Module for 10 Ports / RS485 2-wire / Configurable U_{OUT} M83572

The module M83572 provides:

- Stabilised and ripple-free voltage output $\boldsymbol{U_{OUT}}$ individually configurable according to customer requirements
- 10 individually configurable ports with pull-up and pull-down resistor with impedances that are adapted by Ammonit according to customer requirements. The following three configurations are possible for each port of the module:
  1. Pull-up resistor R1 (configurable according to customer requirements) to stabilised $\boldsymbol{U_{OUT}}$ or
  2. Pull-up resistor R2 (configurable according to customer requirements) to stabilised $\boldsymbol{U_{OUT}}$ or
  3. Pull-down resistor R3 (configurable according to customer requirements).
- One stabilised and ripple-free $\boldsymbol{U_{OUT}}$ output with active current limit (110 mA).
- One configurable bus-termination resistor (120 Ω) for two-wire RS485 bus setup (half duplex).

Proposed sensors for pull-down resistor

- Control switch
- Precipitation monitor (Thies)

Proposed devices for 14 V stabilised output

- EKO Pyranometers / Pyrheliometers (MS40 Series, MS60 Series, MS80 Series, MS57)
- Control switch, monitoring, status

Biasing and termination for half-duplex (HD) RS485

- RS485 bus termination (120 Ω) (switchable with jumpers)

Notes

- M83572 is derived from M83570. M83572 is individually configurable for special purposes according to customer requirements. Ammonit performs the adaptation of impedance values inhouse.
- In order to configure the output of the ports, soldering bridges inside the module must be set according to purpose.
- Each terminal comprises overvoltage protection.
- M83572 contains fuse protection (T0.8A, i.e., 800 mA time-lag).

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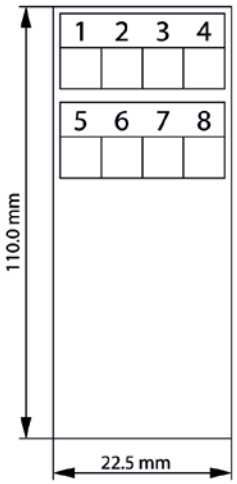
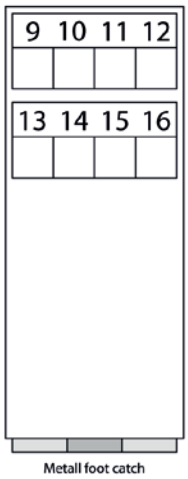
Pin Assignment



Pin 1: Port 1
Pin 2: GND
Pin 3: B+
Pin 4: A- } RS485
Pin 5: Port 5
Pin 6: Port 6
Pin 7: Port 7
Pin 8: Port 8



Pin 9: Port 9
Pin 10: Port 10
Pin 11: Port 11
Pin 12: Port 12
Pin 13: GND
Pin 14: Supply
Pin 15: U_{OUT} / 110 mA Output
Pin 16: Port 16

Electrical characteristics

Parameter	Pin	Min	Max
Supply voltage (DC)	14	U_{OUT} + 4 V	32 V
Output voltage (DC)	15	13.5 V	14.5 V
Output current (ϑ = 25 °C)		110 mA	130 mA
Operating temperature		-40 °C	+75 °C
Quiescent current	14	10	
RS485 Bus termination	3, 4		120 Ω
Fuse T0.8A (time lag, slow-blow): 5 x 20 mm			
Pull-up = 0 Ω	8, 9, 10, 11		

Note: Minimum supply voltage must be 4 volts higher than the configured output voltage $\boldsymbol{U_{OUT}}$.

