APPLICATION NOTE	AN-LM2C-0002v100EN
Multi Lift parameters conversion to LM2C	

Inverter type	FRENIC-Lift LM2C
Software version	All versions
Required options	-
Required software	FRENIC-Loader 3.3 FRENIC-Loader 4 Multi-LIFTvLM2C Conversion Tool v1
Related documentation	SI27-4670A_FRN-E1S-LM SI27-5130a_FRN-E1S-LM1 INR-SI47-1909a-E_Lift(LM2)_RM(E)
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Use	Public
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Version	1.0.0
Languages	English

1. Introduction

This document describes the procedure to import the parameters from a FRENIC-Multi (LM or LM1 versions) to FRENIC-Lift LM2C. To achieve that, we will use the tool “Multi-LM1vLM2C Conversion Tool”, which will generate a CSV file to import in FRENIC-Loader 4.

The aim of this is to explain how to manage properly the different FRENIC-Loader versions in order to get the CSV format files, and how to proceed with the conversion tool.

Starting point is an existing inverter FRENIC-Multi (LM or LM1), from which we will take the parameter list in a CSV file. Thanks to the tool, the parameters will be adapted to the FRENIC-Lift LM2C specifications and a new CSV format file will be generated with the correct format for the FRENIC-Loader 4, which will write it to new inverter.

2. Parameter list from Multi

In order to get the existing parameter list from the FRENIC-Multi, FRENIC-Loader 3.3 is used. With it, we can read and generate a file in the CSV format needed for the tool. This file format is mandatory, otherwise the tool will not work and the parameters for the LM2C will not be converted.

With the Loader and the inverter properly connected to the computer, we will read the actual configuration. Click on “Menu > Function Code > Read from the INV” as in the blue square and arrow on the figures as follow:

