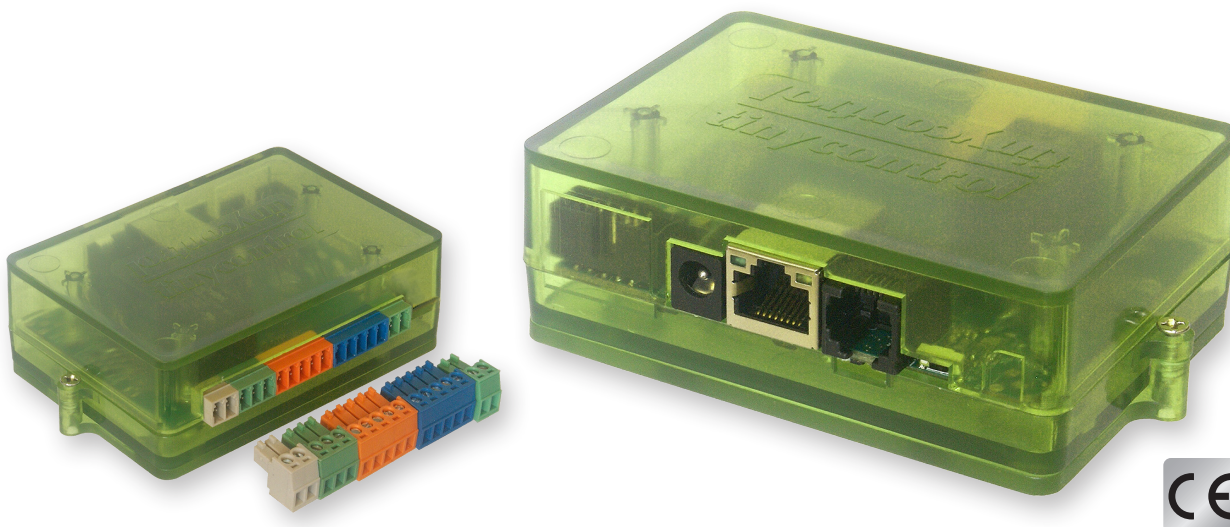


IT'S TIME FOR INTERNET OF THINGS

LK4 - universal IoT controller

The symbol: 06202



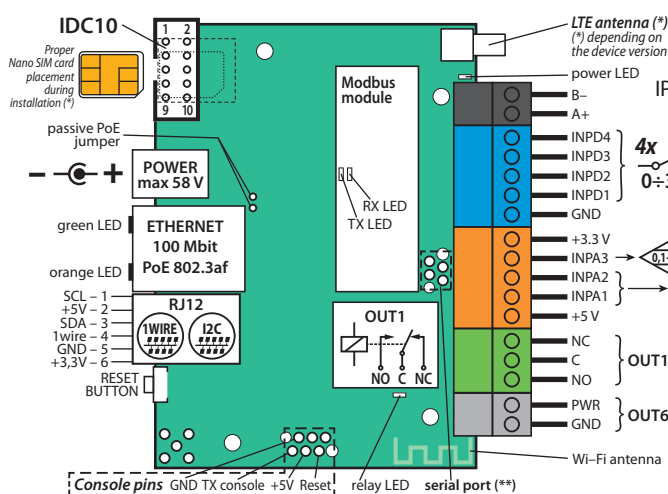
The LK4 integrates our previous IoT experiences into one universal device. It represents a seamless continuation of the previous LAN Controller series, now in a more convenient form.

Dual communication interface: you can use a wired Ethernet connection, wireless Wi-Fi, or both at the same time. A variant with LTE connectivity is also available.

LK4 can be fully configured from the website, available on the built-in web server. It is also possible to send any commands to the device via the HTTP protocol (omitting the website) or MQTT (after configuring the connection).

Technical specifications:

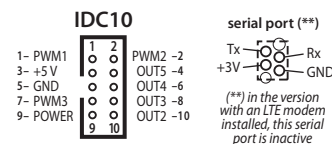
the symbol / name	06202 / LK4 - universal IoT controller
supply voltage	8 ÷ 58 V DC
power consumption	0.5W (without relays enabled)
PoE power supply	YES (802.3af) mode A passive with jumper
interfaces	Ethernet 10/100 Mbit/s, Wi-Fi 802.11n
relay	255VAC, 10A
operating temperature range	-20 to + 85 °C
dimensions (width x length x height)	106 x 79 x 38 mm
weight	130 g (complete set with housing and plugs)
DIN rail mounting	YES (35mm)



LK4 terminal diagram

LOGIN/PASS: admin / admin

IP address: use LKTools for checking IP address



Ethernet PoE info		serial port (**)	
Plug	Colors A	Colors B	default Alternative A
Pin1	white-green	white-orange	Rx+ DC+
Pin2	green	orange	Rx- DC+
Pin3	white-orange	white-green	Tx+ DC-
Pin4	blue	blue	not used
Pin5	white-blue	white-blue	DC+
Pin6	orange	green	Tx- DC-
Pin7	white-brown	white-brown	DC-
Pin8	brown	brown	not used

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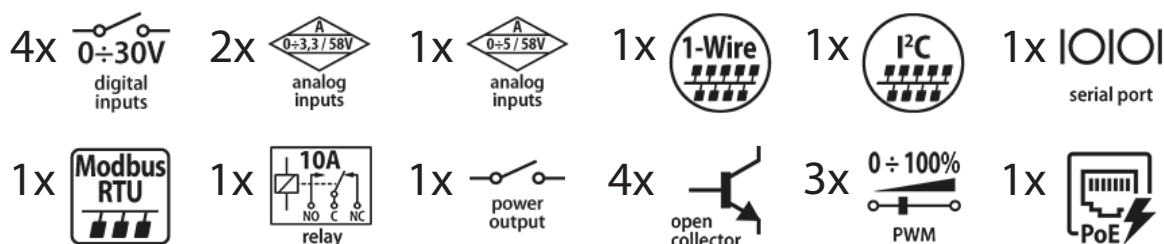


