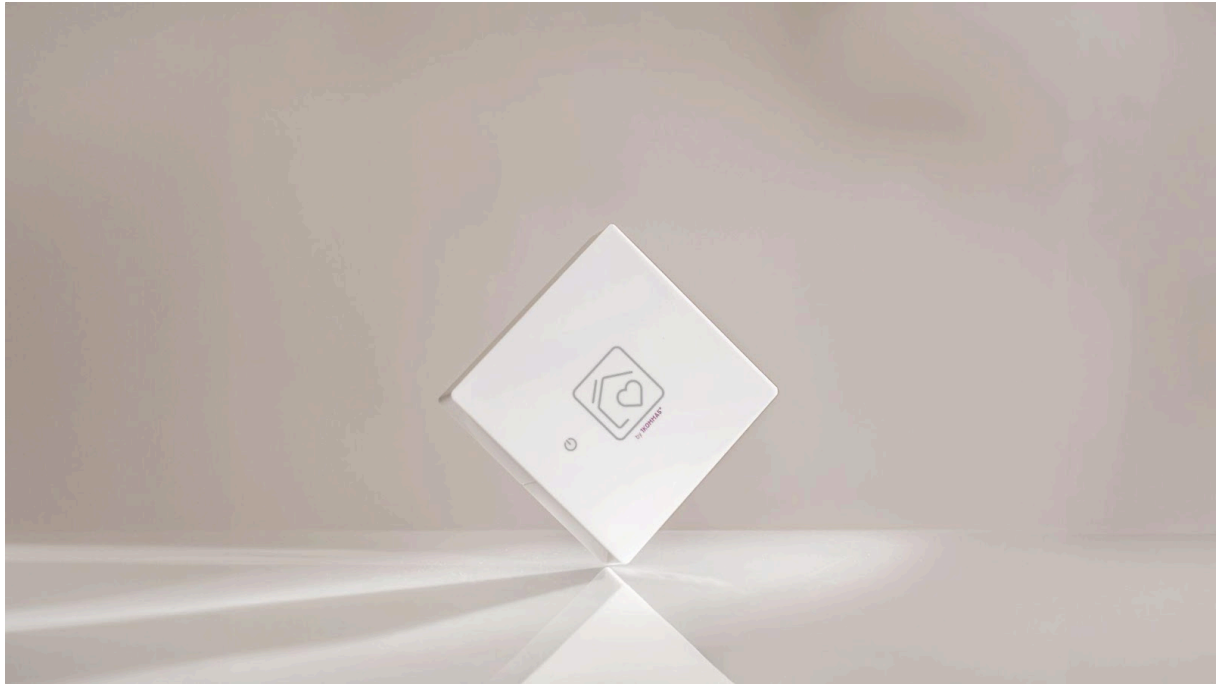


**1KOM  
MA5°**



# **HEARTBEAT & ENERGY TRADER**

Compatibility List - Denmark

Version 2.0

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## 2. Product Range & Requirements

The 1KOMMA5° Energy Manager Heartbeat can be offered as followed:

- **Heartbeat** Standalone (Hardware + App with Self Consumption Optimization)
- Heartbeat bundled with the subscription 1KOMMA5° **Energy Trader**

### 2.1 Customer Requirements

The 1KOMMA5° Energy management system Heartbeat can only be offered to customers that fulfill the following requirements:

1. Customer is based in Denmark
2. Customer with a minimum shopping card of the below focus products:

#### A. **Mandatory:**

- PV system
- Compatible energy storage system

#### B. **Optional:**

- Compatible EV-charger
- Compatible heat pump

### 2.2 Device Requirements

Customers' devices must meet the following requirements:

1. New devices with latest firmware,
2. connected to the end customer's home network,
3. the Modbus TCP/RTU/OCPP/etc. Interface and
4. activated and listed on the following compatibility list (see chapter 3 / page 5)

## 2.3 Storage Retrofit

The 1KOMMA5° storage retrofit to an existing PV system can be offered as follows:

### Customer requirements:

1. There must be no incompatible energy storage system.
2. The existing PV system must not be running at full feed-in.
3. Mixing different compatible energy storage systems is not compatible.

### Technical requirements:

1. The existing PV system must have an output of less than 30 kWp.
2. The connected power per phase must not exceed 100 A.

Storage tanks compatible for retrofitting are listed below:

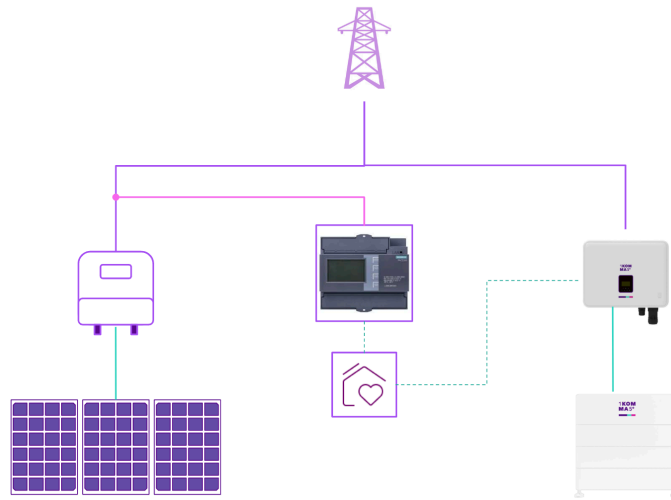
<b>Manufacturer</b>	<b>Product Name</b>	<b>Heartbeat Compatibility</b>	<b>Energy Trader Compatibility</b>
Enphase	IQ Battery 3T & 10T	Yes	Yes

The storage retrofit with an Enphase IQ Battery 3T and IQ Battery 10T is compatible in compliance with customer and technical requirements.

