



Tuner4TRONIC™

Production

Please note:

All information in this guide has been prepared with great care. The manufacturer of this hardware and software, however, does not accept liability for possible errors, changes and/or omissions. Please contact your sales partner for an updated copy of this guide. This user manual is for information purposes only and aims to support you in tackling the challenges and taking full advantage of all opportunities the technology has to offer. Individual applications may not be covered and need different handling. Responsibility and testing obligations remain with the luminaire manufacturer/OEM/application planner.

Tuner4TRONIC® Production Version

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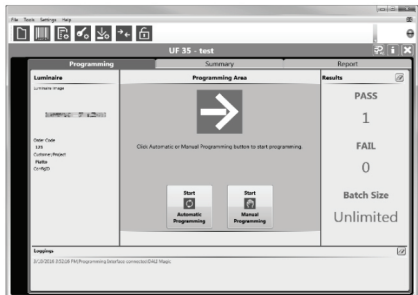
About Tuner4TRONIC

Purpose and Application

The Tuner4TRONIC (T4T) software suite allows luminaire manufacturers to program LED drivers via DALI and/or NFC in a simple, fast, reliable and cost-effective way, speeding up the production process.

Click [here](#) to watch a short video that gives a great overview about Tuner4TRONIC.

This software for Windows consists of four different modules according to the environment of use:

	<p>Tuner4TRONIC Development</p> <p>Luminaire designers can configure LED drivers by setting parameters such as output current, dimming levels, constant lumen output, operating modes and much more. Thanks to its multi-level password system, Configuration Lock protects LED drivers against unauthorized changes while service technicians can still be granted access rights for selected features.</p> <p>Once the configuration has been completed, the settings are exported as an encrypted read-only production file and transmitted to the production line.</p>	
	<p>Tuner4TRONIC Production</p> <p>Factory workers can easily load encrypted production files in order to start automatic programming for the fast mass production of LED drivers. Changes to the LED driver configuration are not possible during this stage. Provides a multilingual user interface.</p>	

Files Types

The Tuner4TRONIC Development creates and processes different file types, as follows:

- Tuner4TRONIC project file = .osrtul
- Tuner4TRONIC production file = .osrtup
- ECG description file = .osrtud

Workflow between the different T4T Versions

The luminaire product manager/designer creates his desired configuration (e.g. current, CLO, EL) using T4T Development. He saves his project as a *.osrtul file. It is possible to test the configuration by programming individual drivers. When the configuration is finished and ready for production, a read-only *.osrtup production file is exported and sent to the assembly line.

At the assembly line, the production file is loaded using T4T Production and the simplified mass programming can start.

Installation

System Requirements


The minimum system requirements for the T4T are:

- A programming interface such as:
 - DALI magic
 - NFC programmer (FEIG reader)
- A PC or notebook with the following specification:
 - Pentium M processor
 - 1 GB main memory
 - Windows 7 (both 32 or 64-bit), Window 8 / 8.1 (both 32 or 64-bit), or Windows 10 (both 32 or 64-bit) latest SP installed
 - 100 MB hard disk memory
 - Monitor with a resolution of 1024x768 pixels, the recommended zoom factor is 100%
 - A free USB 2.0 port


Software Installation

NOTE: Always read the "Release notes" in the zip file before installing the SW.
The Installer MUST have administrator rights.
Extract in a folder all files included in the Tuner4TRONIC zip file and then run "Install T4T.exe" available in that folder. By default both Tuner4TRONIC Development and Tuner4TRONIC Production will be installed, but there is the option to select only one of them. Tuner4TRONIC Development and Tuner4TRONIC Production can be launched from "Start" => "All Programs" => "Tuner4TRONIC" or by double-clicking the desktop icons.
Follow the instruction included in the Tuner4TRONIC zip file in order to use the components T4T-CMD or T4T-DLL or other possible SW tools.

Hardware Installation
To program the luminaries, it's needed a programming interface suitable for the used ECG(s):

[1]	ECG with DALI interface (multi and/or single programming)	DALI magic	
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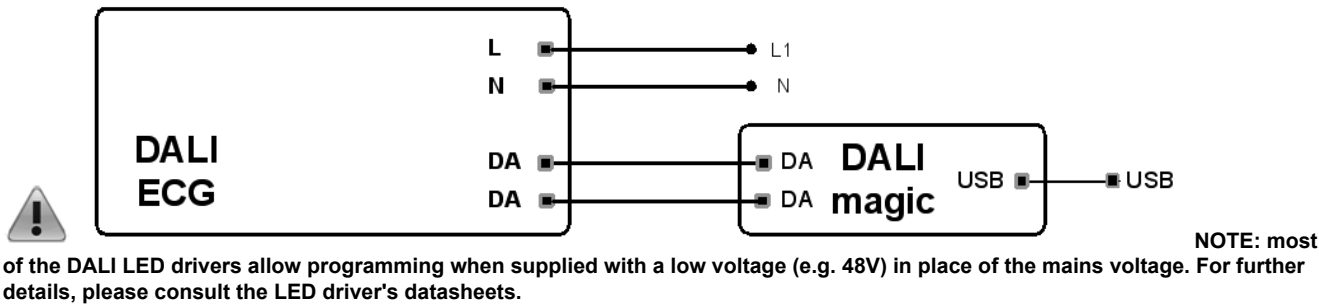
[2]	ECG with NFC interface (only single programming)	FEIG PRH101 FEIG CPR30 FEIG MR102	
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The Tuner4TRONIC is capable to handle more than one programming interface connected to the same PC (see Programming interfaces chapter)

ECG with DALI interface:

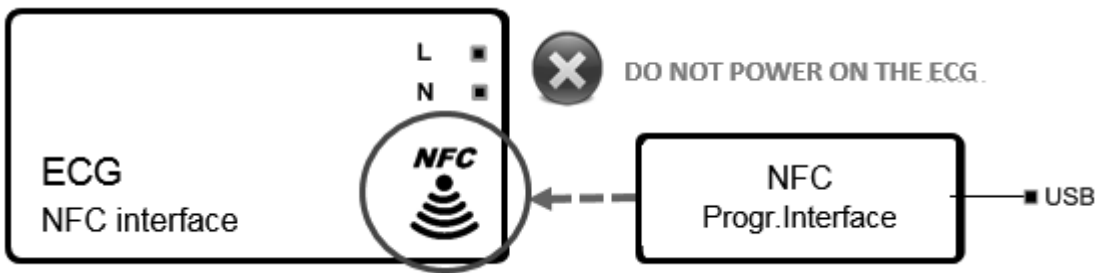
Step	Activity
1	Connect DALI magic and PC with the enclosed USB cable.
(2)	Connect the external 6V DC power supply to the DALI magic. The use of the external power supply is mandatory in case of more than 4 ECGs connected to the DALI line, anyhow it is strongly recommended to always use the external power supply in order to improve the stability of the DALI communication.
3	Connect the ECG to mains and PE if the related terminal is available in the ECG.
4	Connect the DALI® terminals of the DALI magic with the DALI® inputs of the ECG(s).

POWER ON THE ECG



ECG with NFC- Interface

Step	Activity
1	Connect a Programming Interface FEIG PRH101 or. FEIG CPR30 to the PC with the enclosed USB cable.
2	Put the Programming interface close in contact with the NFC area of the ECG (see logo) and hold still both ECG and programming interface till the process is completed



Important Information:
Keep the ECG powered OFF during programming via NFC unless otherwise indicated in the documentation of the ECG.
Keep both Programming interface antenna and ECG with NFC close in contact during the complete programming process.

Compatibility with previous versions of Tuner4TRONIC

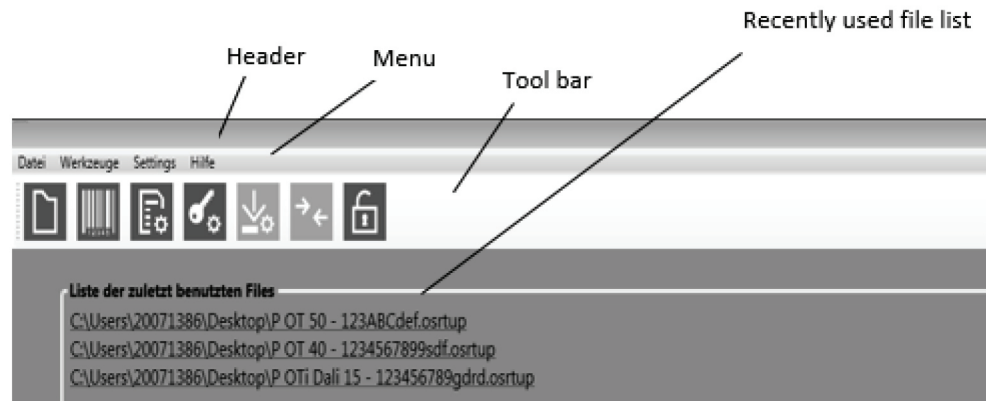
IMPORTANT INFORMATION:

Production files (.osrtup) generated with the previous versions from 1.x. to 2.1 cannot be used with the Tuner4TRONIC 3.3 anymore.

Production files (.osrtup) generated with the previous versions from 2.4 to 3.1 can be opened directly with the Tuner4TRONIC 3.3. In addition, they can be converted to be used in 3.3 by using the conversion utility available in the Tools menu of Tuner4TRONIC Development: "Upgrade Production Files".

User interface

Basic layout



Menu bar

The basic functions are available via the menu bar. Submenus or dialogs are opened by clicking an entry in the menu bar. The menu contains the following elements, each with the listed sub items.

File

Open	Loads an existing Luminaire Production File (.osrtup). This file is previously created with the Tuner4TRONIC® Development.
Recently Used Files	List of recently used files.
Load Production file using a barcode scanner	Loads a Luminaire Production File using the Barcode reader
Close	Closes the software.

Settings

Report	Enables the selection of the file title, folder path, retention time
Label Printing	Enables the selection of label printing feature, the spooling folder path and the label definition file path.
Administrative PIN Settings	Allows to Set\Change\Remove the PIN for the Administrative Mode. Available only in Administrative Mode.
Programming Setup	Allows to change the Programming settings. Available only in Administrative Mode, if left unlocked in Tuner4TRONIC.
Programming Interfaces	Visualize, the connected programming interface(s) and enables the selection of the default one (for each types).
Programming sound	Enable\Disable sound on programming. Available only in Administrative Mode, or if left unlocked in Tuner4TRONIC. Generates a sound like a short beep every time a luminaire is programmed successfully and a long beep in case of failed programming.

Tools

Compare	Compare actual configuration with the connected luminaire.
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Help








Help	Opens the User's guide
Info	Displays "About" "EULA" and "Release Notes" information and allows the creation of the diagnosis file

Flag icon

Allows the user to select the GUI language (if other languages than English are available).


Toolbar

The toolbar provides instant access to the most important features.

	Open	Load the Luminaire Production File.
	Load Production file using a barcode scanner	Load the Luminaire Production File using a barcode reader
	Report Settings	Enables the selection of the file title/path, retention period.
	Administrative PIN Settings	Allows to Set\Change\Remove the PIN for the Administrative Mode. Available only in Administrative Mode.
	Programming Setup	Allows the user to change the Programming settings. Available only in Administrative Mode.
	Compare	Compare actual configuration with the connected luminaire.
	Administrative Mode Status	Enter/Exit Administrative Mode. Open lock means Administrative Mode activated.


In Admin Mode, all toolbar icons (except Administrative Mode Status) will be disabled.



