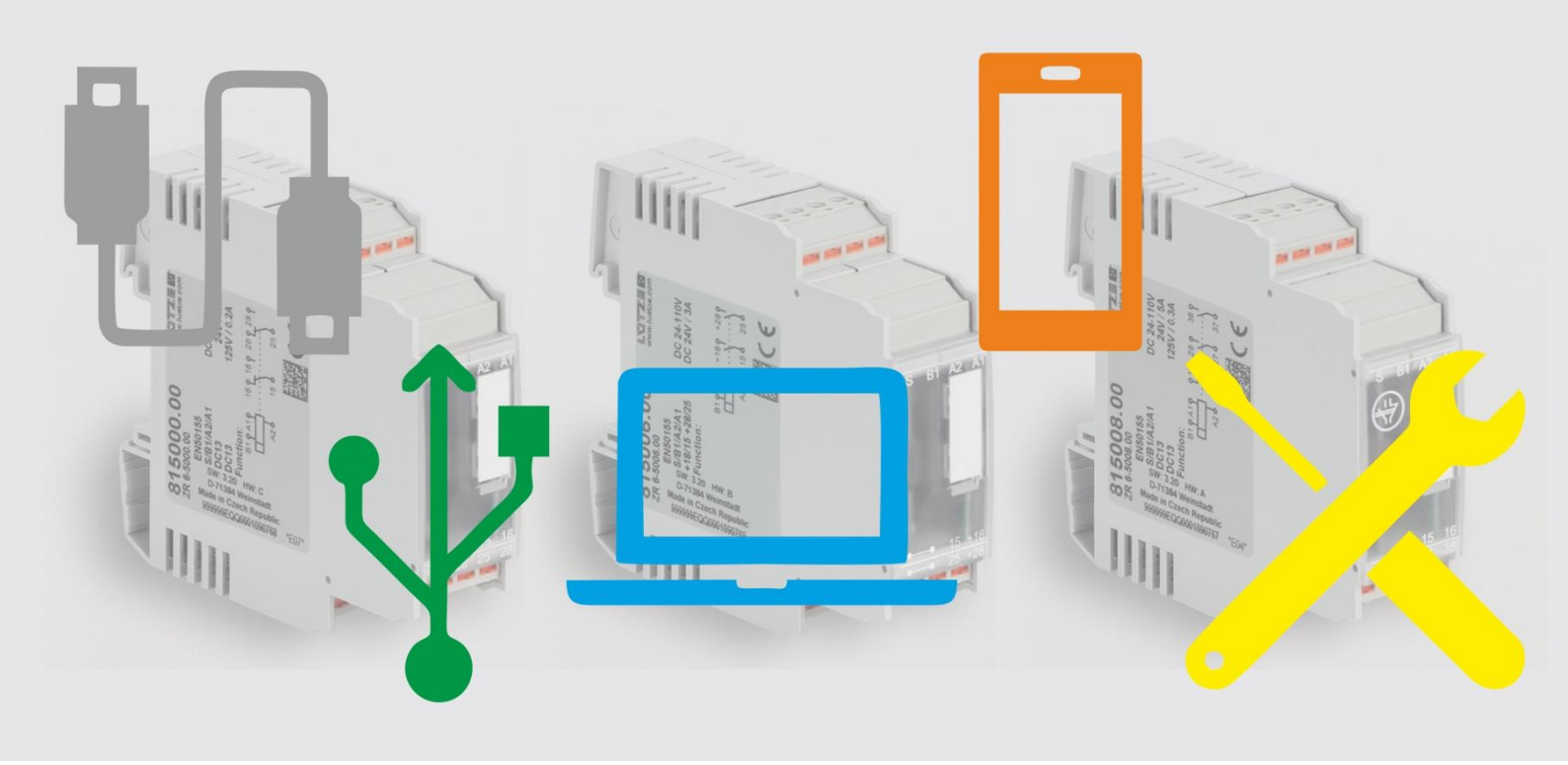

Transportation Solutions

Time Relay Configurator Tool

Operating Instructions

Version 1.02

LUTZE TRANSPORTATION

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This manual and the information contained herein have been compiled with due care. However, the company Lütze Transportation GmbH accepts no liability for printing or other errors or resulting damage.

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Content

1 Introduction

This manual is part of the *Time Relay Configurator*. It contains important information about the handling and safety.

To avoid hazardous situations, read the manual before installing the product and using it. This applies to every person who is getting in touch with the product. Trained employees and experts, especially qualified persons who have worked with similar products before, have to read and understand the manual as well.

Keep the manual in a place where it is readily available. In the event of sale, rental or in the event of disposal, pass the manual on to the authorized person.

Read and understand these instructions before installing, operating, or maintaining the equipment.

Before using the device, please read these operating instructions to avoid possible dangers and to ensure proper use.

CAUTION

Risk of injury and damage to property due to failure to read and observe this manual.

Always read this manual before planning the system in order to avoid or reduce risks and damage.

NOTICE

This manual contains important information on safety, commissioning, operation, maintenance and disposal of the device.

Always keep the document at hand. This applies until the device is disposed of. Pass on this manual if the device is sold, distributed or loaned.

You can also find these operating instructions at
***www.luetze-transportation.com*.**
In the search field, enter either the product name or the product number.

1.1 About this instruction manual

This manual provides information on how to handle the products throughout its entire product life cycle, from delivery to disposal.

Further documents apply in addition to this manual.

If you have suggestions for improving this document, please contact Lütze Transportation GmbH.

2 General information

2.1 Symbol description

2.1.1 Safety messages

This document contains several safety messages. Each safety message contains a defined signal word and a color. The color and the word are referring to an alert level. There are 4 levels. The safety messages point out hazardous situations and give information on how to avoid these.

DANGER	**Indicates a hazardous situation which leads to death or serious injuries if not observed.**
WARNING	**Indicates a hazardous situation which can lead to death or serious injuries if not observed.**
CAUTION	**Indicates a hazardous situation which can lead to slight or moderate injuries if not observed.**
NOTICE	**Indicates a situation which could damage the product or the environment. This notice does not apply to personal injuries.**

2.1.2 Handling notes

Additionally, the following symbols can be found. These refer to important technical information and instructions:

	**Refers to important technical information. This indicates to the user a specific action that must be performed to operate the device safely.**
	**Refers to the use of different tools.**

2.2 Copyright

This document is intended for the operator and his staff. Do not pass the content to a third party, to duplicate, exploit or impart it. Permission to do so must be received in writing from Lütze Transportation GmbH.

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2.3 Disclaim of liability

The document was written under consideration of the applied standards, regulations and the current state of technology.

The content is accurate at the time of publication. Errors and omissions excepted (E&OE).

Applicable changes and additional information will be in the next version of this document. The Lütze Transportation GmbH does not assume liability for any damages and accidents of the following reasons:

- Failure to read and observe this document
- Untrained and unqualified personnel
- Nonconventional use of the product
- Unapproved reconstructions and functional modifications of the product
- Using non-original or aftermarkt parts or equipment

2.4 Standards and norms

The product is state-of-the-art and complies with the applicable safety regulations and the corresponding harmonized European standards (EN).

The products are constructed and designed according following standards:

EN 50155	*Railway applications – Rolling stock – Electronic equipment*
EN 50121	*Railway applications – Electromagnetic compatibility – Part 3-2: Rolling stock – Apparatus*
EN 50124	*Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment*
EN 61373	*Railway applications – Rolling stock equipment – Shock and vibration tests*
EN 45545-2	*Railway applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components*
HN_Isolations-prüfung	*Company internal standard – Insulation test*

NOTICE **The current versions of the standards and further information on the product can be found in the corresponding data sheets which are valid with this document.**

2.4.1 Observe other applicable documents

When operating the device, please also observe all documents accompanying other components of your system.

