

I/O Cards

Input/output cards with digital and/or analogical inputs and outputs and USB, Ethernet, WiFi, CAN or RS232 interface



IPSES input/output cards are the right answer to acquire digital and analogical signals and to control digital or analogical outputs from a PC in an industrial environment.

IPSES I/O cards allows to monitor and to control in *real-time* the status of each input and output which can be read at any time from PC and, in case of digital I/O, it also shows by LEDs mounted directly on the board.

All the analogical I/O are calibrated one by one, so to guarantee the maximum of precision and resolution. Beside, to improve their reliability and quality, the cards have all the digital inputs and outputs galvanically isolated to protect them and to reduce electromagnetic noises that may arrive.

Through the use of USB, Ethernet, WiFi, CAN or RS232 interfaces, our I/O cards can be integrated into any environment, using the client's resources already available and guaranteeing high speed, hardware independence and maximum of flexibility in the number of connected cards.

The boards are low or standard European Format card size (100 x 160 mm - 3,94 x 6,30 inches) so that they can be easily integrated and, on request, can be furnished mounted on a DIN rail.

**All IPSES I/O cards are provided with a driver and a software for Windows environment (XP, Vista and 7).
On request, IPSES develops fully customized I/O cards and control software based on client's specifications.**

IO-69: Input/output Card with 6 inputs and 9 relay outputs and USB interface



IO-69-USB is a self-powered card to manage six optocoupled inputs and nine relay outputs with USB interface.

A timeout control allows to protect the connecting devices, turning off all the outputs if it does not receive commands from the host within a time configurable through software.

Furthermore, there is the possibility to program all the outputs so that each one will activate only when inputs reach assigned conditions: in this case, **IO- 69** acts like a programmable logic controller (PLC).

The card is produced in two versions: with single pole double throw relay (SPDT) and with single pole single throw relay (SPST).

General technical features:

Power supply: selfpowered thorough USB

Working temperature: from 0°C up to + 60°C

Storage temperature: from -40°C up to + 85°C

Size: European format card (100 x 160 mm - 3,94 x 6,30 inches)

USB port technical features:

1 type B port, compatible with USB 2.0, autonomously powered for the host connection

Possibility to connect directly to an host port up to 256 cards for a maximum of 1.536 inputs and 2.304 outputs.

Technical features of outputs:

Number of outputs: nine

SPDT version:


- Type: relay single pole double throw
- Max switching current: 0,25A
- Max carrying current: 0,5A
- Max switching voltage: 70V_{AC}/100V_{DC}, potential free
- Max contact resistance: 200mΩ

SPST version:

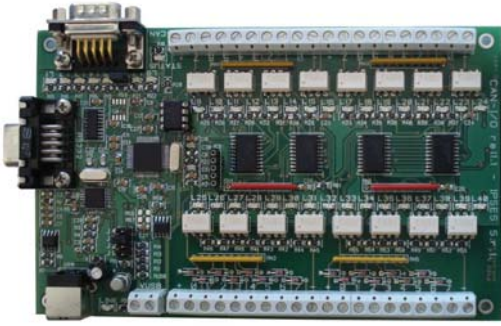
- Type: relay single pole single throw
- Max switching current: 0,5A
- Max carrying current: 1A

<p>Technical features of inputs: Number of inputs: six Operative Voltage: independently selectable for each input at 5V/12V/24V (DC) Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p>	<ul style="list-style-type: none"> - Max switching voltage: 100V_{AC/DC}, potential free - Max contact resistance: 150mΩ <p>Isolation voltage between coil and contacts: 500V_{DC}.</p> <p>Connectors: pitch terminal block</p> <p>Timeout control to turn off all the outputs if it does not receive commands from the host within a time configurable through software.</p>
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IO-1616: Input/output Card with 16 inputs and 16 outputs and USB or RS232 interface



