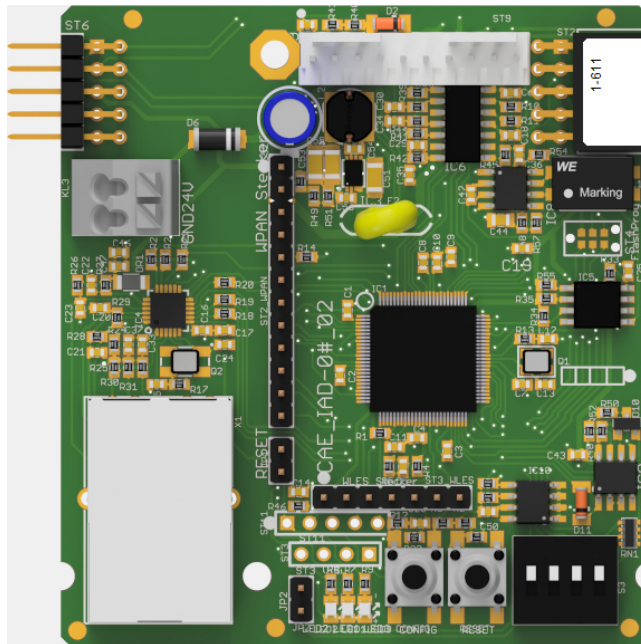


CAE_Z-PatBridgeMX-11



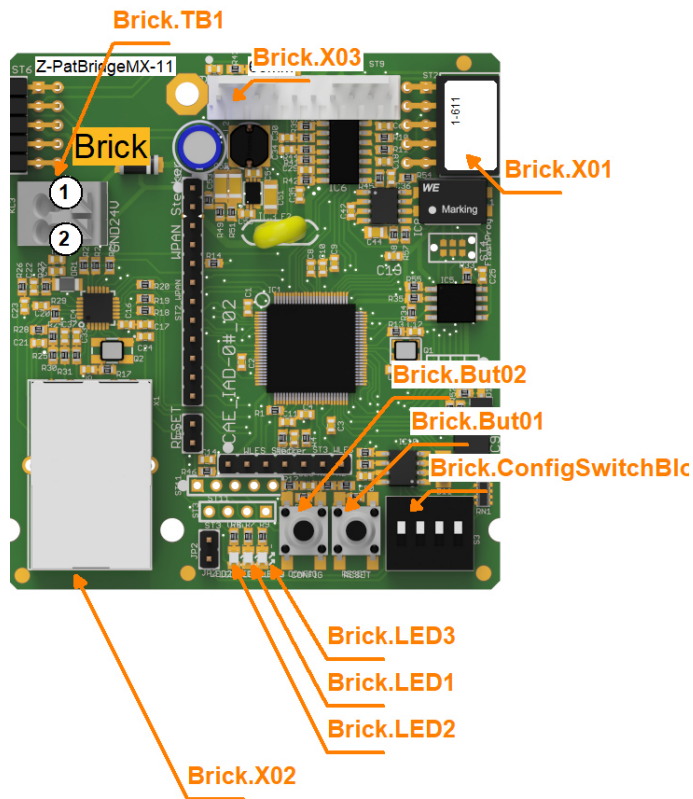
1.1 Description

Bus-Koppler zum Aufbau eines lokalen brickBUS Knotens

Ankopplung möglich via: LAN, RSxxx, CAN

Versorgung: 24V dc, die brickBUS-Versorgung wird intern erzeugt

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 | Box connector | emBRICK I/O-Bus | 10 | | - | brickBUS master |
| Brick.X02 | Plug | LAN | | RJ45 | - | Ethernet IEEE 802.3 |
| Brick.X03 | Print Connector | Expansion Connector | 10 | Molex - KK | | RS485 + CAN + RS232-TTL |

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 | Cage Terminal | WAGO250 | 3,5mm | 2 | up to 1.5mm ² | power supply input 24V dc |

1.2.3 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.

