## Front Panel Design „C“(onnector) – Minimizing the mechanical works

There are many excellent electronic technicians that have trouble with mechanical works. So I thought about how to reduce the **mechanical works to a minimum**.

**The Solution: Remove the currently used socket box holder and instead just lead through the socket box connector .**

Advantages:

- less mechanical effort
- more professional look due to less „handcrafted“ parts
- front panel slightly cheaper
- main board easier removable when needed; there is no more socket holder that has to be removed first

## Details for the assembly of the ‚C' design:

**Additional details regarding the construction manual for design ‚A'**

## Ordering the front panel:

You can order the front panel from www.schaeffer-ag.de
First download the free of charge front panel designer software from their page. Ordering is done using that program. Front panel layouts are included on the CD-Rom.

I recommend to order the front panel without bolts and instead to use screws for mounting the main board (this is not only more rugged but also will make the front panel cheaper). You can also fill the labeling with color yourself. This will again save you a few EUR.

It does not always have to be silver-colored. For a small extra charge you can also order the front panel in other colors – example here gold-colored:

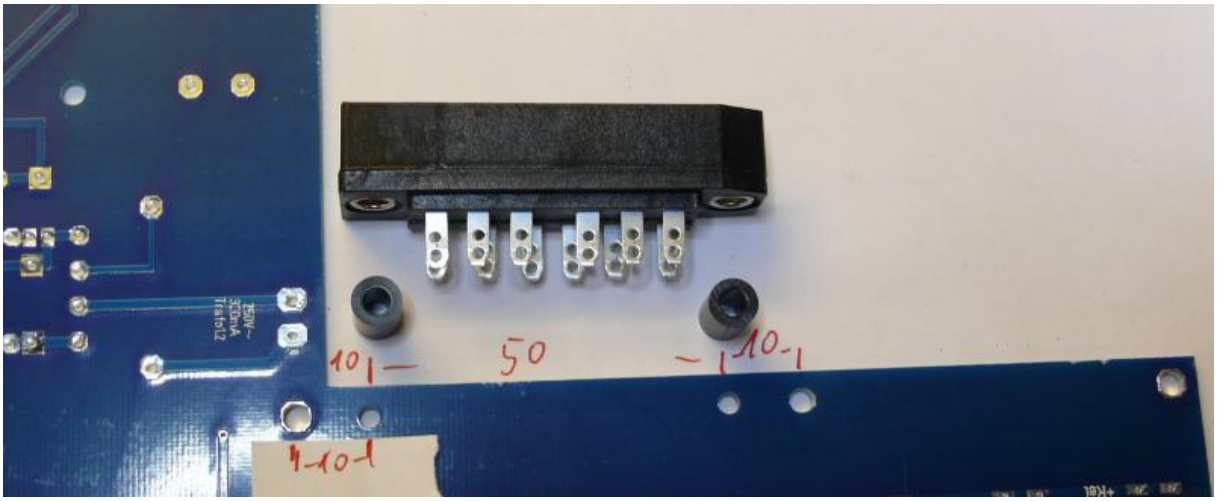
For mounting the main board use M3 stainless steel screws 20 mm in length and plastic spacers with 3 mm inside thread:

**Front panel with mounted sockets, switch and screws:**

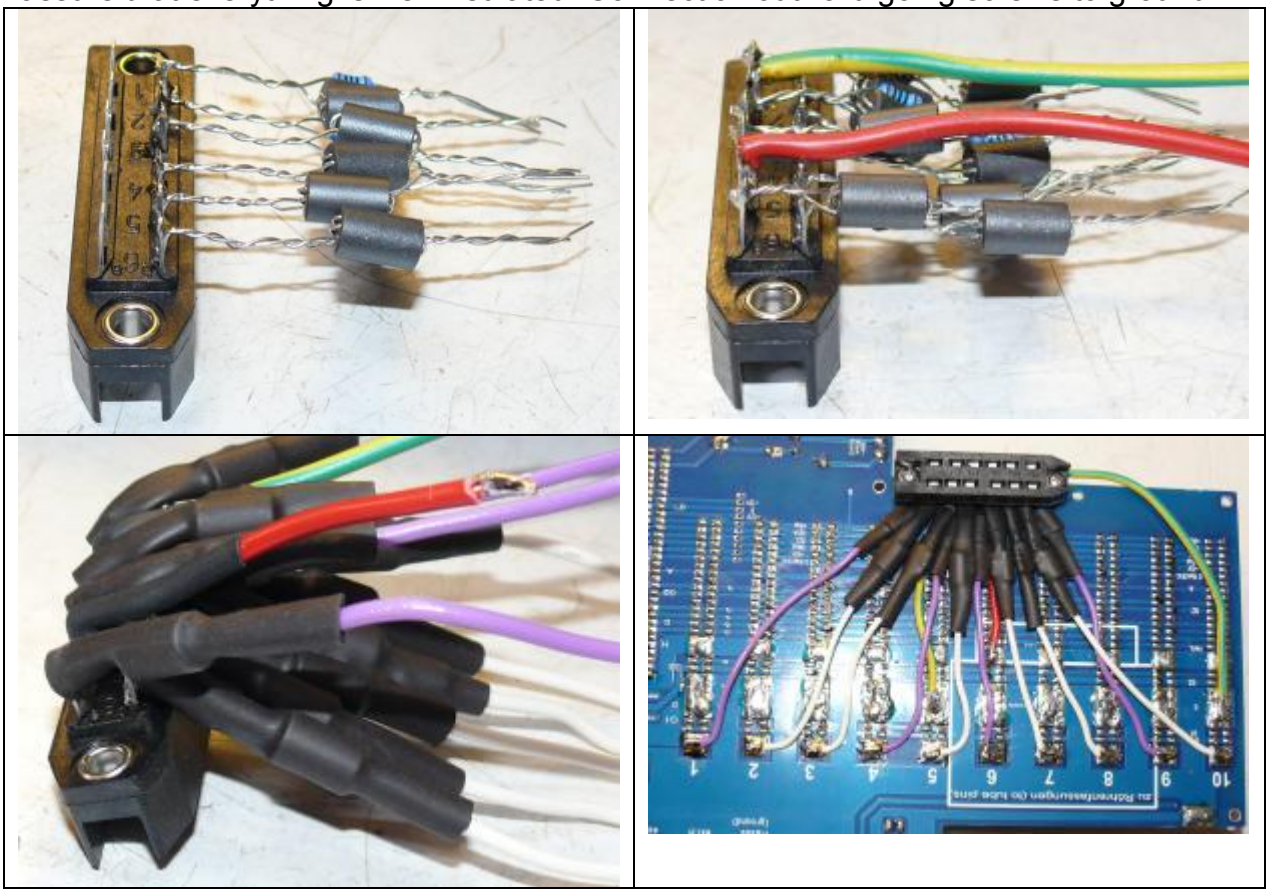
**Option**: Screw on or glue spacers for the socket box to the front panel. Thus the socket box will sit on the connector without any wobble.
Here I used an aluminum profile of 15x15 mm and glued a piece of foamed rubber onto it:

## Socket box connector:

Mount the female connector to the bottom side of the main board.  For this purpose drill 3 additional holes into the main board (3 mm diameter):



Then connect the female connector to the main board using attenuator pads (VHF-choke + 100 Ohms resistor in parallel ) as already depicted. Use heat shrink tube to assure that everything is well insulated. Connect all outward going screws to ground.



