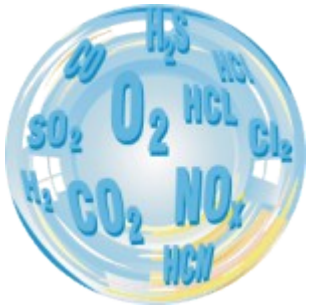

STATIONARY GAS ANALYSER

maMoS

Operation manual

Version: from 10.5b
11/2012

madur
ELECTRONICS

INSTALLING THE *maMoS* ANALYSER

To install the analyser correctly, follow these steps:

1. Pick the spot:
   - the analyser has to be mounted upright, on the wall, so that it is not exposed to adverse weather conditions (rain, snow, direct sunlight, temperatures below 0°C (32°F) and above 40°C (100°F)). Dusty environments should also be avoided.
2. Drill two ø8mm bores for mamos holder:
   - use one of the drawings below to determine the distance between the bores. Drawing 1 - bores for the holder for the analyser with the supply unit. Drawing 2 - bores for the holder for the analyser without the supply unit.

Figure 1. Bores for the analyser + supply unit

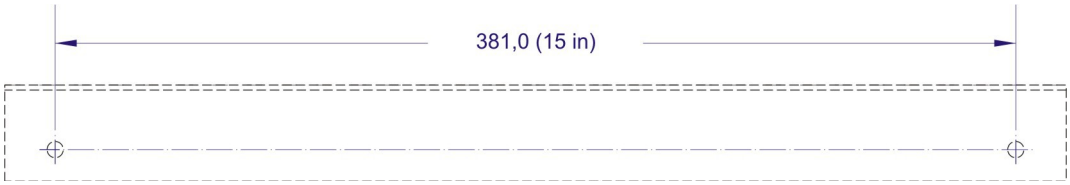

Figure 2. Bores for the analyser without supply unit

3. Put the Rawlplugs into the bores and then attach the analyser's holder.
4. Hang the analyser on the holder and then secure it against movement with the plastic rivets.

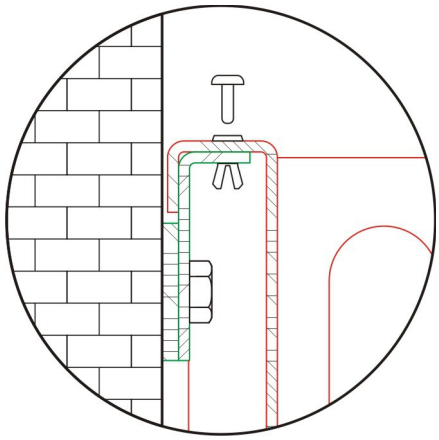

Figure 3. The analyser hanged on the holder and secured with the plastic rivets.

