Meteo-42 Data Logger

Quick Reference Guide

What is new:
- Three separate RS-485 interfaces
- Electrical improvements

What stays the same:
- Same user interface as Meteo-40 plus
- All features from Meteo-40 plus available

Ammonit has developed a successor to the well-established and proven data logger Meteo-40. In our new data logger **Meteo-42**, we have taken into account our experience with the Meteo-40, the increased requirements of our customers and the technological evolution towards more smart sensors.

The **Meteo-42** introduces those improvements:
- Connection of additional smart sensors through three separate RS-485 interfaces
- Some electrical improvements:
  - Improvement of lightning protection and
  - Minimization of possible cross-interference between the analog channels.

These improvements in the electrical design of the **Meteo-42** lead to some changes in the electrical design of the electrical cabinets, which we describe in this quick reference guide. Please note that changes 1 to 4 (improved lightning protection, switches, RS-485, reference sources) are mandatory, otherwise the measurement system will not work.

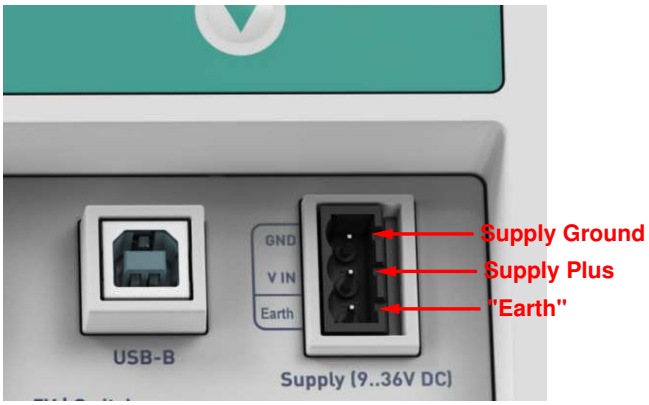
Furthermore we propose an improvement of the grounding in the measurement setup to take full advantage of the electrical improvements of the **Meteo-42**. This is not absolutely necessary for the use of the **Meteo-42** and can therefore be done at later stage (see document "Improved Grounding").

Ammonit Measurement GmbH
Wrangelstrasse 100, D-10997 Berlin, Germany
T: +49 30 6003188-0, E: info@ammonit.com
measuring wind and solar power
www.ammonit.com

1. Electrical improvements

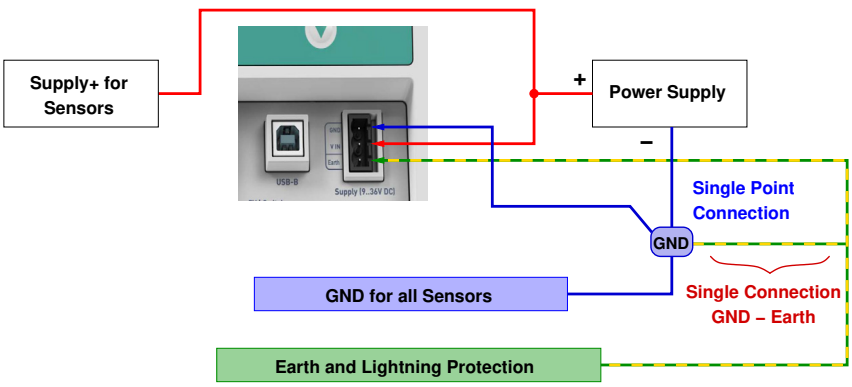
Improved Lightning Protection

- Separate connection for lightning protection "Earth"
- Do not use as a supply ground.
- Connect "Earth" terminal to earthing of steel cabinet.
- If no earthing is available leave "Earth" connection open.



Suggested Grounding/Earthing Concept for Meteo-42 Steel Cabinet

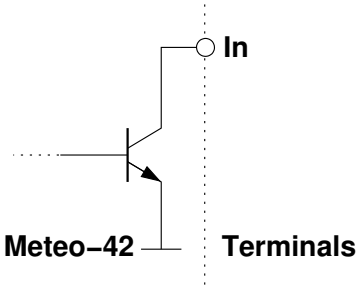
- Separate wiring for supply ground (GND) and Earth.
- Use only one connection between GND and Earth to avoid floating.



