



wirenboard

Home and building automation

2024

Wiren Board 8

Versatile programmable automation controller with open source Linux-based software

Hardware

- Quad-core ARM Cortex A53 1.5 Ghz
- Up to 4 GB LPDDR4 RAM and up to 64 GB eMMC
- USB network card for fast controller setup

Linux Inside

- Debian Linux OS with root access: change of any settings and installation of third-party programs
- Wiren Board software for any task
- You can build a firmware image with your own or our software
- **Wiren Board Cloud** – remote control service administration and inventory

Interfaces and communications

- 2 x Ethernet 10/100
- 1 x USB Host
- Wi-Fi 802.11n (AP, client) 2.4 GHz and 5 GHz
- Bluetooth 4.0
- 2 x RS-485: Modbus RTU and other protocols
- up to 3 CAN expansion modules
- 6 universal inputs/outputs analog, discrete and 1-Wire

Industrial versions, -25...+75 °C

ARM Cortex A53 1.5 GHz, RAM LPDDR4 2 GB, eMMC 16 GB

ARM Cortex A53 1.5 GHz, RAM LPDDR4 4 GB, eMMC 64 GB

Industrial versions, -40...+75 °C

ARM Cortex A53 1.5 GHz, RAM LPDDR4 1 GB, eMMC 8 GB

ARM Cortex A7 1.2 GHz, RAM DDR3 1 GB, eMMC 8 GB (Wb7)



4G (LTE) modem

Backup or main communication channel

- 2 SIM-cards
- Sending SMS
- 2G/3G/4G (up to 150 Mbit/s)

Supply

- 9 to 48 VDC
- Input for backup power
- Optional PoE 802.3af or Passive PoE
- Built-in backup power modules

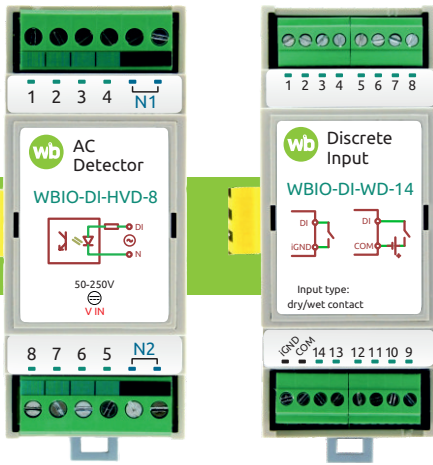
354 €

405 €

405 €

354 €

It fits your needs



WBIO I/O Modules

Stackable modules allow to add up to 128 additional I/O ports to be interconnected with the controller

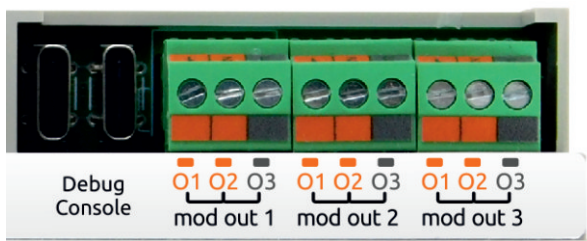
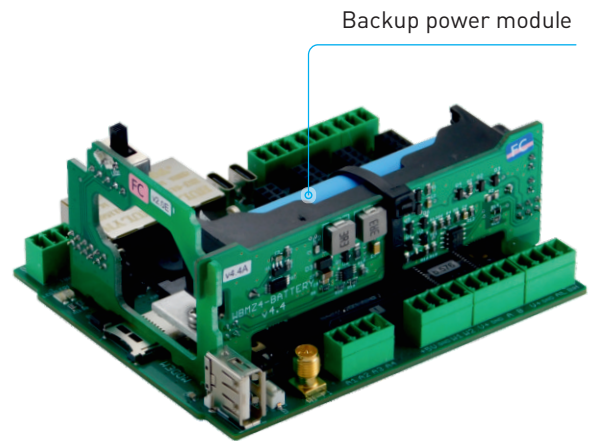
- Discrete and analog inputs/outputs
- Mechanical and solid state relays
- Mains voltage detectors

starting at 37€

Backup power modules

Built-in uninterruptible power supply. The module provides power to the controller, the expansion and modules, and external devices connected via the 5Vout, Vout and USB terminals.

40€

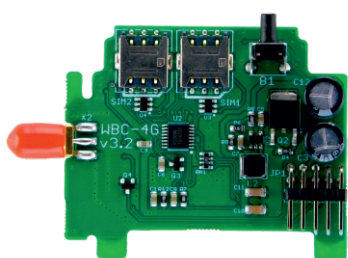


Extension modules

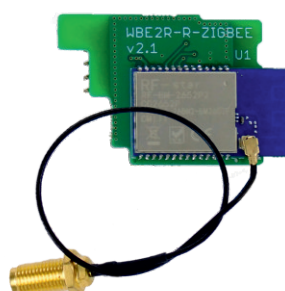
Four extension modules are installed in slots inside the controller housing

- Additional inputs and outputs
- eBUS, KNX, OpenTherm, Z-Wave, Zigbee, GPS

Terminals for connecting external devices to extension modules



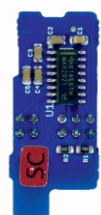
4G modem



Zigbee



KNX



RS-232

Internal extension modules



Wiren Board controllers can be easily customized for specific tasks with extension and input-output modules.

