

The module M83570 provides:

- 10 individually configurable ports with the following configuration options:
 - Current limit 10 mA
 - Pull-up resistor 5.1 k Ω with current limit 1mA
 - Pull-down resistor 10 k Ω
- One configurable biasing and bus-termination terminal for RS485 2-wire bus setup
- One stabilised and ripple-free 5 V output with active current limit (110 mA)

List of compatible sensors

1. Potentiometric wind vanes with current limit 10 mA, e.g.,:

- Wind vane Thies First Class (2 k Ω)
- Wind vane Vector W200P (1 k)
- Wind vane Vaisala PV1 (10 k)
- Wind vane NRG #200P (10 k)
- Wind monitor Young (10 k)

2. Potentiometric wind vanes with current limit 1 mA, e.g.,:

- Wind vane Thies Compact(2 k Ω)

3. Counter, switch or open-collector: Pull-up resistor 5.1 k Ω , e.g.,:

- Precipitation sensor Thies
- Precipitation sensor Young
- Anemometer NRG #40H (Hall Effect)
- Anemometer Risø P2546A (Reed switch)
- Anemometer Thies (if open drain output is used)

4. Digital input / status: Pull-down resistor 10 k Ω , e.g.,:

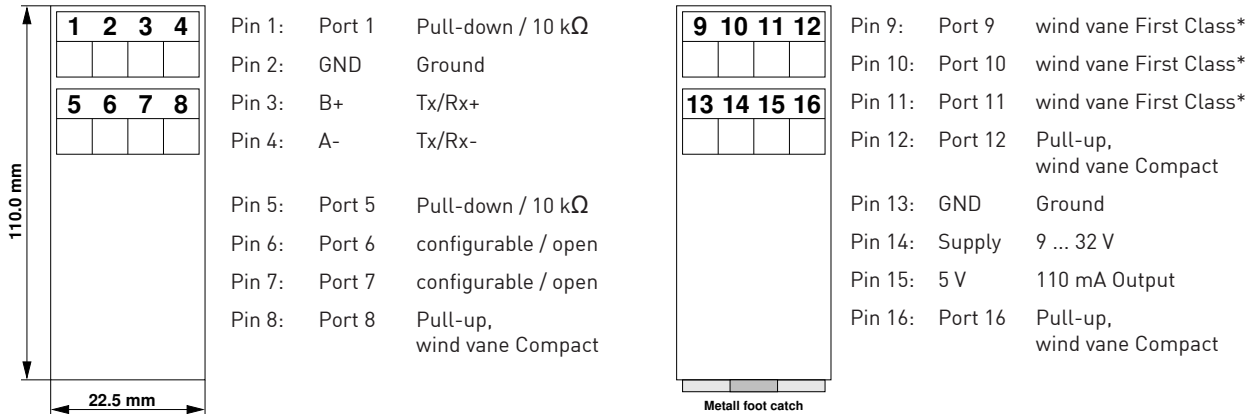
- Control switch
- Precipitation monitor Thies

5. Biasing and termination for RS485 2-wire, e.g.,:

- Set biasing voltage for RS485 bus (680 Ω) (configurable with jumpers)
- RS485 bus termination (120 Ω) (configurable with jumpers)

6. Supply: Stabilised 5 V output, e.g.,:

- Control switch

Pin Assignment


* see page 1 for further wind vanes

Electrical characteristics (Default settings)

Parameter	Pin / Ports	Min	Typical	Max
Supply voltage (DC)	14	9 V		32 V
Quiescent current		6 mA		
Output (5 V DC) (θ = 25°C)	15	5 V		5.3 V
		110 mA		130 mA
Low current limit to ground	8, 12, 16	0.97 mA	1 mA	1.05 mA
Pull-up resistor			5.1 kΩ	
High current limit to ground	9, 10, 11	10.5 mA	10 mA	11.4 mA
Pull-down resistor	1, 5	9900 Ω	10 kΩ	10100 Ω
Configurable ports (open)	5, 6			
RS485: TxD+/RxD+, B+	3			
RS485: TxD-/RxD-, A-	4			
RS485 Bus termination	3, 4 (Jumper 120 Ω)		120 Ω	
RS485 Biasing	Jumper V+, Jumper V-		680 Ω	
Ground	2, 13			
Operating temperature		-40°C		+75°C
Fuse T0.8A (time lag, slow-blow): 5 x 20 mm				

