

## **Model # DMC-5**

### **Advanced Solid State Electromagnet Controller**

#### **Features:**

- \* Output power infinitely variable via pot on front or externally
- \* Demag cycle infinitely variably via pot on front
- \* Output polarity alternates each cycle to prevent residual magnetism
- \* Internal overcurrent and overtemp detection
- \* 7 Seg display for status and fault reporting
- \* Output wire break detection
- \* Efficient mosfet output and "ideal" blocking diode provide very low power loss
- \* Actual current display via 7 Seg display

#### **Specifications:**

Operating Voltage: 10 to 50 VDC

Max continuous load: 4 amp

Max ambient temp: 50 deg. C

#### **Connections:**

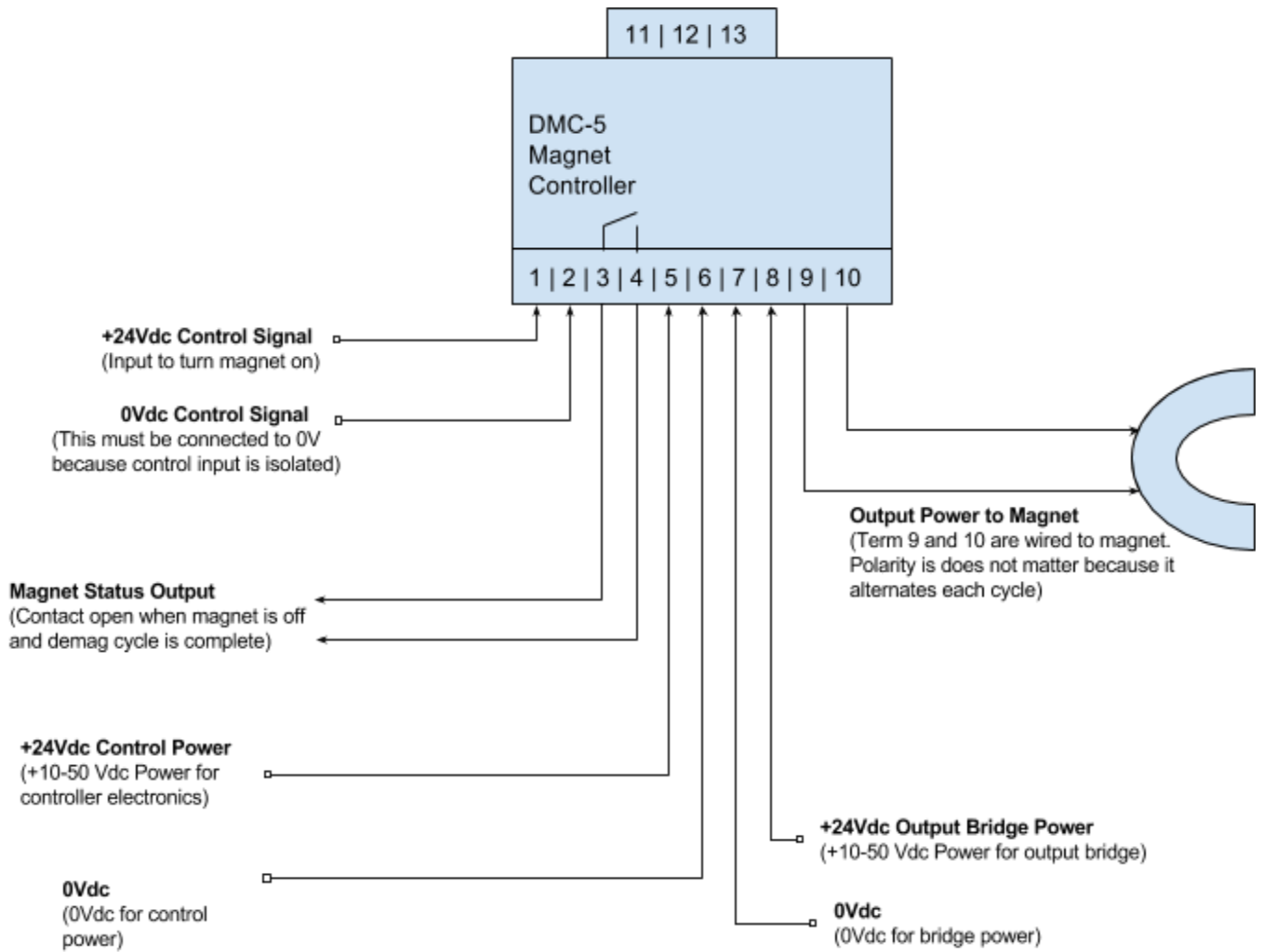
##### **10 terminal plug on bottom:**

- 1) Control Input+ (10 to 50 VDC isolated input to turn on magnet)
- 2) Control Input-
- 3) Output status contact (Relay contact closed when magnet output on)
- 4) Output status contact
- 5) Control Power in + (10 to 50 VDC to supply power for control electronics)
- 6) 0v
- 7) 0v
- 8) Magnet supply in + (10 to 50 VDC to supply power for output)
- 9) Magnet lead 1 (Output power to magnet)
- 10) Magnet lead 2

##### **3 terminal plug on top for external 5K pot:**

- 11) 5v+ (supply to external potentiometer)
