PalmSens
Compact Electrochemical Interfaces

MUX8-R2 multiplexer

Compatible with
PalmSens3, PalmSens4 and EmStat Blue

Contents

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Description

The MUX8-R2 multiplexer can be used to expand a PalmSens3, PalmSens4 or EmStat Blue potentiostat.

The MUX8-R2 multiplexer is designed for up to 8 channels with 2- or 3- electrode sensors or cells.

The multiplexer can be used with different electrode or sensor configurations:
1   Eight separate cells or sensors each with a working/sense, reference and counter electrode
2   Eight separate cells or sensors each with a working/sense and combined reference and counter electrode
3   Cell or sensor array with eight working/sense electrodes sharing one reference and one counter electrode
4   Cell or sensor array with eight working/sense electrodes sharing one combined reference/counter electrode

In all configurations the cells can be multiplexed, leaving the non-selected working electrodes either at open circuit (individually floating), ground potential or at the set potential.
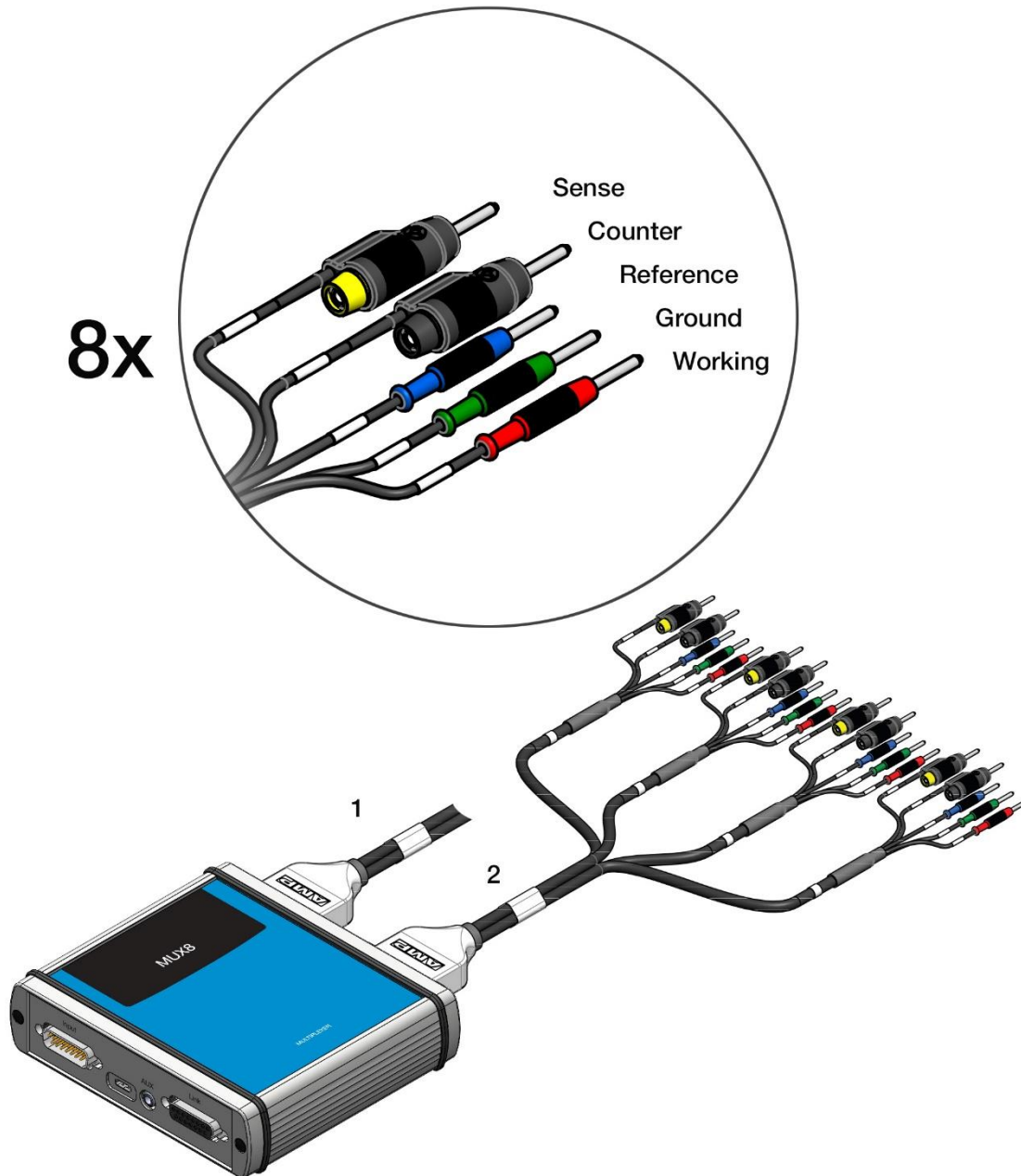
The hardware configuration of the MUX8-R2 can be changed in the PSTrace software.

