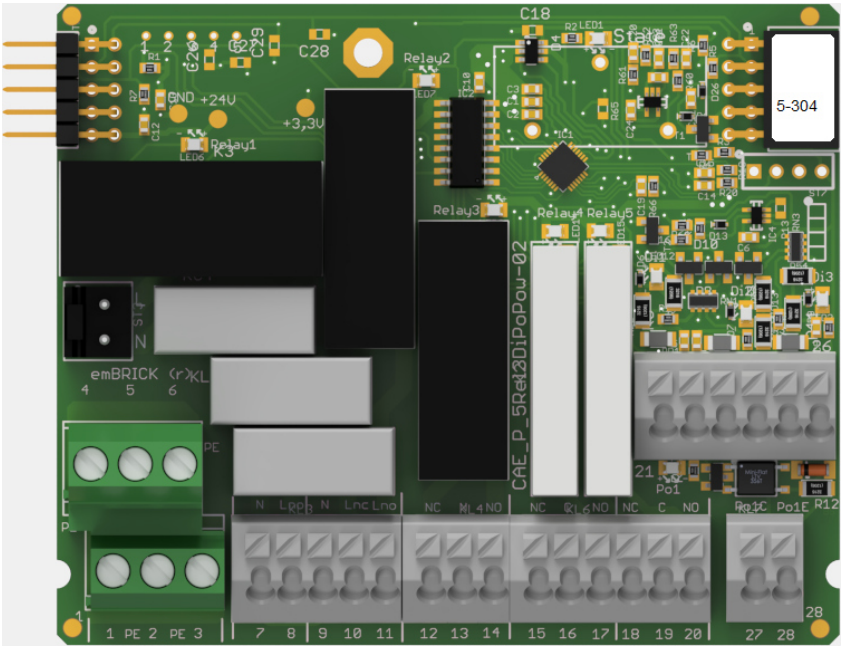
CAE_P-5Rel3DiPoPow-01

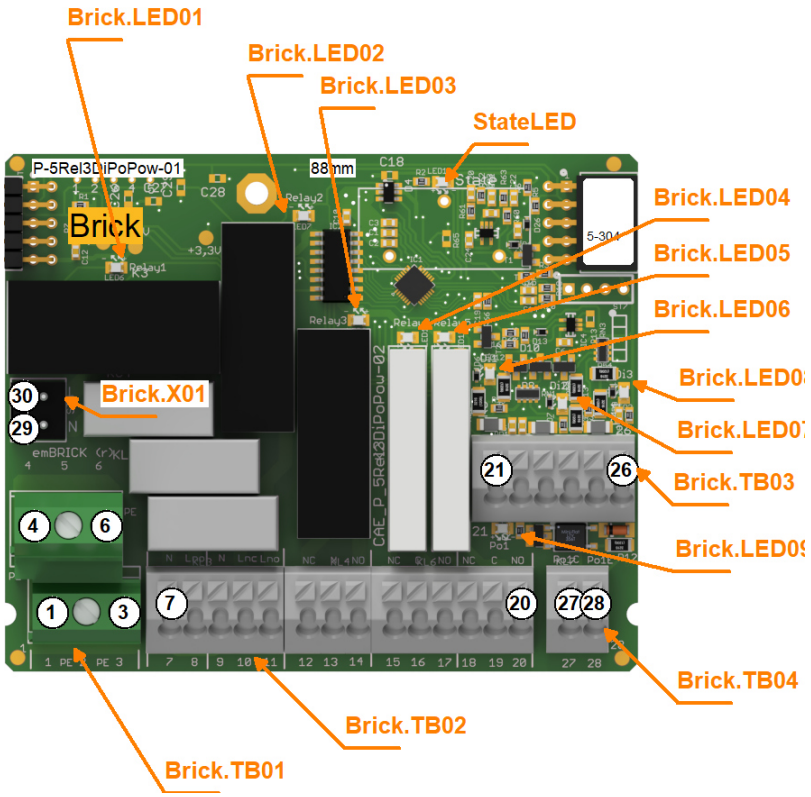


1.1 Description

ID: 5-304
Order No.: CAE_P-5Rel3DiPoPow-01
Terminal: push-in (for < 1.5mmÂ²)
Size: 8 eU (88mm x 72mm)
BBFCP: 1-1-1
Weight: 130g