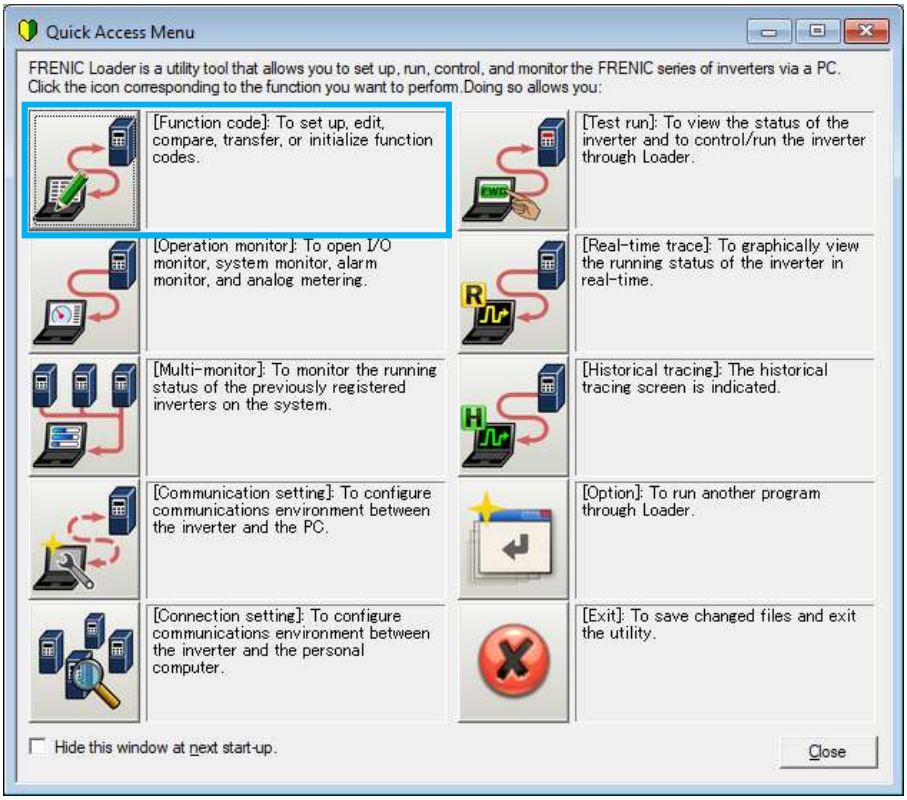

Figure 1. Quick access Menu view from FRENIC-Loader 3.3

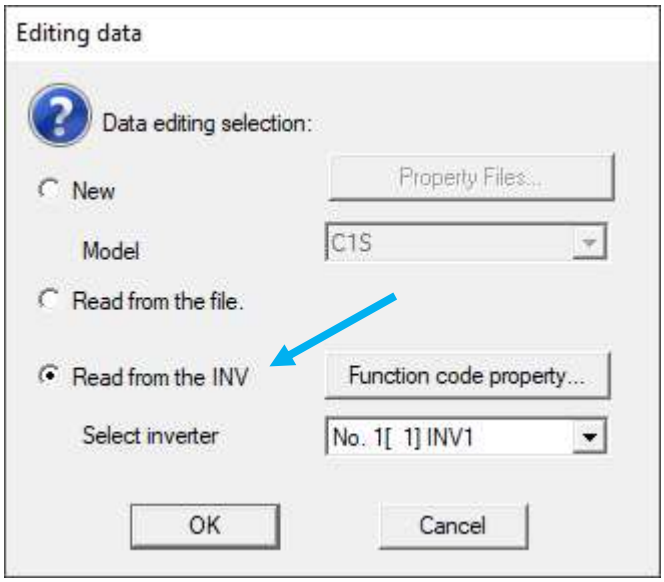

Figure 2. Editing data selection box from FRENIC-Loader 3.3

Once the parameter list has been read, it will be shown on the screen. This list must be saved as CSV format in “File > Save As…”, then the following browser will be displayed:

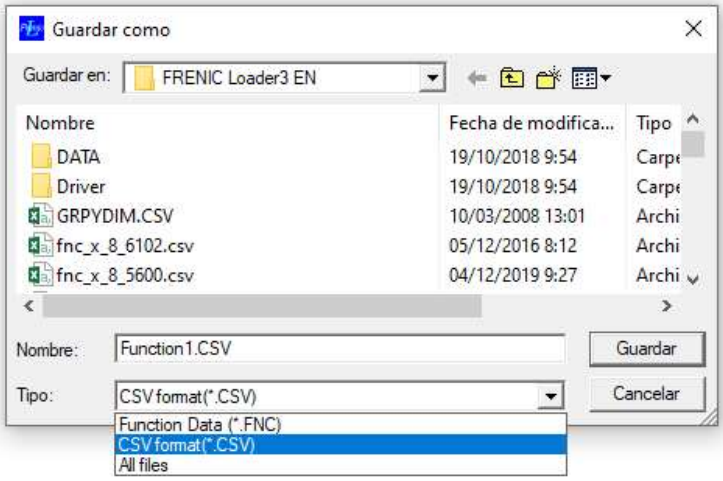

Figure 3. Save as browser from FRENIC-Loader 3.3

When the file has been generated, we can continue following the instructions on the tool in order to create the converted parameter list in a CSV file.

3. Multi-LM1vLM2C Conversion Tool

In order to create a CSV file with the correct format and the changes from Multi to LM2C in the parameters, we will use the Multi-LM1vLM2C Conversion Tool in Excel. It is necessary in order to adapt some parameters that have been changed from the Multi.

The first step to do once the tool has been executed is to introduce the information about the drive where parameters will be transferred: we have to select from the list the capacity of the LM2C. The information about the ROM version is optional for the tool, being the 1500 version as default (cell in blank). For more information regarding ROM version, please refer to chapter 4 of this Application Note.

Second step will be to select the CSV file that we have created in the previous chapters with the parameter list from the Multi clicking on the “File Selector” button. After the selection, the tool will convert all the parameters automatically. If there is any problem during the conversion, an error message will be shown below the button. This can be solved selecting a correct CSV file.

Once the file has been loaded and only if it is correct, a new window will be deployed. On the new screen, we need to set the desired speed profile (the same that the old unit had). We will select from the list the multistep combination for the different digital inputs (figure 4), appearing in blue the selected speed value.