Extension modules are small circuit boards designed to be installed inside the controller. They expand the functionality of the controller by adding additional interfaces.

Stackable I/O modules allow to add 8-16 digital and analog ports to be interconnected with the controller on a DIN-rail and operate as a single unit

Interfaces

WBE2-I-RS232	Auxiliary RS-232 bus port	13 €
WBE2-I-KNX	KNX TCP Interface	92 €
WBE2-I-RS485-ISO	Auxiliary RS-485 (Isolated) bus port	22 €
WBE2-I-1-WIRE	Auxiliary 1-Wire bus port	13 €
WBE2-I-EBUS, WBE2-I-OPENTHERM	Electric and gas boiler controls using eBus and OpenTherm	102 €

Discrete Inputs

WBE2-DI-DR-3	3 dry contact inputs	13 €
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Discrete Outputs

WBE2-DO-R6C-1	1 relay output (SPDT)	13 €
WBE2-DO-SSR-2	2 dry contact outputs (SSR)	13 €
WBE2-DO-R3A-1	1 output type with NO contacts	11 €

Wireless

WBE2R-R-GPS	GPS/Glonass with precise time signal	35 €
WBE2R-R-ZIGBEE v.2	Zigbee interface (2.4 GHz), Z-Stack 3.x	54 €
WBE2R-R-ZWAVE-ZWAY	7th generation Z-Wave chip	145 €

Power modules

WBP-ACTIVE-POE	IEEE 802.3af, 802.3at PoE power module	43 €
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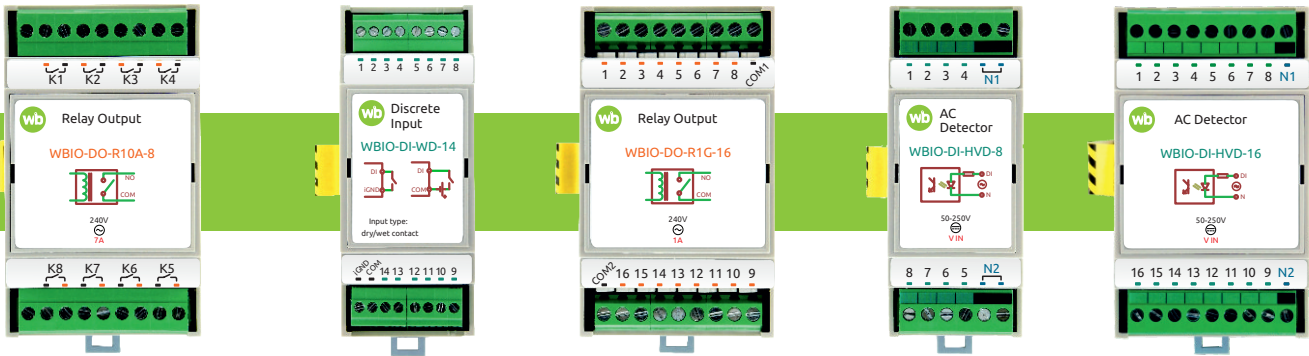
Backup power modules

WBMZ4-SUPERCAP	Backup power supply module based on ionistors	40 €
WBMZ4-BATTERY	Li-ion battery backup module	40 €

Modems

WBC2-4G	Supports 2G, 3G, 4G (Cat.4 LTE)	60 €
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WBIO Modules



WBIO-DO-R10R-4	4 mechanical relay outputs (SPCO) rated 10A to controll roller doors	53 €
WBIO-DO-SSR-8	8 discrete outputs equipped with low-voltage solid state relays (optorelays, SPST, up to 40V)	37 €
WBIO-DO-R1G-16	16 mechanical relay outputs (SPST, 1..5A)	92 €
WBIO-DI-HVD-8	8 channels of mains (230VAC) voltage presence detection	40 €
WBIO-DI-HVD-16	16 channels of mains (230VAC) voltage presence detection	60 €
WBIO-DI-WD-14	14 universal digital inputs. 2 operation modes: dry contact and 12/24V voltage presence	46 €

Demo kit

The demo suitcase is an assembled and customized set of equipment. It is used to demonstrate Wiren Board devices to the end customer or to get knowledge of how the equipment and software work.

The demo suitcase comes with detailed documentation: a complete connection diagram and a power supply diagram, and a detailed description of the various scenarios.

It performs the functions:

- climate control
- ventilation and air conditioning control
- lighting control
- polling of water and electricity meters
- multi-zone electricity metering
- leakage protection systems
- prevention of equipment failure
- continuing system operation in case of external power failure

It can be used to show:

- engineering systems management in stores or warehouses
- control of data center equipment, base stations and transformer substations
- home automation



1260€

Retail price for standard configuration

Supported hardware

Modbus RTU (RS-485)

- Sensors, I/O and lighting control modules
- Wide variety of industrial I/O modules and other devices manufactured by: S+S, Advantech and so on



KNX (EIB)

- Supports both KNX TP (KNX bus) and KNX/IP
- A wide variety of KNX devices for automation of residential and commercial buildings
- The controller works as a KNX IP Gateway



1-Wire (DS18B20)

- Inexpensive and reliable digital temperature sensors
- Used in underfloor heating systems, boilers and climate controls
- Measures temperatures from -55°C to +125°C with an accuracy of $\pm 0.5^\circ\text{C}$



