Technical Description

Wireless Automation

Communication Module
WSIX100

Power and productivity
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Please note the following

Target group

This description is intended for the use of trained specialists in electrical installation and control and automation engineering, who are familiar with the applicable national standards.

Safety requirements

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

FCC Compliance

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

Warning:
Changes or modifications made to this equipment not expressly approved by
ABB Automation Products GmbH may void the FCC authorization to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

_ Reorient or relocate the receiving antenna.
_ Increase the separation between the equipment and receiver.
_ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
_ Consult the dealer or an experienced radio/TV technician for help.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Liability

The documentation has been prepared with care. The products described are, however, constantly under development. For that reason the documentation is not in every case checked for consistency with performance data, standards or other characteristics, and does not represent an assurance of characteristics in the sense of § 459, Para. 2 of the German Civil Code. In the event that it contains technical or editorial errors, we retain the right to make alterations at any time and without warning.

No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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WSIX100 Communication Module

Fig 1: WSIX100

Content

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Purpose and short description

The communication module can be connected to the head of a special inductive sensor WSIN/WSIF in the same way as a conventional sensor plug.
The communication module is identical for all types of sensor heads.

The communication module can also connect to mechanical contacts like switches or reed contacts via a short cable.

The energy required for the sensor operation and the wireless communication with the input module is supplied to the communication module by an electromagnetic field (ABB´s Wireless-POWER).

Indicators and operating elements on the front plate

Fig. 2 shows the indicators and operating elements on the front plate.

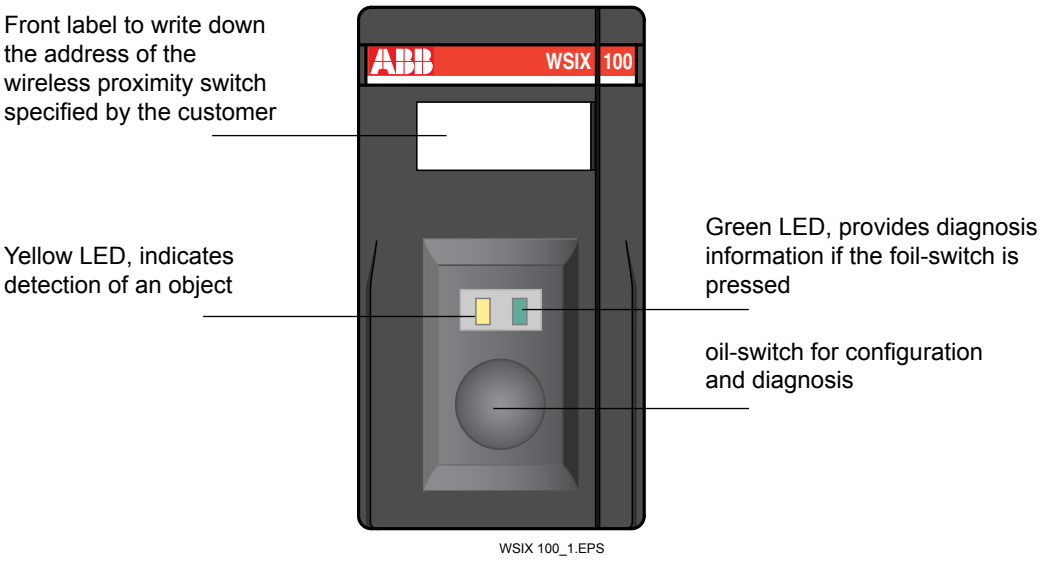


Fig. 2: WSIX100, indicators and operating elements on the front plate

Side view of WSIX100

Fig. 3 shows the side view of the WSIX100.

