Smart Dupline®
Weather Station
Type SHOWEAGPS

- **Brightness measurement with three separate sensors for east, south and west. Recognition of twilight/dawn with special filters**
- **Wind measurement: the wind strength measurement takes place electronically and thus noiselessly and reliably, even during hail, snow and sub-zero temperatures. Even turbulent air and anabatic winds in the vicinity of the weather station are recorded**
- **Temperature measurement**
- **Heated precipitation sensor (1.2 watts): no false reports as a result of fog or dew. Dries quickly after precipitation has stopped**
- **Integrated GPS receiver. Position (degree of longitude and latitude) and position of the sun (azimuth, elevation)**

Product Description

The SHOWEAGPS Weather Station measures temperature, wind speed and brightness (eastern, southern and western sun) and recognizes precipitation.
The direction of the sun (azimuth) as well as its height (elevation) are calculated and indicated, too.
Data are usually output after a request made by the Modbus master via a 2-wire RS485 connection.

Ordering Key

SH O WEA GPS

smart-house
Outdoor
Weather station
GPS receiver

Type Selection

Mounting	Colour	12 to 40 VDC (12 to 28 VAC)
On wall	White	**SHOWEAGPS**

Input Specifications

Temperature	
Heating rain sensor	Approx. 1.2 W
Measurement range	-40 to +80°C
Resolution	0.1°C
Accuracy	±1.5°C at -25 to +80°C
Wind	
Measurement range	0 to 35 m/s
Resolution	0.1 m/s
Accuracy	At ambient temperature -20 to +50°C: ±22% of the measurement value when incident flow is from 45 to 315° ±15% of the measurement value when incident flow is from 90 to 270° (Frontal incident flow corresponds to 180°)

Brightness	
Measurement range	0 to 99 000 lux
Resolution	1 lux at 0 to 120 lux 2 lux at 121 to 1 046 lux 63 lux at 1 047 to 52 363 lux 423 lux at 52 364 to 99 000 lux
Accuracy	±35%

Bus Specifications

Data output	RS485 2-wire
Protocol	Modbus RTU

Supply Specifications

Operating voltage	12 to 40 V DC (12 to 28 V AC)
Current	Max. 80 mA, residual ripple 10%

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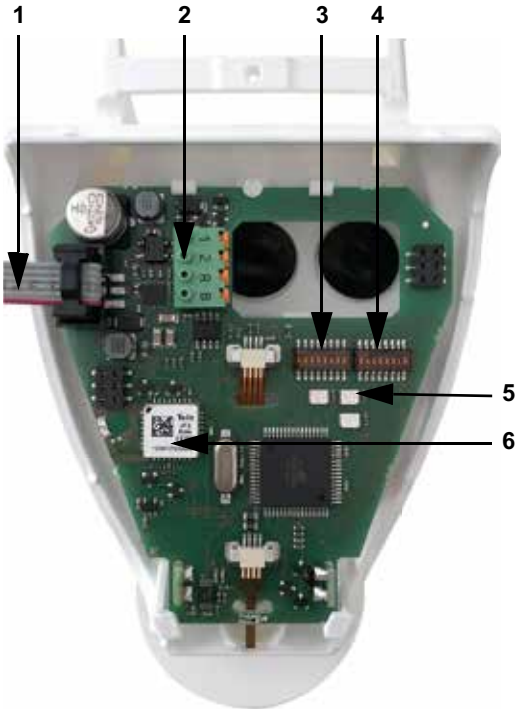
General Specifications

