

# Smart Dupline® Weather Station Type SHOWEAGPS

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- 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

On wall

### Colour

White

### 12 to 40 VDC (12 to 28 VAC)

SHOWEAGPS

## Input Specifications

### Temperature

Heating rain sensor  
Measurement range  
Resolution  
Accuracy

Approx. 1.2 W  
-40 to +80°C  
0.1°C  
±1.5°C at -25 to +80°C

### Wind

Measurement range  
Resolution  
Accuracy

0 to 35 m/s  
0.1 m/s  
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 corre-  
sponds to 180°)

### Brightness

Measurement range  
Resolution

0 to 99 000 lux  
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  
±35%

Accuracy

## 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

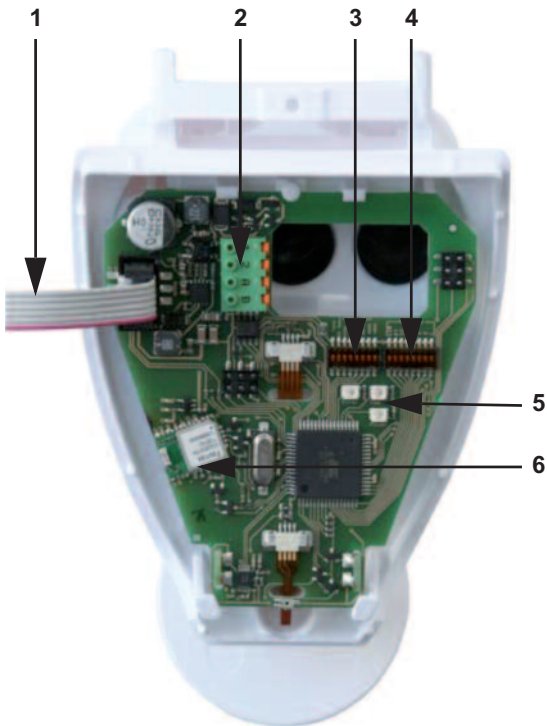
Max. 80 mA,  
residual ripple 10%



General Specifications

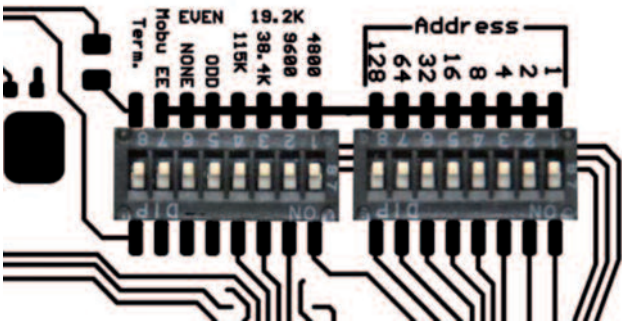
<b>Environment</b>		<b>Housing</b>	
Degree of protection	IP 44	Dimensions (W × H × D)	approx. 96 × 77 × 118 mm
Operating temperature	-30° to +50°C (-22° to 122°F)	Material	Plastic
Storage temperature	-30° to +70°C (-22° to 158°F)	Colour	White / translucent
Humidity (non-condensing)	5 to 95% RH	<b>Weight</b>	Approx. 160 g
<b>Connection</b>		<b>CE Marking</b>	Yes
Cable cross-section	Massive conductors of up to 0.8 mm²	<b>EMC</b>	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  
V+ : 24VDC;  
V- : 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

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