	<p>IO1616 is a self powered card to manage sixteen optoisolated inputs and sixteen optoisolated outputs with USB interface. The model is available also with RS232 interface, in this case the card needs external power supply.</p> <p>IO1616 can be directly connected to PLC, to input devices from operator and to other I/O systems.</p> <p>On request, an integrated temperature sensor allows to know in real time the temperature of the system IO1616 is placed in.</p>
<p>General technical features: Power supply: self-powered thorough USB or, for model with RS232 interface, external from 7V_{DC} up to 30V_{DC} Working temperature: from 0°C up to + 60°C Storage temperature: from -40°C up to + 85°C Size: European format card (100 x 160 mm - 3,94 x 6,30 inches)</p> <p>USB port technical features: 1 type B port, compatible with USB 2.0, autonomously powered for the host connection</p> <p>- Possibility to connect directly to an host port up to 128 cards, cards for a maximum of 2.048 inputs and 2.048 outputs</p> <p>Temperature sensor technical features: Resolution: 0,0625°C Accuracy: from ±1°C to ±3°C, depending on temperature range.</p> <p>Timeout control to turn off all the outputs if it does not receive commands from the host within a time configurable through software.</p>	<p>Technical features of inputs: Number of inputs: sixteen Operative voltage: from 3,3V_{DC} up to 36V_{DC} Max current absorbed: 10mA (on each input) Input impedance: ≈ 2.5KΩ Logic low level: < 1V Logic high level: > 2.5V Port read average time execution: 15 ms Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Technical features of outputs: Number of outputs: sixteen Operative voltage: from 3,3V_{DC} up to 36V_{DC} Maximum current: 150 mA Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p>

CAN-IO: Input/output Card with 16 inputs and 16 outputs with CAN, USB and RS232 interface

	<p>CAN-IO is a control unit equipped with CAN, USB and RS232 interfaces to manage sixteen optocoupled inputs and outputs. The card can work as standalone device on CAN BUS. Its configuration is achieved either through USB (in this case the board is self powered) or through RS232 interface. Easy to use and to configure, thanks to the provided <i>software</i>, CAN-IO is the right answer to the need to acquire and to drive digital signals through already existing CAN bus.</p> <p>CAN-IO can be directly connected to PLC, to input devices by operator and to other I/O systems.</p> <p>Each input and output status can be read by a field bus at any moment. Besides, thanks to LEDs fixed on, the status is shown directly on the board. An integrated</p>
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	<p>temperature sensor allows to know in real time the temperature of the system CAN-IO is placed in.</p>
<p>General technical features: Power supply: self-powered through USB or +5V_{DC} in stand-alone mode Working temperature: from 0°C up to + 60°C Storage temperature: from -40°C up to + 85°C Size: European format card (100 x 160 mm - 3,94 x 6,30 inches) Interfaces toward PC: 1 USB port, 1 RS232 port</p> <p>CAN port technical features:</p> <ul style="list-style-type: none"> - Configurable in high-speed or low-speed mode. - Customizable baudrate (up to 1MB/s). - Customizable address (standard or extended frame). - Consistent with standard CAN 2.0B Active Specification - DB9 male connector <p>USB port technical features: 1 type B port, compatible with USB 2.0, autonomously powered for the host connection</p>	<p>Technical features of inputs: Number of inputs: sixteen Operative voltage: 36V_{DC} Logic low level: < 1V Logic high level: > 2.5V Input impedance: ≈ 2.5KΩ Max absorbed current on each input: 10mA Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Technical features of outputs: Number of outputs: sixteen Operative voltage: from 3,3V_{DC} to 36V_{DC} Max open collector current: 150mA Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Temperature sensor technical features: Resolution: 0,0625°C Accuracy: from ±1°C to ±3°C, depending on temperature range.</p>

WEB-IO: Input/output Card with 16 inputs and 16 outputs, Ethernet interface, integrated web, telnet and SNMP servers and SMTP client.