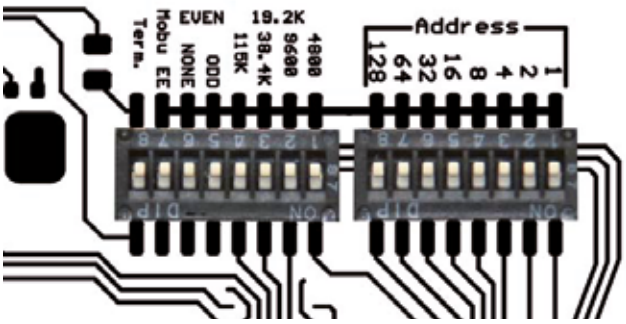
Environment	
Degree of protection	IP 44
Operating temperature	-30° to +50°C (-22° to 122°F)
Storage temperature	-30° to +70°C (-22° to 158°F)
Humidity (non-condensing)	5 to 95% RH
Connection	
Cable cross-section	Massive conductors of up to 0.8 mm²
Housing	
Dimensions (W × H × D)	approx. 96 × 77 × 118 mm
Material	Plastic
Colour	White / translucent
Weight	Approx. 160 g
CE Marking	Yes
EMC	EN 60730-1:2000-11 + A11:2002

Wiring Diagram



1) Connection to the rain sensor in the housing cover
2) Connecting plug, suitable for massive conductors of up to 0.8 mm²
   1 : 12..40 V DC (12..28 V AC);
   2 : GND;
   B : RS485+;
   A : RS485-
3) DIP switch for interface parameters (see detailed view)
4) DIP switch for slave address (see detailed view)
5) LED “Com”, “Error” and “Power”
   „Power“: operating voltage
   „Error“: sensor error or erroneous data
   „Com“: bus communication
6) GPS module

Serial Port Programming



If all DIP switches are in the OFF position (default setting), the following parameters are active:
Address: 1
Baud rate: 19,200
Parity: Even
Termination: Disabled

Setting of the slave’s address:
The slave address is set with the help of the 8-bit DIP switch “Address”. If all switches are in the OFF position, Address 1 is active. Address 0 is reserved for broadcast messages; addresses greater than 247 are not valid.

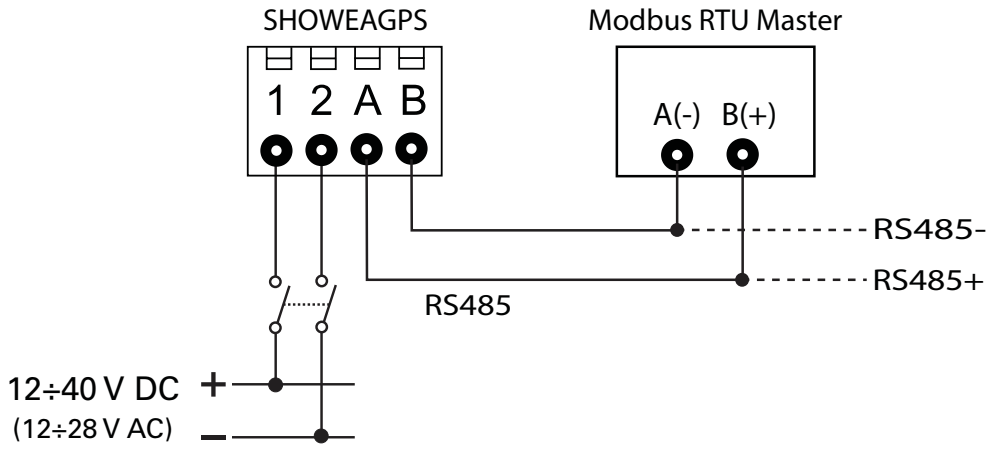
The coding of the address is binary. For the address 47, you must e.g. set the switches 1, 2, 3, 4 and 6 to ON.

Interface parameters:
The interface parameters are set with the help of the second 8-bit DIP switch. If the first 4 switches are in the OFF position, the transfer rate amounts to 19,200 bauds. If one of these switches is set to ON, the corresponding baud rate is applicable.

Parity: If the two switches “ODD” and “NONE” are set to OFF, the parity is EVEN. Only “ODD” or “NONE” activates the corresponding parity control.

Switch “Mobu EE”: no function.
Switch “Term.”: bus termination 124 ohms

Connection diagram



ATTENTION!
Make sure the connection is correct! The interface module is damaged if the voltage supply is connected to the wrong terminal.
- Connect the power supply to 1 and 2 only.
- Use the data connections A and B exclusively for Modbus.