Luminaire info: On click of the  icon a non-editable dialog as below, with the details of the luminaire is displayed.

Luminaire Description

Luminaire



Select Image

Remove Image

Name

Dali Ed 2

Order Code


Customer/Project

Description

ECGs

ConfigID ☐

1



+

-

+

OSRAM

+

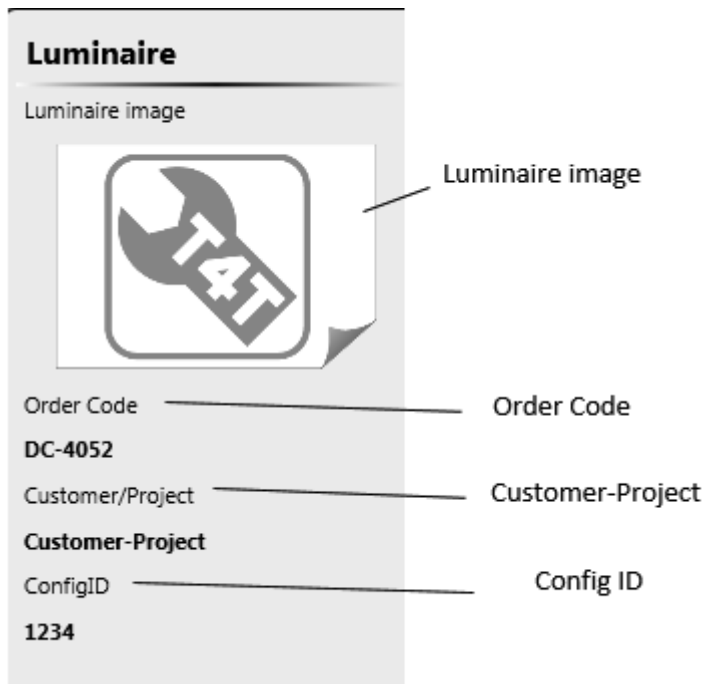
🔍

×

OK

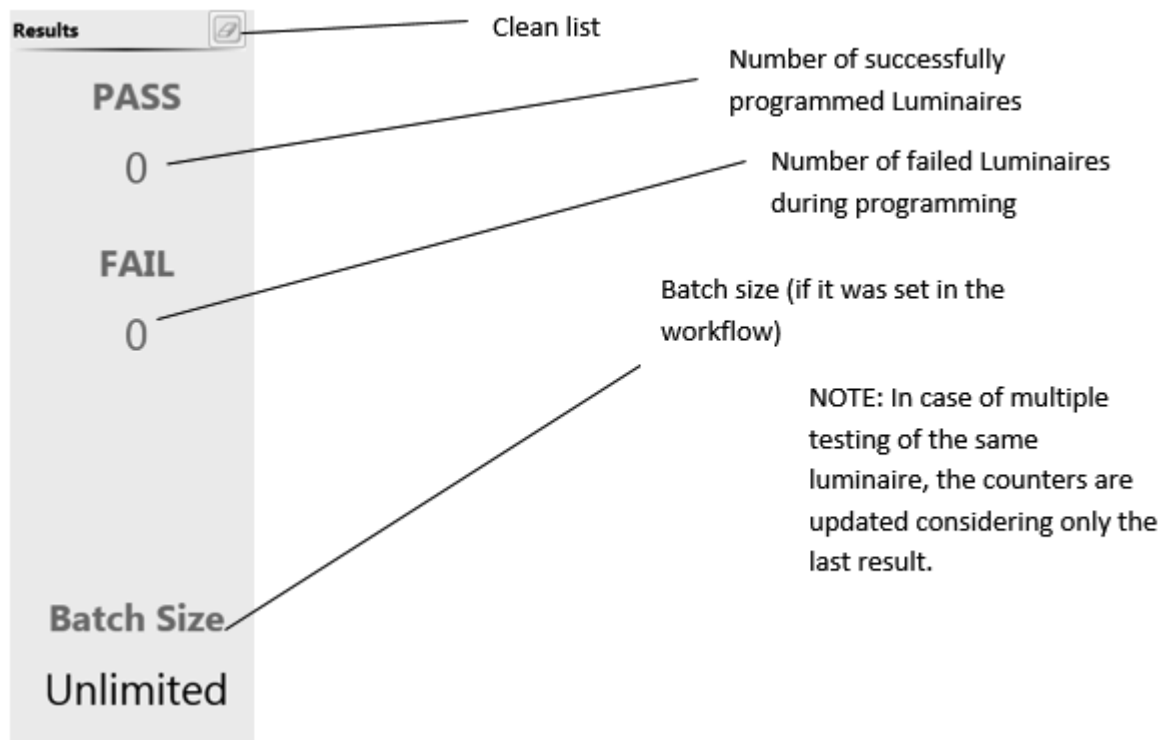
Workspaces

Luminaire Area



It has the Luminaire image, Order Code, Customer/Project and Config ID details.