 	<p>WEB-IO is a card to manage sixteen optocoupled inputs and sixteen optocoupled outputs with Ethernet interface, equipped with a web, a telnet and an SNMP servers, and an SMTP client. The web server allows to connect and to manage the card using any web browser (i. e. Internet Explorer or Firefox), with no needs to install a software on your PC. Beside, the card can be connected directly to a switch or to a router with no need to use a PC. It is also possible to develop a customized software managed by telnet service or SNMP client. The SMTP client allows to send alert email based on inputs status change events.</p> <p>WEB-IO can be directly connected to PLC, to input devices from operator and to other I/O systems. Each input and output status can be read by a web browser or a telnet client at any moment, besides it is shown directly on the board thanks to LEDs fixed on. On request, the card can be equipped with an integrated temperature sensor which allows to monitor in real time the temperature around the regulator voltage module. Through expansion connectors the card can be interfaced to a RTCLOG (Real Time Clock and Logger) optional module: by this way, it can perform a log of the I/O states on a dedicated memory. WEB-IO is provided with a demo software for Windows environment, based on telnet service.</p>
<p>General technical features: Power supply: external, from 5V_{DC} up to 30V_{DC} Working temperature: from 0°C up to + 60°C Storage temperature: from -40°C up to + 85°C Size: European format card (100 x 160 mm - 3,94 x 6,30 inches) Max thickness: 20 mm (30 mm with RTCLOG module) RTCLOG module interface: 2 expansion dedicated connectors</p>	<p>Technical features of inputs: Number of inputs: sixteen Operative voltage: from 3,3V_{DC} to 36V_{DC} Max absorbed current on each input: 10mA Logic low level: < 1V Logic high level: > 2.5V Input impedance: ≈ 2.5KΩ</p>



<p>Ethernet interface: 1 Ethernet RJ45 port</p> <p>Supported protocols: Telnet: the card can work as telnet server HTTP: the card can work as WEB server SNMP: the card can work as SNMP server SMTP: the card can work as SMTP client</p> <p>Temperature sensor technical features: Resolution: 0,0625°C Accuracy: from ±1°C to ±3°C, depending on temperature range.</p>	<p>Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Technical features of outputs: Number of outputs: sixteen Operative voltage: from 3,3V_{DC} to 36V_{DC} Max open collector current: 150mA Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Timeout control to turn off all the outputs if it does not receive commands from the host within a time configurable through software.</p>
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WEB-IO-WiFi: Input/output Card with 16 inputs and 16 outputs, Ethernet and WiFi interfaces, integrated web, telnet and SNMP servers



WEB-IO-WiFi is a card to manage sixteen optocoupled inputs and sixteen optocoupled outputs with Ethernet and WiFi interfaces, equipped with a web, a telnet and an SNMP servers. The web server allows to connect and to manage the card using any web browser (i. e. Internet Explorer or Firefox), with no needs to install a software on your PC. Beside, the card can be connected directly to a switch or to a router, by this way it can be accessed by any PC connected to Internet. It is also possible to develop a customized software managed by telnet service or SNMP protocol. The board is available with built-in antenna or with ultra miniature coaxial (U.FL) connector for external antenna connection.

WEB-IO-WiFi can be directly connected to PLC, to input devices from operator and to other I/O systems. Each input and output status can be read by a web browser or a telnet client at any moment, besides it is shown directly on the board thanks to LEDs fixed on. On request, the card can be equipped with an integrated **temperature sensor** which allows to monitor in real time the temperature around the regulator voltage module.

<p>General technical features: Power supply: external, from 5V_{DC} to 32V_{DC} Working temperature: from 0°C u to + 60°C Storage temperature: from -40°C up to + 85°C Size: European format card (100 x 160 mm - 3,94 x 6,30 inches) Max thickness: 20 mm Ethernet interface: 1 Ethernet RJ45 port</p> <p>Supported protocols: Telnet: the card can work as telnet server HTTP: the card can work as web server SNMP: the card can work as SNMP server</p> <p>WiFi technical features: - Compatibility: WiFi 802.11b (2,4GHz). - Security: WEP, WPA and WPA2. - Transmit power: 10dBm (10mW). - Receiver sensitivity: -83dBm -Built-in antenna or <i>ultra miniature coaxial</i> (U.FL) connector for external antenna connection - Configurable to connect to any Access Point, with any channel and SSID.</p>	<p>Technical features of inputs: Number of inputs: sixteen Operative voltage: from 3,3V_{DC} to 36V_{DC} Max absorbed current: 10mA (on each input) Logic low level: < 1V Logic high level: > 2.5V Input impedance: ≈ 2.5KΩ Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Technical features of outputs: Number of outputs: sixteen Operative voltage: from 3,3V_{DC} to 36V_{DC} Max open collector current: 150mA Protection: optocouplers with 2.500V_{RMS} maximum operative voltage Connectors: pitch terminal block</p> <p>Temperature sensor technical features: Resolution: 0,0625°C Accuracy: from ±1°C to ±3°C, depending on temperature range.</p> <p>Timeout control to turn off all the outputs if it does not receive commands from the host within a time configurable through software.</p>
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WEB-ADIO: Input/output Card with 8 analogical inputs, 8 digital inputs, 8 analogical outputs and 8 digital outputs, Ethernet interface, integrated web, telnet and SNMP servers



