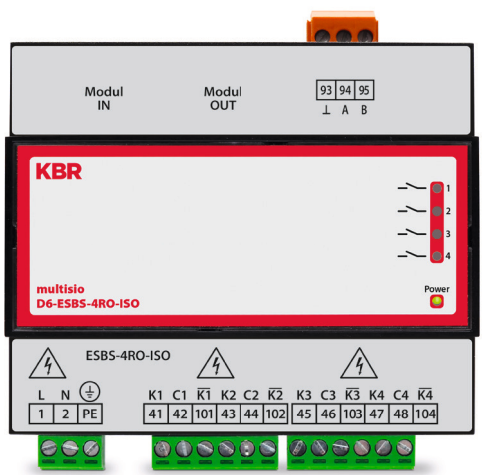
KBR
Energy Management

User Manual
Technical Parameters



multisio D6-ESBS-4RO-ISO-1

In our download centre you will find the appropriate instructions for KBR devices.

https://www.kbr.de/en/download/operating instructions/

System | English

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Thank you for choosing this KBR quality product.

In order to become familiar with the operation and programming of the device and to always be able to use the full range of functions of this high-quality product, you should carefully read these operating instructions and the safety instructions enclosed with the device.

The individual chapters explain the technical details of the device and show how damage can be avoided through proper installation and commissioning.

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Table of Contents

1 Function description of multisio D6-ESBS-4RO ISO-1

The multisio D6-ESBS-4RO ISO-1 with eBus hardware supports four floating relay outputs (changeover relays), 5 LEDs and an 8-fold DIP switch.

The relay outputs serve to control contactors of devices or other systems.

The module can be accessed from a master device (multimax D6-5, multisio D6-7 or higher, or a computer with visual energy via multigate ESBS) using the module bus interface. The master device has to configure the module. The module cannot be used on its own

The bus interface is powered via a power supply (of Ph-N 100V – 240V+/-10% 50Hz/ 60Hz AC or DC) or the module bus interface (24 VDC). The device is equipped with a "power" LED for supply voltage monitoring.

NOTE

The expanded module bus interface (RS 485 serial) also functions as a gateway (implementation of module bus RJ12 on eBus (ESBS)).
Prerequisite: Module bus input via RJ12 - connector
eBus output via terminal 93, 94, and 95

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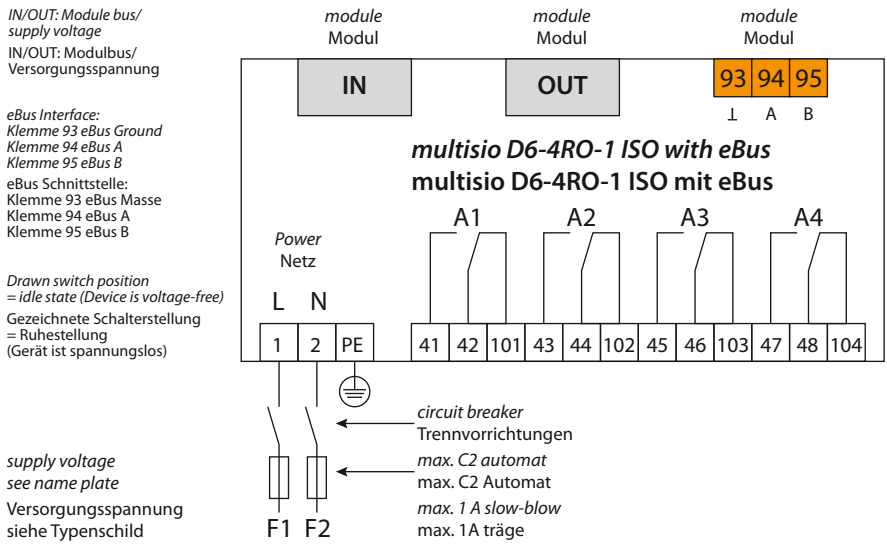
1.1 Connection Diagram



NOTE

When connecting the phase (L1) to terminal 1 and the neutral conductor (N) to terminal 2 (Ph-N 100V – 240V+/-10% DC/50Hz/60Hz) the safety device and the disconnector in the supply line to terminal 2 (N) are not required.

