



wirenboard

Home and facility automation

2025

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



Embedded Software

- Debian Linux OS with root access:
modify any settings
and install third-party applications
- Wiren Board software for various tasks
- Custom firmware images can be built
with your own or our software
- **Wiren Board Cloud** – remote management
and inventory service

Interfaces & communications

- 1× microSD slot, up to 60 MB/s
- 2× Ethernet 10/100
- 1× USB Host
- Wi-Fi 802.11n (AP, client), 2.4 & 5 GHz
- Bluetooth 4.2 + BLE
- 2×RS-485: Modbus RTU and other protocols
- 2×1-Wire / DI
- 4×AI / DI / DO

4G (LTE) modem

Primary or backup communication channel

- 2 Nano SIM slots
- SMS Sending
- 2G/3G/4G (up to 150 Mbps)

Supply

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

Industrial versions (-40 to +75 °C)

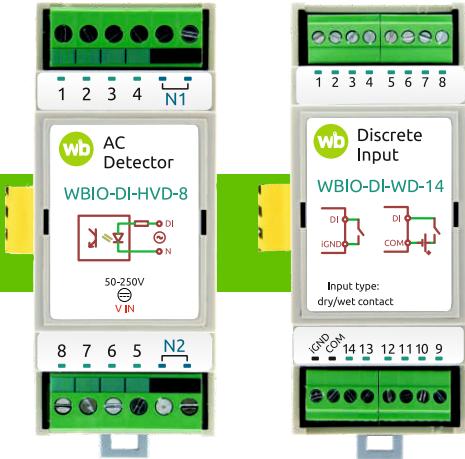
ARM Cortex-A53 1.5 GHz, 2 GB LPDDR4 RAM, eMMC 16 GB

385 €

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

440 €

It fits your needs



WBIO I/O Modules

Stackable modules allow adding up to 128 additional I/O ports to the controller

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

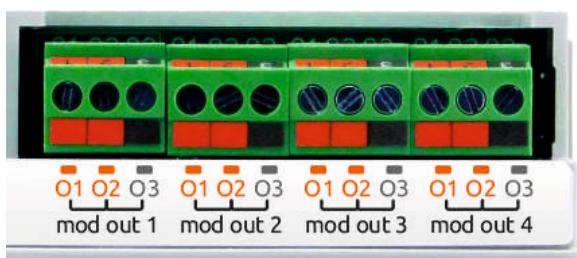
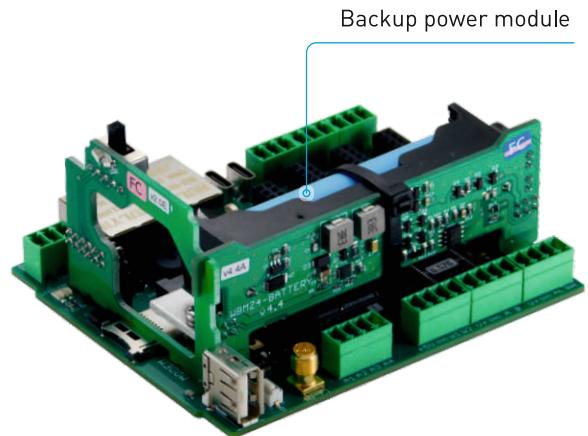
starting at **39 €**

Backup power modules

Built-in UPS.

Powers the controller, expansion modules, WBIO and devices connected to USB and Vout terminals.

43 €

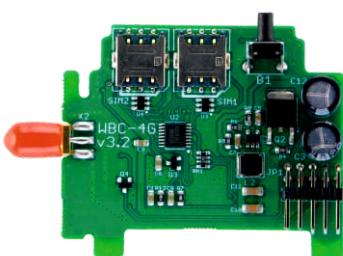


Terminals for connecting external devices to extension modules

Extension modules

Four extension modules can be installed in slots inside the controller housing

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



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 adding 8-16 digital and analog ports for connection with the controller on a DIN-rail and operate as a single unit.

Interfaces

WBE2-I-RS232	RS-232 Interface	14 €
WBE2-I-KNX	KNX TP Interface	101 €
WBE2-I-RS485-ISO	Additional isolated RS-485 interface	25 €
WBE2-I-1-WIRE	Additional 1-Wire interface	14 €
WBE2-I-EBUS, WBE2-I-OPENTHERM	Control of electric and gas boilers eBus and OpenTherm protocol	111 €

Discrete Inputs

WBE2-DI-DR-3	3 dry contact inputs	14 €
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Discrete Outputs

WBE2-DO-R6C-1	1 relay output (SPDT)	14 €
WBE2-DO-SSR-2	2 dry contact outputs (SSR)	14 €
WBE2-DO-R3A-1	1 normally open relay output	11 €

Wireless

WBE2R-R-GPS	GPS/Glonass module with precise time signal	38 €
WBE2R-R-ZIGBEE v.2	Zigbee interface (2.4 GHz), Z-Stack 3.x	60 €
WBE2R-R-ZWAVE-ZWAY	7th generation Z-Wave chip	157 €

Power modules

WBP-ACTIVE-POE	IEEE 802.3af, 802.3at PoE power module	47 €
WBP-PASSIVE-POE	Passive PoE power module	47 €