M-Bus/DLMS/COSEM Meters

- M-Bus bus master interface
- Electricity, heat and gas meters
- Meters operating on DLMS/COSEM protocols



Z-Wave

- Certified software package with Z-Wave Plus support
- Over 1000 compatible wireless devices



Zigbee

- Operation via zigbee2mqtt bridge
- Wide range of compatible wireless devices



Other

- Boilers with eBUS and OpenTherm protocols
- Curtain drives Akko AM82, Dooya DT82, WinDeco, Somfy SDN



User Interfaces

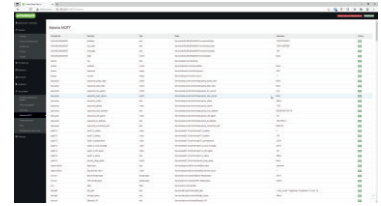
Wiren Board controller web interface



Dashboard



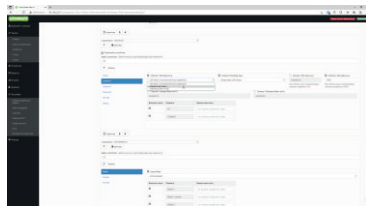
History



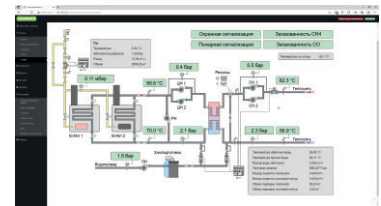
MQTT-channels



RS-485 metrics

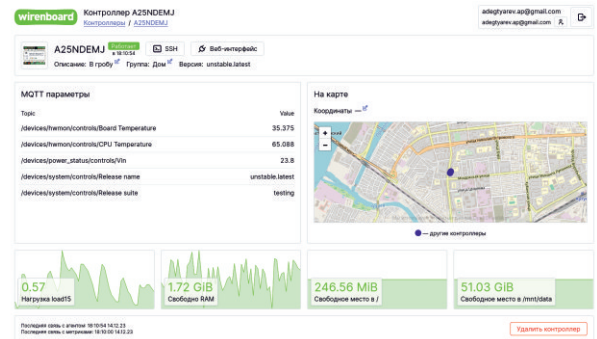
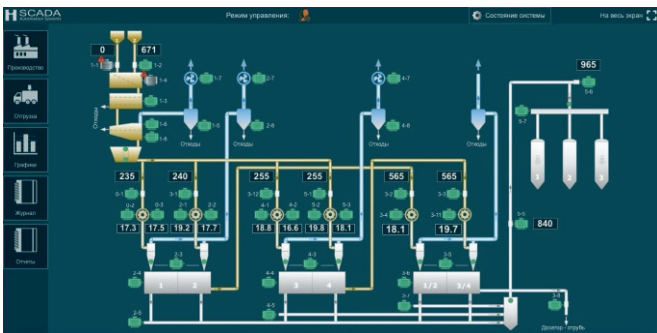


Device Configuration



Interactive mnemonic

Third party software

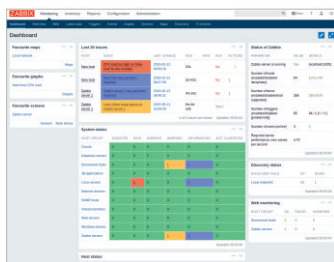
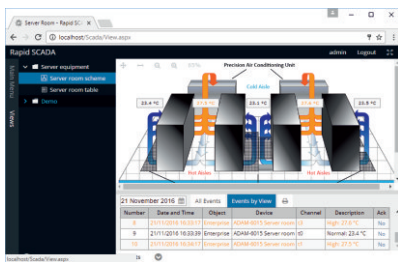


IntraSCADA

Universal and flexible software platform for creating professional home and industrial automation and engineering systems monitoring

