Technical Description

Wireless Automation

Wireless Input/Output Pad
WIOP100

Power and productivity
for a better world™

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 20 cm 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.

Wireless Input/Output Pad
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Technical description

Purpose and short description

The wireless input/output pad collects 24 V inputs and outputs like standard bus distribution boxes and uses a standard 24 V power supply. The actuator voltage is fed separately to enable flexible emergency stop concepts. The two 7/8” power feeding connectors allow also a comfortable looping through of the power wiring from pad to pad.

The WIOP100 – 8DI8DC has 8 digital inputs and 8 configurable inputs/outputs which can be both, input or output, depending on the use on the fieldbus/PLC.

The WIOP100 communicates by means of the ABB Wireless Communication Technology with an WDIO input/output module (base station). The WDIO connects one of several fieldbuses (e. g. PROFIBUS, DeviceNet, Modbus …) using a FieldBusPlug (FBP).

Fig. 1: WIOP100

Content

Connector, Indicator and Operating Element Overview

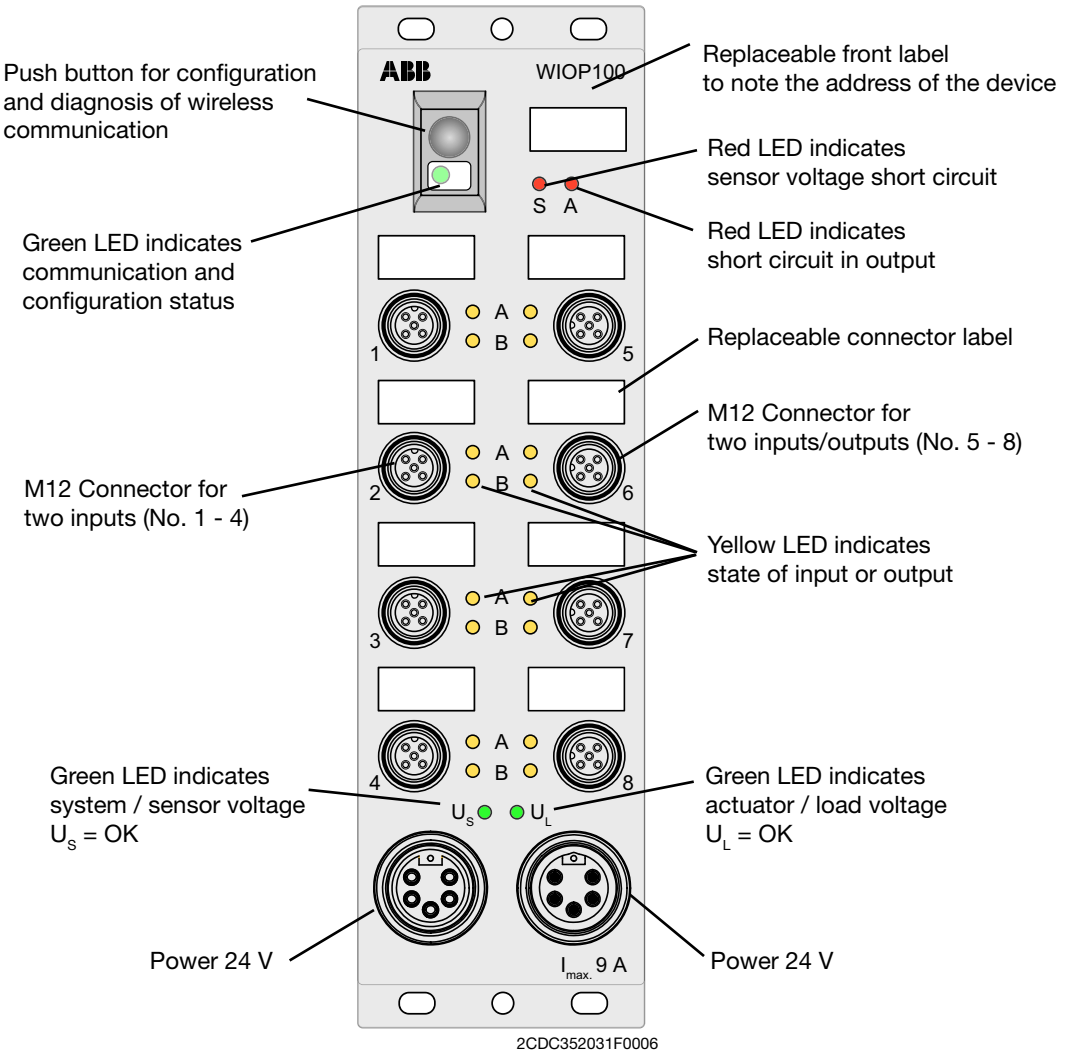
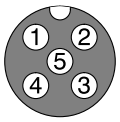


