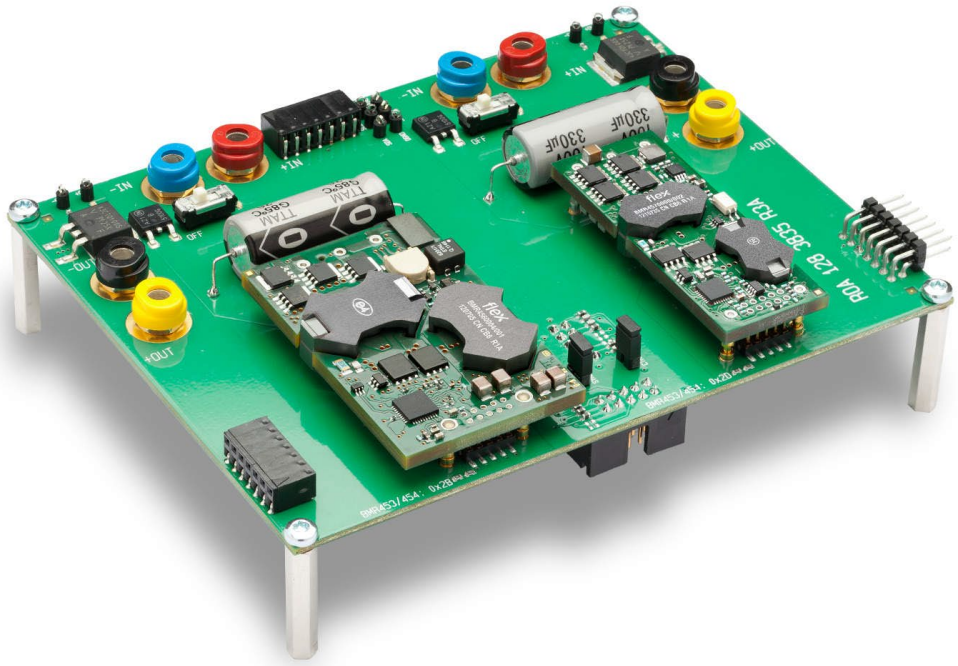
flex Power Modules

Evaluation board for digital IBC

USER GUIDE for BMR456, BMR457, BMR458

ROA 1283835



Contents

1 Introduction 3
1.1 How to contact Flex Power Modules 3

2 Schematics 4

3 Component layout 5

4 Power up 6
4.1 Power up/down instructions 6
4.1.1 Power Supply Connection 6
4.1.2 Power-up instruction: 8
4.1.3 Power-down instruction: 9
4.2 Jumper positions 9
4.2.1 Default settings 9
4.2.2 Jumper settings for BMR 456/457 10

5 Change of series resistors for the LEDs 11
5.1 Change of LED series resistors R3 and R4 in position 0x2B 11
5.1.1 Change of LED series resistors R7 and R8 in position 0x2D 12

6 Dimensions 13

7 Contact us 14

1 Introduction

This User Guide provides a brief introduction and instruction on how to use the evaluation board ROA 1283835 together with BMR456, BMR457 and BMR458.

1.1 How to contact Flex Power Modules

For general questions or interest in our products, please visit our website or contact your local sales representative.

Flexpowermodules.com

2 Schematics

Below is the top level schematics of ROA 1283835.
For BMR456/457 the address is in this position 0x35 and 0x36.

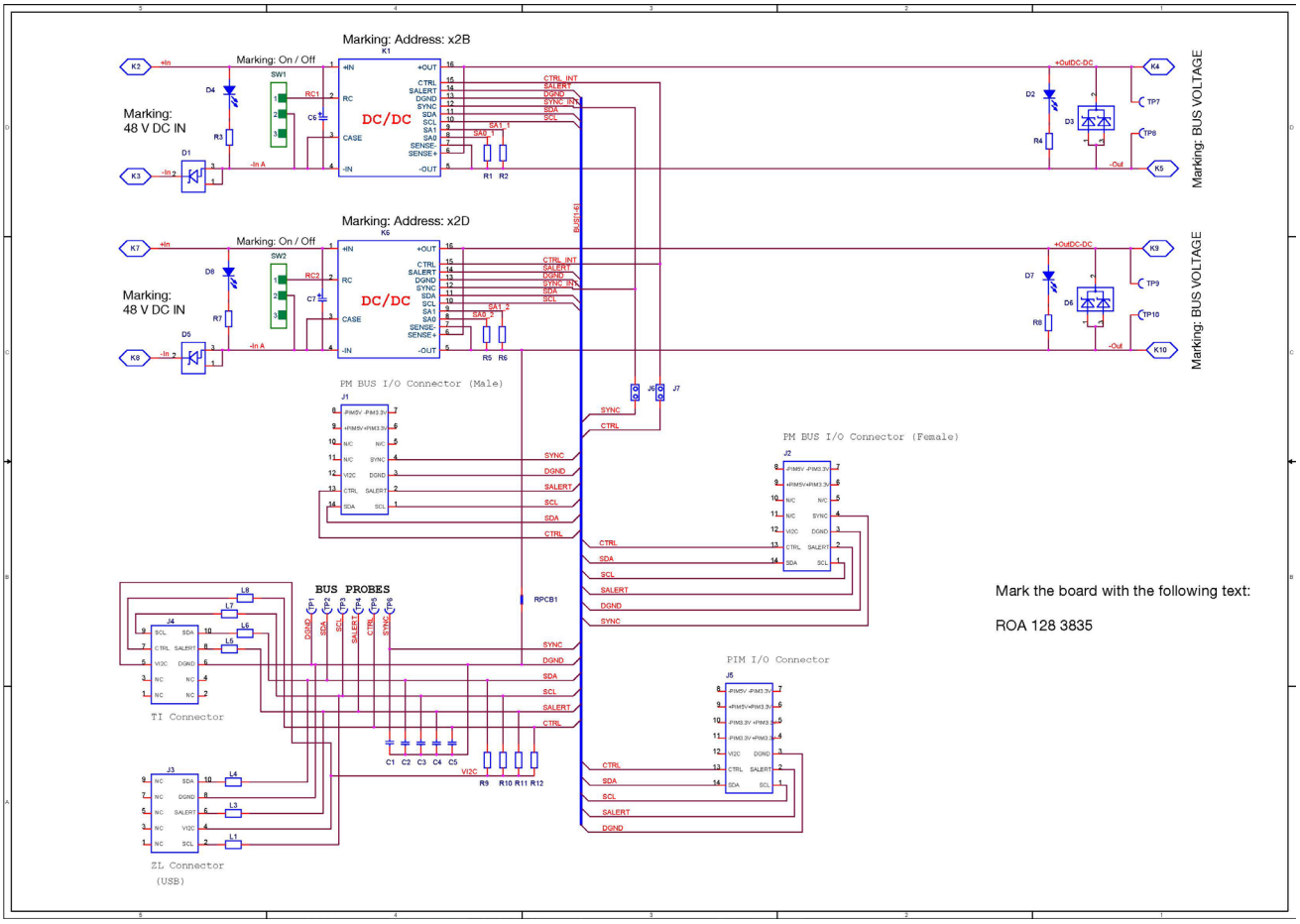


Figure 1: Schematics of ROA 1283835

3 Component layout

In Figure 2.1 and 2.2 the component layout is shown

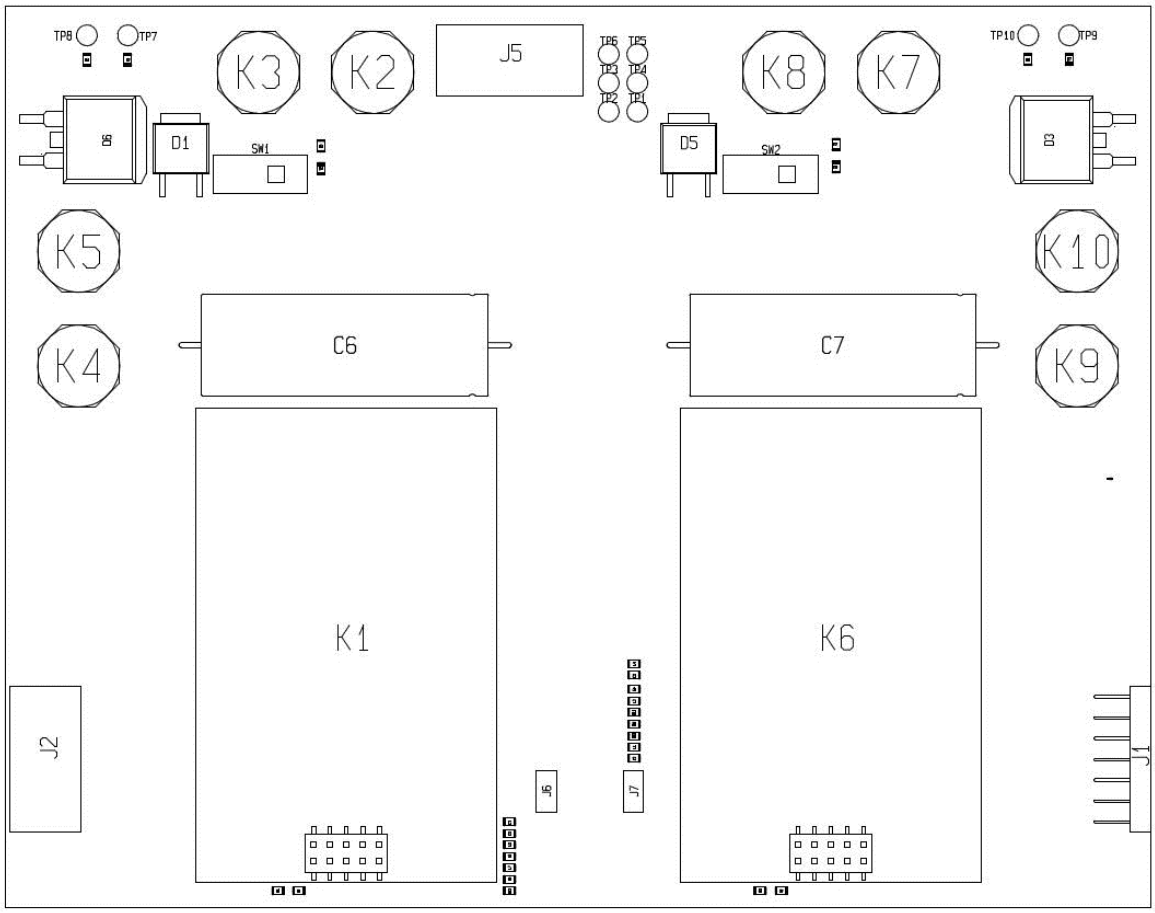


Figure 2.1: Top side component layout of ROA 1283835

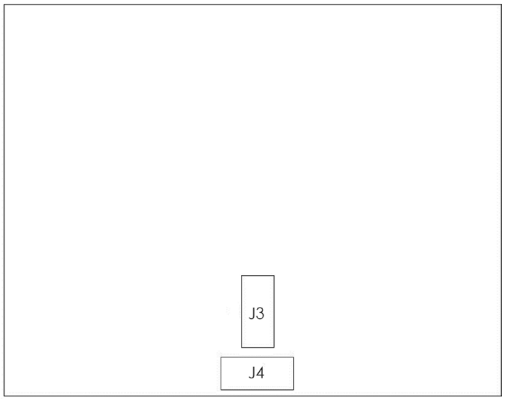


Figure 2.2: Bottom side component layout of ROA 1283835

4 Power up

4.1 Power up/down instructions

This section of the document describes how to connect power supply for different cases in order to avoid mistake during measurements.

The jumpers that you need shall be mounted before power-up. See Section 3.2 for information about jumper positions.

4.1.1 Power Supply Connection

Add the 48V DC power to one or two pairs ot the "-IN" and "+IN" connectors (see Fig 3.1).

Figure 3.1a: Connect 48V between the "-IN" and "+IN" DC power connectors located on the same side of the board (see orange rectangles)

There are two RC switches on the ROA 128 3835 board, one for each IBC converter position. Fig 3.2 shows one of the two RC switches in "Off" position.

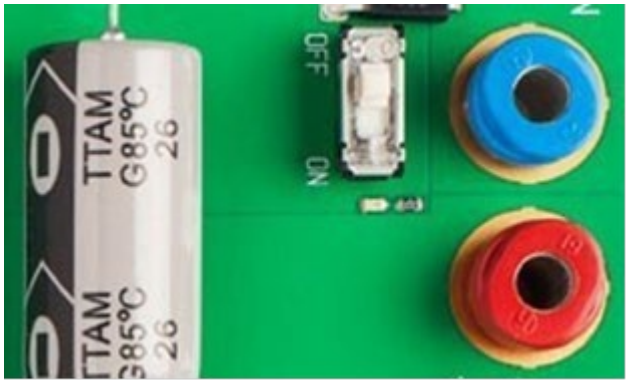


Figure 3.2 One of the two RC switches in "Off" position

Figure 3.3a and Figure 3.4b show the connection of 2 types of USB-to-PMBus adapters

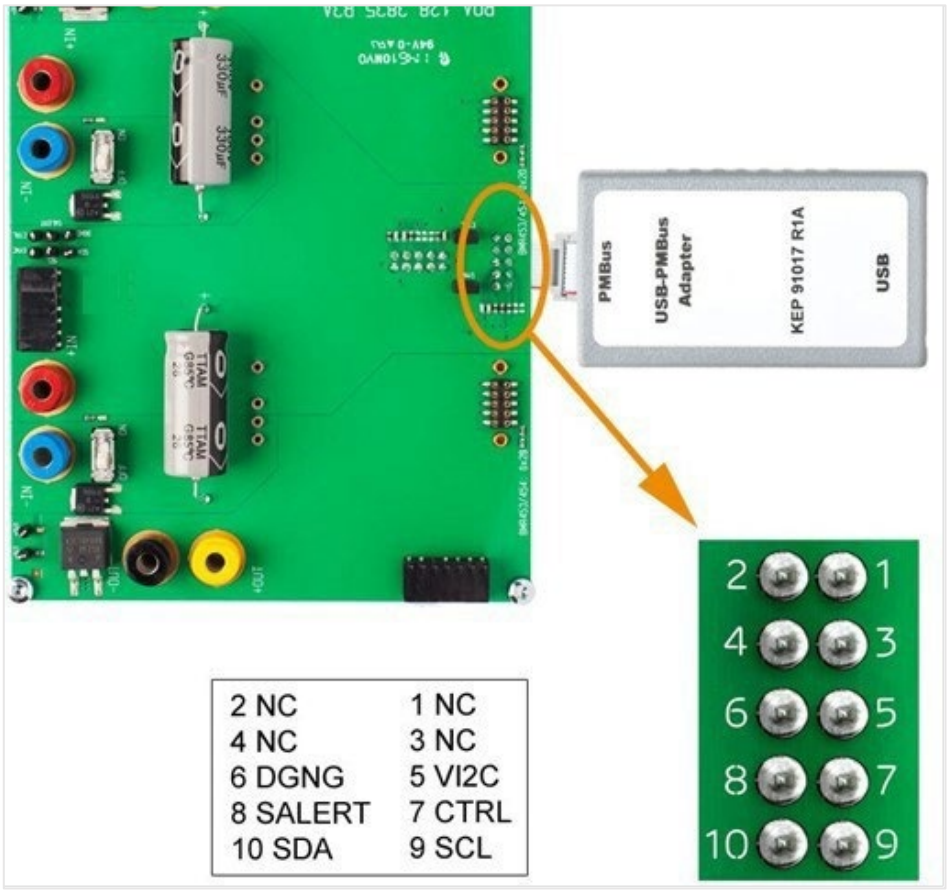


Figure 3.3a: Connection of the Flex Power Modules KEP 910 17 PMBus-to-USB adapter (connector is found on the back side of the ROA 1283835 board)

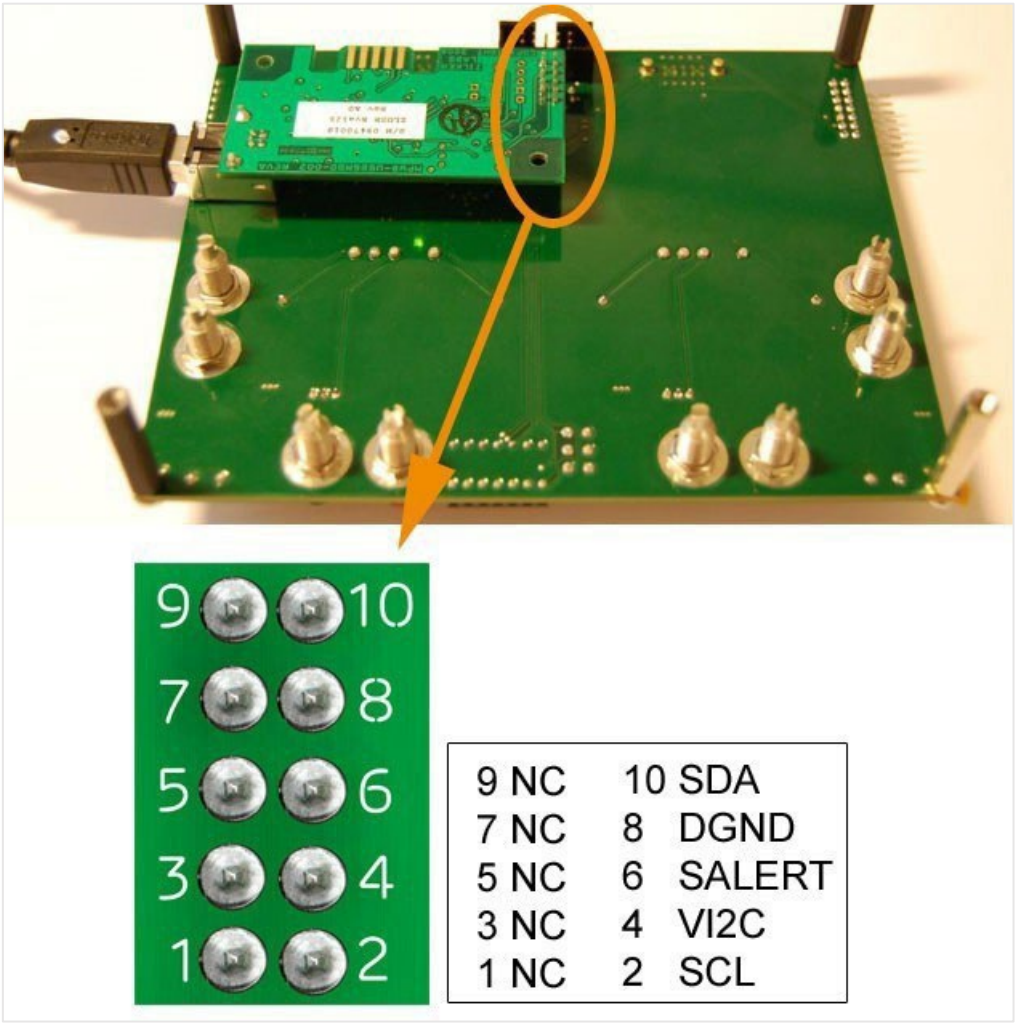


Figure 3.3b: Connection of the Intersil ZLUSBREF02 PMBus-to-USB adapter (connector is found on the back side of the ROA 128 3835 board

4.1.2 Power-up instruction:

- ***Mount the BMRs*** *in the desired positions*
- *Connect and turn* ***On*** *the* ***48V*** *supply*
- *Turn RC* ***switch (or switches)*** *in* ***On*** *position*
  - *The LEDs should now give green light (unless the outputs of the BMRs are not configured to be disabled).*
- *Connect the PMBus Adapter/Cable to the board.*
- *Start the software program.*

4.1.3 Power-down instruction:

- *Turn **RC switch(es) in Off** position or turn **Off the 48V** Supply*
- *Now the BMR modules can be removed/replaced*

4.2 Jumper positions

4.2.1 Default settings

There are only two jumpers in the ROA 128 3835 board - one for the SYNC and one for CTRL. The factory default jumper positions are the shown in figure below. The jumper positions are described furthermore in next section

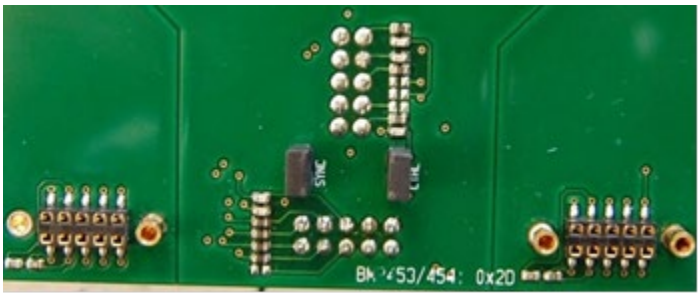


Figure 4.1: Factory default jumper settings of ROA 128 3835

4.2.2 Jumper settings for BMR 456/457

In the figure below the jumper positions numbers for BMR456 and BMR457 are given. Using the table below, the user can make custom configurations of the board using these jumpers.

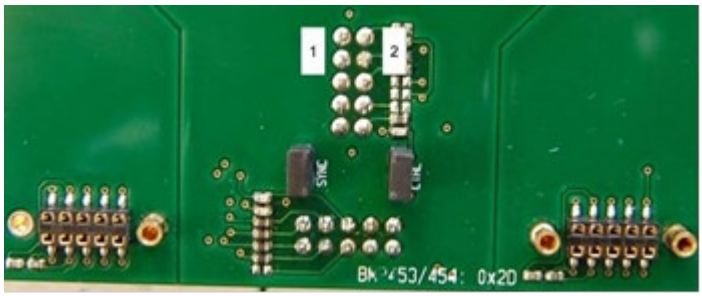


Figure 4.2: Position number of the jumpers in ROA 1283835

Jumper Position No.	Description	Shall be used for	Notes
1	Jumper mounted: The common two modules' PG signal is **connected** to the SYNC signal on the board's interfaces	N/A	Note 1: This jumper shall always be removed for BMR456/457
	Jumper not mounted: The common two modules' PG signal is **disconnected** from the SYNC signal on the board's interfaces	All cases	
2	Jumper mounted: The common module's PMBus CTRL signal is **connected** to the CTRL signal on the board's interfaces	Connecting the PMBus CTRL signal of BMR456 or BMR457 to external parts	Note 2: This jumper is connected to BMR456/457 CTRL pin (pin no 15)
	Jumper not mounted: The common two modules' CTRL signal is **disconnected** from the CTRL signal on the board's interfaces	Disconnecting the PMBus CTRL signal of BMR456 or BMR457 to external parts	

5 Change of series resistors for the LEDs

In order to reduce power dissipation, the series resistors for the LEDs can be changed to higher values. The resistors are located at the places shown in the figure below.

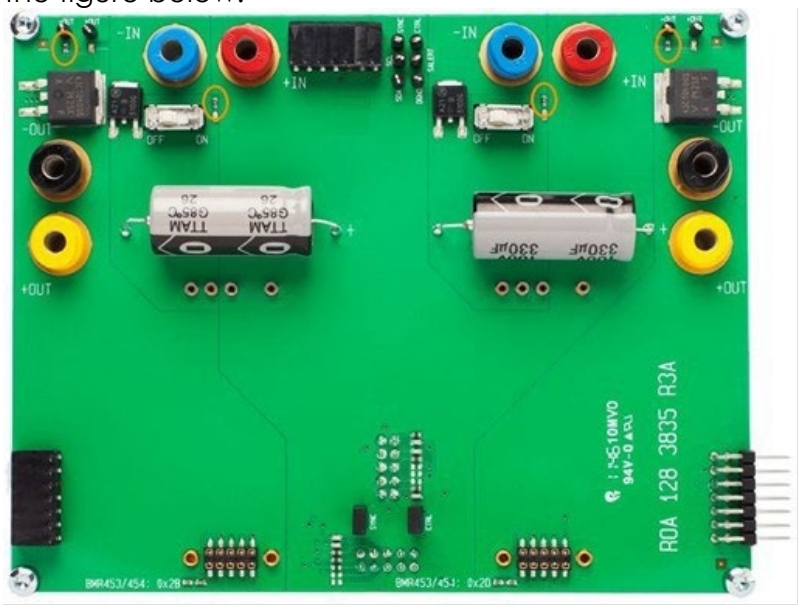


Figure 5.1: Series resistors for the LEDs

5.1 Change of LED series resistors R3 and R4 in position 0x2B

The figure below shows where LED series resistors R3 and R4 are located

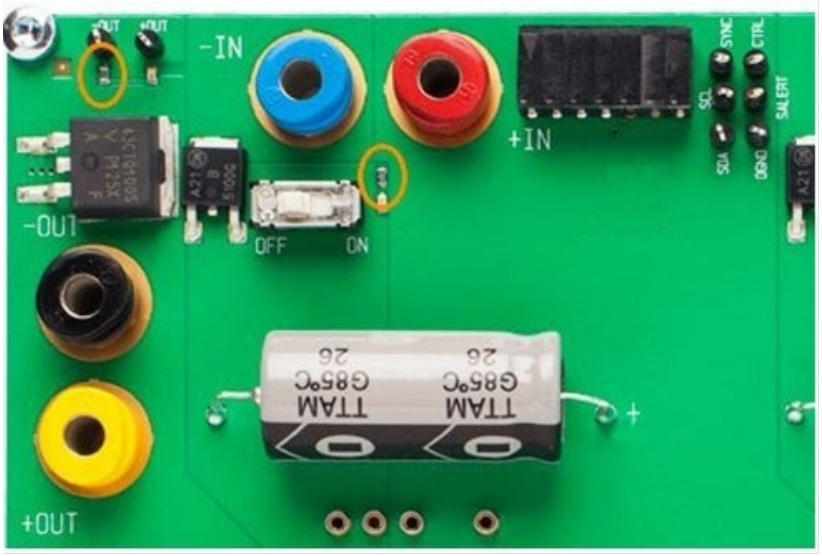


Figure 5.2: Resistors R3 and R4

5.1.1 Change of LED series resistors R7 and R8 in position 0x2D

The figure below shows where resistors R7 and R8 located

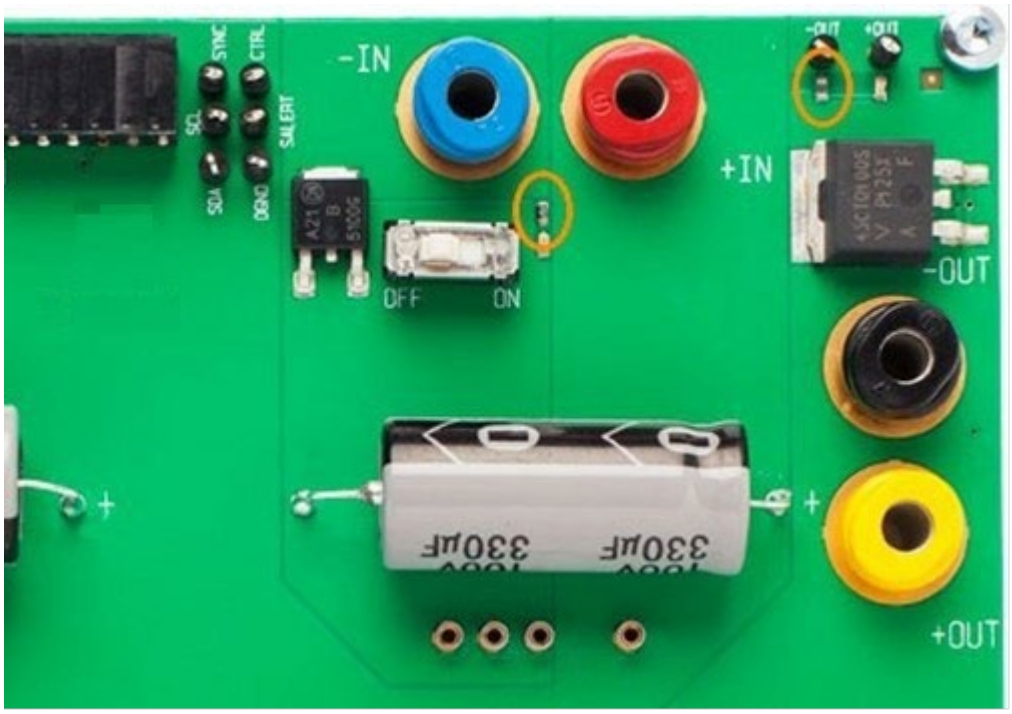


Figure 5.3: Resistors R7 and R8

6 Dimensions

The outer dimensions (in mm) of the test board are shown in the picture below.