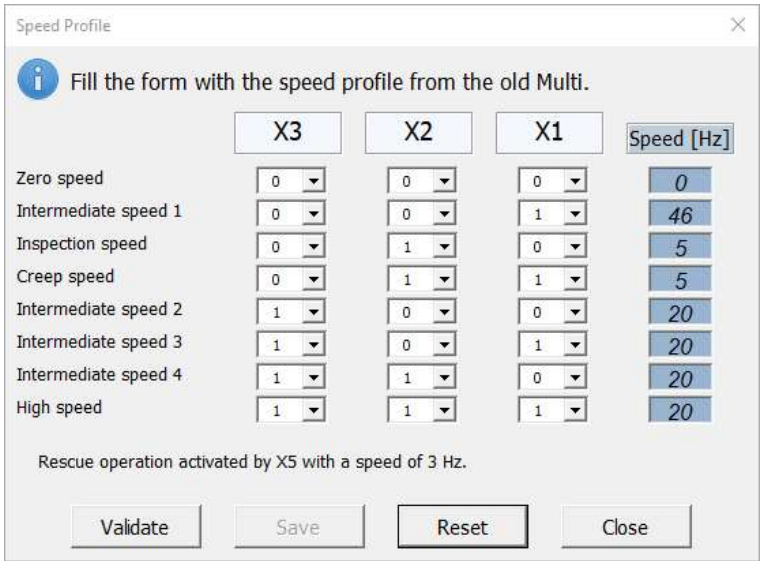

Figure 4. Default screen of the Speed Profile selector.

As an example, we will convert the read setting from figure 4 into the correct profile for the new inverter. For this purpose, it is needed to change the combination for “Intermediate speed 1”, “Inspection speed” and “High speed”.

Table 1. Example: read setting from old unit

Name	SS4 (X3)	SS2 (X2)	SS1 (X1)	Speed [Hz]
Zero speed	0	0	0	0
Intermediate speed 1	0	0	1	46
Inspection speed	0	1	0	5
Creep speed	0	1	1	5
Intermediate speed 2	1	0	0	20
Intermediate speed 3	1	0	1	20
Intermediate speed 4	1	1	0	20
High speed	1	1	1	20

Table 2. Example: applied changes for the speed profile

Name	SS4 (X3)	SS2 (X2)	SS1 (X1)	Speed [Hz]
Zero speed	0	0	0	0
Intermediate speed 1	0	1	0	5
Inspection speed	1	1	1	20
Creep speed	0	1	1	5
Intermediate speed 2	1	0	0	20
Intermediate speed 3	1	0	1	20
Intermediate speed 4	1	1	0	20
High speed	0	0	1	46

Modifying the values of digital input combination, the displayed speed value is automatically updated. When the profile has been set, click on “Validate” button to check that there is no wrong setting, and then click on “Save” to transfer it to

the tool. If setting is not saved, the tool will never change the message “Conversion error”.

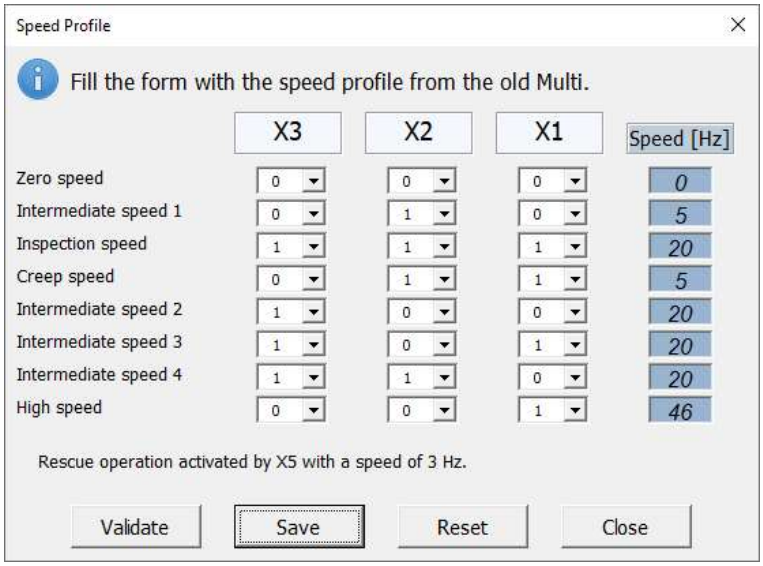

Figure 5. Speed profile window after validation

Save button is only visible after the setting has been validated. Any change after the validation or save will need to be validated and saved again. The tool will use the last saved setting, the not saved changes will be ignored.

Finally, when message “Conversion successful” is shown, we can generate the CSV file for the FRENIC-Loader 4 with the parameter list converted to LM2C format. It is necessary to click on the “File Generator” button to open the browser where we can specify the name for the file and where to save it. If we write the same name than in other file, it will be replaced.