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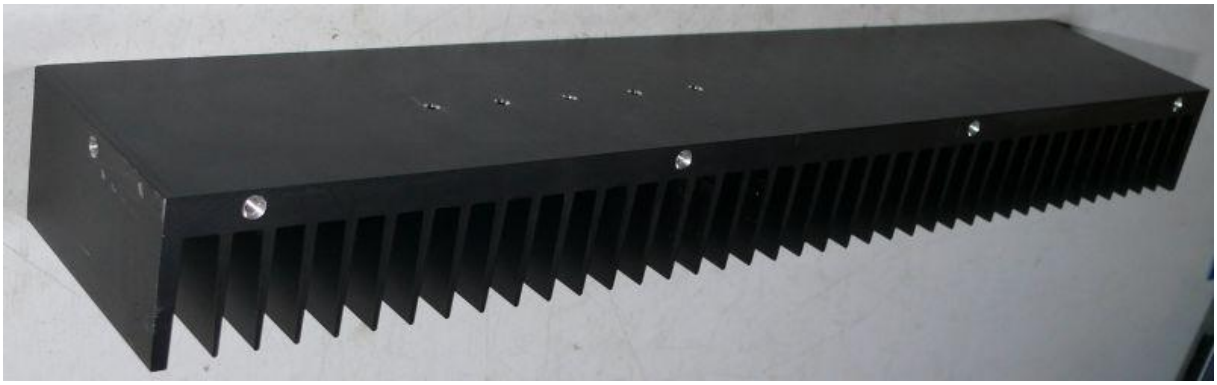
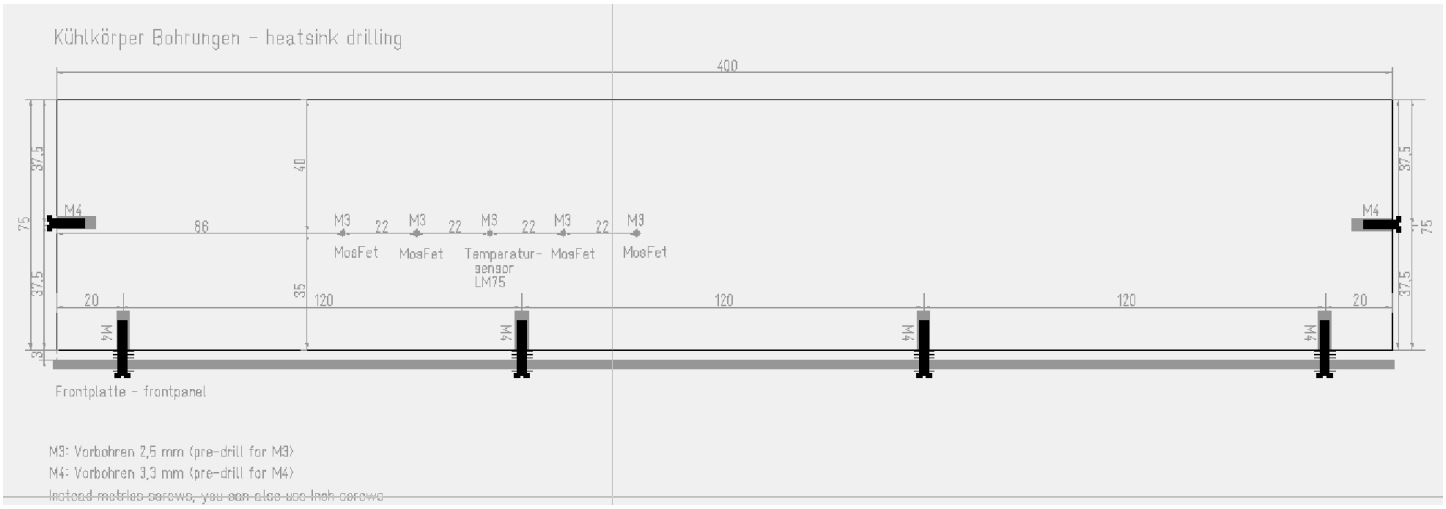
## Heat Sink (for Design ‚A' and Design ‚C')

Suitable heat sink: Fischer Elektronik SK 47975SA, dimensions: 400 x 40 x 75 mm

Tap into the heat sink 5 threads type M3 (for fastening the MosFets and the temperature sensor) and 6 threads type M4 (4 of them for fastening the front panel and 2 for fastening the housing – both on the sides).





