

Features

- **48 channels per board, freely selectable**
- **Short switching times**
- **Dialectic strength 200V DC or V_{peak}**
- **Variable configurations available**
- **Long service life**

The MSU board is a relay matrix with 48 channels. It is used to connect the test points of a DUT to the test system's measurement board. The signal to be measured is connected to a central point by switching one of the 48 reed relays and from there connected to the analog bus via a second group of 8 relays.



Specification

Operating voltage	5V ± 0.1V
Current consumption	20 mA neutral 600 mA (all relays active)
Measurement channels (X1)	48
Analog bus channels (X2)	8
Relay type Contact type	SIL05-1A72-71D Protective gas contact
Current carrying capacity	500mA
Dialectic strength	200 VDC
Switching time	1 ms
Service life	1 * 10 ⁹ cycles
Service life under load Contact capacity	1 * 10 ⁶ cycles 0.3 pF
Dimensions	160 x 100 mm
X1 connector	50-pin header
X2 connector	64-pin multipole connector DIN 41612

Application

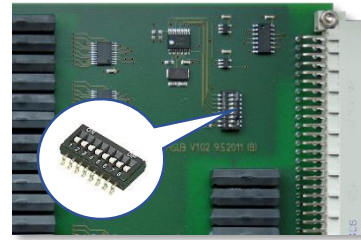
Typical applications include automatic testing of electrical assemblies and devices. The advantage of MSU3 in comparison to semiconductor switches is the combination of high dialectic strength and switching capacity at low capacitance. It is suitable for other uses in addition to connecting test points with a measurement device.

- **Short-circuit and connection test**
- **Signal feed**
- **Connecting test points to each other**
- **Controlled discharge of capacities**

Pinout

X1		X2	
PIN	CHAN-NEL	PIN	CHANNEL
1	1	AC1	5 V
2	2	A2	GND
3	3	C2	RXD +
4	4	A3	RXD -
5	5	C3	GND
6	6	A4	TXD +
[...]		C4	TXD -
46	46	AC5, AC16, AC18, AC20, AC22, AC24, AC26, AC28, AC30, AC32	GND
47	47	AC17	ANALOG1
49	NC	AC19	ANALOG2
		AC21	ANALOG3
		AC23	ANALOG4
		AC25	ANALOG5
		AC27	ANALOG6
		AC29	ANALOG7
		AC31	ANALOG8

Addressing



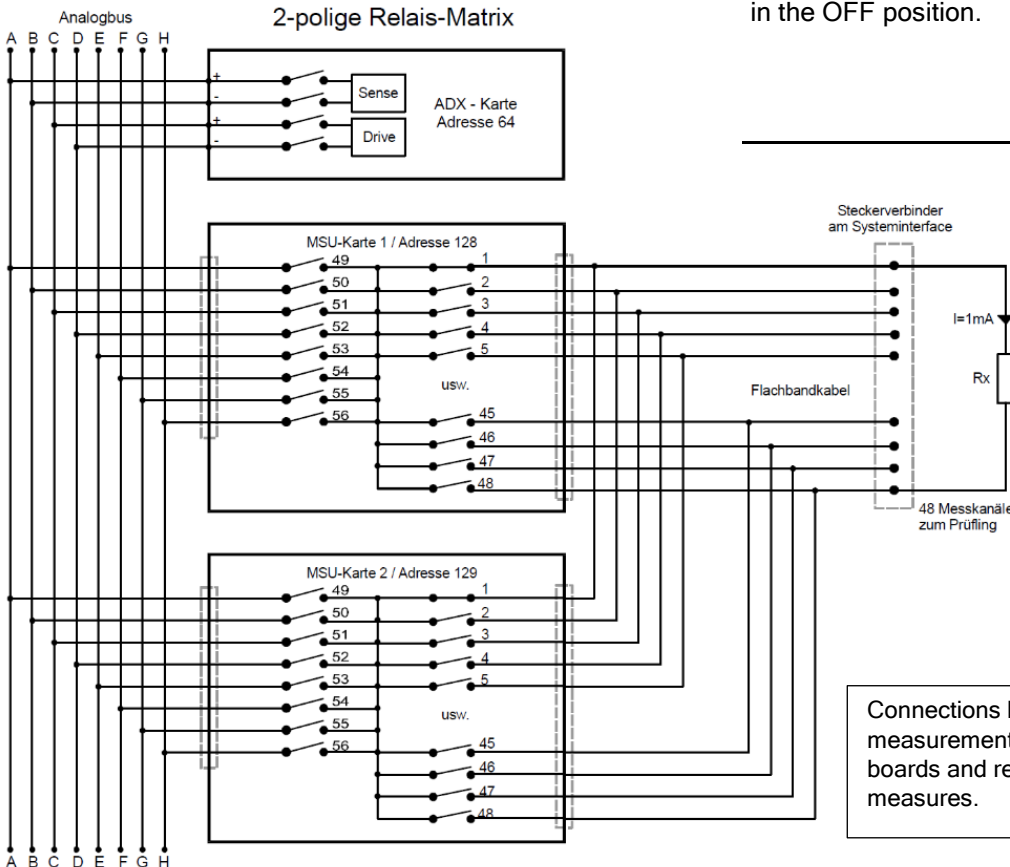
The board address is configured with a 8-pin DIP switch. The WinGuard supports up to 16 MSU boards; the base address is 128 Standard configurations are 48x2, 96x2, 192x2 or 48x4 measurement channels.

