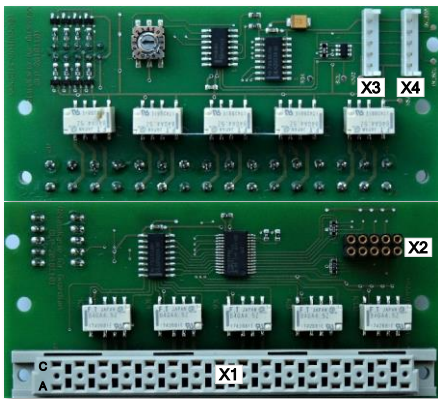


## Features

- Universal relay module with 10 switch contacts
- Low contact resistances
- 8 GPIOs with 5V
- I<sup>2</sup>C control
- Can be combined with up to 4 boards

5 miniature signal relays are fixed on each side of the relay module, which is controlled by a UMB2 board via I<sup>2</sup>C. Both of the relay's switch contacts are connected in parallel in order to double the current carrying capacity and ensure a low contact resistance.



## Application

- Switching supply voltages up to 30V DC or 230V AC
- Connecting test points
- Electrical isolation
- Retrieval of the 6-bit adapter number and reading of the start/stop inputs
- Replacement for discontinued relay boards

## Addressing

A UMB2 board with the board address 248 controls up to 4 relay modules. After power up, the firmware reads the number of connected relay modules. In order to ensure that the combination of UMB2 and relay modules remains backwards compatible to predecessors, the UMB2 firmware emulates the Guardian log of the old relay boards on the bus addresses 248 to 251. The I<sup>2</sup>C

Position	Address
0	248
1	249
2	250
3	251



## Specification

Operating voltage 1	5.0V max. 200 mA
Operating voltage 2	3.3V max. 30 mA
Dimensions	100 x 45 mm
Control	I <sup>2</sup> C with 100 KHz clock
X1	Relay contacts 32-pin female multipoint connector DIN 41612
X2	Digital inputs 10-pin header RM 2.54
X3	Connector for UMB2 JST B5B EH
X4	I2C transmission JST B4B EH

## Pinout

### X1 - Relay contacts

Contact	NC contact	Change-over contact	NO contact
1	C4	A4	A6
2	A8	C6	C8
3	C10	A10	A12
4	A14	C12	C14
5	C16	A16	A18
6	A20	C18	C20
7	C22	A22	A24
8	A26	C24	C26
9	C28	A28	A30
10	A32	C30	C32

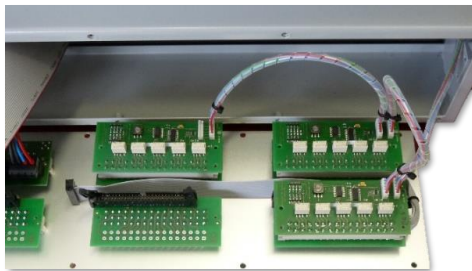
### X2 - Digital inputs

Pin	Signal
1	not connected
2	GND
3	Bit 7
4	Bit 6
5	Bit 5
6	Bit 4
7	Bit 3
8	Bit 2
9	Bit 1
10	Bit 0

### X3 and X4, connector for UMB2

Pin	Signal
1	5 V
2	3.3 V
3	I <sup>2</sup> C SCL
4	I <sup>2</sup> C SDA
5	GND

Connection of additional modules to X4



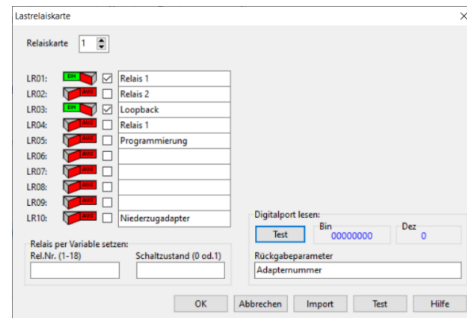
View of the Guardian System interface from inside with 3 relay mod-

The modules are directly inserted and fixed onto the 32-pole multipole connectors of the interface PCBs rel. 1-20, rel. 11-20 and rel. 21-30. As the pinout of X1 is compatible with the predecessor, the module can also be used as a replacement part for discontinued relay boards. For the relay modules, the cables to the contacts within the test system are significantly shorter and the contact resistances are lower and stronger than in previous modules.

In addition to the relay, the module also includes 8 digital inputs that are used for the Guardian Test System to retrieve the number of the connected test adapters and start-stop inputs.

## WinGuard

This dialog box controls the relay modules. More information on this process can be found in the WinGuard documentation.



Kommentiert [IN1]: I assume here the source should state 30