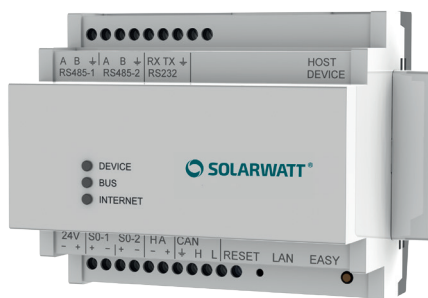


PRODUCT



SOLARWATT Manager flex



EnergyManager pro

SOLARWATT Manager flex 1.0

EnergyManager pro

Energy independence within reach

The SOLARWATT Manager reduces energy costs for your customers and allows them to look at electricity bills with a sense of relief.

It keeps an eye on all energy flows within your household and automatically actuates many key electrical devices, so that they are powered by free, self-generated PV-power and ensure worry-free convenience.

With the Manager, the installer receives all the installation data at a glance, can provide remote support and help his customers pave the way to a modern and future-oriented energy supply.

ADVANTAGE

- overview of all energy data
- switching of appliances when surplus PV-power is available
- integrating of water heating or e-mobility
- maximum of data security

OUR SERVICE

FullCoverage

on purchasing a Solarwatt system solution*

guaranty of origin

quality Made in Germany

competent consulting

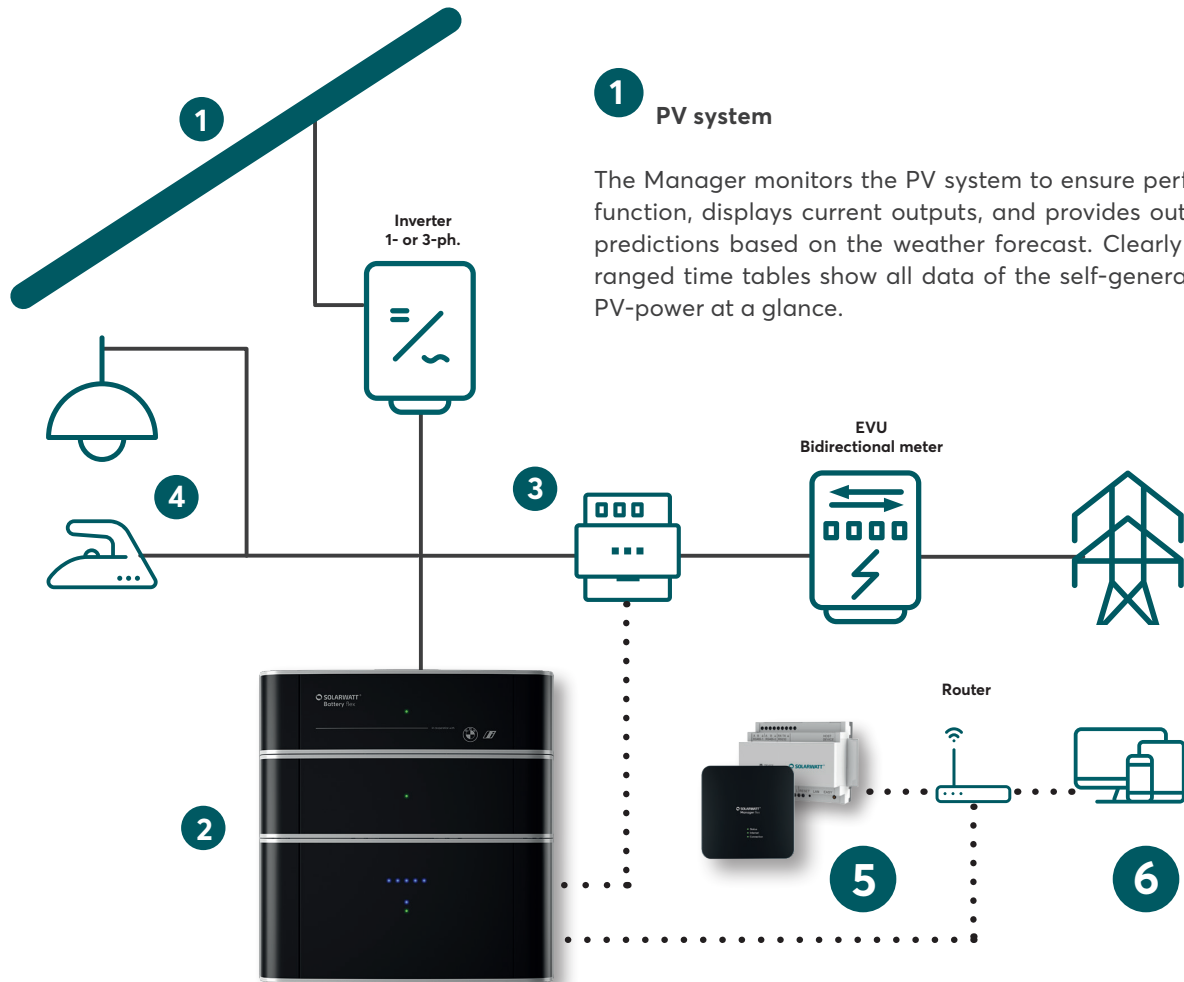
experts via hotline or on location

SOLARWATT Battery flex ready

perfect system integration

* As specified in insurance conditions





1 PV system

The Manager monitors the PV system to ensure perfect function, displays current outputs, and provides output predictions based on the weather forecast. Clearly arranged time tables show all data of the self-generated PV-power at a glance.

2 SOLARWATT Battery flex AC-1

Battery flex is designed to increase the energy self-sufficiency. The ACS Sensor measures the grid import vs. the grid export from surplus PV energy, and communicates this information to the Battery flex. When energy is purchased from the grid, the Battery flex discharges to support the household consumption. When energy is exported to the grid, the Battery flex then charges to store the excess energy for later use.

3 AC-Sensor Flex

The AC sensor Flex measures the electrical power export/import into/from the grid and sends it to Battery flex, which is regulated accordingly.

4 Electrical devices in households

By linking the Battery flex and major energy consumers such as a heat pump or wallbox (EV charger) and the SOLARWATT Manager, it can be ensured that they are operated as much as possible with low-cost solar power. This leads to higher self-consumption at lower cost without compromising the level of comfort and convenience.