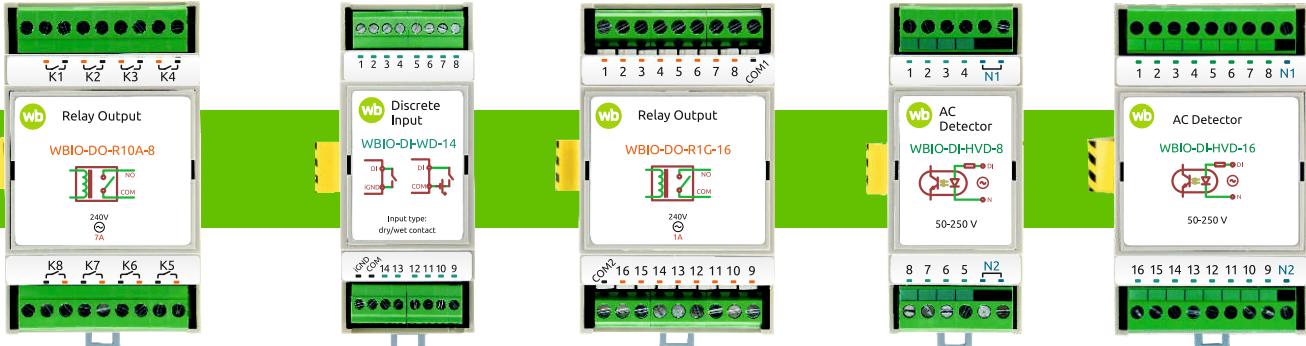
Backup power modules

WBMZ4-SUPERCAP	Supercapacitor-based backup power supply module	43 €
WBMZ4-BATTERY	Li-ion battery backup module	43 €
WBMZ6-BATTERY	Supercapacitor-based backup power module for Wiren Board 8.5	43 €
WBMZ6-SUPERCAP	Li-ion battery backup module for Wiren Board 8.5	43 €

Modems

WBC2-4G	Supports 2G, 3G, 4G (Cat.4 LTE)	66 €
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WBIO Modules



WBIO-DO-R10A-8 8 outputs with mechanical relays (SPST) 7 A **55 €**

WBIO-DO-SSR-8 8 discrete outputs with low-voltage solid-state relays (optocouplers, SPST, up to 40 V) **39 €**

WBIO-DO-R1G-16 16 mechanical relay outputs (SPST, 1.5 A) **100 €**

WBIO-DI-HVD-8 8 channels for mains voltage detection (230V AC) **43 €**

WBIO-DI-HVD-16 16 channels for mains voltage detection (230V AC) **65 €**

WBIO-DI-WD-14 14 universal digital inputs
2 operation modes: dry contact and 12/24 V voltage presence **50 €**

Demo kit

The demo suitcase is pre-assembled and pre-configured set of equipment. It is designed for demonstrating Wiren Board devices to end customers or for quick self-study of the hardware and software.

The demo suitcase includes detailed documentation: a complete wiring diagram, a power supply diagram, and a comprehensive description of various scenarios

Use cases and features:

- Climate control
- Ventilation and air conditioning control
- Lighting control
- Water and electricity meter polling
- Multi-zone electricity metering
- Leakage protection systems
- Equipment failure prevention
- Uninterrupted operation in case of external power failure

It can be used to show:

- Engineering system management in stores and warehouses
- Control of data center equipment, base stations and transformer substations
- Home and residential complex automation



1360 €

Wiren Board 8M

for automation and monitoring systems with high resistance to EMI
(Electromagnetic Interference)



Hardware

- Quad-core ARM Cortex-A53 1.5 Ghz
- Up to 4 GB LPDDR4 RAM and up to 64 GB eMMC

Embedded Software

- Debian Linux OS with root access: modify any settings and install third-party applications
- Wiren Board software for various tasks
- Custom firmware image can be built with your own or our software
- **Wiren Board Cloud** – remote management and inventory service

Interfaces and communications

- 1× microSD slot, up to 50 MB/s
- 2× Ethernet 10/100
- 1× USB Host
- Wi-Fi 802.11n (AP, client), 2.4 & 5 GHz
- Bluetooth 4.2 + BLE
- 2×RS-485: Modbus RTU and other protocols
- 2×1-Wire / DI
- 4×AI / DI / DO
- RTC with ±0.5 seconds per day accuracy

Package includes

- 2G/3G/4G (LTE) Modem with 2 Nano SIM Slots
- 2 RS-485 modules with galvanic isolation
- Supercapacitor backup power module