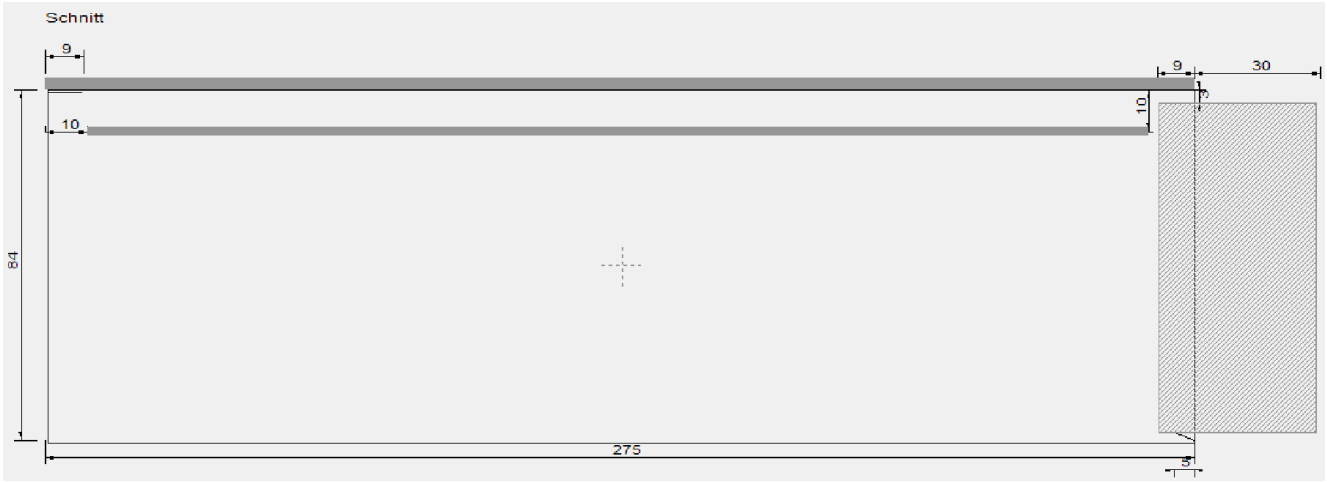

The heat sink is mounted to the front panel using 4 screws type M4 (16 mm length). Use 4 washers per screw so that a vent slot results between the heat sink and the front panel.