	Switch number
	8 7 6 5 4 3 2 1
Address 128	0 1 1 1 1 1 1 1
Address 129	0 1 1 1 1 1 1 0
Address 130	0 1 1 1 1 1 0 1
Address 131	0 1 1 1 1 1 0 0

1 indicates switch position ON
0 indicates switch position OFF

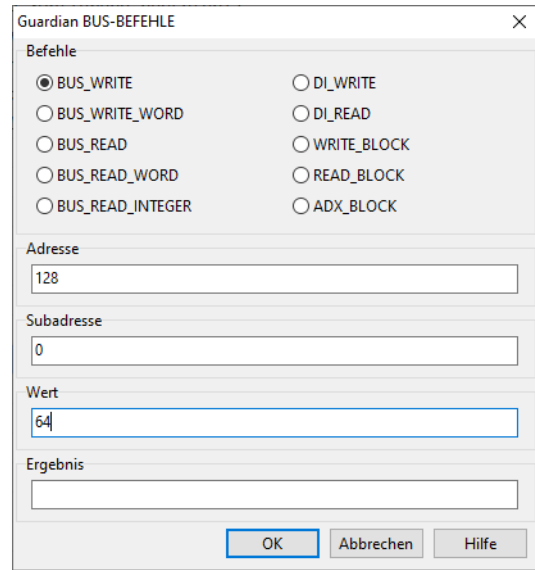
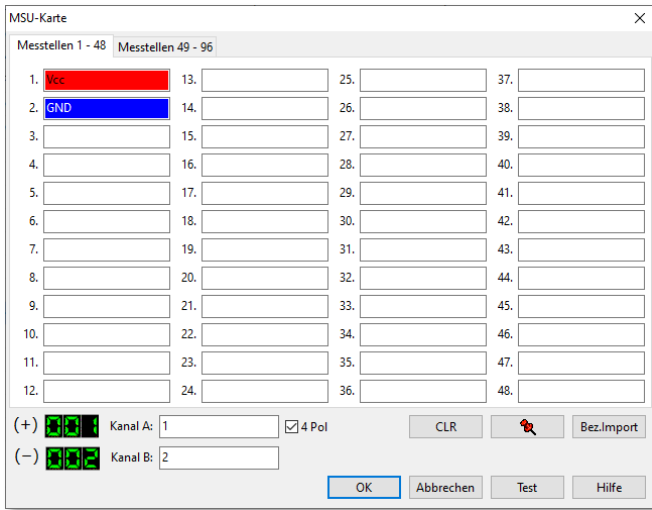
The bits are active-low and switch 8 **MUST** always be in the OFF position.

Guardian system



Connections between ADX measurement boards, MSU boards and resistance to be measures.

WinGuard



This is the standard dialog box for switching the MSU boards. 'Channel A' is connected with analog bus A, which is usually connected with the positive input of the measurement board; Channel B is routed to the negative measurement input via analog bus B. Each measurement channel can be assigned a name. More information on this process can be found in the WinGuard documentation.

In the case of special designs, the MUS boards can also be switched with the Guardian bus commands (low-level commands), see WinGuard software manual for more information. A DLL is provided for integration into other software platforms.