Results Area

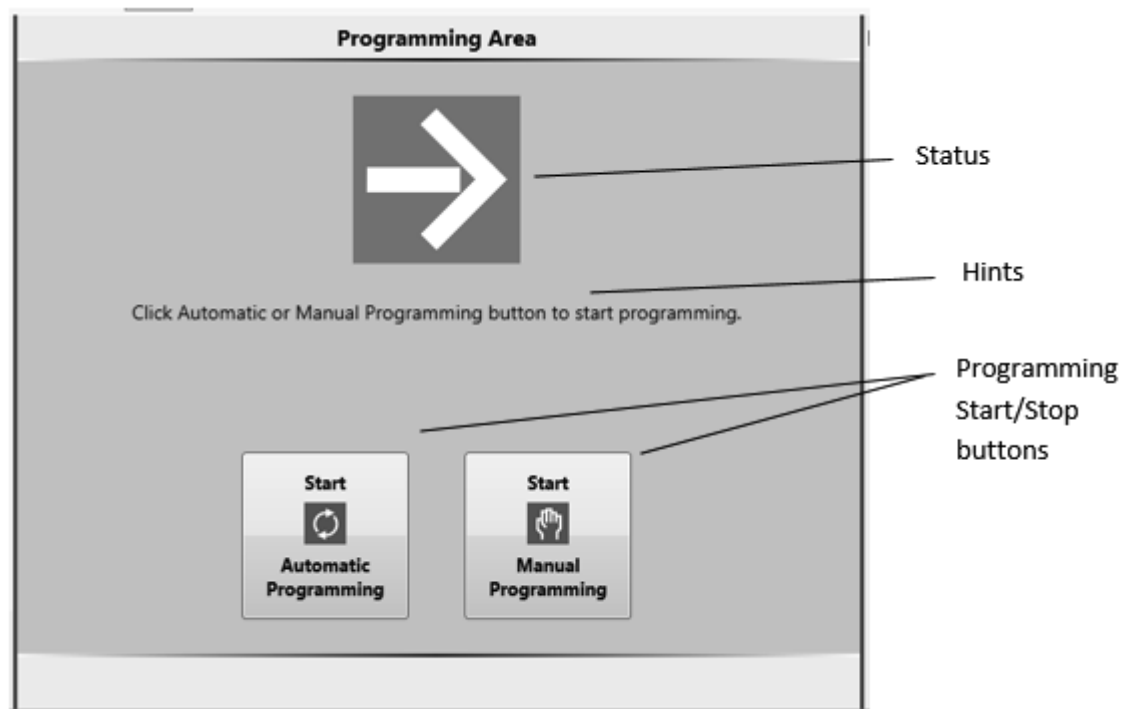


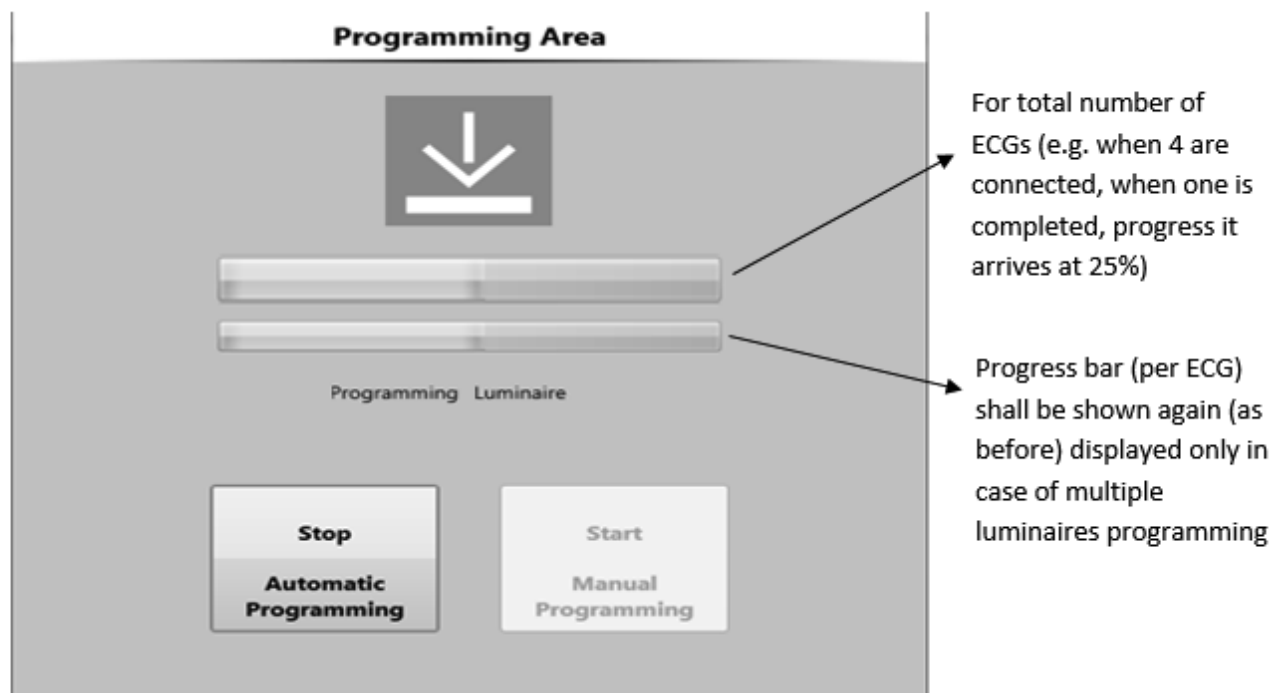
When opening a Production File, Batch Size is set to "unlimited" if not available yet, otherwise previous values are retained

Loggings Area



Programming Area





Progress bar (per ECG) shall be shown again (as before) displayed only in case of multiple luminaires programming

For total number of ECGs (e.g. when 4 are connected, when one is completed, progress it arrives at 25%)

Possible status indicators:


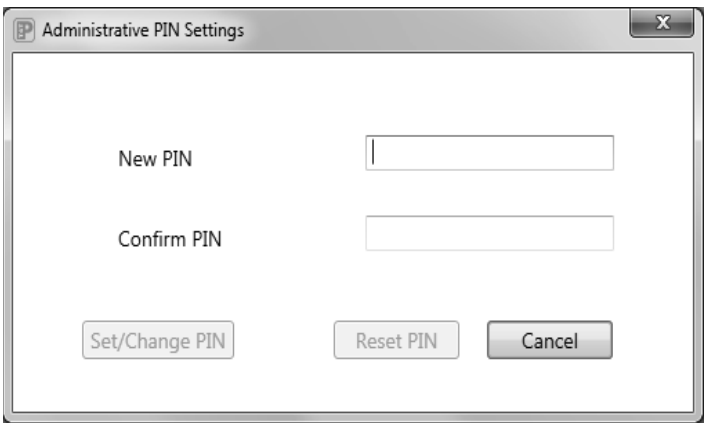

	Production file not loaded	Load a production file to start (File --> Open).
	Waiting for Luminaire	Connect a Luminaire to begin/continue programming.
	Programming in progress	Do not remove the connected Luminaire(s) until programming process is completed.
	PASS	Programming process has completed successfully. Remove Luminaire(s).
	FAIL	Programming process has stopped by user or due to errors. Fix the problem then start programming again. Check possible messages on screen for further details.
	Missing programming interface	Connect the programming interface to the computer (check Settings --> Programming interfaces for details).

