# ENERGY MANAGEMENT ASSISTANT

Model：EMMA-A02

**Unified management**
One-stop management of inverters, ESS, optimizers, chargers and appliances

**More intelligent**
Peak shaving, PV preference, feed-in power limitation, and automatic start/stop of diesel generators.

**More economical**
Automatically connect to Nord Pool, supporting peak-valley price arbitrage and zero-power feed-in during negative price periods.

**Open to 3rd parties**
Supports Modbus-TCP and third-party VPP integration, enabling FCR-D frequency modulation.

## ◉ EMMA
# Technical Specifications

| Technical Specification | EMMA-A02 | | |
|---|---|---|---|
| **General Data** | | | |
| Dimension(W × H × D) | 108 mm × 100 mm × 65 mm | | |
| Mounting type | DIN35 Rail | | |
| Height requirement of cabinet | ≥ 47.5 mm | | |
| Weight | 0.5 kg | | |
| **Power Supply** | | | |
| AC Voltage | 1P2W: 100 ~ 240V, 50 / 60Hz | 3P3W: 346 ~ 415V, 50 / 60Hz | 3P4W: 346 ~ 415V, 50 / 60Hz |
| Typical power consumption | 4 W | | |
| **Interface** | | | |
| Power output | 9.5 ~ 13.2V @ 100mA, ≤ 3m | | |
| LAN | 10 / 100Mbps,≤ 100m | | |
| WAN | 10 / 100Mbps,≤ 100m | | |
| WLAN | AP + STA, 802.11b/g/n (2.412GHz ~ 2.484GHz) | | |
| RS485 | 9600 / 19200 / 115200bps,× 2, ≤ 50m | | |
| Digital input | × 2, ≤ 20 m | | |
| Digital output | × 2, ≤ 20 m | | |
| **Interaction** | | | |
| LED | LED Indicator × 3 RUN, ALM, COM | | |
| Button | RST | | |
| APP | Communication by WLAN for Commissioning | | |
| **Measurement Range** | | | |
| Current range | Direct connection: ≤ 63 A, external CT[1] : > 63 A | | |
| Voltage range | 1P (L-N): 85 ~ 299 Vac; 3P (L L): 148 ~520 Vac | | |
| Energy accuracy | ±1% | | |
| **Device Management** | | | |
| Smart energy controllers | up to 3 | | |
| Smart chargers | up to 2 | | |
| Heat pump | up to 1[2] | | |
| Shelly device | up to 20 | | |
| **Environment** | | | |
| Operating temperature range | -25 °C~ +60 °C | | |
| Storage temperature range | -40 °C~ +85 °C | | |
| Relative humidity range | 5% ~ 95% RH (non condensing) | | |
| Max. operating altitude | 4000m (derating over 2000m) | | |
| Degree of protection | IP2X | | |
| **Compatible Device** | | | |
| Smart energy controller | SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-8/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20/25KTL-M5, SUN2000-12/15/17/20/25K-MB0, SUN2000-5/6/8/10/12K-MAP0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0 | | |
| Smart charger | SCharger-7KS/22KT-S0 | | |
| Heat pump | SG-ready | | |
| Shelly device | Shelly Plus Plug S, Shelly Plus 2PM, Shelly Pro 2PM [3] | | |
| Smart Scheduling [4] | SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-8/10K-LC0, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20/25KTL-M5, SUN2000-12/15/17/20/25K-MB0, SUN2000-5/6/8/10/12K-MAP0, SUN5000-8/12K-MAP0, SUN5000-17/25K-MB0+ LUNA2000-5/10/15-S0 / LUNA2000-7/14/21-S1 | | |
| Dynamic tariff | Automatically connect to Nord Pool electricity market and obtain day-ahead dynamic tariff. (Available in Sweden, Denmark, Finland, Norway, Lithuania, Estonia, Latvia, and the Netherlands.) | | |

*1. The secondary current of an external CT connected shall be 50 mA, and the cable length can be up to 30 m.
*2. A heat pump can be directly connected to EMMA-A02. More appliances can be connected through a Shelly device.
*3. For the Shelly device firmware version supported, please refer to the user manual.
*4. The smart scheduling function of the EMMA is offered free of charge for two years from the trial start date. After this period, we reserve the right to charge for this service.

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.