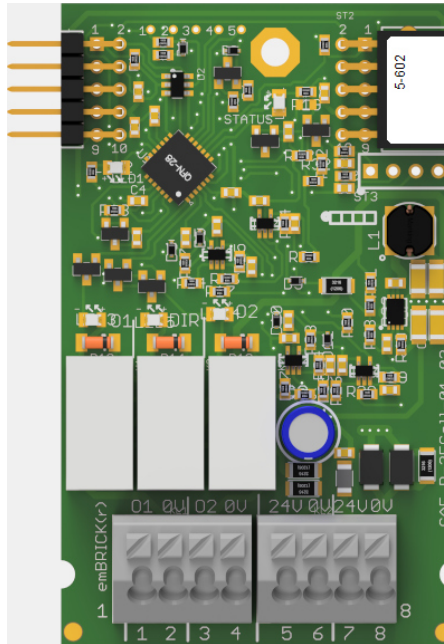


CAE_P-2ECell-01



1.1 Description

ID: 5-602

Order No.: CAE_P-2ECell-01

Terminal: push-in (for $\leq 0.5\text{mm}^2$)

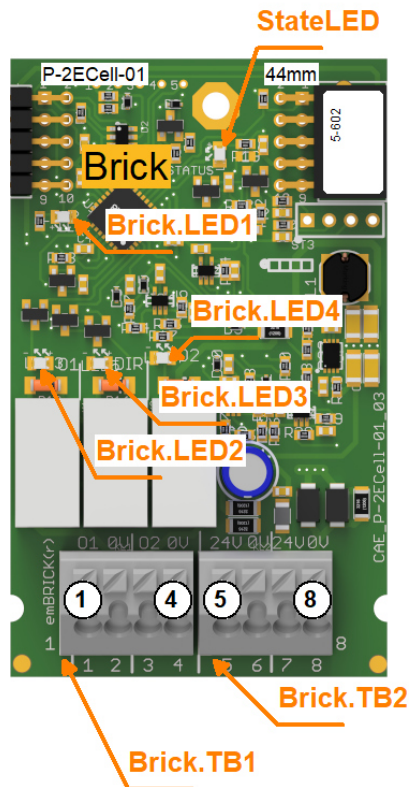
Size: 4 eU (44mm x 72mm)

BBFCP: 1-1-1

Weight: 30g

This module sources a changeable constant current out of two outputs. The polarity is switchable and the current and voltage level is measured.

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 column) in the previous illustrations.

ID	Model	Model / Series	Grid	Num. of term.	connection	elec. usage
Brick.TB01	Push-in Cage Clamp	Wago250-1##	3.5mm	4	Eindrchtig (starr) = 0.2 .. 1.5mm ² Feindrchtig (flexibel) = 0.2 .. 1.5mm ² Feindrchtig (mit Aderendhusen) = 0.25 .. 1.0mm ²	UL: 300V 5A VDE: 160V 8A
Brick.TB02	Push-in Cage Clamp	Wago250-1##	3.5mm	4	Eindrchtig (starr) = 0.2 .. 1.5mm ² Feindrchtig (flexibel) = 0.2 .. 1.5mm ² Feindrchtig (mit Aderendhusen) = 0.25 .. 1.0mm ²	UL: 300V 5A VDE: 160V 8A

1.2.2 Terminal assignment

Here the assignment of individual terminals and their affiliation to terminal blocks (Te block), terminal numbers (Te no.) and short description (T.desc.) as well as their 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 terminal description (T.desc.) in the previous illustration respectively.

In the column "usage" the technical-/ device-functional use is listed.