- 12) Ext pot in (external potentiometer wiper)
- 13) 0v (supply to external potentiometer)

# Wiring Diagram

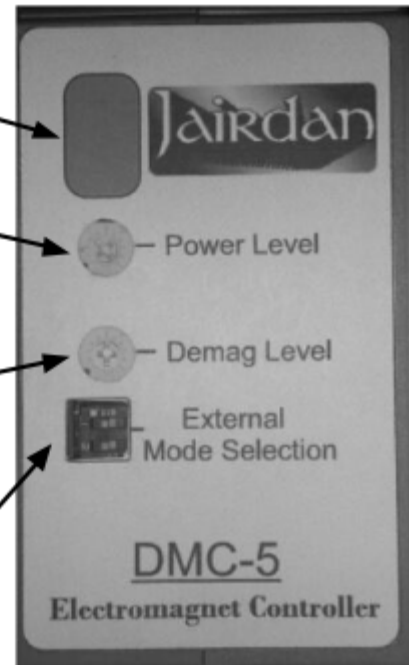


7 Segment display indicates actual current while magnet is on and displays fault messages if there is a fault condition.

Power Level adjusts the output power of the magnet from 20% (Full CCW) to 100% (Full CW)

Demag Level adjusts the demag cycle. Generally this pot should be centered. Turning the pot CCW from center shortens demag time but will reduce demag effectiveness. Turning the pot CW from center adds an extra timed reverse polarity pulse to help demag materials that are difficult to release.

External Mode Selection is used with an external 5k pot wired to terminals 11-13 on top of the controller. When switch 1 (top switch) is to the left and the power level pot is turned full CCW the external pot controls power level. When switch 1 is to the right and the demag level pot is turned full CCW the external pot controls demag level.



OC

### Overcurrent

Flashing "oc" indicates overcurrent. The control detected current in excess of 5 amp. The output shuts down to protect the output bridge. Cycling the control input and correcting the overcurrent condition resets the fault.

