Cobra SMARTsense Rotary Motion

12918-00
12918-01
12918-02

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Fig. 1: 12918-00 Cobra SMARTsense Rotary Motion

Operating instructions

CE The unit complies with the applicable EC-guidelines

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1 SAFETY PRECAUTIONS

Caution!

- Carefully read these operating instructions completely before operating this instrument. This is necessary to avoid damage to it, as well as for user-safety.
- Only use the instrument for the purpose for which it was designed.
- Only use the instrument in dry rooms in which there is no risk of explosion.
- Protect the instrument from dust, moisture and vapours. Use a slightly moist lint-free cloth to clean the instrument. Do not use aggressive cleaning agents or solvents.
- Take care that no liquid penetrates in through the housing openings, as such penetration would result in damage to Sensor.
- Do not open the unit.

2 PURPOSE AND CHARACTERISTICS

The sensor is used to determine the angle of rotation, rotational speed and angular acceleration as well as to transmit the measured values via Bluetooth or USB to any end devices such as tablets, smartphones etc.

3 FUNCTIONAL AND OPERATING ELEMENTS

3.1 Operating elements

The sensor has a power button and several LEDs, the function of which is explained in the following.

On-button

To switch the sensor on and off in Bluetooth mode, the power button must be pressed for longer than 3s. If the sensor is to be connected via USB, it is not necessary to press the power button.

Bluetooth-LED

Flashing red	Not connected
Flashing green	Connected

Battery charge LED

Illuminated red	Active charging process
Illuminated green	Charging process completed

Work-Indicator-LED

Flashing blue	Working process

3.2 USB port

The battery, which is permanently installed in the sensor, is charged via the type C USB port. Furthermore, communication with a computer takes place via this interface.

4 NOTES ON OPERATION

This device fulfils all of the technical requirements that are compiled in current EC guidelines. The characteristics of this product qualify it for the CE mark.

The individual connecting leads are each not to be longer than 2 m.

The instrument can be so influenced by electrostatic charges and other electromagnetic phenomena (HF, bursts, indirect lightning discharges) that it no longer works within the given specifications. Carry out the following measures to reduce or eliminate the effect of such disturbance: Ensure potential equalization at the PC (especially with Laptops). Use screening. Do not operate high frequency emitters (e.g. radio equipment or mobile radiotelephones) in the immediate vicinity. When a total failure of the instrument occurs, unplug it and plug it back in again for a reset.

5 HANDLING

This section describes the start-up of the sensor and the recording of measurement data. Please read this section thoroughly in order to avoid failures or operating errors.

5.1 Charging process

Use a USB-C cable to connect the sensor to a computer or USB charger (not included).

During the charging process, the battery charge LED lights up red. When the charging process is complete, the battery charge LED lights up green. The charging time for a completely discharged battery is 3 hours maximum.

Disconnect the charger at the latest four hours after the completion of the charging process. Otherwise, the service life of the battery may be negatively affected.

5.2 Start-up

Switch on the sensor by pressing the power button for more than 3s. Now the Bluetooth LED flashes red. Start the software and select the sensor.

If the sensor is to be used via the USB interface, it does not need to be switched on. The sensor is connected directly to the end device using the supplied USB cable.

There is a 9-digit code on the back of the sensor (Fig.2). The last 4 digits of the code are displayed as the sensor name in the software (Fig.3). This enables the precise assignment of the sensors within the software.

Fig. 2

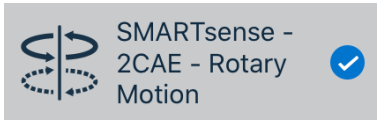

Fig. 3

Selection of the sensor via the Bluetooth interface

Make sure that the Bluetooth interface is activated on the terminal device (PC/Tablet/Smartphone) and that the software is allowed to access the interface.

After the sensor has been selected in the software, the LED flashes green to indicate that the connection has been established correctly. After the sensor has been coupled with the software, the sensor is no longer visible to other users in the software, and therefore can no longer be selected.

If the sensor is switched on and not connected, it switches off automatically after 5 minutes.

Selection of the sensor via the USB interface

For this purpose the sensor must be plugged into the USB port of the end device. It is not necessary to switch on the sensor. The sensor is automatically recognized and displayed. It can be selected and connected directly.

5.3 Recording of measurement data

Measuring principle:

An incremental encoder determines the current rotational position. When a measurement is started, the velocity and acceleration are calculated from the rotational position over a time interval.

Measurement:

Start recording at Software. The position is set to 0 and the measured values are transmitted at a fixed time interval. Dur-

ing the measurement the Bluetooth LED lights up permanently.

6 TECHNICAL DATA

Operating temperature range: 5 - 40°C
Rel. humidity < 80%

Angle	
Measuring range	0… ∞ °
Resolution	0.125 °
Angular velocity	
Measuring range	±10000 °/s
Resolution	1.2 °/s
Angular acceleration	
Measuring range	±100000 °/s²
Resolution	12 °/s²

Max. date rate	100 Hz
Battery capacity	1000 mAh
Max. wireless range (open field)	30 m
Dimensions (length x width x height)	110x 47 x 69 mm
Weight	161 g

7 SCOPE OF DELIVERY

The scope of delivery 12918-01 includes:

- Cobra SMARTsense Rotary Motion
- Knurled screw
- Step wheel
- Screw for fixing the step wheel
- USB connecting cable type C
- Operating instructions

The scope of delivery 12918-02 includes:

- Holder with roller for screwing to the sensor
- bracket with motor for screwing to the sensor
- Dumbbell bar with two weights
- Three different discs as inertial bodies
- Three slotted weights (2x 50g, 1x 100g)
- Two slotted weight plates
- Tying thread
- terminal adapter
- miscellaneous screws

The scope of delivery 12918-00 includes:
Contents of 12918-01 and 12918-02

8 ACCESSORIES

The following accessories are available

• Cobra SMARTlink	12999-99
• USB-charger	07934-99
• USB connecting cable type C	07935-00
• USB-Bluetooth-Adapter	07936-00
• Software measureLAB	14580-61

- Free measureApp available from supplier portals

iOS **Android** **Windows**

9 CONFORMITY

PHYWE Systeme GmbH & Co.KG hereby declares that the radio system type 12918-00 complies with the 2014/53/EU directive. The complete text of the EC Declaration of Conformity is available at the following Internet address:
www.phywe.com/en/ec-declaration

10 DISPOSAL

The packaging mainly consists of environmentally-friendly materials that should be returned to the local recycling stations.

Do not dispose of this product with normal household waste. If this unit needs to be disposed of, please return it to the address that is stated below for proper disposal

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