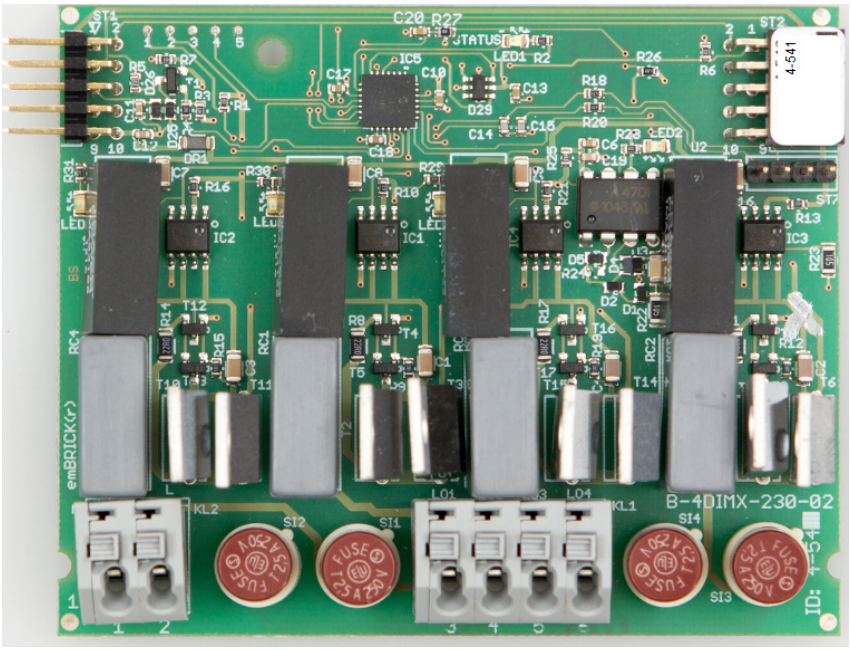
CAE_B-4Dim230T-01

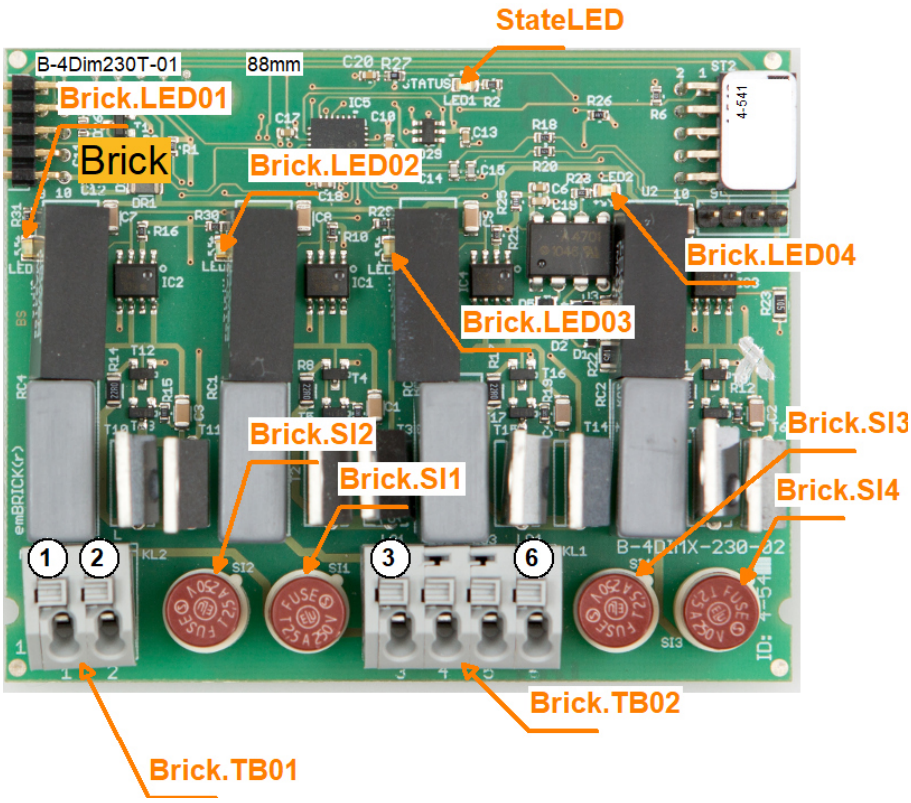


1.1 Description

ID: 4-541
Order No.: CAE_B-4Dim230T-01 (-p)
Terminal: push-in (≤ 1.5mm²)
Size: 8 eU (88mm x 72mm)
BBFCP: 1-1-1
Weight: 85g

This module contains four independent 230Vac dimmer outputs that includes a phase angle control with a resolution of 20.000 steps per half wave.
Leading and trailing edge phase control can be selected via the brickBUS (Do not change the mode under load).
Each of these channels can control a permanent load (see notes) of max. 300W and contains a quick acting 1,6A melting fuse for output protection.

1.2 Connectors and Indication-/Operation-Elements



1.2.1 Terminal block (TB)

The following Illustration the technical details for Terminal blocks are listed. The location of a specific block is documented with the ID (left coloumn) in the preavious Illustrations.

ID	Model	Model / Series	Grid	Num. of term.	connection	elec. usage
Brick.TB01	Push-in Cage Clamp	Wago250-5##	5,0mm	2	Eindrähtig (starr) = 0.5 .. 1.5mm² Feindrähtig (flexibel) = 0.75 .. 1.5mm² Feindrähtig (mit Aderendhülsen) = 0.5 .. 1.0mm²	UL: 300V 10A VDE: 320V 17,5A
Brick.TB02	Push-in Cage Clamp	Wago250-5##	5,0mm	4	Eindrähtig (starr) = 0.5 .. 1.5mm² Feindrähtig (flexibel) = 0.75 .. 1.5mm² Feindrähtig (mit Aderendhülsen) = 0.5 .. 1.0mm²	UL: 300V 10A VDE: 320V 17,5A

1.2.2 Terminal assignment

Here the assignment of individual terminals and there affilation to terminal blocks (Te block), terminal numbers (Te no.) and short description (T.desc.) aswell as there electrical function and usage are explained.
The associated mechanical and electrical properties are stated with the specific terminal block in the previous chapter. The position of a terminal is dedicated through the "Te block" and the actual terminal number (Te no.) or the therminal description (T.descr.) in the previous Illustration respectivly.
In the coloumn "usage" the technical-/ device-functional use is listed.