- Housing dimension (width x height x depth): 22.5 x 110 x 115mm
- Mounting on DIN-rail (35 x 7.5mm)
- Terminal: wire cross section from 0.25 to 1.5mm²

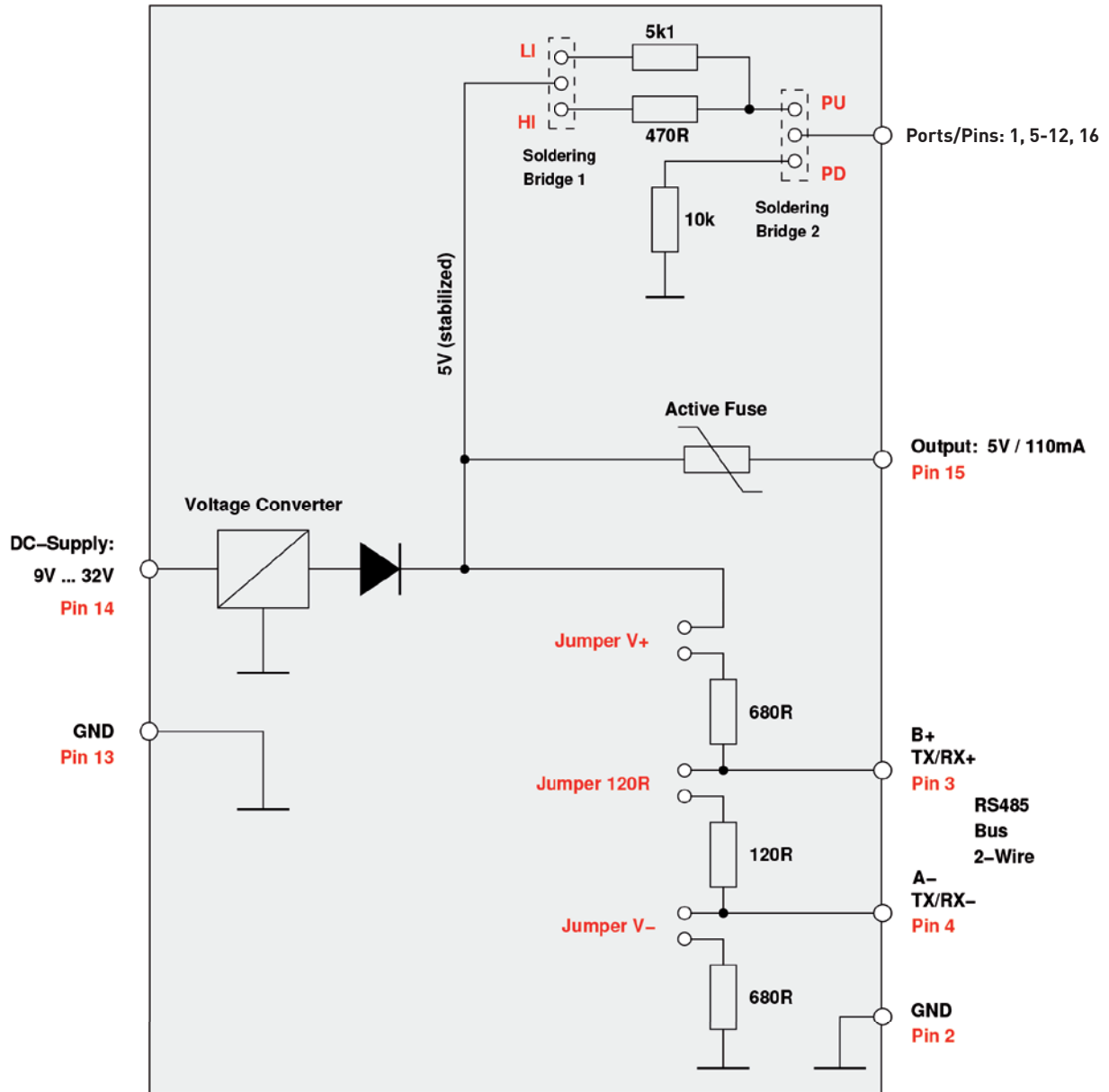
Note

In order to configure the output of the ports, soldering bridges inside the module must be set according to purpose.
RS485 bus configurable with jumpers.
Each terminal comprises overvoltage protection.

