KBR Energy Management

User manual
Technical parameters

multisio

Module with 4 digital outputs

D2-4DO-2

You partner for network analysis

System I English

In our download centre you will find the appropriate instructions for KBR devices.
https://www.kbr.de/en/download/operating instructions/

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Dear customer

Thank you for choosing a KBR product.

To familiarize yourself with the operation and configuration of the device, we recommend that you read this manual carefully. This way, you will be able to use of the entire range of functions that this high-quality product has to offer.

The individual chapters explain the technical details of the device and show how to properly install and start it up to prevent damage.

This user manual is included in the scope of delivery of the device and must be accessible to the user at all times (e.g. in the switchgear cabinet). Even if the device is resold to third parties, the manual remains an inherent part of the device.

Although the utmost care has been taken in putting together this user manual, errors may still occur. We would be very grateful if you could notify us of any errors or unclear descriptions you may notice. The form included in the appendix to this manual can be used to send us corrections or suggested improvements.

Yours sincerely,

KBR GmbH Schwabach

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This user manual contains notes that you have to observe for your personal safety and to prevent damage to the equipment. These notes are identified by a warning sign or information symbol, depending on the degree of hazard they warn about.

DANGEROUS VOLTAGE

means that death, major injury or substantial property damage may occur if the appropriate safety measures are not taken.

CAUTION

means that minor injuries or property damage may occur if the appropriate safety precautions are not taken.

NOTE

is an important piece of information on the product, product handling or the respective part of the user manual to which special reference is made.

Disclaimer

The contents of this manual have been checked to concur with the described hardware and software components. However, deviations may occur, meaning that no guarantee can be made for complete agreement with the documentation. The specifications given in this manual are checked on a regular basis; necessary corrections will be included in the next revision.

We appreciate your corrections and comments.

Safety notes

In order to prevent operating errors, handling of the device has been kept as simple as possible. This will enable you to use the device very quickly. In your own interest, however, read the following safety notes carefully.

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Product liability

You have purchased a high-quality product.

Only components of the highest quality and maximum reliability are used.

Each device is subject to long-term testing before it is delivered. For details on product liability, please refer to our general terms and conditions for electronic equipment.

The warranty on device properties applies only if the device has been operated in accordance with its intended use!

Disposal

Devices that are faulty, obsolete or no longer used must be properly disposed of.

If required, we will dispose of the devices for you.

Scope of delivery

Included in the scope of delivery:

- Digital output module
- Connector set
- User manual

2 Installing the device

The housing of the transducer attachment is designed for mounting in the cabinet to 35 mm standard rail. The module is snapped on the standard rail.

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2 Description of functions D2-4DO-2 digital output module

The **multisio D2-4DO-2** hardware supports four digital outputs, 5 LEDs and an 8-position DIP switch.

At its outputs, the module generates digital pulses as configured via the module bus.

For each hardware output, a voltage of up to 35 V has to be applied to the + input. When switched to "ON" , the digital outputs transfer this voltage to the corresponding - terminal. To ensure that the

current applied does not exceed 50 mA, use an external circuit. With these parameters, the digital output is S0-compatible in accordance with DIN 43864. Ensure that the polarity is correct when connecting.

The module can be accessed by a master device (multisio D6-x (D6-ESBS-5DI-

6RO1DO-5 or higher) with module bus or a computer with VE using multisys D2-ESBS-3 / multisys D2-BSES-3) via the module bus interface. The master device has to configure the module.

The operating voltage is supplied via the module bus interface. The module cannot be used on its own.

3 Digital output module connection diagram

Terminal assignment

Terminal 80: Digital output 1 +

Terminal81: Digital output 1 -

Terminal 82: Digital output 2 +

Terminal 83: Digital output 2 -

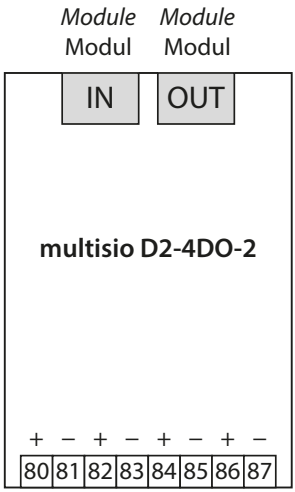
Terminal 84: Digital output 3 +

Terminal 85: Digital output 3 -

Terminal 86: Digital output 4 +

Terminal 87: Digital output 4 -

IN/OUT: Module bus/supply voltage



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4 Digital output module LED display

In KBR module bus scanning mode, all 4 output LEDs are flashing.

In the module detection mode, the output LEDs flash in sequence.

The LEDs represent:

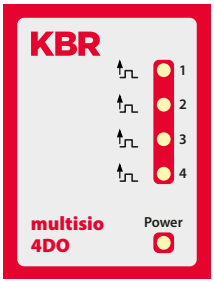
LED1 for output 1

LED2 for output 2

LED3 for output 3

LED4 for output 4

Power LED on:
Operating voltage
is applied



The LEDs on the digital output module indicate the current state of the digital output. If the output is active, the LED is on.
If the output is passive, the LED is off.

