EQUINOX2 HSX

Single-phase hybrid solar inverters from 3 to 8 kW

EQUINOX2 HSX: Maximum energy availability

The **EQUINOX2 HSX** range of single-phase hybrid solar inverters makes maximum use of energy generated for self-consumption.

On the one hand, like the On-Grid models of the **EQUINOX2 S/SX/T** series, high-energy efficiency continues to be an important factor for **EQUINOX2 HSX**. However, the extreme versatility is an even more crucial factor.

The **EQUINOX2 HSX** devices have up to 6 operating modes. Peak Shaving mode, surplus energy graded management: load/batteries/grid, time-slot discrimination mode, automatic backup mode, isolated mode and operating mode without batteries.

In the characteristic back-up mode, the system functions as a UPS capable of supplying 100% of the nominal power of the inverter to the loads, and all with an automatic transfer less than 10 ms in case of a mains supply outage. In this regard, our **EQUINOX2 BATT** storage system allows scaled growth according to autonomy time and the loads that you want to supply with power. The wide voltage range accepted by the **EQUINOX2 HSX** and **EQUINOX2 HT** hybrid inverters makes it possible to connect batteries in series of up to 10 stackable modules, which provide 25.6kWh at a voltage of 512V.

The operating mode without batteries ensures that photovoltaic energy is still available even when the batteries are in poor condition, disconnected for replacement or even if the user decides to acquire them at a future date and initially operates the system without storage.

Applications: Domestic self-consumption up to 8kW with high sustainability

Whenever, whether in a domestic or small business environment, you want to ensure a high degree of independence from the grid or when consumption is concentrated in times outside those of maximum radiation, and the income from the sale of energy to the grid does not sufficiently compensate the expenditure item for energy from the conventional grid. **EQUINOX2 BATT** perfectly completes the hybrid solution.

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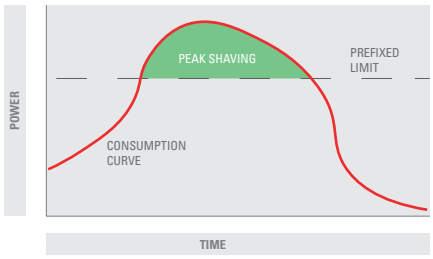
Performances

- High conversion efficiency and input current adapted to high-performance panels.
- Two 15 A MPPT trackers without current penalty by the battery connection.(1)
- Very low start-up voltage of 80 Vdc and battery charging capacity with low solar radiation.
- Admits +60% of input power in DC, above the nominal voltage.
- Possibility of delivering 10% more power in addition to the nominal.
- Fast charging/discharging of up to 30 A. Fast battery charging (1 hour).
- Back-up of up to 100% of nominal power, in battery mode.
- Made from aluminium and coated with epoxy paint to guarantee optimum corrosion resistance.
- Reduced dimensions and weight.
- Excellent thermal design extends the life of the device.
- Integrated DC disconnector.
- Plug & Play connection, with start-up and installation supervision through the free EQUINOX App, the web portal or the OLED screen.
- Incorporated meter and instrument transformers.
- Long battery life: 6000 cycles @ 80% DOD.
- Maximum energy efficiency:

(1) Except the 3 kW model which has 1 MPPT.

Peak Shaving

One of the 6 operating modes of the **EQUINOX2 HSX** is Peak Shaving. When we activate this inverter mode, we see that whenever the solar radiation is insufficient to satisfy a particular demand or the user has decided to limit grid consumption to a level less than the specific load demand, it will activate the batteries and complete the necessary power using the energy previously stored in the batteries. Thus, there is no need to consume additional energy from the grid and, therefore, there is no additional cost. Obviously, this will only happen if the power demanded is not greater than that of the inverter.



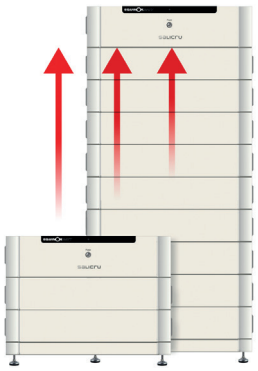
Work under minimum radiation conditions

The low start-up voltage is a characteristic common to all the **EQUINOX2** series. In other words, the solar radiation necessary for our system to start generating energy is minimal, only 80Vdc being required.

If the **EQUINOX2 HSX** hybrid inverters are also surprisingly under the threshold from which the batteries start to charge; the amortisation of the investment is ensured even under unfavourable conditions, whether by energy storage or direct consumption.

Autonomy adaptability

The **EQUINOX2 HSX** series is compatible with several battery models available on the market, although the **EQUINOX2 BATT** batteries complement it in the best way, with scalable modular configuration, maximum adaptation to the desired autonomy and in line with the investment capacity of the user.