General Operation

Enter Administrative Mode




Step	Activity
1	<div></div> <div>Click button in the toolbar.</div> <div></div>
2	Enter administrative PIN
3	Click OK button to enter in Administrative Mode .
4	<div>The icon in the toolbar changes from  to </div>

Set/Change Administrative PIN



Step	Activity
1	<div></div> <div>Click button in the toolbar.</div> <div></div>
2	Enter the new PIN in New PIN and Confirm PIN
3	Click  to set the new PIN.

Exit Administrative Mode

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Step	Activity
1	Click  button in the toolbar.
2	The icon in the toolbar changes from  to  .


Reset Administrative PIN

Step	Activity
1	Click  button in the toolbar. 
2	Click  to remove the PIN

Lost of Administrative PIN

There is no way to recover the Administrative PIN if lost. The recover from this situation it is needed to uninstall the Tuner4TRONIC Production and then install it again

Open Luminaire Production File

Step	Activity
1	Click  button in the toolbar.
2	Select the folder which contains the configuration file via the "Look in: "drop-down menu.
3	Open the configuration by double-clicking. The name of the loaded configuration appears in the header of the Tuner4TRONIC®.

4

A window prompts the user to clear PASS/FAIL counters, if the Production file has non-zero values in PASS/FAIL counters. The counters can be reset if they are not zero (only in Administrative mode), else previous values are retained.

Note:



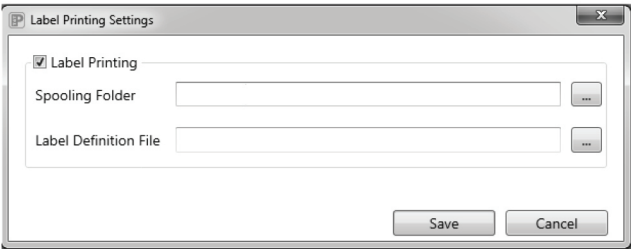
A configuration can also be loaded by double-clicking the file within the Windows Explorer.

Label Printing


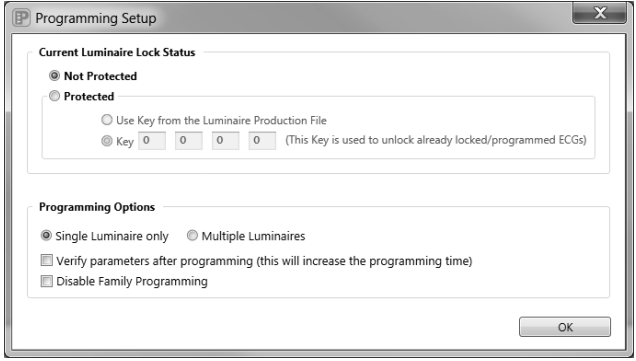
To use the label printing functionality in T4T, a third party label printing software (e.g. Nice Label, Bartender) is needed to layout the label design (incl. barcode creation) and to start the actual printing.
After activating the label printing in the T4T settings (see below), Tuner4TRONIC Production will save a file (Output.csv) on the spooling folder specified in the label printing settings after each successful driver programming.
The third party label printing software must be set up to monitor the spooling folder and whenever a new Output.csv file is created, the printing process shall be triggered using the data inside the new Output.csv file and the predefined label design.
The Output.csv file hold only the data of the last programmed driver, i.e. after each driver programming in T4T-Production, the Output.csv file is overwritten with the latest driver data.
In this way, after each driver is programmed with T4T-Production, the corresponding label is printed instantly and fully automatically.

NOTE: see Appendix for the parameter names definition

Label printing settings

Step	Activity
1	<div></div> <div>Click  button in the Settings menu.</div> <div></div>
	Label Printing Checkbox-Enable/Disable label Printing feature.
	Spooling folder - Select the folder to save the generated file. The files thus created will be saved as csv files.
	Label Definition File - Select the label file-(not mandatory)
	Click SAVE to save the settings.