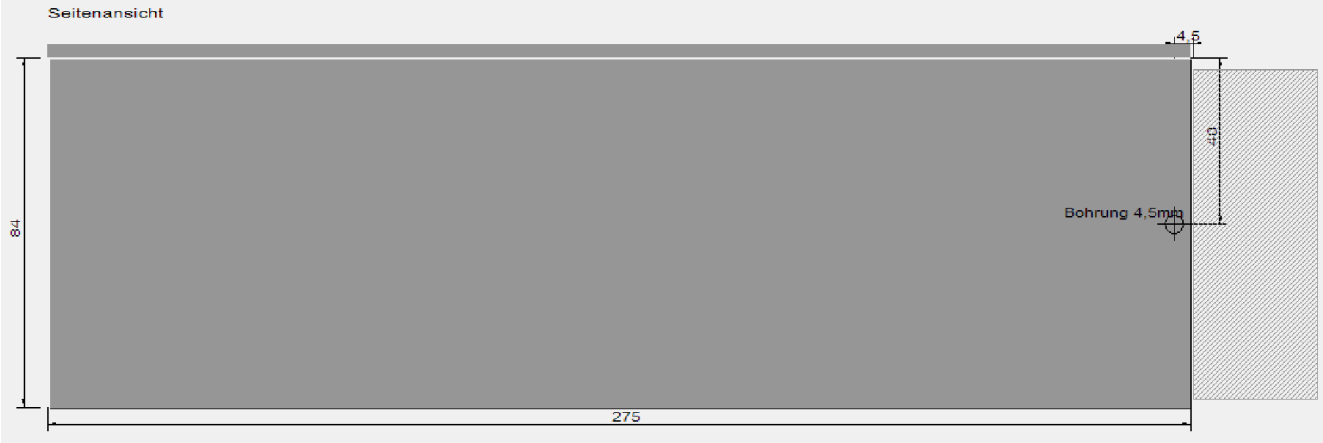
**Housing:**

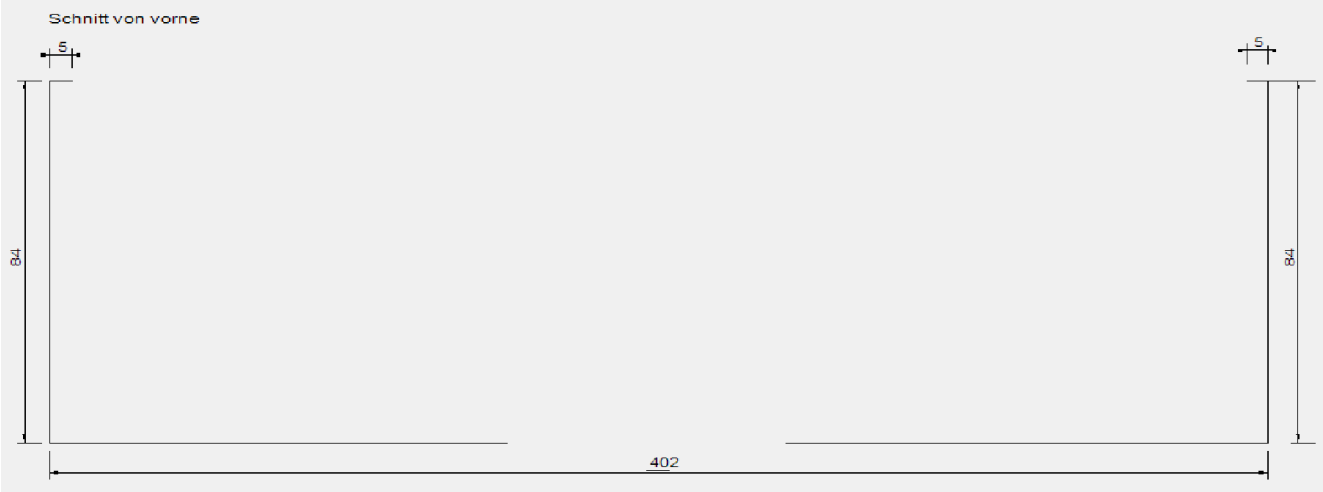
I ordered a suitable housing from a local sheet metal worker shop. It was built from 1 mm perforated steel plate:

Self-adhesive rubber door gaskets serve as board holders. The metal housing must be connected to the mains protective earth. The housing is fastened to the front panel and to the heat sink with 4 pieces M4 screws ( two at top of the front and two at the back sides).

Housing drawing:






Important when designing your own housing: Ensure good ventilation of the interior parts; connect the metal housing to mains protective earth.

