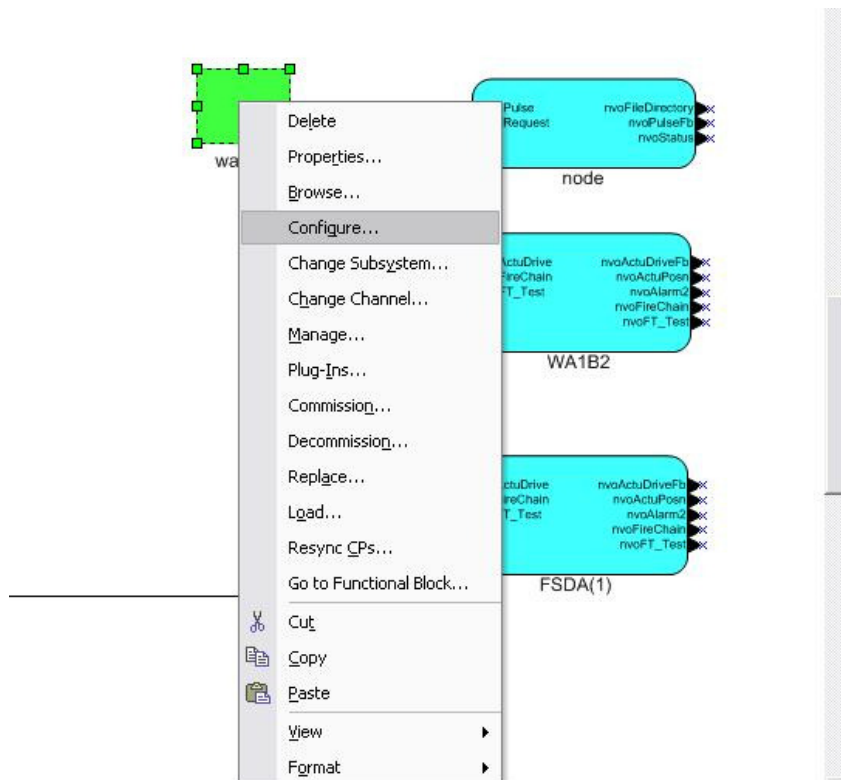
The TROX LON-WA1B2_01 plug-in has a total of four tabs. You can find a detailed description of the individual tabs in chapter 4.2.

4.1 Start: Plug-In

The plug-in is started with the respective *Device* in the LonMaker[®] network management tool. In order to do so, one should select the node with the mouse: the "configure" menu item can be started with the right mouse button.

The plug-in will be newly started for each individual LON[®] node, i.e. one can gain access to the currently updated node with the plug-in.

Only one plug-in should be opened at one time.



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4.2 Description of the Tabs

In the next chapter the individual tabs along with their functions will be described in detail.

4.2.1 “Main” Tab

On the “main” tab one can determine whether the damper connected is a fire damper or a smoke extraction damper. Moreover, the OEM type, the manufacturing date, the version number, and the actual status of the *pulse* can be read there.

4.2.1.1 Damper Type

- BSK / EK

Here, one can determine whether the damper connected is a fire damper (BSK) or a smoke extraction damper (EK).

4.2.1.2 OEM Type

Display the OEM type.

4.2.1.3 Manuf Date

Here the manufacturing date for the LON-WA1 / B2 software can be read (fixed).
 Format: YYYY, MM, DD, HH, MM, SS

4.2.1.4 Pulse In/Out

Pulse In/Out serves to review a LON[®] network.

The Pulse (In/Out) “low” display signifies a value of 0. Consequently, “high” signifies a value of 1.



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4.2.2 “Damper1” Tab

On the “Damper1” tab various conditions of the fire or smoke extraction dampers can be read.

4.2.2.1 Inputs

- **ActuDrive (Green/Red/Gray):** Here, one can read – according to color – whether there is a command to close the damper at the input variable.

