Technical Information

SMA DATA MANAGER /
SUNNY PORTAL powered by ennexOS
Functions

1 Device Functions

This overview shows the current range of functions of the following products:

- EDMM-10 / EDMM-US-10 (SMA Data Manager M)
- EDMM-10.A (SMA Data Manager M Lite)

1.1 Basic Functions

Device function	EDMM-10	EDMM-10.A
Total number of supported devices (PV inverters, battery inverters, energy meters, I/O systems, sensor modules, weather stations, charging stations) up to the maximum nominal system power	50	5
Maximum number of supported PV inverters up to the maximum nominal system power	50	5
Maximum number of supported PV inverters up to the maximum nominal system power via SunSpec Modbus (e.g. Sunny Tripower CORE2)	20	5
Maximum number of supported battery inverters	50	1
Maximum number of supported energy meters (electric current and gas), generators from energy meters, I/O systems, sensors	50	5
Number of master devices per system	1	-
Maximum number of slave devices per system	49	-
Maximum number of supported SMA Energy Meters, Modbus meters and Modbus power analyzers	50	5
Maximum nominal system power of all PV inverters (nominal AC power)	2.5 MVA	30 kVA
Maximum nominal system power of battery inverter (nominal AC power)	without limitation	30 kVA
Ethernet/Speedwire (LAN)	2 x RJ45 switched	2 x RJ45 switched
Wi-Fi access point for commissioning and access to the user interface	x	x
FTP Push	hourly/daily	daily
Automatic synchronization of the system time	x	x
Manual configuration of the system time	x	x
Local user interface	x	x

Device function	EDMM-10	EDMM-10.A
Assistant for local commissioning and parameterization of connected SMA products	x	x
Firmware updates via USB interface	x	x
Firmware updates of connected SMA products via USB interface	x	x
Enable or disable automatic firmware updates via user interface	x	x
Enable or disable automatic firmware updates of connected SMA products via user interface	x	x
Creating and importing a backup file including the configuration information of the device	x	-
Integrated direct selling (SMA SPOT)	x	-
Modbus interface for direct selling (with external VPN router)	x	x
Modbus server for system monitoring and specifications for grid management services	x	x
Interface to Sunny Portal powered by ennexOS	x	x

1.2   Grid Management Services

Device function	EDMM-10	EDMM-10.A
Closed-loop control and open-loop control of other SMA Data Managers (master/slave)	x	-
Free configuration of a grid-connection meter (measurement at the point of interconnection)	x	x
Open-loop and closed-loop active power control (Modbus)	x	x
Open-loop and closed-loop active power control (manual specification)	x	x
Open-loop and closed-loop active power control (digital inputs)	x	x
Open-loop and closed-loop active power control (analog inputs)	via external I/O systems	via external I/O systems
Closed-loop active power control (P(f))	in the inverter	in the inverter
Open-loop and closed-loop reactive power control (Modbus)	x	x
Open-loop and closed-loop reactive power control (manual specification)	x	x
Open-loop and closed-loop reactive power control (digital inputs)	x	x
Open-loop and closed-loop reactive power control (analog inputs)	via external I/O systems	via external I/O systems
Open-loop and closed-loop reactive power control (Q(V))	x	x
Open-loop and closed-loop reactive power control cos φ (Modbus)	x	x

Device function	EDMM-10	EDMM-10.A
Open-loop and closed-loop active power control cos φ (manual specification)	x	x
Open-loop and closed-loop reactive power control cos φ (analog inputs)	via external I/O systems	via external I/O systems
Maximum available active and reactive power as Modbus register (meteorological values must be available)	x	-

1.3   Modbus Client

Device function	EDMM-10	EDMM-10.A
Modbus TCP	x	x
Modbus RTU (RS485)	x	x
Support of meteorology stations for solar irradiation, wind speed and temperatures via Modbus/RTU (e.g., PVMet-200)	x	x
Support FLX and TLX series inverters with Danfoss EtherLynx protocol from Danfoss Solar Inverters A/S	x	x
Support of the Sunny Tripower CORE2 inverter via SunSpec Modbus with the extension to configure country data sets	x	-
Support of third-party inverters via Modbus TCP SunSpec	x	x
Support of third-party inverters via Modbus RTU SunSpec	x	x
Support of energy meters (e.g., from Janitza, Elkor)	x	x
Support of I/O systems (Wago, Moxa)	x	x
Configuration of personal Modbus profiles to support energy meters, gas meters and PV inverters	x	x

1.4   SMA Data1

Device function	EDMM-10	EDMM-10.A
Total number of supported devices (except Sunny String-Monitor, Sunny Central) up to the maximum nominal system power	50	5
Baud rate	1200 or 19200 baud	1200 or 19200 baud
Maximum cable length	1000 m	1000 m
Automatic device detection	yes	yes

1.5   External Input/Output

Device function	EDMM-10	EDMM-10.A
Input and output signals via external I/O systems:*	x	x