Programming Settings

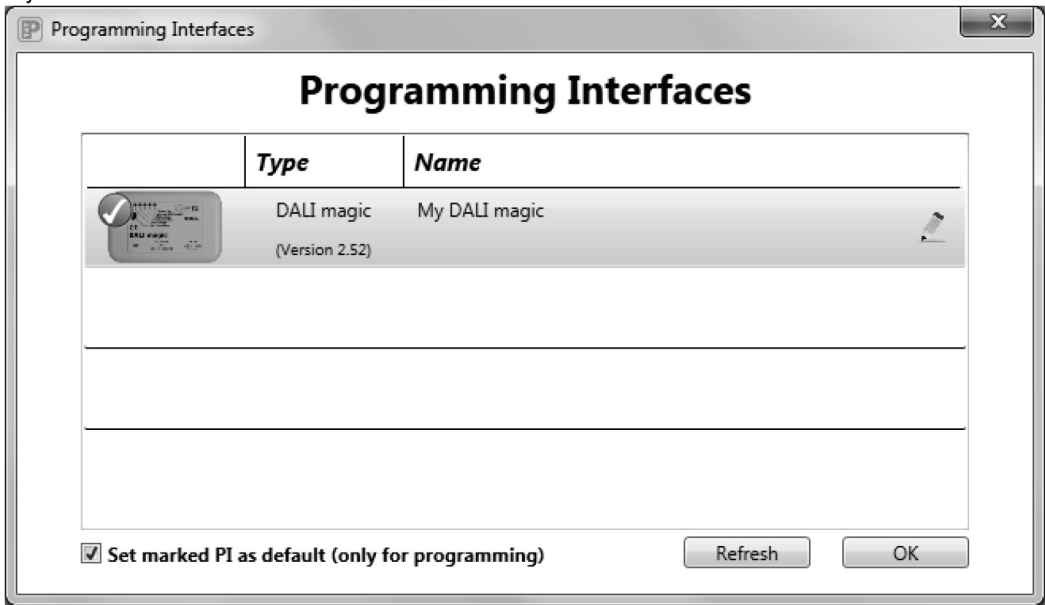
Step	Activity
1	<p>Click  button in the toolbar.</p> 
2	<p>Set Luminaire Lock Status</p> <ol style="list-style-type: none"> 1. Not Protected: The Luminaire has no OEM/Admin key set. 2. Protected: The Luminaire is locked thus it is needed to unlock it before proceeding with the programming: <ul style="list-style-type: none"> • Use Key from Luminaire Production File. Use this option if the needed code to unlock equals the one set in the OEM Key feature. • Key _ _ _ _. Input in the field the code to unlock (which can be different from the one in the OEM Key feature). If the OEM Key feature is selected, after programming the Luminaire will be locked with the using the code of the OEM Key feature.
3	<p>Other settings:</p> <ol style="list-style-type: none"> 1. Single Luminaire only: select this option if the programming station processes only one luminaire at a time, this will speed up the programming (less time to detect the luminaire). 2. Multiple Luminaires: select this option if the programming station processes more than one DALI luminaire at a time (automatic sequential programming); DALI addressing is performed before programming, then after programming is completed all short addresses are cleared. 3. Verify parameters after programming: after programming, the configuration is read back and compared with the one just programmed. This slows down the overall programming speed. 4. Disable Family Programming: The term "Family Programming" refers to the capability of T4T to be able to program LED drivers within the same or later generation of one product family using the same production file, thus simplifying the production workflow. A product family is defined as a group of related LED driver models of the same target application and similar physical characteristics, but can differ in the name, firmware version, current and/or power. Generations typically differ in the set of included features. <p>Family Programming will fail when the capability of the target driver are not sufficient for the configuration</p>

	<p>defined in the production file. For example, if a driver supports only 1A, but the original configuration has selected 1,2A then the program must (and will) fail.</p> <p>Moreover, Family Programming only works forward (e.g. from a G2 device to a G3 device), not backward (e.g. from a G2 device to a G1 device). The reason is that later generations introduce new features that may not be available in the older generation. Therefore the usage of a production file created for a newer generation for programming of an old driver is not possible.</p> <p>When devices of different generations are mixed in the production, the recommended usage is to create a projects / production files based on the older devices of a family. When newer features shall be used, a new production file has to be created and only the newer drivers can be used.</p> <p>Family programming was introduced to Tuner4TRONIC in version 3.3.</p> <p>By default, family programming is turned on. Turning off this option means that T4T will only program the exactly specified driver model (i.e. only drivers with the same name and firmware version will be programmed).</p> <p>In T4T-Production, the Family Programming can be disabled in the Programming Setup.</p> <p>A list of all supported and unsupported drivers of family programming is provided at the Appendix 1 of the T4T-Development user manual.</p>
4	Click OK to save the programming settings.


Set the Programming Interface



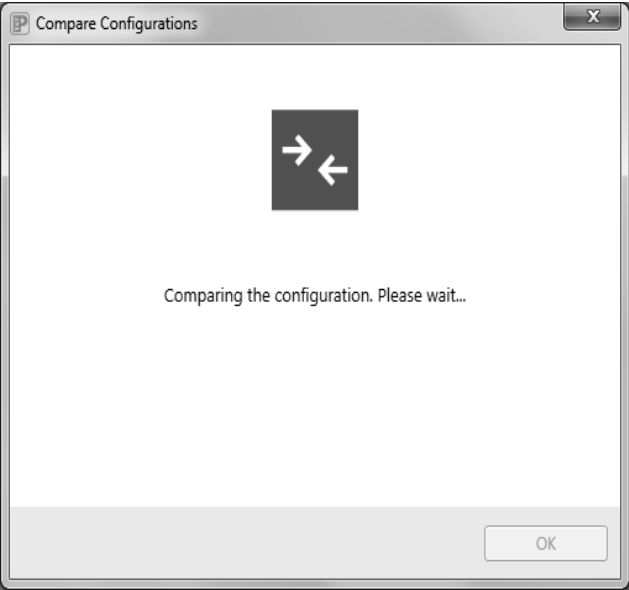

Scope: This dialog shows all current connected ECG programmer to the PC and allows each type to define the default one for programming.

Click on the pencil icon  to change the name of the programming interface (only for DALI magic), then press "enter" key of the keyboard.

