EmStat Pico MUX16 for OEM

Contents

PalmSens
Compact Electrochemical Interfaces

Description

The "EmStat Pico MUX for OEM" is a 16-channel multiplexer with embedded EmStat Pico potentiostat module.

There are two ways of addressing the multiplexer:

- MUX16 mode where the WE, RE and CE are all switched at the same time. This allows for 16 individual cells to be connected to the board, each with their own WE, RE and CE.
- MUX256 mode where WE and RE+CE combined are switched separately, allowing 256 channels to be addressed as a matrix.
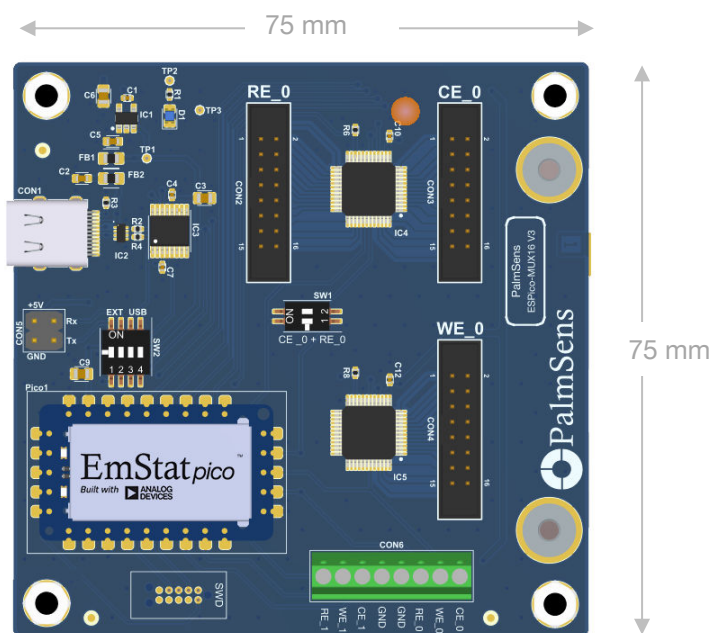
*The EmStat Pico MUX16 board (actual size)*

Communications

The board has a USB-C port for connecting and powering the board from a PC.

Next to the USB port is a 4-pin male (2.54 mm pitch) header which can be used for alternative 5V power supply and Rx and Tx pins for TTL serial connection. This allows you to connect the board directly to another microcontroller like an Arduino.

The MUX is controlled using 8 digital IO lines. This effectively creates an 8-bit address for the mux. The 4 LSB bits of the mux address switch the WE, the 4 MSB switch the RE and CE.

The EmStat Pico MUX16 board can be used directly with PSTrace software.
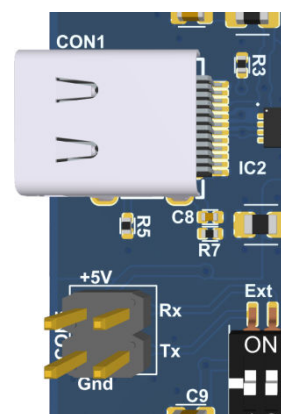
Please note that the digital lines of the EmStat Pico module need to be toggled manually in the PSTrace software before starting a measurement on a specific channel.

Controlling the MUX with your own code

The EmStat Pico module works with the MethodSCRIPT™ language.

[Click here for more information on MethodSCRIPT](#)

The following script can be used to set channel 2 in MethodSCRIPT
(\n represents a newline):

```
e\n
#configure all 10 GPIO pins as outputs, add "i" to indicate it
is an integer \n
set_gpio_cfg 0x3FFi 1\n
#Select WE2 and RE2/CE2\n
set_gpio 0x11i\n
\n
```

Note that # is used for comments.

This script can be sent through the PSTrace MethodSCRIPT Sandbox window or any terminal emulator. Many examples for using MethodSCRIPT on different platforms are available.

Connections

The cells can be connected to the box connectors on the box by means of flatcables or a break-out board.

The connectors have 16 position with a pitch of 0.079" (2.00mm).
See the [datasheet](#) of the connector (AWHW2-16G-0202-T-R) for more details.

System Specifications

General	
▪ **multiplexer**	16 channels in 3-electrodes multiplexer mode 256 channels in 2-electrodes matrix mode
▪ **on resistance**	4 Ohm typical
▪ **charge injection**	1 pC typical
▪ **leakage current**	10 pA (per channel) typical at 25 ℃

See www.palmsens.com/pico for the EmStat Pico potentiostat module specifications.