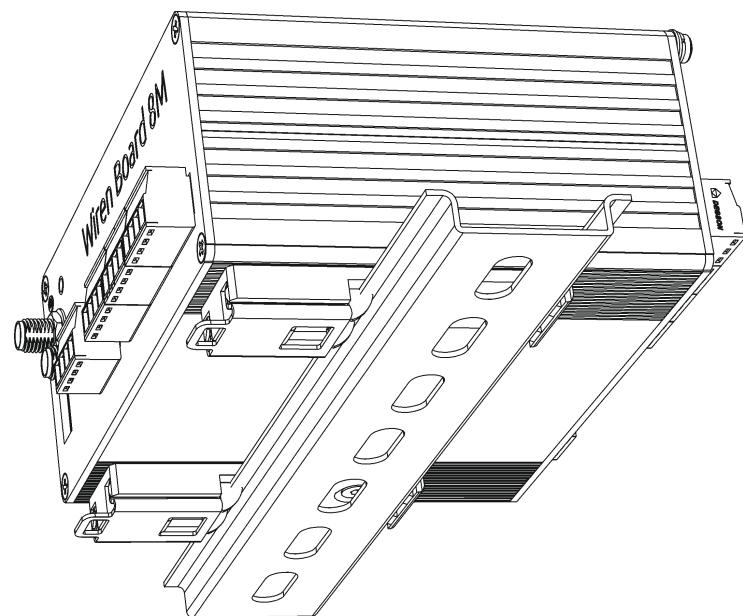
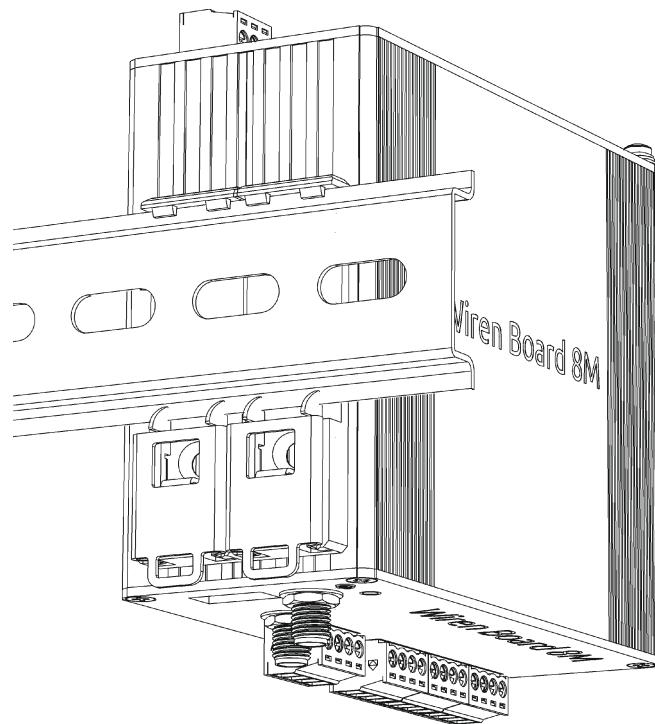
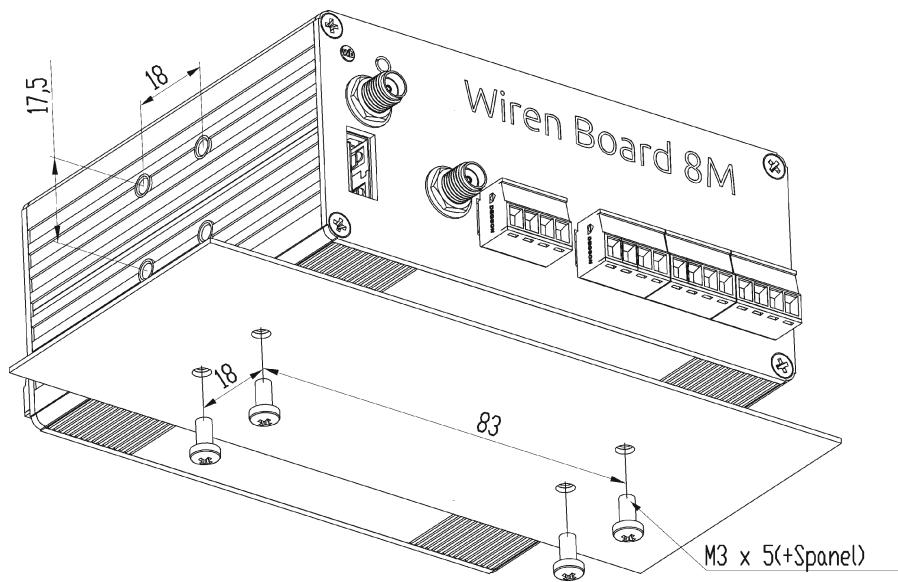
Supply

- 9 to 48 VDC
- Backup power input

Industrial versions (-40 to +75 °C)

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

910 €



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, ICP-DAS, and others



KNX (EIB)

- Supports both KNX TP and KNX/IP
- Wide selection of KNX devices for residential and commercial automation
- The controller works as a KNX IP Gateway
- ETS project import support



SNMP **ZABBIX**



WINDECO **IEC**



dlms **MQTT**



M-Bus, DLMS/COSEM Meters

- M-Bus bus master interface
- Electricity, heat and gas meters
- Support for DLMS/COSEM protocol based meters

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
- Lighting equipment with the DALI-2 protocol



