

### What is new:

- Three separate RS-485 client interfaces
- Improved electrical robustness
- 5 Volt reference source available

### What stays the same:

- Same user interface as Meteo-40 plus
- All features from Meteo-40 plus available



Ammonit has developed the successor to our field-proven Meteo-40 data logger. The new **Meteo-42** incorporates years of operational experience, evolving customer requirements, and the technological shift toward smart sensor integration.

### Key Enhancements of the Meteo-42

**Expanded Connectivity:** Support for additional smart sensors via three independent RS-485 interfaces.

### Optimized Electrical Design:

- Enhanced lightning protection.
- Minimized cross-interference between analog channels.

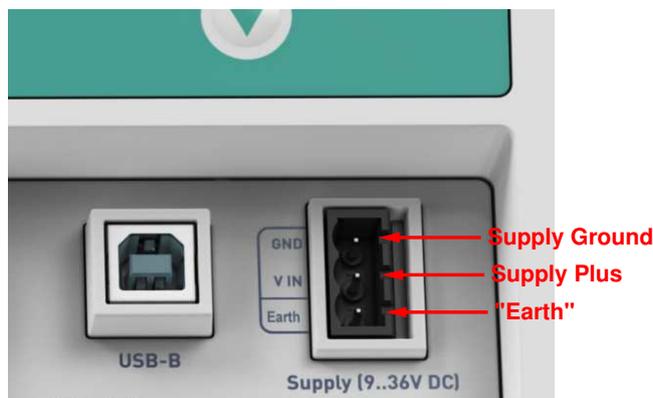
These refinements require specific adjustments to the control cabinet layout, which are detailed in this Quick Reference Guide. Please note that modifications 1 to 4 (improved lightning protection, switches, RS-485, and reference sources) are mandatory for the measurement system to function correctly.

Furthermore, we recommend an upgraded grounding scheme to fully leverage the Meteo-42's electrical performance. While this grounding update is not strictly required for operation, it can be implemented at a later stage (refer to the "Improved Grounding" documentation).

## 1. Electrical improvements

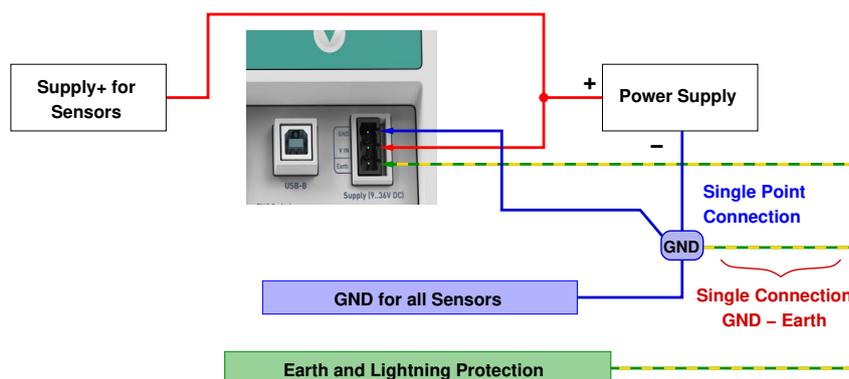
Improved lightning protection

- 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 connect "Earth" terminal to supply ground GND.



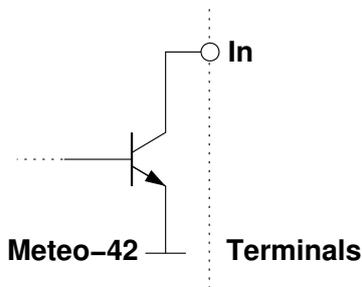
Suggested grounding/earthing concept for Meteo-42 steel cabinet

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



## 2. Switches more versatile than with Meteo-40

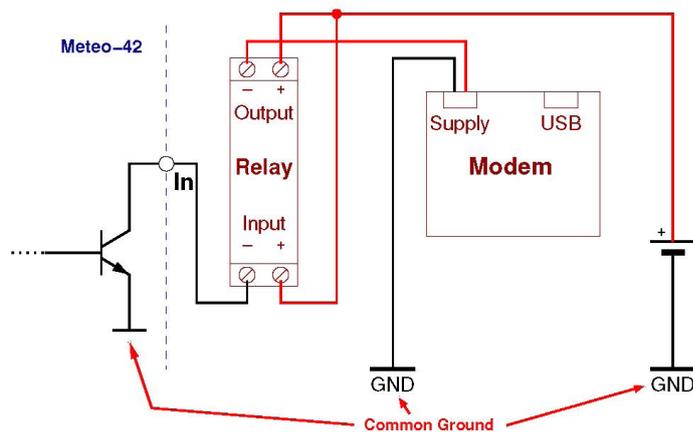
- Meteo-42 provides up to eight open collector switches.



Important:

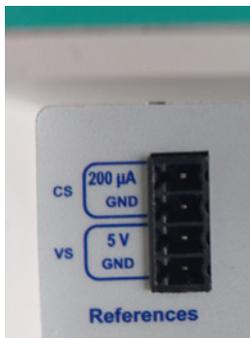
- Do not connect the 5 V voltage output to the IN of the switches, as this could damage the hardware.