## Socket Box (Design ‚C')

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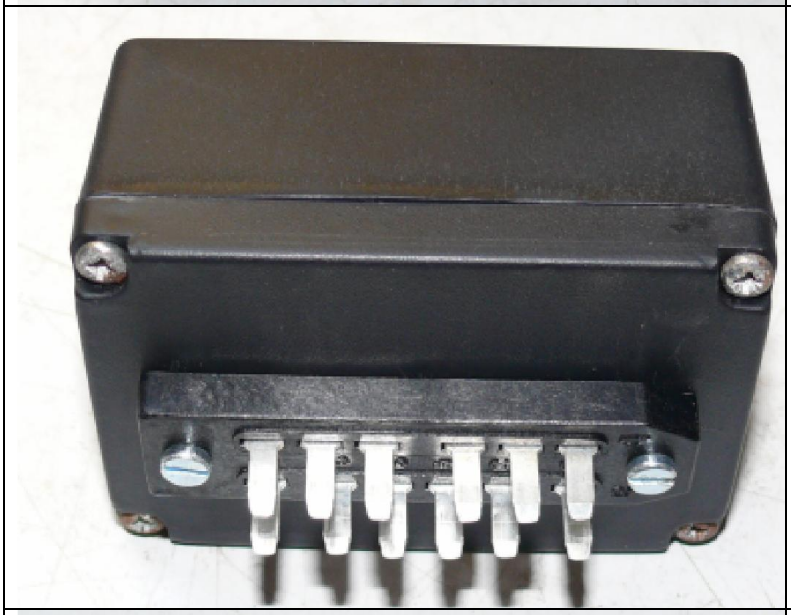
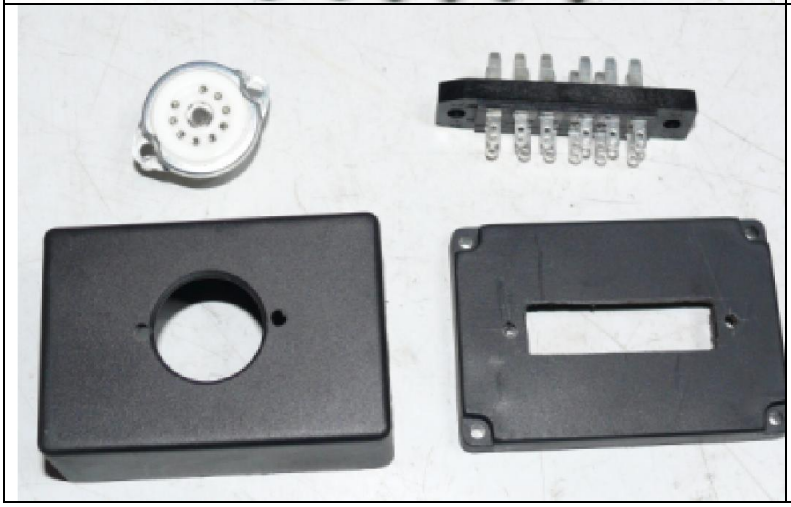
| | Design ‚C':<br><br>*large socket boxes:*<br>*Reichelt GEH KS 50*<br><br>*small socket boxes:*<br>*Reichelt GEH KS 35*<br><br>*Male multipoint connector (DIN41622):*<br>*Reichelt ML A12* |
|  | The original box's top cover is used. |
|  | Because of the easy machinable plastic material the few cutouts can be achieved without difficulty using step drill, keyhole saw, drill, jigsaw or fretsaw. |

