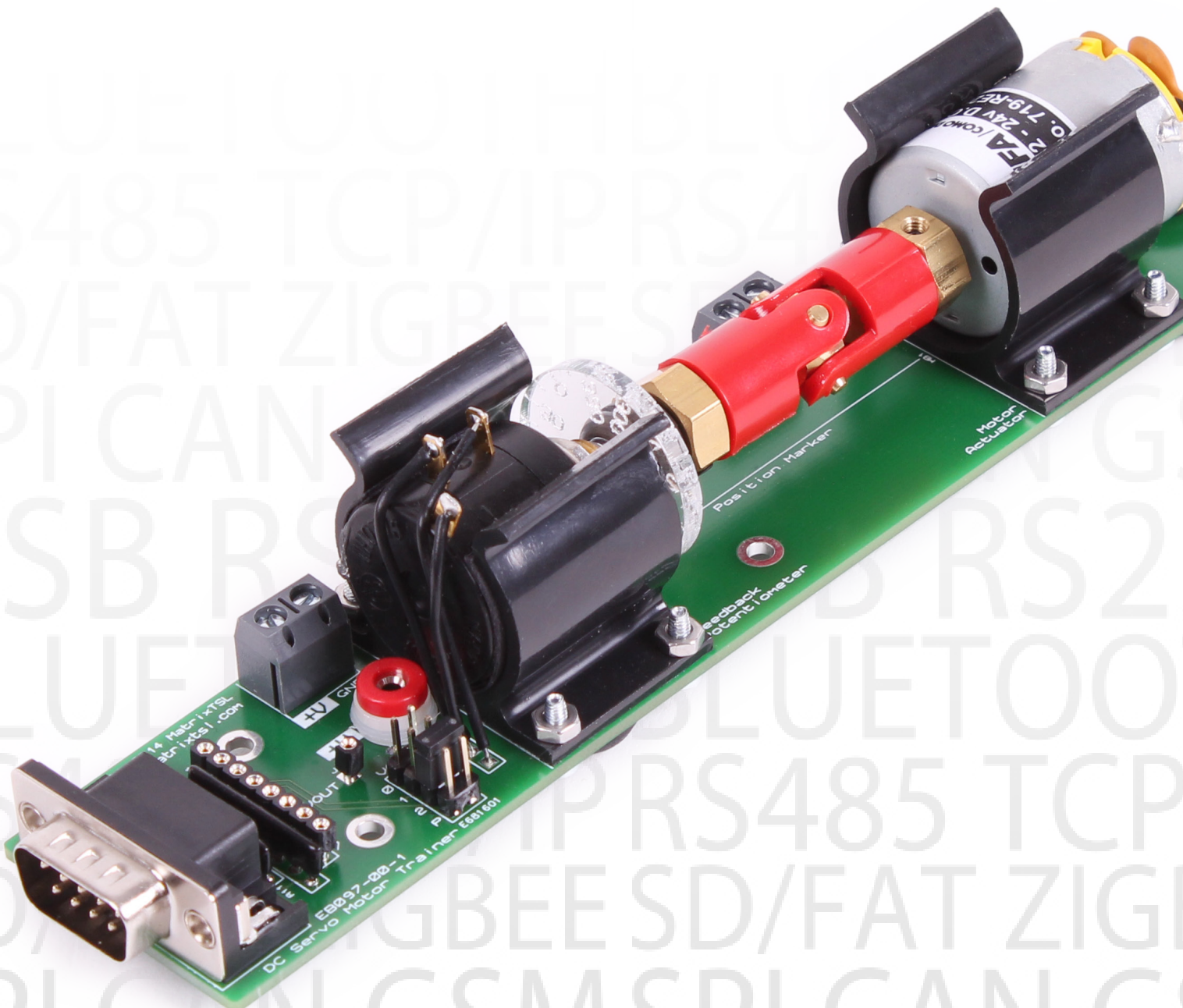


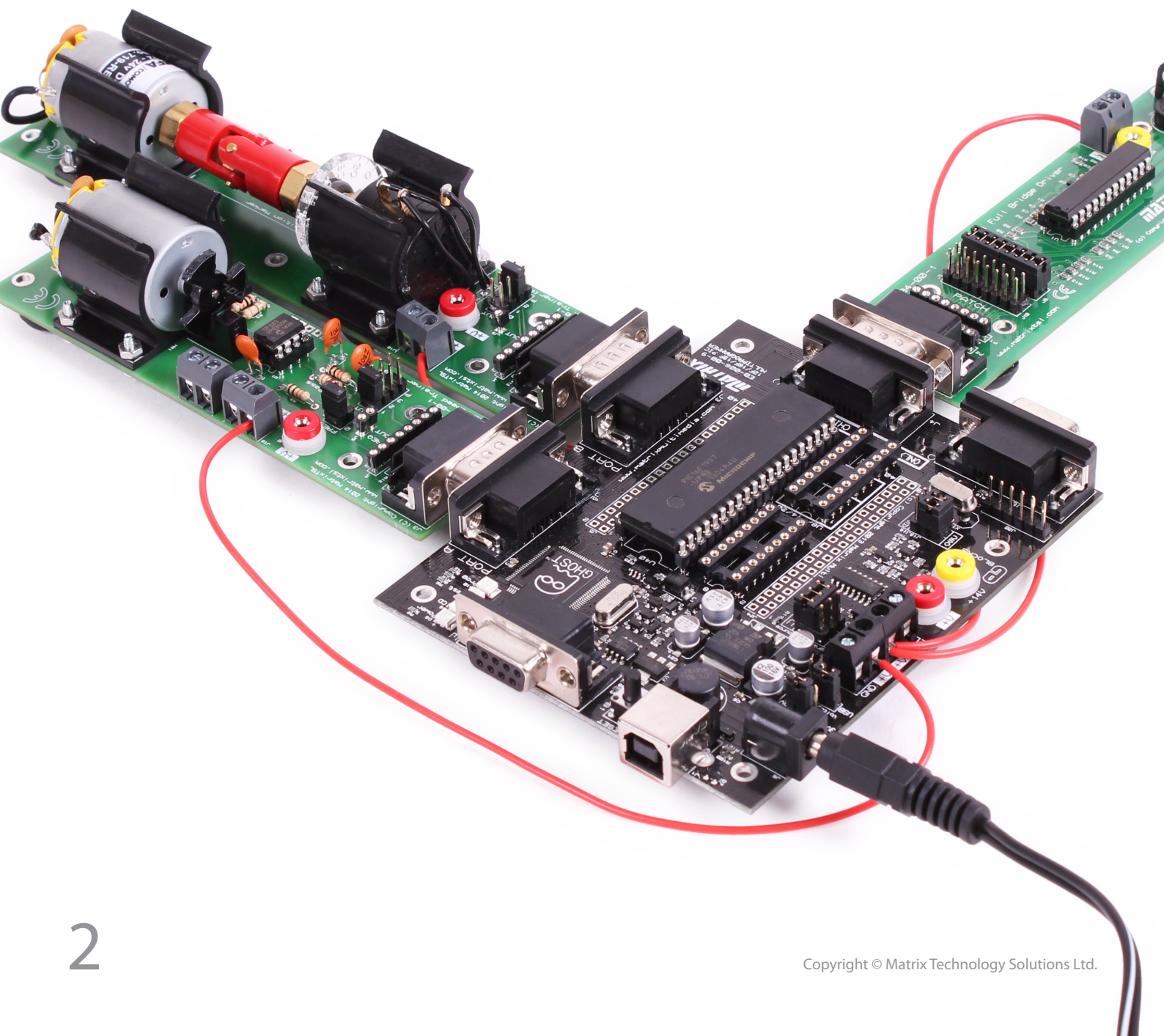
# EBLOCKS<sup>®</sup>

Motor angle (servo) trainer  
board



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# About this document

This document concerns the EB097 E-blocks motor angle (servo) trainer board.

