SMA ECHARGER

EV charger rated from 1.38 to 22 kW, designed for integration with SMA photovoltaic systems. It combines targeted charging, PV surplus charging and fast charging with automatic switching between one and three phases. It features a shuttered Type 2 socket, integrated display, RFID authorization and Ethernet, Wi-Fi and RS485 communications. It can operate independently or with Sunny Home Manager 2.0 for intelligent energy management.

SMA EVC

The SMA eCharger 22 is an AC **charging station for electric vehicles**, designed to make **use of photovoltaic energy** and coordinate charging with user requirements. Its power can be configured **from 1.38 to 22 kW**, with a **maximum current of 32 A** per phase. It supports **single-phase 230 V and three-phase 400 V** supplies and features a shuttered Type 2 socket in accordance with IEC 62196-1/2. Charging cables in lengths of 5, 7.5 and 10 metres are available as accessories.

The unit provides **three charging strategies. Targeted charging** allows the charging process to follow the user's specified objectives. **PV surplus charging** prioritizes available solar energy to increase self-consumption. **Fast charging** combines photovoltaic power with grid power when a shorter charging time is required. Automatic phase switching extends the usable solar range: charging can start or continue on one phase when production is low and switch to three phases when more power is available.

For intelligent charging management, the **SMA eCharger** is integrated with Sunny Home Manager 2.0. Within this system, forecast-based planning can coordinate PV generation, household consumption and vehicle charging. Multi-EVC operation with up to three SMA charging stations is also supported in combination with Sunny Home Manager 2.0. Without this manager, the unit can operate as a standalone charger and be visualized in Sunny Portal powered by ennexOS and the SMA Energy App, but it does not provide the same intelligent energy management functions.

Local interaction is provided by the integrated display and LED status indication. Fast charging can be activated by double-tapping the interaction surface, and the charging mode can also be changed through the SMA Energy App. The RFID reader restricts charging to authorized cards; two MIFARE DESFire EV3 cards are included. Two Ethernet ports, Wi-Fi, RS485, Webconnect, SEMP and SMA Modbus are available for communications and system integration.

The SMA eCharger includes internal 6 mA DC residual-current detection in accordance with IEC 62955 and is compatible with an external Type A RCD rated up to 30 mA. Its IP54 enclosure and IK10 impact resistance support installation at a suitable location, provided that the manual, applicable regulations and required external protective devices are observed. The operating range is -25 °C to +50 °C, with continuous derating where applicable.

Installation is possible on a wall or on optional SMA stands for one or two chargers. The unit is supplied with a charging socket rather than a fixed cable, allowing a 5, 7.5 or 10 metre Type 2 cable to be selected as an accessory. Planning must take account of conductor cross-section, grid configuration, external protection and the power available at the connection point.

The unit has a five-year warranty and SMA Smart Connected. Its architecture allows for future extensions, but these must be distinguished from currently available functions. OCPP 1.6 JSON communication, ISO 15118 and the SMA eMobility Portal are being prepared for a later update. MID-compliant metering is planned for a future hardware version. Bidirectional AC charging is envisaged as a future paid function, subject to final standardization and compatible vehicles.

How it works

- **Targeted charging:** The vehicle is charged according to the objectives and parameters defined by the user.
- P**V surplus charging:** Prioritizes available solar energy to charge the vehicle and increase self-consumption.
- **Fast charging:** Combines photovoltaic and grid energy to provide the available charging power within the configured limits.

Key features

- **Configurable power:** Charging range from 1.38 to 22 kW, with password-protected power limitation, for example to 11 kW.
- **Single-phase and three-phase:** 1N~ 230 V or 3N~ 400 V supply, with up to 32 A per line conductor.
- **PV-optimized charging:** Dedicated modes prioritize solar surplus or combine solar and grid energy.
- **Automatic phase switching:** Adapts operation between one and three phases according to available power.

Management with Sunny Home Manager 2.0: Coordinates intelligent charging within the SMA energy system.

- **Multi-EVC operation:** Supports up to three SMA charging stations with Sunny Home Manager 2.0.
- **Display and local control:** Integrated display, LED indication and local fast-charging activation by double tap.
- **RFID authorization:** Access control in accordance with ISO/IEC 14443, with two MIFARE DESFire EV3 cards included.
- **Connectivity:** Two Ethernet ports, Wi-Fi, RS485, Webconnect, SEMP and SMA Modbus.
- **Protection and monitoring:** 6 mA DC residual-current detection, IP54, IK10, SMA Smart Connected and a five-year warranty.