WEB-ADIO is a card to manage 8 optocoupled digital inputs, 8 analogical inputs, 8 optocoupled digital outputs and 8 analogical outputs with Ethernet interface, equipped with a web, a telnet and an SNMP servers. The WEB server allows to connect and to manage the card using any web browser (i. e. Internet Explorer and Firefox), with no needs to install a software on your PC. Beside, the card can be connected directly to a switch or to a router with no need to use a PC.

It is also possible to develop a customized software managed by telnet service.

WEB-ADIO can be directly connected to PLC or to analogical transducer, to input devices from operator and to other I/O systems.

The analogical inputs and outputs have an operative voltage from 0V to 10V, with a resolution of 10mV and are calibrated one by one. Each input and output status can be read by a web browser or a telnet client at any moment, besides, the status of digital inputs and outputs it is shown directly on the board thanks to LEDs fixed on.

General technical features:

Power supply: external, from 12V_{DC} to 15V_{DC}
Working temperature: from 0°C up to + 60°C
Storage temperature: from -40°C up to + 85°C
Size: European format card (100 x 160 mm - 3,94 x 6,30 inches)
Max thickness: 20mm
Ethernet interface: 1 Ethernet RJ45 port

Supported protocols:

Telnet: the card can work as telnet server
HTTP: the card can work as web server
SNMP: the card can work as SNMP server

Timeout control to turn off all the digital outputs if it does not receive commands from the host within a time configurable through software.

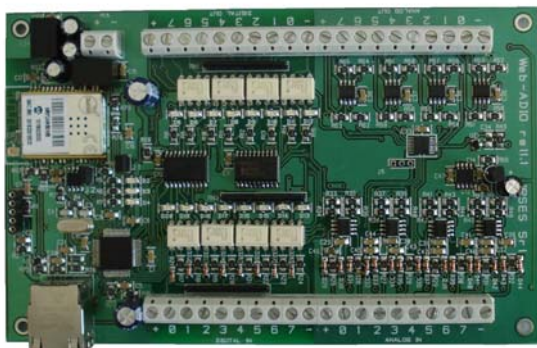
Technical features of inputs:

Number of inputs: sixteen: 8 analogical and 8 digital
 Operative voltage of digital inputs: from 3,3V_{DC} to 36V_{DC}
 Operative voltage of analogical inputs: from 0V to 10V (10 bit ADC).
 Max current absorbed on each input: Digital: 10mA. Analogical: 1mA.
 Input impedance: Digital: ≈2,5kΩ. Analogical: ≈15kΩ.
 Logic low level: < 1V
 Logic high level: > 2.5V
 Protection: Digital: optocouplers with 2.500V_{RMS} maximum operative voltage.
 Analogical: overvoltage protection through calmp diodes.
 Connectors: pitch terminal block

Technical features of outputs:

Number of outputs: sixteen: 8 analogical and 8 digital
 Operative voltage of digital outputs: from 3,3V to 36V (DC).
 Operative voltage of analogical outputs: from 0V to 10V (10 bit DAC).
 Max current (on each output): Digital: 150mA. Analogical: ± 25mA.
 Response average time: Digital: 100μs. Analogical: 6ms (from 10% to 90% of the whole dynamic).
 Protection of digital outputs: optocouplers with 2.500V_{RMS} maximum operative voltage.
 Connectors: pitch terminal block

WEB-ADIO-WiFi: Input/output Card with 8 analogical inputs, 8 digital inputs, 8 analogical outputs and 8 digital outputs, Ethernet and WiFi interfaces, integrated web, telnet and SNMP servers



WEB-ADIO-WiFi is a card to manage 8 optocoupled digital inputs, 8 analogical inputs, 8 optocoupled digital outputs and 8 analogical outputs with Ethernet and WiFi interfaces, equipped with a web, a telnet and an SNMP servers. The web server allows to connect and to manage the card using any web browser (i. e. Internet Explorer and Firefox), with no needs to install a software on your PC. Beside, the card can be connected directly to a switch or to a router with no need to use a PC. The board is available with built-in antenna or with ultra miniature coaxial (U.FL) connector for external antenna connection.