5 SOLARWATT Manager (flex or pro)

The SOLARWATT Manager leads the combination of PV system and Battery flex to the optimum - maximum independence and minimum costs.

- monitor and analyse electricity flows
- detect energy wasters
- intelligent appliance control

6 SOLARWATT Manager Portal

Manager Portal and InstallerCenter allow users to view their energy data via Internet – on a computer, tablet or smartphone.

Manager Portal for end customers

- obtain all energy data wherever you are
- meter and switch electrical devices conveniently
- benefit from maximum data security (online banking standards)

InstallerCenter for electrical installers

- monitor Manager installations online
- identify problems and their causes automatically
- access all Manager configurations remotely

SOLARWATT Manager PV-optimization – key to independence

The SOLARWATT Manager monitors the current PV-energy production and consumption in the household at all times to determine whether surplus PV-power is available.

The Manager can control many important home appliances, so they can be powered with free, self-generated PV-power - allowing users to save money, gain independence, and reduce their impact on the environment.

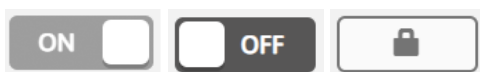
CONSUMPTION OPTIMIZATION WITH THE SOLARWATT MANAGER PORTAL

There are three ways to switch appliances and thus optimize their consumption with the SOLARWATT Manager Portal:

Manual

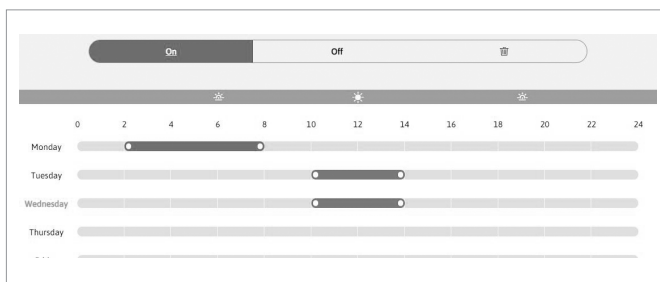
The Control app in the Manager Portal shows all appliances available for switching and optimizing consumption. The app can be used to switch an appliance on or off directly using a digital switch.

The Lock icon shows that manual switching is not possible – because it's not conducive to the appliance's functions, for example.



Time-optimized

Time optimization allows the Portal user to set specific times when an appliance is switched on or off, no matter whether there is surplus PV-power or not.

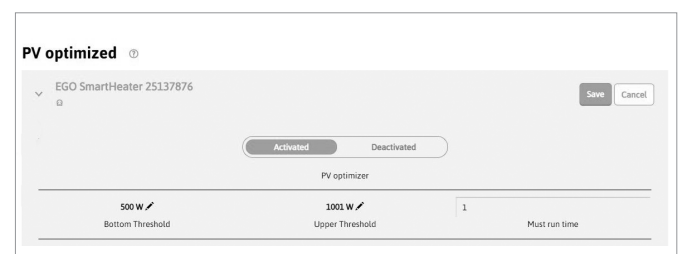


PV-optimized

If PV optimization is activated, the appliance concerned is automatically switched on when there is a surplus of PV-power.