OT

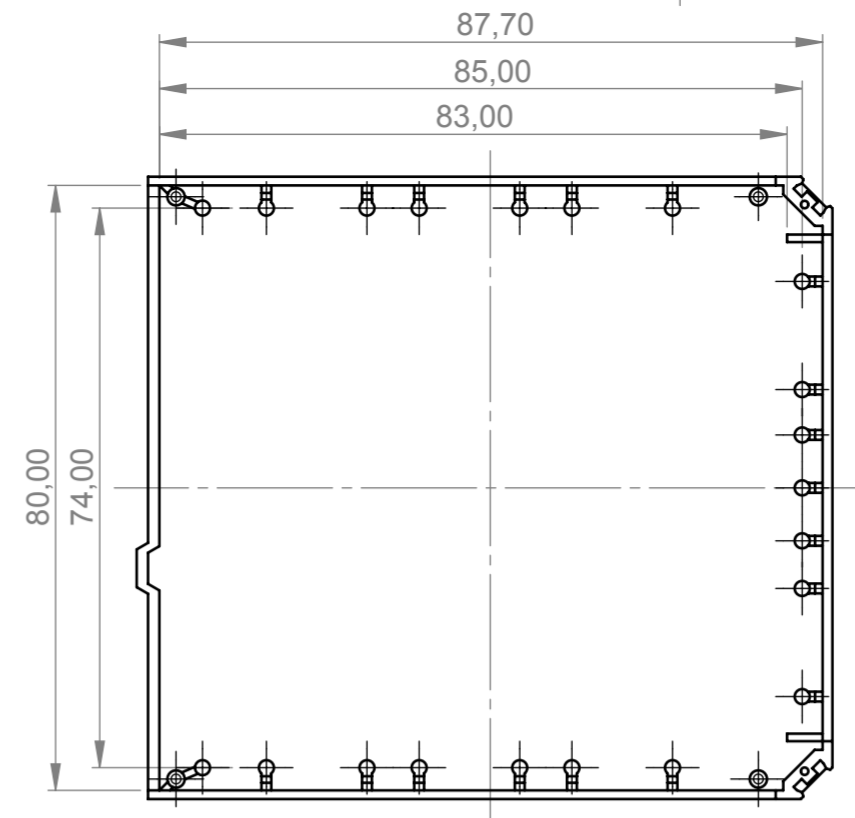
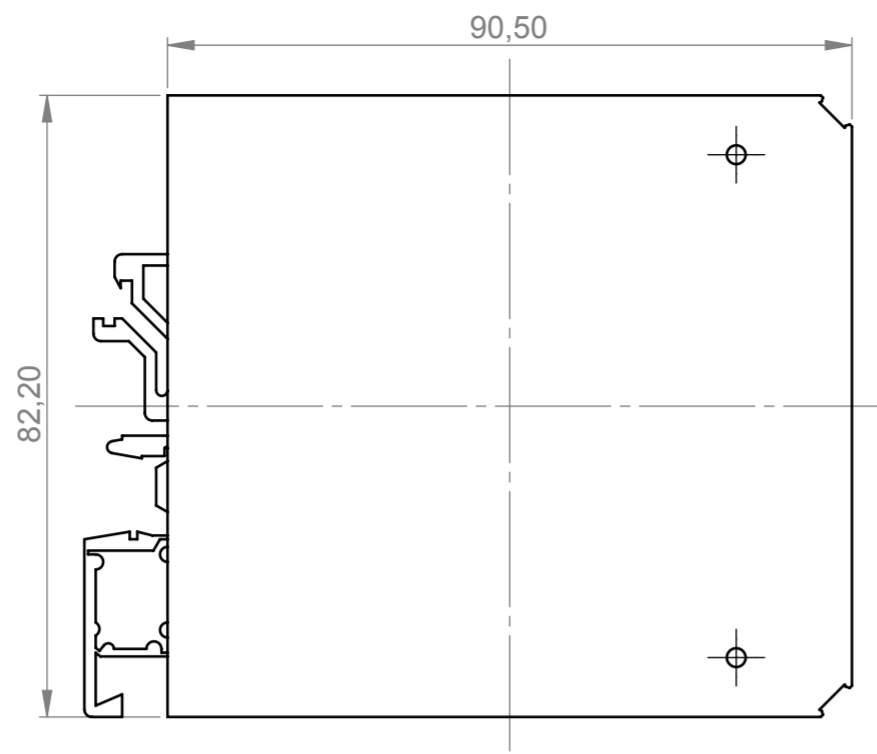
### Overtemp

Flashing "ot" indicates that the output bridge has overheated. The output shuts down to protect the output bridge. Once the output bridge cools down cycling the control input will clear the fault