User Interfaces

Wiren Board controller web interface



Dashboard



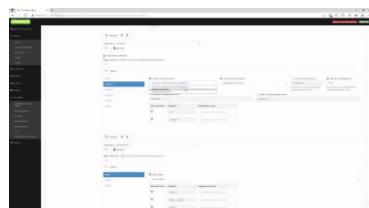
History



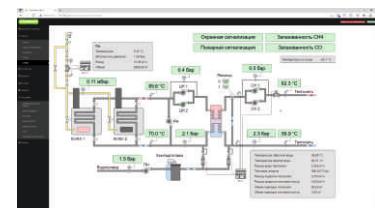
MQTT-channels



Scan Interface



Device Configuration



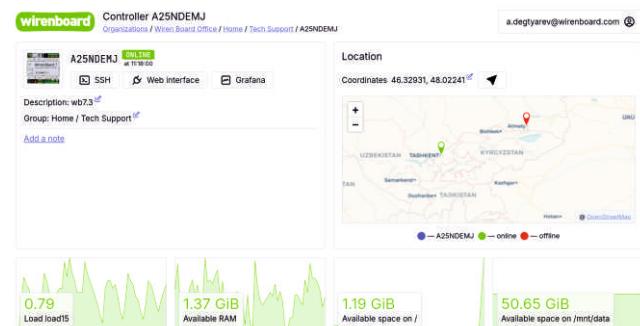
Live equipment layout diagram

Third party software



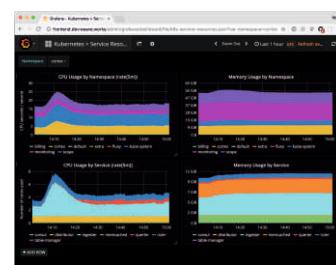
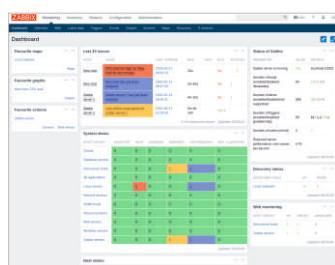
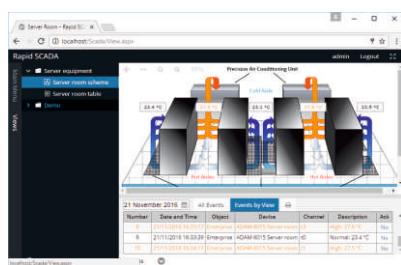
Home Assistant

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



Wiren Board Cloud

Remote administration service

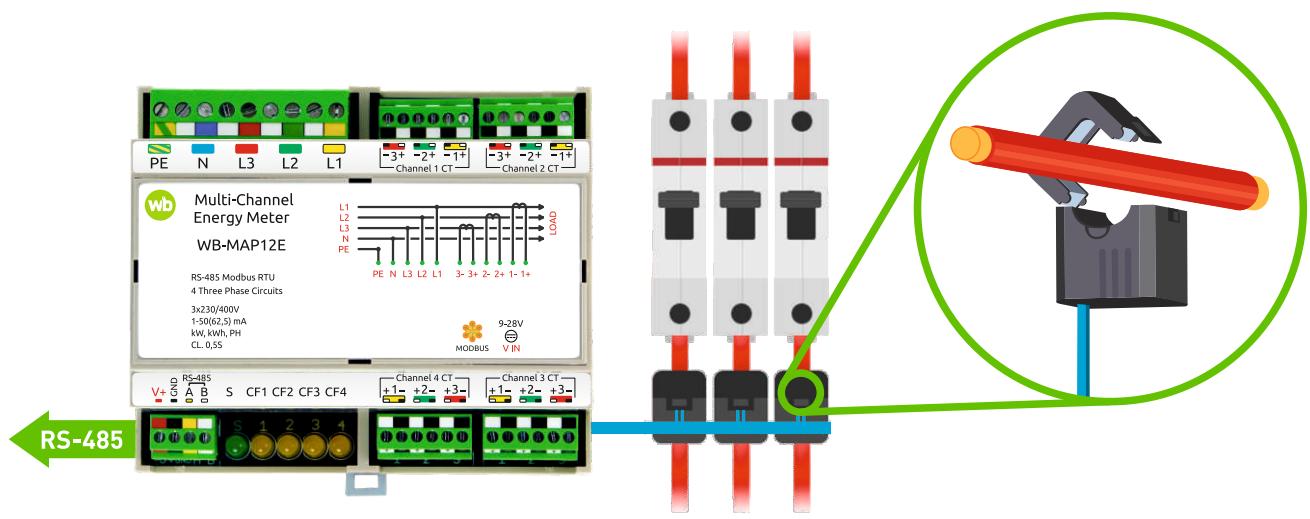


Rapid SCADA, Zabbix, Grafana and other monitoring software

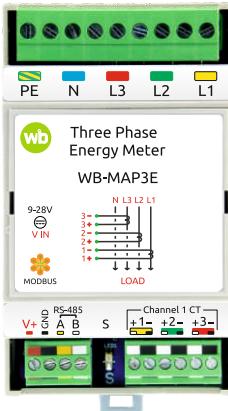
WB-MAP Multi-Circuit Energy Meters

WB-MAP multi-circuit energy meters are designed for energy management, industrial metering and power quality monitoring.

These devices occupy significantly less space in the electrical cabinet compared to traditional energy meters. Split-core current transformers used by WB-MAP meters are installed on existing wires without requiring reassembly of the electrical cabinet.



- External split-core transformers rated for currents up to 400 A
- DIN-rail mount
- Real-time measurement of electrical parameters of each line: current, voltage, power (kW, kVA, kVAr)
- Active, reactive and apparent energy metering
- Measurement of surges of voltages and currents with durations from 300 µs



WB-MAP3E

- Compact three-phase energy meter with Modbus RTU support
- Accuracy class 0.5S
- Measuring peak values of current and voltage within a specified interval
- Powered directly from phase voltage
- DIN-rail mount (3 modules)

117 €

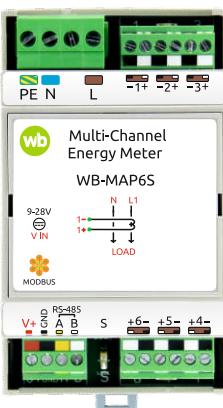
complete with 3 plug-in
transformers for 80 A



WB-MAP3EV

- Compact three-phase voltmeter with Modbus RTU support
- Accuracy class 0.5S
- Measures real-time voltage parameters, peak voltage values and phase angles
- DIN-rail mount (2 modules)