Wiren Board Cloud

Remote administration service



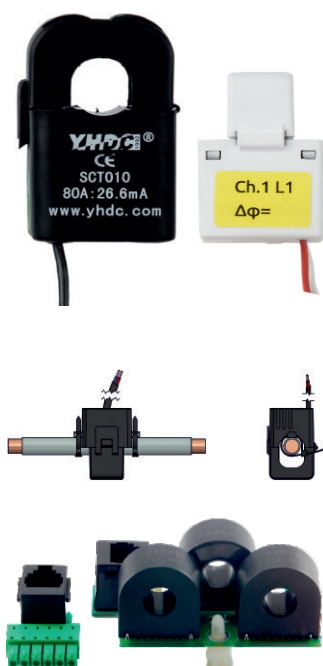
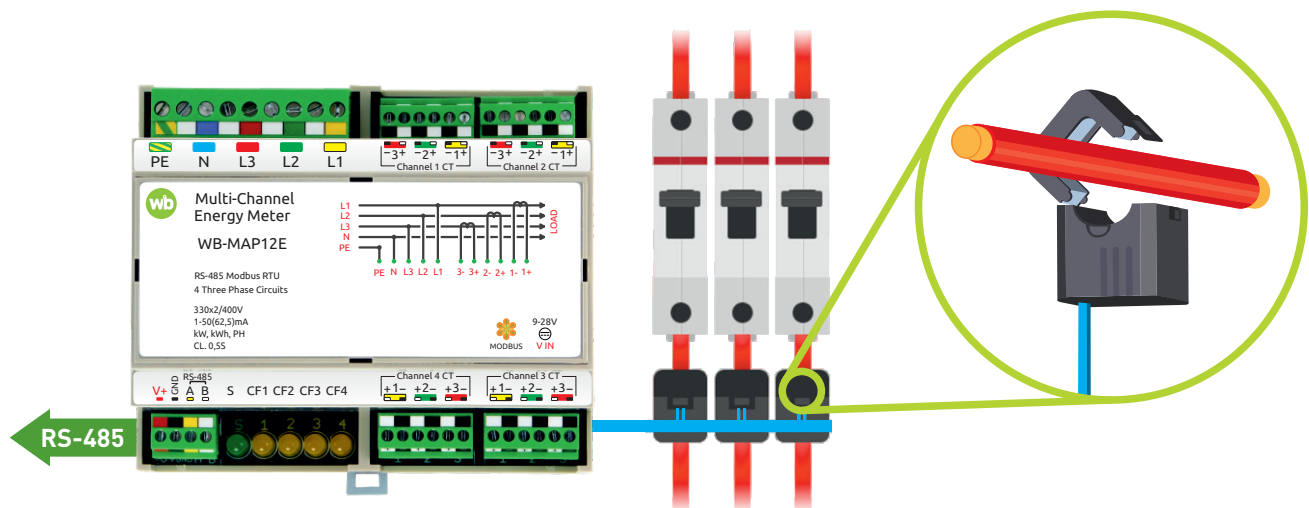
Rapid SCADA, Zabbix, Grafana and other monitoring software

WB-MAP Multi-Circuit Energy Meters

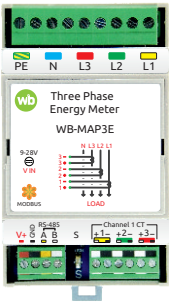
WB-MAP multi-circuit energy meters are developed for energy management, industrial metering and monitoring of electric power supply quality.

These devices take significantly less space in the electrical cabinet compared to traditional energy meters.

Split-core current transformers used by WB-MAP meters are clamped to the existing cables eliminating the need to reassemble the electrical cabinet.



- External split-core transformers with the rated current up to 400 A
- DIN-rail mount
- Instantaneous measurement of parameters of each line: current, voltage, power (kW, kVA, kVA_r)
- Active, reactive and apparent energy metering
- Measurement of surges of voltages and currents with a duration of 300 μs



WB-MAP3E

- Compact three-phase energy meter using Modbus RTU protocol
- Accuracy class 0.5S
- Measuring peak values of current and voltage in a predefined interval
- Powered by phase voltage
- DIN-rail mount (3 modules)

83 €

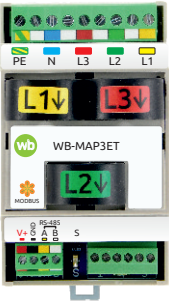
complete with 3 plug-in transformers for 75 A



WB-MAP3EV

- Compact three-phase voltmeter using Modbus RTU protocol
- Accuracy class 0.5S
- Measures instantaneous voltage parameters, voltage peaks and phase angles
- DIN-rail mount (2 modules)

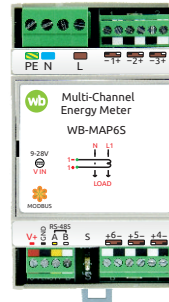
64 €



WB-MAP3ET

- Compact three-phase energy meter using Modbus RTU protocol
- Built-in integral transformers
- Accuracy class 0.5S
- Measuring peak values of current and voltage in a predefined interval
- Powered by phase voltage
- DIN-rail mount (3 modules)

100 €

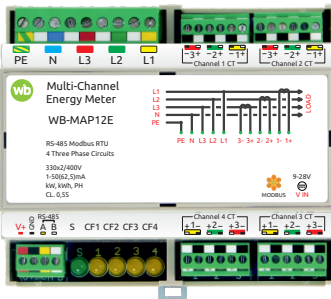


WB-MAP6S

- Single-phase 6-Channel energy meter with Modbus RTU
- Accuracy class 0.5S
- For flats, apartments, offices
- DIN-rail mount (3 modules)

64 €

complete with 6 plug-in transformers for 75 A



WB-MAP12E

- Single-handedly replaces 4 three-phase or 12 single-phase energy meters
- Accuracy class 0.5S
- Powered by phase voltage
- Measuring peak values of current and voltage in a predefined interval
- DIN-rail mount (6 modules)

216 €

complete with 6 plug-in transformers for 75 A

WB-MR relay modules

WB-MR are relay modules controlled via Modbus RTU. They are used for switching various load types: lighting, ventilation, heated floors, power supply units, equipment etc.

The series includes modules with different number of channels and load capacities. Pay special attention to our relay modules developed for direct load control with inrush current (up to 800A) eliminating the need for a separate contactor: LED lighting, incandescent lamps etc.

The majority of modules in the series are equipped with discrete inputs that can be used for direct control of the relay channels or as general-purpose inputs.

