starkonex EMS

DATASHEET

# Energy management that keeps working when the internet doesn't

An on-site controller for battery storage, solar and grid. It plans charging and discharging, holds your grid limits and runs every control function locally — the cloud is an option, not a dependency.

SX-EMS-C1 SX-EMS-C1 Light




**100 %**
of control runs on the controller, without the internet

**20**
devices per site: storage, inverters, meters

**450 days**
of local history at a 5-minute step

**7**
interface languages, on phone, tablet and PC

## Earn on price spreads

Day-ahead market arbitrage: charge in cheap hours, discharge in expensive ones — planned from prices, forecasts and battery state, within your grid limits.

## Use your own solar

Self-consumption keeps grid exchange near zero. Where export is prohibited or prices turn negative, solar is regulated to consumption plus charging, not switched off.

## Stay inside your limits

Peak shaving, import and export limits at the grid connection point, and zero export per phase — held by a closed loop on the grid meter.

## Or simply set a schedule

A manual day plan: from — to, power, days of the week. The controller executes it by itself, offline, and never breaks a grid limit to do so.

## Secure by design

Unique credentials and certificate per unit, encrypted sign-in, separated networks, separate rights for viewing, control and finance, signed updates, full audit log.

## Honest data, hard safety

Only measured values are shown — a missing reading is a dash, never a guess. The SX-EMS-C1 hardware watchdog withdraws the storage enable signal if the controller stops.

## Control functions

| FUNCTION | WHAT IT DOES |
|---|---|
| Day-ahead arbitrage PRICES | Plans charging at low prices and discharging at high prices, using consumption and solar forecasts. |
| Manual day plan OFFLINE | Time windows with set charge or discharge power, by day of the week. |
| Self-consumption OFFLINE | Storage absorbs surplus generation and covers consumption. |
| Peak shaving OFFLINE | Discharges when grid import exceeds the set threshold. |
| Export limit OFFLINE | Keeps export within the permitted value; storage first, then solar curtailment. |
| Solar curtailment OFFLINE | Regulates compatible inverters to consumption plus charging. |
| Zero export per phase OFFLINE | Holds export near zero on each phase separately. |
| Blackout reserve OFFLINE | Keeps a state-of-charge reserve that other functions do not use. |
| SoC and power limits | Deep-discharge protection, upper SoC limit, storage power cap. |
| Automation rules OFFLINE | "If — then" rules on digital inputs and outputs (SX-EMS-C1). |

The functions available at a station depend on the software version and the connected equipment. Transfer of the site to island supply and resynchronisation are functions of the power equipment, not of this product.

## Monitoring and operation

- Live energy flow, readings of every device, alarms in plain language
- Controller plan for the day, forecast of consumption and solar generation, forecast accuracy
- Event log, audit log, reports with CSV and PDF export
- Setup wizard: from first sign-in to a working station, step by step
- Every change is confirmed as "accepted by the controller", not merely "saved"
- One "stop control" button that halts all commanding functions

## Starkonex cloud — optional

- Remote access to the same stations from anywhere, with no inbound connections to your site
- Portfolio of sites, companies and people with roles; access to a single station for a third party
- Push notifications to a phone; installable app for iOS and Android
- Remote software updates, postponable by the owner

## Models

| | SX-EMS-C1 | C1 LIGHT |
|---|---|---|
| Controller, control functions, interface, cloud | Yes | Yes |
| Digital inputs / outputs | 14 / 14 | — |
| Hardware watchdog relay for the storage enable circuit | Yes | — |
| Automation rules on contacts | Yes | — |

## Technical data

| | |
|---|---|
| Supply | 230 V AC, 50 Hz |
| Enclosure | Cabinet, IP65 with the door closed |
| Ethernet | 2 independent ports: site network and device network |
| Wi-Fi | Service access point, 2.4 GHz, for sign-in near the cabinet |
| Device protocols | Modbus TCP; Modbus RTU (RS-485) through a Modbus TCP gateway |
| Devices per site | Up to 20 |
| Digital inputs | 14 × 24 V DC, galvanically isolated, EN 61131-2 types 1 and 3 (SX-EMS-C1) |
| Digital outputs | 14 × 24 V DC, up to 500 mA, short-circuit protected; output 1 reserved for the watchdog (SX-EMS-C1) |
| Operating conditions | −25…+55 °C inside the cabinet; up to 93 % RH, non-condensing |
| Local interface | Web interface over HTTPS; current Chrome, Edge or Safari |
| Local history | 5-minute step, rolling 450 days |
| Languages | English, Czech, German, French, Spanish, Polish, Ukrainian |

Values stated on the rating plate of the product take precedence.

## Compatible equipment

- Battery energy storage systems and hybrid inverters
- PV inverters and plant loggers with power limiting
- Three-phase energy meters at the grid connection point

The current compatibility list is available on request. New devices are added by a software update, without replacing the controller.



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