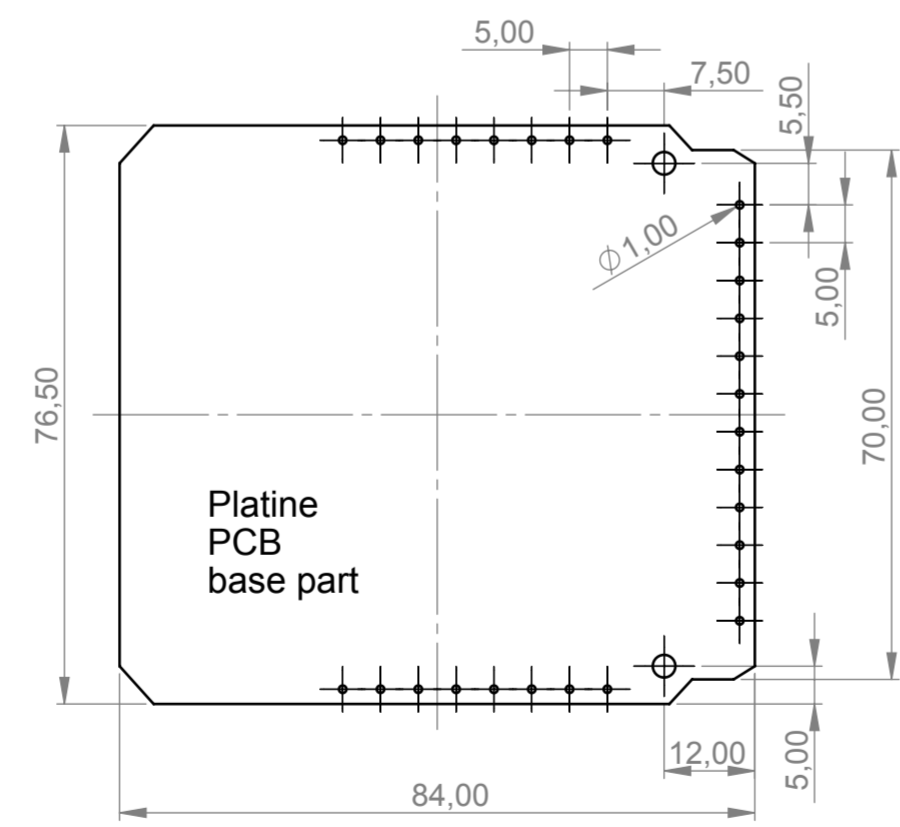
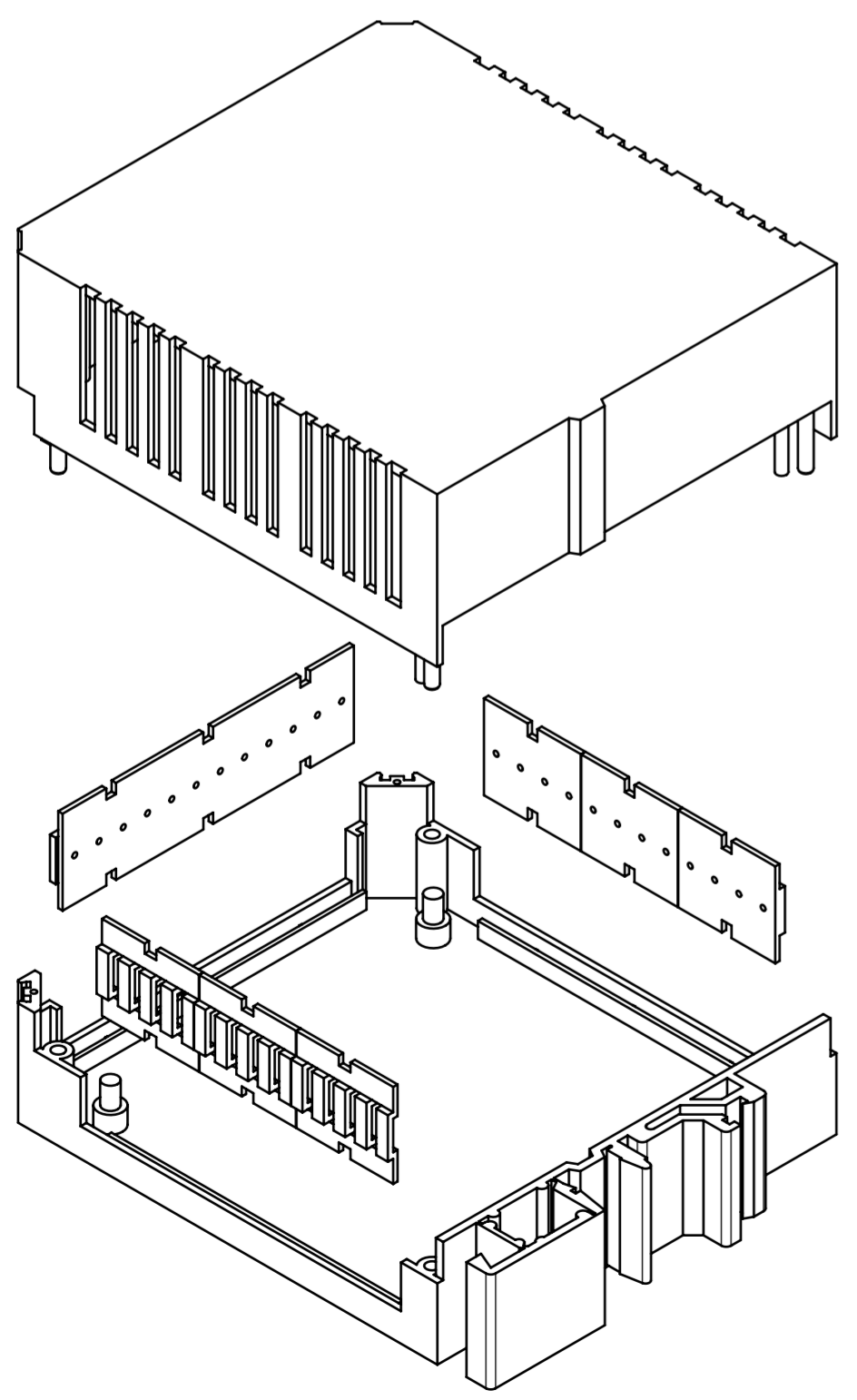