Standard package

The EmStat Pico MUX16 comes standard with the following items:
- EmStat Pico MUX16 board
- USB-C cable
- USB stick with PSTrace
- 6x IDC (crimp) connectors for the 16 position board connectors
- Flat cable

PSTrace: research software for Windows

Reduce your time-to-market

The EmStat Pico MUX16 can be used with our **PSTrace software** for generic research.
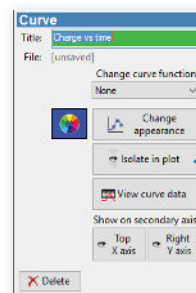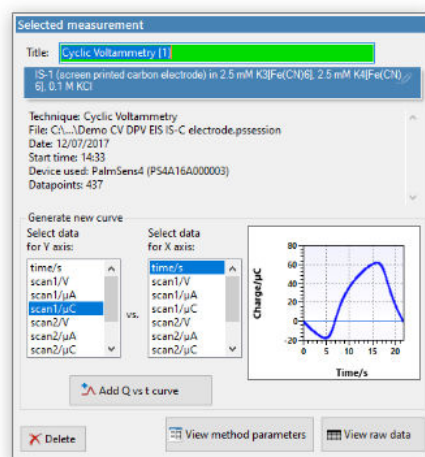Use the MethodSCRIPT Sandbox for full control over the multiplexer.
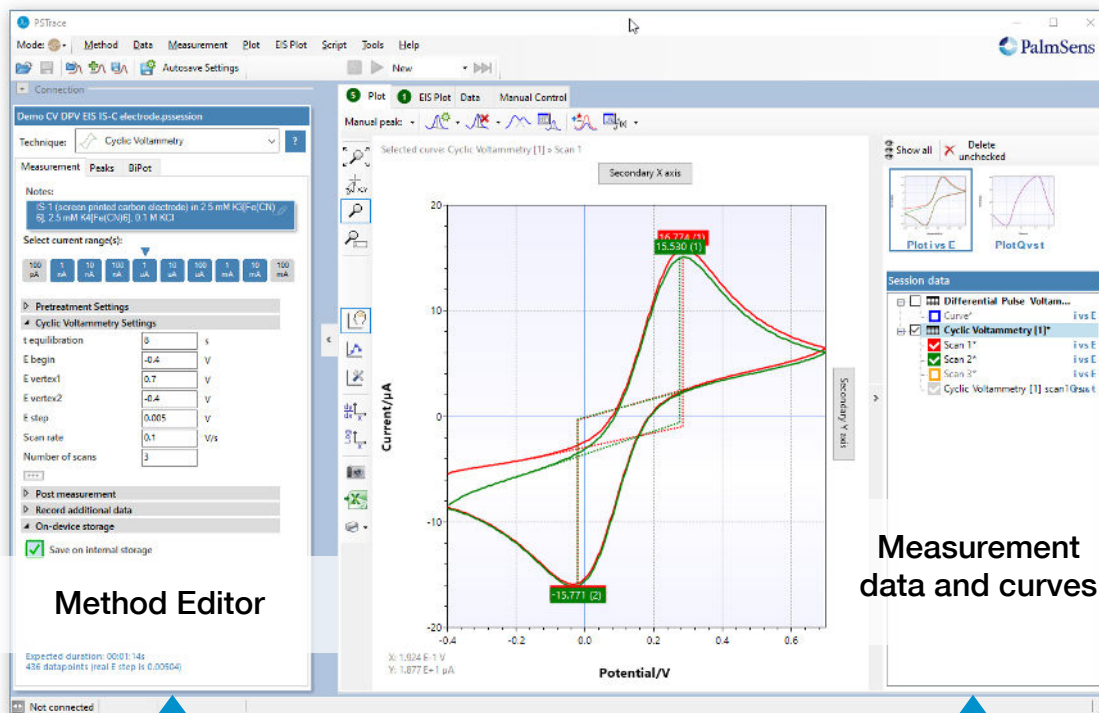
Method Editor

Measurement data and curves

Select current ranges for auto ranging and the starting current range.

Switch between plots if curves with different units are available.

Click on a curve in the legend to change its title or appearance.

Click on a measurement in the legend to see the available data and to generate more curves.

❯ See for more information:
www.palmsens.com/pstrace

Please don't hesitate to contact PalmSens for more details:
info@palmsens.com

PalmSens BV
The Netherlands
www.palmsens.com

DISCLAIMER
Changes in specifications and typing errors reserved.
Every effort has been made to ensure the accuracy of
this document. However, no rights can be claimed by
the contents of this document.