5. Additionally, it is possible to screw the analyser to the wall through the holes in the holding plate

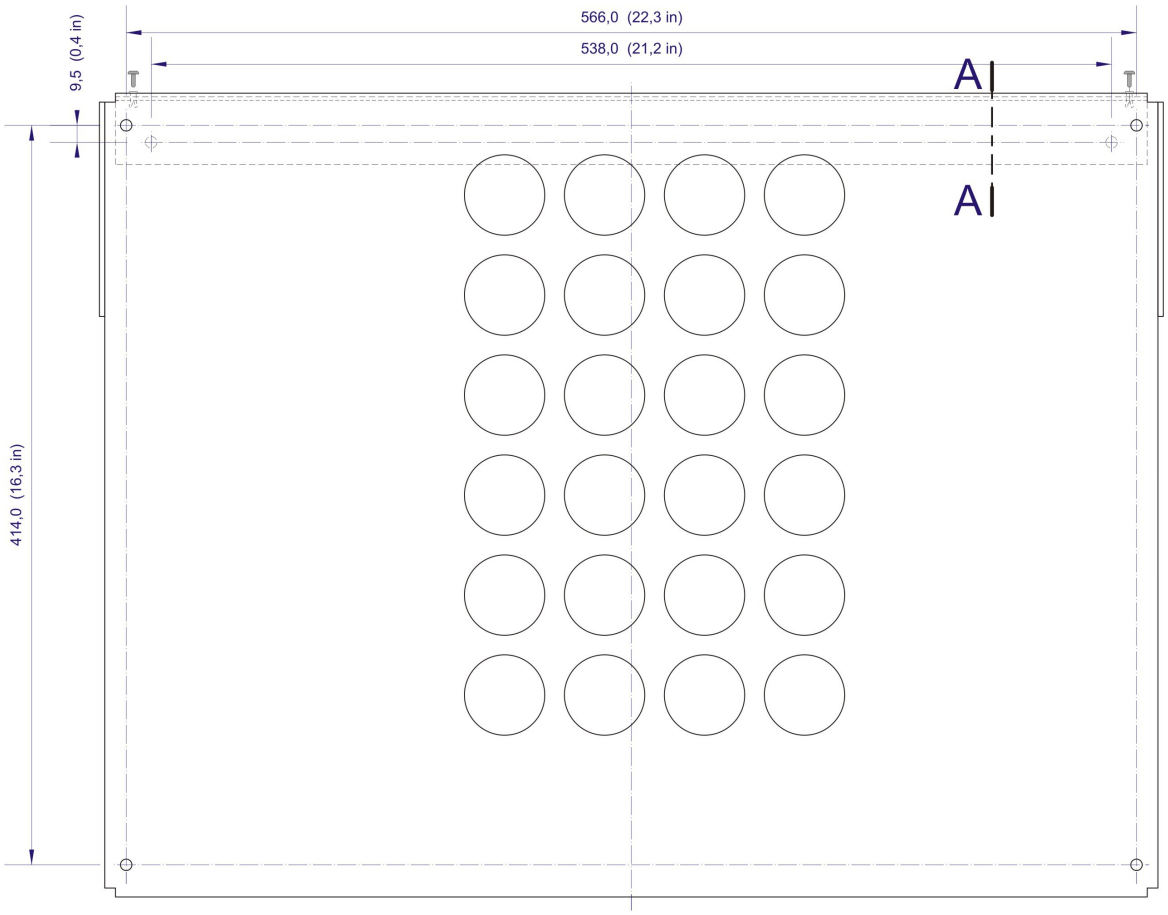

Figure 4. Location of the security holes in the analyser's holding plate (version analyser + supply)

