

CANEO series5x

Original Operating Instructions



Table of contents

1	Imprint	3
2	Preface.....	4
3	Legal notice	4
4	General information	5
4.1	Used notices and symbols	5
4.2	Related Documents	5
5	Security	6
5.1	General safety.....	6
5.2	Intended use	6
5.3	Reasonably foreseeable misuse	6
5.4	Personnel qualifications	7
6	Product description.....	7
6.1	Product components.....	7
6.2	Product variants	8
7	Mounting	9
8	Installation	9
9	Commissioning.....	10
10	Operation	10
11	Maintenance.....	11
12	Disassembly	11
13	Disposal	11
14	Technical data	12
14.1	Connection options.....	13
14.2	Wiring diagram	13
14.3	Drilling pattern	14
14.4	Dimensional drawing	14

1 Imprint

This user manual was written and published by CAPTRON Electronic GmbH. The most current version of this user manual can be found on our website.

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CANEO series5x, Version 1.0

2 Preface

This operating instruction is intended for technicians, installers, and operators and contains all the necessary information for the safe and proper use of the product.

Carefully reading and following this operating instruction is essential for safe operation and for ensuring the product is used as intended.

This operating instruction must be retained for future use and kept available throughout the product's entire service life.

3 Legal notice

The information contained in this document regarding sensors, SENSORbuttons, devices, applications, and software is provided for informational purposes only and may be superseded by updates at any time. It is your responsibility to ensure that your applications comply with your specifications.

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4 General information

4.1 Used notices and symbols

Warnings regarding personal injury and property damage are designed according to the SAFE principle and include information on the nature and source of the hazard, possible consequences, and how to avoid or mitigate the risk. The following hazard classifications apply to the warnings:

DANGER



DANGER indicates a hazardous situation; failure to heed this warning will result in death or serious injury. The symbol preceding the warning graphically represents the nature and source of the hazard.

WARNING



"Warning" indicates a dangerous situation; failure to heed this warning may result in death or serious injury. The symbol preceding the warning message graphically represents the type and source of the hazard.

CAUTION



Caution indicates a dangerous situation; failure to observe this warning may result in injury. The symbol preceding the warning message graphically represents the type and source of the hazard.

NOTE

"Note" indicates a situation; failure to observe this note may result in property damage and impair the product's function.

TIP

A "Tip" provides additional and useful information on how to use the product.

Symbol/Font	Meaning
▶	Avoiding and preventing the hazard described in the warning
▶	Instructions are listed in chronological order
▪	Bulleted list
✓	Result
Software	Fields, tabs, system commands, and buttons in the software are displayed in this font

4.2 Related Documents

Additional documents and data are available via the QR code printed on the product packaging label and at www.captron.com.

5 Security

5.1 General safety

This chapter contains basic safety instructions for using the product.

Warnings are indicated by symbols and signal words. The meaning of the symbols and signal words used is explained in [Chapter 4.1, "Used Notices and Symbols."](#)

- ▶ It is essential to follow all safety and warning instructions.
- ▶ Use the product only if it is in perfect working order.
- ▶ Modifications or tampering are not permitted.

WARNING

Electric shock due to improper work on electrical systems! Serious injury or even death.



- ▶ Disconnect electrical systems from the power supply before performing any work and secure them against being switched back on.
 - ▶ All work on electrical systems or equipment must be performed only by qualified electricians in accordance with local and national regulations and standards.
 - ▶ Wear personal protective equipment (PPE).
-

5.2 Intended use

The SENSORbutton was developed for industrial use as a control and communication device in indoor environments.

The SENSORbutton is not designed as a safety component and must not be used to implement safety functions.

Responsibility for the conformity of the complete machine with applicable legal requirements lies with the machine manufacturer.

Proper use of the SENSORbutton requires compliance with the values specified in [Chapter 14, "Technical Data,"](#) as well as the conditions listed below:

- ▶ Connect only to a limited-power source in accordance with DIN EN IEC 60757 or to a power supply unit in accordance with NEC Class 2.
- ▶ Limit the source current to 4 A at maximum operating voltage.

5.3 Reasonably foreseeable misuse

Any use that deviates from or exceeds the specifications in [Chapter 5.2, "Intended Use,"](#) is considered improper.

The following, in particular, are considered reasonably foreseeable misuse:

- use in a potentially explosive atmosphere
- use as a safety component within the meaning of the Machinery Directive 2006/42/EC or the Machinery Regulation (EU) 2023/1230

5.4 Personnel qualifications

Only a qualified electrician may work on electrical systems or equipment. The operator is responsible for the safety of the system.

A qualified electrician is a person who, through their professional training, experience, and knowledge of the relevant regulations, is able to assess risks and identify potential hazards arising from their own work.

6 Product description

The SENSORbutton is operated via a capacitive sensor surface. Activation is triggered by pressureless contact and without mechanical movement of the sensor's button element.

Depending on the variant, the SENSORbutton CANEO series5x features a five-digit 16-segment LED display or a symbol for indicating states, values, or functions; [see Chapter 6.2, "Product Variants."](#)

The SENSORtaster as shipped may include options that differ from those shown in this operating manual. This does not affect the intended function of the device.

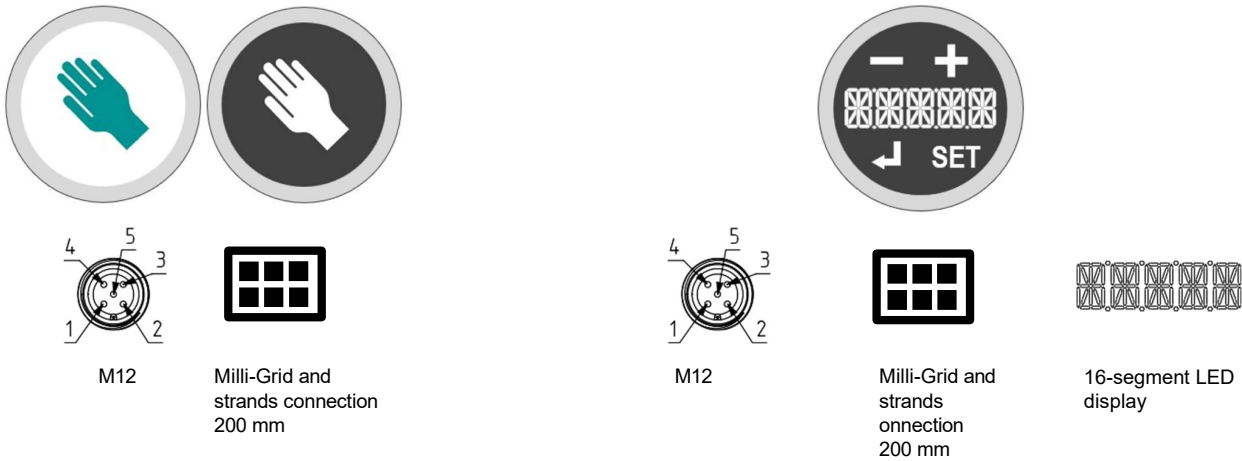
6.1 Product components

- A SENSORbutton
- B Knurled nut
- C Flat gasket (installed)
- D M12 connector
- E Design ring



6.2 Product variants

CANEO series5x



Variants	Touch	Touch Display	Duo-Touch	Duo-Touch Display	Multi-Touch		Multi-Touch Display	
Display								
Touch Areas	1	1	2	2	3	4	3	4
Symbol Areas	1	2	2	2	3	4	3	4
Symbol background color	white / black	black	white / black	black	white / black	white / black	black	black

7 Mounting

NOTE

Property damage due to improper installation or mechanical stress on the SENSORbutton! Damage to the device.

- ▶ Install the SENSORbutton with the power disconnected.
- ▶ Follow the installation instructions.
- ▶ Do not mechanically overload the SENSORbutton.

TIP

Before installation, see the illustration in Chapter 6.1, "Product Components"

Prerequisite:

- The mounting surface must be level and clean.
 - ▶ Determine the desired position of the SENSORbutton and drill the hole according to the drilling template.
 - ▶ Combine SENSORbutton (A) with Designring (E).
 - ▶ Insert the SENSORbutton (A) into the prepared hole and screw on the knurled nut (B).
 - ▶ Align the SENSORbutton (A) and tighten the knurled nut (B) at a maximum of 1.5 Nm.
 - ▶ Connect the SENSORbutton (A) electrically to the terminal (D) according to the wiring diagram.
- ✓ The SENSORbutton is installed.

8 Installation

⚠ WARNING

Electric shock due to improper work on electrical systems! Serious injury or even death.



- ▶ Disconnect electrical systems from the power supply before performing any work and secure them against being switched back on.
- ▶ Have all work on electrical systems or equipment performed only by qualified electricians in accordance with local and national regulations and standards.
- ▶ Wear personal protective equipment (PPE).

Prerequisites:

- The system has been de-energized.
- The wiring diagram is available.
- ▶ Connect the connection cables to the SENSORbutton according to [Chapter 14.2, "Wiring Diagram."](#)
- ▶ Make the plug connections or tighten the terminals.
- ✓ The electrical connection has been made correctly.
- ▶ Turn on the power supply.
- ✓ The SENSORbutton is ready for operation.

9 Commissioning

NOTE

Property damage due to improper commissioning! Malfunctions of the SENSORbutton or the system.

- ▶ Have commissioning performed only by qualified personnel.
 - ▶ Follow the manufacturer's instructions.
 - ▶ Check the installation before commissioning.
 - ▶ Perform a supervised functional test.
-

Prerequisites:

- The electrical installation has been completed correctly.
- Power is supplied.
- ▶ Turn on the SENSORbutton.
- ▶ Briefly touch the sensor surface.
- ✓ The SENSORbutton responds reliably to touch.
- ▶ Check the switching behavior at the output, e.g., signal or indicator.
- ✓ The switching signal is output correctly.

10 Operation

NOTE

Property damage due to improper or unintentional operation of the SENSORbutton! Malfunctions or unintentional switching of the system.

- ▶ Operate the SENSORbutton only as intended.
 - ▶ Touch the sensor surface precisely.
 - ▶ Keep the sensor surface clean and free of debris.
-

Prerequisite:

- The SENSORbutton is ready for operation.
- ▶ Touch the sensor surface of the SENSORbutton.
- ▶ Check for a switching response or display.
- ✓ The switching operation is performed reliably.
- ✓ Downstream components are controlled correctly.

11 Maintenance

Maintenance tasks

NOTE

Solvent damage to materials!

Solvents in cleaning agents can corrode the plastic of the SENSORbutton.

- ▶ Clean the surface of the SENSORbutton with a neutral cleaner or a damp microfiber cloth.

The following maintenance tasks must be performed at the specified intervals:

Maintenance Task	As needed	Annually
Clean the button surface	X	
Check cables for damage and secure fit		X
Check screw connections to ensure they are tight		X

12 Disassembly

- ▶ De-energize electrical systems before work begins and secure them against accidental re-energization.
- ▶ Disconnect the electrical connection and remove the knurled nut.

13 Disposal

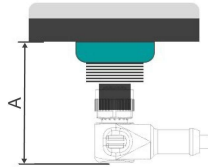
- ▶ Sort electrical and electronic components of various types for recycling.
- ▶ Comply fully with all applicable local and national laws and regulations.

14 Technical data

CANEO series5x		
Operating voltage	— — — 24 V DC (10 to 32 V)	
Load current	Max. 200 mA	
Output	PNP/NPN, NO/NC, push-pull (configurable)	
Output signal duration	300 ms (configurable)	
Reverse polarity protection for all cables/wires	Yes	
Short-circuit and overload protection	Yes	
Voltage drop	Max. 2.5 V at 200 mA load current	
Current consumption at 24 V (no load)	Max. 150 mA	
Operating temperature	-30 to 65 °C (-22 to 149 °F)	
IP rating	Front	IP6K9K (max. surface roughness of the mounting surface < 0.1 mm)
	Rear	M12, max. IP68 (depending on the connection cable)
		Stranded wires IP20
Protection class IK	IK07	
Material	Front	Polycarbonate (PC) and thermoplastic polyurethane (TPU)
	Rear	Polyamide (PA) and stainless steel (optional)
Communication Interface	IO-Link Specification V1.1	
Control voltage range E1/E2	ON	≥ 80% UV+
	OFF	≤ 20% UV+
LED ring	32 RGB LEDs	
Display	88 RGB LEDs, 5 digits, 16 segments per digit RGB LEDs with 4 + 4 decimal points (top/bottom) for 180° rotation	
Measurement principle	Capacitive	
Actuation type	Touch	
Feedback	LEDs, vibration (optional)	
Actuation force	No actuation force required	
Max. altitude	2,000 m above sea level	
Relative humidity	Max. 95%, non-condensing	
Standards/Certifications	CE, UKCA, DIN EN 60947-5-1	

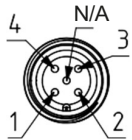
14.1 Connection options

M12, 5-pin

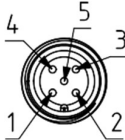


A 47 mm

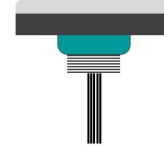
M12 connector, 4-pin



M12 connector, 5-pin



Milli-Grid and strands, 5-pin

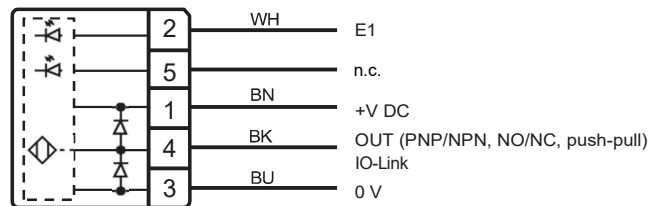


Strands

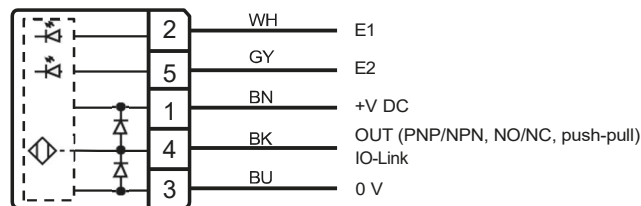
- 200 mm [7.87 inches] Individual wires with wire end ferrules
- Wire end ferrules with plastic collars DIN 46228
- Wire cross-section of strands: 0.34 mm² [AWG 22]

14.2 Wiring diagram

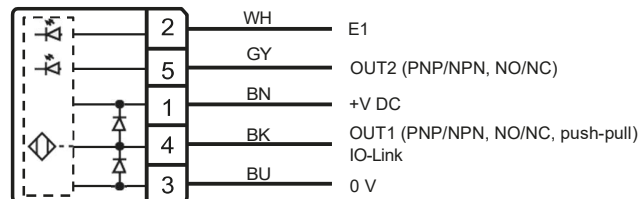
4-pin (IO-Link / 1 discrete output / 1 input)



5-pin (IO-Link / 1 discrete output / 2 inputs)



5-pin (IO-Link / 2 discrete outputs / 1 input)

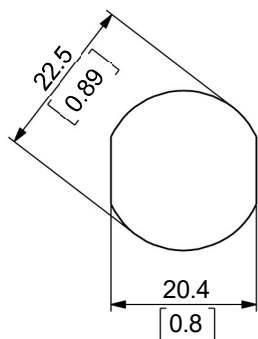


14.3 Drilling pattern

TIP

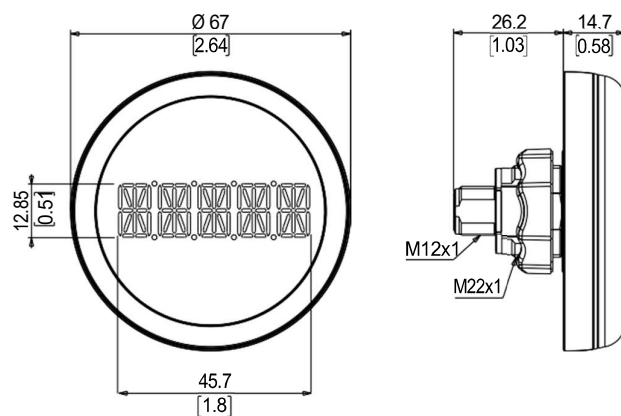
The drawings use both metric and imperial dimensions. Imperial dimensions are marked with [].

With the hole shown, the SENSORbutton is secured against rotation.



14.4 Dimensional drawing

M12 connector



Milli-Grid and strands

