

Combination sensor

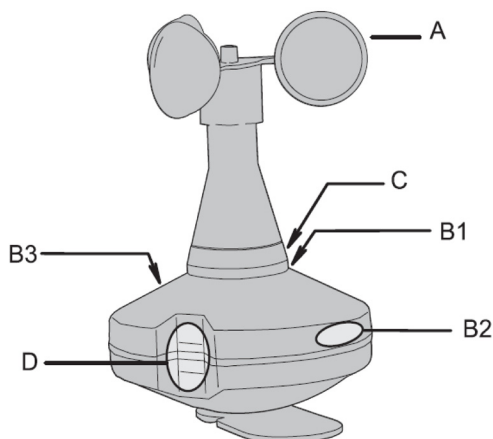
Order no.: 1025 00

Function

The combination sensor can measure wind speed, precipitation, brightness and twilight. Brightness can be measured separately for the cardinal points East, South and West. Position and orientation of the individual sensors see FIG. ①.

- A: Wind-wheel
B1...B3: Brightness sensors West, East, South
C: Twilight sensor
D: Precipitation sensor.

①



- The combination sensor can be directly connected to a weather station (Order No. 1010 00) which ensures further processing of the measured data and transmission to the bus in the form of switching or value telegrams.

- The combination sensor is equipped with a DCF77 receiver which can receive the legal German time (CET or CEST) and transmit the signals to the KNX/EIB bus (e.g. to synchronize KNX/EIB clocks)
- The internal heating of the combination sensor protects the electronic circuitry against dew and condensation in the specified temperature range. It does not protect against the formation of ice on the housing or on moving parts.
- For checking the function of the wind-wheel, the software of the weather station can effect a plausibility check of the wind signal. If the software detects signals that do not make sense, the system can move wind-sensitive fixtures (e.g. external blinds, awnings) into a wind-protected position. Unlogical signals are transmitted, for instance, when the wind-wheel is blocked due to icing.
- The combination sensor needs an external 24 V power supply, e.g. Order No. 1024 00.
- The other functions of the device depend on the software of the weather station and on the parameters programmed. Detailed information on this subject can be found in the corresponding product documentation.



Attention

Electrical equipment must be installed and fitted by qualified electricians only and in strict observance of the relevant accident prevention regulations.

Failure to observe any of the installation instructions may result in fire and other hazards.

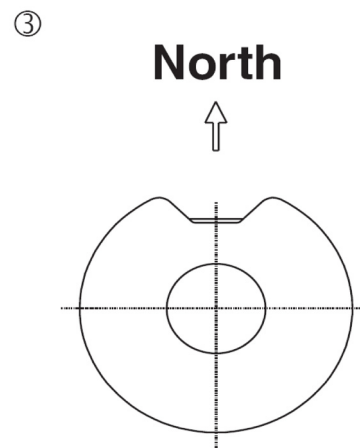
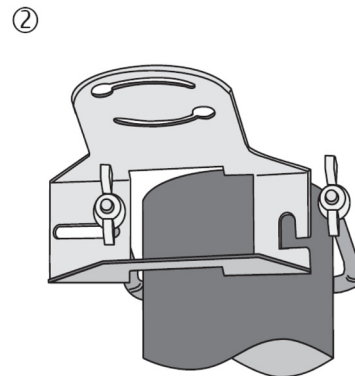
Installation

Important:

Check the place of installation for optimal reception of the DCF77 time signal. Reflexions can cause reception interference. Minimum distance from other electrical devices: 3 m.

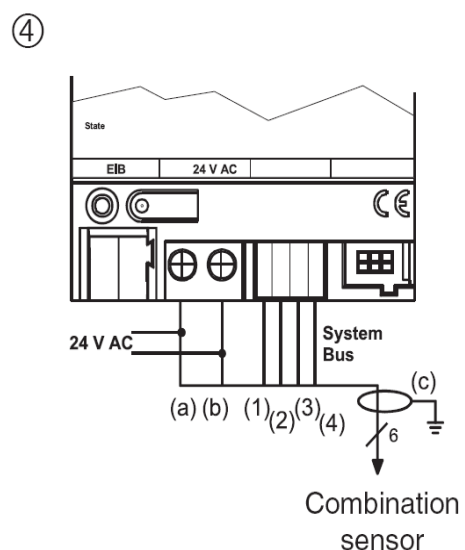
If no interference-free reception is possible, change the place of installation by a few meters until the combination sensor receives the time signal without interference (see chapter „Antenna orientation“).