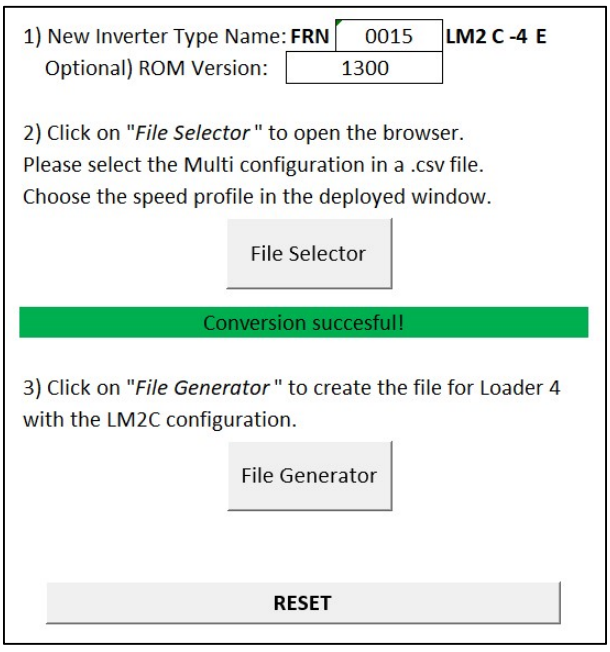

Figure 6. Conversion tool operation view

The tool also has the option to reset the information in order to start again the process for another file.

When the conversion has been completed and the tool has to be closed, it is recommended to not save any change on it.

4. Parameter list to LM2C

When the tool has generated the new parameter list with the conversion, it can be imported to FRENIC-Loader 4. It is not possible to open directly this file in CSV format, therefore the procedure is explained below.

First step is to generate a parameter list for LM2C in blank. Click on “Menu > Function Code > Create new function setting”, with the option marked like in the figure as below:

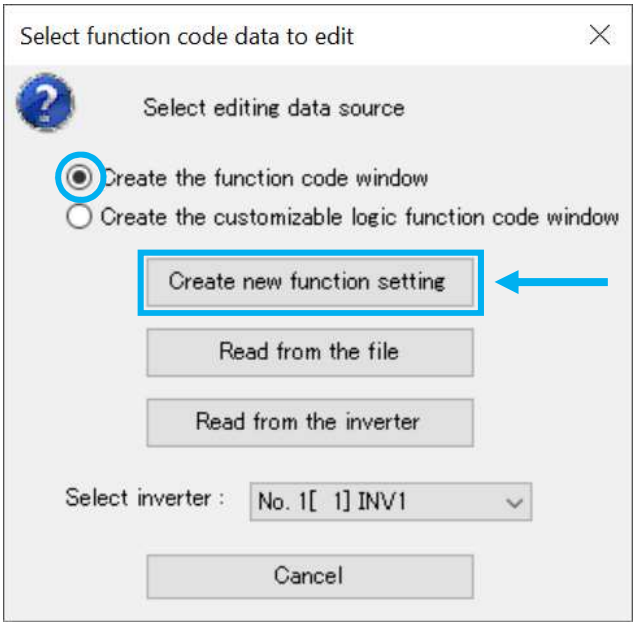

Figure 7. Parameter list creation box from FRENIC-Loader 4

A new window will be displayed, where the specifications of the FRENIC-Lift LM2C must be selected (blue arrows on Figure 8); click on “Change” in order to select the proper ROM version from the list:

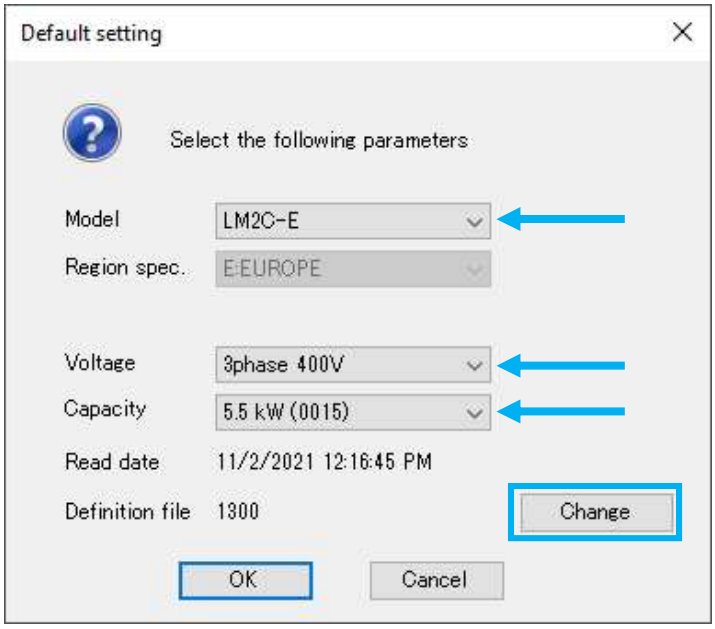

Figure 8. Configuration box from FRENIC-Loader 4

Clicking on “Change”, we must select the correct version of the LM2C. If there is a mismatch between FRENIC-Loader 4 and the inverter (once it is connected to the computer), parameters cannot be transferred. We can solve this situation in the future clicking on “File information” when the parameter list is shown. In order to know how to identify the version, please refer to chapter 4.1 of this Application Note.

