



## Wind Sensors

### Wind measurement done by state-of-the-art technology

The measurement of the wind speed and wind direction are regarded as elemental meteorological parameters. As a producer of automatic weather stations, company SOMMER has gathered a vast experience in the wind measurement and cooperates with wind sensor producers of worldwide leading format.

#### Wind Monitor 05103

The wind sensor 05103 is a very robust four-leaves-propeller-anemometer for the usage under extreme conditions (e.g. in high alpine environment) and with a very low power consumption. For even harsher conditions, it can be equipped optionally with extra strong bearings as well as a special coating to prevent icing. At the wind speed sensor the propeller rotates and creates an induced voltage with a frequency, which is directly proportional to the wind speed. The wind direction sensor is a robust and very light weighted wind vane with a very high accuracy, even under varying wind conditions. The wind direction is registered by a precise potentiometer, which is installed in a sealed casing. With the application of a marker ring, the wind monitor can be de- and reinstalled without loss of northern direction.

#### Product variations

- Wind sensor 05103 (white) with output of wind speed and direction as frequency and potentiometer
- Wind sensor 05103 (black) - heavy duty - with reinforced bearing and special black coating against icing
- Wind sensor 05103L with Linedriver and output of wind speed and direction as 4 ... 20 mA signal

#### Technical details

- **Measuring element/ principle** propeller
- **Measuring range** 0 ... 100 m/s and 0 ... 360 degrees
- **Accuracy**  $\pm 0.3$  m/s and  $\pm 3$  degrees
- **Start speed** 1.0 m/s
- **Operation range** -50 °C ... +50 °C
- **Output** frequency, potentiometer or as 4 ... 20 mA
- **Voltage supply** 15 VDC
- **Consumption** max. 2 mA

- **Protection** IP 65
- **Dimensions** propeller ø 180 mm; length 550 mm
- **Installation** attachment on mast (ø 34 mm)

## Wind Sensor 263

Combined, light and compact anemometer to measure wind speed and wind direction.

- Light and compact design of high quality and reliability
- Cup anemometer made from CFK secures highly sensible response (CFK = carbon fibre reinforced plastic)
- Wind vane mechanical damping
- Electronics saved with rough and fine protection against overvoltage

### Technical details

- **Measuring range** 0 ... 60 m/s and 0 ... 360 degrees
- **Measuring accuracy** better than +/- 0.5 m/s for wind speed under 5 m/s and + /- 10% of measuring value over 5 m/s
- **Response speed anemometer** 0.3 m/s; wind vane: 0.5 m/s at 30 degrees deflection
- **Voltage supply** 11 ... 30 VDC.
- **Operating temperature** -50 °C ... +70 °C
- **Dimensions and weight** diameter anemometer 120 mm, total height 650 mm, weight 1.5 kg
- **Options** heating with thermostat, power 30 VA at 24 VAC

## Ultrasonic Anemometer 2D

The ultrasonic anemometer 2D is used for the two dimensional recording of horizontal components of wind speed and wind direction as well as the virtual-temperature. Due to the high measuring rate the device is qualified for inertia free measuring of wind squalls and peaks.

The accuracy of measuring the air temperature (virtual-temperature) surpasses the classical systems, where a temperature sensor is used in a weather and radiation shelter. The measuring results are transmitted via analogue signals or as data telegram over a serial interface. Optionally there is the possibility that the sensor as well as the device body is heated at critical surrounding temperatures automatically. Therefore, the operation is secured also at snowfall and ice rain conditions. Furthermore, icing of the sensor is prevented. There is practically no maintenance needed due to the non-contact ultrasonic measurement technique.

### Technical details

- **Measuring range** 0 ... 65 m/s and 0 ... 360 degrees
- **Accuracy wind**  $\pm 0,1$  m/s rms at 0 ... 5 m/s respectively 2 %  $\pm 0.1$  m/s rms from measurement > 5 m/s
- **Accuracy direction**  $\pm 1$  degree
- **Resolution wind speed /direction** 0.1 m/s resp.  $\pm 1^\circ$
- **Power supply** 12 ... 24V AC/DC,  $\pm 10\%$ ; ca. 3 VA
- **Operating temperature** -40 ... +70 °C
- **Output analogue** (only wind speed and direction) 0/4 ... 20 mA, 12 bit resolution
- **Output digital** momentary values, direction vectorial, status (heating, measuring section-failure, section temperatures)
- **Option** supply heating 24V AC/DC  $\pm 15$  %; max. 70 VA
- **Weight** 2.5 kg