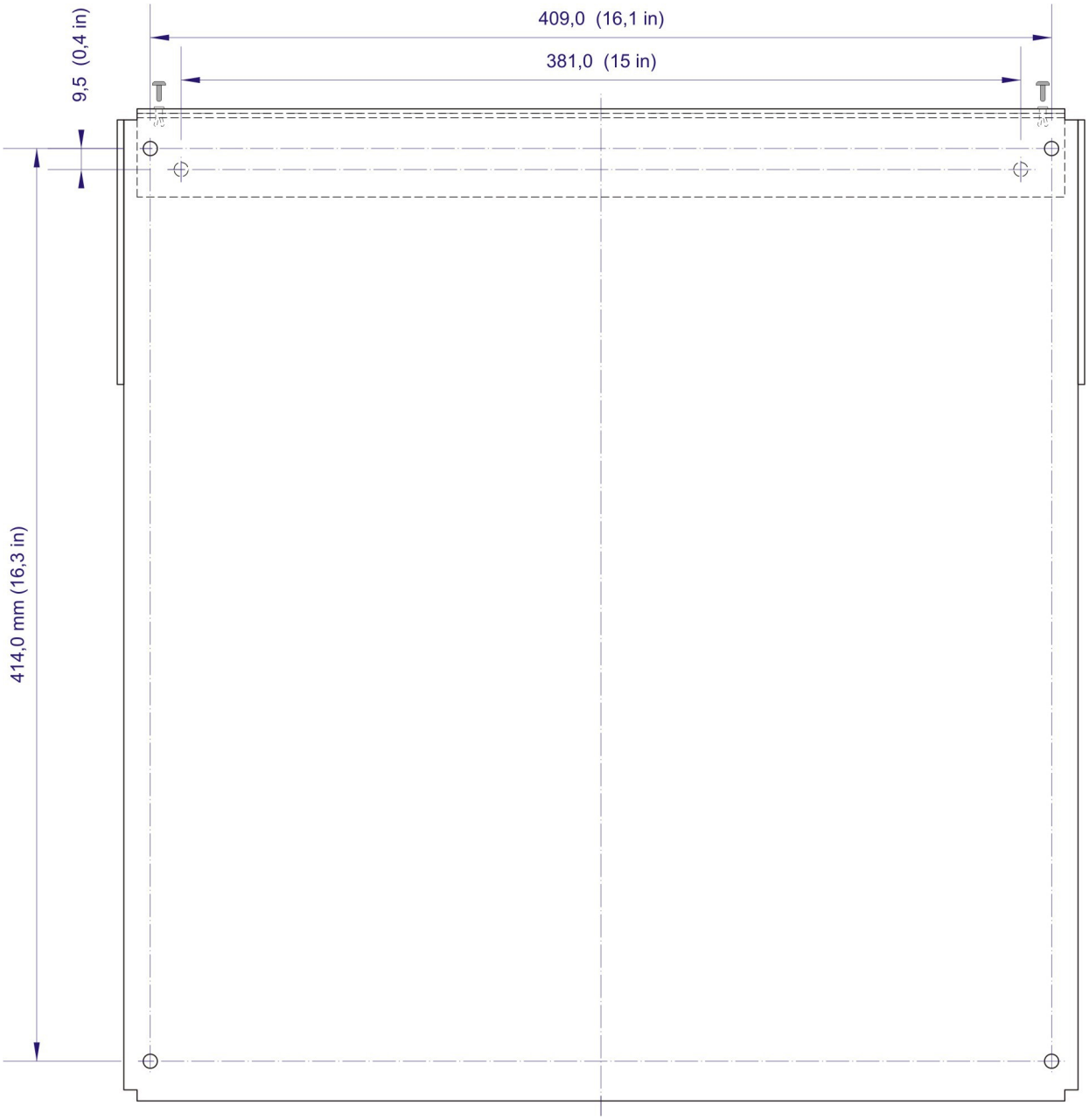

Figure 5. Location of the security holes in the analyser's holding plate (version analyser without supply)

6. If your mamos analyser is equipped with the gas dryer type MD2, both elements are packed separately – they are not gaseously and electrically connected, the dryer is not attached to the analyser metal plate – see the drawing below.

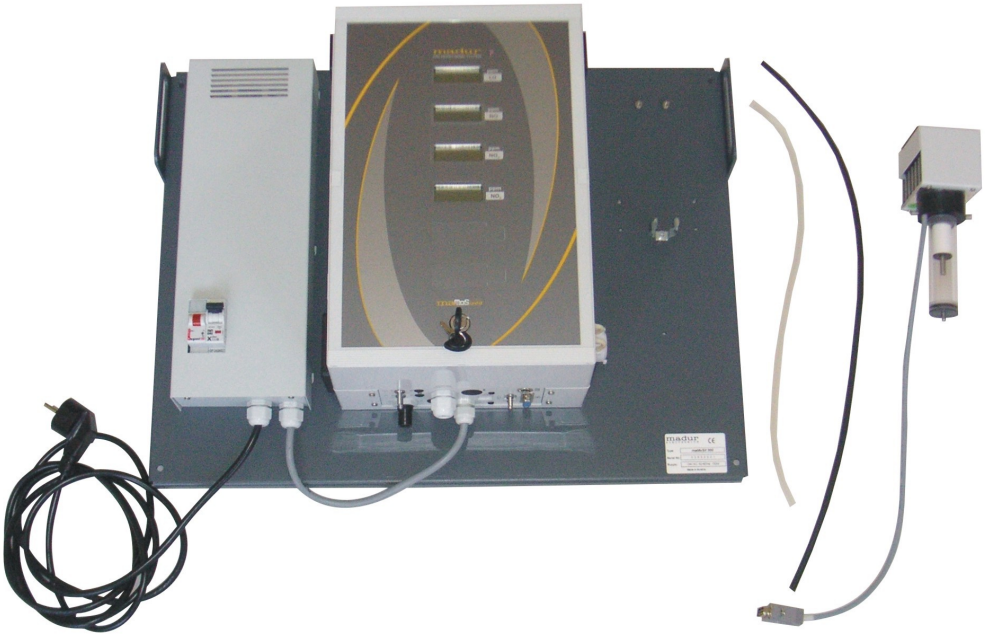

Figure 6. Mamos with supply and MD2 dryer – before installation.