Connection of wires
with cross-section up to 4 sq. mm

DIN-rail mount
3M or 6M wide

Reliable Hongfa relays

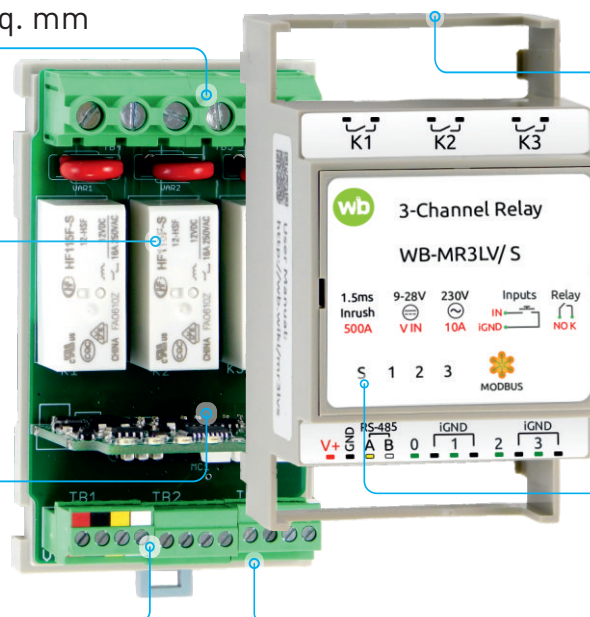
Three-tier
quality control

Control of coil current
for increased
energy efficiency

Output status indication

Wide range of
power voltages: 9-28 V

Inputs may be used to
control relay channels





WB-MR6C v.2

Designed for direct control of LED, incandescent and fluorescent lighting and other loads

- 6 relay channels 10 A 230 V AC
- High inrush current up to 80 A
- Continuous current 16 A
- 7 isolated inputs
- DIN-rail mount (3 modules)

64 €

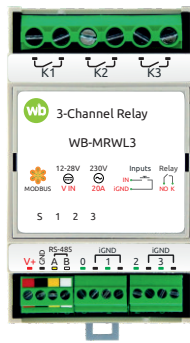


WB-MR6C v.3

WB-MR6C v.2 module version with built-in power supply

- Advanced safety settings mode
- Relay emulation with normally closed contacts
- DIN-rail mount (3 modules)

76 €

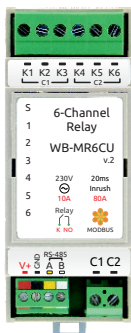


WB-MRWL3

Direct control (without contactor) of groups of mains sockets

- 3 relays 20 A 230 V AC
- Continuous current 26 A
- 4 isolated inputs
- DIN-rail mount (3 modules)

65 €

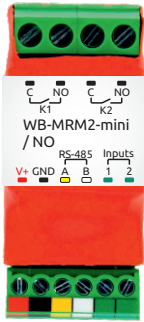


WB-MR6CU v.2

Compact relay module without inputs

- 6 relay channels 10 A 230 V AC
- High inrush current up to 80 A
- Continuous current 16 A
- DIN-rail mount (2 modules)

59 €



WB-MRM2-mini v.2

Built-in module for installation in junction boxes and sockets

- 2 relay channels 10 A
- Inrush current up to 80 A
- NO and NC configurations
- 2 discrete inputs
- Small size: 52 x 22 x 20 mm

37 €

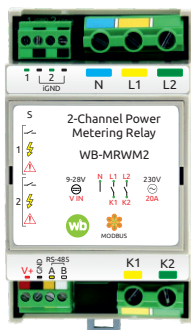


WB-MRPS6

Six high-power relay outputs

- 6 independent relay channels rated 10 A 230 V AC
- High inrush current up to 500 A
- Ideal for lighting and PSU control
- DIN-rail mount (3 modules)

76 €

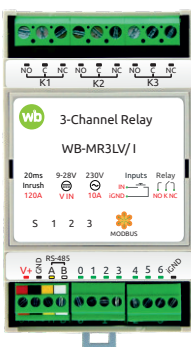


WB-MRWM2

Switch of power outlets, motors, heaters and power consumption measurement

- 2 relay channels 20 A 230 V AC
- 2 isolated inputs
- The measurement of active power of the load and the input voltage
- DIN-rail mount (3 modules)

76 €



WB-MR3LV и WB-MR6LV

For switching LED lamps, PSU and other powerful loads without intermediate contactors

- 3 or 6 relay channels 10 A 230 V AC
- High inrush current up to 500 A
- Continuous current 16 A
- 7 isolated inputs
- DIN-rail mount (3 or 6 modules)
- Models with normally open and changeover contacts

WB-MR3LV/S
3 relay
inputs «dry contact»

57 €

WB-MR6LV/S
6 relay
inputs «dry contact»

83 €

WB-MSW v.4

Wall mount 8-in-1 sensor with Modbus RTU for residential and office spaces

- Temperature and humidity
- Light sensor (lux)
- Noise level
- CO₂ concentration
- Built-in buzzer and status lights
- PIR sensor for presence detection
- Air quality (Volatile organic compounds)
- IR codes emitter