## 1. Trademarks and copyright

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

## 2. Other sources of information

There are various other documents and sources that you may find useful:

- *Getting started with E-blocks.pdf* - This describes the E-block system and how it can be used to develop complete systems for learning electronics and for PICmicro programming
- *PPP help file* - This describes the PPP software and its functionality. PPP software is used for transferring

hex code to a PICmicro microcontroller

- *C and Assembly strategies* - Not provided for this product

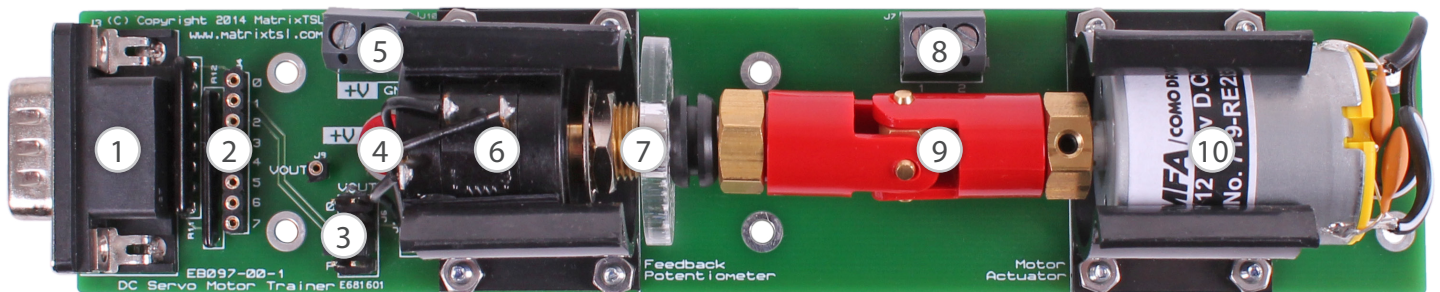
## 3. Disclaimer

The information provided within this document was correct at the time of going to press. Matrix TSL reserves the right to change specification from time to time. This product is for development purposes only and should not be used for any life-critical application.

## 4. Technical support

If you have any problems operating this product then please refer to the troubleshooting section of this document first. You will find the latest software updates, FAQs and other information on our website: [www.matrixtsl.com](http://www.matrixtsl.com)

# Board layout



1. D-type E-blocks connector - to programmer board
2. Patch system
3. Connection jumpers - angular feedback voltage
4. +V 2mm patch socket
5. +V screw terminals

6. Three turn potentiometer
7. Angular disk
8. Motor control terminals
9. Angular position marker
10. DC motor

# General information

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This E-blocks board features a DC motor attached to a robust three turn potentiometer and laser cut angle disk. As the DC motor turns the resistance on the potentiometer changes based on the angle of the shaft. This allows the DC motor to change from a device which can rotate indefinitely in any direction to a motor which can turn to a specific angle similar to a standard R/C servo motor.

## Features:

- E-blocks compatible
- DC motor
- Potentiometer feedback
- Highly ruggedised for a lab environment

## Protective cover

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Most of the boards in the E-blocks range can be fitted with a plastic cover as an optional extra. These covers are there to protect your E-blocks board therefore extending the life of the board. The covers also prevent the removal of external components while still allowing for the adjustment of applicable parts on the board.

12mm M3 spacers, anti-slip M3 nuts and 25mm M3 bolts can be used to attached the cover to the board. These are not included but can be bought separately from our website.