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Basic features:



Hardware:

- 4 logic inputs - as a status sensor for opening monitoring, infrared motion sensors, for a button for manual switching with the option of bistable mode, as a pulse counter from the energy meter, as a time counter between subsequent input resets.
- 2 analog inputs with switchable range (measurement up to 3.3V or 58V) - for measuring voltages, DC current, AC current (additional sensors), operating pressure sensors, thermocouples, distance sensors, photoresistors for lighting measurement and many others.
- 1 analog input with switchable range (measurement up to 5V or 58V) - for measuring voltages, DC current, AC current (additional sensors), operating pressure sensors, thermocouples, distance sensors, photoresistors for lighting measurement and many others.
- Measurement of supply voltage up to 58V
- Digital input in 1-Wire standard - measurement of up to 8 DS18B20 temperature probes.
- Digital input in the I2C standard (together with 1-Wire on the RJ12 connector) - for connecting various devices, e.g. temperature and humidity sensors, air quality (PM) sensors, CO2 measurement sensors, OLED display with the ability to configure the displayed text and others. See the list of supported sensors on the next page.
- Serial bus (UART) - for connecting the devices and sensors listed below.
- RS485 bus to support devices and sensors with the Modbus RTU protocol.
- 1 relay (NO, C, NC) 10A/250V.
- 1 transistor output - supply voltage at the output, to control loads with a current consumption of up to 0.6A.
- 4 outputs for switching relays, transistors in OC standard.
- 3 PWM outputs 1Hz to 1MHz.
- Measurement of temperature and humidity on board.

Software:

- Modern and responsive web interface.
- Possibility of own configuration of the Status panel - uploading your own background, selection and placement of necessary readings and buttons.
- Two levels of access (login) - as an administrator for configuration and as a user to view the Status.
- Advanced events table with the possibility of entering 3 conditions, including time events from the Scheduler.
- Scheduler (Scheduler) for setting 50 programmed time events.
- Ability to configure reading from your own Modbus RTU devices - up to 5 non-standard devices.
- Watchdog to monitor and reset devices with an IP address.
- Modern communication protocols: SNMP, HTTP and MQTT.
- Support for TLS encrypted connections for HTTP, SMTP, MQTT or SNMP v3.
- HTTP client that make it possible to configure and control other devices. For example, controlling Wi-Fi relays (Smart Relay) or displaying sensor readings on the camera image. It supports authentication methods like Basic Authentication and Digest Access Authentication.
- Possibility of collecting data from all connected devices and sensors, remote switching of outputs as well as remote configuration via the MQTT protocol in our service mqtt.ats.pl and mobile application.
- Many functions available through the above service, such as setting reactions and tasks (performing actions under certain conditions and at a certain time) covering multiple devices.
- Sending email, MQTT or SMS notifications (LTE option) as a result of an Event.
- Possibility to send data from sensors via Modbus TCP.
- Remote control from one to many devices via UDP - useful as an implementation of the button over the Internet.
- Time synchronization with the Internet (NTP).
- Maintaining the status of outputs and energy counters until power is restored.
- Convenient software update and backup functions from the device's website.
- Mobile application.

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Communication:

- Wi-Fi in the 802.11n standard (integrated antenna) in station and AP mode
- Ethernet 10/100Mb with PoE 802.3af power support
- LTE modem - available as an option

List of currently supported sensors and devices:

- **Analog inputs** (the whole spectrum of sensors with voltage or 4-20mA output, supported in firmware)
 - AC voltage sensor: AC-meter
 - AC current sensors: SCT-013-000, SCT-013-030
 - DC current sensors: ACS711EX_15, ACS711EX_30, ACS709_75, ACS711LC_12.5, ACS711LC_25, ACS711LC20, WCS1800, WCS6800, LA100P, R=0.1Ω
 - temperature sensor: PT1000 (with additional resistor)
- **Logical inputs** (digital)
 - magnetic sensor of door opening, etc.
 - infrared motion sensor
 - button for manual switching with bistable mode option
 - pulse counter from an energy or water meter
 - time counter between successive resets of inputs for measurements, e.g. length of operations in industrial processes
- **1-Wire bus**
 - temperature sensor DS18B20
- **I2C bus**
 - BME280 (humidity, temperature, atmospheric pressure)
 - AM2301B, AHT20, AHT25, AM2320, HTS221 (humidity, temperature)
 - SPS30, APM10 (particulate matter sensor: PM1, PM2.5, PM4, PM10)
 - SCD40, ACD10 (CO2 level sensor)
 - 0.96 inch OLED display
- **Serial port** (not available with LTE option)
Support for devices via serial port has not been enabled yet.
 - particulate matter sensor SPS30 and SDS011
 - CO2 sensors MH-Z16, MH-Z19
 - Duraluxe PV inverters
 - ultrasonic distance sensor
 - 2D and barcode scanner
- **Modbus RTU port**
 - 2-way energy meters Eastron SDM120M, SDM72D-M, SDM630M, CHINT DTSU666 (readings of power, energy, voltage, current and other parameters depending on the meter)
 - Epever Tracer solar chargers
 - photovoltaic inverters Sofarsolar
 - the ability to add the reading of many other devices and sensors through your own custom configuration
- **Modbus TCP**
 - Modbus controller can read sensors connected to the LK4 (tested with Siemens LOGO)
- **HTTP Client**
 - smart Wi-Fi plugs with Tasmota firmware
 - displaying reading from sensors on camera image
 - control of relays by Smart Relay



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