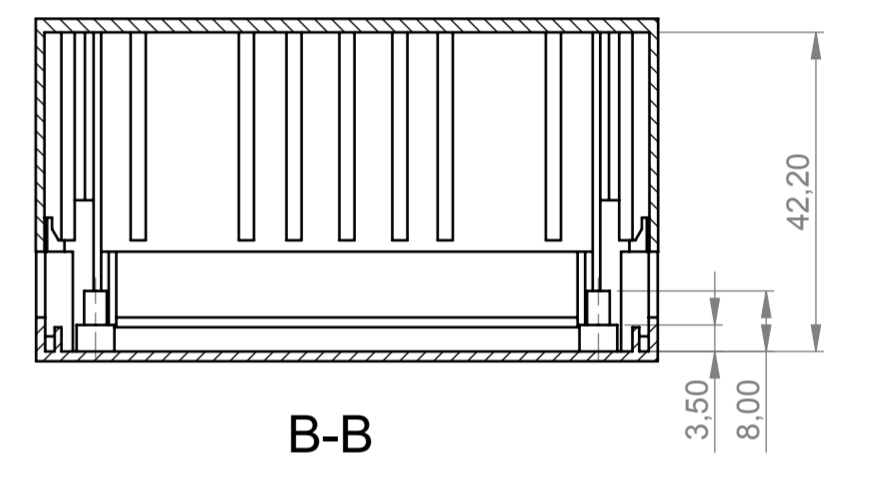
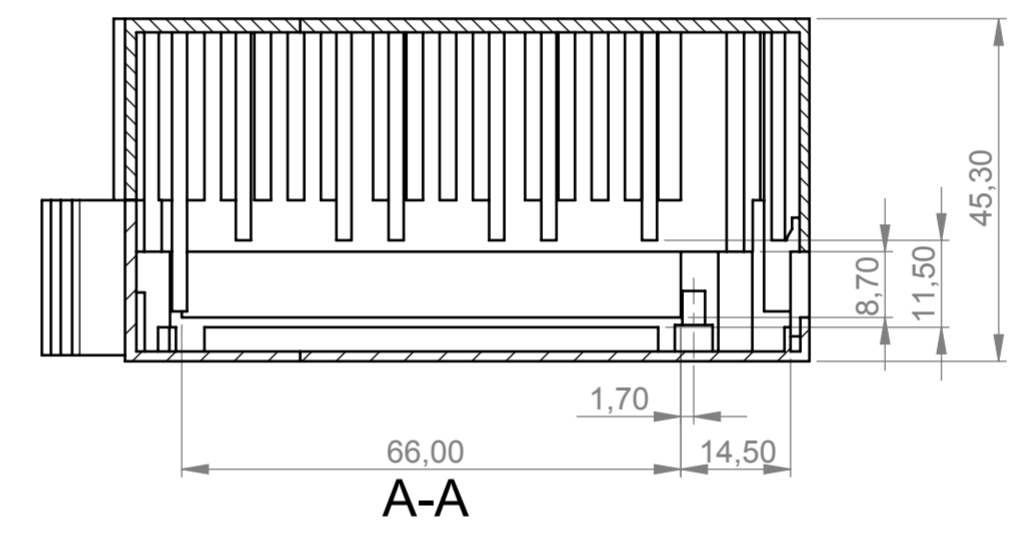