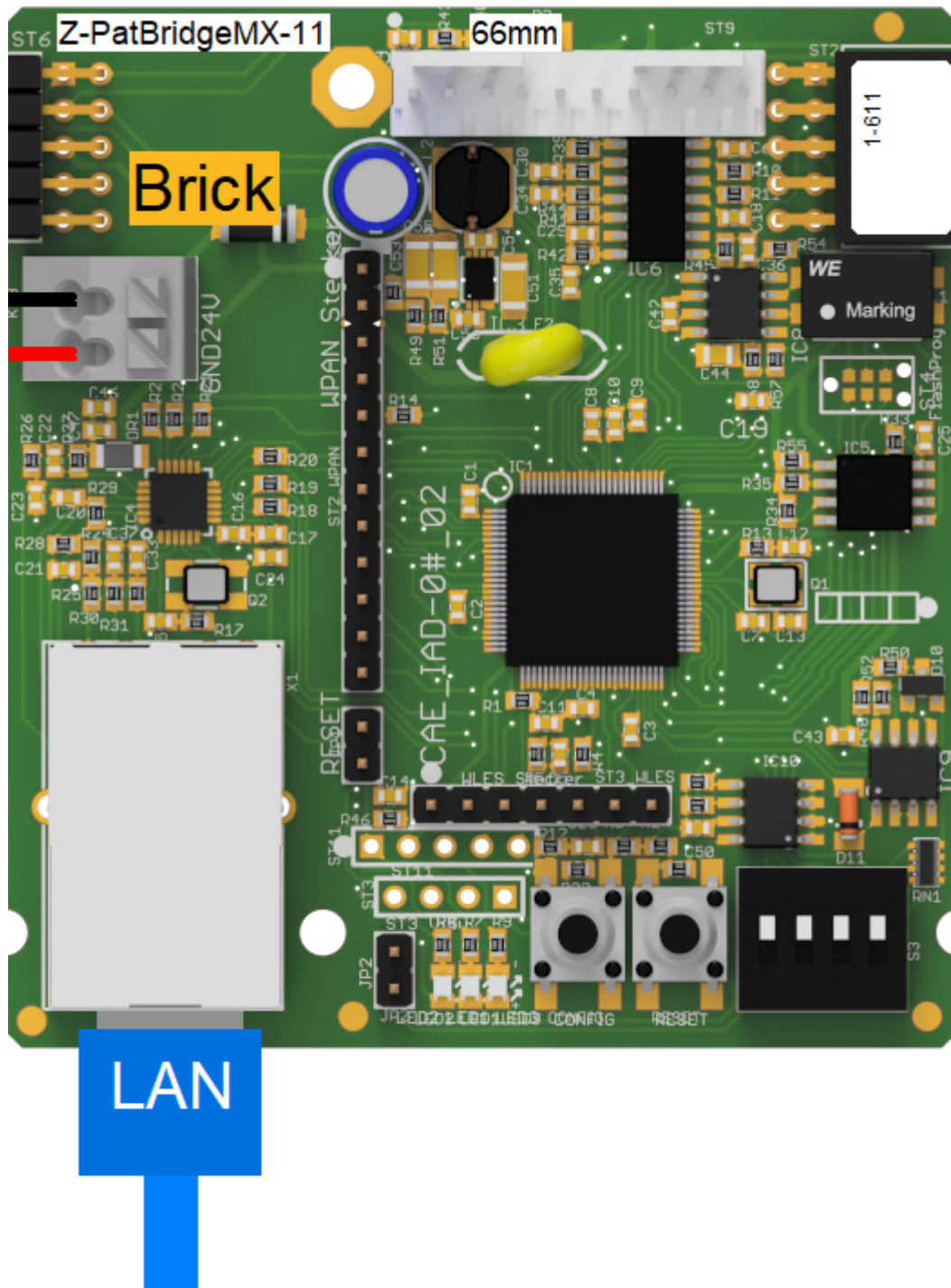
| Te block | Te no. | T. descr. | Function | Usage |
|------------|--------|-----------|--------------|-----------|
| Brick.TB01 | 1 | +24V | Supply | - |
| Brick.TB01 | 2 | GND | Ground | - |
| Brick.X01 | 1 | +3,45V | Supply | - |
| Brick.X01 | 2 | GND | Ground | - |
| Brick.X01 | 3 | TX | RS232-TTL TX | RS232-TTL |
| Brick.X01 | 4 | RX | RS232-TTL RX | RS232-TTL |
| Brick.X01 | 5 | A | RS485 A | RS485 Bus |
| Brick.X01 | 6 | B | RS485 B | RS485 Bus |
| Brick.X01 | 7 | CAN H | CAN H | CAN Bus |
| Brick.X01 | 8 | CAN L | CAN L | CAN Bus |
| Brick.X01 | 9 | GND | Ground | - |
| Brick.X01 | 10 | +24V | Supply | - |