NOTICE

Always keep these operating instructions and the other applicable documents (e.g. data sheets, package inserts, declarations of conformity, etc.) at hand so that they are available when required.

This applies until the device is disposed of. Hand over all documents in case of sale, distribution or rental of the device.

For reasons of clarity, we would like to point out that this manual cannot describe all conceivable problems in connection with the use of this device.

Should you require further information or encounter special problems that are not dealt with in sufficient detail in this manual, you can request the necessary information about service from Lütze Transportation GmbH.
(See also chapter "Service")

2.5 Labeling

Observe the name plate.

- Keep them readable.
- In case of malfunction, the part number and the serial number might be needed.

The name plate is constructed according to this scheme:

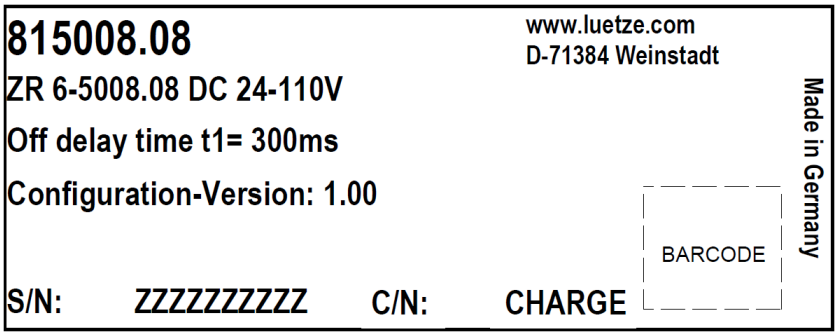


Fig. 1: Example type plate

The name plate contains the following information:

- Item number
- Hardware Revision
- Module Description
- Date of manufacture
- Software version
- Serial number
- Batch number
- Data Matrix Code, content: serial number, article number, date
- QR Code, reference to product information

2.5.1 QR Code - Product information

The code refers to further product information in the online catalog on the Lütze Transportation website. To access the page, proceed as follows:

1. Scan the QR code with a smart phone or other device that can read QR codes
2. The standard browser with the corresponding page opens.
3. Select an appropriate language.
4. The device is displayed in the online catalogue. Under Downloads you can download further technical documentation.

3 Safety

3.1 Applicable documents

3.2 Safety information

3.2.1 Contents of the operating instructions

NOTICE **These instructions must be read and understood before installing, operating, or maintaining the device.**

This manual must be read and observed before any work is carried out on or with the units. This applies to all persons who come into contact with the devices. Trained personnel and specialists, especially electricians *(see also chapter „Electrically qualified persons“)* who have already worked with similar equipment should also have read and understood the manual.

3.2.2 Appropriate use

The devices are designed exclusively for railway use. The intended use includes the procedure according to the manual. The devices may only be used for the cases specified in the technical documents and only in connection with the third-party devices and components recommended or approved by us. Proper and safe operation of the product requires proper transport, storage, installation and assembly as well as careful operation and maintenance.

3.2.3 Addressees

This manual is directed towards planners, project managers and programmers, as well as staff authorized to commission, operate and maintain the devices and systems.
A distinction is made between various qualification levels of the staff.

3.2.3.1 Operating personnel

Only qualified personnel may perform the following work on the modules:

Working range	Competency
Installation, transport and storage	Experts
Commissioning, decommissioning	Trained Employee
Operation	Trained Employee
Servicing and maintenance	Experts
Troubleshooting	Experts

⚠ WARNING **Risk of injury by usage through insufficient qualified operating personnel! Misusage through performed insufficiently qualified personnel can cause property damage and personal injuries.**

- Tasks which apply special procedures should be done by trained and qualified employees or experts, especially electricians.

(according to EN 60204-1)

Trained employee

The employee was trained by the employer on the task and possible hazardous situations. The employee does not have any technical knowledge.

Experts

The employee has a technical education, knowledge and/or experience in the required field. The employee is capable to perform specific operations on and with the product.

Electrically qualified persons

The employee has a technical education in the required field. The employee is capable to perform special operations on and with the product. The different sections of the document refer to the qualification level of the operating personnel.

According to European Standard EN 50110-1:2008-09-01 Section 3.2.3.

NOTICE The individual sections refer to the qualification level of the personnel.

3.2.4 Responsibility of the operator

NOTICE The customer is subject to an obligation to report back when safety-related errors are discovered.

Since the device is used in a commercial area, the operator of the device is subject to the legal obligations for occupational safety:

- The operator of the device is obliged to instruct the operating personnel and to inform himself about the industrial safety regulations.
- The operator must ensure that safety, accident prevention and environmental protection regulations are observed.
- The operator must make an appropriate risk assessment on the Workplace/location to detect and warn of special hazards.
- The manual must be kept in the immediate vicinity of the device.
- The information in the manual must be followed.
- The device may only be operated in technically perfect condition.

3.2.5 Protective clothing

Since all devices are ESD tested, no special ESD protective clothing is necessary.

3.2.6 Changes and modifications to the devices

WARNING

Modifications and conversions lead to personal injury and property damage!

Unauthorized modifications to the product may result in electric shock or injury and destroy the product.

- Do not make any changes or modifications to the product.
- If a modification or change cannot be avoided, have the modification approved in writing by Lütze Transportation GmbH.

3.2.7 Further safety notes

NOTICE Follow the ESD regulations.

NOTICE Only use certified components. Only this way a reliable functioning is ensured.

NOTICE Follow the valid safety regulations and general regulations regarding the technical standards.

NOTICE The device is intended to be used in indoor applications and be mounted in cabinets.

3.3 Safety device

DANGER

Danger to life due to errors in the overall system!

Sabotage of the module can lead to errors in the entire system.

Ensure that the modules are not accessible to unauthorized persons and unqualified personnel.

CAUTION

Electric shock and material damage due to overvoltage at the module.

Overvoltage on the module can cause electric shock when touched. The modules can be destroyed by the high voltage.

Never bypass or bridge the protective and safety devices of the module.

3.3.1 Safety concept

DANGER

Danger to life due to errors in the overall system!

Faults in the overall system may occur if the modules are incorrectly configured and the applicable standards and regulations are not observed.

Observe all applicable standards and regulations during project planning.

Integrate the safety functions correctly into the higher-level

security concept.

Test the operation of the system before final commissioning.

3.4 Special safety instructions

CAUTION

Electric shocks and material damage due to excessive voltages.

Non-compliance with the specified voltage limits may result in electric shock and the modules may be destroyed.