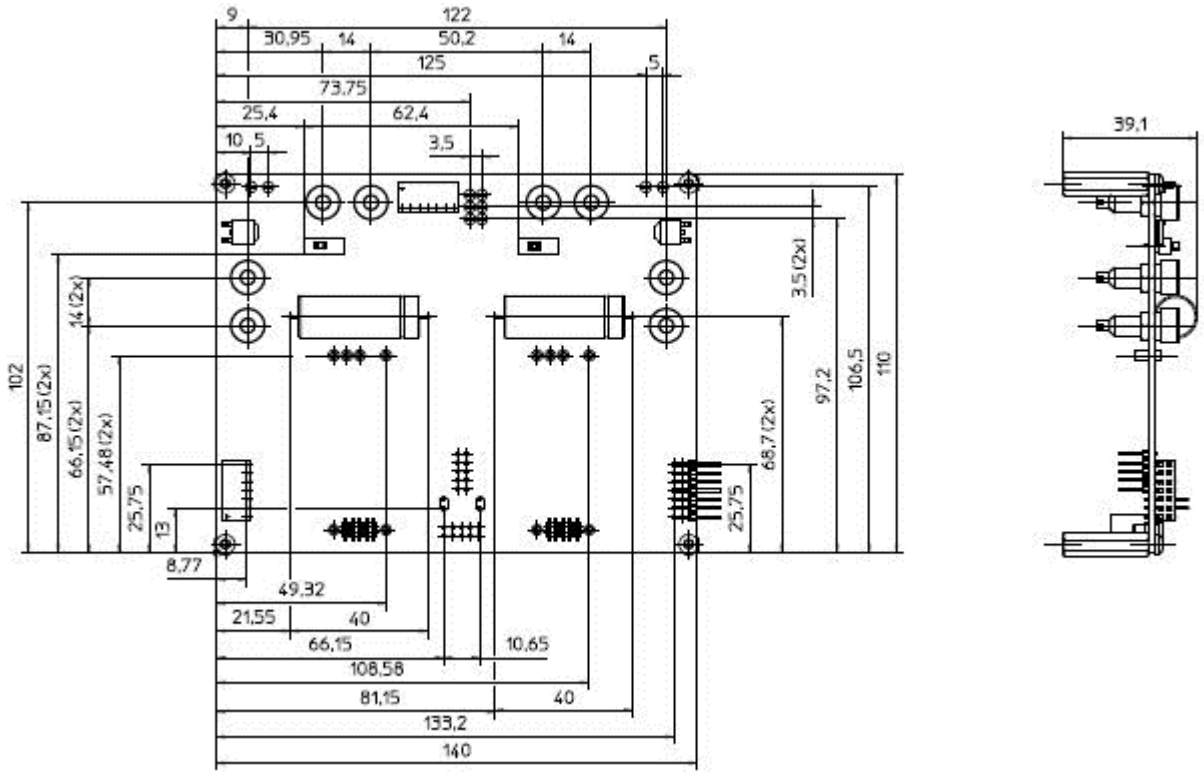


Figure 6: Mechanical information

The whole testboard has the outer dimensions 140 x 110 x 39.1 mm (L x W x H). Weight of the complete test board including 2 jumpers is 180 g.

7 Contact us

Headquarter

Flex Power Modules

Torshamnsgatan 28A

SE-164 40 Kista, Sweden

Email: pm.info@flex.com

Web: flexpowermodules.com

LinkedIn: linkedin.com/showcase/flex-power-modules/

Flex Power Designer: flexpowerdesigner.com

WeChat: flexpowermodules.com/wechat

YouTube: youtube.com/flexintl