69 €



WB-MAP6S

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

121 €

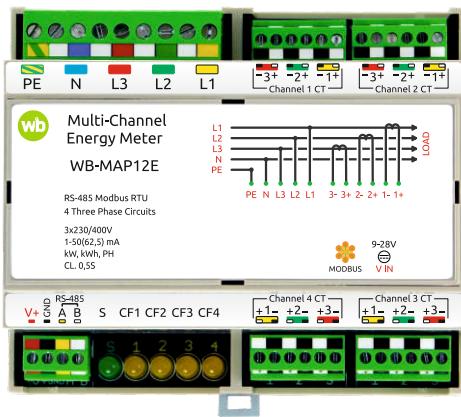
complete with 6 plug-in
transformers for 80 A



WB-MAP3ET

- Compact three-phase energy meter with Modbus RTU support
- Non-removable built-in transformers
- Accuracy class 0.5S
- Measuring peak values of voltage, current and power within a specified interval
- Powered by phase voltage
- DIN-rail mount (3 modules)

109 €



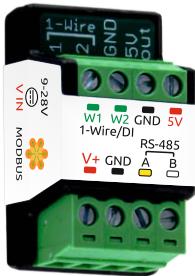
WB-MAP12E

- Replaces up to 4 three-phase or 12 single-phase energy meters
- Accuracy class 0.5S
- Powered by phase voltage
- Measuring peak values of current and voltage within a specified interval
- DIN-rail mount (6 modules)

340 €

Includes 12 split-core
transformers for 80 A

Signal converters

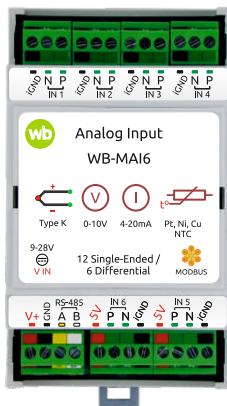


WB-M1W2 v.3

Built-in module with two dry contact inputs

- For installation in wall switch boxes, cable ducts and other tight places
- Each input can operate in two modes:
1-Wire or pulse counting and press detection
- Dimensions: 34×20×17 mm

24€



WB-MAI6

12 inputs for analog sensors

- RTD sensors Pt 100, Pt 1000, etc.
For two-wire and three-wire configuration
- K-type thermocouples, NTC thermistors
- Sensors with output 0-10V, 1-10V, -50-50mV, 4-20mA, 0-20mA, 0-5mA
- DC voltage measurement up to 30 V
in the basic configuration
- DC voltage measurement up to 60 V
using WB-VDIV voltage divider
- DIN-rail mount (3 modules)

WB-VDIV

18€

WB-MAI6

93€



WB-MAI2-mini / CC

Two channel 0-20 mA analog input module
with Modbus RTU

- Designed for installation in junction boxes
- Dimensions: 57×18×12 mm

27€

WB-MR relay modules

WB-MR relay modules are controlled via Modbus RTU. They are used for switchin various load types: lighting, ventilation, heated floors, switching power supplies and other equipment..

The series includes modules with different numbers of channels and load capacities. The series includes specialized modules designed for direct control of loads with high inrush currents (up to 800 A) eliminating the need for a separate contactor. These are ideal for LED lighting, incandescent lamps and other demanding applications.

Most modules in the series feature discrete inputs that can be used either for direct control of relay channels or as general purpose inputs.

When used with switches, the inputs can recognize four types of presses: short, long, short followed by long, and long followed by short. Each press type can be assigned a specific action for one or multiple outputs.

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

Reliable Hongfa relays

Coil current control
for reduced power
consumption

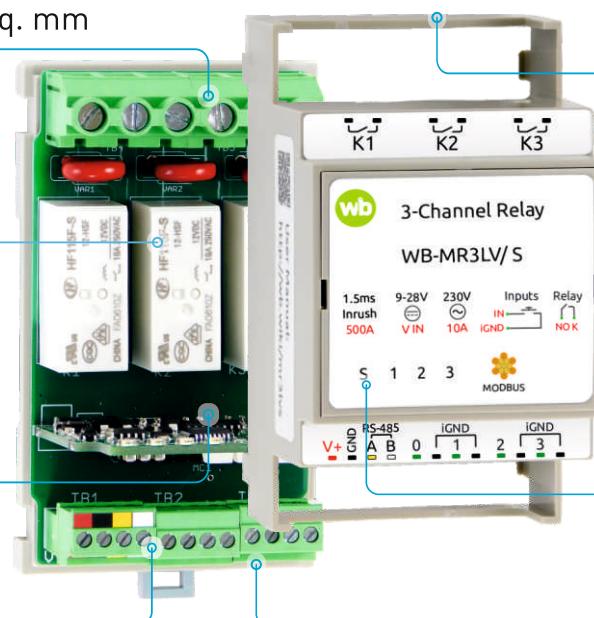
Wide range of
power voltages: 9-28 V

DIN-rail mount
3M or 6M wide

Three-stage
quality control

Output status indication

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)

69 €

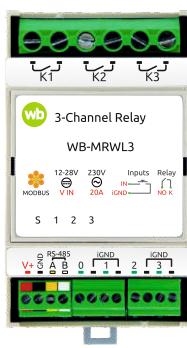


WB-MR6C v.3

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

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

82 €



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)

70 €

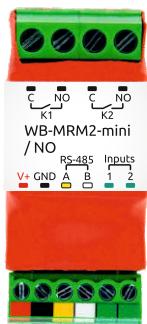


WB-MR6CU v.2

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)