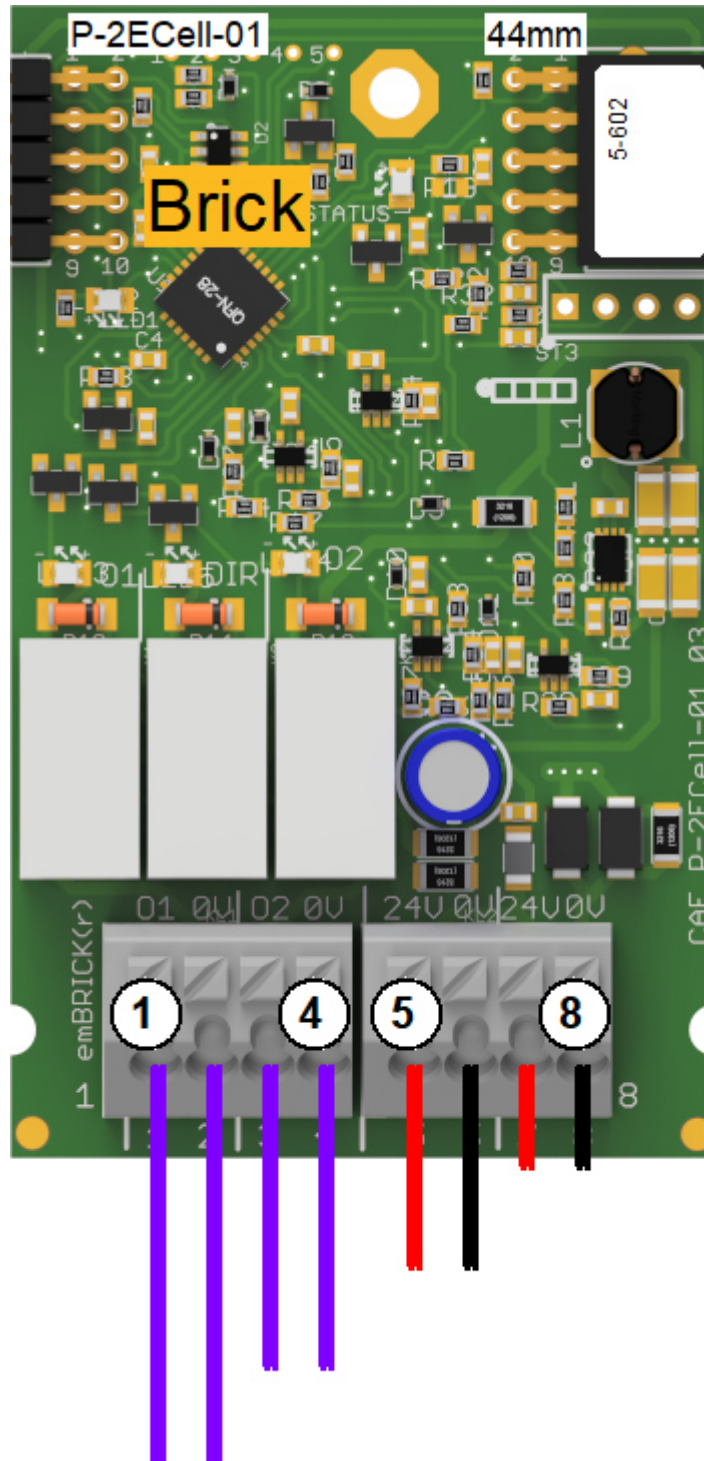
Te block	Te no.	T. descr.	Function	Usage
Brick.TB01	1	O1a	Output	Electrolytic Cell
Brick.TB01	2	O1b	Output	Electrolytic Cell
Brick.TB01	3	O2a	Output	Electrolytic Cell
Brick.TB01	4	O2b	Output	Electrolytic Cell
Brick.TB02	5	24V	power supply input 24V dc	-
Brick.TB02	6	0V	Ground	-
Brick.TB02	7	24V	power supply input 24V dc	-
Brick.TB02	8	0V	Ground	-

1.2.3 LED Indications

ID	Type	Specification	Type / Usage
Brick.LED01	SMD-LED	green	Shows state of Output current setting
Brick.LED02	SMD-LED	green	Shows state of Output1
Brick.LED03	SMD-LED	green	Shows state of Direction
Brick.LED04	SMD-LED	green	Shows state of Output2
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 Outputs

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

Identifier	Direction
Type	Relay, 2x change over contact, isolated
max. Switching Volt.	250Vac/220Vdc
max. Switching Cur.	2A
max. Perm. Current	0.5A: 125Vac 1A: 30Vdc
nom. Cycles	see datasheet
Component	NA24WK
Remark	-

Identifier	Output1
Type	Relay, 2x change over contact, isolated
max. Switching Volt.	250Vac/220Vdc
max. Switching Cur.	2A
max. Perm. Current	0.5A: 125Vac 1A: 30Vdc
nom. Cycles	see datasheet
Component	NA24WK
Remark	-

Identifier	Output2
Type	Relay, 2x change over contact, isolated
max. Switching Volt.	250Vac/220Vdc
max. Switching Cur.	2A
max. Perm. Current	0.5A: 125Vac 1A: 30Vdc
nom. Cycles	see datasheet
Component	NA24WK
Remark	-