NOTICE

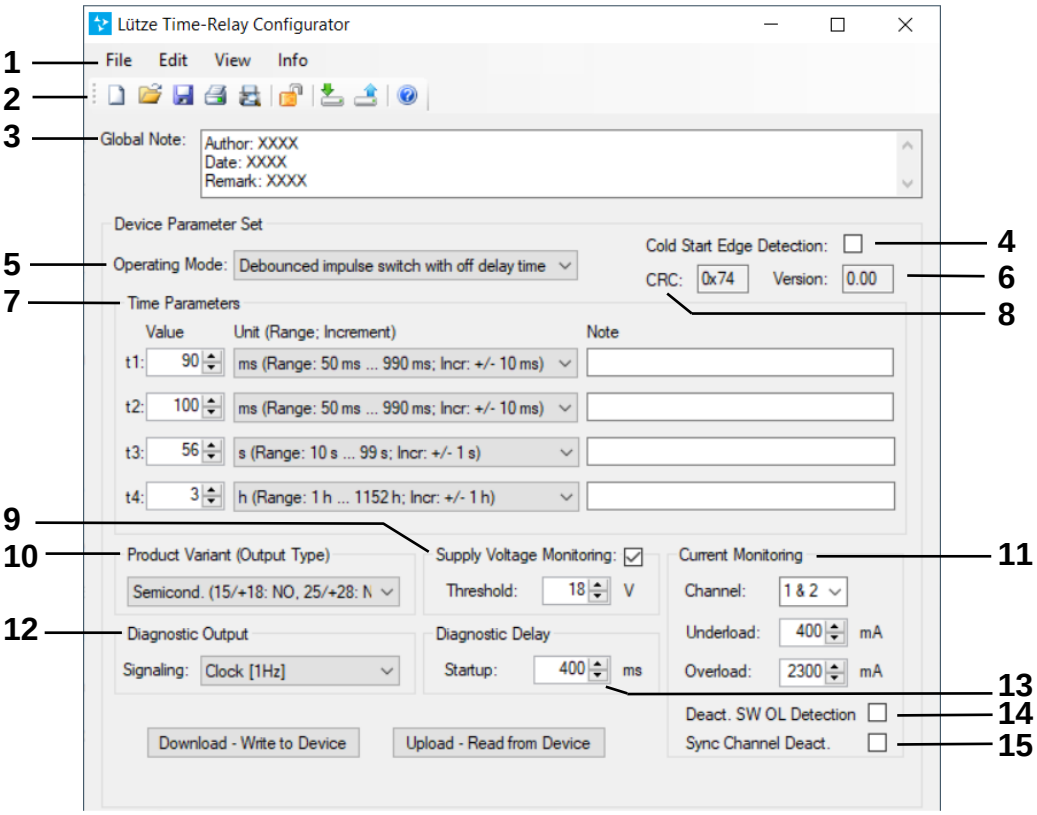
Damage to the product due to compensating currents.

Disassemble all assemblies and their connections when carrying out welding work.

4 Product overview

4.1 Main dialog

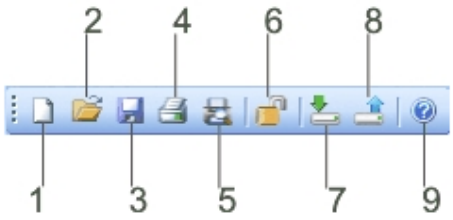
When starting the *Time Relay Configurator*, the main dialog appears. In the main dialog all settings for the configuration must be made.



1.	Menu bar
2.	Tool bar
3.	Memo field
4.	Checking the control signal B1 when switching on or only afterwards
5.	Operating modes
6.	Configuration version
7.	Time parameters - depending on the selected operating mode
8.	CRC-Checksum
9.	Voltage monitoriong
10.	Product variant (Output Type)
11.	Current monitoring - only for semiconductors
12.	Diagnostic signaling - output S and LED
13.	Diagnostic start-up time
14	Deactivation of the software overload detection
15	Sets the synchronous channel deactivation

4.2 Toolbar

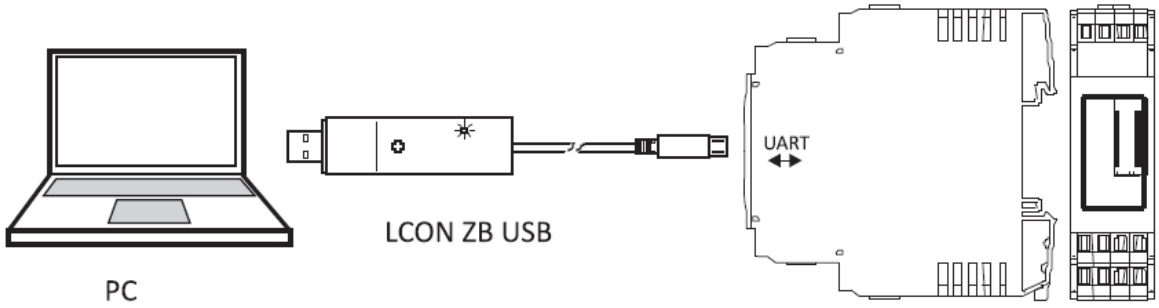
The toolbar consists different shortcuts:



1	Creating a new file
2	Open a file
3	Saving a configuration
4	Printing a configuration
5	Print preview
6	Toggle Edit-/View-Mode
7	Downloading a configuration
8	Uploading a configuration
9	Help

5 Preparations

5.1 Connecting the time relay to the computer



Connect the time relay to the PC via the LCON ZB USB cable (Part No. 815900).

NOTICE	**The LCON ZB USB Cable (part no. 815900) must be used for configuration.**

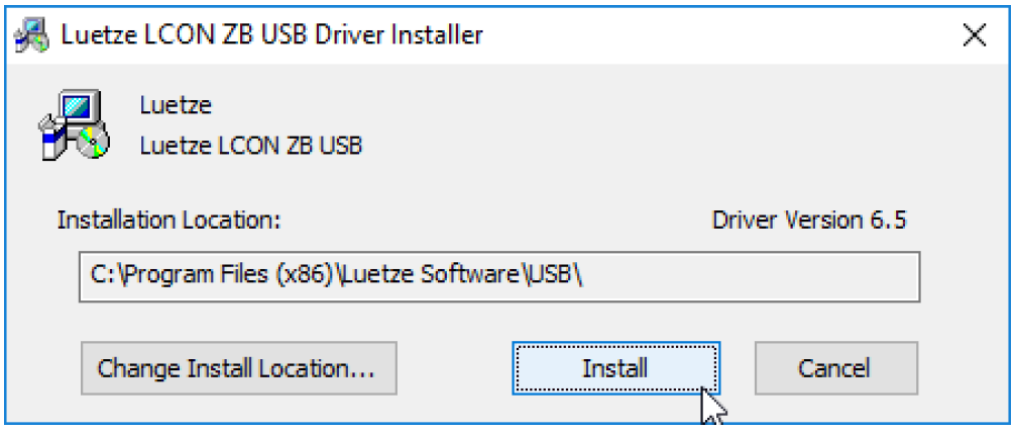
NOTICE	**The LCON ZB USB Cable is available as an accessory and is not included in the scope of delivery of the time relay.**

To use the LCON ZB USB Cable, the software tool LCON ZB USB DRIVER must be installed, you can find it here.

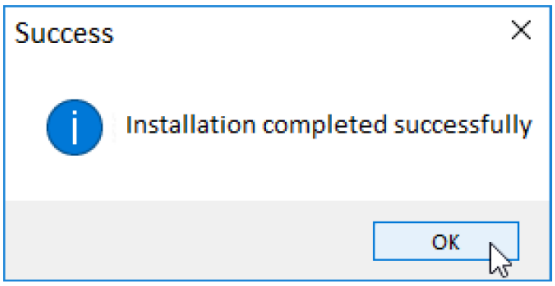
The link opens the product website of part no. 815900, below in the download area you will find the LCON ZB USB DRIVER for download.