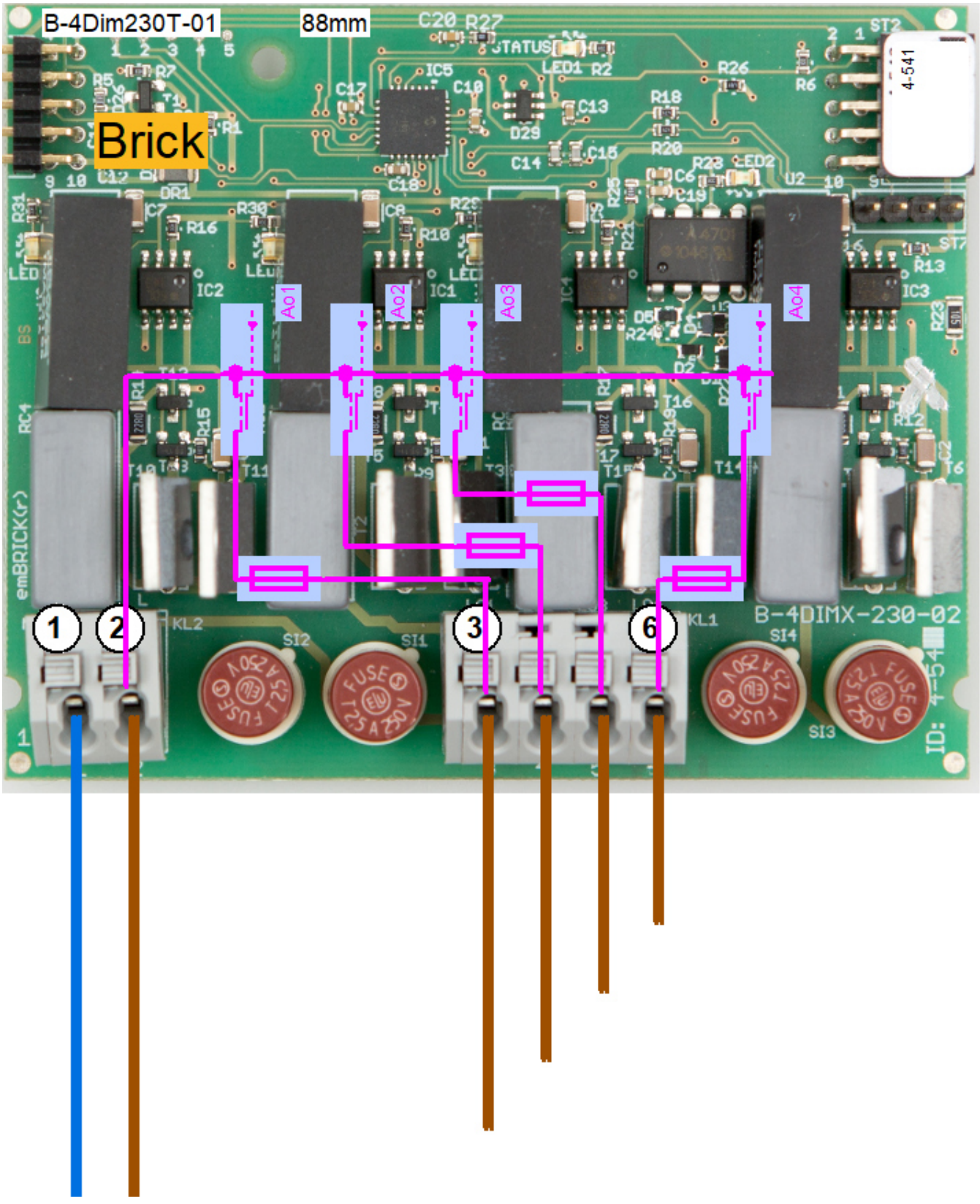
Te block	Te no.	T. descr.	Function	Usage
Brick.TB01	1	N	Neutral, Supply	-
Brick.TB01	2	L	Phase, Supply	-
Brick.TB02	3	O	Dimmer	Analog output 1
Brick.TB02	4	O	Dimmer	Analog output 2
Brick.TB02	5	O	Dimmer	Analog output 3
Brick.TB02	6	O	Dimmer	Analog output 4

1.2.3 LED Indications

ID	Type	Specification	Type / Usage
Brick.LED01	SMD-LED	green	Shows state of Analog output 1
Brick.LED02	SMD-LED	green	Shows state of Analog output 2
Brick.LED03	SMD-LED	green	Shows state of Analog output 3
Brick.LED04	SMD-LED	green	Shows state of Analog output 4
Brick.StateLED	SMD-LED	yellow	communicationstate Brick

1.3 Input-/Output Scheme

The following diagram shows the adaption of the control unit. To avoid overlapping, some wires are displayed interrupted and dashed.