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

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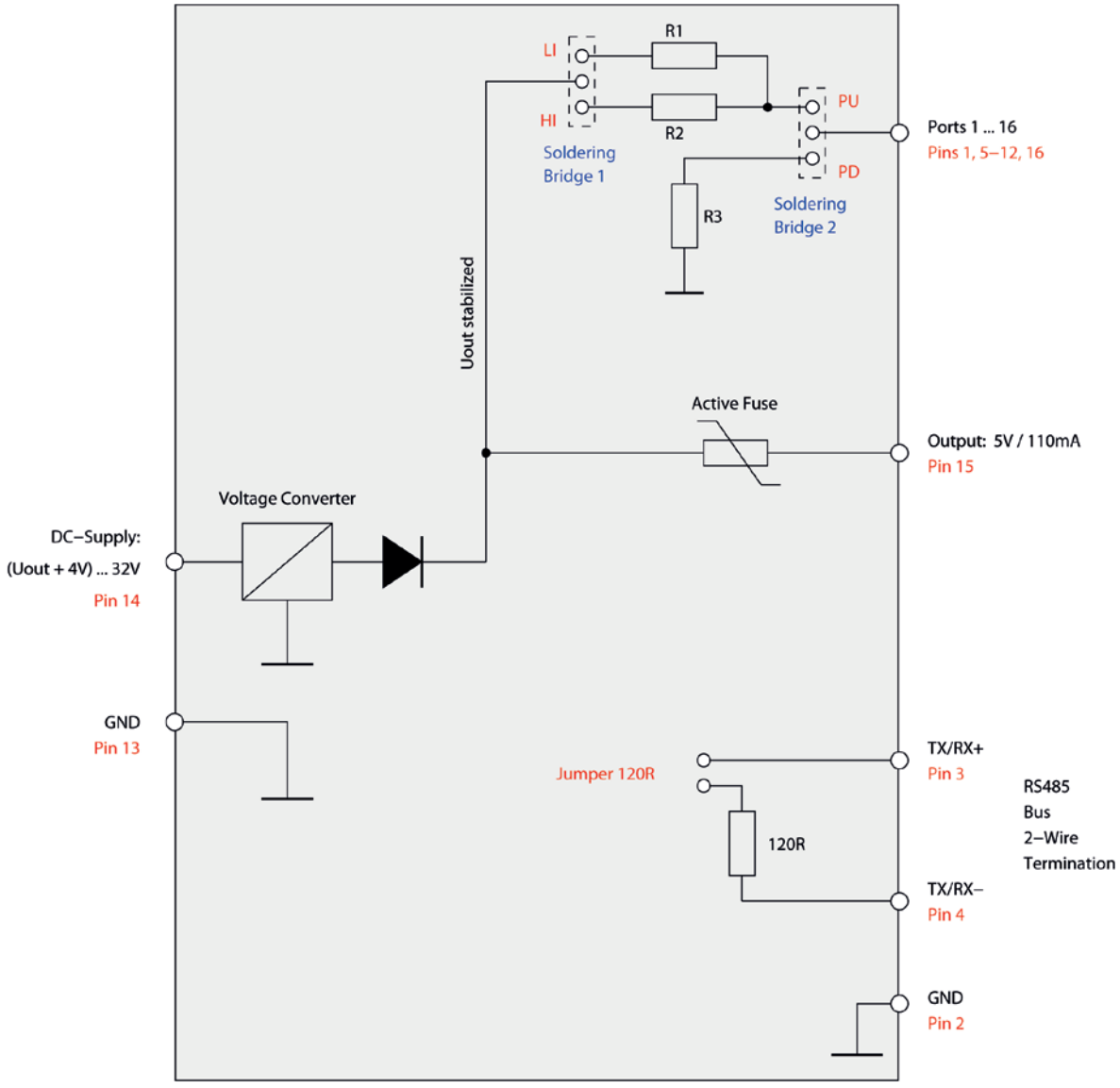
Principle of operation

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

- Ports 1 ... 16: Configurable outputs providing two different Pull-up resistors and one Pull-down resistor.
- RS485 2-wire termination and termination terminals.