The module includes 5 digital relay outputs, 3 n-switching inputs, 1 isolated fast puls output.
The module has two potential free change-over relays which can switch a continouse current of 4A.
Four other relays are able to supply up to 230V. 2 of these are closing and the other 2 are switch-over.
Each of the supplying relay can switch up to 5A. The max. permant sum current over the supply outputs is 5A.

1.2 Connectors and Indication-/Operation-Elements



1.2.1 Connectors (X)

Hereinafter the necessary connections, connectors and there specification for operation are listed. The location of a specific connector is documented with the ID (left coloumn) in the previous Illustrations.

ID	Model	Usage	Num. of term.	Model / Series	connection	elec. usage
Brick.X01	Print Connector	power supply, internal	2	MTA-156	-	275V / 6A AC

1.2.2 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	Screw Terminal	WE2337	5mm	6	up to 2.5mm²	PE
Brick.TB02	Cage Terminal	WAGO250	3.5mm	14	up to 1.5mm²	power resp. isolated
Brick.TB03	Cage Terminal	WAGO250	3.5mm	6	up to 1.5mm²	signal level
Brick.TB04	Cage Terminal	WAGO250	3.5mm	2	up to 1.5mm²	signal level

1.2.3 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	PE	Protective earth	-
Brick.TB01	2	PE	Protective earth	-
Brick.TB01	3	PE	Protective earth	-
Brick.TB01	4	PE	Protective earth	-
Brick.TB01	5	PE	Protective earth	-
Brick.TB01	6	PE	Protective earth	-
Brick.TB02	7	N	Neutral, Consumer	Relay 1
Brick.TB02	8	Lno	Relay, normally open contact, power switching 230V	Relay 1
Brick.TB02	9	N	Neutral, Consumer	Relay 2
Brick.TB02	10	Lnc	Relay, normally close contact, power switching	Relay 2
Brick.TB02	11	Lno	Relay, normally open contact, power switching 230V	Relay 2
Brick.TB02	12	N	Neutral, Consumer	Relay 3
Brick.TB02	13	Lnc	Relay, normally close contact, power switching	Relay 3
Brick.TB02	14	Lno	Relay, normally open contact, power switching 230V	Relay 3
Brick.TB02	15	NC	Relay, normally close contact, isolated	Relay 4
Brick.TB02	16	C	Relay, change over contact, isolated	Relay 4
Brick.TB02	17	NO	Relay, normally open contact, isolated	Relay 4
Brick.TB02	18	NC	Relay, normally close contact, isolated	Relay 5
Brick.TB02	19	C	Relay, change over contact, isolated	Relay 5
Brick.TB02	20	NO	Relay, normally open contact, isolated	Relay 5
Brick.TB03	21	IN	Input for ext. floating contact	Input 1
Brick.TB03	22	GND	Ground	Input 1
Brick.TB03	23	IN	Input for ext. floating contact	Input 2
Brick.TB03	24	GND	Ground	Input 2
Brick.TB03	25	IN	Input for ext. floating contact	Input 3
Brick.TB03	26	GND	Ground	Input 3
Brick.TB04	27	PoC	Optocoupler Collector	Pulse Output 1
Brick.TB04	28	PoE	Optocoupler Emitter	Pulse Output 1