1.4 Technical Data

1.4.1 Analog Outputs

The control unit has the following analog outputs:

Identifier	Analog output 1
Type	Phasenan(ab)schnittsteuerung
Range	0 ... 100%
max. Voltage	230V AC
max. Current	1.6A
Filter	hardware, 1st order, fcut off = approx. 100Hz
Component	
Remark	670 Hz

Identifier	Analog output 2
Type	Phasenan(ab)schnittsteuerung
Range	0 ... 100%
max. Voltage	230V AC
max. Current	1.6A
Filter	hardware, 1st order, fcut off = approx. 100Hz
Component	
Remark	670 Hz

Identifier	Analog output 3
Type	Phasenan(ab)schnittsteuerung
Range	0 ... 100%
max. Voltage	230V AC
max. Current	1.6A
Filter	hardware, 1st order, fcut off = approx. 100Hz
Component	
Remark	670 Hz

Identifier	Analog output 4
Type	Phasenan(ab)schnittsteuerung
Range	0 ... 100%
max. Voltage	230V AC
max. Current	1.6A
Filter	hardware, 1st order, fcut off = approx. 100Hz
Component	
Remark	670 Hz

1.4.2 Fuses

The controller owns the following internal fuses for providing safety for the device and partially for the connected sensors/ actors:

ID	Type	Nom. Current	Characteristic	Usage
Brick.SI 1	1.6AF	1.6A	fast	Analog output 2
Brick.SI 2	1.6AF	1.6A	fast	Analog output 1
Brick.SI 3	1.6AF	1.6A	fast	Analog output 3
Brick.SI 4	1.6AF	1.6A	fast	Analog output 4

1.4.3 User Notes

• Blinking behavior StateLED:
Each Morse code is 3 seconds long!
not initialized = flashing continuously at approx. 5Hz
no communication = short-long-short
too little communication = short-short-short
disturbed communication = short-long-long
OK = continuous flashing at approx. 1Hz (0.6-1.5Hz)

1.4.4 Developer Notes

• For high level application (medical, stage equipment, ...) we recommend an inline inductor in all operation cases that limits the current increase (tau) to 50 ... 500µs.

• The module does not contain any output inductors. For common use, this results in following IMPORTANT application requirements else a destruction of the module is very likely):
a) for resistive loads use trailing edge mode. A separate inductor is NOT necessary.
b) for capacitive loads use trailing edge mode. A separate inductor is NOT necessary.
c) for inductive loads use leading edge mode and an inline inductor of > 1mH

• To save a secure usement each output is fused with quick reacting (F) 1.6A.

1.5 Process Data Image

1.5.1 Outgoing Process Data (from bus master to this brick)

Byte	Function	rCAssign
00..01	Analog Output 1 0...25000 Dig. ≡ 0..100%	...+eB_W0,0,...
02..03	Analog Output 2 0...25000 Dig. ≡ 0..100%	...+eB_W1,0,...
04..05	Analog Output 3 0...25000 Dig. ≡ 0..100%	...+eB_W2,0,...
06..07	Analog Output 4 0...25000 Dig. ≡ 0..100%	...+eB_W3,0,...
08	Bit 0 : Phase Control 1 = leading edge 0 = trailing edge	...+eB_B8,0,0,... ...+eB_B8,0,1,... ...+eB_B8,0,2,... ...+eB_B8,0,3,...

		...+eB_B8,0,4,... ...+eB_B8,0,5,... ...+eB_B8,0,6,... ...+eB_B8,0,7,...

1.5.2 Incoming Process Data (from this brick to the bus master)

Byte	Function	rCAssign
00	Bit 0 : Status Image 1 = zero point detected 0 = no zero point detected	...+eB_B0,0,... ...+eB_B0,1,... ...+eB_B0,2,... ...+eB_B0,3,... ...+eB_B0,4,... ...+eB_B0,5,... ...+eB_B0,6,... ...+eB_B0,7,...

1.6 History

On the following page you will find a list of changes that have been made to the product.

1.6.1 History

Date	Entry scope (HW, SWappl, SWapi, Release)	Entry type (enhancement, improvement, bugfix, release)	Version	Status (development, implemented, tested)	Responsible	Reason for the modification	Items of modification	Impact for (end-)customer	Comment	Location in model/source
xxxx-xx-xx		Release	0.99	Tested	NSt					

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