The MUX8-R2 has the following connections:

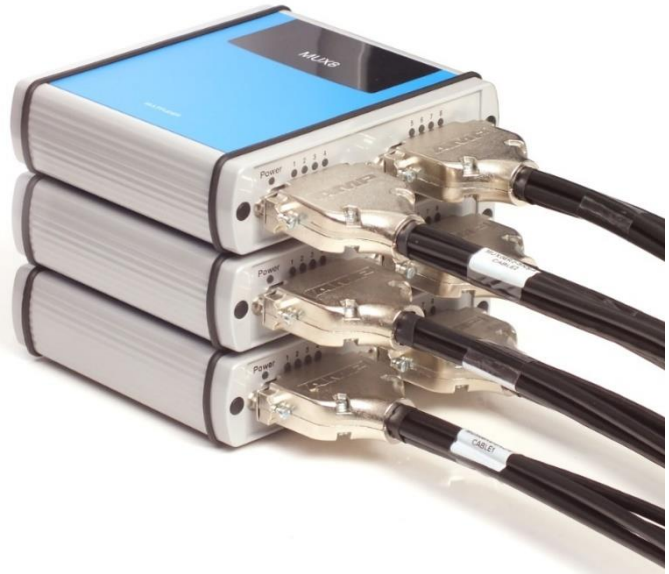| CONNECTOR	FUNCTION
INPUT	Y-cable connects to both potentiostat sensor connector and (digital) AUX
AUX	Can be used to measure auxiliary input like temperature or pH, and to switch external hardware using two digital control lines that can be set in PSTrace
LINK	Connects to Input of next multiplexer, for daisy-chaining multiple multiplexers.
CHANNEL 1-4	Connects to sensor cables 1-4
CHANNEL 5-8	Connects to sensor cables 5-8

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Sensor cables

The channels are divided in two sets of four sensor cables joined with a D-Sub connector.

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Stacking

Each multiplexer has a Link connector which can be used to daisy chain to another MUX8-R2 multiplexer, expanding the number of channels. A maximum of 16 multiplexers can be connected in a daisy chain, giving a maximum of 128 channels.
The PSTrace software detects automatically how many multiplexers are daisy chained and shows the available number of channels in the user interface.

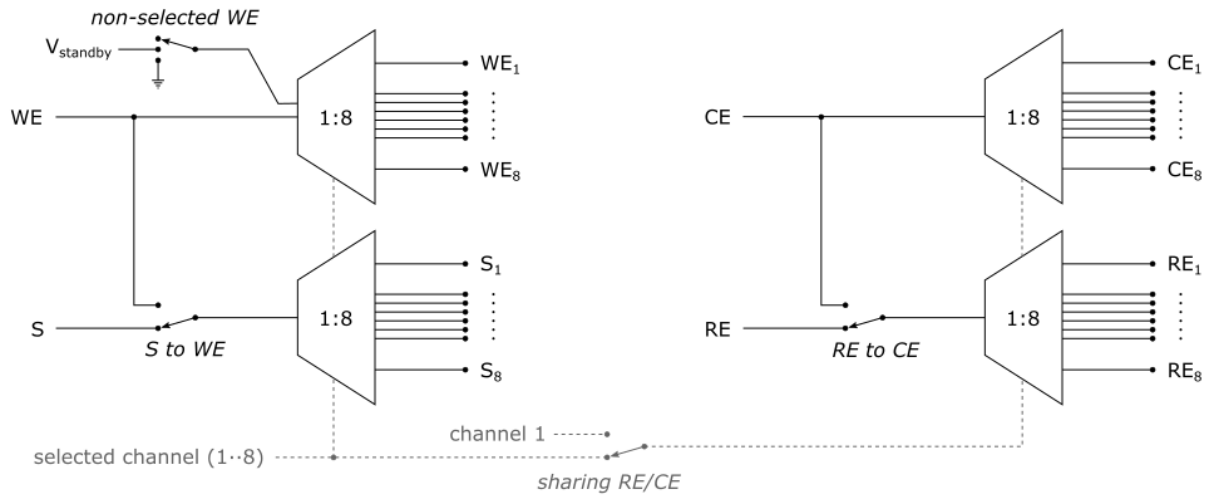*Magnetic feet and top for easy stacking*

Specifications

MUX8 multiplexer

- number of channels: 8 (up to 128 channels when daisy chained)
- multiplexer: switches 8 x (WE, S, RE and CE)
- on resistance for WE: 1 ohm typical
- charge injection on WE: 0.5 nC typical
- leakage current: < 20 pA (5 pA typical) at 25 ℃
- switching time: 2 ms
- compliance voltage: ±10 V

Limitations for Electrochemical Impedance Spectroscopy (EIS)

- max. frequency:
  - 100 kHz when switching WE/S, RE and CE
  - 1 MHz when switching WE,/S and RE+CE combined (2 electrodes configuration)

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MUX8-R2 functional diagram

Dimensions

Dimensions in mm:

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