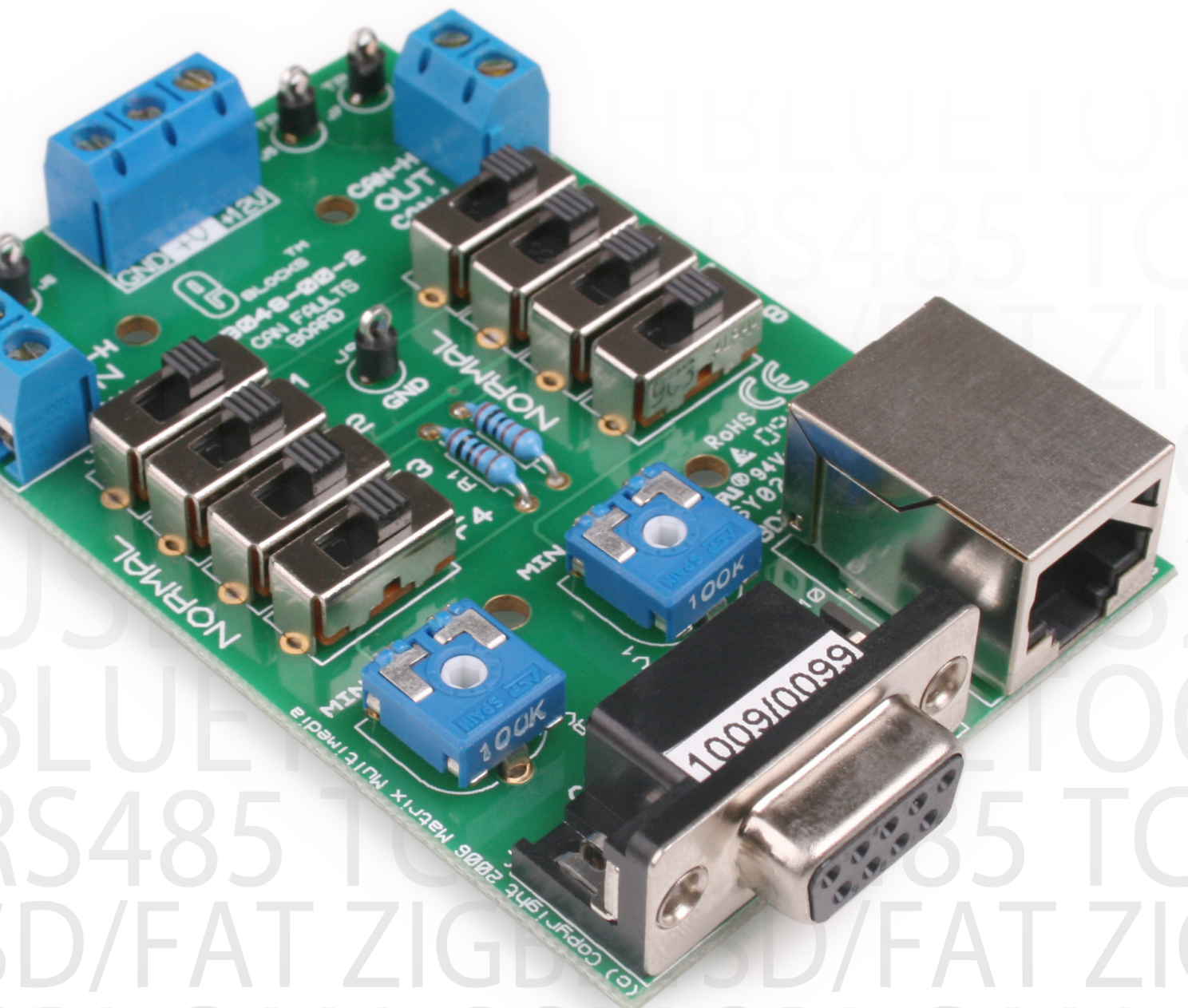


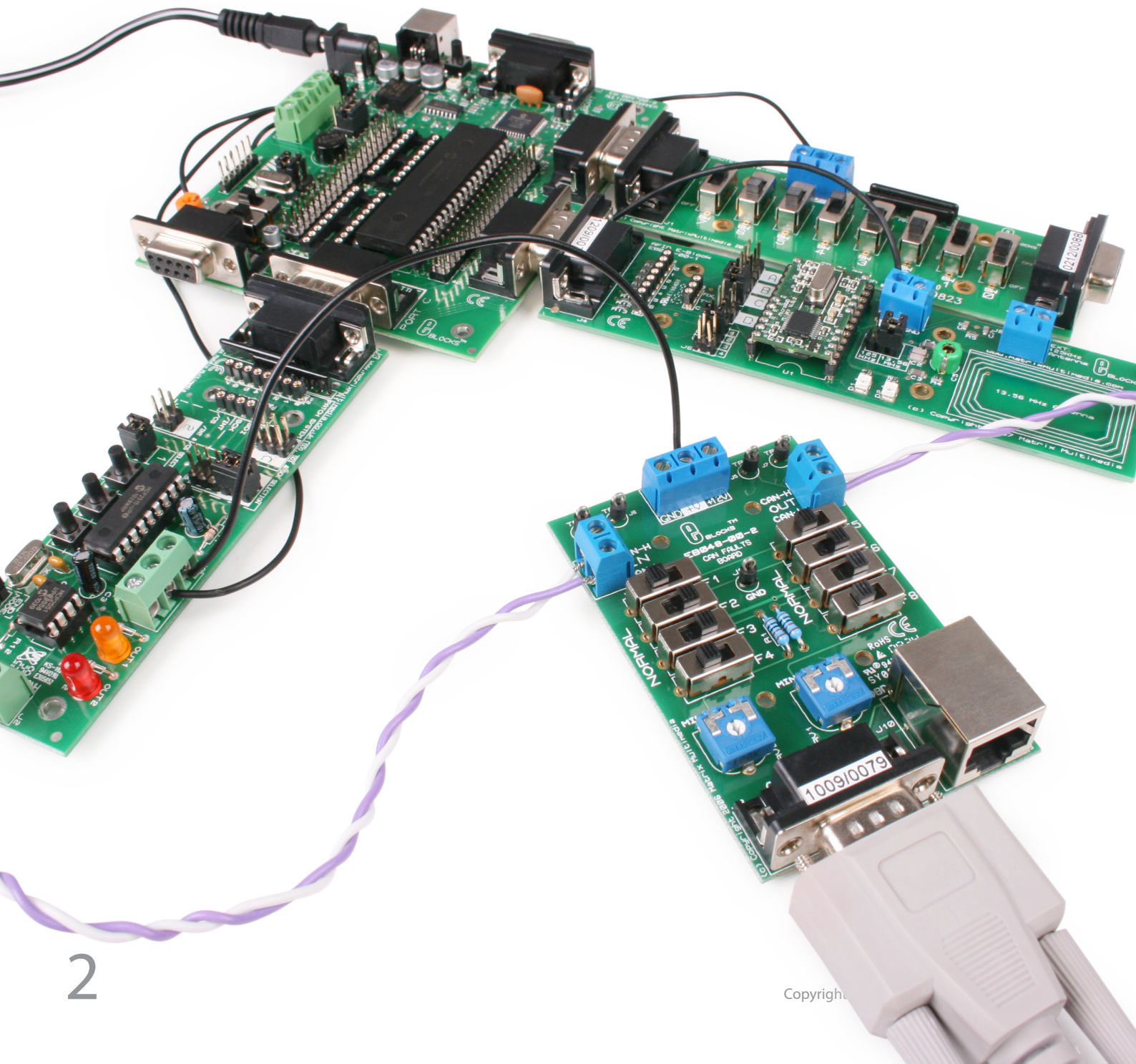
# **EBLOCKS<sup>®</sup>**

## CAN bus faults board



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# About this document

This document concerns the EB048 E-blocks CAN bus faults board.

## 1. Trademarks and copyright

PIC and PICmicro are registered trademarks of Arizona Microchip Inc. E-blocks is a trademark of Matrix Technology Solutions Ltd.

## 2. Disclaimer

The information provided within this document is correct at the time of going to press. Matrix TSL reserves the right to change specifications from time to time.

## 3. Testing this product

It is advisable to test the product upon receiving it to ensure it works correctly. Matrix provides test procedures

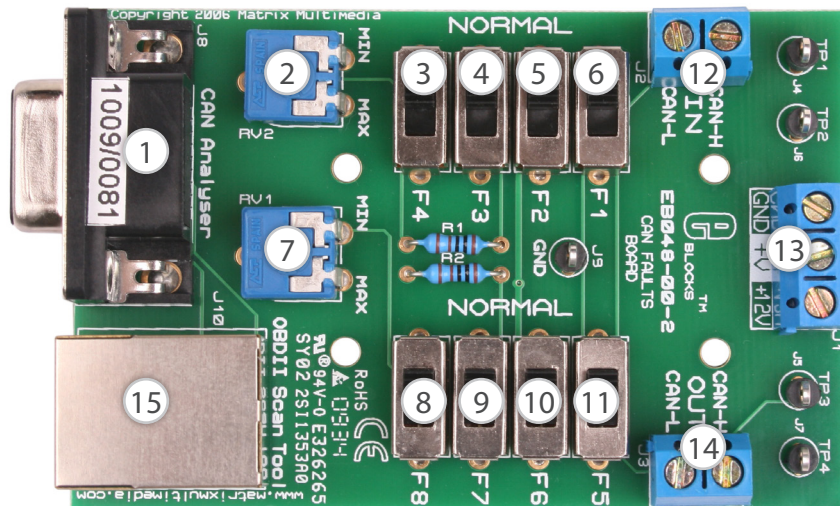
for all E-blocks, which can be found in the Support section of the website.

## 4. Product support

If you require support for this product then please visit the Matrix website, which contains many learning resources for the E-blocks series. On our website you will find:

- How to get started with E-blocks - if you are new to E-blocks and wish to learn how to use them from the beginning there are resources available to help.
- Relevant software and hardware that allow you to use your E-blocks product better.
- Example files and programs.
- Ways to get technical support for your product, either via the forums or by contacting us directly.

# Board layout



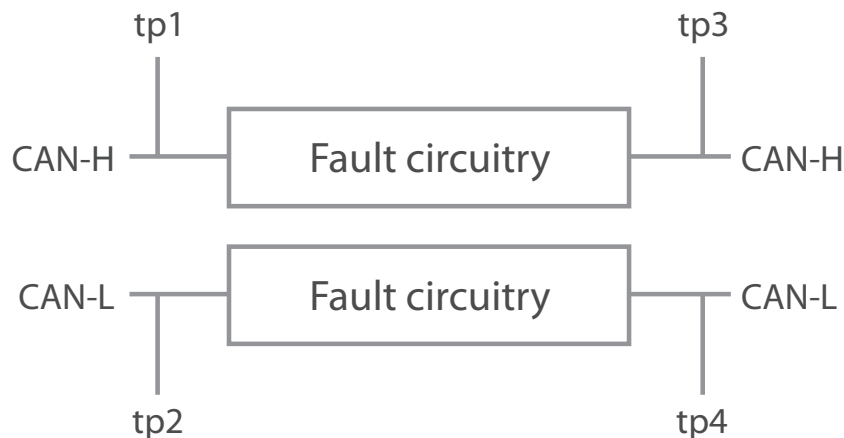
1. 9-way downstream D-type connector
2. CAN-L partial open circuit control
3. CAN-L partial open circuit enable
4. CAN-L open circuit enable
5. CAN-L short to VCC enable
6. CAN-L short to ground enable
7. CAN-H partial open circuit control
8. CAN-H partial open circuit enable

9. CAN-H open circuit enable
10. CAN-H short to VCC enable
11. CAN-H short to ground enable
12. CAN bus input terminal
13. Power terminal
14. CAN bus output terminal
15. USB interface

# General information

This E-block allows investigation of the CAN bus system by introducing a variety of faults into the network. The E-block is capable of introducing up to eight individual faults onto the CAN network.

1. Features
  - Short to ground
  - Short to VCC
  - Open circuit
  - Partial open circuit
  - All faults available on CAN-H and CAN-L
  - Test points



## Circuit description

The circuit as can be seen in the circuit diagram on page 5, is made up of two sections: CAN connectors and fault switched

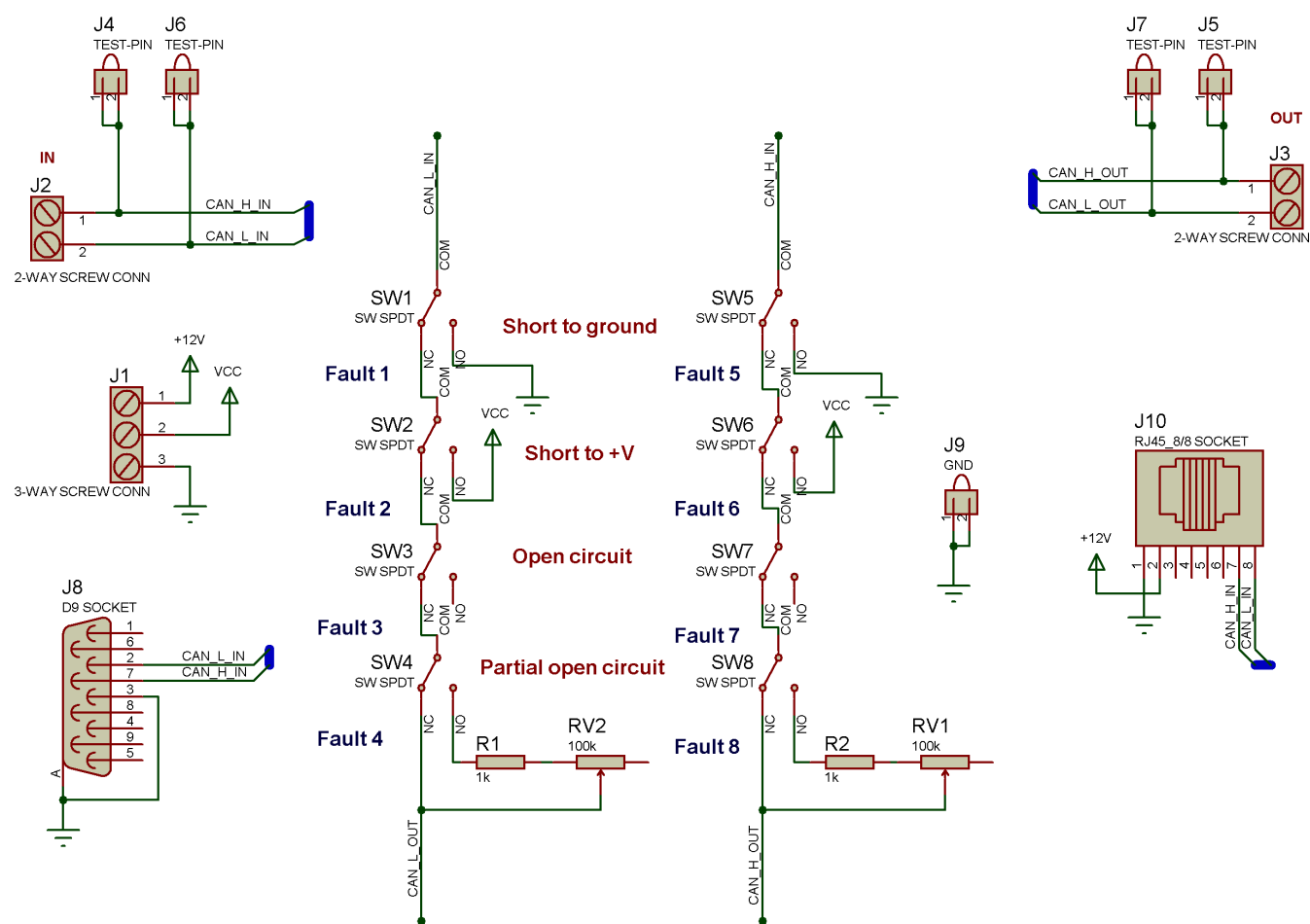
### 1. CAN connectors

The design of this product is to enable you to use it with existing CAN systems or the pre-designed CAN solution by Matrix Technology Solutions Ltd. There are three connections to a CAN system from the CAN bus faults board, these are the input and output CAN busses that use the screw terminals, or the Kvaser analyser interface that uses the D-type connector.

### 2. Fault switching

Faults are introduced into the system by means of the eight switches on the CAN faults bus board. Each switch enables a different fault onto either the CAN-H or CAN-L lines. Switches F1-F4 introduce faults onto the CAN-L data line whereas switches F5-F8 introduce faults onto the CAN-H data line. For the partial open circuit fault there is a 47K ohm potentiometer assigned to both the CAN-L and CAN-H lines which varies the resistance of the open circuit.

# Circuit diagram





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