The ezeio® mkII System overview

Monitor, control, automate & consolidate any type of remote industrial devices, equipment & systems. From connecting sensors to automating applications. Future-proof throughout.

ezeio® mkII Hardware

Combining all hardware & firmware components needed for making IIoT work. 100% remotely managed, configured & synchronized. The 5-in-1 hardware controller:

- Input/Output Unit
- Data Logger
- Modem (LTE Cat M1) & Gateway
- PLC (edge processing)
- System Functionality



ezeio® mkII Cloud Software & eze.io User Interface

The ezeio® Cloud is a highly optimized solution for the automated synchronization of the entire deployed ezeio® Hardware units. It's the core architecture which make the system highly secure, fully redundant and greatly scalable from one user with a single ezeio® to enterprise level deployments with thousands of field devices and users.

The eze.io User Interface is the single hub for all of the users technical and managerial needs. Any number of ezeio® Hardware units can be accessed by as many users as needed.

- Account Management
- Configuration Management
- Scripting Editor
- Live status
- Dashboards
- Alarms & Notifications
- Timers & Schedules
- Mapping & Geofencing



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The ezeio® mkII Cloud Software (eze.io)

ezeio® System is 100% remotely managed
with total control for the user from a single hub

1. The powerful eze.io User Interface

One single "hub" for all technical & managerial user needs.

Through the eze.io User Interface any number of users can access any number of ezeio® Hardware units based on their individual privileges. 100% of the system features and functionalities are managed through the web portal. This is a significant security feature as there is no other way to interact with the system ... not remotely, not locally on the hardware level.

- Account Management
- Configuration Management
- Scripting Editor
- Live status
- Dashboards
- Alarms & Notifications
- Timers & Schedules
- Mapping & Geofencing



2. Dashboard & widgets

Customized data visualization for sensors to whole applications and systems.

The dashboards can be freely created based on predefined widgets. There are no limits set in term of the size of the dashboards or the number of used widgets. Widgets can be simple such as dials and graphs but also very powerful applications in itself with control and automation functionality ("Super Widgets"). Here some examples of the available widget types:

- Field value/text widgets
- Dials/gauge widgets
- Graphs widgets
- Tables widgets
- Push/sliding button widgets
- Clock/date widgets
- Map widgets with geofencing details
- Aggregation "Super Widgets" (in table or map form) for the consolidation of deployments
- Scheduling "Super Widget"

Above widget types can be combined into newly created widgets for customization purposes by the eze System development team. This will give full flexibility for creating new custom applications.



3. Group & account management

Create any numbers of accounts & groups.

The group & account tree functionality is a very powerful managerial tool for the entire deployed systems. It allows to structure the deployments in an form or way, i.e. by location, by type of equipment, by business unit or it allows you to map your own and your customers commercial ecosystem. There are no upper limits for creating groups and accounts as well as levels within the tree structure.



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4. User management & privileges

A very unique system for managing the access rights for every single user.

- The user management and privileges system within the eze.io environment is another extraordinary functionality which allows inviting users into any specific group and account with very specific access rights.
- Users can be invited various groups and accounts individually and this within the up- and downstream tree structure.
- The privilege system gives the option to assign very specific access rights and privileges for each invited user which will ensure that users only have the privileges they need for their specific needs and assignments. A single user can have different privileges for different groups and accounts.
- The privileges span in small increments from very limited "view only" to full administrator rights.



5. The unique ezeio® configuration management system

Total control of every single ezeio® deployment.

The configuration management system is the "heart" of the ezeio® mkII System. It gives 100% control of the configurations for every deployed ezeio® mkII Hardware and this from simple settings to complex scripting. The current configuration management components are:

- System status overview
- Fields overview & management
- Alarms & notification configuration
- Timers configuration
- Schedule configuration
- Calendar configuration
- Device/driver overview & management
- User scripting management





All configuration updates within the system are fully automated and synchronised. Even offline ezeio® mkII hardware units are managed automatically. They will be updated with the latest configuration whenever the are again online. This takes every burden of the user so that she/he can focus on its core work.

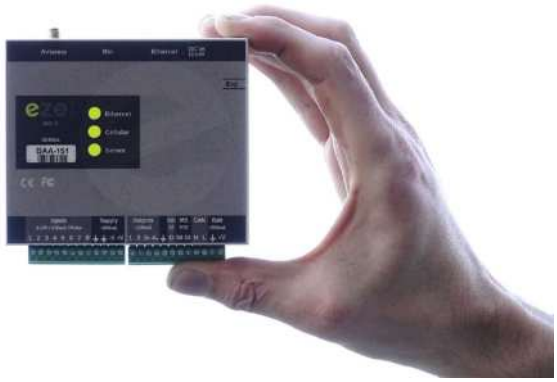


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The ezeio® mkII hardware specification

Combining all hardware & firmware components needed for making IIoT work. 100% remotely managed, configured & synchronized.