70 €

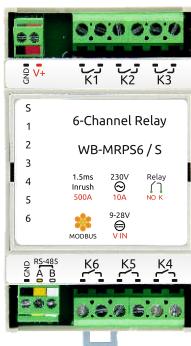


WB-MRM2-mini v.2

Built-in module for installation in junction and wall switch boxes

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

39 €

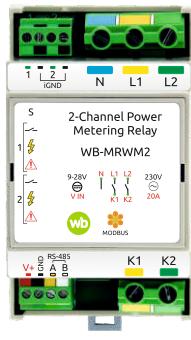


WB-MRPS6

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)

82 €

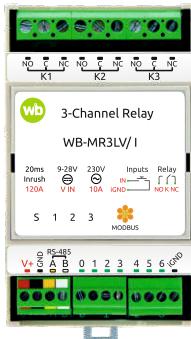


WB-MRWM2

Designed for controlling power outlets, motors and heaters with power consumption measurement

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

82 €



WB-MR3LV и WB-MR6LV

For switching LED lamps, power supplies (PSUs) and other powerful loads without intermediate contactors

- 3 or 6 independent relay channels 10 A 230 V AC
- High inrush current up to 500 A (1.5 ms)
- Continuous current 16 A
- 4 & 7 isolated inputs
- Models with normally open and changeover contacts
- DIN-rail mount (3 or 6 modules)

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

64 €

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

97 €



WB-MSW v.4

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

- Temperature and humidity
- Light level
- Noise level
- CO₂ concentration
- Built-in buzzer and status lights
- Motion sensor
- Air quality (Volatile organic compounds)
- IR control for home appliances

71 €

temperature and humidity

+ 14 €

Light sensor and IR

+ 5 €

Noise level

+ 8 €

Motion sensor

+ 40 €

Air quality

+ 59 €

CO₂ concentration

 **237 €**

Zigbee version in full configuration

 **197 €**

Modbus version in full configuration



WB-MS v.2

Universal sensor with Modbus RTU, suitable for wall DIN rail mounting

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

51 €

temperature and humidity

Lighting control modules

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



WB-LED

4-channel dimmer for controlling LED strips:
RGB, RGB+W, CCT (tunable-white) or W (white)

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

54 €



WB-AMPLIED

4-channel amplifier for LED strip dimming

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

49 €

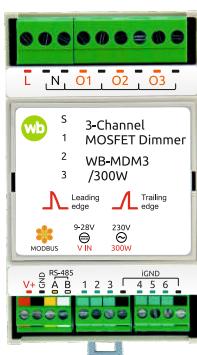


WB-MA04

4-channel analog control module for lighting
and other equipment

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

69 €



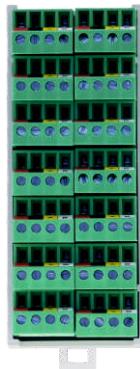
WB-MDM3

Dimmer for LED and incandescent lamps.
3 channels, up to 300 W per channel

- Trailing and leading edge dimming
- 6 discrete inputs with freely programmable logic
- Overload protection
- DIN-rail mount (2 modules)

111 €

Other devices



WB-BUSHUB

Passive RS-485 bus splitter

- Removable 4-contact terminal blocks
- Two bus segments with 7 branches each
- Supports RS-485 bus, isolated ground, power supply, etc.
- DIN-rail mount (2 modules) (35×90×36 mm)

33€

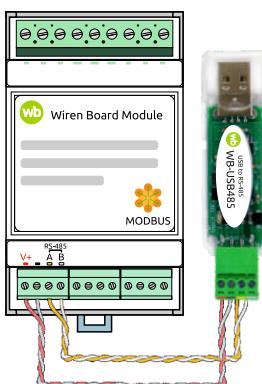


WB-T120

Terminator for the RS-485 bus

- Resistance: 120 ohms ±5%.
- Maximum wire cross-section that can be clamped: 2.5 mm²

5€



WB-USB485

RS-485 interface converter
for device control

- 12 V output, up to 400 mA
- Short circuit protection
- Supported without drivers on Windows, Linux, macOS, and Android

36€



WB-MA04-20mA

Four 0-20 mA outputs for air damper
actuators, frequency converters, and other industrial
equipment control

- 4×0-20 mA outputs, 4 discrete inputs
- DIN-rail mount (2 modules)

86€

IR control



WB-MIR

Programmable IR remote control module for a wide range of devices: climate control units, fan coils, TVs, lighting and other IR-enabled devices

- Stores up to 80 IR commands in internal memory
- Programming and control via RS-485 interface using Modbus RTU protocol
- External IR transmitter with a 3.5 mm jack
- External 1-Wire temperature sensor or can be used as a discrete input
- Small size: 34×20×17 mm

40 €



WB-MSW v.4

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

- Temperature, humidity, and light level
- Stores up to 80 IR commands
- Simultaneous IR control of multiple devices in the same room
- Additional options can be added (p. 17)

84 €

Interface converters



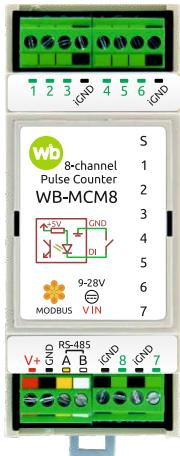
WB-MGE v.2

Gateway for RS-485 to Ethernet connection. Can operate in transparent bridge mode for data exchange between two remote RS-485 segments