The user can configure the activation threshold and a minimum runtime and/or a minimum rest period for the appliance.

If several appliances are activated for PV optimization a prioritization can be easily determined in the Portal. This prioritization specifies which device should benefit from surplus PV-power first.



If the consumption strategy for devices is to be a combination of PV optimization and time control, the Manager Portal also offers the option of defining time periods in which PV-optimization is compulsively deactivated.

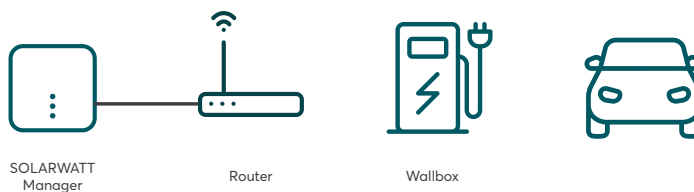


HARDWARE OPTIONS FOR PV-OPTIMIZATION

Optimization using LAN connection

Example: Charging of electric vehicles

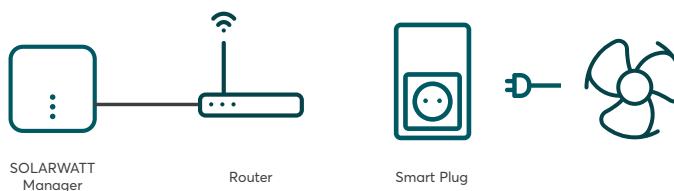
The Keba or Webasto wallbox is connected to the SOLARWATT Manager via the router using an LAN cable.



Optimization using smart plug connection

Example: Small electrical devices with standard plug

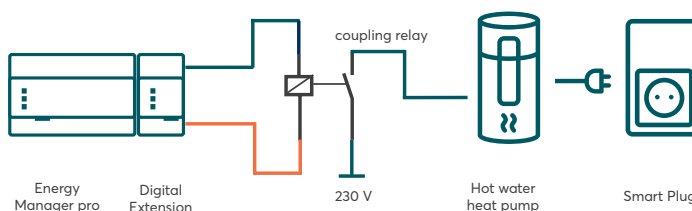
A smart plug is connected between the device and socket, communicating with the SOLARWATT Manager via the router.



Optimization using coupling relay connection

Example: heat pump or immersion heater

A relay and, consequently, a signal are controlled via the digital extension. This is used to implement the (SG-ready) heat pump.



TECHNICAL SPECIFICATIONS

GENERAL DATA

	EnergyManager pro	Manager flex
Device supply	via external top hat rail power supply (230 V AC/24 V DC; 1,5 A; 3 TE)	internal universal power supply (120-240 V; 50/60 Hz)
Power input	2,4 W	nom. 3 W; max. 12 W
Ambient temperature	-10°C to +40°C	-10 °C to +50 °C
Housing	Composite	Composite
Dimensions (BxHxT)	108 x 90 x 70 mm, 6 TE (horizontal pitch)	130 x 130 x 40 mm
Installation type	Top-hat rail TS35	Wall installation
IP rating	IP20	IP20
Hardware editions	ERBxx-xxxxxxx, ERCxx-xxxxxxx, ERKxx-xxxxxxx, ERZxx-xxxxxxx	EMCxx-xxxxxxx, EMXxx-xxxxxxx, SMFxx-xxxxxxx

I/O INTERFACES AND CONNECTABLE DEVICES

	EnergyManager pro	Manager flex
Ethernet	1x RJ-45 10/100Mbit	1x RJ-45 10/100Mbit
PLC	-	AV Home Green Phy
Clamp connection	2x RS485	2x S0/Digital In
	10 devices per interface	
	2x S0/Digital In	
USB	1 device per interface	no differences between the hardware versions
	1x CAN (AC-Sensor connection)	
	Serial number ERBxx-xxxxxxx, ERCxx-xxxxxxx: 2x USB-2.0-Device, USB socket type A Serial number ERKxx-xxxxxxx, ERZxx-xxxxxxx: 1x USB-2.0-Device, USB socket type A	
Digital Extension	Serial number ERBxx-xxxxxxx, ERCxx-xxxxxxx: max. 5 Digital Extensions Serial number ERKxx-xxxxxxx: max. 1 Digital Extension Serial number ERZxx-xxxxxxx: no Digital Extension	-