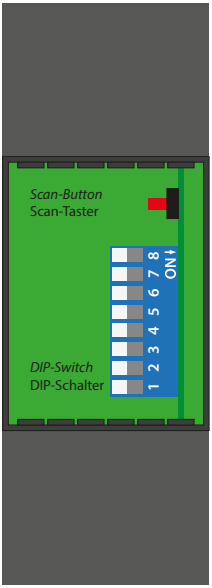
5 Scan button function

NOTE

If the scan button is pressed briefly, the module enters the scan mode.

Illustrated switch setting:

OFF = white
ON = gray



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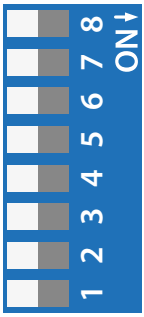
6 DIP switch function

6.1 Operating mode



For every output, the multisio D2-4DO-2 has the two operating modes "normal" and "manual", which are activated with DIP switches 5 to 8.

The DIP switches are assigned to the outputs as follows:

- DIP switch 5 determines the operating mode of output 1
- DIP switch 6 determines the operating mode of output 2
- DIP switch 7 determines the operating mode of output 3
- DIP switch 8 determines the operating mode of output 4

If the DIP switch is set to **OFF**, the respective output is in normal operating mode. If the DIP switch is set to **ON**, the respective output is in manual operating mode.

Illustrated switch setting:

OFF = white

ON = gray

Normal operating mode

In normal operating mode, the state created by the module is issued at the corresponding output.

Manual operating mode

In manual operating mode, the state of DIP switches 1 to 4 is issued at the corresponding output instead of the state created by the module. The DIP switches are assigned to the outputs as follows:

- DIP switch 1 determines the state of output 1
- DIP switch 2 determines the state of output 2
- DIP switch 3 determines the state of output 3
- DIP switch 4 determines the state of output 4

If the DIP switch is set to OFF, the output state passive/off is used. If the DIP switch is set to ON, the output is active/on.

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6.2 DIP switch settings

DIP operating		State DIP		Explanation
S5	OFF	—	—	Output 1 = normal operating mode
	ON	S1	OFF	Output 1 = manual operating mode passive/off
			ON	Output 1 = manual operating mode active/on
S6	OFF	—	—	Output 2 = normal operating mode
	ON	S2	OFF	Output 2 = manual operating mode passive/off
			ON	Output 2 = manual operating mode active/on
S7	OFF	—	—	Output 3 = normal operating mode
	ON	S3	OFF	Output 3 = manual operating mode passive/off
			ON	Output 3 = manual operating mode active/on
S8	OFF	—	—	Output 4 = normal operating mode
	ON	S4	OFF	Output 4 = manual operating mode passive/off
			ON	Output 4 = manual operating mode active/on

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7 Technical data:

Power supply:	Via module bus	24 V DC/approx. 1,3 W
	Connection	Modular connector RJ-12:6P6C
Hardware outputs:		
4 digital outputs:	S_0 - compatible	max 35 V / 50 mA
	Plug-in terminal, 8-pin	
Module bus interface:	Serial interface	RS-485
	Module bus connection	RJ-12 for ready-made KBR system cable, max. length 30 m if correctly placed
	Transmission speed	38400 Bps
	Bus protoco	KBR module bus
Display:	LED	4x message 1x operation display
Control unit:	DIP switch	Configuration with 8 inputs
	Button	Scan button (module bus)
Mechanical data::		
DIN rail device:	Housing dimensions	90 x 36 x 61 mm (H x W x D)
	Mounting type	Wall mounting on 7.5 mm deep DIN rail, in accordance with DIN EN 50022. Suitable for distribution board mounting
	Weight	Approx. 70 g

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Ambient conditions / electrical safety

Ambient conditions	Standards	DIN EN 60721-3-3/A2: 1997-07; 3K5+3Z11; (IEC721-3-3; 3K5+3Z11)
	Operating temperature	K55 (-5°C …. +55°C)
	Humidity	5 % … 95 %, non-condensing
	Storage temperature	K55 (-25°C …. +70°C)
	Operating altitude	0 to 2000 m above sea level
Electrical safety (used with base device)	Standards	DIN EN 61010-1: 2011-07
	Protection class	I
	Overvoltage category	CAT III
	Rated surge voltage	4kV
Protection type	Standards	IP20 in accordance with DIN EN 60529:2014-09
EMC	Standards	DIN EN 61000-6-2:2006-03 + amendment 1:2011-03 DIN EN 61000-6-3:2011-09 + amendment 1:2012-11 DIN EN 61326-1:2013-07

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KBR GmbH

Am Kiefernschlag 7
D-91126 Schwabach

P +49 (0) 9122 6373 - 0
F +49 (0) 9122 6373 - 83
E info@kbr.de

www.kbr.de

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