<b>Manufacturer</b>	<b>Product Name</b>	<b>Heartbeat Compatibility</b>	<b>Energy Trader Compatibility</b>
1KOMMA5°	1KOMMA5° Battery*	Yes	Yes

\*For the installation of a 1KOMMA5° battery, a 1KOMMA5° hybrid inverter or a FoxESS H3-Pro is mandatory. See chapter 4.3.

The storage retrofit with a 1KOMMA5° battery in combination with the 1KOMMA5° inverter is compatible in compliance with the customer and technical requirements. An additional meter is required for measuring PV generation, as shown in the following figure:



If the 1KOMMA5° battery is installed with a 1KOMMA5° hybrid inverter together with an Enphase PV system, no additional meter is required for PV measurement. The measurement data is transmitted to the Heartbeat via the Enphase IQ Gateway.

## 3. Compatible Products

### 3.1 Compatible PV & Hybrid Inverters

(Applies to the installation of one inverter)

<b>Manufacturer</b>	<b>Product Name</b>	<b>Heartbeat Compatibility</b>	<b>Energy Trader Compatibility</b>
1KOMMA5°	1K5-HI-5-V1	Yes	Yes
1KOMMA5°	1K5-HI-8-V1	Yes	Yes
1KOMMA5°	1K5-HI-10-V1	Yes	Yes
1KOMMA5°	1K5-HI-12-V1	Yes	Yes
1KOMMA5°	1K5-HI-15-V1	Yes	Yes
Enphase	IQ7	Yes	Yes
Enphase	IQ7+	Yes	Yes
Enphase	IQ7X	Yes	Yes
Enphase	IQ8MC	Yes	Yes
Enphase	IQ8AC	Yes	Yes
Enphase	IQ8HC	Yes	Yes
Solar Edge	SE5K	Yes	Yes
Solar Edge	SE7K	Yes	Yes
Solar Edge	SE8K	Yes	Yes
Solar Edge	SE9K	Yes	Yes

Solar Edge	SE10K	Yes	Yes
Solar Edge	SE12.5K	Yes	Yes
Solar Edge	SE16K	Yes	Yes
Solar Edge	SE17K	Yes	Yes
Solar Edge	SE2200H	Yes	Yes
Solar Edge	SE3000H	Yes	Yes
Solar Edge	SE3500H	Yes	Yes
Solar Edge	SE3680H	Yes	Yes
Solar Edge	SE5K-RWB48	Yes	Yes
Solar Edge	SE8K-RWB48	Yes	Yes
Solar Edge	SE10K-RWB48	Yes	Yes
Sungrow	SG5.0RT (V115)*	Yes	Yes
Sungrow	SG6.0RT (V115)*	Yes	Yes
Sungrow	SG8.0RT (V115)*	Yes	Yes
Sungrow	SG10.0RT (V115)*	Yes	Yes
Sungrow	SG12.0RT (V115)*	Yes	Yes
Sungrow	SG15.0RT (V115)*	Yes	Yes

Sungrow	SG17.0RT (V115)*	Yes	Yes
Sungrow	SG20.0RT (V115)*	Yes	Yes
Sungrow	SH5.0RT (V11 + V112)	Yes	Yes
Sungrow	SH6.0RT (V11 + V112)	Yes	Yes
Sungrow	SH8.0RT (V11 + V112)	Yes	Yes
Sungrow	SH10.0RT (V11 + V112)	Yes	Yes
Sungrow	SH5.0RT-20	Yes	Yes
Sungrow	SH6.0RT-20	Yes	Yes
Sungrow	SH8.0RT-20	Yes	Yes
Sungrow	SH10RT-20	Yes	Yes
Sungrow	SH15T (V11)*	Yes	Yes
Sungrow	SH20T (V11)*	Yes	Yes
Sungrow	SH25T (V11)*	Yes	Yes
Fox ESS	H3-Pro-20.0 (inkl. ETH)*	Yes	Yes
Fox ESS	H3-Pro-25.0 (inkl. ETH)*	Yes	Yes
Fox ESS	H3-Pro-29.9 (inkl. ETH)*	Yes	Yes

\* Products marked with \* are compatible with Heartbeat and Energy Trader but are not finally approved on the whitelist of Green Power Denmark. The process of listing is currently ongoing.

