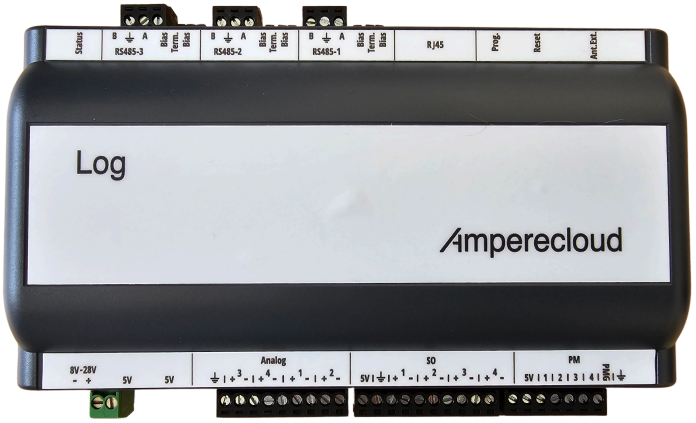
# Datasheet
# Amperecloud Log (EN)




## Scope of functions

The Amperecloud Log supports the monitoring and control of a wide range of inverters, electricity meters, sensors and other components in renewable energy generation plants.

The user was the focus of the development - economic efficiency and easy installation are the result: Helpful functions - like a built-in direct marketing interface, without the need for an additional VPN modem - were integrated.

By using Amperecloud Platform, the Amperecloud Log can configure itself and keep itself up to date after entering a setup key.

## Technical specifications

| | |
|---|---|
| **Supply Voltage** | 5 V, 8-28 V, 2 A max. |
| **Power consumption** | <2 W typical, 10 W max. |
| **ESD-Protection** | Optional |
| **Operating temperature** | -30 °C to 60 °C, < 80 % rel. humidity |
| **Ingress protection code** | IP20 |
| **Installation** | DIN-rail or surface mount |
| **Casing** | 157 x 86 x 39 mm Lexan DIN-rail case (9 DU) |
| **Weight** | 185 g |

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## User Interfaces

| | |
|---|---|
| **Configuration** | via WiFi/web interface via smartphone, tablet or laptop |
| **Status-LEDs** | 1x general RGB status LED |
| **Buttons** | 1x reset, 1x factory Reset |
| **Jumpers** | 3x termination resistors and bias voltage for RS485 |

## Connections

| | |
|---|---|
| **Serial communication** | 3 x RS485-Bus (expandable via RS485-RJ45-Converter) |
| **Digital inputs** | 4 x floating with common ground (e.g. for radio ripple control receivers [RRCR])<br>4 x floating, galvanically isolated (e.g. for S0 meters) |
| **Analogue inputs** | 4 x 18 bit differential analogue inputs ± 2.048 V (for external sensors, adapters for 4-20 mA and 10 V on request) |
| **Expansion options** | Digital/analogue outputs: connection of various PLCs (e.g. akYtec PR200 or akYtec MK110) |
| **Network** | 1x RJ45 100/10 MBit/s,<br>wireless LAN (802.11n, 2.4 GHz) |

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## Supported inverters

| Manufacturer | Type | Connection |
|---|---|---|
| ABB | all | RS485 |
| Advanced Energy Industries | AE 3TL 40-46 | RS485/Ethernet |
| Danfoss | TLX, ULX, FLX series | RS485 |
| Delta | RPI series | RS485/Ethernet |
| Diehl | Platinum | RS485 |
| Freesun | all | RS485/Ethernet |
| Fronius | IG series, Symo series | RS485/Ethernet |
| GoodWe | all | RS485/Ethernet |
| Huawei | all | RS485/Ethernet |
| Kaco Schüco | Powador series, blueplanet series | RS485 |
| Kostal | Piko series | RS485/Ethernet |
| Refusol | all | RS485 |
| Siemens | Sinvert PVM | RS485 |
| SMA | all | RS485/Ethernet |
| Sofarsolar | xx000TL series | RS485/Ethernet |
| Solar Fabrik | Convert series | RS485 |
| Solaredge | SE serie | RS485/Ethernet |
| Solarmax | SHT series, SXT series | RS485 |
| Sungrow | all | RS485/Ethernet |
| Sunways | all | RS485 |
| Xantrex/Schneider Electric | GT series | RS485/Ethernet |
| all Sunspec compatible inverters | | |

Other inverter manufacturers and types after inquiry.