7. On the mounting plate, right to the analyser there are two bolts and a latch. Latch holds the dryers condensate trap, while the dryer hangs on those two bolts. Slip the condensate trap to the latch, and fit the dryers mounting holes (they are have “teardrop” profile) on the holding bolds – see the drawing below.

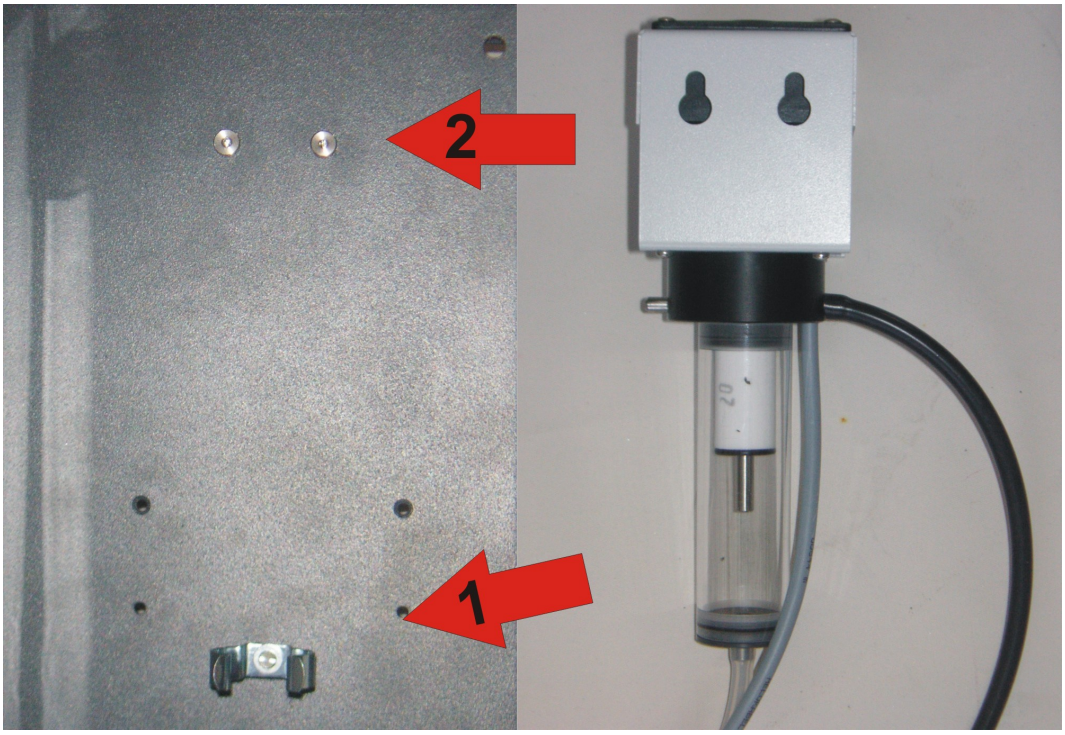

Figure 7. Installation of the MD2 dryer onto the mamos holding board

8. Connect the tubing to the MD2 dryer as shown in the picture below. Black silicone tubing is a gas channel. Transparent (white) is connected to the peristaltic pump to remove the condensate from the condensate trap.