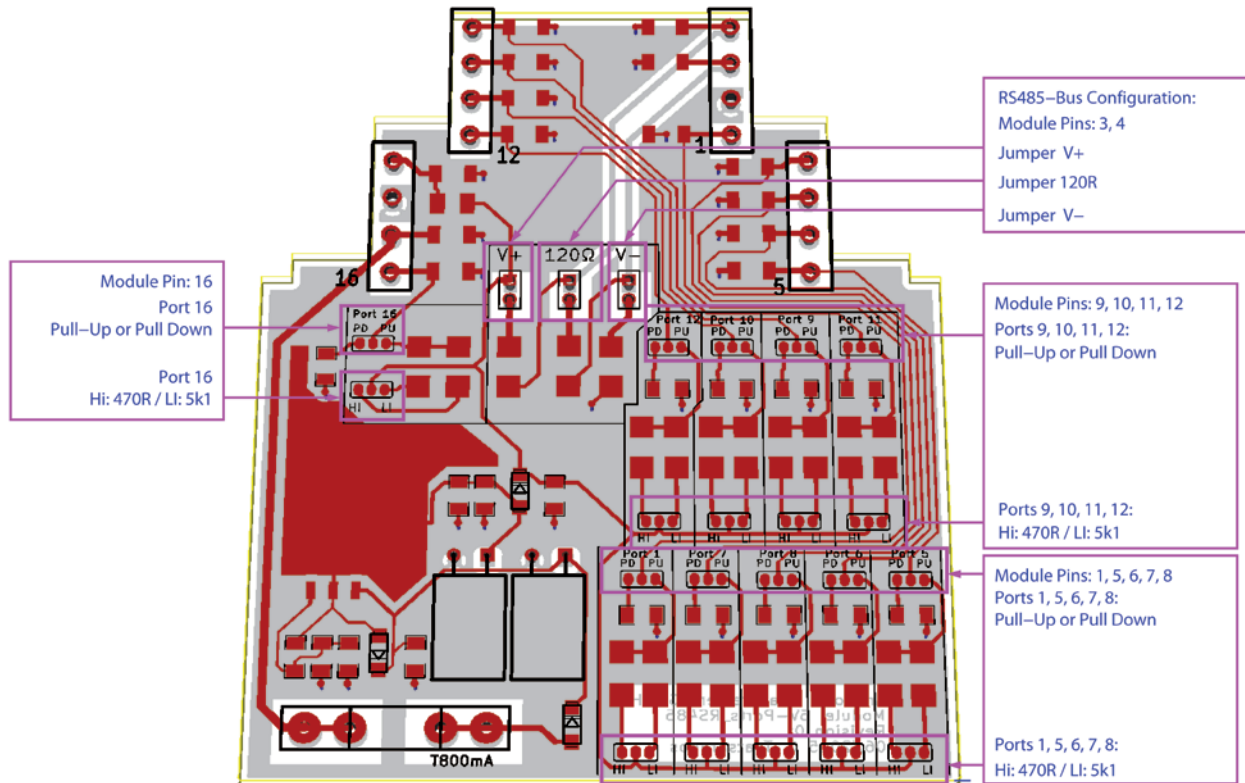
Principle of operation

The principle of the circuit with the listed units is shown in the picture below.

- Ports: Configurable outputs providing two different pull-up resistors and one pull-down resistor
- Stabilised 5 V output with overcurrent protection
- RS485 2-wire termination and biasing terminals (configurable with jumpers V+, V- and 120 Ω)