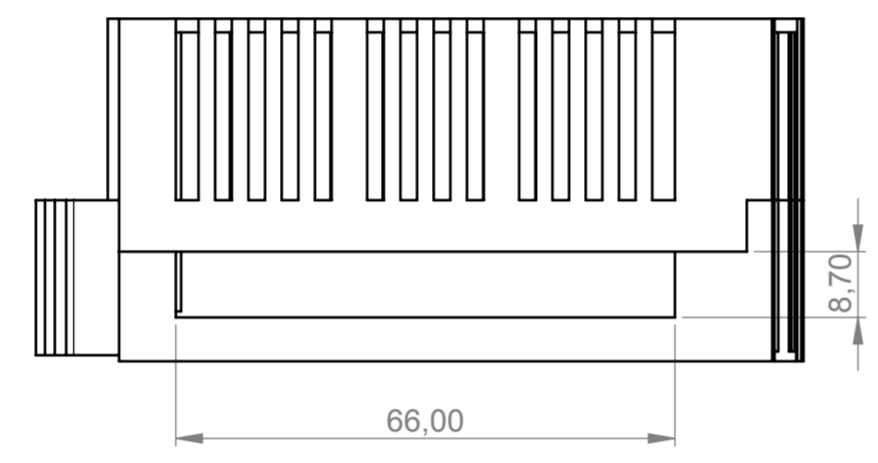
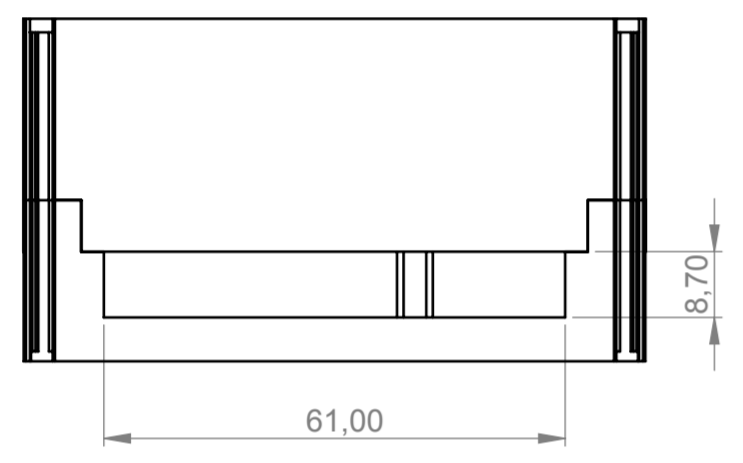
Lb