The safety device and the disconnector to terminal 2 (N) are only required for the following connection variants:

Alternating voltage: Terminal 1 (L1) and terminal 2 (L2):
US1 Phase-Phase 100V - 240V +/-10% 50Hz/60 Hz

Direct voltage: Terminal 1 (+) and terminal 2 (-):
US1 100V - 240V +/-10% DC

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1.2 Connection Variants of the Supply Voltage

Terminal 1	Terminal 2	Voltage	Safety device and disconnector to Terminal 2 required
		Power supply unit US1	
Phase L	Neutral conductor N	100V - 240V +/-10% AC 50/60 Hz	No
Phase L1	Phase L2	100V - 240V +/-10% AC 50/60 Hz	Yes
+	-	100V - 240V +/-10% DC	Yes

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1.3 Terminal assignment:

Mains	Klemme 1:	Phase (L) and DC (+)
	Klemme 2:	Neutral conductor and DC (-)
	Klemme PE:	Protective earth
eBus	Klemme 93:	eBus ground
	Klemme 94:	eBus A
	Klemme 95:	eBus B
Changeover relay A1:	Klemme 41:	NO = normaly open relay 1
	Klemme 42:	Shared connection relay 1
	Klemme 101:	NC = normally closed relay 1
Changeover relay A2:	Klemme 43:	NO = normaly open relay 2
	Klemme 44:	Shared connection relay 2
	Klemme 102:	NC = normally closed relay 2
Changeover relay A3:	Klemme 45:	NO = normaly open relay 3
	Klemme 46:	Shared connection relay 3
	Klemme 103:	NC = normally closed relay 3
Changeover relay A4:	Klemme 47:	NO = normaly open relay 4
	Klemme 48:	Shared connection relay 4
	Klemme 104:	NC = normally closed relay 4

NOTE

The potential at the relay outputs on the module matches the respective input (shared connection) of the relay! (Ph-N 100V - 240V +/-10% DC/50Hz/60Hz)

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In scanning mode, all 4 output LEDs are flashing.

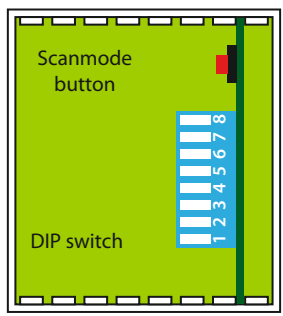
In the module detection mode, the output LEDs generate a chase light effect.

The LEDs represent:

LED 1:	Output relay 1 (A1) switched
LED 2:	Output relay 2 (A2) switched
LED 3:	Output relay 3 (A3) switched
LED 4:	Output relay 4 (A4) switched
LED Power	Operating voltage

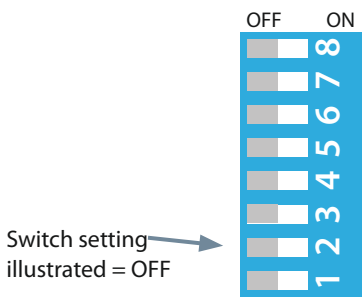
1.4 Function of Scan button

If the scan button is pressed briefly (2 to 4 seconds), the module enters the scan mode (module detection mode).



1.5 Manual Operation:

Each output can manually be set to active. If the DIP switch for the channel is set to "OFF," the output state is established within the module. If the DIP switch is set to "ON," the state for this output is kept as active, regardless of the state of the output that has actually been determined.