5.2 Installation LCON ZB USB Cable Driver

1. Unzip the downloaded zip-file.
2. Start the installation by double clicking ***install.exe***.
3. Following window appears:

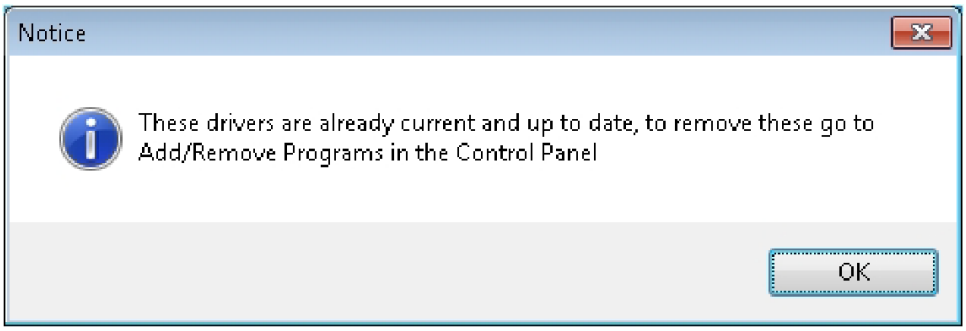


4. Click ***Install*** to start the driver installation.



5. Click ***OK*** to complete the installation.

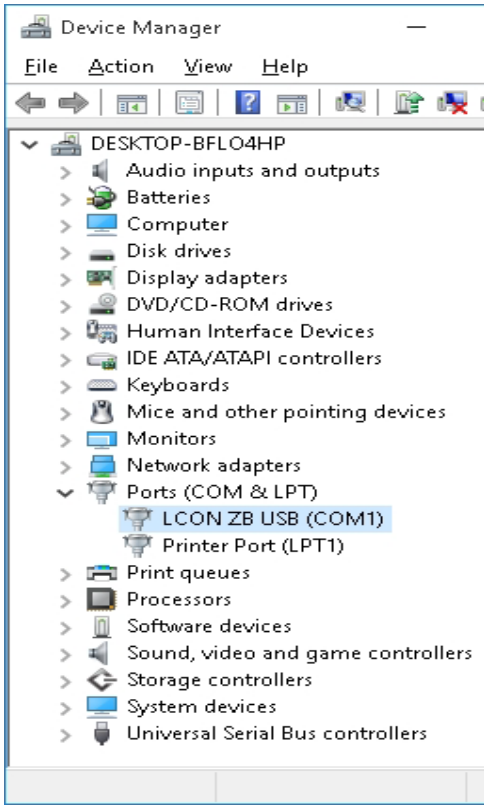
6. If the driver is already installed, following window appears:



7. Click ***OK***.

5.2.1 Installation check

1. Connect the converter via the LCON ZB USB Cable with the computer.
2. Open the window device manager: **Start>Control Panel>Device Manager**
3. After a successful installation the ***LCON ZB USB*** appears under connectors.



NOTICE **The LCON ZB USB Cable (part no. 815900) can now be used for configuration.**

6 Installation/Downloading

NOTICE

Make sure that the newest version of the Time Relaiy Configuration Tool is installed.

Otherwise, download the latest available version of the ***Lütze Time Relay Configurator*** from the Lütze Transportation website. You will find the ***Time Relay Configurator*** with the programmable time relays in their download area, at the bottom of the product page.

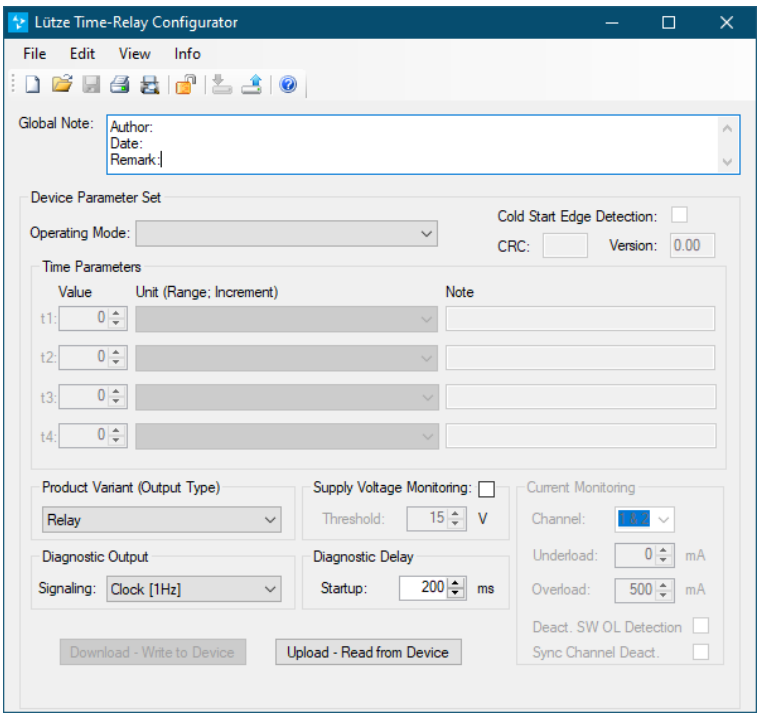
Or use this link to get the newest version of the: ***Time Relay Configurator*** **from www.luetze-transportation.com**

1. Download the *Time Relay Configurator* from the Luetze-Transportation website: www.luetze-transportation.de
2. Save the download in any folder. A setup installation routine will not run.
3. Open the exe file by double clicking. The program is running.

Operating System	**Windows XP and later**
Runtime Environment	Net Framework 3.5 or higher

6.1 Starting the tool

Open the downloaded *.exe file by double-click. The program starts.



7 Main settings

7.1 Open a configuration

1. Click ***File>Open from disk*** in the menubar or
   click  in the toolbar.

2. Choose the project and click Open.

7.2 Creating a new configuration

1. Click ***File>New*** in the menubar or
   click  in the toolbar.

   The main dialog will be blank.

2. Start to configure the project.

7.3 Saving a configuration

1. Click ***File>Save As to disk*** in the menubar or
   click in  the toolbar.

2. Please select the format in which you would like to save the file.

NOTICE	**You can choose between the new LTR format 4.0 or the older ones.** Configurations older than V3.0 are not supported to save and can not be overwritten. Save as 4.0 instead.

3. Type in any file name. The file must be saved as a ***ltr file*** *(lütze time relay file)*.

4. To save changes in an existing and opened ltr file click ***File>Save to disk*** in the menubar or
   click  to save the configuration to this file.

7.4 Editing a configuration

The *Time Relay Configurator* starts in the viewer mode.

Before any settings can be made click  to get into the edit mode.

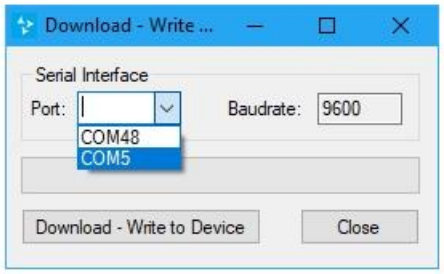
To get back into the view mode click  in the toolbar.

7.5 Downloading a configuration

NOTICE **After configuring a project, it must be downloaded to the time relay.**

1. First check in the device manager which COM interface is used for the time relay

   (Control Panel → Hardware & Sound → Device Manager).
2. Choose the port the relay is connected to in the *Time Relay Configurator*. The name of the interface is ***LCON ZB USB (COM5).***
   Remember the port number *COM5*.
3. In the drop-down menu, select the COM port to which the time relay is connected. (In this example COM5, cf. point 2.)
4. Start the download by clicking button
   Download – Write to Device
5. To cancel the operation, click button ***Close***

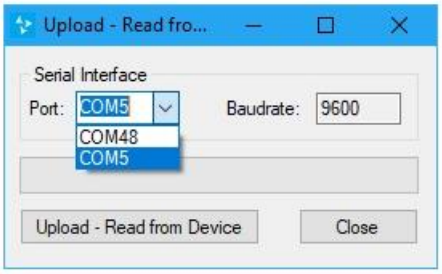


7.6 Uploading a configuration

To modify or change a current configuration which is downloaded on the relay, it is possible to upload that configuration:

1. First check in the device manager which COM interface is used for the time relay

   (Control Panel → Hardware & Sound → Device Manager).
2. Choose the port the relay is connected to in the *Time Relay Configurator*. The name of the interface is ***LCON ZB USB (COM5).***
   Remember the port number *COM5*.
3. In the drop-down menu, select the COM port to which the time relay is connected. (In this example COM5, cf. point 2.)
4. Start the upload by clicking button
   Upload – Read from Device
5. To cancel the operation, click button ***Close***



7.7 Printing a configuration

It is possible to print out the configuration settings in a tabularly format.