Port and RS485 biasing configuration



Configuration of ports

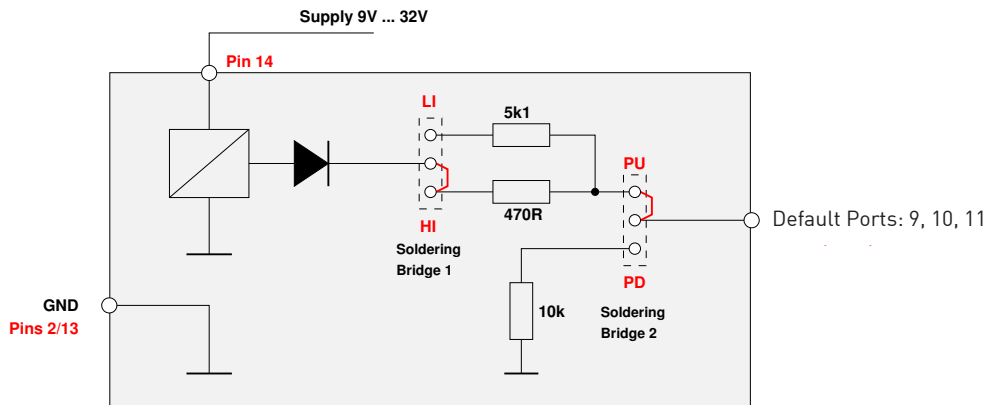
- Soldering bridge 1 (pull-up configuration): Bridge between LI and center-pad sets low current (i.e., 5.1 kΩ, 1 mA), bridge between HI and center-pad sets the corresponding port to high current (470 Ω / 10 mA).
- Soldering bridge 2 (pull-up or pull-down configuration): Bridge between pull-up and center-pad sets the corresponding port to pull-up, bridge between pull-down and center-pad sets the ports to pull-down (i.e., 10 kΩ to ground (GND)).

Configuration of RS485 bus

- To set the termination resistance (120 Ω), set the Jumper 120 Ω.
- If bus biasing is needed, set Jumper V+, Jumper 120 Ω, Jumper V-.

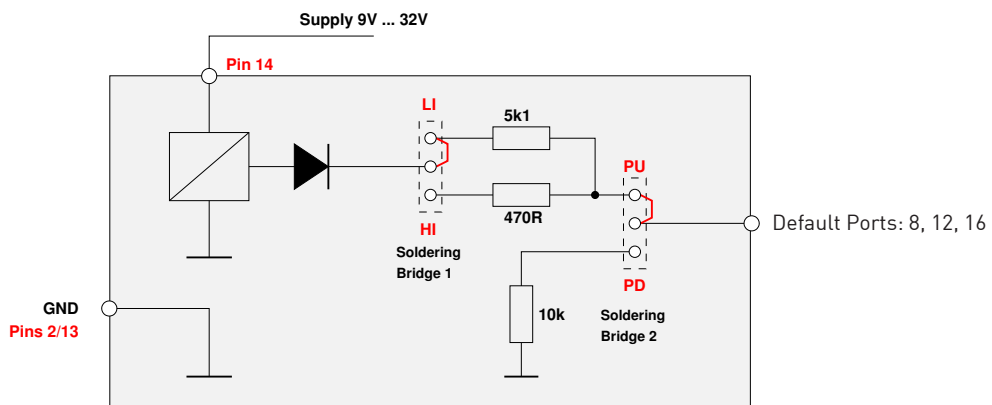
Configuration of ports

High Current 10 mA: Bridge HI and PU



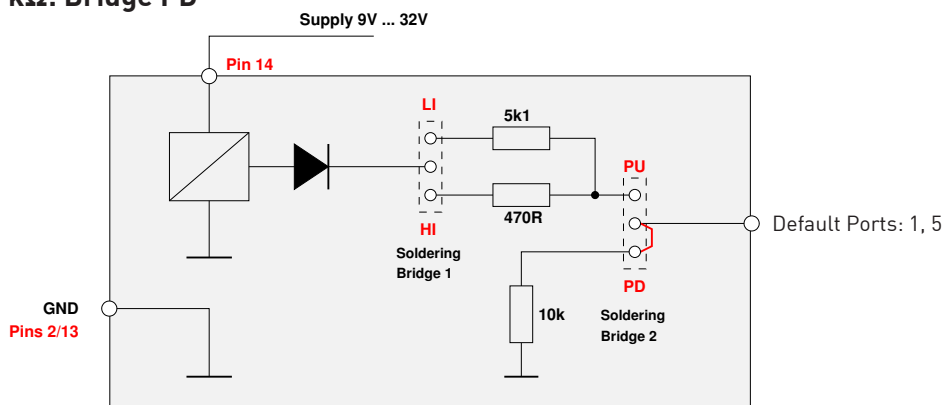
Setting the soldering bridges for **10 mA**: Soldering bridge 1 set to HI, soldering bridge 2 to pull-up.