DEVICE SOFTWARE

	EnergyManager pro / Manager flex
Operating system	Linux, Kernel 7.x
Communications platform	SOLARWATT Manager portal (Cloud)
Management	Cloud-access
Security	VPN tunnel based on the IPSec standard, secure protocols (SSH/SSL, SFTP, HTTPS)
Firmware and app-updates	via Update-Server
Language	de, en, fr, it, nl, es, se

SOLARWATT MANAGER PORTAL

	EnergyManager pro / Manager flex
Supported display media	Desktop PC, Tablets, Smartphones
Supported browsers	Google Chrome,Mozilla Firefox, MS IExplorer, Apple Safari
Security	VPN tunnel based on the IPSec standard, secure protocols (SSH/SSL, SFTP, HTTPS)
Language	de, en, fr, it, nl, es, se

SUPPORTED METERS

	Connection via				Functions	EnergyManager pro	Manager flex
	LAN	WIFI	CAN	S0			
AC-Sensor Flex			X		main meter*	X	
	X				main meter* connected with Battery flex	X	X
KDK PRO380-S				X	main meter*, energy meter	X	X
Shelly 3EM		X			main meter*		X
Shelly 2.5		X			energy meter		X
SOLARWATT EnergyMeter				X	energy meter	X	X

* Requirements for use as main meter for energy management: bidirectional meter, balancing measuring method (consumption/purchase of the individual phases are netted against each other)

TECHNICAL SPECIFICATIONS

SUPPORTED INVERTERS AND STORAGES

	Connection via			Unit type	Functions		EnergyManager pro	Manager flex
	LAN	RS485	S0		measuring	dynamic curtailment via:		
Fronius	X				x	SOLARWATT Manager	X	X
			X		x	Inverter features*	X	X
SMA	X			SunSpec-certified	x	SOLARWATT Manager	X	X
		X		older generation	x	SOLARWATT Manager	X	
			X		x	Inverter features*	X	X
KOSTAL	X			PLENTICORE, PIKO IQ	x	SOLARWATT Manager	X	X
		X		PIKO (established generation)	x	SOLARWATT Manager	X	
			X		x	Inverter features*	X	X
Steca	X			coolcept FleX XL	x	SOLARWATT Manager	X	X
		X		coolcept	x	SOLARWATT Manager	X	
			X		x	Inverter features*	X	X
KACO			X		x	Inverter features*	X	X
APsystems			X		x	Inverter features*	X	X
SolarEdge		X			x	Inverter features*	X	
			X		x	Inverter features*	X	X
Other inverters			X		x	Inverter features*	X	X
Battery flex AC-1	X				x	SOLARWATT Manager	X	X
VARTA battery	X				x	SOLARWATT Manager	X	

* Follow the manufacturer's instructions for installing and setting up the inverter. Additional accessories from the manufacturer may be necessary.

SUPPORTED APPLIANCES SECTOR E-MOBILITY (WALLBOXES)

	Connection	Functions	EnergyManager pro	EnergyManager flex
Keba P30 (X series, C series)	LAN	measuring/switching	3 devices*	1 device*
Webasto Live	LAN	measuring/switching	1 device*	1 device*
Webasto Next	LAN	measuring/switching		1 device*
Alfen (Eve Single S-line, Eve Single Pro-line)	LAN	measuring/switching		1 device*

SUPPORTED APPLIANCES SECTOR HEAT

	Connection	Functions	EnergyManager pro	Manager flex
Appliances without standard plug	EnergyMeter (S0 pulse measurement)	measuring	X	X
Heating element my-PV AC ELWA-E	LAN	measuring/switching		1 device*
Heating element EGO Smart Heater	LAN	measuring/switching	2 devices*	1 device*
Heating element (fixed wiring)	Digital Extension, EnergyMeter, coupling relay	measuring/switching	X	
Heating heat pump (SG-ready)	Digital Extension, EnergyMeter, coupling relay	measuring/switching	X	
Heating heat pump (Stiebel Eltron - thermal EM)	LAN, Stiebel Eltron ISG web, Energy-Meter	measuring/switching		X
Hot water pump (SG-ready/with standard plug)	Digital Extension, myStrom WiFi Switch, coupling relay	measuring/switching	X	
Hot water pump (SG-ready/fixed wired)	Digital Extension, EnergyMeter, coupling relay	measuring/switching	X	

* Number of devices of this type of wallbox that can be controlled by the manager at the same time.

SUPPORTED SMART HOME COMPONENTS

	Connection	Supported plugs	Functions	EnergyManager pro	Manager flex
myStrom Smart Home	WIFI	myStrom WiFi Switch	devices with standard plug (Type F, Type J) measuring/switching (max 16 A)	X	X