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

91 €

Devices for polling meters

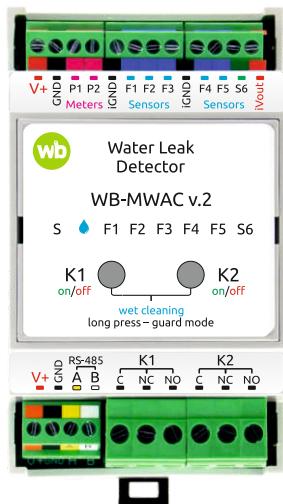


WB-MCM8

Polls 8 counters with pulse outputs

- 8 discrete inputs for pulse counting supporting dry contact or open collector outputs
- Compatible with water, electricity and gas meters
- Monitors current status, pulse frequency and total pulse count for each input
- DIN-rail mount (2 modules)

46 €



WB-MWAC v.2

Automatically shuts off water when leakage sensors are triggered and monitors two water meters with pulse output

- 2 inputs for pulse counters
- Retains pulse count even during power outages
- 6 isolated universal inputs for leak sensors and control buttons
- 2 changeover relays for connecting motorized shut-off valves
- 2 buttons for local control of shut-off valves
- “Wet cleaning” mode
- LED indicators of emergency status, input status and valve position
- Works autonomously and via RS-485 Modbus RTU
- DIN-rail mount (3 modules)

100 €



Pulse water meters



Water leak sensors



Motorized shut-off valves

Refrigerator network cards

Our network cards provide an RS-485 interface with Modbus RTU support for Danfoss, Carel and Eliwell refrigeration controllers.

You can connect freezers, refrigerated display cases and other commercial refrigeration equipment to SCADA or a controller with Modbus RTU support to remotely monitor their status and performance as well as control key functions such as defrosting, adjusting temperature setpoints. and more.

WB-REF-DF-ERC21

For Danfoss controllers models
ERC 211, ERC 213, ERC 214

27€

WB-REF-DF-178A

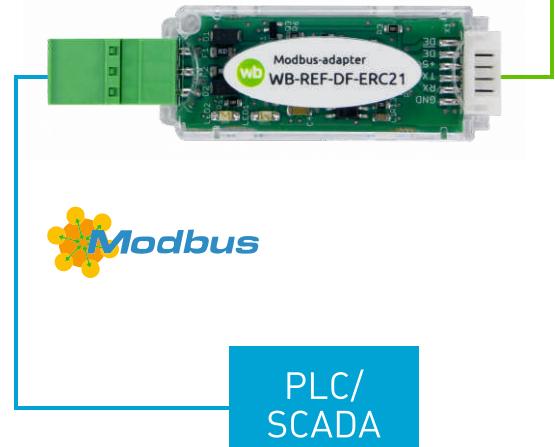
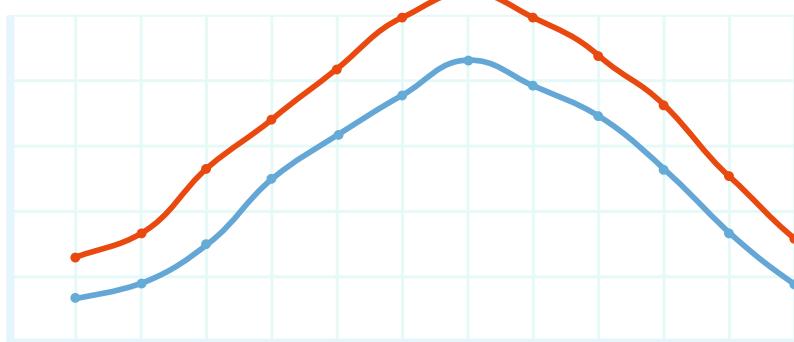
For Danfoss controllers models
EKC 202D, EKC 202B, EKC 204A1 / AK-CC 210

52€

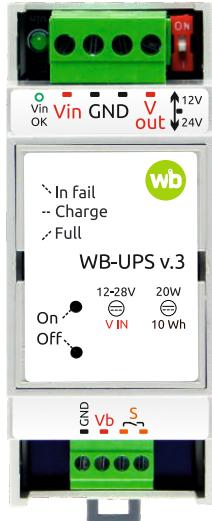
WB-REF-U

For Carel controllers models Carel BASIC, EASY,
pRack, µC2SE, pCO2, µGEO Eliwell ID / ID Plus