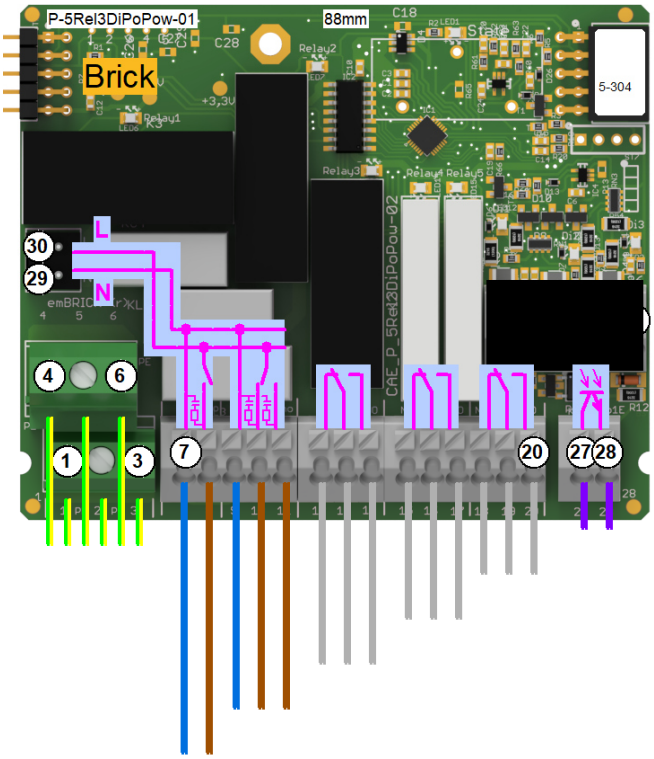
1.2.4 LED Indications

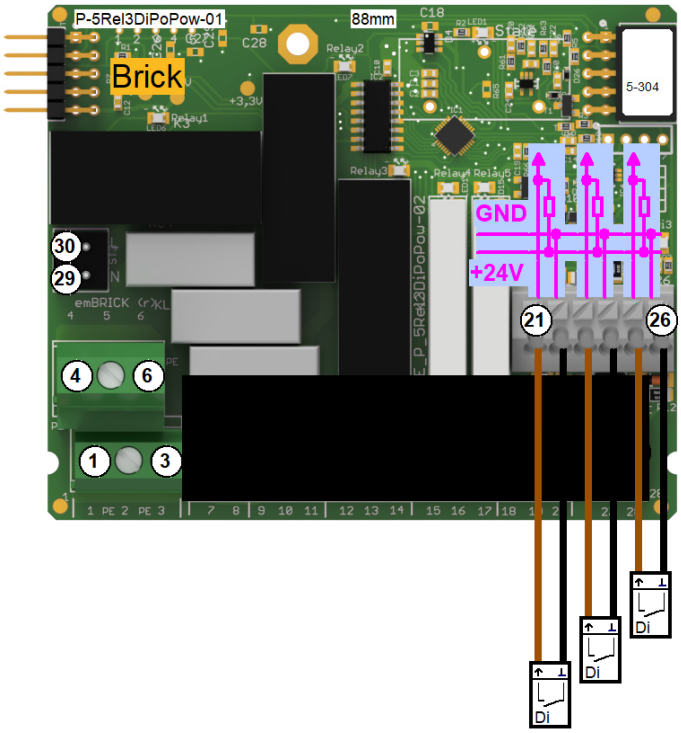
ID	Type	Specification	Type / Usage
Brick.LED01	SMD-LED	green	Shows state of Input 1
Brick.LED02	SMD-LED	green	Shows state of Input 2
Brick.LED03	SMD-LED	green	Shows state of Input 3
Brick.LED04	SMD-LED	green	Shows state of Pulse Output 1

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 Digital Inputs

The control unit has the following digital inputs / switch inputs:

Identifier	Input 1
Type	Input for ext. isolated contact, NPN switching against GND
Low Volt.	< 1,5 kOhm
High Volt.	> 30 kOhm
Input Current	< 5mA @ 24V
Component	-
Remark	Input is supplied internal

Identifier	Input 2
Type	Input for ext. isolated contact, NPN switching against GND
Low Volt.	< 1,5 kOhm
High Volt.	> 30 kOhm
Input Current	< 5mA @ 24V
Component	-
Remark	Input is supplied internal