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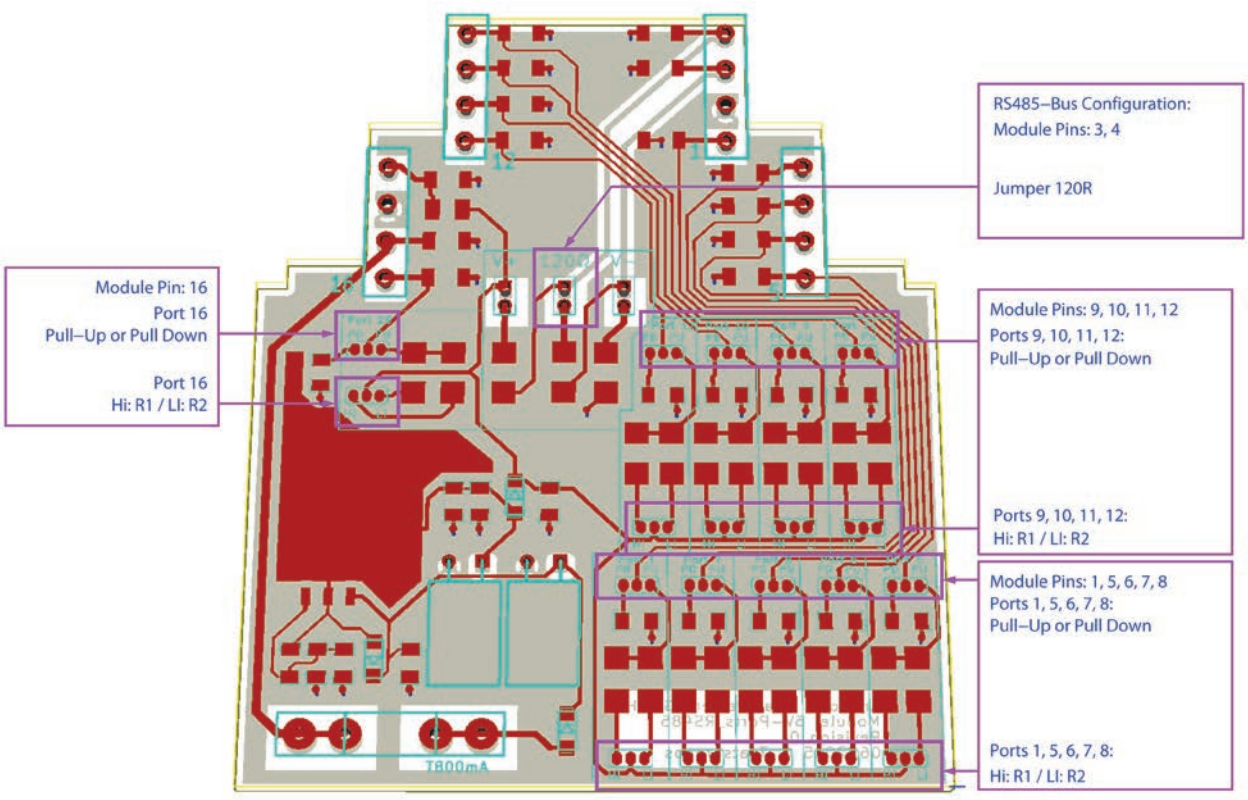
Port and RS485 termination configuration



Configuration of Port 1 ... 16

- Soldering bridge 1 (Pull-up configuration):
  Bridge between LI and centre-pad selects R1, bridge between HI and centre-pad selects R2.
- Soldering bridge 2 (Pull-up or pull-down configuration):
  Bridge between PU and centre-pad sets the corresponding port to Pull-up, bridge between PD and centre-pad sets the ports to Pull-down (i.e. R3 to Ground (GND)).

Configuration of RS485 bus

- To set the termination resistance (120 Ω), set the Jumper 120 Ω.

