



## User Manual Function Description

**multisio**

**D2-2AO**



### Double Analog Output Module



You can find the instructions for your KBR device at our download center.

<https://www.kbr.de/download/>

# Table of Contents

Function Description of Analog Output Module multisio D2-2AO.....	3
Analog Output Module – Connection diagram .....	4
Analog Output Module – LED Display .....	4
Function of Scan Button .....	4
Function of the DIP Switches .....	5
Technical Data:.....	6

---

© KBR GmbH

All technical data is  
subject to change

## Function Description of Analog Output Module multisio D2-2AO

The multisio D2-2AO module is a modular component that can be connected to an existing system. The module can be connected directly to the multimax basic module (from multimax D6). This basic module supplies the module with the necessary operating voltage and communicates through the module bus using the double analog output module. If the double analog output module is operated directly on the KBR eBus, then a separate multisys D2-ESBS gateway must be provided for the module.

The multisio D2-2AO hardware supports 2 analog outputs, 5 LEDs, an eightfold DIP switch and a button to start scanning.

LEDs 1 and 2 display the output level of the analog outputs. If the LEDs are on continuously, the output level lies between 80% and 100%. The shorter the "on" time of the LEDs, the lower the output level (if the lengths of the flashes vary, see description of test operation).

At its outputs, the module provides a voltage of 0 to 10 volts or a current of 0 to 20 mA, in accordance with the configuration made via module bus.

### For the analog outputs, the following values are given as typical:

Current output: Load max. 400 ohms

Voltage output: Load min. 1,000 ohms

The analog outputs are each connected through a dipolar connector plug. The connectors are marked with "+" and "-" signs. The analog outputs are not electrically isolated from each other.

It is possible to switch between normal and test operation using the DIP switches.

The power LED shows whether the operating voltage is present.

## Analog Output Module – Connection Diagram

### Terminal Assignment

Terminal 60: Analog output 1 +

Terminal 61: Analog output 1 -

Terminal 62: Analog output 2 +

Terminal 63: Analog output 2 -



## Analog Output Module – LED Display

In KBR eBUS scan mode, all four output LEDs flash. In the module detection mode, the output LEDs generate a chase light effect.

### The displays are:

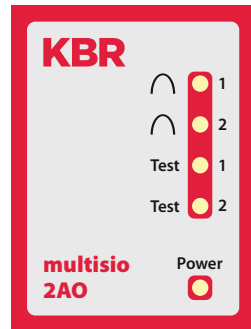
LED 1 for output 1 (analog value)

LED 2 for output 2 (analog value)

LED 3 for output 1 (test operation)

LED 4 for output 2 (test operation)

Power LED on: Operating voltage present

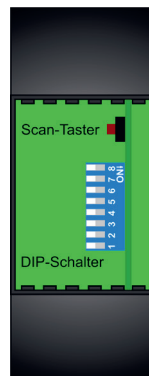


## Function of Scan Button



### NOTE

If the scan button is pressed briefly until the LEDs flash quickly, the module enters scanning mode.

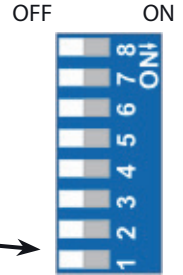


## Function of the DIP Switches

### Normal and Test Operation:

It is possible to switch between normal and test operation using the DIP switches.

Switch setting illustrated = OFF



The individual DIP switches signify the following:

Switch	Off	On
1	Channel 1: normal operation	Channel 1: test operation
2	Channel 1: 0 V to 10 V (in test operation)	Channel 1: 0 mA to 20 mA (in test operation)
3	Channel 2: normal operation	Channel 2: test operation
4	Channel 2: 0 V to 10 V (in test operation)	Channel 2: 0 mA to 20 mA (in test operation)

In test operation, DIP switches 5 to 8 indicate the analog value output as a percentage.

Switch	Meaning in Test Operation
5	10% of the analog end value (in test operation, for both channels)
6	20% of the analog end value (in test operation, for both channels)
7	30% of the analog end value (in test operation, for both channels)
8	40% of the analog end value (in test operation, for both channels)

The analog output value and mode of operation should be set first. Following that, the DIP switch should first be set to test operation. The output value for this channel will then be saved and output. In this way, it is possible to assign an individual output value to each channel. Changes to the operating mode and value output will be discarded until the normal/test switch is set to test operation.

LEDs 1 and 2 display the analog value of the respective output channels. For this purpose, the LEDs are controlled by flashing. The speed of the flashes shows the analog output value. The rhythm of the flashes is divided into 20% stages. If the LED is on for 20% of the time, the output value is < 20%. If the LED is on continuously, the output value is > 80%. In between, the time during which the LED is on is increased in 20% increments. LED 3 is switched on if output 1 is in test operation.

LED 4 indicates the test operation of channel 2.

**Technical Data:**

Power supply:	Via module bus	24 V DC/approx. 2 W
	Connection:	Modular connector RJ12:6P6C
<b>Hardware:</b>		
Analog outputs	Number	2
	Load capacity	Max. 20 mA for current output (max. load 400 ohms)  Max. 10 V for voltage output (min. load 1,000 ohms)
	Signal	0–10 V, 0–20 mA
	Connection	2x plug terminal dipolar
Module bus interface	Serial interface	RS485
	Module bus connection	RJ12 for ready-made KBR system cable, max. length 30 m when suitably placed
	Transmission speed	38,400 Bps
	Bus protocol	KBR module bus
Display	LED	4x message, 1x operation display
Control unit	DIP switch	1x eightfold, output configuration
	Button	Scan button (module bus)
<b>Mechanical Data:</b>		
Top hat rail device	Housing dimensions	90 x 36 x 61 mm (H x W x D)
	Mounting type	Wall mounting on DIN rail 7.5 mm deep, in accordance with DIN EN 50022. Suitable for distribution board mounting
	Weight	Approx. 70 g
<b>Standards and Miscellaneous:</b>		
Ambient conditions	Standards	DIN EN 60721-3-3: 1995-09 + /A2 1997-07; 3K5+3Z11; (IEC721-3-3; 3K5+3Z11)
	Operating temperature	-5°C ... +55°C
	Operating altitude	Up to 2000 m above sea level
	Humidity	5 % ... 95 %, non-condensing
	Storage temperature	-25 °C ... +70 °C
Electrical safety	Standards	DIN EN 61010-1: 2011 -07; (IEC1010-1)
	Protection type	IP20 in accordance with ISO 20653: 2013-02
	Electromagnetic compatibility	DIN EN 61000-6-1: 2007-10 61000-6-2: 2006-03 + correction1: 2011-6 61000-6-3: 2011-09 + correction1: 2012-11 61000-6-4: 2011-09



A series of 20 horizontal lines spaced evenly down the page, providing a template for handwritten notes.



**KBR Kompensationsanlagenbau GmbH**

Am Kieferschlag 7  
D-91126 Schwabach

T +49 (0) 9122 6373 -0  
F +49 (0) 9122 6373 -83  
E [info@kbr.de](mailto:info@kbr.de)

[www.kbr.de](http://www.kbr.de)