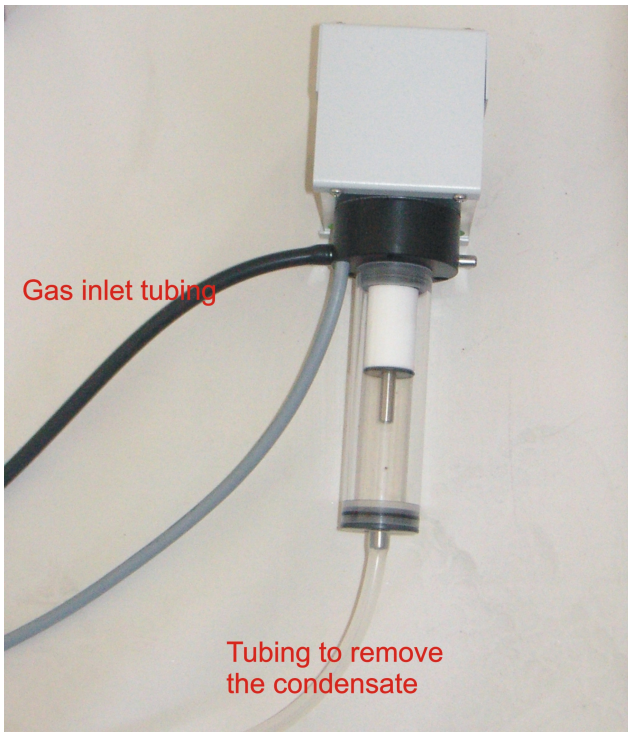

Figure 8. Gaseous connection – MD2 dryer's side

9. The other ends of the tubing connect to the analyser. Also, connect the electrical cable, all as shown in the picture below.

Figure 9. Electrical and gaseous connection – analyser's side

10. Open the analyser's cover and connect electric cables (power supply, analogue outputs / inputs) to the connector showed in the drawing below.

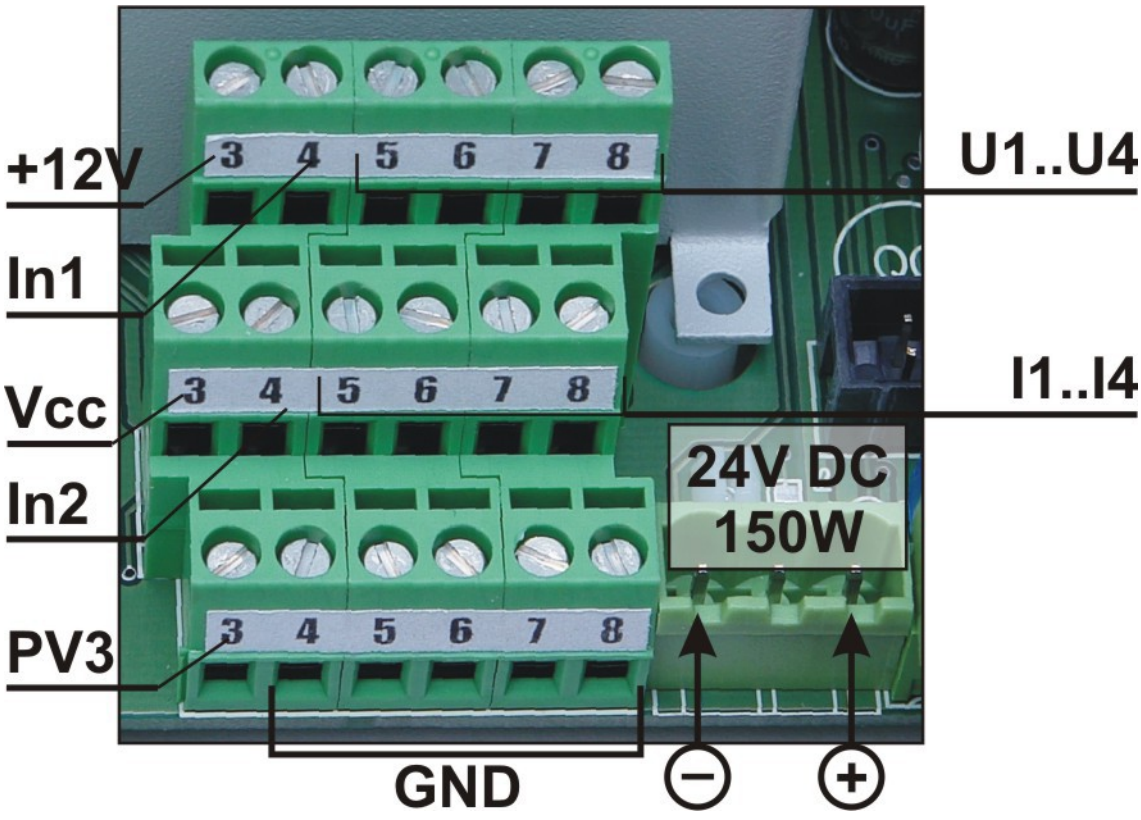

Figure 10. Power supply and the input/output connections of the *maMoS* analyser (the arrows indicate the power supply connections).