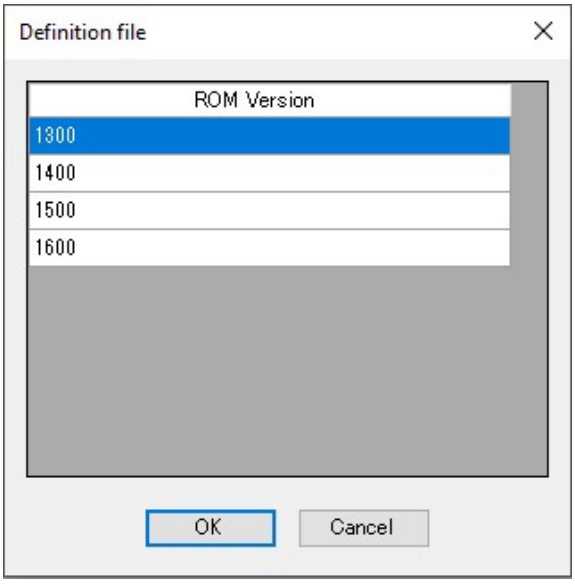

Figure 9. ROM version selection list

Accept the configuration in order to set the parameters to the default setting for that size. A wrong configuration here may cause a problem during the importing of parameters or a wrong behaviour on the inverter.

Once the parameter list is displayed on the screen, change from the default setting to the Multi configuration is needed. FRENIC-Loader 4 import from CSV file function will only change the parameters that are listed on it; the other parameters will keep the default setting that appear on screen.

In order to open the browser, click on “FunctionCodeEdit > Import”; then, select the file generated by the tool.

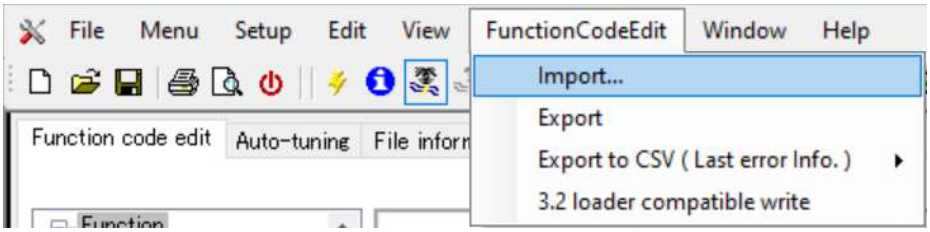

Figure 10. Import route from FRENIC-Loader 4

In case of using a FRENIC-Loader 4 version 1.0.5.2 or previous, parameters C21 and P01 must be set by hand on Loader before to import. It is a mandatory step or the import procedure will be failed. In FRENIC-Loader 4 version 1.0.5.2 it is needed to deactivate the add-in number 000065 if the inverter version is the 1500; otherwise, a warning could appear during the import procedure. Make sure that the add-in numbers 000116, 000117 and 000118 are activated for the proper behaviour of FRENIC-Loader 4.

The following window will be displayed when file is selected. If the motor run time information is needed to transfer from the old Multi to the new LM2C, we will also click on the “Import read-only data” option on this box:

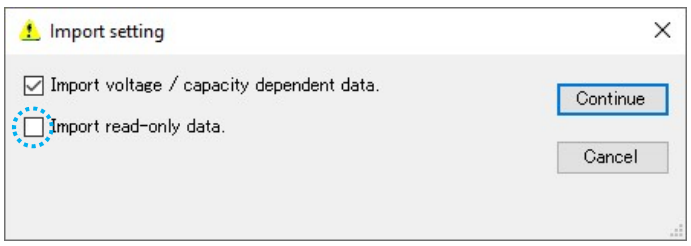

Figure 11. Import setting box from FRENIC-Loader 4

If any error occurs during the porting, it will be shown here. There are three levels of error with their consequences:

- Advise: when the capacity, power supply, ROM version, etc. are different between the configuration and the CSV file. FRENIC-Loader 4 can continue with these mismatching, but it is not recommended in order to not send a wrong default setting to the inverter.
- Reading error: when the parameter has a value over the range or not exists for that version. After the advice message with the parameter number, it is possible to correct it on the list.
- Warning: when the CSV file is corrupt or with a wrong format. FRENIC-Loader 4 will not import any parameter.