62€

temperature and humidity

+ 14€

Light sensor and IR

+ 5€

Noise level

+ 8€

PIR sensor

+ 37€

Air quality

+ 54€

CO₂ concentration



 226€

Z-Wave version in full configuration

 226€

Zigbee version in full configuration

 180€

Modbus version in full configuration

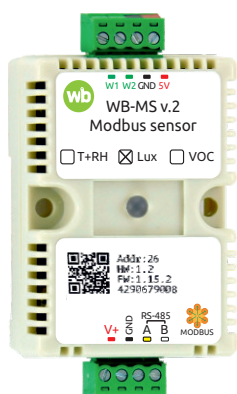
WB-MS v.2

Universal sensor with Modbus RTU surface mount and DIN rail

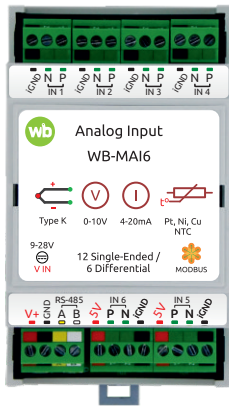
- Temperature and humidity
- Light sensor (lux)
- Air quality (Volatile organic compounds)
- Connecting up to two external 1-Wire temperature sensors
- 1-Wire inputs can be used as counter or discrete inputs

45€

temperature and humidity



Bus couplers

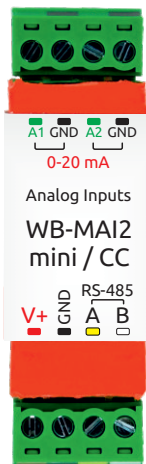


WB-MAI6

12 inputs for analog sensors

- Thermal resistors Pt 100, Pt 1000, etc. two-wire and three-wire
- K-type thermocouples, NTC thermistors
- Sensors with output 0-10V, 1-10V, -50-50mV, 4-20mA, 0-20mA, 0-5mA
- DIN-rail mount (3 modules)

84 €



WB-MAI2-mini / CC

Reading data of two 0-20mA signals via Modbus RTU

- For installation into junction boxes
- Dimensions: 57x18 x12 mm

27 €



WB-M1W2

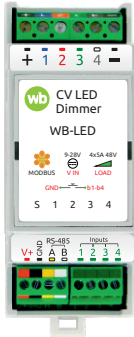
The built-in module allows polling two remote digital 1-Wire temperature sensors via RS-485

- For installation into junction boxes
- -40°C to +125°
- Accuracy $\pm 0.5^\circ\text{C}$
- Dimensions: 57x18 x12 mm

24 €

Lighting control

The modules support direct control from switches and remote control via RS-485 Modbus RTU

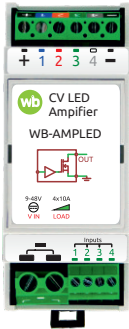


WB-LED

4-channel dimmer to control LED strips: RGB, RGB+W, CCT (yellow-white) or W (white)

- 4 channels, up to 48 V DC, up to 5A per channel
- PWM frequency from 100 Hz to 24 kHz, changeable in settings
- Programmable digital inputs
- Short circuit and overheat protection
- DIN-rail mount (2 modules)

49€



WB-AMPLED

4-channel amplifier for dimming LED strips

- 4 channels, 10 A each, up to 48 V
- 4 inputs for control signals
- DIN-rail mount (2 modules)
- Built-in overload protection

45€

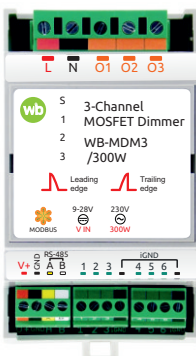


WB-MA04

4-channel control module for lighting and other equipment

- 4 outputs 0-10 V AC and PWM
- 3 digital inputs
- DIN-rail mount (2 modules)

64€



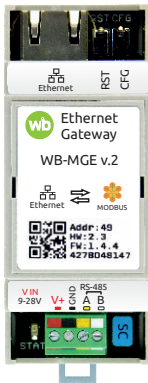
WB-MDM3

Suitable for dimming LED lamps. Three channels, 300W per channel.

- 300 W load per channel
- Trailing or leading edge dimming
- 6 discrete inputs for direct control
- Overload protection
- DIN-rail mount (2 modules)