Range

MODEL	CODE	MAXIMUM DC INPUT POWER (W)	MAXIMUM POWER (W)	MAXIMUM APPARENT OUTPUT POWER (VA)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 3001-HSX	6B2AB000027	4800	3000	3300	13	175 × 550 × 410	26
EQX2 4002-HSX	6B2AB000028	6720	4200	4620	18.3	175 × 550 × 410	26
EQX2 5002-HSX	6B2AB000029	8000	5000	5500	21.7	175 × 550 × 410	26
EQX2 6002-HSX	6B2AB000030	9600	6000	6600	26.1	175 × 550 × 410	26
EQX2 8002-HSX	6B2AB000031	12800	8000	8800	34.8	175 × 550 × 410	26

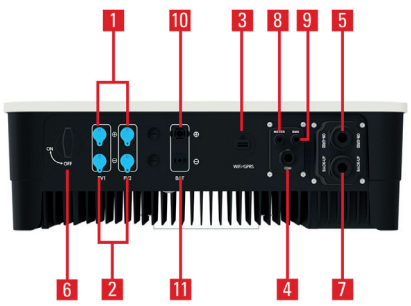
Batteries selection

MODEL	BASE CODE	BMSCODE	BATTERY CODE	DIMENSIONS (F x AN x AL mm)	WEIGHT (kg)	RATED CAPACITY (kWh)	RATED VOLTAGE (V)
EQX2 Li-Ion BATT 5 kWh	6B2OP000015	6B2AC000001	1 x 6B2AC000002	315 x 708 x 425	78.6	5.1	102.4
EQX2 Li-Ion BATT 7 kWh	6B2OP000015	6B2AC000001	2 x 6B2AC000002	315 x 708 x 562	110.9	7.7	153.6
EQX2 Li-Ion BATT 10 kWh	6B2OP000015	6B2AC000001	3 x 6B2AC000002	315 x 708 x 699	143.2	10.2	204.8
EQX2 Li-Ion BATT 12 kWh	6B2OP000015	6B2AC000001	4 x 6B2AC000002	315 x 708 x 836	175.5	12.8	256.0
EQX2 Li-Ion BATT 15 kWh	6B2OP000015	6B2AC000001	5 x 6B2AC000002	315 x 708 x 973	207.8	15.4	307.2
EQX2 Li-Ion BATT 18 kWh	6B2OP000015	6B2AC000001	6 x 6B2AC000002	315 x 708 x 1110	240.1	17.9	358.4
EQX2 Li-Ion BATT 20 kWh	6B2OP000015	6B2AC000001	7 x 6B2AC000002	315 x 708 x 1247	272.4	20.5	409.6
EQX2 Li-Ion BATT 23 kWh	6B2OP000015	6B2AC000001	8 x 6B2AC000002	315 x 708 x 1384	304.7	23.0	460.8
EQX2 Li-Ion BATT 25 kWh	6B2OP000015	6B2AC000001	9 x 6B2AC000002	315 x 708 x 1521	337.0	25.6	512.0

Dimensions

EQX2 3001÷8002-HSX

Connections



EQX2 3001÷8002-HSX

1. Positive photovoltaic input terminals
2. Negative photovoltaic input terminals
3. Main communication port (communication module connection).
4. Auxiliary communication port (optional).
5. AC / mains terminal.
6. DC disconnector.
7. Output connection for critical loads.
8. Connection port for current metering.
9. Communication port with batteries.
10. Positive battery connection terminal.
11. Negative battery connection terminal.

Technical specifications

MODEL		EQX2 3001-HSX	EQX2 4002÷8002-HSX
INPUT	Maximum DC input voltage (Vdc)	600	
	Working-out rank (Vdc)	100 ÷ 550	
	Inputs per MPPT	1/1	
	Max. short-circuit current per MPPT	20	20/20
	Starting voltage (Vdc)	80	
	Nr. MPP trackers	1	2
	Input maximum current per tracker (A)	15	15/15
OUTPUT	Power factor	0.8 inductive…0.8 capacitive	
	Network voltage	230 V Single-phase (L, N, PE)(1)	
	Voltage ranges	195.5 ÷ 253 V according to UNE 217002	
	Total harmonic distortion (THDi)	<3%	
	Frequency	50 Hz (45.5 ÷ 55 Hz) / 60 Hz (55 ÷ 65 Hz)	
	Performance EU	97,0%	
	Maximum performance	97,6%	
COMMUNICATION	Ports	RS485, WiFi	
INDICATIONS	Type	3 LED states, LED bar for battery level, OLED display	
PROTECTION	Input DC disconnector	Included	
	Integrated in the device	Inverse polarity DC, Residual Current, DC disconnector, Over-voltage, Over-temperature, Differential, Islanding operation, AC short-circuit, Over-voltage AC	
	Over-voltage protection category	PV: II / AC: II	
GENERAL	Contamination level	PD2/PD3	
	Self-consumption (at night)	<1 W	
	Operating temperature	30°C ~ +60°C (de-rate for temperature >45°C)	
	Relative humidity	0~100%	
	Maxium operating altitude	3,000 masl (power degradation up to 4,000 m)	
	Degree of protection	IP65	
	Isolation	Transformerless	
	Cooling	Natural convection (no fans)	
	Acoustic noise at 1 metre	<25 dB	
	Terminal type	MC4	
	Installation	Indoor and outdoor installation / Wall support	
	Topology	Hybrid	
STANDARDS	Certificate	EN 61000-6-2/3(2)	
	Safety / EMC	IEC 62109-1/2 / EN 61000-6-2/3	
	Energy efficiency	IEC EN UNE 61683	
	Environmental tests	IEC EN UNE 60068-1/2/14/30	
	Operation / Protection	UNE EN 62116:2014, IEC 61727:2004, UNE 217002:2020, UNE 217001:2020	
	Quality and environmental management	ISO 9001, ISO 14001, ISO 45001	

(1) For 2 x 230 V two-phase voltages, ask
(2) Consult available regulations for other countries