- AIN (4 to 20 mA) for grid operator setpoints for active power (P) in [%]
- AIN (4 to 20 mA) for grid operator setpoints for reactive power Q in [%]
- AIN (4 to 20 mA) for grid operator setpoint for cos φ
- AOUT (4 to 20 mA, 0 to 10 V) for actual value of active power (P) in [W]
- AOUT (4 to 20 mA, 0 to 10 V) for actual value of reactive power (Q) in [W]
- AOUT (4 to 20 mA, 0 to 10 V) for current setpoint of active power for P in [%]
- AOUT (4 to 20 mA, 0 to 10 V) for current setpoint of reactive power Q in [%]
- AOUT (4 to 20 mA, 0 to 10 V) for current PV active power
- AOUT (4 to 20 mA, 0 to 10 V) for current PV reactive power
- AOUT (4 to 20 mA, 0 to 10 V) for PV active power default value
- AOUT (4 to 20 mA, 0 to 10 V) for PV reactive power default value
- DIN setpoint for PV reactive power
- DOUT for feedback (error)
- DOUT for feedback (warning)
- DOUT for system status (error, warning)
- DOUT for limiting value based switching

* Voltage values are only available with the WAGO I/O system with voltage output module

Device function	EDMM-10	EDMM-10.A
Limiting values available / parameters:		
• Alarm in case of warning or error	x	x
• Alarm in case of error	x	x
• System active power	x	x
• System reactive power	x	x
• System active power at point of interconnection (grid feed-in)	x	x
• System active power at the point of interconnection (purchase)	x	x
• System reactive power at the point of interconnection	x	x
• Reactive power setpoint	x	x
• Setpoint of active power limitation	x	x

Device function	EDMM-10	EDMM-10.A
• System-wide state of charge of batteries (SOC)	x	-
• Active access through direct selling	x	x
• Mean or peak value of the three voltages at the point of interconnection (depending on the settings of function Q(U))	x	-
• Cos phi nominal and actual value, if a meter is set up at the point of interconnection	x	-

1.6   Sensors

Device function	EDMM-10	EDMM-10.A
Solar irradiation: • via external analog inputs (4 to 20 mA) • via sensor module in supported inverters • via SMA SensorBox and SMA Meteo Station by means of SMA Com Gateway and Modbus RTU • via Modbus/RTU connected meteorology stations (e.g., PVMet-200)	x	x
Wind speed: • via external analog inputs (4 to 20 mA) • via sensor module in supported inverters • via SMA SensorBox and SMA Meteo Station by means of SMA Com Gateway and Modbus RTU • via Modbus/RTU connected meteorology stations (e.g., PVMet-200)	x	x
Temperatures: • via external Pt100 temperature inputs • via sensor module in supported inverters • via SMA SensorBox and SMA Meteo Station by means of SMA Com Gateway and Modbus RTU • via Modbus/RTU connected meteorology stations (e.g., PVMet-200)	x	x

1.7   Parameterization

Device function	EDMM-10	EDMM-10.A
Remote parameterization of connected SMA products	x	x
Parameter adjustment of Data Manager and suitable connected devices	x	x
Data export of chart and list presentations	x	x

1.8   Energy management

Device function	EDMM-10	EDMM-10.A
Peak load shaving	by battery inverters	by battery inverters

1.9   Monitoring

Device function	EDMM-10	EDMM-10.A
Status display of all devices (dashboard, status list)	x	x
Display of PV power and PV energy (current, historical)	x	x
Display of battery power values and energy values as well as state of charge of the battery	x	x
Status display for grid management services	x	x
Display of instantaneous values (live) of all devices	x	x
Display of instantaneous values (1 min.) on the system dashboard	x	x
Display of events of connected devices	x	x

2   Sunny Portal powered by ennexOS

This overview shows the range of functions supported by Sunny Portal powered by ennexOS in conjunction with following products:

- EDMM-10 / EDMM-US-10 (SMA Data Manager M)
- EDMM-10.A (SMA Data Manager M Lite)

Function of the Sunny Portal powered by ennexOS	EDMM-10	EDMM-10.A
Status display of all devices (dashboard, status list)	x	x
Display of PV power and PV energy (current, historical)	x	x
Display of batter power values and energy values	x	x
Status display for grid management services	x	x
Display of instantaneous values (live) of all devices	-	-
Display of instantaneous values on the system dashboard	-	-
Display of events of connected devices	x	x
Energy balance display	x	x
Energy balance display with additional generators and generator view	x	x
Display and configuration of an expected yield	x	x
Manual data recording for virtual generators (PV, water, combined heat and power plant, diesel fuel)	x	x
Automatic data recording for virtual generators from energy meters (PV, water, combined heat and power plant, diesel fuel)	via energy meters	via energy meters
Data resolution		
• High (every 5 minutes)	x	x
• Medium (every 15 minutes)	x	x
• Low (6 times a day)	x	x
Energy monitoring of several systems with 1 user account	x	x
Creating system groups	x	x
Creating system sections	x	x
Calculation of a performance ratio and alert in case thresholds are exceeded	x	x
Automatic inverter comparison with alerting	x	x
Satellite-based meteorological data to rate performance without local sensors (not available in all countries)	x	x
Analyse Pro	x	x
• Measured value evaluation of all data channels of devices and systems		
• Create personal profiles as filters		

Function of the Sunny Portal powered by ennexOS	EDMM-10	EDMM-10.A
Remote parameterization of Data Manager and suitable connected devices	x	x
System-wide parameter adjustment of suitable connected devices	x	x
Alert in case of communication faults between portal and system	x	x
General daily system report	x	x
General monthly system report	x	x
Detailed report with inverter information	x	x
Event report	x	x
Data export of chart and list presentations	x	x