Fig. 2: WIOP100, indicators and operating elements on the front plate

Pin assignment

Input/Output M12

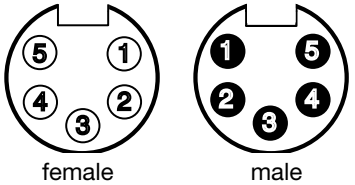


1 = + 24 V
2 = Signal B
3 = GND (0 V)
4 = Signal A
5 = Earth

Bit assignment of connectors / signals

Bit	7	6	5	4	3	2	1	0
M12 Output								
Byte 0	8B	8A	7B	7A	6B	6A	5B	5A
M12 Input								
Byte 0	4B	4A	3B	3A	2B	2A	1B	1A
Byte 1	8B	8A	7B	7A	6B	6A	5B	5A

Power supply 7/8"



1 = GND (0 V)
2 = GND (0 V
3 = Earth
4 = + 24 V system / sensors U_S
5 = + 24 V actuators / load U_L

Technical data

WIOP100-8DI8DC	
Number of digital inputs	8
Number of digital configurable in-/outputs	8
Type of connectors	
signals	M12 - 5 pin female, screwable (micro)
power	7/8” - 5 pin male in / 5 pin female out (mini)
Galvanic isolation	No
Operating temperature	0 … 55° C
Degree of protection	IP 67
Weight	350 g
Housing	PBT
System/Sensor Power Supply U_S	
Rated voltage	24 V DC
Voltage range	19-30 V DC
Rising U_S at power-on	min. 10 V/s
Power consumption (w/o sensors)	100 mA
Reverse polarity protection	Yes
Indication	LED green
Power supply to sensors	
Voltage range	Min. (U_S – 1.5 V)
Sensor current	Max. 700 mA per module (Tamb 30° C)
Short circuit proof	Yes
Inputs	Type 3 acc. to IEC 61131-2
Rated input voltage	24 V DC
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnosis indicator “S”	LED red per module (short cicuit)
Input filtering	Adjustable (1 ms preset, 5 ms, 10 ms)
Power Supply to outputs U_L	
Rated voltage	24 V DC
Voltage range	19 - 30 V DC
Reverse polarity protection	Yes / antiparallel diode - see below information
Indication	LED green

continuation ...

The reverse polarity protection does only work, when the supply voltage for the actuators is fused (10 A, mT) and a short circuit is switched off after 10 – 100 ms.

Attention!
A power supply with current control/limit or a wrong fuse results in the case of reversed polarity in the destruction of the modul.

Technical data continuation

WIOP100-8DI8DC	
Outputs	
Output type	24 V DC / 500 mA; DC13 500 mA
Nominal output current	0.5 A
Reverse polarity output	max. –10 V DC
Short circuit proof	YES
Max. output current on 7/8” connector	9 A
Overload-proof	Yes
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel
Diagnosis indicator "A"	LED red per module (short circuit)

