

Supported Protocols & Interfaces

Which interfaces each Reduxi device has, and which communication protocols the Reduxi system supports – plus what Reduxi Converters add.



📄 Reference article

🔧 Controller · Controller Industrial · P1 Ultra Plus / Pro

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1 Overview

The Reduxi Controller and P1 Ultra converters talk to meters, inverters, batteries, EV chargers and heat pumps over a range of physical interfaces and protocols. This page lists what is supported today and what is on the roadmap. Where a protocol has its own article, it is linked directly in the tables below.

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Physical interfaces

Ethernet, Wi-Fi, LTE, RS485, DI, relays, M-Bus, CAN, P1

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Communication protocols

From Modbus and DLMS to OCPP, MQTT and EEBus

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Converter options

M-Bus, TTL, EMS-Bus and eBus to RS485



Looking for a specific device?

This article covers Reduxi hardware and protocols, not third-party devices. To check whether your meter, inverter or charger is supported, see the [List of supported devices](#).

2 Interfaces by device

Which physical interfaces are built into each Reduxi device, including the Reduxi Gateway as system extension. Interfaces a device doesn't have can often be added with a [Reduxi Converter](#), the Reduxi Gateway or an external Shelly Pro device.

INTERFACE	CONTROLLER / DIN	CONTROLLER INDUSTRIAL	P1 ULTRA PLUS	P1 ULTRA PRO	GATEWAY
Ethernet (RJ45)	2× 1 Gbps WAN + 100 Mbps LAN	2× 1 Gbps WAN + 1 Gbps LAN	—	—	1× 10/100 Mbps
Wi-Fi	✓ 2.4 / 5 GHz	✓ internal antenna	✓	✓	✓ 2.4 / 5 GHz
Mobile (4G/LTE)	✓ PRO version, external antenna	✓ external antenna	—	✓ SIM slot, external antenna	—
RS485	1× more via Gateway	2×	1× for additional devices	1× for additional devices	1×
Digital inputs	— via Gateway / Shelly Pro	6×	—	—	—
Relay outputs	— via Gateway / Shelly Pro	4×	—	—	2×
Current-transformer inputs	— via Gateway	—	—	—	3×
M-Bus (wired)	— via Converter	✓ 1× master + 1× slave	✓ 2-wire, RJ12 or RJ45	✓ 2-wire, RJ12 or RJ45	—
CAN	— via Controller Industrial	1× 2× version available	—	—	—
P1 / HAN / I1 (TTL)	— via P1 Ultra / Converter	— via P1 Ultra / Converter	✓ RJ12	✓ RJ12	—
Power supply	5 V USB-C adapter / DIN-rail PSU	24 V DC	see device article		12–24 V DC
Documentation	Setup guide	Technical manual	P1 Ultra Plus / Pro guide		Gateway manual



Reduxi Controller DIN, PRO & Reduxi Gateway

The Reduxi Controller DIN has the same interfaces as the stand-alone Reduxi Controller, just in a DIN-rail housing. The Reduxi Controller PRO adds 4G/LTE with an external antenna. Every system can be extended with the **Reduxi Gateway**: it adds one more RS485 port (RS485 → TCP/IP via LAN or Wi-Fi, also for devices too far away for a direct cable), two relay outputs (e.g. SG Ready / EVU contacts) and three current-transformer inputs.

3 Physical interfaces

The physical layer defines how a device is wired or connected. For which device has which interface, see [Interfaces by device](#).

AVAILABLE supported today · **COMING SOON** on the roadmap · **VIA ADD-ON** needs an external device

INTERFACE	STATUS	TYPICAL USE & RELATED ARTICLE
Ethernet (LAN/WAN)	AVAILABLE	Internet connection and local network devices (Modbus TCP, REST, OCPP) · Reduxi Controller 2.0 Network settings
Wi-Fi	AVAILABLE	Wireless connection to the local network; P1 Ultra Plus / Pro send meter data via Wi-Fi · Network settings
Mobile (4G/LTE)	AVAILABLE	Mobile internet where no LAN or Wi-Fi is available – Reduxi Controller PRO, Controller Industrial and P1 Ultra Pro · P1 Ultra Pro LTE setup
RS485 (EIA-485)	AVAILABLE	Wired serial bus for Modbus RTU devices such as meters and inverters · Wiring, cable types and connection diagram
Digital inputs / relay outputs	AVAILABLE VIA ADD-ON	Switching contacts, e.g. EVU/SG Ready for heat pumps. Built into the Controller Industrial (6× digital inputs, 4× relays); for the Reduxi Controller / DIN via the Reduxi Gateway or a Shelly Pro · Connect any heat pump via EVU contact
M-Bus (wired)	AVAILABLE	Meters with M-Bus interface – built into Controller Industrial and P1 Ultra Plus / Pro · P1 Ultra Plus / Pro with energy meter
P1 / HAN / I1 (TTL)	AVAILABLE	Smart meter customer interface via P1 Ultra Plus / Pro · P1 Ultra Plus / Pro with energy meter
CAN	AVAILABLE	Via the Controller Industrial (1× CAN, 2× CAN version available) · No article yet

4 Communication protocols

The communication layer defines the "language" the controller and the device speak over the physical connection.