Recommended applications

- Homes with an SMA photovoltaic system and Sunny Home Manager 2.0.
- Single-phase or three-phase home charging of vehicles with a Type 2 connector and Mode 3.
- Installations that want to prioritize PV surplus and increase self-consumption.
- Systems with one or more SMA charging stations, up to three units with Sunny Home Manager 2.0.
- Installations requiring access control through RFID cards.

Product advantages

- Wide power range from 1.38 to 22 kW.
- Flexible use of photovoltaic and grid energy through three charging strategies.
- Use of low solar production thanks to automatic phase switching.
- Integration into the SMA ecosystem for visualization, control and energy management.
- Wall or optional stand installation, with a Type 2 socket and interchangeable cables.
- RFID access control, SMA Smart Connected monitoring and a five-year warranty.

Important requirements and clarifications

- Intelligent charging management requires Sunny Home Manager 2.0; without it, the unit operates as a standalone charger.
- An external Type A RCD rated up to 30 mA must be installed, and the remaining protective devices must be sized according to the manual and applicable regulations.
- The current model includes an energy meter with ±1% accuracy as stated by SMA, but it is not a MID/legal meter for billing.
- OCPP, ISO 15118, SMA eMobility Portal, MID metering and bidirectional charging must not be presented as standard available functions; they are planned for updates, new hardware or future services.

SPECIFICATIONS

AC inputs and outputs	
Model type number	EVC22-3AC-20
Charging power	1.38 kW to 22 kW, configurable
Nominal voltage	1N~, AC, 230 V / 3N~, AC, 400 V
Nominal frequency	50 Hz / 60 Hz
Nominal current	Max. 32 A per line conductor
AC connection via spring terminal	5 × 2.5 to 5 × 10 mm², rigid / 5 × 2.5 to 5 × 6 mm², flexible
Vehicle connection	Shuttered Type 2 socket, IEC 62196-1/2
Communication and control	
Ethernet / Wi-Fi / RS485	Yes, 2 ports / Yes / Yes
Backend communication	OCPP 1.6 JSON - in preparation for later update
Vehicle communication	IEC 61851-1/2 Mode 3; ISO 15118 in preparation
Digital inputs / digital output	6 / 30 V DC
Data protocols	SEMP, SMA Modbus
Visualization and control	SMA Energy App, SMA 360° App, Sunny Portal powered by ennexOS; SMA eMobility Portal in preparation
Authorization	RFID according to ISO/IEC 14443
Cards included	2 MIFARE DESFire EV3 RFID cards
Protective devices	
Internal DC residual-current detection	6 mA, functional according to IEC 62955
Compatible external RCD	Type A ≤ 30 mA
Power outage protection	Included
Ambient conditions	
Operating temperature	-25 °C to +50 °C, with continuous derating
Storage temperature	-25 °C to +70 °C
Protection / impact resistance	IP54 / IK10
Protection class / overvoltage	I / III
Maximum relative humidity	95%, non-condensing
Altitude	0 m to 2,000 m
General data	
Dimensions (W × H × D)	270 × 495 × 190 mm
Weight	5.0 kg
Grid configurations	TN / TT / IT
Device display	LED status indicator, display; future pulse LED (1,000 imp/kWh)
Standby self-consumption	< 6.5 W
Charging cable 5 / 7.5 / 10 m	Optional / optional / optional
Warranty	5 years
System compatibility	Webconnect, Sunny Home Manager 2.0; integrated System Manager and SMA Energy Maximizer planned
SMA Smart Connected	Included
Certificates and approvals	CE, DIN EN IEC 61851-1, DIN EN ISO 15118, DIN IEC/TS 61439-7, IEC 62955, TOR ÖVE R37

DOWNLOADS

ESPECIFICACIONES SMA ECHARGER

PDF eCharger-DS-es-22.pdf Size: 1.61 MiB

DATA SHEET SMA ECHARGER

PDF eCharger-DS-en-22.pdf Size: 1.59 MiB