- The device is fitted in its position of normal use shown in FIG. ①.
- For fitting on a tubular mast (Ø 35 ... 50 mm), the sensor is supplied with a stainless-steel mounting bracket. Fitting see FIG ②.
- The combination sensor must be installed unobstructed by obstacles in all directions.
- When the combination sensor is installed in front of a wall, a minimum spacing of 0.5 m must be respected to prevent incorrect measuring values due to negative influence on the sensors.
- To enable the brightness sensors to clearly determine the sun's actual position, the combination sensor must be aligned with the help of a compass in such a way that the precipitation window points to the North (see FIG. ②). In this case, the brightness sensors are correctly aligned with the cardinal points (FIG. ③).
- To ensure perfect wind speed measurements, the wind wheel must be able to turn freely. This can be checked visually at low wind speeds.
- To obtain correct measurements, the housing should be as free from dust deposits as possible. In operation, the surfaces of the housing are cleaned automatically by the falling rain.



Connection

- The combination sensor is provided with a 10 m-long connecting cable. The cable may be extended up to 50 m max. (recommended cable: LiYCY 6 x 0.25 mm², shielded).
- Connect the combination sensor to the weather station (FIG. ④):
 - (a) pink: supply AC/DC 24 V, 600 mA
 - (b) grey: supply ground
 - (c) yellow-green: shield
 - (1) green: system voltage DC 24 V, >15 mA
 - (2) yellow: data
 - (3) white: sync.
 - (4) brown: system ground
- If possible, connect the shield of the combination sensor (yellow-green, (c)) to earth potential (not to GND!). If this is not feasible, the shield must remain unconnected. When the shield is connected with GND, trouble-free operation of the device cannot be guaranteed.

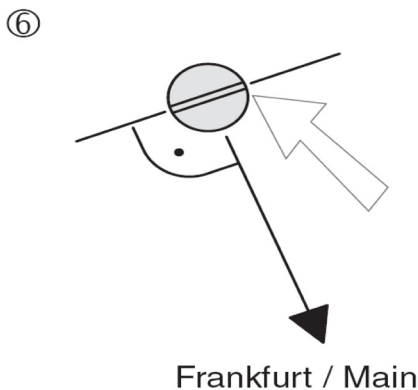
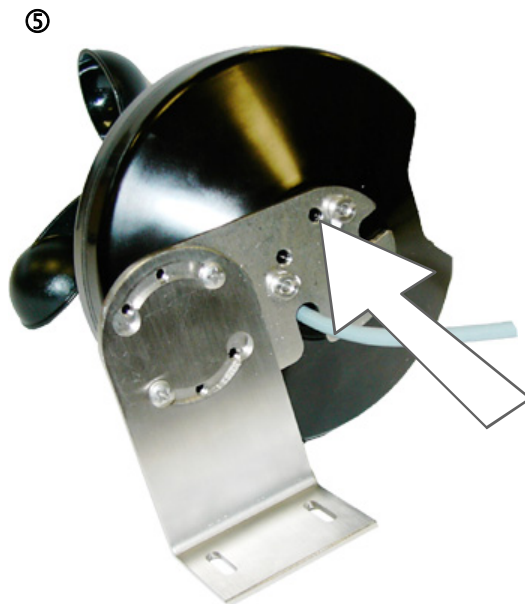


Antenna orientation

For optimal reception of the DCF77 time signal, the built-in receiving antenna must be properly aligned. The antenna can be adjusted with a screwdriver from the underside of the combination sensor (FIG. ⑤) and rotated by approx. 90°.