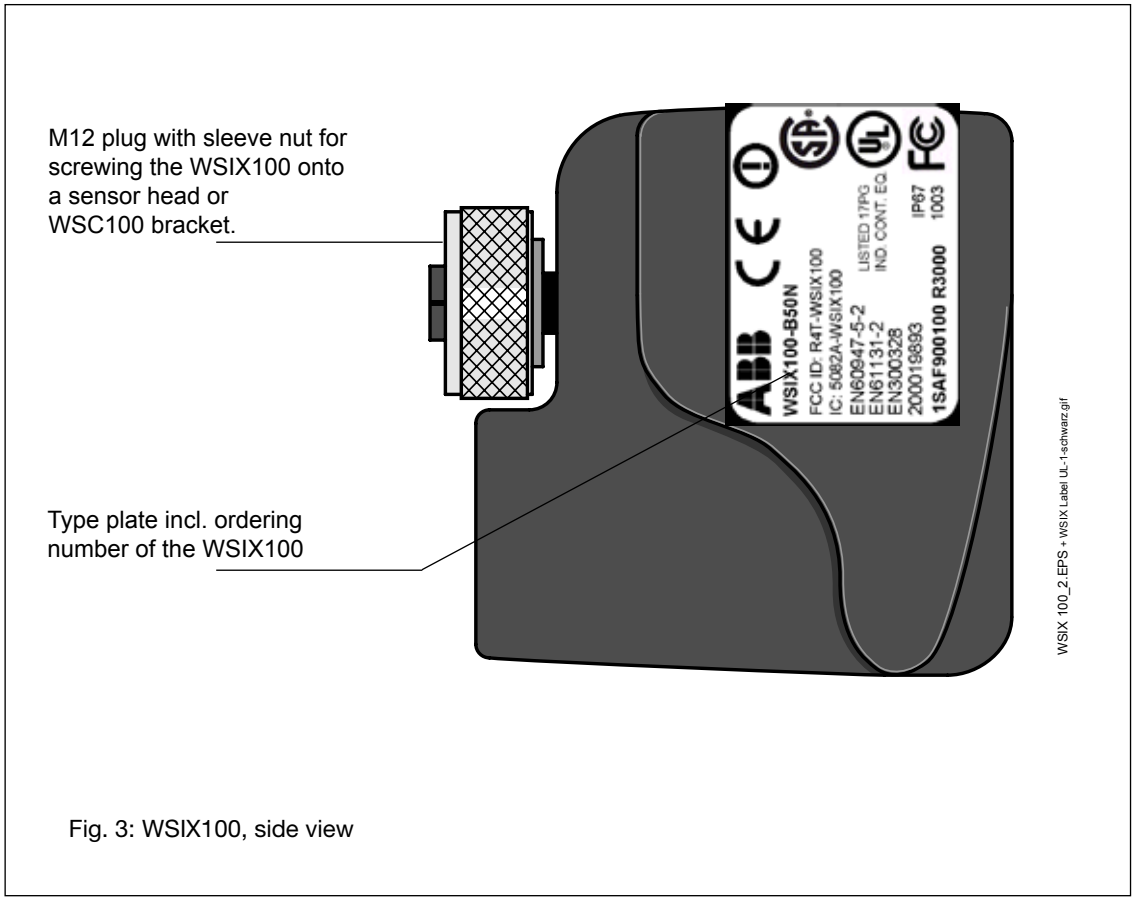


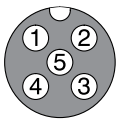
Fig. 3: WSIX100, side view

Technical data

WSIX100	
Switching frequency	2.5 Hz (Minimum value energy conditionally, can be typically clearly higher)
Latency (99.9 %)	20 ms until the signal is available on the fieldbus (max. 34 ms)
Error rate	10^{-9}
Switching state indication	LED, yellow
Diagnosis indication	LED, green
Operation	1 foil-switch
Operating temperature	- 0 ... +55 °C
Storage temperature	-25 ... +70 °C
Permissible shock and vibration stress	Shock b ≤ 50g, T ≤ 11 ms (1000 repeated shocks according to IEC 60068-2-29
Degree of protection acc. to IEC 60529	IP 67
EMC compatibility	EN 60 947-5-2
Connection	M12 appliance socket with sleeve nut for sensor heads for wireless proximity switches or sensor cables
Input type	N.O, , n-switching
Input power supply	2.9 V / 300 μA (max, short circuit proof)
Tightening torque	0,7 Nm (is equivalent to tighten firmly by hand plus a ¼ turn with pliers)
Material of housing	Bergamit A700 (PA6.6 not reinforced)
Frequency of energy supply	120 kHz
Frequency band (communication)	2.4 GHz ISM band
Transmit power	1 mW
Max. number of communication modules within one manufacturing cell (3x3x3 m^3)	360 (without change of performance)
Maximum speed	10 m/s
Range of transmission for communication	5 -15 m (typ. 10 m)
Address storage	Addresses cannot be lost
Weight	125 g

Pin assignment

Input M12



(1 = cast-in)
2 = + 3 V
3 = GND (0 V)
4 = IN
5 = not connected

Pinning deviates from standard sensor connectors to avoid destruction by wrong wiring.

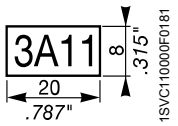
Pinning corresponds to WSIN/WSIF-sensor-heads.

Approvals and authorizations

UL USA	CSA Canada	FCC	Japan	ETSI Europe	CMIIT China
■	■	■	■	■	■

■ Approval available; rating plates carry the test symbol, if sign obligation exists.