11. Connect the gas lines:

Attention!

The measured gas, as well as the zeroing gas may not be delivered under pressure. The analyser is equipped with its own gas pump, which is used to extract the samples. The maximum allowed pressure range is from -50hPa to 20hPa.

- connect the gas inlet hose to the gas inlet in the dryer – pt. 1 on figure 11, 12 or 13.
- connect the gas outlet hose to the gas outlet – pt 3 on figure 11, 12 or pt 2 on figure 13.

Attention (doesn't apply to over atmospheric pressure mamos)!

The gas outlet hose in mamos should be as short as possible and should not increase the flow resistance significantly. Pressure building up in the hose can disturb the measurement results (especially in the case of electro-chemical sensors).

- connect the zeroing gas inlet hose to the zeroing gas inlet – pt 2 on figure 11, 12 or pt 3 on figure 13.
- connect the zeroing gas outlet hose to the zeroing gas outlet – pt 4 on figure 13

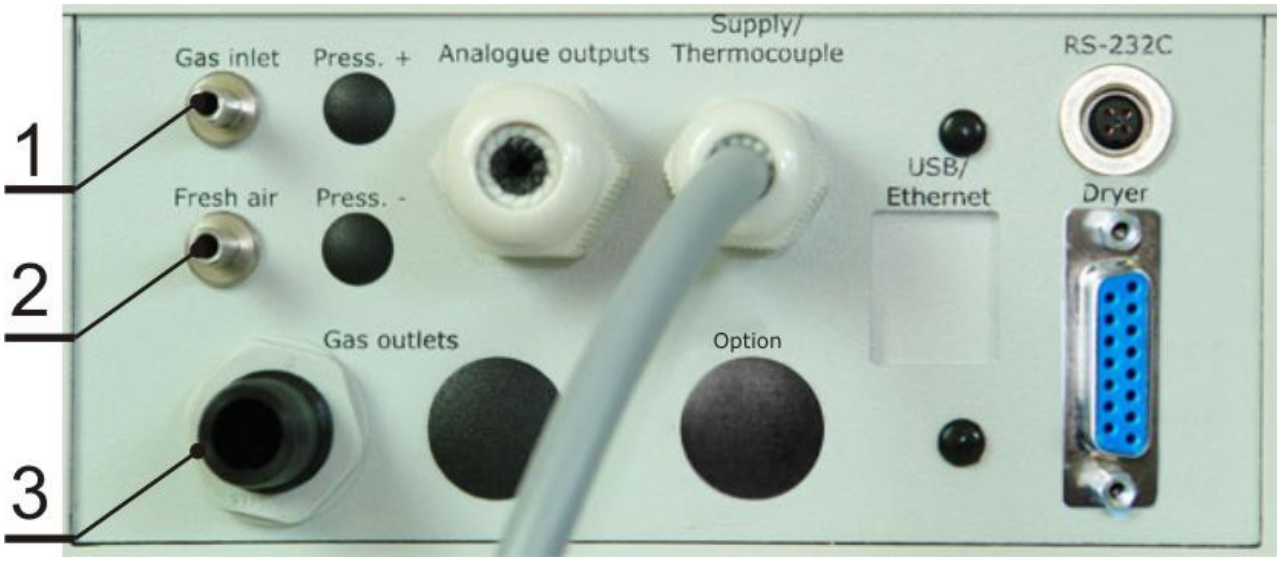

Figure 11. Connection spots (analyser with new type of dryer): 1) gas inlet hose; 2) zeroing gas inlet hose; 3) gas outlet hose.