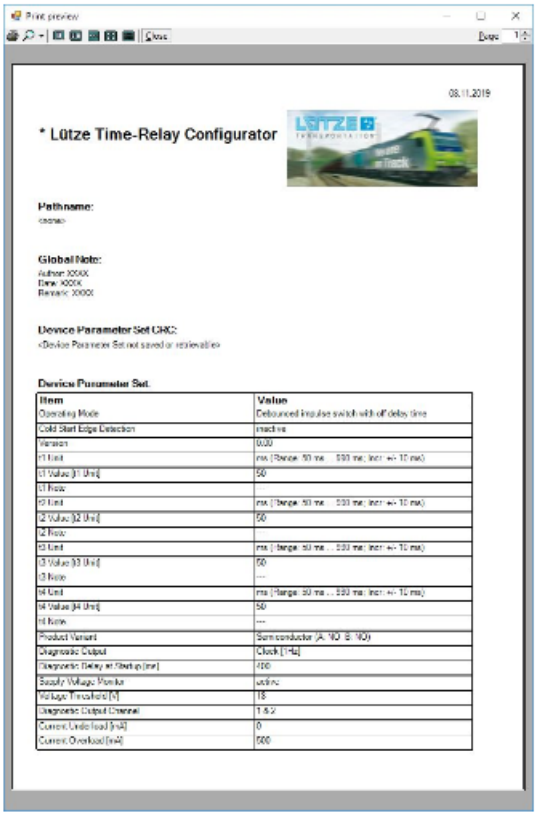
Click  in the toolbar or click ***File*** in the menubar and choose ***Print***. The print dialog appears.

7.8 Print Preview

To see the print preview:

Click  in the toolbar or click ***File*** in the menubar and choose ***Print Preview***.

The following dialog appears:

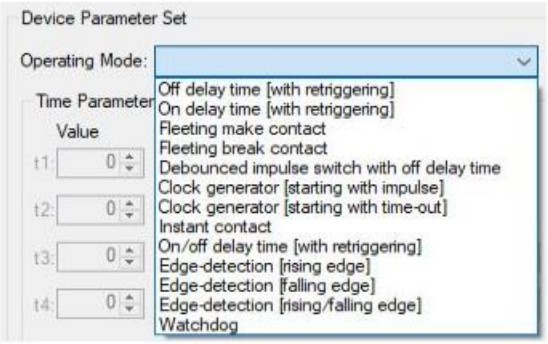


8 Configuration

8.1 Operating modes

The time relay has a large number of different operating modes which change the behavior between input signal B1 and the outputs (relays).

The behavior of the different operating modes can be seen in the following chapters.



If the ***Cold Start Edge Detection*** function is activated (=CHECKED): The presence of a control signal at ***B1*** during ***Power-ON*** is treated as a rising edge. B1 can be connected directly to the power supply in this case.

Cold Start Edge Detection CHECKED

If the ***Cold Start Edge Detection*** function is deactivated (=UNCHECKED): The control signal at is evaluated after the system boot-time.

Cold Start Edge Detection UNCHECKED

B1

The characteristic operating behavior of the time relays is shown below.

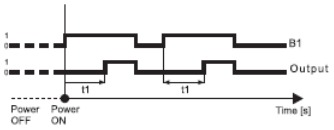
8.1.1 Delay – Operating modes

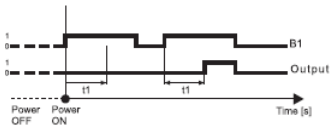
The characteristic operating behavior of the operating modes “Delay” is shown here:

Operating mode	Cold Start Edge Detection Checked	Cold Start Edge Detection Unchecked

8.1.1.1 D1: On delay time

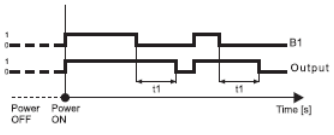
On delay time

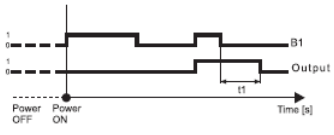




8.1.1.2 D2: Off delay time

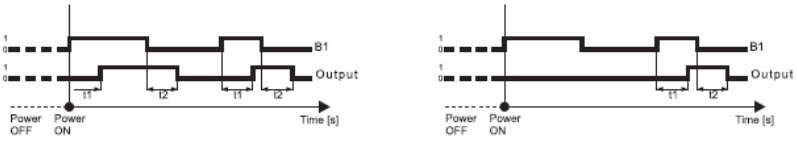
Off delay time





8.1.1.3 D3: On/Off delay time

On/off delay time

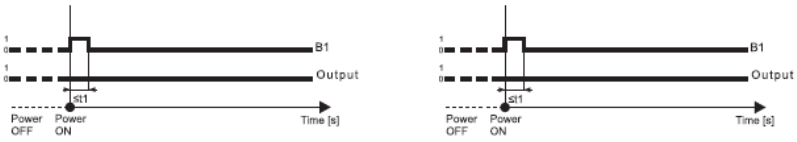


8.1.2 Response delay – Operating modes

The characteristic operating behavior of the operating modes “Response delay” is shown here:

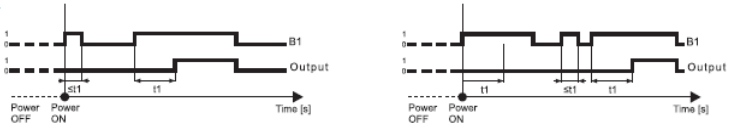
8.1.2.1 R1: Response delay

Response delay, example with “B1=H” <t1



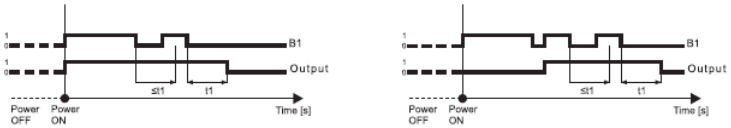
8.1.2.2 R2: On response delay

On response delay, example with retrigge-ring



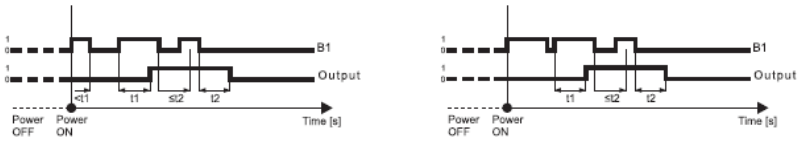
8.1.2.3 R3: Off response delay

Off response delay
Example with retriggering



8.1.2.4 R4: On/Off response delay

On/Off response delay
Example with retriggering



8.1.3 Fleeting – Operating modes

The characteristic operating behavior of the operating modes “Fleeting” is shown here:

8.1.3.1 F1: Fleeting contact

Fleeting contact

8.1.3.2 F2: Retriggering 1

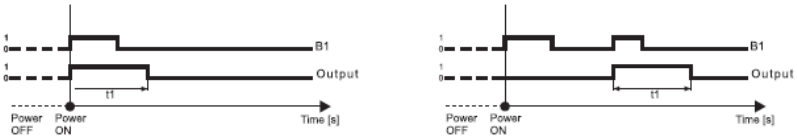
Fleeting make contact
Example with retriggering

8.1.3.3 F3: Retriggering 2

Fleeting break contact
Example with retriggering

8.1.3.4 F4: B1 < t1

Fleeting make contact
Example with B1 < t1



8.1.3.5 F5: Fleeting brake contact

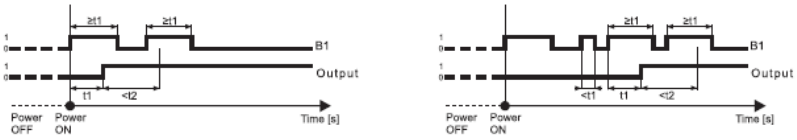
Fleeting break contact

8.1.4 Impulse switch – Operating modes

The characteristic operating behavior of the operating modes “Impulse switch” is shown here:

8.1.4.1 I1: Bounce free ON

Impulse switch
e.g. „bounce free ON“,
t3 = 0, t4 = 0

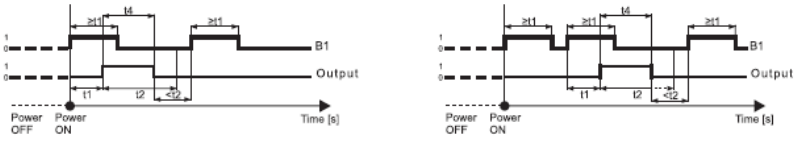


8.1.4.2 I2: Bounce free OFF

Impulse switch
e.g. „bounce free OFF“,
t3 = 0, t4 = 0

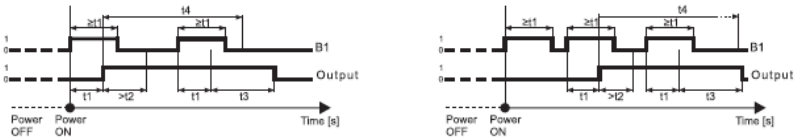
8.1.4.3 I3: Switch on time- / release time delay

Impulse switch
e.g. „switch on time- / release time delay with one validated impulse“,
t3 ≠ 0, t4 ≠ 0, t4 ≤ t2



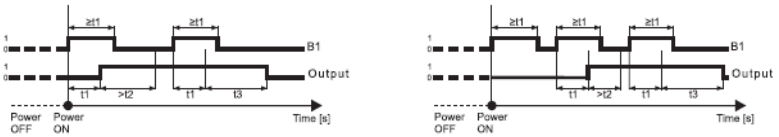
8.1.4.4 I4: Validated switch OFF impulse

Impulse switch
e.g. „validated switch off impulse“,
t3 ≠ 0, t4 ≠ 0



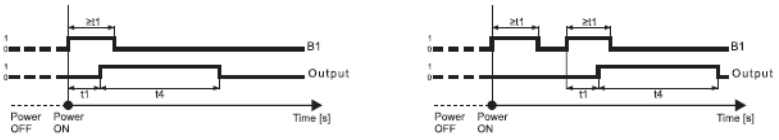
8.1.4.5 I5: Release time delay OFF with switch OFF delay

Impulse switch
e.g. „release time delay OFF with switch off delay“,
t3 ≠ 0, t4 = 0



8.1.4.6 I6: Release time delay automatic OFF

Impulse switch
e.g. „release time delay automatic OFF“,
t3 = 0, t4 ≠ 0



8.1.5 C: Clock generator – Operating modes

The characteristic operating behavior of the operating modes “Clock generator” is shown here:

8.1.5.1 C1: Starting with impulse 1

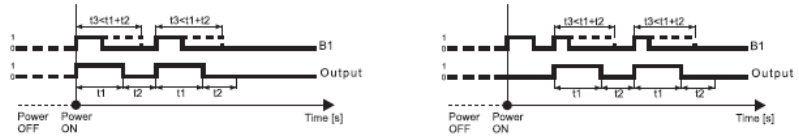
Clock generator starting with impulse
t3 = 0

8.1.5.2 C2: Starting with impulse 2

Clock generator starting with impulse
t3 ≠ 0 and t3 = 2t1 + 2t2

8.1.5.3 C3: Starting with impulse 3

Clock generator starting with impulse
t3 ≠ 0 and t3 < t1 + t2



8.1.5.4 C4: Starting with impulse 4

Clock generator starting with impulse
t3 ≠ 0 and t3 > t1 + t2

8.1.5.5 C5: Starting with pause 1

Clock generator starting with pause
t3 = 0

8.1.5.6 C6: Starting with pause 2

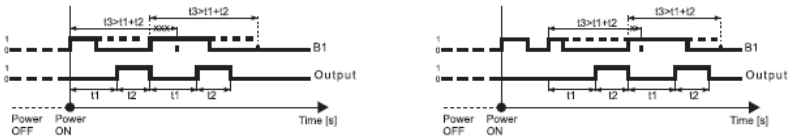
Clock generator starting with pause
t3 ≠ 0 and t3 = 2t1 + 2t2

8.1.5.7 C7: Starting with pause 3

Clock generator starting with pause
t3 ≠ 0 and t3 < t1 + t2

8.1.5.8 C8: Starting with pause 4

Clock generator starting with pause
t3 ≠ 0 and t3 > t1 + t2

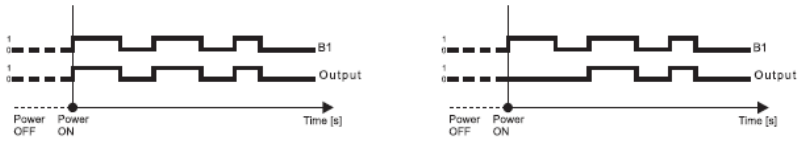


8.1.6 Instant contact – Operating modes

The characteristic operating behavior of the operating mode “Instant contact” is shown here:

8.1.6.1 IN1: Instant contact

Instant contact

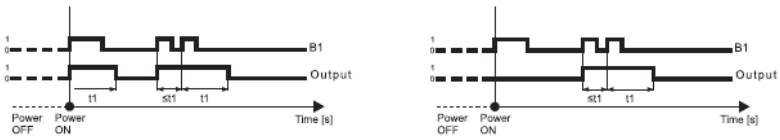


8.1.7 Edge-detection – Operating modes

The characteristic operating behavior of the operating modes “Edge detection” is shown here:

8.1.7.1 E1: Rising edge

Edge-detection
rising edge



8.1.7.2 E2: Falling edge

Edge-detection
falling edge

8.1.7.3 E3: Rising/falling edge

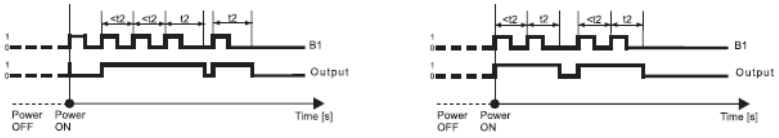
Edge-detection
rising/falling edge

8.1.8 Watchdog – Operating modes

The characteristic operating behavior of the operating modes “Watchdog” is shown here:

8.1.8.1 W1: Watchdog 1

Watchdog
t1 = 0, t2 ≠ 0, t3 = 0, t4 = 0

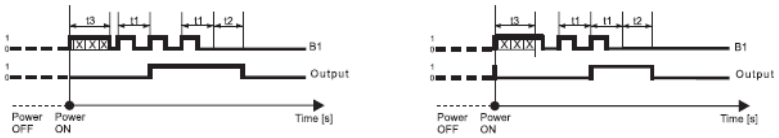


8.1.8.2 W2: Watchdog 2

Watchdog
t1 ≠ 0, t2 = 0, t3 = 0, t4 = 0

8.1.8.3 W3: Watchdog 3

Watchdog
t1 ≠ 0, t2 ≠ 0, t3 ≠ 0, t4 = 0



8.1.8.4 W4: Watchdog 4

Watchdog
t1 = 0, t2 ≠ 0, t3 ≠ 0, t4 ≠ 0

Figure 1: Example Part-no. 815000.00

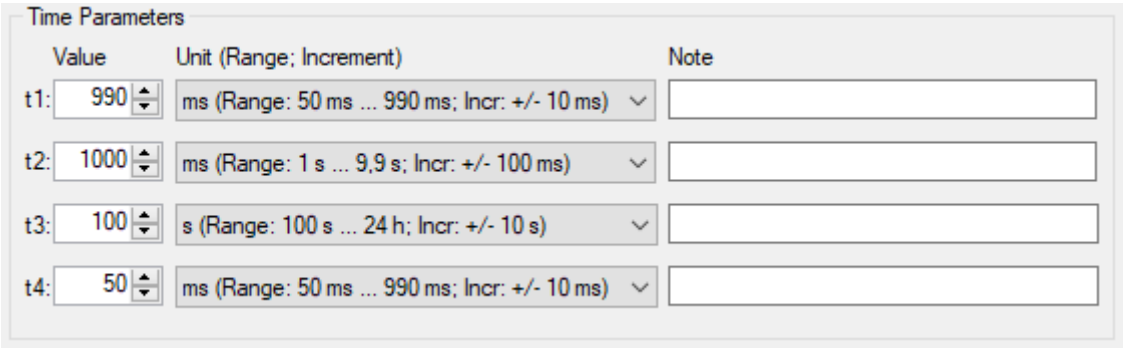
8.2 Global note

It is possible to set a user-defined text for the configuration. As example the author, date, and a remark for the configuration. The text field is multi-lined.

8.3 Time parameters

Each operating mode offers different times, which can be set freely. Depending on the time, this can change the behavior considerably.

Depending on the operating mode, the number of times that can be set also differs. The function "off Delay" for example offers only one time t1, while the operation mode "Watchdog" offers up to four times. Here, however, it is also possible to set individual times to zero.



8.3.1 Time parameter t1

Range	Increment
50 msec...990 msec	10 msec
1 sec...9.9 sec	100 msec
10 sec...99 sec	1 sec
100 sec...24 h	10 sec
1 h...1152 h	1 h

8.3.2 Time parameter t2

Range	Increment
50 msec...990 msec	10 msec
1 sec...9.9 sec	100 msec
10 sec...99 sec	1 sec
100 sec...24 h	10 sec
1 h...1152 h	1 h

8.3.3 Time parameter t3

Range	Increment
50 msec...990 msec	10 msec
1 sec...9.9 sec	100 msec
10 sec...99 sec	1 sec
100 sec...24 h	10 sec
1 h...1152 h	1 h
0 sec	---

8.3.4 Time parameter t4

Range	Increment
50 msec...990 msec	10 msec
1 sec...9.9 sec	100 msec
10 sec...99 sec	1 sec
100 sec...24 h	10 sec
1 h...1152 h	1 h
0 sec	---

8.4 The text field note

NOTICE

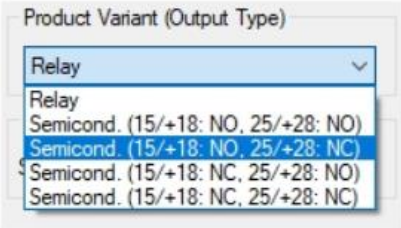
In the text fields “Note” explanatory notes can be made.
The notes will be saved in the project file.
The notes are not stored on the device. The field is always empty when a new project is started.

8.5 Product variant

It is possible to configure following time relays with the *Time Relay Configurator*:

Relay	Part-No.
Relay DC 24-110 V	815000.00
Semiconductor DC 24 V	815006.00
Semiconductor DC 110 V	815007.00
Relay DC 24-110 V, with positive action contacts	815008.00

The two outputs of the solid-state relays (815006.00 & 815007.00) can be freely configured as normally closed (NC) or normally open (NO).



NOTICE

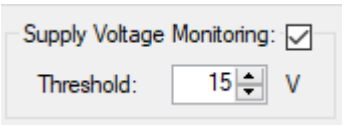
The output behavior is then inverse to the description in the data sheet.

The two variants 815000.00 and 815008.00 can only be selected as Relay under "Product Variant (Output Type)".

The data sheets valid for the respective product as well as further product information are available on the Lütze Transportation homepage.

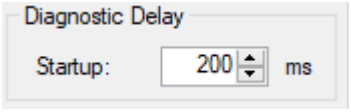
8.6 Supply voltage monitoring

The voltage monitoring can be deactivated or activated. The value indicates the voltage from which the time relay starts up. The voltage can be set from 15V to 120V.



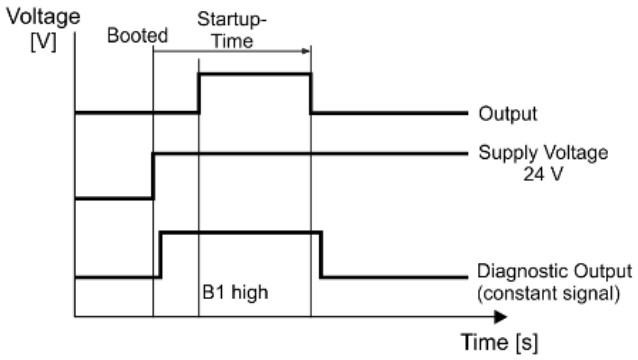
8.7 Diagnostic delay

The supply voltage monitoring will not start until the set time is elapsed. Before the startup time has not elapsed, the diagnostic output assumes that everything is OK and outputs a high signal to S. The minimum time is 200 ms, the maximum time is 25 sec



NOTICE **The start time refers to the supply voltage monitoring and NOT to the current monitoring of the outputs.**

Example:
Operating Mode: Instant contact
Diagnostic Output - Signaling: Constant
Supply Voltage Monitoring - Threshold: 30 V
Diagnostic Delay - Startup: 500 ms

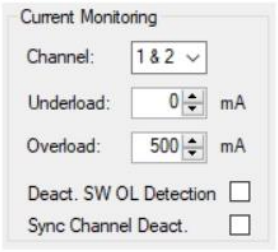


8.8 Current monitoring

NOTICE **This setting is only possible if configuring a semiconductor time relay.**

It is possible to set:

- a channel: 1&2,1, 2 or off
- an underload value between 0A and 1A
- an overload value between 0.5A and 4A
- a deactivation of the software overload detection
- a synchronous channel deactivation



The parameters increment by 100mA if increasing or decreasing the values.

Errors are indicated via the *diagnostic output (also see chapter 8.9)* and the status LED.

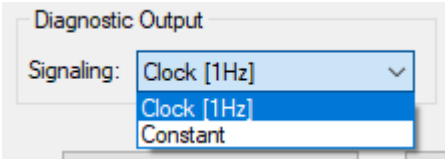
If the undercurrent detection is active and the value falls below the limit value, this is detected as an error (LED) but the output is not switched off.

The **Deactivate software overload detection function** disables the overcurrent detection. This should only be activated in exceptional cases, e.g. in environments with strong magnetic fields. By activating the function "Deactivate software overload detection" only thermal overload detection is active.

If the **Synchron channel deactivation function** is active, both outputs are switched off in case of an error, even if the error is only present at one output. If the function is deactivated, only the output at which an error or a limit value violation is present is switched off.

If a threshold is violated, the output is **switched off immediately**.

8.9 Diagnostic output



It is possible to set a constant level or a clock with a cycle of 1Hz.

The diagnostic output is issued via output S. The diagnostic function is available when the supply voltage is applied.

The setting of the diagnostic output also influences the diagnostic LED.
If the diagnostic output is defined as "Clock", the diagnostic LED will look with a clock of 1 Hz.
If the diagnostic output is defined as "Constant", the diagnostic LED is permanently on.

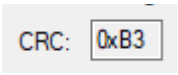
The following errors can be detected by the diagnostic function:

- Internal errors
- Deviation in *current monitoring (also see chapter 8.8)*
- Supply voltage lower than specified (*also see chapter 8.6 supply voltage monitoring*)

After detecting an error, the output is LOW (0V). This state is only reset after a restart. The diagnostic LED lights up red when an error is detected.

