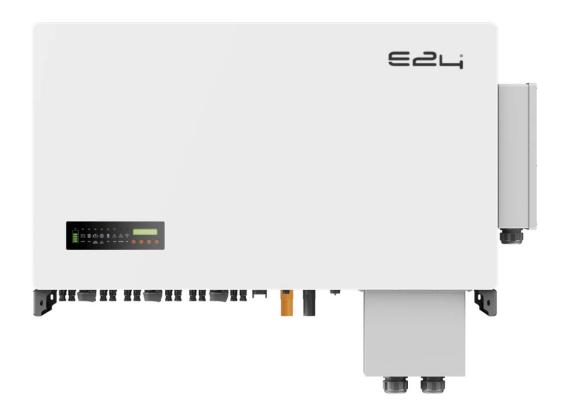
Bidirectional HV Three Phase Inverter Series





Bidirectional, High Voltage Modular, Three Phase, Solar inverters from 4 KW to 110 KW per unit for Hybrid Solar Applications (European Compliance)

The P315 Series (ESIBO3XP), offers a range of modular inverters from 4KW to 110KW ideally suited for applications where energy feed-in to the grid is required.

Features include among others, the possibility of dual output to prioritize critical load over standard load in case of low battery conditions.

Units may be connected in parallel (up to 6) to increase power in Three phase configurations.

The P315 series include USB, Dry contact, CAN, RS232, RS485, WiFi, and Optional SNMP or MODBUS Cards to connect to other control devices while providing an easy web interface to the enduser.

The ESIBO3XP™ Inverter Series

The ESIBO3XP inverters are built in modules of 10W, 12KW, 15KW, 30KW and 50KW each that can be connected in parallel in to reach a maximum power of 200KW (4x50KW) in three phase configuration.

The ESIBO3XP inverters are battery agnostic allowing them to be used with any type of battery (Lead Acid, ELA, Lithium, ...). The ESIBO3XP inverters operate modular battery units that can also be increased based on client needs. They allow the user to gradually upgrade in either power or Battery size at will in order to gradually adapt the system with his growing energy needs.

The ESIBO3XP inverters are fitted with a WiFi wireless connection that connects the client to an application allowing him to remotely monitor his energy system. They are highly compact and efficient allowing substantial savings in space and energy.

The ESIBO3XP™ Inverters exceptional design meets basic modern requirements in terms of energy efficiency and environmental friendly applications for residential, business and Industrial applications.

E24's inverters employ transformerless high-frequency technology to offer the highest efficiency while remaining silent during its operation.

- Outdoor installation (IP 65 Waterproof)
- 320 to 1000 Vdc Solar input
- Super compact
- Works with or without solar panels
- Wide Utility/Generator input voltage
- Intuitive large LCD display
- Built-in AC coupled function
- Seamless Unattended operation
- Pure Sine Wave Output
- 150% Unbalanced load support
- Up to 96 % efficiency
- Unity power factor
- Up to 6 Units in Parallel (4 units for 30KW and 50KW)
- Multiple Communication Ports (RS485, CAN-BUS, RS232, Dry Contact for BMS)
- Battery Equalization to extend battery life
- USB-ON-THE-GO function
- Easy Replaceable Fans
- OPTIONAL Automatic control of Generator

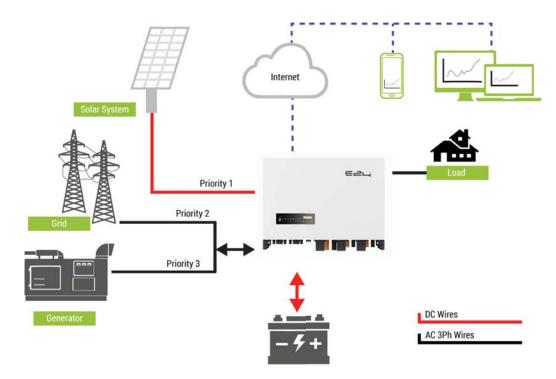






The ESIBO3XP[™] Unmatched Features

The ESIBO3XP™ Hybrid Inverter Series is engineered to adapt to almost multiple existing number of energy sources in a manner to optimise energy costs and minimize generator operation while offering immediate power backup to the user.



E24 Bidirectional inverter with Dual Output Topology

Works with or without solar panels

The ESIBO3XP inverters charge the batteries from either the solar energy or the utility supply/back-up generator. If you do not install solar panels, the unit will still operate by only charging from your utility/generator. Off-course we recommend that you install solar panels in order to save on the cost of fuel and utilities.

Wide Utility/Generator input voltage

The ESIBO3XP inverters accept a wide range of input voltage to remain fully compatible with your utility and generator voltage outputs

Intuitive large LCD display

The ESIBO3XP inverters have a built in LCD display that provide intuitively all the data about the generated, stored or consumed energy.

Super compact - Fits Anywhere

The ESIBO3XP inverters are wall mounted taking limited space on your wall. The battery can be installed at a few meters away in an attic or an unused space in your home or business.

Programmable priority of energy sources:

The ESIBO3XP™ may be programmed by default to priorities the energy source available to either supply the load directly or charge the batteries. Any unused renewable energy generated may be fed back to the grid for Net-meetering benefits. Other priority configurations can be programmed at will.

Seamless, easy operation:

The ESIBO3XP[™] is engineered to operate without any user intervention. There is no need to push any buttons or understand how it works. It simply does.

Strong Overload Capability

The ESIBO3XP™ inverter is capable of handling overloads of 110% - 125% / 150% for 10s / 5s respectively under unbalanced load.

Power Walk In

Power Walk In function allows the rectifier of each unit to be turned on progressively and in sequences in order to avoid the sudden load on generators.

Dry Contacts

The ESIBO3XP™ Series includes dry contacts that can be used to trigger certain actions like the automatic start-up of a diesel generator when battery is low and its shutdown when battery is charged.

Comprehensive Communication Options

Communications options include: RS232, RS485, Can, , