

Manual

RC10-E2-C-V1

RC20-E2-C-V1



CE

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Used symbols



This symbol warns the user of potential danger. Nonobservance may lead to personal injury or death and/or damage to property.



This symbol warns the user of potential device failure. Nonobservance may lead to the complete failure of the device or other devices connected.



This symbol calls attention to important notes. Following these notes helps the user to install and to use this product.

Security advice



This product must not be used in applications, where safety of persons depend on the correct device function. This product is not a safety device according to EC machinery directive.

Notes

These operating instructions refer to proper and intended use of this product. They must be read and observed by all persons making use of this product. This product is only able to fulfill the tasks for which it is designed if it is used in accordance with specifications of Pepperl+Fuchs.

The warranty offered by Pepperl+Fuchs for this product is null and void if the product is not used in accordance with the specifications of Pepperl+Fuchs.

Changes to the devices or components and the use of defective or incomplete devices or components are not permitted. Repairs to devices or components may only be performed by Pepperl+Fuchs or authorized work shops. These work shops are responsible for acquiring the latest technical information about Pepperl+Fuchs devices and components. Repair tasks made on the product that are not performed by Pepperl+Fuchs are not subject to influence on the part of Pepperl+Fuchs. Our liability is thus limited to repair tasks that are performed by Pepperl+Fuchs.

The preceding information does not change information regarding warranty and liability in the terms and conditions of sale and delivery of Pepperl+Fuchs.

This device contains sub-assemblies that are electrostatically sensitive. Only qualified specialists may open the device to perform maintenance and repair tasks. Touching the components without protection involves the risk of dangerous electrostatic discharge, and must be avoided. Destruction of basic components caused by an electrostatic discharge voids the warranty!

Subject to technical modifications.

Pepperl+Fuchs GmbH in D-68301 Mannheim maintains a quality assurance system certified according to ISO 9001.



Description of the sensor function

The welding gun sensor RC**-E2-C-V1 is used for monitoring the condition of the chuck of a welding gun.



Chuck good

Chuck broken, bad

The high reliability of the welding gun sensor helps ensure the quality of welding points and the correct fitting of the pins, thus avoiding costly postprocessing steps in the production flow.

The non-contact principle of operation and the resistance of the sensor to dirt and dust ensure a high level of availability and make tool monitoring almost maintenance-free.

The intelligent, easy teach-in procedure on commissioning makes it possible to safely differentiate between good and bad chucks and also compensates for the mounting tolerances if the sensor is replaced.

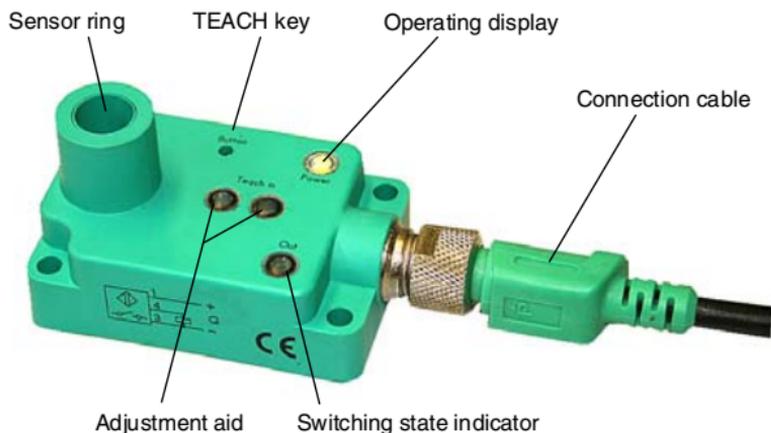
Type code

RC		-	E2	-	C	-	V1
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							Connection type
							V1 Device connector M12 x 1, 4-pin
							Special properties
							C weld-proof
							Output type
							E2 PNP, normally open
							Ring diameter
							10 10 mm
							20 20 mm
							RC Ring-shaped sensor, comfort version

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Displays, operating and function elements



Sensor functions

Teach-in of the reference value for a chuck is possible via the TEACH key.

If a chuck that is inserted corresponds to the learned reference value, the switch output is activated.

The sensor offers an adjustment aid for the optimum teach-in of the chuck response threshold. It is realised by two display LEDs (red and green).



Teach-in of the optimum response threshold



Note

During the teach-in procedure, the final switching state is always inactive

Teach-in procedure

- Actuate the TEACH key for approx. 3 seconds by means of a sharp, thin object until the switching state indicator (LED yellow) starts to flash.
- Immerse the chuck into the sensor ring.
The adjustment aid now indicates the signal quality detected by the sensor:
LED red lights up: chuck just detected
LED red and green lights up: chuck detected, switch point not safe
LED green lights up: chuck detected, switch point safe
no LED lights up: chuck not detected or too deep in the sensor
- Actuate the TEACH key while the adjustment aid indicates a safe switch point (only LED green lights up).
Saving is only possible if "switch point safe" is displayed. This overwrites the previously adjusted switch point. The learned switch point is saved in a non-volatile memory such that it will be available even after a power loss.