The following values can be displayed:

Color	Meaning
Red	Signal to put the damper in <i>fire position</i> .
Green	Signal to put the damper in <i>normal position</i>
Yellow	Signal to put the damper in <i>normal position</i>
Gray	LON-WA1 / B2 offline

- **FireChain (active/inactive):** The *FireChain* input/output can pass a signal along the chain from the first to the last damper while not triggering them. In the event of fire, or when *FireChain* input or the *ActuPosn* output go to FIRE, the FC relay is de-energized. In this manner, for example, the ventilation system can be switched off.
- **FT-Test (active/inactive):** With the help of these input variables a damper functionality test can be activated at the operator level. The damper is thereby moved into the *fire position*. During test cases, “active” is displayed. Otherwise, “inactive”. If, however, a test is directly executed on the LON-WA1 / B2 with the test button, it will not be displayed here (display: *inactive*).

4.2.2.2 Outputs

- **ActuDriveFb (Red/Green/Gray):** The *ActuDriveFb* output variable gives the status of the *ActuDrive* input variable. The signal can be forwarded in this manner. For color values, see *ActuDrive* input.
- **ActuPosn (Red/Yellow/Green/Gray):** Reflects the current status of the damper.

The following values can be displayed:

Color	Meaning
Red	<i>Fire Position</i>
Green	<i>Normal Position</i>
Yellow	<i>Zero position</i> (between the <i>normal</i> and <i>fire</i> positions)
Gray	LON-WA1 / B2 offline

- **FireChain (active/inactive):** See *FireChain* Input.
- **FT-Test (active/inactive):** With the help of these output variables, it can be determined from the operator level whether a damper functionality test is active. It is unimportant whether the test function was activated with the FT-Test entry or directly with the LON-WA1 / B2 via the test button.

Value	Function
Active	Damper functionality test will be conducted
inactive	Damper functionality test will not be conducted.

4.2.2.3 Alarm

- **AlarmType:** Here the standard alarm messages will be issued.
- **PriorityLevel:** Here, the priority of the current alarm will be given.
- **Sequence No.:** This running number indicates how many alarm signals the LON-WA1 / B2 has had since start/reset. It therefore serves as an alarm history, which allows one to determine whether all alarms signaled properly.
- **Description:** Here, a description of the respective alarms will be given.

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4.2.3 “Damper2” Tab

This tab contains the same functions as the “Damper1” tab. Here the values for a second BSK can be read.

Functions: See chapter 4.2.2

4.2.4 “Config” Tab

4.2.4.1 Damper1

- **MaxRcvTime (sec):** This parameter defines within what amount of time the *nviActuDrive* input must be received. If the input is not updated, the damper will move into the fire position and the *nvoAlarm2* output variable will issue the AL_ERROR alarm type. If a value of 0 seconds is entered, no review will be conducted.
- **MaxSendTime (sek):** This parameter defines in which time interval the *nvoActuPosn* output variable will be cyclically sent. A definition of 0 seconds switches this function off.
- **TestHoldTime (sec):** This parameter indicates how long the test conditions should remain active during a test run, where the *nviFT_Test* variable was activated, before the damper can be returned to the normal position with the *nviActuDrive* variable.

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- **DriveTime (sec):** This parameter indicates the maximum amount of time the damper requires in order to transition from the fire to the normal position. If the damper requires more time than is allotted, it will be brought back into the fire position and the *nvoAlarm2* output variable will issue the AL_FIR_MONITOR_COND alarm type. If a value of 0 seconds is entered, no review will be conducted.
- **OffTime (sec):** This parameter indicates the amount of time the damper requires in order to transition from the normal to the fire position. If the damper requires more time than is allotted, the *nvoAlarm2* output variable will issue the AL_FIR_MONITOR_COND alarm type. If a value of 0 seconds is entered, no review will be conducted.
- **ActuatorType:** Description of the connected damper actuator with up to 30 ASCII characters.
- **ZoneNr:** Here, the user can enter a zone number which allows for conclusions to be drawn on the situation of the LON[®] module
- **Location:** Description of the physical location of the LON[®] module with up to 30 ASCII characters.
- **InstallDate:** Here, the exact time of installation of the node in the LON[®] network can be entered.
- **MaintDate:** Here, the exact time of the last maintenance/inspection of the damper and/or actuator can be given.

4.2.4.2 Damper2

Here, the values for a second BSK can be entered.
Functions see point 4.2.4.1.