Approvals and authorizations

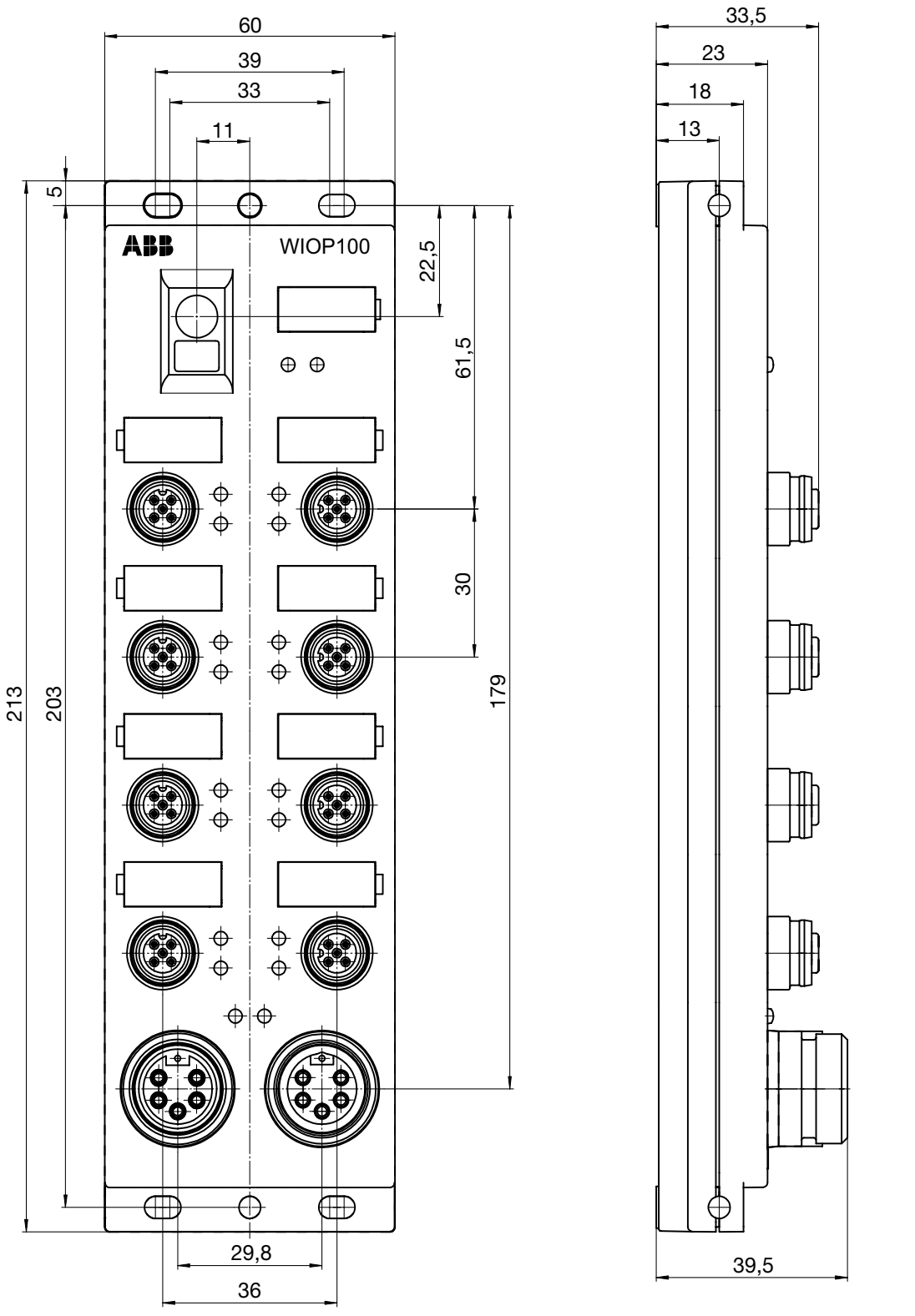
UL USA	CSA Canada	FCC	 Japan	ETSI Europa	CMIIT China
■	■	■	■	■	■

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

Ordering data

Type	**Designation**	**Ordering number**	**EAN number**
WIOP100-8DI8DC	Wireless I/O Pad	1SAF960100R1000	4013614386312
Accessories			
WDI0100-CONF-FBP	Input / Output module for wireless devices with FBP-connector	1SAF960300R1000	4013614386329
SZC1-YU0	Y-distribution connector M12 - 2xM12 for 2 sensors/actuators	1SAF912910R1000	4013614386343

Mechanical dimensions



All dimensiones in mm

Fig. 3: WIOP100, Mechanical dimensiones

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