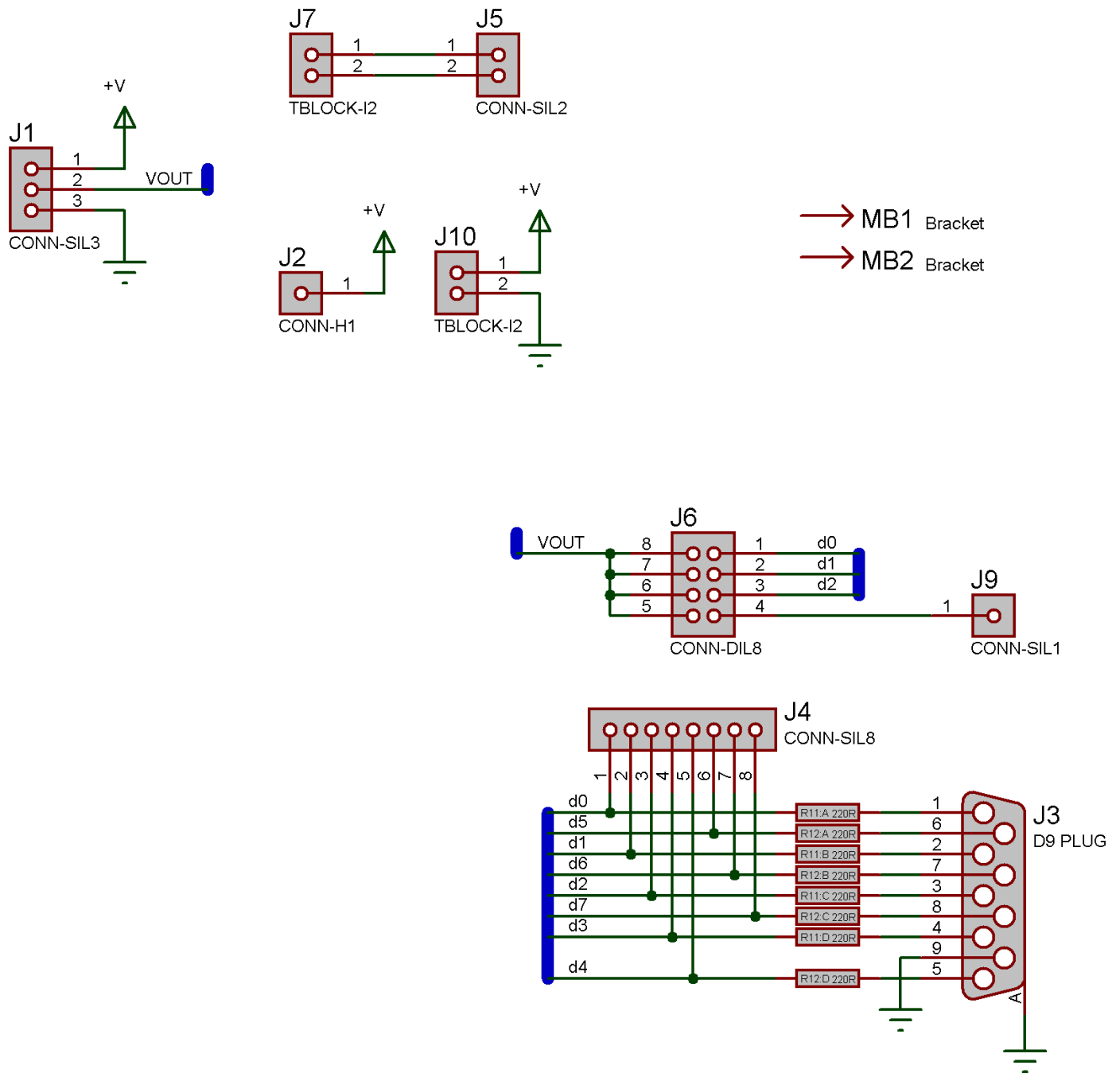
The order code for the EB097 motor angle (servo) trainer board is EB797.

## Circuit description

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The analogue feedback is generated by the coupling of the motor shaft to the three turn potentiometer. By reading the voltage across the potentiometer it is possible to determine the angle of the motor shaft. By controlling the DC motor and monitoring the feedback voltage it is possible to set the output shaft to any angle.

# Circuit diagram





Matrix Ltd.  
The Factory  
33 Gibbet Street  
Halifax, HX1 5BA, UK

t: +44 (0)1422 252380  
e: [sales@matrixtsl.com](mailto:sales@matrixtsl.com)

[www.matrixtsl.com](http://www.matrixtsl.com)

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