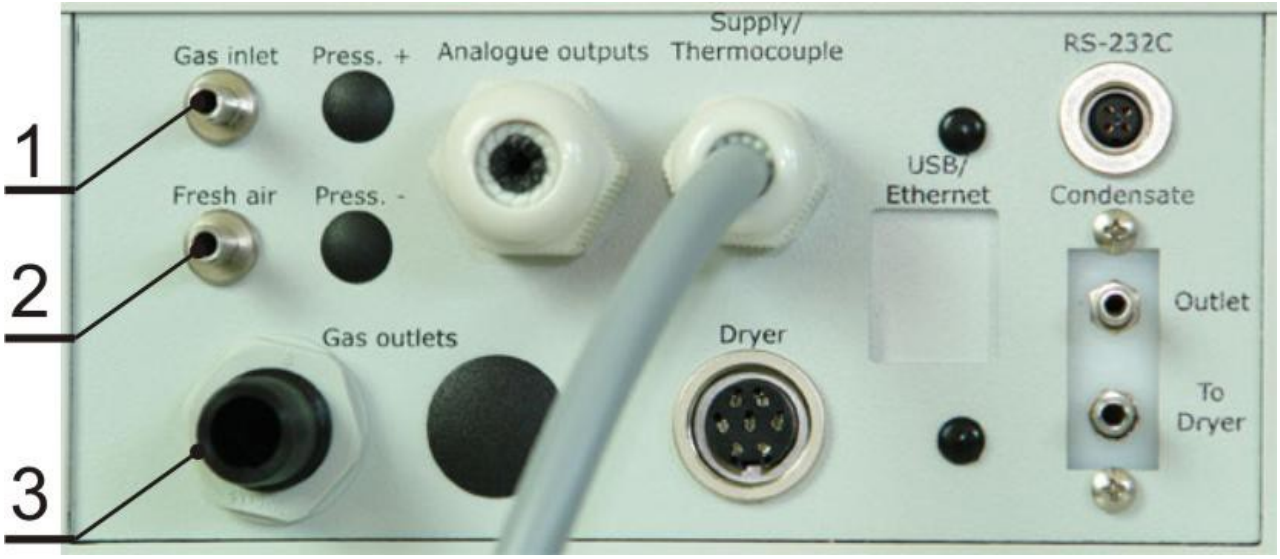

Figure 12. Connection spots (analyser with old type of dryer): 1) gas inlet hose; 2) zeroing gas inlet hose; 3) gas outlet hose.