Pull-up with Low Current 1mA: Bridge LI and PU



Setting of soldering bridges for **1 mA**: Soldering bridge 1 set to LI, soldering bridge 2 set to pull-up.

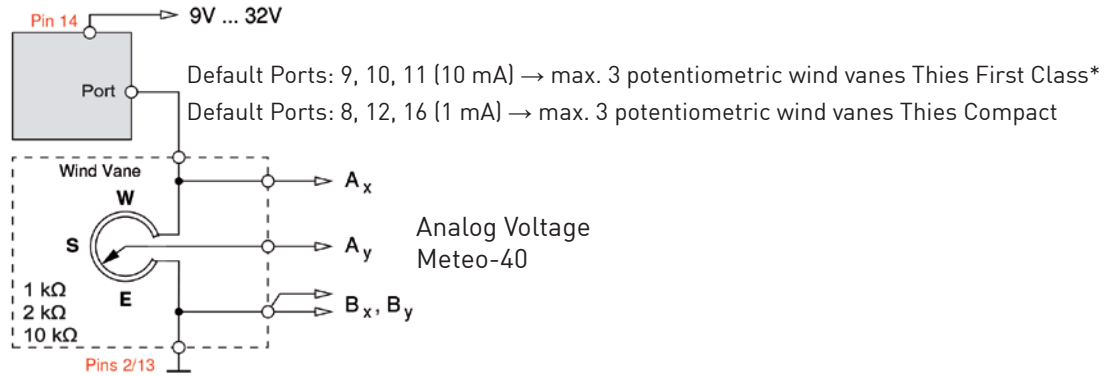
Pull-down 10 kΩ: Bridge PD



Setting of soldering bridges for **pull-down**: Soldering bridge 1 left open, soldering bridge 2 set to pull-down.

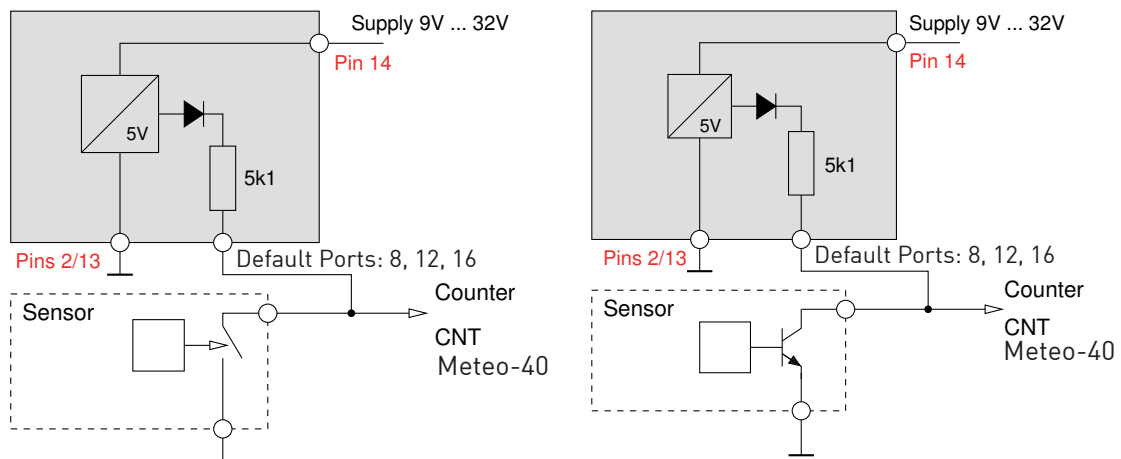
Examples for common port configurations for Meteo-40 Data Logger setups