1.2.4 LED Indications

| ID | Type | Specification | Type / Usage |
|-------------|---------|---------------|---|
| Brick.LED01 | SMD-LED | orange | <p>Network configuration</p> <ul style="list-style-type: none"> - Off : Not in network configuration mode and no error pending - Flashing (approx.. 1Hz) : Network configuration, searching address from DHCP. - Permanently on : in network configuration mode, connected. <p>Error notification</p> <ul style="list-style-type: none"> - Off : Not in network configuration mode and no error pending - Morse code (5 bit, 0.5 sec = 1 / 0.2 sec = 0, Pause 5 sec) : an error is pending (see User Notes). |
| Brick.LED02 | SMD-LED | green | <p>Local Bus Indicator</p> <ul style="list-style-type: none"> - Flashing (approx.. 5Hz) : Local Bus is configuring, at start or after failure. - Flashing (approx.. 1Hz) : Local Bus is operating. |
| Brick.LED03 | SMD-LED | yellow | <p>Remote Bus indicator</p> <ul style="list-style-type: none"> - Off : No connection to remote master - On : Remote master connected and sending - Flashing (approx. 1Hz) Connection to remote master is established, but no data is sent (timeout). |

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 User Notes

IP adress setting

1. When setting the DIP-Switches to "DHCP" you need a possibility to get the actual IP address of the coupling master. Tools for this purpose are available from different suppliers.

2. When setting the DIP-Switches to "Software set Adress", the shipped value of the IP address is 192.168.1.0

• 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)

• Some errors make the LED1 (orange) send an error code repeated every 5 seconds. These errors will occur immediately after power on. The codes mean the following:

0x000: remanent data storage corrupted or defective

0x001 .. 0x004: remanent parameter area corrupted

0x005 .. 0x008: remanent system parameter area corrupted

0x009 .. 0x00C: remanent calibration data area (most times unused) corrupted

0x00D .. 0x010: remanent process data area corrupted

0x011 .. 0x014: REMA data area corrupted

0x01F: internal program error which can not be repaired

The different numbers of certain errors are for use by embrick support to identify the error more specifically.

If such an error occurs, the program is halted. To continue, press the Config button.

CAUTION: Pressing the Config Button in this case sets the corrupted area back to factory default values! Therefore, the device will then enter the Configuration mode and the configuration must be checked and eventually updated / corrected.

If the error persists even after the configuration has been updated or in case of error code 0x1F please contact support@embrick.com.

1.4.2 Developer Notes

• The UniBrigdeMX offers multiple operation and communication methods and can be used in following different modes. The first 3 modes supports an integrated parallel working Web Server (via Port 80) for running configuration and diagnostics via a Web-Browser (under development).

Mode 1: Remote Bus Coupling Device (shipping version)

This mode offers a connection between remote-bus and local-bus and is therefore a Local-Master without own functionality. It contains the following different (alternative) operation sub modes. (for details about the communication see http://embrick.de/downloads/dokumente/eB_Programmer.pdf):

- eB-Remote TCP Ethernet via Port 7086

- eB-Remote CAN via CAN – planned
- eB-Remote RS485 via RS485 Half-Duplex (ModBUS Large Block)
- eB-Remote RS232 via RS232 Full-Duplex (ModBUS Large Block)
- Modbus TCP Ethernet via Port 502
- Modbus RTU via RS485

More features supported in this mode:

- ♣ Parallel to this, a Bluetooth interface expansion allows to couple another Coupling Bridge running in the "Wireless Slave Sting" mode (see below) to append its Bricks to the main string – under development
- ♣ For the eB-Remote TCP communication and different common programming systems, ready-to-use drivers are available (MSVC++, Gamma). See => eB_Developer-Manual. For own/individual programming of connections to the CouplingBrick see eB_Developer-Manual.

Mode 2: Standalone Target

This offers an individual programming with C/C++ or radCASE model-based programming. For details send a request to support@embrick.com.

Mode 3: eWAC

This is the embedded web access mode and an expanded version of mode 2 with libraries / functionality that offers a TCP/IP-Slave to connect to cloud based Web Server. This mode also offers the full security package with TLS encryption. For details send a request to support@embrick.com.

Mode 4: Standalone Target (for own Development with MPLAB and radCASE®)

The hardware of the UniBrigdeMX supports also an individual programming using the existing environment and libraries. For details send a request to support@embrick.com

1.5 History

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

1.5.1 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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|--------------|--|----------------------|--|