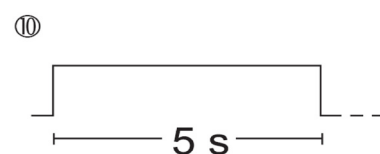
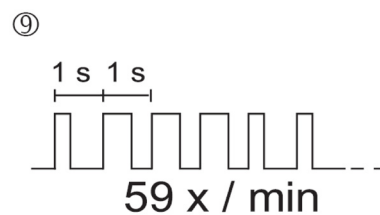
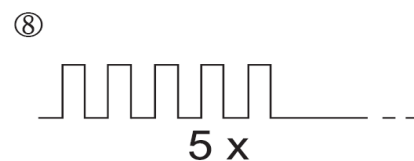
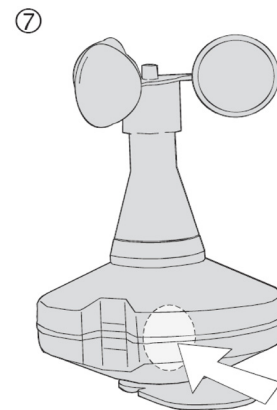
...without electrical connection

- Turn the antenna in such a way that the slot of the adjusting screw is perpendicular to an arrow pointing in the direction of Frankfurt/Main (D) (FIG. ⑥).



...with electrical connection

- Hold the magnet supplied with the device against the integrated Reed contact (Fig. ⑦) so that 5 brief tones will be heard (FIG. ⑧). Hold the magnet in this position.
- The combination sensor indicates reception of the time signal by brief tones (at 1-second intervals; interruption after each full minute) (FIG. ⑨). **Important:** The quality of the time signal is independent of tone length.
- Turn the receiving antenna to the correct direction.
- The antenna is pointing in the right direction when the complete time signal is received.
- Select another fitting location, if no signal or only part of the signal is received.
- Remove the magnet from the sensor. The combination sensor confirms the removal with a 5 s-long tone (FIG. ⑩).



Specifications

Power supply

Sensor unit (incl. heating):	24 V AC/DC \pm 15 %, 50/60 Hz
Max. current consumption:	600 mA
Power consumption:	14.4 W max. (sensors and heating)
Weather station current loading:	max. 28 mA

Connection

Connecting cable:	LiYCY, 6 x 0.25 mm ² , shielded
Length:	10 m, max. 50 m

Ambient conditions

Ambient temperature:	-40 °C ... +60 °C, no icing *)
Storage/transport temperature:	-40 °C ... +60 °C
Humidity:	outside the building

Enclosure

Protective system:	IP 55 in working position as per EN 60529
Protection class:	III
Dimensions (diameter x height):	130 x approx. 200 mm
Type of installation:	stainless steel bracket on mast or wall
Weight:	approx. 330 g

Sensor signals

Wind velocity	
Measuring range:	1 ... 40 m/s
Accuracy:	\leq 0.5 m/s, -20 °C ... +60 °C
Precipitation	
Measuring range:	precipitation yes/no fine drizzle
Sensitivity:	approx. 3 precipitation particles
Switch-on delay:	
Switch-off delay:	parameterizable
Brightness	
Measuring range:	approx. 0 ... 110 kilolux
Spectral range:	approx. 700 ... 1050 nm
Resolution:	10 bits
Cardinal points:	East, South, West
Twilight	
Measuring range:	approx. 0 ... 674 lux
Resolution:	10 bit

- *) „no icing“ means no frozen rain on
a) moving parts or sensors
b) light-sensitive elements or sensors

Acceptance of guarantee

We accept the guarantee in accordance with the corresponding legal provisions.

Please return the unit postage paid to our central service department giving a brief description of the fault:

Gira
Giersiepen GmbH & Co. KG
Service Center
Dahlienstrasse 12
D-42477 Radevormwald

Gira
Giersiepen GmbH & Co. KG
Postfach 1220
D-42461 Radevormwald

Telefon: +49 / 21 95 / 602 - 0
Telefax: +49 / 21 95 / 602 - 339
Internet: www.gira.de