Identifier	Input 3
Type	Input for ext. isolated contact, NPN switching against GND
Low Volt.	< 1,5 kOhm
High Volt.	> 30 kOhm
Input Current	< 5mA @ 24V
Component	-
Remark	Input is supplied internal

1.4.2 Digital Outputs

The control unit has the following digital outputs / switching outputs:

Identifier	Pulse Output 1
Type	Pulse Output open connector
max. Switching Volt.	< 24V DC
max. Switching Cur.	< 5mA DC
max. Perm. Current	< 5mA DC
nom. Cycles	< 100 Imp./s
Component	-
Remark	-

Identifier	Relay 1
Type	Relay, normally open contact, power switching 230V
max. Switching Volt.	250V AC
max. Switching Cur.	10A AC, Contact 16A

max. Perm. Current	5A AC
nom. Cycles	see datasheet
Component	Schrack, RT33L024
Remark	with snubber

Identifier	Relay 2
Type	Relay, change over contact, power switching 230V
max. Switching Volt.	250V AC
max. Switching Cur.	8A AC, contact 10A
max. Perm. Current	5A AC
nom. Cycles	see datasheet
Component	Takamisawa, JS24N-K
Remark	with snubber

Identifier	Relay 3
Type	Relay, change over contact, isolated, external supply switching
max. Switching Volt.	250V AC
max. Switching Cur.	8A AC, contact 10A
max. Perm. Current	5A AC
nom. Cycles	see datasheet
Component	Takamisawa, JS24N-K
Remark	

Identifier	Relay 4
Type	Relay, change over contact, isolated
max. Switching Volt.	250V AC
max. Switching Cur.	5A AC, Contact 6A
max. Perm. Current	3A AC
nom. Cycles	see datasheet
Component	FTR, LYCA024V
Remark	-

Identifier	Relay 5
Type	Relay, change over contact, isolated
max. Switching Volt.	250V AC
max. Switching Cur.	5A AC, Contact 6A
max. Perm. Current	3A AC
nom. Cycles	see datasheet
Component	FTR, LYCA024V
Remark	-

1.4.3 Power Supply (injected from external)

The control unit requires the following electrical supply from external:

Description	Brick.Output supply

Information	Output Supply from extern
Voltage	230V AC
max. Current	5A AC/DC
Inactive Current	< 1mA
Frequency	
Remark	

1.4.4 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)

1.4.5 Developer Notes

♣ Current measurement is only active when one wire (L or N) is carried through the current sensor only one time.

♣ Make sure that the GND of the analog signals is connected to the 0V terminal. Otherwise the measurement will reduce precision.

♣ On the backside of the PCB the contacts are touchable, so you have to keep the PCB in a housing.

♣ The 2 potential-free relays (Relay 4 + 5) have to operate on the same voltage level 230VAC or 24Vac/dc. A mixture of different voltage levels is not allowed.

1.4.6 Technican Notes

• Bus power consumption:

1.5 Process Data Image

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

Byte	Function	rCAssign
00	Pulse Output	...+eB_B0,0,0,...
	Relay 5	...+eB_B0,0,1,...
	Relay 4	...+eB_B0,0,2,...
	Relay 3	...+eB_B0,0,3,...
	Relay 2	...+eB_B0,0,4,...
	Relay 1	...+eB_B0,0,5,...
	Measurement Range (0=20Ap; 1=2Ap)	...+eB_B0,0,6,...
		...+eB_B0,0,7,...

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

Byte	Function	rCAssign
00..01	Analog-Input 1 current measurement range = 1: 0,5Aeff = 275 digit 1Aeff = 550 digit current measurement range = 0: 1Aeff = 50 digit 5Aeff = 250 digit 10Aeff = 500 digit	...+eB_W0,0,...
02	Digital Input 1 Digital Input 2 Digital Input 3	...+eB_B2,0,... ...+eB_B2,1,... ...+eB_B2,2,... ...+eB_B2,3,... ...+eB_B2,4,... ...+eB_B2,5,... ...+eB_B2,6,... ...+eB_B2,7,...

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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