1.4.2 Analog Inputs

The control unit has the following analogue inputs / measuring inputs:

Identifier	Current Input
Type	Current Input
Range	50 ... 500mA
Input/Load Resistor	0,5R
Resolution	10Bit
Accuracy	0.5%
Linearity	0.2%

Filter	-
Linearization	-
Model / Series	-
Remark	internal

Identifier	Voltage Input
Type	Voltage Input
Range	0,5 ... 14,5V
Input/Load Resistor	-
Resolution	
Accuracy	0.5%
Linearity	0.2%
Filter	100Hz
Linearization	
Model / Series	
Remark	internal

1.4.3 Analog Outputs

The control unit has the following analog outputs:

Identifier	Output current setting
Type	internal current output
Range	0 .. 500mA
max. Voltage	0 .. 15V
max. Current	650mA
Filter	
Component	-
Remark	

1.4.4 Power Supply (injected from external)

The control unit requires the following electrical supply from external:

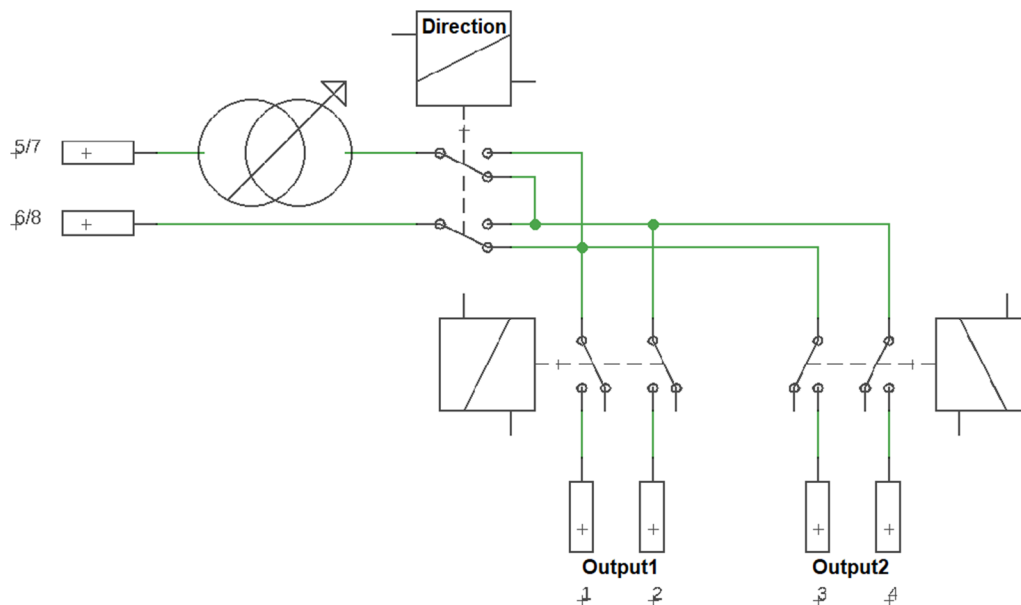
Description	Brick.Output supply
Information	Output Supply from extern
Voltage	24V \pm 10%
max. Current	1A DC
Inactive Current	< 1mA
Frequency	
Remark	

1.4.5 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)

1.4.6 Developer Notes

- It is only one measurement for current and coltage available, therefor it´s recommended to activate only one output.
- The Supply Pins power a current source, adjustable with Output current setting. The Relay Direction switches the current direction through the cells and the Output Relays activates the cell.



1.4.7 Technican Notes

Bus power consumption $0\text{mA}@24\text{V} + \leq 10\text{mA}@3,3\text{V}$

1.5 Process Data Image

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

Byte	Function	rCAssign
00..01	Output Current setting 641 .. 9829 Dig. = 36 .. 453mA	...+eB_W0,0,...
02	Bit 0: Output1 control Bit 1: Output2 control Bit 2: Direction control	...+eB_B2,0,0,.. ...+eB_B2,0,1,.. ...+eB_B2,0,2,.. ...+eB_B2,0,3,.. ...+eB_B2,0,4,.. ...+eB_B2,0,5,.. ...+eB_B2,0,6,.. ...+eB_B2,0,7,...

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

Byte	Function	rCAssign
00..01	Current Input 94...890 Dig. = 50 ...500mA	...+eB_W0,0,...
02..03	Voltage Input 14...445 Dig. = 0,51 ... 14,2V	...+eB_W1,0,...

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					

For questions please contact:

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