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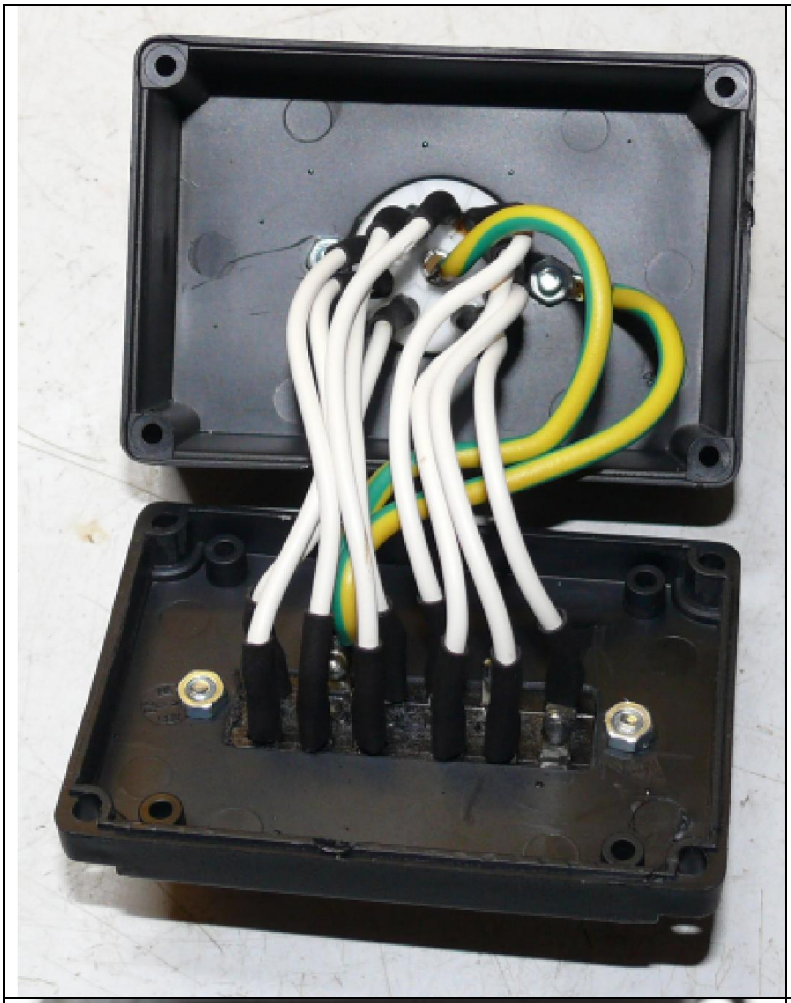
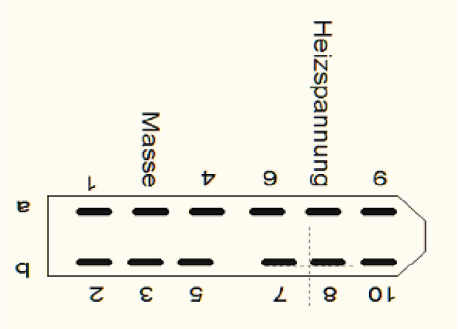
|  | Wiring with stranded wires.<br><br>All contacts must be insulated properly (heat shrinkable tube).<br><br>Ferrite beads are not required. .<br><br>Connect all metal screws to ground. |
| | The pin assignment is the same as that for design ‚A'<br>  |

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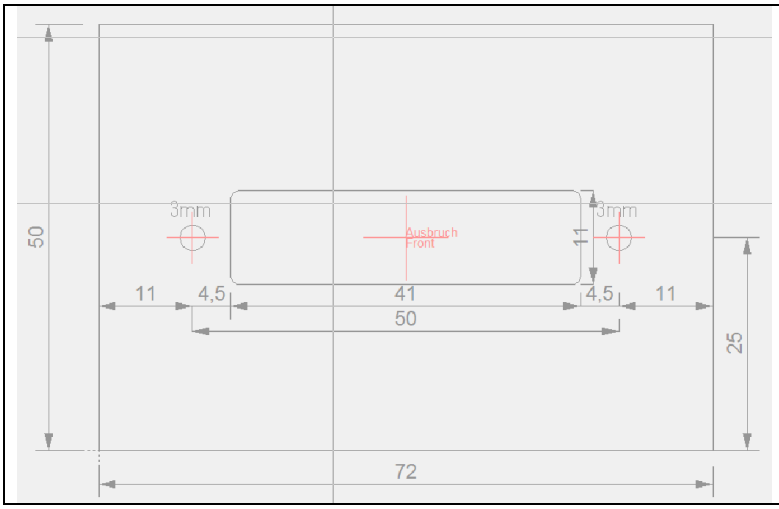
|  | Dimensions for the cutout in the case bottom.<br><br>Best is to make a work pattern (for instance from paperboard) |