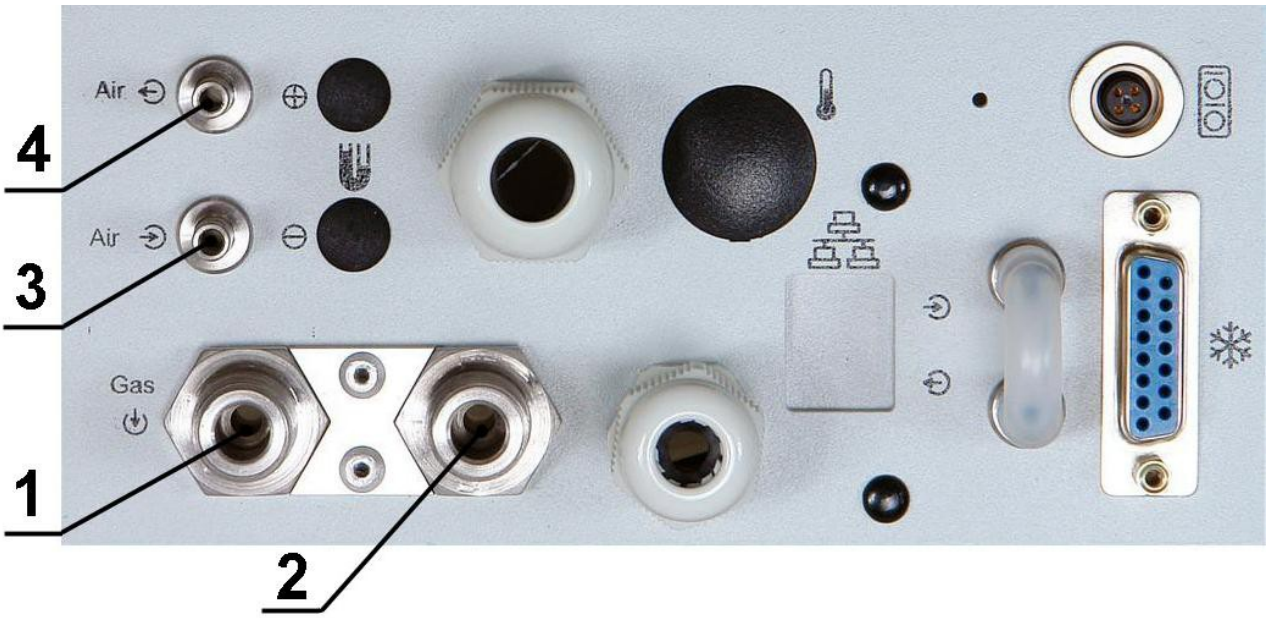

Figure 13. Connection spots (analyser measuring over atmospheric pressure conditions): 1) gas inlet hose; 2) gas outlet hose 3) zeroing gas inlet hose; 3) zeroing gas outlet hose.

12. Close the cover and connect the supply. In case of analyser without the supply unit – the cable that is passed through “Supply/Thermocouple” cable pass connect to the power source: 24VDC 150W.
13. Turn on the analyser by turning the key located on the front panel under the displays.
14. Put the cover back together and turn on the analyser power supply.

Figure 14. A connecting cable for communication with the PC via the RS232C interface.

15. Connect the ***maMoS*** analyser to the PC (the communication port is placed on the bottom side of the cover, see figure 13):

- in case of communication via the RS232C interface, an appropriate connecting cable is already included.
- in case of communication through a USB interface, the analyser has to be connected to the PC using a cable with a B-type plug on one end (the analyser end) and an A-type plug on the other end (the PC). After connecting the analyser to the PC, dedicated drivers need to be installed.

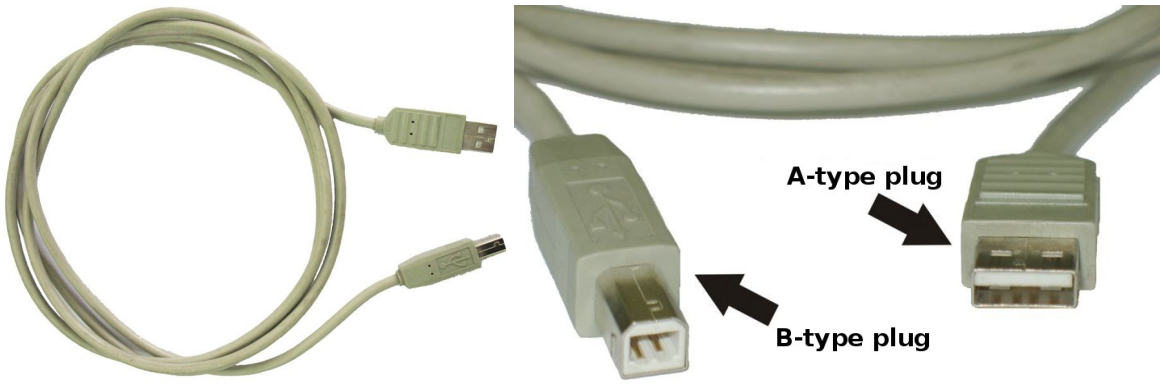

Figure 15. A connecting cable for communication via the USB interface.

- in case of communication via the Ethernet interface, the analyser needs to be connected to a hub with a UTP or an STP-type cable (an ordinary LAN cable) or directly to the network adapter of the PC (using a crossed-over LAN cable). Appropriate software needs to be installed before Ethernet based communication with the analyser is possible (the software can be found on the enclosed CD).

16. Set the analyser up using the ***MaMoSII.exe*** programme (see chapter 7 of the manual):
    - after the connection has been established, confirm the automatic time setting (chapter 7.3.1 of the manual).
    - assign desired values to the displays (chapter 7.3.5 of the manual).
    - perform a setup of the analogue outputs (chapter 7.3.7 of the manual), the relay outputs (chapter 7.3.8 of the manual) and the digital outputs (chapters 7.3.6.4 and 7.3.6.5 of the manual).
    - set the duration of each cycle stage (chapter 7.3.6 of the manual).
    - choose the fuel type if necessary (chapter 7.3.3 of the manual).

- for network operation, verify and, if necessary, change the address of the analyser (chapter 7.3.2 of the manual).

*After all steps have been completed, the **maMoS** analyser is ready for operation according to the user's needs. To learn more about the **maMoS** analyser capabilities, please read the full manual.*