It is also possible to develop a customized software managed by telnet service.

The analogical inputs and outputs have an operative voltage from 0V to 10V, with a resolution of 10mV and are calibrated one by one.

WEB-ADIO-WiFi can be directly connected to PLC or to analogical transducer, to input devices from operator and to other I/O systems. Each input and output status can be read by a WEB browser or a telnet client at any moment, besides, the status of digital inputs and outputs it is shown directly on the board thanks to LEDs fixed on.

General technical features:

- Power supply:** external, from 15V_{DC} to 32V_{DC}
- Working temperature:** from 0°C up to + 60°C
- Storage temperature:** from -40°C up to + 85°C
- Size:** European format card (100 x 160 mm - 3,94 x 6,30 inches)
- Max thickness:** 20mm
- Ethernet interface:** 1 Ethernet RJ45 port

Supported protocols:

- Telnet:** the card can work as telnet server
- HTTP:** the card can work as web server
- SNMP:** the card can work as SNMP server

WiFi technical features:

- Compatibility: WiFi 802.11b (2,4GHz).
- Security: WEP, WPA and WPA2.
- Transmit power: 10dBm (10mW).
- Receiver sensitivity: -83dBm
- Built-in antenna or *ultra miniature coaxial* (U.FL) connector for external antenna connection
- Configurable to connect to any Access Point, with any channel and SSID.

Timeout control to turn off all the digital outputs if it does not receive commands from the host within a time configurable through software.

Technical features of inputs:

- Number of inputs: sixteen: 8 analogical and 8 digital
- Operative voltage of digital inputs: from 3,3V_{DC} to 36V_{DC}.
- Operative voltage of analogical inputs: from 0V to 10V (10 bit ADC).
- Max current absorbed on each input: Digital: 10mA. Analogical: 0,1mA.
- Input impedance: Digital: ≈2,5kΩ. Analogical: >1MΩ.
- Logic low level: < 1V
- Logic high level: > 2.5V
- Protection: Digital: optocouplers with 2.500V_{RMS} maximum operative voltage.
- Analogical: overvoltage protection through clamp diodes.
- Connectors: pitch terminal block

Technical features of outputs:

- Number of outputs: sixteen: 8 analogical and 8 digital
- Operative voltage of digital outputs: from 3,3V_{DC} to 36V_{DC}.
- Operative voltage of analogical outputs: from 0V to 10V (10 bit DAC).
- Max current on each output: Digital: 150mA. Analogical: ± 25mA.
- Response average time: Digital: 100 μs. Analogical: 6ms (from 10% to 90% of the whole dynamic).
- Protections Digital: optocouplers with 2.500V_{RMS} maximum operative voltage.
- Connectors: pitch terminal block

LabVIEW Library for I/O cards:



A complete library for LabVIEW, giving the feasibility of I/O devices remote control, is available on request. The Library allows to implement a LabVIEW application without knowing the details of the communication protocol, making the development quick and easy. Each library is provided with a help file which explains deeper each function included with.

IN8-USB: Input Card with 8 inputs and USB interface



IN8 is a low size auto powered control unit equipped with USB interface. IN8 can check eight galvanic isolated inputs: on each input it is possible to apply voltages regardless from the USB ground, with a maximum voltage of 30V.

Easy to use, thanks to the driver provided with and to the LabVIEW 8.2 library available on demand, IN8 also reduce installation costs.

The board low size to be easily integrated in several systems. Besides, IN8 has its inputs galvanically isolated to protect from electromagnetic disturbances and ground loops, improving its reliability and quality.

IN8 is the right answer to the need to acquire digital signals from a PC in an industrial environment.