52€



Backup power

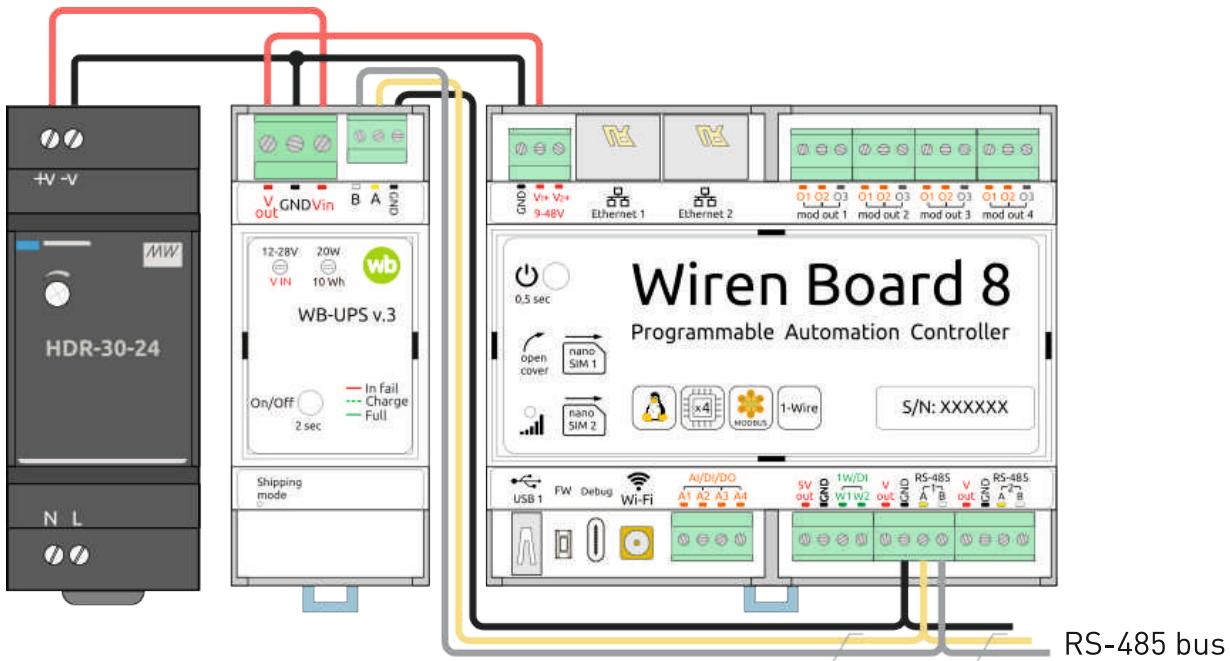


WB-UPS v.3

Uninterruptible power supply module with lithium-polymer batteries

- Compatible with any equipment
- 2 voltage modes: 12 V / 24 V
- Power: 15 W
- Operating time up to 60 minutes (at 10 W)
- Charging: from 0°C to 55°C,
discharging: from -20°C to 60°C
- DIN-rail mount (2 modules)

79€



Example connection of the WB-UPS v3 uninterruptible power supply

Industry and Agriculture



Supervisory Control of Industrial Facilities

Many automation systems suffer from vendor lock-in and proprietary protocols.

Wiren Board equipment has an open architecture and is used by companies that operate within the paradigm of open standards and vendor independence.

The Wiren Board controller and modules enable low-level supervisory control of industrial facilities: they collect sensor and meter readings and transmit them to the server.

Greenhouse Automation and Vertical Farming

To get a plentiful harvest, plants require a precisely controlled microclimate, including temperature, humidity levels in the air and soil, light and CO₂ concentration.



The Wiren Board controller is used to automate lighting and watering, control temperature and CO₂ levels in vertical farming systems. The choice of Wiren Board equipment is driven by its reliability, flexible implementation and strong technical support.



Medicine Warehouse Microclimate Monitoring

Wiren Board equipment forms the backbone of the monitoring system used by pharmaceutical distributors to track storage and transportation conditions.

The system operates 24/7. In case of an emergency, responsible employees receive

notifications. A log of all sensor readings is saved, and if necessary, an audit of employee actions is available.

Residential and Commercial Real Estate



Supervisory Control of Residential Complexes and Condominiums

Wiren Board equipment is used in townhouses and residential estates.

Wiren Board modules control the lighting of building facades, courtyards, and common areas.

Depending on project needs, a Wiren Board

controller is installed in each apartment or floor, where it manages lighting, power sockets and climate settings, monitors security, and collects utility meter readings.

Control of Bank Branch Infrastructure

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

As of 2024 Wiren Board equipment and software ensure a comfortable indoor environment for employees and clients, including temperature, humidity, lighting, carbon dioxide (CO₂) levels. Monitoring resource consumption helps identify inefficiencies and reduce costs by up to 30% on utility bills.



Fast Food Retail Telemetry

Telemetry of engineering systems and equipment is an important part of the digitalization of the fast food industry. This growing trend not only enhances operational efficiency, but also reduces costs.

Wiren Board offers unique solutions for grocery and fast food retail automation, including climate sensors, energy meters, refrigerator network

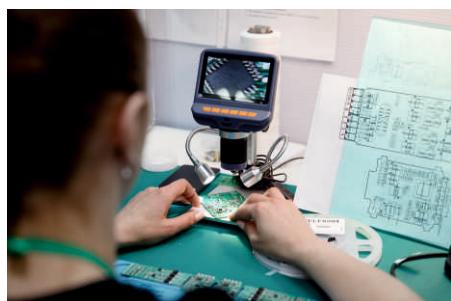
cards, and high-power relay modules for lighting control. The Wiren Board controller runs an open operating system and provides extensive integration capabilities with third-party supervisory control platforms.

About us

Wiren Board is an international group of companies that designs and manufactures industrial automation and monitoring electronics. Since 2013, we have been developing reliable solutions for industrial and building automation. Our R&D department and production facilities are located in Astana and Yerevan.

Our mission is to make industrial automation more accessible for all customers by offering high-quality, flexible, and open solutions. Our core products include Linux-based programmable logic controllers (PLCs), I/O modules, sensors and meters supporting Modbus, Zigbee and Z-Wave protocols.

Wiren Board devices are used in both industrial and home automation. They monitor climate conditions in the data centers, supermarkets, offices, apartments and large residential complexes. Additionally our equipment operates in oil extraction sites and telecommunications infrastructure and industrial facilities, integrating seamlessly with various cloud platforms for remote control and monitoring. Today Wiren Board is a team of over 100 highly skilled professionals, including electronic engineers, software developers, QA specialists, and production engineers. We manufacture hundreds of thousands of high-tech devices annually. To ensure the outstanding product quality we directly oversee, manage and perform all critical stages of the production process, from component sourcing and functional testing to final assembly. Every device undergoes rigorous individual testing using state-of-the-art automated equipment and fully complies with European and international standards.



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