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## Supported meters

| Manufacturer | Type |
|---|---|
| ABB | A Series, B Series |
| eBZ | DD3 |
| Fronius | Smart Meter 50kA-3 |
| Inepro/KDK Dornscheidt | PRO 380 |
| Janitza | UMG 96, UMG 104, UMG 604 |
| Landis+Gyr | E650 |
| Lovato | DMED301, DMED 330 |
| Phoenix Contact | EMpro Series |
| PQ Plus | UMD Series |
| Schneider Electric | IEM3255 |

Other meter manufacturers and types after inquiry. Voltage and current transformers required for measurement must be dimensioned according to the applicable guidelines.

## Supported sensors

| Manufacturer | Type |
|---|---|
| Analogue sensors (adapter required) | 0-2 V,0-10 V, 0-20 mA, 4-20 mA |
| Ingenieurbüro Mencke & Tegtmeyer | Si-RS485TC-T-MB, Si-RS485TC-2T-MB, Si-RS485TC-2T-v-MB, Si-RS485TC-T-Tm-MB, Si-RS485TC Ta-ext |
| Kipp & Zonen | SMP10 |
| SMA | Sunny Sensorbox |

Other sensors after inquiry..

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## Park control

| | |
|---|---|
| **Certificates** | Component certificate VDE-AR-N 4105 (Generation plants on the low-voltage grid), VDE-AR-N 4110 (Medium voltage technical connection rule) and VDE-AR-N 4120 (High voltage technical connection rule) |
| **Power management** | Setpoint specification, prioritization generation management, active power gradient after de-energization, active power gradient for network security management, frequency-dependent active power, monitoring of connection conditions |
| **Reactive power management** | Fixed reactive power value, fixed power factor cos φ, reactive power/voltage characteristic Q(U), characteristic reactive power as a function of active power Q(P) (10 interpolation points), reactive power specification with voltage limiting function, controller bypass, switching between methods |
| **Failure behaviour** | Failure park controller - inverters: Standby until end of fault,<br>Failure park controller - network analyzer: fallback value or fallback mode (freely parameterizable),<br>Failure park controller - telecontrol: last value, fallback value or fallback mode (freely parameterizable),<br>Voltage failure: Remain in normal operation with built-in UPS (not included in scope of delivery) |

## Remote control

| | |
|---|---|
| **Protocols** | Modbus RTU, Modbus TCP, IEC 60870-5-101, IEC 60870-5-104 |
| **Parameterization** | Freely configurable according to the specifications of the grid operator |

## Plant size

| | |
|---|---|
| **Maximum peak power** | No Limit * |
| **Maximum number of inverter per Amperecloud Log** | 100 per Port ** |

* depends on licence

** expandable by using several Amperecloud Logs, may be limited by inverter type

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## Other features

| | |
|---|---|
| **5-minute setup via smartphone or laptop** | ✔ |
| **Resolution** | 1 minute* |
| **Automatic plant detection** | ✔ |
| **Automatic Over-the-Air Updates (OTA)** | ✔ |
| **TLS encryption**<br>**(client and server certificate are verified)** | ✔ |
| **Direct marketing interface** | ✔ (No VPN modem required) |
| **Real-time monitoring, configuration and control via Amperecloud Platform** | ✔ |
| **Limitation of active and apparent power taking into account the self-consumption** | ✔ |
| **Configuration and data backup on SD card**<br>Cache of at least one month in case of internet connection failure | ✔ |
| **Automatic monitoring of the operating state** | ✔ |

* Partly limited by connected components