## 3.2 Compatible PV & Hybrid Inverter Combinations

(Multiple inverters can be stacked, as long as **only one hybrid inverter** including **one Energy Storage System** are installed on-site.)

The following combinations are compatible: (Applies to the installation of two inverters)

<b>Manufacturer</b>	<b>Product Name</b>	<b>Heartbeat Compatibility</b>	<b>Energy Trader Compatibility</b>
Sungrow	SH.RT + SG.RT*	Yes	Yes
Sungrow	SH.RT + SH.RT**	Yes	Yes
Solar Edge	Free combination of RWB48 / RWS / RW0*	Yes	Yes

\* Products marked with \* are compatible with Heartbeat and Energy Trader but are not finally approved on the whitelist of Green Power Denmark. The process of listing is currently ongoing.

\*\* The combination of V11 and V112 devices is not compatible.

## 3.3 Compatible Batteries

<b>Manufacturer</b>	<b>Product Name</b>	<b>Heartbeat Compatibility</b>	<b>Energy Trader Compatibility</b>
1KOMMA5°	1KOMMA5° Battery*	Yes	Yes
Enphase	IQ Battery 3T**	Yes	Yes
Enphase	IQ Battery 10T**	Yes	Yes
Enphase	IQ Battery-5P-1P-INT	Yes	Yes
Enphase	IQ Battery 5P with Flexphase	Yes	Yes
Solar Edge	Home Battery 48V	Yes	Yes
Sungrow***	SBR-Serie	Yes	Yes

\* Compatible with: 1KOMMA5° hybrid inverter and Fox ESS H3-Pro

\*\* The combination of several Enphase batteries via an IQ Gateway is compatible up to a storage capacity of 42 kWh, regardless of the composition of the IQ Battery 10T and IQ Battery 3T.

\*\*\* Other batteries are compatible with the Sungrow SHX.XRT inverters, see Sungrow compatibility list Approved Batteries with SH Series Hybrid Inverters EU Version V1.8.1.

## 3.4 Compatible EV-Chargers

<b>Manufacturer</b>	<b>Product name</b>	<b>Heartbeat compatibility</b>	<b>Energy Trader compatibility</b>	<b>Dynamic phase switching</b>
Mennekes	AMTRON Charge Control	Yes	Yes	-
Mennekes	Compact 2.0 S - 11 kW	Yes	Yes	Yes
Mennekes	Compact 2.0 S - 22 kW	Yes	Yes	-
Mennekes	AMTRON 4You 510 11 C2 - 1KOMMA5° Edition	Yes	Yes	from the end of December 2024*
Mennekes	AMTRON 4You 560 11 C2 - 1KOMMA5° Edition	Yes	Yes	from the end of December 2024*
Wallbox	Commander 2s	Yes	Yes	-

\* Is activated with a Mennekes software update and is dependent on the Mennekes software rollout.

## 3.5 Compatible Heat Pumps

### 3.5.1 Daikin

Requirements for all Daikin Heat pumps:

A Daikin-Home Hub must be available for control via Heartbeat.

Product Name	Outdoor unit	Indoor unit		Heartbeat Compatibility	Energy Trader Compatibility
Altherma 3 H HT	EPRA14/16/18DV37/W17	F	ETVH/X/Z16-E7	Yes	Yes
		ECH <sub>2</sub> O	ETSH(B)/X(B)16-E7	Yes	Yes
		M	ETBH/X16-E7	Yes	Yes
Altherma 3 H MT	EPRA08/10/12EV3/W1	F	ETVH/X/Z12-E	Yes	Yes
		ECH <sub>2</sub> O	ETSH(B)/X(B)12-P-E	Yes	Yes
		M	ETBH/X12-E	Yes	Yes
Altherma 3 R	ERGA-EV(7)H(A)	F	EHVH/X/Z-E	Yes	Yes
		ECH <sub>2</sub> O	EHS(B)/X(B)-P-E	Yes	Yes
		M	EBH/X-E	Yes	Yes
Altherma 3 R	ERLA11/14/16DV3/W1	F	EBVH/X/Z-D	Yes	Yes
		ECH <sub>2</sub> O	EBSH(B)/X(B)-D	Yes	Yes
		M	EBBH/EBBX-D	Yes	Yes

Altherma 3 R MT	ERRA-EV3/W1	F	ELVH/X/Z-E	Yes	Yes
		ECH <sub>2</sub> O	ELSH(B)/X(B)-E	Yes	Yes
		M	ELBH/X-E	Yes	Yes
Altherma 3 M	EBLA09/11/14/16D EDLA09/11/14/16D			Yes	Yes
Altherma 3 M	EBLA04/06/08E EDLA04/06/08E			Yes	Yes

### 3.6 Compatible Energy Meters

For stand-alone PV or EV or HP installations, one of the following energy meters is required to transmit household consumption measurement data to Heartbeat.

<b>Manufacturer</b>	<b>Product Name</b>	<b>Protocol</b>
Siemens	PAC2200	Modbus TCP
Shelly	Pro 3EM	Modbus TCP