Fieldbus & meter protocols

PROTOCOL	STATUS	TYPICAL USE & RELATED ARTICLE
Modbus (RTU)	AVAILABLE	Inverters, meters and batteries over RS485 · Connecting devices to Reduxi Controller · Modbus slave connector
Modbus TCP	AVAILABLE	Network devices over LAN/Wi-Fi · Example: KEBA KeContact P30 via Modbus TCP
DLMS	AVAILABLE	Smart grid meters · Telegram structure for Iskraemeco AM550
DLMS push	AVAILABLE	Meters that push data cyclically via the customer interface · Telegram structure for Landis+Gyr E350/E450
M-Bus (EN 13757-2)	AVAILABLE	Meters with M-Bus interface · P1 Ultra Plus / Pro with energy meter
CAN	AVAILABLE	Via the Controller Industrial · No article yet
eBus	COMING SOON	No article yet

Network, cloud & integration protocols

PROTOCOL	STATUS	TYPICAL USE & RELATED ARTICLE
OCPP 1.6	AVAILABLE	EV charging stations · Connect an EV charging station over OCPP 1.6
OCPP 2.0.1	COMING SOON	No article yet
REST API	AVAILABLE	Devices with an HTTP interface · Example: sonnenBatterie (REST API)
MQTT	AVAILABLE	Integration with brokers and third-party systems · Reduxi Controller MQTT API · Example: connect to an MQTT broker
EEBus	AVAILABLE	EEBus-compatible heat pumps and wallboxes · Add EEBUS compatible device

Grid & utility protocols

PROTOCOL	STATUS	TYPICAL USE & RELATED ARTICLE
IEC 60870-5-104 (IEC-104)	AVAILABLE	Telecontrol communication with grid operators and plant control systems · No article yet
IEEE 2030.5	COMING SOON	No article yet

5 Reduxi Converters

Reduxi Converters translate additional interfaces to RS485, so devices that don't speak one of the controller's native interfaces can still be integrated.

CONVERSION	STATUS	TYPICAL USE & RELATED ARTICLE
M-Bus (EN 13757-2) → RS485	AVAILABLE	Meters with M-Bus interface · Release notes – Reduxi Converter and Gateway
TTL → RS485	AVAILABLE	Smart meter customer interfaces (e.g. P1 port) · Reduxi Converter for Iskraemeco AM550 · P1 WiFi / Ultra in the Reduxi Configurator
EMS-Bus → RS485	AVAILABLE	Heating systems with EMS-Bus · No article yet
eBus → RS485	COMING SOON	No article yet

→ Summary

- **Reduxi Controller / DIN:** 2× Ethernet, Wi-Fi, 1× RS485; LTE on the PRO version.
- **Controller Industrial:** 2× Ethernet, Wi-Fi, LTE, 2× RS485, 6× digital inputs, 4× relays, M-Bus master/slave and CAN.
- **P1 Ultra Plus / Pro:** P1/HAN/I1, M-Bus and RS485 towards the meter, Wi-Fi towards Controller or Cloud; the Pro adds LTE.
- **Most common device protocols:** Modbus RTU/TCP, DLMS/DLMS push, M-Bus, OCPP 1.6, REST API, MQTT and EEBus.
- **Grid integration:** IEC-104 is supported; IEEE 2030.5 is coming soon. CAN is available via the Controller Industrial.
- **Extending the system:** the Reduxi Gateway adds 1× RS485, 2× relay outputs and 3× current-transformer inputs.
- **More protocols:** Reduxi Converters add M-Bus, TTL and EMS-Bus (eBus coming soon) via RS485.

→ Common issues

ISSUE	WHAT TO DO
My device's protocol or model isn't listed	Check the List of supported devices first. If it's still missing, see Can we add a device to the list of supported devices?
Modbus TCP / network device can't be reached	Make sure the device is in the same network and check its IP address · Test if an ethernet device is reachable · Find an automatically assigned IP address (DHCP)
No data from an RS485 device	Check A/B polarity, cable type and bus termination · Wiring, cable types and connection diagram
Need a "coming soon" protocol for a project	Contact Reduxi Support with your project details so we can check the current roadmap status.

→ Related articles

Matching guides from the Reduxi knowledge base:



Connecting devices to Reduxi Controller
How inverters and meters are connected



Wiring, cable types & connection diagram
RS485 cabling and connection diagrams



Reduxi Controller: Installation & Setup Guide
First-time setup of the Reduxi Controller