Protection resistor for potentiometric wind vane

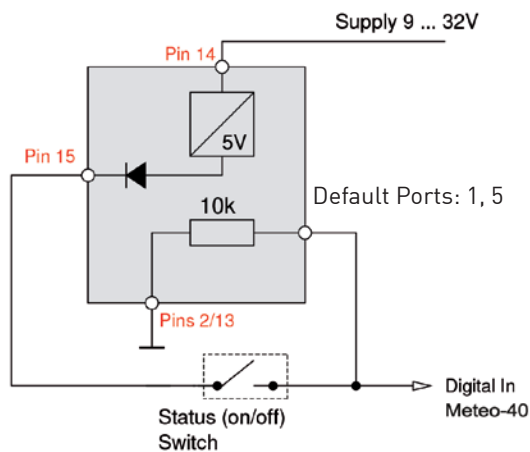


* see page 1 for further wind vanes

Counter input with pull-up resistor



Digital input / status input with pull-down resistor

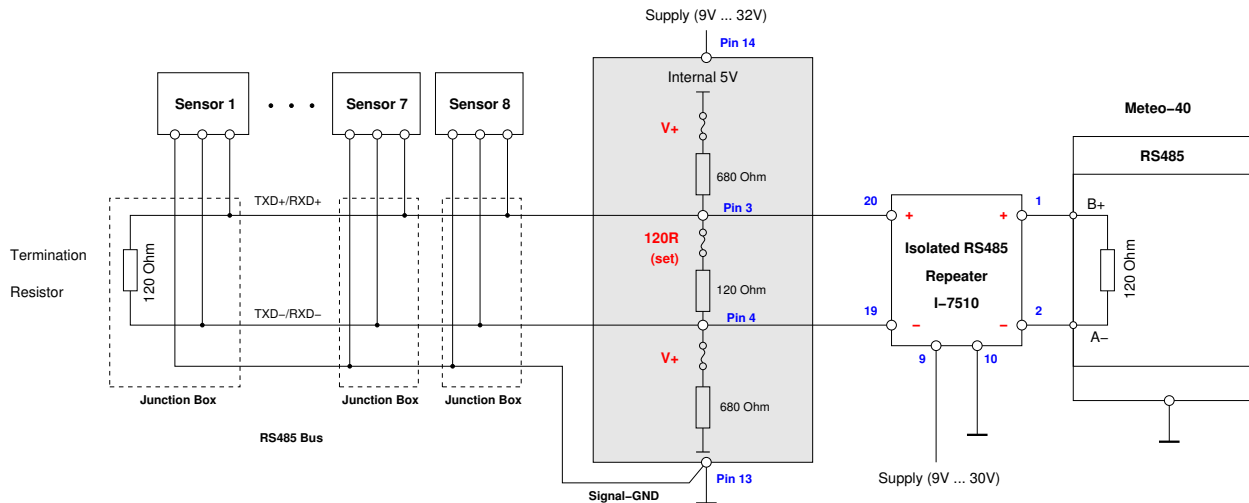


RS485-M bus (Meteo-40 = Master)

Connecting up to eight devices with isolated repeater to Meteo-40 Data Logger

If the Ammonit Meteo-40 data logger is connected via isolated repeater to the RS485 bus, **set** the Jumper 120 Ω, Jumper V+ and Jumper V- (default setting on delivery). The RS485 bus is biased and terminated by the module (M83570).

If there is **no repeater** used in the system configuration, **leave** the Jumper 120 Ω **open**.