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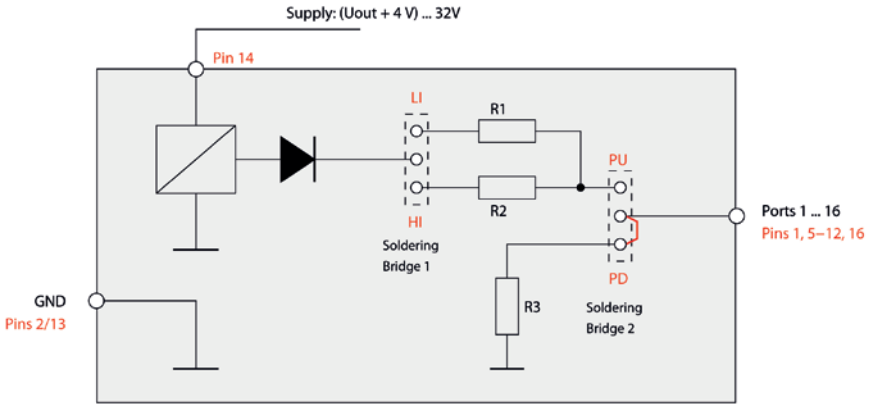
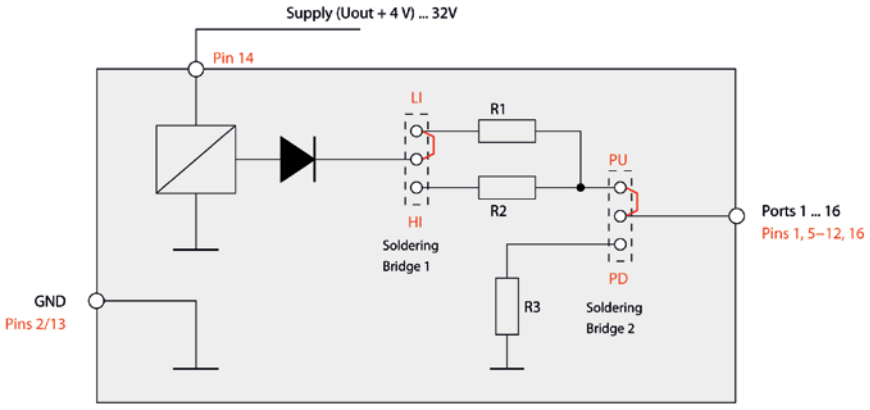
Configuration of Ports: Select R2 as Pull-up



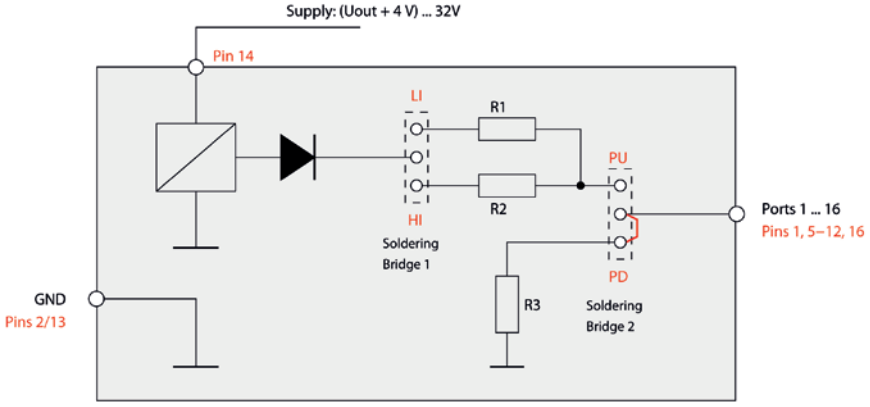
Setting of soldering bridges for **10mA**: Soldering bridge 1 set to HI, soldering bridge 2 set to PU.

Configuration of Ports: Select R2 as Pull-up



Setting the soldering bridges R1, soldering bridge 2 set to PU.