Notes on cancelling the teach-in procedure

After the sensor has been set to teach-in mode by actuating the TEACH key (switching state indicator flashes yellow), the teach-in procedure can be cancelled as follows:

- If no chuck is immersed, the teach-in procedure can be cancelled by pressing the TEACH key again.
- If a chuck is immersed, the teach-in procedure can be cancelled by removing the chuck and then pressing the TEACH key.
- The teach-in procedure can be cancelled, by switching the sensor to zero potential. The last valid switch point that was saved is kept.



Note

If the sensor is set to teach-in mode, it remains in the teach-in mode until the TEACH key is actuated again.



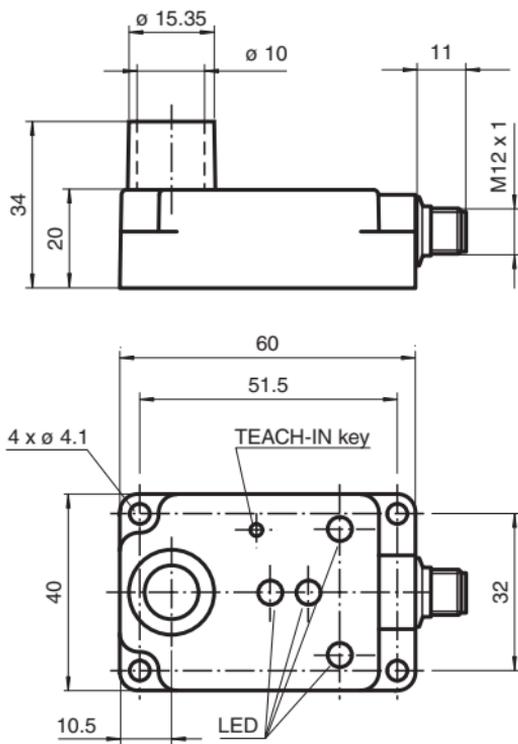
Attention

After maintenance and repair measures during which the sensor or its substructure have been moved, the teach-in procedure must be repeated.

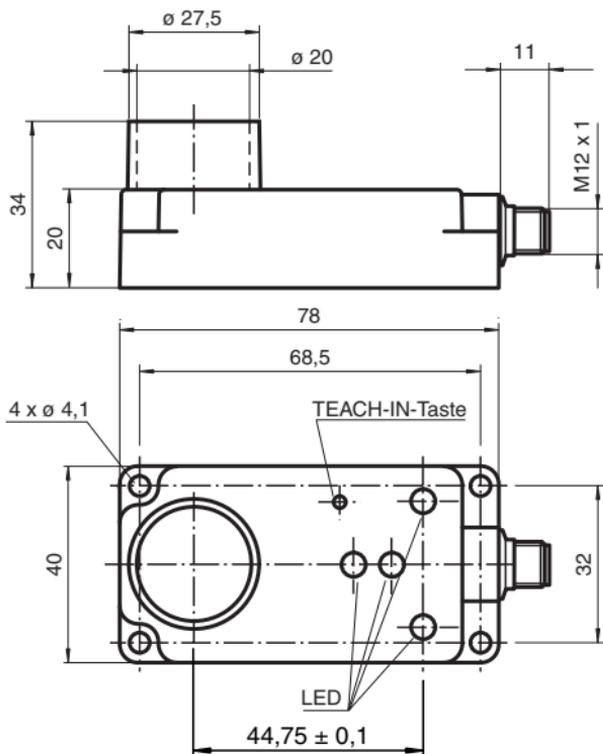
Technical data

General data	
Switch element function	PNP, normally open
Diameter of the sensor ring	10 mm (RC10-E2-C-V1) 20 mm (RC20-E2-C-V1)
Installation	not embeddable
Displays	Operating display, green Switching state indicator, yellow Adjustment aid, red/green
Operating elements	TEACH key for teach-in of switch point
Reference object	Chuck for welding guns
Characteristics	
Operating voltage U_B	12 ... 30 V
Switching frequency f	0 ... 5 Hz
Polarity protection	Reverse polarity protected
Short circuit protection	pulsing
Voltage drop U_d	≤ 3 V
Operating current I_L	0 ... 100 mA
No load current I_0	≤ 10 mA
Rated insulation voltage U_{BIS}	60 V
Conformity to standards	
EMC in accordance with	IEC / EN 60947-5-2:2004
Ambient conditions	
Ambient temperature	0 ... 50 °C (273 ... 323 K)
Storage temperature	-25 ... 85 °C (248 ... 358 K)
Mechanical data	
Connection type	V1 device connector, M12 x 1, 4-pin
Housing material	PBT
Protection type	IP65
Protection class	II

Dimensions



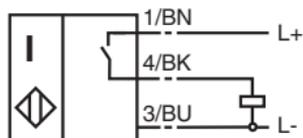
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Electrical connection

E2



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FACTORY AUTOMATION – SENSING YOUR NEEDS



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