8.10 CRC

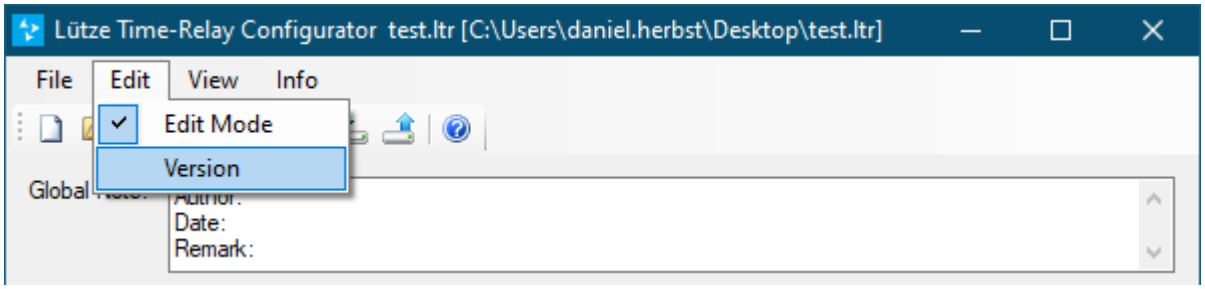
Displays the CRC of the current parameter set.
This field is empty if a parameter set is changed and not saved.



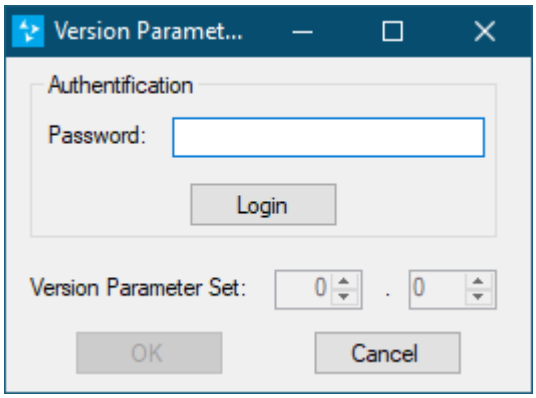
8.11 Version

The version number of the parameter set can only be changed by an authorized user.

The version can be changed under ***Edit: Version:***

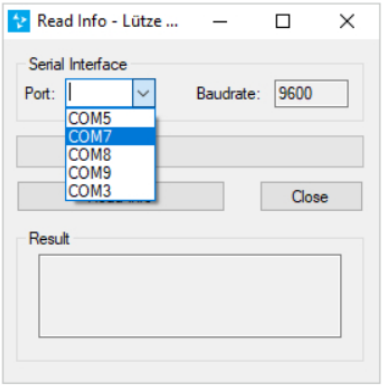


To prevent anyone from changing the version, this option is password protected. For what password please contact your supplier or *E-Mail: support.transportation@luetze.de*.



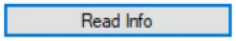
9 View

9.1 Device Info

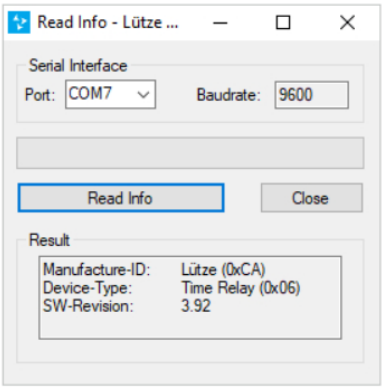


1. Click **View** in the menu bar.
2. Choose **Device Info**.

The following window appears.

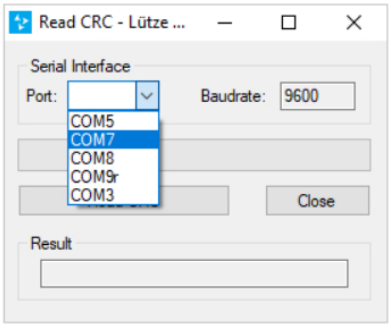
3. Choose a **Port**.
4. Click 

Following device information will be written under **Result**:



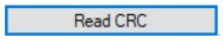
- Manufacture-ID
- Device-Type
- Hardware-Revision
- Software-Revision

9.2 Device CRC

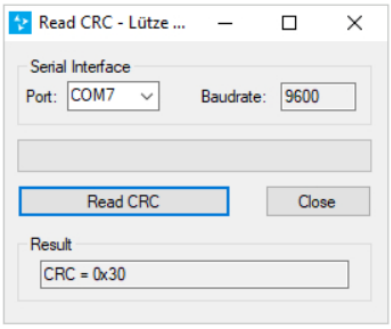


1. Click **View** in the menu bar.
2. Choose **Device CRC**.

The following window appears.

3. Click 

The CRC will be written under **Result**.



10 Software versions and functionalities

Current software version 4.20

Version 4.20:
Minimal bugfixes, no functional, requirement or architectural changes

10.1 New functionalities

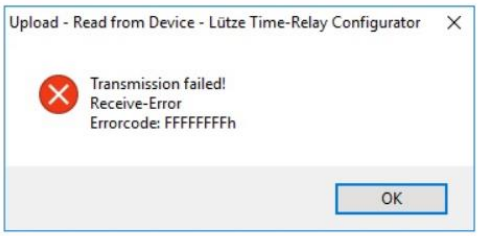
The following functionalities are new from version 4.00:

- ***Extended Operating Mode***
  - Debounced impulse switch with off delay time: Configurable with four-time parameters and extended functionality
- ***New Operating Mode***
  - Watchdog: Configurable with four-time parameters
- ***Extended Configuration of the Product Variants***
  - Individual configuration of the outputs of the semiconductor variant as NO and/or NC contact
- ***Saving the configuration in different formats***
- ***New parameter setting options for current monitoring***
  - Deactivate software overload detection function
  - Synchron channel deactivation function

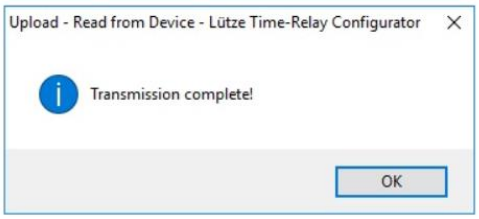
11 Error handlings

While working with the *Time Relay Configurator* three different types of message boxes can appear:

- Error Message Box



- Information Message Box



- Question Message Box

11.1 Error codes

Every error message box contains an error code. The different error codes are listed in the table:

Error Code	Identification	Description
0x0500	TOO_FEW_DATA_BYTES_RECEIVED	Too few data bytes received.
0x1400	INVALID_EXTCMD	Invalid extended command.
0x4000	COMMAND_NOT_IMPLEMENTED	Command not implemented.
0x0040	CONFIGURATION_CHANGED	Write or set command has been executed.
0x0020	COLD_START	Power has been removed and reapplied resulting the reinstallations of the setup information. The first command to recognize this condition will automatically reset this flag. This flag may also be set following a master reset or a self test.
0xFFFFFFFF		Error not specified.

12 Service

For general questions about the product or repair requests, please contact us:

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E-Mail: Sales.Transportation@luetze.de
Internet: www.luetze-transportation.com

13 Revision history

Version	Revision	Date
1.00	Initial Version	05/21/2012
1.01	Revised Version	06/24/2021
1.02	4.1: Main dialog, reviewed, NEW: 14. And 15; 8.1.1: Operating modes: revised 10. Chapter renamed from „*New functionalities in Version 4.0*“ into „*Software versions and functionalities*“	07/05/2022

Subject to technical changes. These operating instructions must be kept for further use!

LÜTZE TRANSPORTATION