Configuration of Ports: Pull-down resistor R3



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

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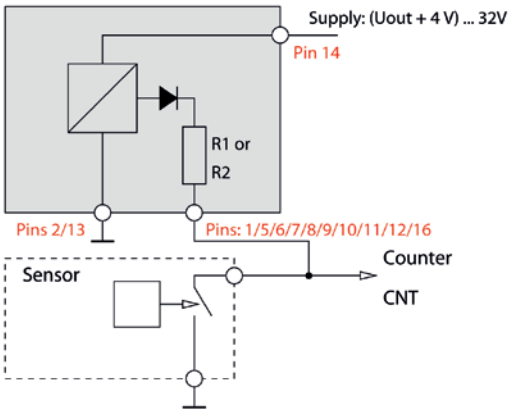
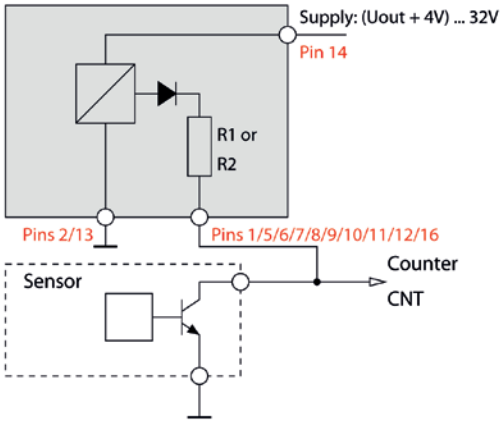
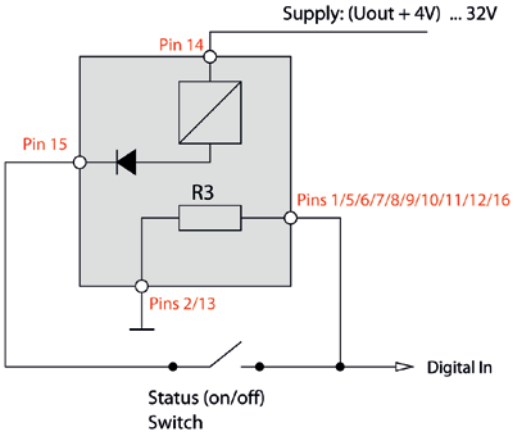
Counter input with pull-up resistor





Digital input / status input with pull-down resistor



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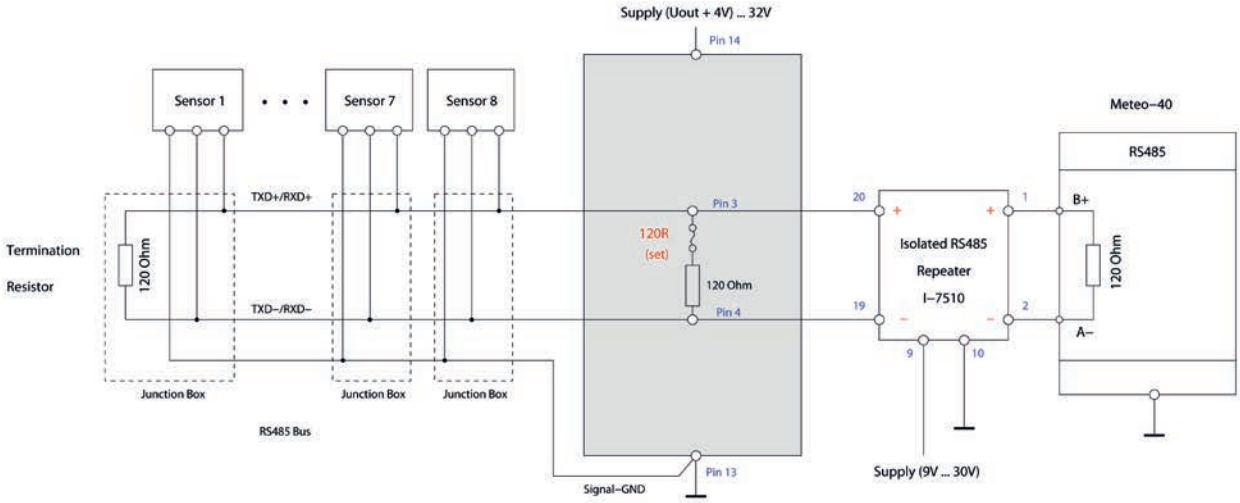
Connecting up to eight devices with isolated repeater to Meteo-40



If the Meteo-40 data logger is connected via isolated repeater to the RS485 bus, set the jumper 120R.

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Configuration

Output voltage	U_{OUT}=		
Configuration		**Pull-up**	**Pull-down**
	Port 1		
	Port 5		
	Port 6		
	Port 7		
	Port 8		
	Port 9		
	Port 10		
	Port 11		
	Port 12		
	Port 16		

Comment

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