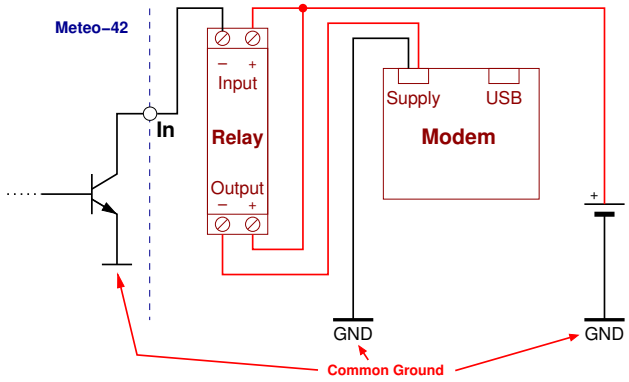
Ammonit Measurement GmbH
Wrangelstrasse 100, D-10997 Berlin, Germany
T: +49 30 6003188-0, E: info@ammonit.com
measuring wind and solar power
www.ammonit.com

2. Switches more versatile than with Meteo-40

- Meteo-42 provides up to eight open collector switches.



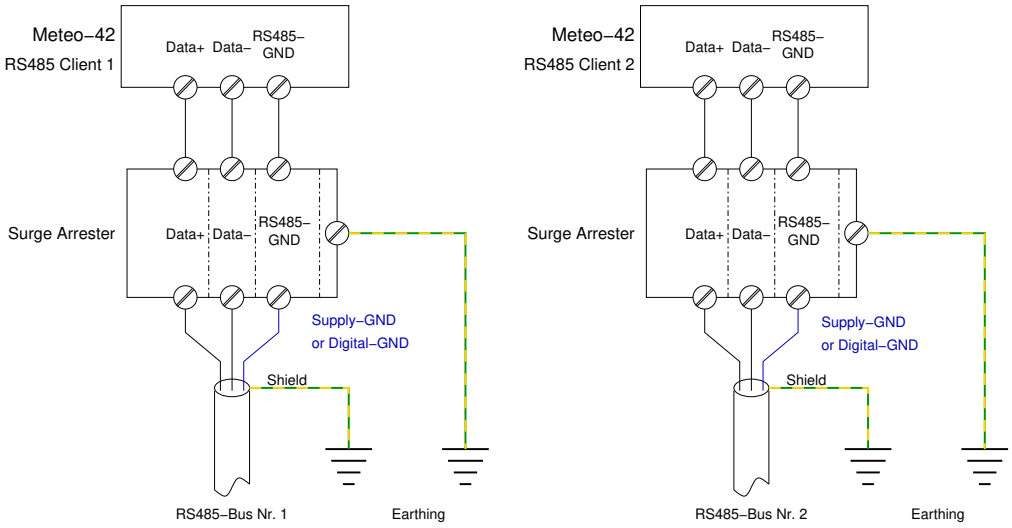
Recommended wiring for a modem with a power control switch



Ammonit
Measurement GmbH
Wrangelstrasse 100, D-10997 Berlin, Germany
T: +49 30 6003188-0, E: info@ammonit.com
measuring wind and solar power
www.ammonit.com

3. Three separate RS-485 interfaces

- Meteo-42 includes up to three client RS-485 bus interfaces and one server interface (for SCADA).
- All RS-485 interfaces have galvanic isolation. M84100 repeater is no longer required.
- Two client RS-485 bus interfaces have an internal bias and termination for half duplex. M83570 is no longer required.
- Therefore, for the first and second client interface it is no longer necessary to use the module M83575 (M83570 + M84100).
- The third client RS-485 bus interface can be connected as half duplex, but still needs M83570.
- All RS-485 bus interfaces have a separate RS-485 ground for improved overvoltage protection.



Example: Connection of client interfaces 1 and 2 to RS-485 bus 1 and 2

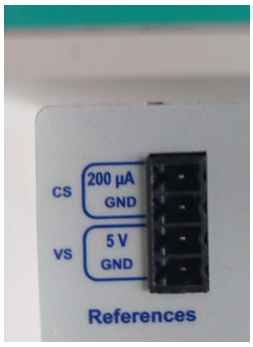
Important:

- Always use the RS-485 ground (RS-485 GND) when connecting sensors to the Meteo-42 RS-485 interfaces.
- Connect RS-485 GND to sensor's signal GND (if available) or alternatively connect RS-485 GND to sensor's supply GND.

Ammonit
Measurement GmbH
Wrangelstrasse 100, D-10997 Berlin, Germany
T: +49 30 6003188-0, E: info@ammonit.com
measuring wind and solar power
www.ammonit.com

4. Reference sources: Current and voltage source

- Meteo-42 provides a current source (200 µA) and a voltage source (5 V, 50 mA) for sensor supply.



Possible sensors for the current source and the voltage source

- The power source is suitable for passive temperature sensors (PT100).
- Voltage source can be used for wind vane with active potentiometer output (S21220 and S21220H).

Ammonit Measurement GmbH
Wrangelstrasse 100, D-10997 Berlin, Germany
T: +49 30 6003188-0, E: info@ammonit.com
measuring wind and solar power
www.ammonit.com