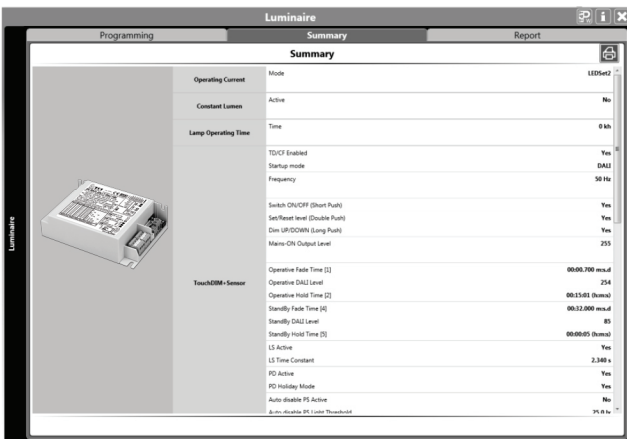



Compare configuration

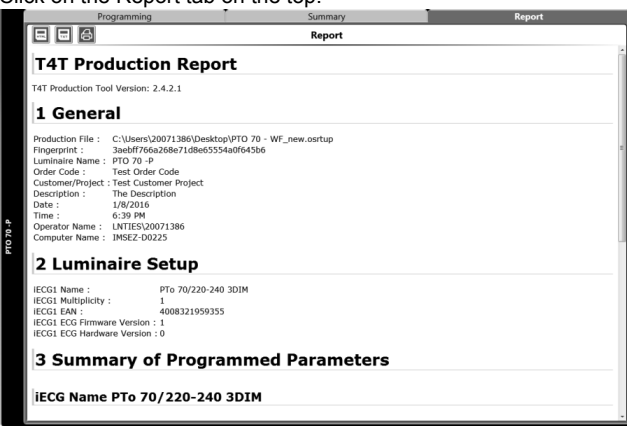



Step	Activity
1	Connect Luminaire to compare and load reference configuration (Production file .orstup) using  button in the toolbar
1	

	<div> Click  button on the toolbar</div> <div></div>
2	<div>In case of difference found there is the possibility to see the details by clicking the "Details..." button in the result window:</div> <div></div>

Parameters' Summary



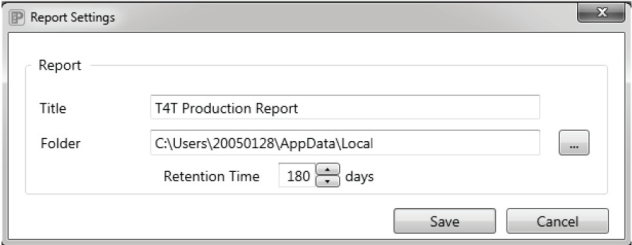
Step	Activity																																														
1	<p>Click on the Summary tab to display the summary of parameters in the configuration.</p>  <table border="1"> <thead> <tr> <th>Parameter</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Mode</td> <td>LEDs2</td> </tr> <tr> <td>Active</td> <td>No</td> </tr> <tr> <td>Time</td> <td>0 h</td> </tr> <tr> <td>TDCT Enabled</td> <td>Yes</td> </tr> <tr> <td>Startup mode</td> <td>DAJ2</td> </tr> <tr> <td>Frequency</td> <td>50 Hz</td> </tr> <tr> <td>Switch ON/OFF (Short Push)</td> <td>Yes</td> </tr> <tr> <td>Set/Reset level (Double Push)</td> <td>Yes</td> </tr> <tr> <td>Dim UP/DOWN (Long Push)</td> <td>Yes</td> </tr> <tr> <td>Main ON Output Level</td> <td>255</td> </tr> <tr> <td>Operative Fade Time [1]</td> <td>00:00.700 ms.d</td> </tr> <tr> <td>Operative DALI Level</td> <td>254</td> </tr> <tr> <td>Operative Hold Time [2]</td> <td>00:15:01 (h:mm)</td> </tr> <tr> <td>Standby Fade Time [4]</td> <td>00:32.000 ms.d</td> </tr> <tr> <td>Standby DALI Level</td> <td>0</td> </tr> <tr> <td>Standby Hold Time [5]</td> <td>00:00:01 (h:mm)</td> </tr> <tr> <td>LS Active</td> <td>Yes</td> </tr> <tr> <td>LS Time Constant</td> <td>2.340 s</td> </tr> <tr> <td>PD Active</td> <td>Yes</td> </tr> <tr> <td>PD Holiday Mode</td> <td>Yes</td> </tr> <tr> <td>Auto disable PS Active</td> <td>No</td> </tr> <tr> <td>Auto disable PS Under Threshold</td> <td>19.6 h</td> </tr> </tbody> </table>	Parameter	Value	Mode	LEDs2	Active	No	Time	0 h	TDCT Enabled	Yes	Startup mode	DAJ2	Frequency	50 Hz	Switch ON/OFF (Short Push)	Yes	Set/Reset level (Double Push)	Yes	Dim UP/DOWN (Long Push)	Yes	Main ON Output Level	255	Operative Fade Time [1]	00:00.700 ms.d	Operative DALI Level	254	Operative Hold Time [2]	00:15:01 (h:mm)	Standby Fade Time [4]	00:32.000 ms.d	Standby DALI Level	0	Standby Hold Time [5]	00:00:01 (h:mm)	LS Active	Yes	LS Time Constant	2.340 s	PD Active	Yes	PD Holiday Mode	Yes	Auto disable PS Active	No	Auto disable PS Under Threshold	19.6 h
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2	In case the luminaire configuration has multiple ECGs, a second table is shown below the first ECG summary																																														
3	<p>Click  to print the report.</p>																																														