Hardware models
- LTE-CAT-M1 (5G IoT) + Ethernet
- 2G/3G + Ethernet (check availability)

Security
- Secure OTA sync & updates
- Fully encrypted, PKI & 128bit encryption,

Inputs/outputs
- 8 general purpose inputs (discrete, on pluggable terminal, fully configurable)
  - 0-10VDC (2.5mV resolution, >65kΩ input impedance)
  - 0-30mA (12.5uA resolution, 200Ω internal shunt)
  - 0-1MΩ resistance (<2% accuracy in the range 2k – 700kΩ)
  - Thermistor (100kΩ/10kΩ/2kΩ types, internal excitation)
  - Dry switch (on/off, optional internal excitation)
  - Pulse (S0 or KYZ, max. 400Hz, optional internal excitation, monitor pulse rate and/or pulse count/ frequency/interval)
  - Electronic configuration of pull-up / shunt
  - Protected with PTC
  - Internal 0.5% reference
- 4 general purpose outputs (discrete, on pluggable terminal, fully configurable)
  - Output 1/2 - digital (on/off), sourcing max. 200mA each
  - Output 3 - PWM output or on/off output (sourcing max. 200mA)
  - Output 4 - analogue, 0-10V, 0.1V resolution (sourcing up to 10mA)

Supports plug-in sidecar ezeio I/O expansion (third-party I/O can be added via the communication ports)

Supports up to 90 individual fields

Modbus/RTU Master port (RS485)
- Up to 32 devices
- 1200 to 115200 bps

Modbus/TCP server & client (TP 10/100 Ethernet)
- Configurable port numbers (standard 502)

CANbus
- Supports J1939
- Optionally used for I/O expansion

SDI-12 port
- Supports v1.4
- Optional support for serial NMEA 0183 (GPS)

Other hardware features
- SMA antenna connector (cellular)
- +5V DC regulated output, max. 200mA
- PTC fused DC output, max. 200mA for sensors
- On-board RTC (24h supercap backup)
- 3 dual-color indicator LEDs
- Pushbutton for controlled start-up/reset

Power supply
- 12-24V DC
- Standard 5.5/2.1mm plug in barrel connector
- Optionally powered through screw terminal
- 0.8W self-draw (average), 3W peak (short sub-second bursts)
- Hibernation mode, <0.06W (average)

Dimension & weight
- W: 108mm (4.3in), H: 90mm (3.6in) (excl. connectors), D: 33mm (1.3in)
- Allow 50mm (2in) top & bottom for connectors & wiring
- 35mm DIN rail or screw mounted
- Weight: 0.150kg (5.3oz)

On-board log buffer memory (non-volatile)
- Full system log data (>50 days @ 10 minutes logging & 90 fields)
- Large dynamic log data buffer, i.e.
  - 10 fields, >30 days @ 10 seconds
  - 50 fields, >30 days @ 1 minute
- >6,000 events/alarms/transactions
- All logs auto-uploaded to eze.io backend

Capabilities
- Up to 90 monitored fields
- Up to 300 alarms for local events, SMS, email, voice calls etc.
- Geo-fence features with GPS support
- Up to 2000 card/PIN codes

Schedules & Calendar
- 10-year calendar
- 30 daily schedules

Additional features
- Full remote configuration & management
- Live data access
- Automatic data synchronization with eze.io cloud
- Expression engine for field math & alarms
- Remote firmware upgrade
- Standard & custom driver support for industrial devices
- Powerful scripting support

Others
- Operating Temperature
  - -20 to 65°C
- Operating Humidity
  - 5 to 95% (non-condensing)
- IP40 (use indoors/in electrical enclosure)
- Max. number of devices per ezeio Hardware:
  - 40 drivers
  - 31 devices on a RS485 bus
  - 252 devices on a network subnet

Certifications
- FCC Part 15 B 15.017 & 15.109
- AS/NZS CISPR 32 (2015)
- EN 55032 (2012) +AC1
- EN 61000-3-2 (2014)
- EN 61000-3-3 (2013)
- EN 55024 (2019) +A1
- VCCI-CISPR 32:2016 Class B
- Verizon OD
- CE
- RoHS 3

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