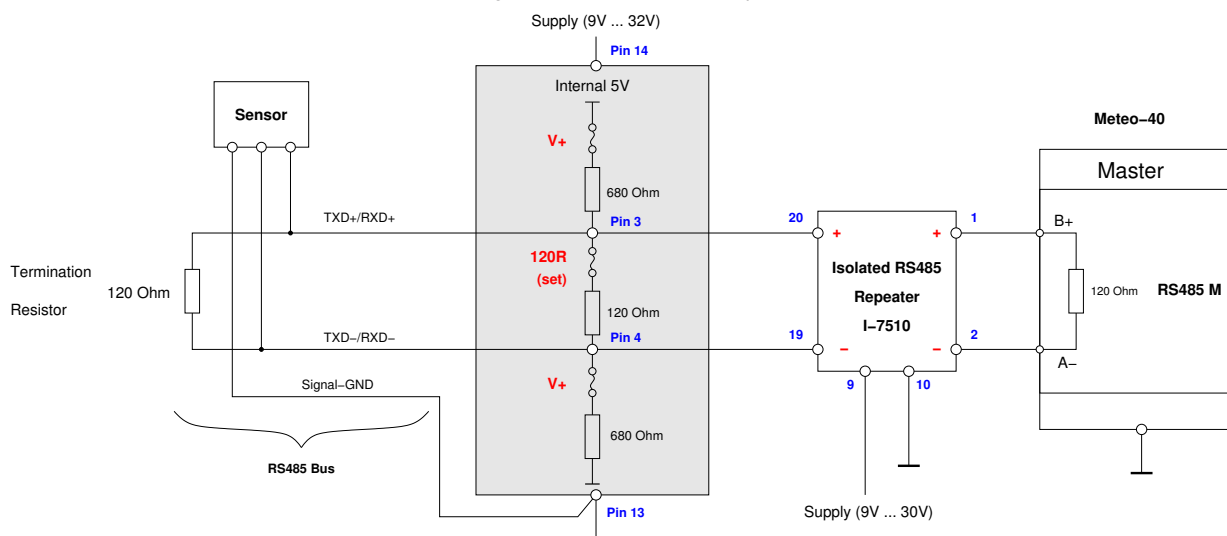
Note

Ordner No. for module set including isolated repeater: M83575
 Ordner No. for isolated repeater only: M84100

RS485-S (SCADA operation, Meteo-40 = Slave)

If the Ammonit Meteo-40 data logger is connected via isolated repeater to the RS485 bus, **set** the Jumper 120 Ω, Jumper V+ and Jumper V- (default setting on delivery). The RS485 bus is biased and terminated by the module (M83570).

If there is **no repeater** used in the system configuration, **leave** the Jumper 120 Ω **open**.



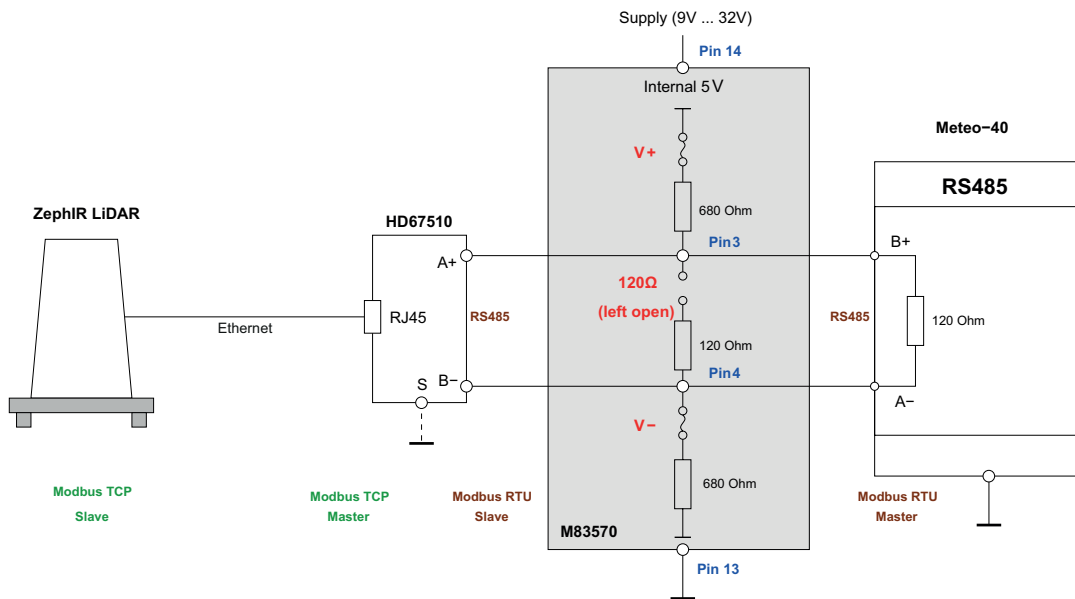
Note

Ordner No. for module set including isolated repeater: M83575
 Ordner No. for isolated repeater only: M84100

RS485-M bus (Meteo-40 = Master)

Connecting a ZephIR LiDAR device via RS485/Ethernet-adapter to Meteo-40

If the Ammonit Meteo-40 data logger is connected to the RS485 bus, **leave** the Jumper 120 Ω **open**.
Set Jumper V+ and Jumper V- (default setting on delivery). The RS485 bus is biased by the module (M83570).
 We recommend using the RS485/Ethernet adapter HD67510.



Your Configuration (Soldering Bridges)

Pin Port	wind vane First Class*	wind vane Compact	Pull-up	Pull-down
	HI, PU	LI, PU		PD
1				default
5				default
6				
7				
8			default	
9	default			
10	default			
11	default			
12			default	
16			default	

* see page 1 for further wind vanes

RS485	Jumpers		
	V+	V-	120R
Default Jumper Settings	X	X	
Jumper Settings			