102€

Modbus RTU — Modbus TCP gateway

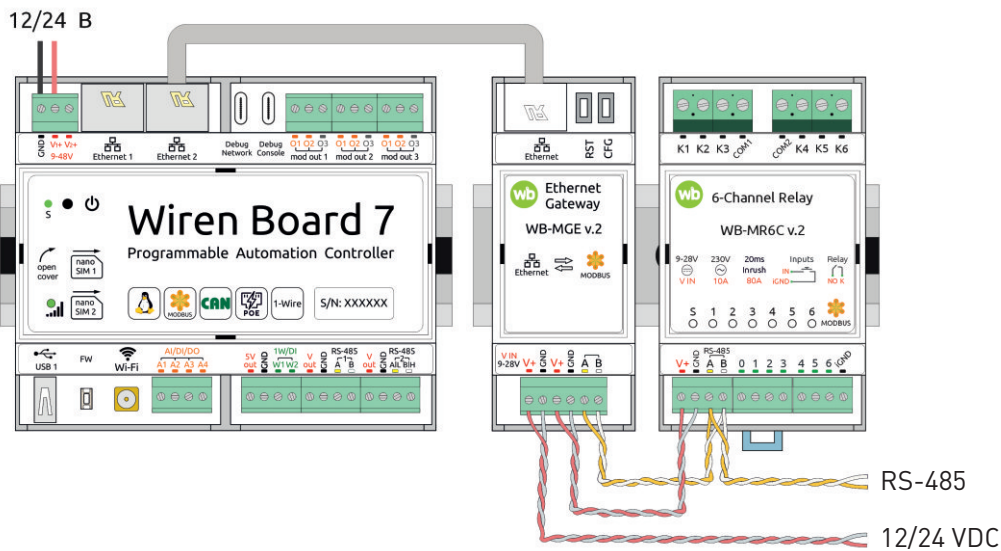


WB-MGE v.2

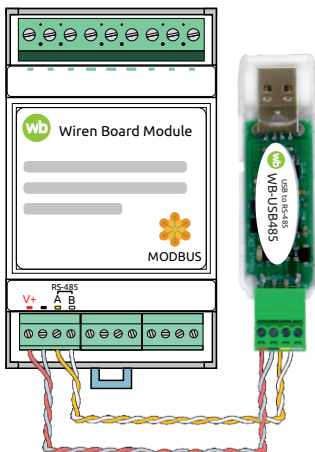
Gateway for connecting the RS-485 bus via Ethernet.
Can operate as a transparent bridge for data exchange between two remote RS-485 bus segments

- Support Modbus TCP and Modbus RTU over TCP
- DIN-rail mount (2 modules)

83€



Connecting a remote segment of the RS-485 bus with Modbus RTU via a local network or the Internet



WB-USB485

Interface converter for controlling devices via the RS-485 bus

- Output 12 V with current up to 400 mA
- Short circuit protection
- Works without drivers on Windows, Linux, macOS and Android

33€

IR control



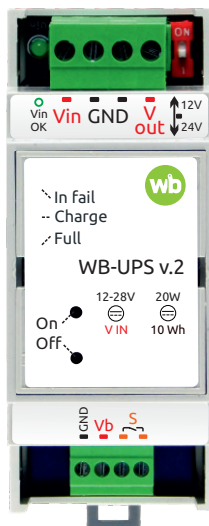
WB-MIR

Programable IR remote control module for a wide range of devices: climate control stations, fan coils, TV, lightening and other devices with IR-interface.

- Up to 80 IR-commands can be stored in internal memory
- Programming and control by RS-485 interface with Modbus RTU protocol
- Small wired transmitter with 3.5 mm jack
- External 1-wire temperature sensor or discrete input
- Small size: 40x15x11 mm

40€

Uninterruptible Power Supply



WB-UPS v.2

UPS module with lithium polymer batteries

- 2 operating modes: 12/24 V
- Charge: 0°C to 55°C / Discharge: -20°C to 60°C
- Power 15 W
- Status indicator
- DIN-rail mount (2 modules)
- Operating time up to 60 min (at 10 W)

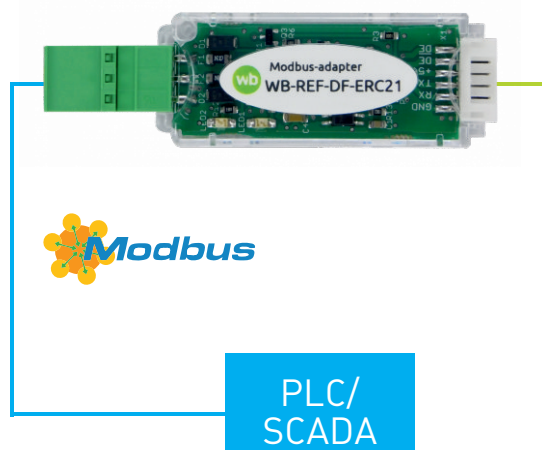
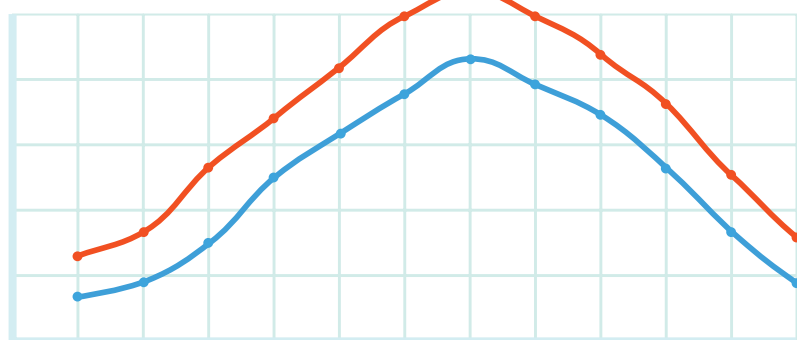
73€

Refrigerator network cards

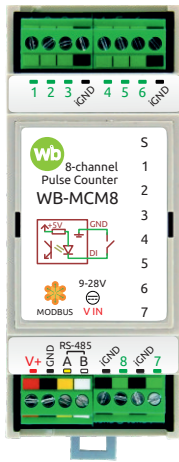
Our network cards add RS-485 interface with Modbus RTU support to Danfoss, Carel и Eliwell refrigeration controllers.

You can connect cooling chests and other commercial refrigeration equipment to SCADA or a controller with Modbus RTU support and monitor their technical condition, as well as control: defrost, change temperature settings, etc.