### Linebreak

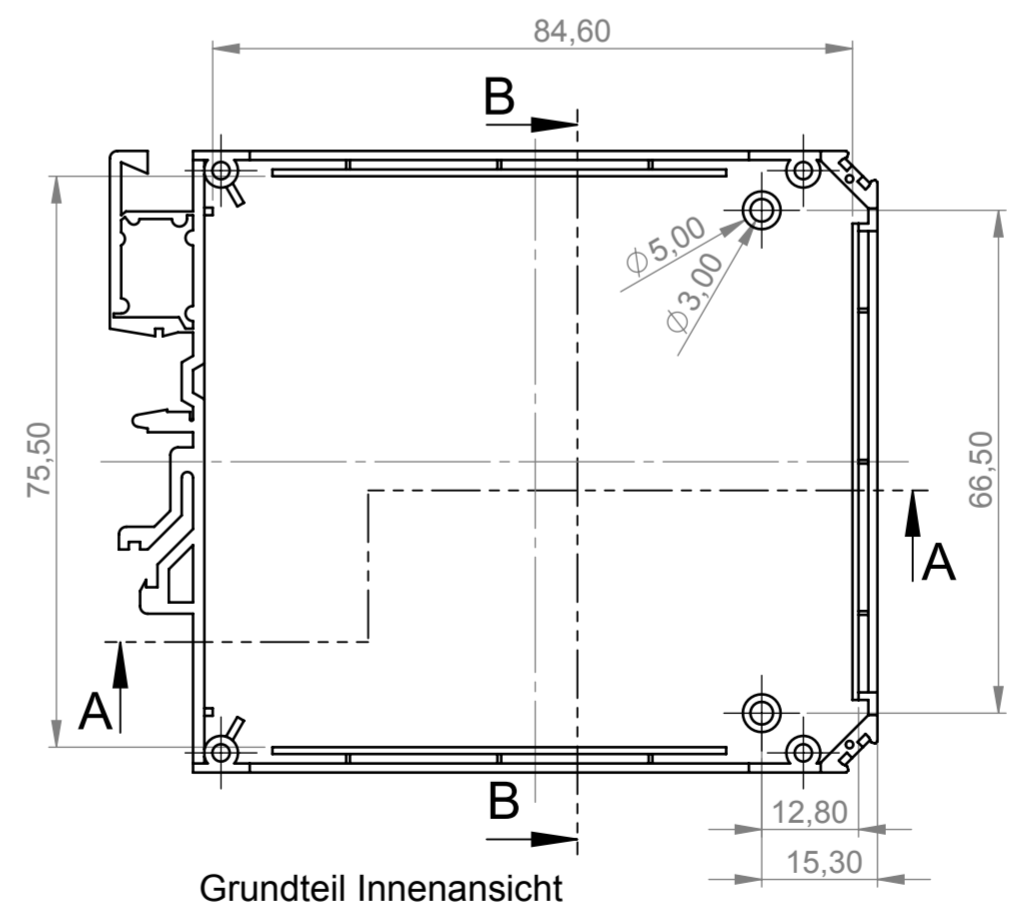
Flashing "Lb" indicates that the output current dropped to 0 amps while the bridge was still on. This fault does not affect controller operation, it is only a diagnostic aid to help determine magnet malfunctions caused by a broken wire. This fault continues to flash for 7 cycles after a break was detected then it clears itself.