General technical features:

Power supply: self-powered through USB
Working temperature: from 0°C up to + 60°C
Storage temperature: from -40°C up to + 85°C
Size: 80 x 75 mm (2,95 x 3,15 inches)

- Possibility to connect directly to an host port up to 256 cards, for a maximum of 2.048 inputs

USB port technical features:

1 type B port, compatible with USB 2.0, autonomously powered for the host connection

Technical features of inputs:

Number of inputs: 8
 Operative voltage: from 3,3V_{DC} up to 36V_{DC}
 Max current absorbed: 10mA (on each input)
 Input impedance: ≈ 2.5KΩ
 Logic low level: < 1V
 Logic high level: > 2.5V
 Port read average time execution: 12 ms
 Protection: optocouplers with 2.500V_{RMS} maximum operative voltage
 Connectors: pitch terminal block

The state of the inputs is shown through LEDs on the board

PRODUCT CODE

I/O-69-SPDT	Input/output Card with 6 inputs and 9 outputs and USB interface with single pole double throw relay (SPDT)
I/O-69-SPST	Input/output Card with 6 inputs and 9 outputs and USB interface with single pole single throw relay (SPST)
IO69Library	LabVIEW library (LabVIEW7.1 or later) for I/O-69 cards
IO1616	Input/output Card with 16 inputs and 16 outputs and USB interface (without temperature sensor)
IO1616T	Input/output Card with 16 inputs and 16 outputs and USB interface (with temperature sensor)
IO1616-RS232	Input/output Card with 16 inputs and 16 outputs and RS232 interface (without temperature sensor)
IO1616-RS2323-T	Input/output Card with 16 inputs and 16 outputs and RS232 interface (with temperature sensor)
IO1616Library	LabVIEW library (LabVIEW 7.1 or later) for I/O-1616 cards
CAN-IO	Input/output Card with 16 inputs and 16 outputs with CAN, USB and RS232 interface (with temperature sensor)
WEB-IO	Input/output Card with 16 inputs and 16 outputs with Ethernet interface and web, telnet and SNMP servers.
WEB-IO-T	Input/output Card with 16 inputs and 16 outputs with Ethernet interface and web, telnet and SNMP servers. Board equipped with temperature sensor.
WEB-IO-WiFi	Input/output Card with 16 inputs and 16 outputs with Ethernet and WiFi interfaces and web, telnet and SNMP servers. Power supply from 5V up to 32V. Built-in antenna.
WEB-IO-WiFi-T	Input/output Card with 16 inputs and 16 outputs with Ethernet and WiFi interface and web, telnet and SNMP servers. Power supply from 5V up to 32V. Built-in antenna. Board equipped with temperature sensor.
WEB-IO-WiFi-U.FL	Input/output Card with 16 inputs and 16 outputs with Ethernet and WiFi interfaces and web, telnet and SNMP servers. Power supply from 5V up to 32V. Ultra miniature coaxial (U.FL) connector for external antenna connection.



IPSES I/O Cards - Presentation

WEB-IO-WiFi-U.FL-T	Input/output Card with 16 inputs and 16 outputs with Ethernet and WiFi interface and web, telnet and SNMP servers. Power supply from 5V up to 32V. Ultra miniature coaxial (U.FL) connector for external antenna connection. Board equipped with temperature sensor.
RTCLOG	RTCLOG Real Time Clock and Logger module for WEB-IO cards (WEB-IO, WEB-IO-T, WEB-IO-15, WEB-IO-T-15 models).
WEB-ADIO	Input/output Card with 8 analogical inputs, 8 digital inputs, 8 analogical outputs and 8 digital outputs with Ethernet interface and web, telnet and SNMP servers.
WEB-ADIO-WiFi	Input/output Card with 8 analogical inputs, 8 digital inputs, 8 analogical outputs and 8 digital outputs with Ethernet and WiFi interfaces and web, telnet and SNMP servers. Built-in antenna.
WEB-ADIO-WiFi-U.FL	Input/output Card with 8 analogical inputs, 8 digital inputs, 8 analogical outputs and 8 digital outputs with Ethernet and WiFi interfaces and web, telnet and SNMP servers. Ultra miniature coaxial (U.FL) connector for external antenna connection.
WEB-IOLibrary	LabVIEW library (LabVIEW v8.6 or later) for WEB-IO and WEB-ADIO cards (all models)
Euro-DIN	DIN universal rail for I/O cards (Eurocard format)
IN8	Input Card with 8 inputs and USB interface
IN8Library	LabVIEW library (LabVIEW8.6 or later) for IN8 cards
USB-A-B	USB cable for IO69, IO1616, IN8 and CAN-I/O (length: 1,8m)
USB-A-B-III	USB cable with light end for IO69, IO1616, IN8 and CAN-I/O
ETH-cable	Ethernet cable for WEB-IO and WEB-ADIO cards (length: 2,0m)

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