WB-REF-DF-ERC21	For Danfoss controllers models ERC 211, ERC 213, ERC 214	25€
WB-REF-DF-178A	For Danfoss controllers models EKC 202D, EKC 202B, EKC 204A1 / AK-CC 210	48€
WB-REF-U-R	For Carel controllers models Carel BASIC, EASY, µRack, µC2SE, µC2, µGEO и Eliwell ID/ID	48€



Devices for polling meters

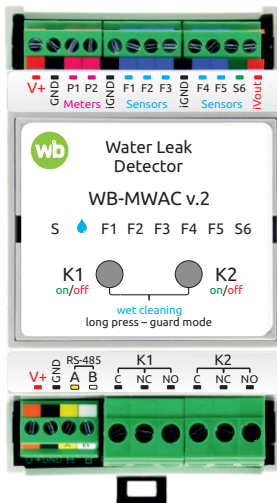


WB-MCM8

Polls 8 counters with pulse outputs

- 8 discrete/counter inputs for connection of "dry contact" or "open collector" outputs
- DIN-rail mount (2 modules)
- Connection of water, electricity, gas meters
- Current status, pulse frequency and number of pulses for each input

46€



WB-MWAC v.2 New for 2024

Shuts off water when sensors are triggered and interrogates two water meters with pulse output.

- 2 inputs for pulse counters
- Counting even when the device is powered off
- 6 discrete universal isolated inputs for connecting leak sensors and buttons
- 2 changeover relays for connecting electric taps
- 2 buttons for local control of shut-off valves
- "Wet cleaning" mode
- Indicators of emergency, input activation and valve position
- Works autonomously and via RS-485 Modbus RTU
- DIN-rail mount (3 modules)

100€



Pulse water meters



Water leakage sensors



Electric valves

Industry and Agriculture



Dispatching industrial facilities

The problem of many automation systems is dependence on one vendor and closed protocols.

Wiren Board equipment has an open architecture and is used by companies that work in the paradigm of open standards and independence from manufacturers.

The Wiren Board controller and modules are used to dispatch industrial facilities at the lower level: they collect the sensors and meters readings and transmit them to the server.

Greenhouse automation and racking systems

To get a plentiful harvest, plants should have a microclimate that is comfortable for them: temperature, air and soil humidity, light, CO₂ level.

The Wiren Board controller is used to automate lighting and watering, control temperature and CO₂ levels in rack plant growing systems. The choice of Wiren Board equipment is due to reliability, flexibility of implementation and good technical support.



Microclimate monitoring at the medicine warehouse

Wiren Board equipment is a base of the dispatch system, which is used by the distributor of medicines to monitor the conditions of storage and transportation of products.

The system operates 24/7. In case of any emergency situations, a notification is sent to responsible employees. A log of all sensor readings is saved, and if necessary, an audit of employee actions is available.



Dispatching of residential condominiums

Wiren Board equipment is used in townhouses and housing estates.

Wiren Board modules control the lighting of the facade, courtyard area, and common areas. Depending on needs Wiren Board controller is installed in each apartment or floor and controls lighting, sockets and climate parameters, monitors

security, and collects meter readings.

Control of bank branch infrastructure

Wiren Board controllers, I/O modules and sensors are used to monitor and control engineering systems in 2,900 bank offices.

By 2024 Wiren Board equipment and software provide comfortable environmental conditions for employees and clients: temperature and humidity, lighting, carbon dioxide (CO₂) concentration. Accounting for resource consumption allows you to identify inefficient departments and save up to 30% on utility bills.



Fast food retail telemetry

Telemetry of engineering systems and equipment is an important part of digitalization of fast food. A promising direction not only increases ease of management, but also reduces expenses.

Wiren Board's assortment includes many unique solutions for automation of grocery and fast food retail: climate sensors, electricity meters, network cards for refrigerators, powerful relay modules for

lighting. Wiren Board controller runs an open operating system and has extensive integration capabilities with third-party dispatch platforms.

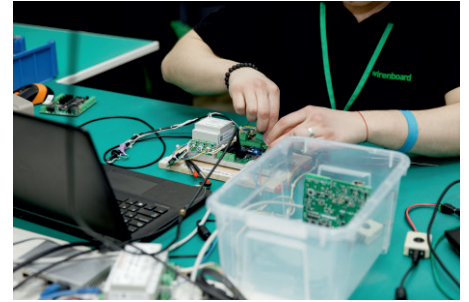
About us

Wiren Board is an international group of companies that designs and manufactures electronics for automation and monitoring since 2013. We have R&D department and production facilities in Astana and Yerevan.

Our aim is to make industrial equipment more affordable for all the customers. Our main products are reliable Linux-based programmable logic controllers and I/O modules, sensors and meters supporting Modbus, Zigbee and Z-Wave protocols.

Our equipment can be used for both industrial and home automation. Wiren Board devices monitor microclimate in the data centers, supermarkets and offices, apartments and entire residential condominiums. They also operate in oil wells and cell sites. Wiren Board devices can work as a part of the various cloud platforms.

Today Wiren Board is a great team of more than 50 highly qualified professionals including electronic engineers, software developers, QA, and production engineers. We manufacture tens of thousands of high-tech devices per year. To ensure the outstanding quality of our products we supervise or directly perform all the crucial steps in the production process, including parts procurement, functional testing, and final assembly. All our devices are 100% tested on a one-by-one basis using specially designed state-of-art automated testing equipment. The products comply with European and international regulations.



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