Recommended wiring for a modem with a power control switch



## 3. Reference sources: Current and voltage source

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

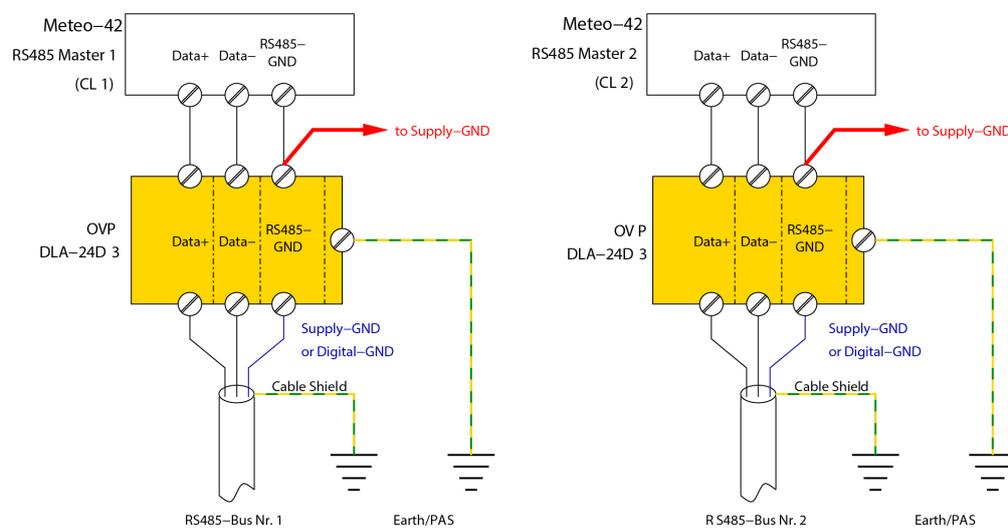


Possible sensors for the current source and the voltage source

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

## 4. Three separate RS-485 client 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.
- CL1 and CL2 RS-485 client interfaces have an internal bias and termination for half duplex. M83570 is no longer required.
- CL3 RS-485 client interface can be connected as half duplex. It does need M83570 to provide biasing.
- All RS-485 bus interfaces have a separate RS-485 ground for improved overvoltage protection.



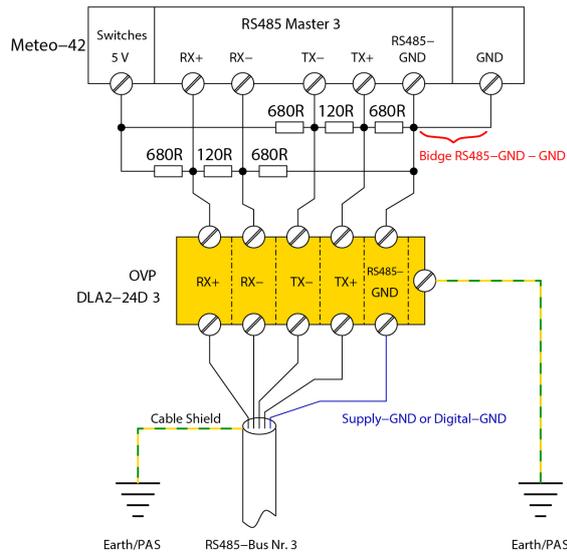
Example: Connection of client interfaces 1 and 2 to RS-485 bus 1 and 2

### Important:

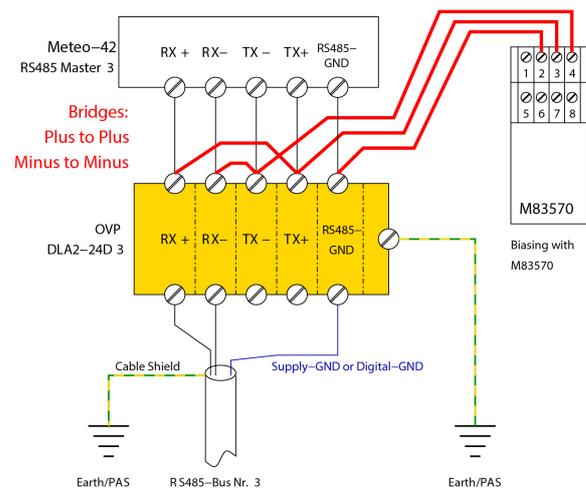
- Always use the RS-485 ground (RS-485 GND) when connecting sensors to the Meteo-42 RS-485 interfaces.
- Connect RS-485 GND to sensor's signal GND (if available) or alternatively connect RS-485 GND to sensor's supply GND.

## 5. RS-485 CL3 interface and RS-485 server (SCADA) interface

- Four-wire terminal (Full-Duplex) for flexible usage
- Switching from Full-Duplex to Half-Duplex with wiring bridges possible
- Provides internal galvanic isolation
- No internal termination provided
- No internal biasing provided
- 



Full-duplex wiring with external biasing



Half-duplex wiring with external biasing