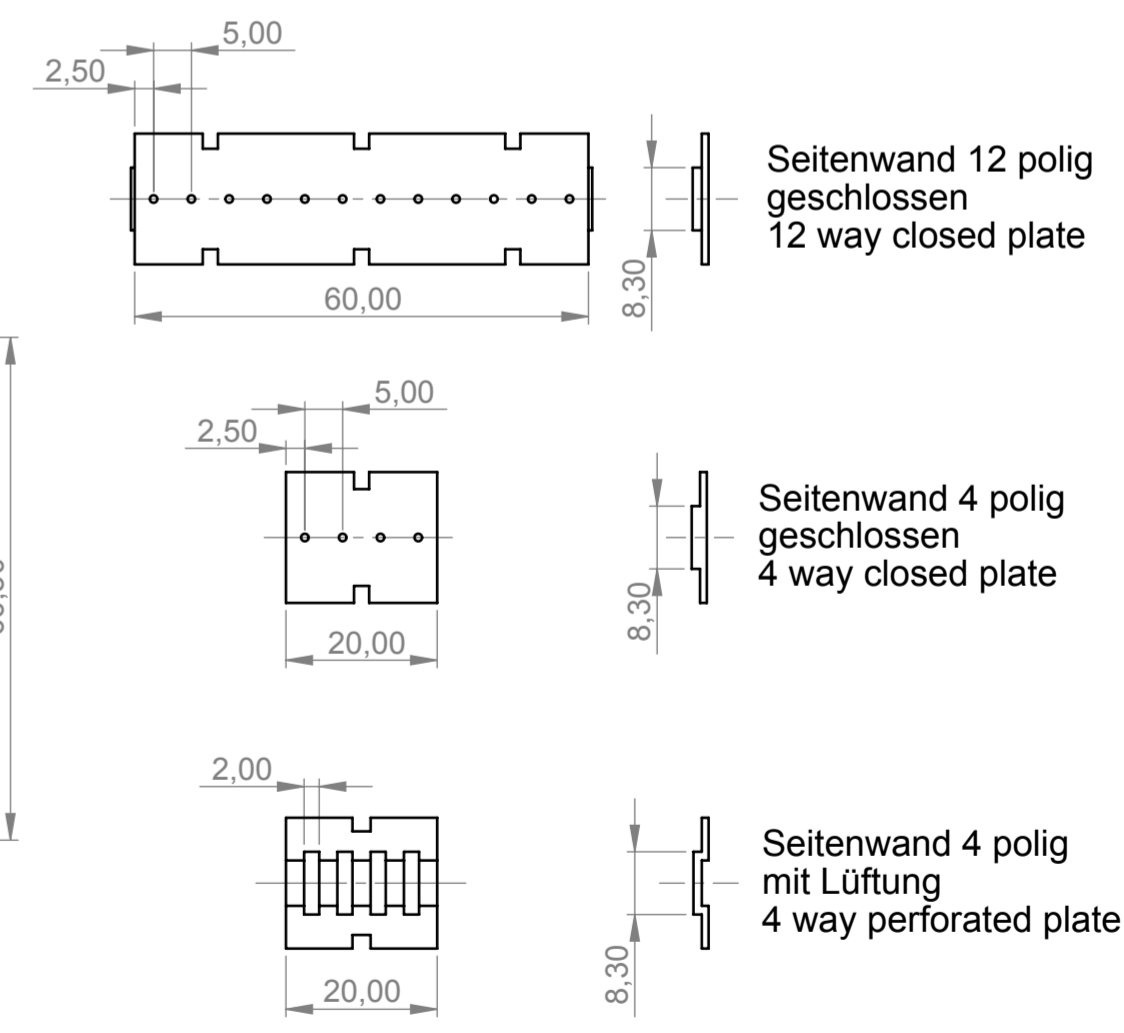
Erweiterungsteil Innenansicht  
Extended part inside view



Platine  
PCB  
base part



Grundteil Innenansicht  
Base part inside view



Seitenwand 12 polig  
geschlossen  
12 way closed plate

Seitenwand 4 polig  
geschlossen  
4 way closed plate

Seitenwand 4 polig  
mit Lüftung  
4 way perforated plate

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