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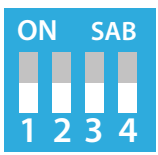
Relay state	Output 1		Output 2		Output 3		Output 4	
	DIP S1	DIP S5	DIP S2	DIP S6	DIP S3	DIP S7	DIP S4	DIP S8
automatic	X	OFF	X	OFF	X	OFF	X	OFF
manual passive / off	OFF	ON	OFF	ON	OFF	ON	OFF	ON
manual active / on	ON	ON	ON	ON	ON	ON	ON	ON

X: DIP switch state does not matter

If necessary, the RS-485 interface on the module bus side can be terminated using four DIP switches (terminating resistors are fitted into multisio).

1.6 DIP Switch for Terminating RS-485 Interface:



DIP1 and DIP2 ON, DIP3 OFF = failsafe active
DIP1 and DIP2 OFF, DIP3 ON = termination active
DIP1 and DIP2 OFF, DIP3 OFF= no failsafe, no termination
DIP4 is not assigned!

NOTE

The failsafe termination can only be activated once per bus segment!

2 Technical Data

Hardware inputs		
Power supply	Via module bus	24 V DC / max. 3W
	Connection	Modular connector RJ12:6P6C
	Via network connection	Ph-N 100V - 240V +/-10% 50Hz/60 Hz/DC, max. 25 VA, 13W
		Terminal 1 phase (+)
		Terminal 2 neutral conductor (-)
		Terminal 3 PE
Connection elements	Plug-in terminals	
Permissible cross-section of the connecting cables	Voltage supply 2.5 mm^2	
Input control voltage	Fuse max. 1 A slow-blow max. C2 automatic isolating switch UL/IEC-approved	

Hardware outputs		
Module bus interface	Serial interface	RS485
	Module bus connection	RJ12 for ready-made KBR system cable, max. length 30 m when suitably placed Maximum DC power output 7W
	Transmission speed	38400 Bps
	Bus protocol	KBR module bus/eBus
optional	Module bus connection	
	Connection material	
	Connections: eBus via plug-in terminal, 3-pin	Device: Terminal 93 (⊥) Terminal 94 (A) Terminal 95 (B)
	Bus protocol	KBR – module bus / eBus

Continuation of table

Continuation of table Hardware Outputs

4 relay outputs	2 plug terminals, each 6-pin	
Changeover relay A1:	Terminal 41	NO = normaly open relay 1
Changeover relay A1:	Terminal 42	Shared connection relay 1
Changeover relay A1:	Terminal 101	NC = normally closed relay 1
Changeover relay A2:	Terminal 43	NO = normaly open relay 2
Changeover relay A2:	Terminal 44	Shared connection relay 2
Changeover relay A2:	Terminal 102	NC = normally closed relay 2
Changeover relay A3:	Terminal 45	NO = normaly open relay 3
Changeover relay A3:	Terminal 46	Shared connection relay 3
Changeover relay A3:	Terminal 103	NC = normally closed relay 3
Changeover relay A4:	Terminal47	NO = normaly open relay 4
Changeover relay A4:	Terminal 48	Shared connection relay 4
Changeover relay A4:	Terminal 104	NC = normally closed relay 4
Contact capacity	500VA each, 2A, 250V 50/60Hz AC	
Overvoltage category	CAT II	
Display	LED	4x message 1x operation display
Control unit	DIP switch	1x 8-fold, for manual operation
		1x 4-fold, for bus termination serial connection RS485
	Button	Scan button (module bus)

Mechanical data		
DIN rail device	Housing dimensions	90 x 108 x 61 mm (H x W x D)
	Mounting type	Wall mounting on DIN rail 7.5 mm deep, in accordance with DIN EN 60715. Suitable for distribution board mounting
	Weight	Approx. 650g

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2.1 Environmental Conditions / Electrical Safety

Surrounding conditions	Standards	DIN EN 60721-3-3/A2: 1997-07; 3K5+3Z11; (IEC721-3-3; 3K5+3Z11)
	Operating temperature	K55 (-5 °C …. +55 °C)
	Air humidity	5 % … 95 %, non-condensing
	Storage temperature	K55 (-25°C …. +70°C)
	Operating height	0…2,000 m above sea level
Electrical safety	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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