When the complete parameter list is generated, we can operate with the normal use of FRENIC-Loader 4 in order to write to the inverter.

4.1. How to identify the ROM version on FRENIC-Lift LM2C

We can easily identify the ROM version of our inverter using the Keypad (TP-A1-LM2 or TP-E1U) or checking the CPU.

If we are using keypad TP-A1-LM2, it can be checked on Menu PRG>3>3 (PRG > INV Info > Maintenance) on page 8/9 as it is shown on Figure 10:

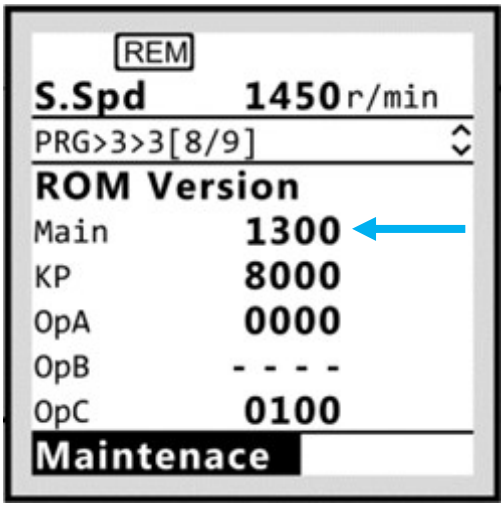

Figure 12. Page 8 of PRG>3>3 on TP-A1-LM2

Menu #5 “Maintenance Information” shows inverter ROM version in case of keypad TP-E1U. To have full access in TP-E1U, parameter E52 has to be set to value 2. Table 1 shows the parameter that shows inverter ROM version:

Table 3. Display Items for Maintenance Information

LED Monitor	Item	Description
5_ 14	Inverter's ROM version	Shows the inverter's ROM version as a 4-digit code

As a final option, we see the ROM version written over the CPU of the inverter. Anyway, the most reliable way to check it is using a keypad. We can identify the CPU inverter as in the figure as below:

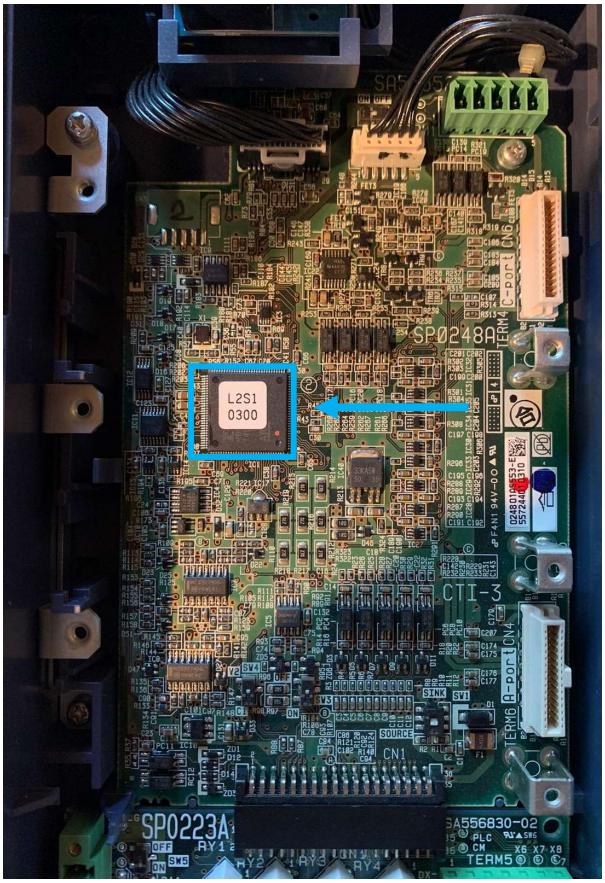

Figure 13. Picture of the LM2 CPU.

5. Document history

Version	Changes applied	Date	Written	Checked	Approved
1.0.0	First version	27/12/2021	C. Arjona	J. Alonso	J. Català