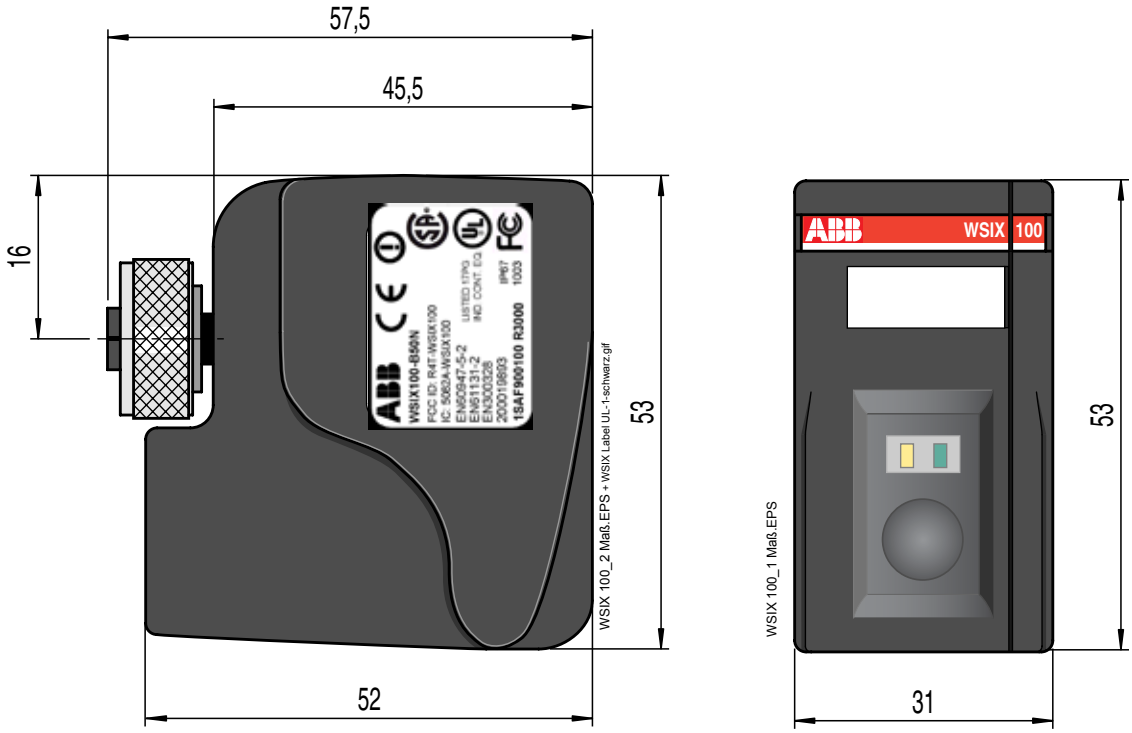
Ordering data

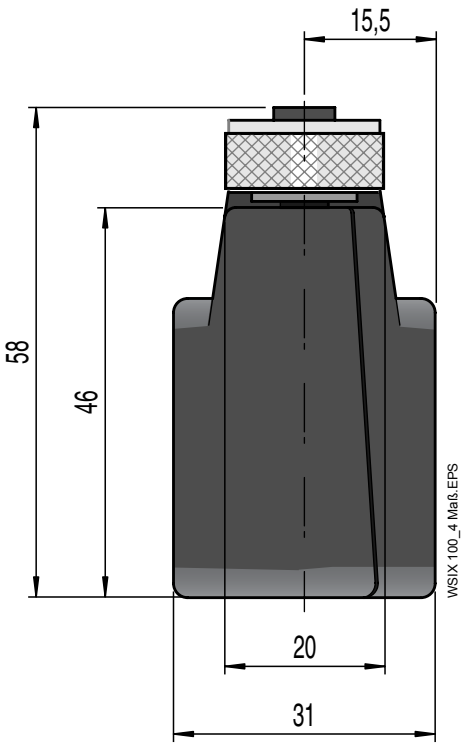
Type	Designation	Ordering number	EAN number
WSIX100-B50NF	Communication module for one wireless proximity switche	1SAF 900 100 R1000	4013614394973
Accessories			
WSC100-N000	Fixing bracket with M12 feedthrough for wireless proximity switches	1SAF 900 100 R1000	4013614386336
WSC100-N003	Connection cable and holder for wireless proximity switches, 0.3 m	1SAF 900 100 R1003	4013614379444
WSC100-N006	Connection cable and holder for wireless proximity switches, 0.6 m	1SAF 900 100 R1006	4013614379451
WSC100-N007	Connection cable and holder for wireless proximity switches, 0.75 m	1SAF 900 100 R1007	4013614382864
	Marker for communication module	1SVR 366 017 R0100	4016779570459

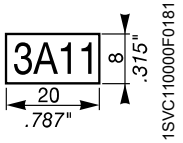
Modifications compared to predecessors

Type	Ordering number	**Modifications**
WSIX100-B50N	1SAF 900 100 R3000	---
WSIX100-B50NF	1SAF 900 100 R4000	additional filter to avoid multiple transmissions due to signal/contact bouncing (5 ms blind time after event.

Mechanical dimensions







Marker for
communication module

All dimensions in mm.

Fig. 4: WSIX100, mechanical dimensions

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