Production Report



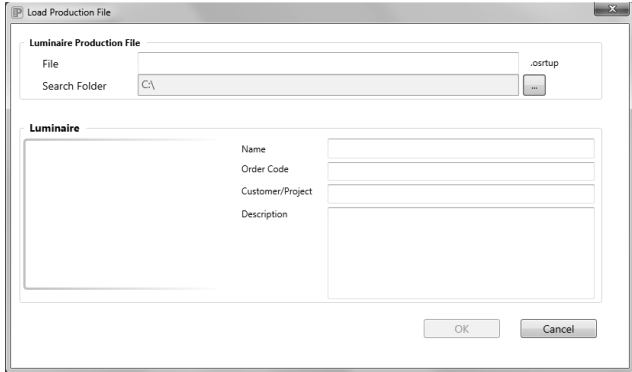
Step	Activity
1	<p>Click on the Report tab on the top.</p>  <p>T4T Production Report</p> <p>T4T Production Tool Version: 2.4.2.1</p> <p>1 General</p> <p>Production File : C:\Users\20071386\Desktop\PTO 70 - WF_new.asrtp Fingerprint : 3aebff766a268e71d8e65554a0f645b6 Luminaire Name : PTO 70 -P Order Code : Test Order Code Customer/Project : Test Customer Project Description : The Description Date : 1/6/2016 Time : 6:39 PM Operator Name : LNTIES\20071386 Computer Name : IMSEZ-D0225</p> <p>2 Luminaire Setup</p> <p>IECG1 Name : PTo 70/220-240 3DIM IECG1 Multiplicity : 1 IECG1 EAN : 4008321959355 IECG1 ECG Firmware Version : 1 IECG1 ECG Hardware Version : 0</p> <p>3 Summary of Programmed Parameters</p> <p>IECG Name PTo 70/ 220-240 3DIM</p>
2	<p>Click  or  to save the report as .txt or .html file respectively, or  to print it.</p>

Report Settings

Step	Activity
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1	<div></div> <div>Click  button in the toolbar or in the Settings menu.</div> <div></div>
2	Title- Change Title in the Report group, if necessary (Title is mandatory)
3	Select the folder where to save the report.
4	Retention time: Retention time of the report in days after which the report shall be deleted

Load Luminaire Production Files using a Bar Code Reader

Step	Activity
1	<div></div> <div>Click  button on the toolbar or in the from the file menu.</div> <div></div>
2	<p>Use the Bar Code reader while this dialog is shown. In the Luminaire Production File Preview area of the Dialog the selected luminaire will be shown.</p> <p>NOTE: the full file name including path has to be encoded in the barcode.</p>


Create Workflow File



The admin user will be able to create "Production File with Workflow Support" (=Work Flow File) by clicking on the icon in the title bar. This will enable the user to create a copy of production with all programming parameters.

Production File With Work Flow

Luminaire



Select Image Remove Image

Name P- OT 50

Order Code Test Order Code

Customer/Project Test Customer

ConfigID ☒

Description Test Description

Batch

Exclude countdown – infinite batch ☒

Size (pcs) 1

Results

PASS 1

FAIL 0

Save As Cancel

The following information can be edited in the Production File With Workflow window:

- Order Code
- Customer / Project
- Description
- Image
- Batch Size
- PASS/FAIL counter, with additional button to ZERO both of them.



When opening a Production File, Batch Size is set to "unlimited" if not available yet, otherwise previous values are retained. On click of "Save As" a Production file with Workflow support is created.

Programming

Automatic Programming


The SW detects automatically when the luminaire is connected and the programming concluded; operator has only to connect – disconnect the luminaires.

NOTE: this option is available only for Luminaire with one ECG only and if single luminaire programming is selected in the programming setup.

Step	Activity
1	 <p>Click Start Automatic Programming button on the bottom of the Programming Area.</p>
2	Connect the Luminaire and wait for the programming result. Check the "Programming Area" paragraph for details about the possible states.
3	In case of "PASS" result disconnect the luminaire and proceed with a new one starting from point 2.
4	In case of "FAIL" result the Automatic programming stops, then follow instruction on screen.
5	To stop the automatic programming process click on
	

Manual Programming

The operator has to start the programming sequence by pressing the related button, after having connecting the luminaire to the programming interface.

Step	Activity
1	Connect Luminaire
2	 <p>Click Start Manual Programming button on the bottom of the Programming Area.</p>
3	Wait for the programming result
4	In case of "PASS" result disconnect the luminaire and proceed with a new one starting from point 1
5	In case of "FAIL" result follow instruction on screen, then a new programming sequence has to be started from point 1.

Programming Errors

During both, Manual or Automatic programming, an error might occur and the luminaire is not programmed successfully. If this happens, a red indicator will appear in the programming area.
Follow instruction on screen for details.

Appendix

Label printing parameter names definition

The parameter names and values in the Output.csv file are fetched from the summary details as follows:

1	2	3	4
		Summary	
		Auto disable PS Light Threshold	25.0 lx
		Frequency	50 Hz
		Switch ON/OFF (Short Push)	Yes
		Set/Reset level (Double Push)	Yes
		Dim UP/DOWN (Long Push)	Yes
		Operative Fade Time [1]	00:00.700 mm:ss
		Operative Hold Time [2]	00:02:31 (hh:mm:ss)
	Corridor Functionality	Operative DALI Level	254
		StandBy 1 Fade Time [3]	00:32.000 mm:ss
		StandBy 1 Hold Time [4]	00
		StandBy 1 DALI Level	170
		StandBy 2 Fade Time [5]	00:00.000 mm:ss
		StandBy 2 Hold Time [6]	OFF
		StandBy 2 DALI Level	0
		Fade Time	00:00.000 mm:ss
		Fade Rate	44.7 steps/s
		Min Level	85
		Max Level	254
		Power on level	254
		System Failure Level	254
		Dimming Curve	Logarithmic
		Short Address	Not assigned
		Active	Yes
		DALI Level Value	180
	DALI Settings		

The parameter name is created by merging with a dot "." the second and third column labels of the summary: **parameter name = second column label.third column label**

Spaces in labels are always replaced by underscores (_)

For example: *Corridor_Functionality.Operative_DALI_Level*

The **parameter value**, which is displayed in the 4th column of the summary, is added in the second row of the Output.csv file, aligned with the related header.

For example, a portion of the Output.csv file opened as spreadsheet:

A1	AJ
Corridor_Functionality.Operative_DALI_Level	Corridor_Functionality.StandBy_1_Fade_Time_[3]
254	00:32.000 mm:ss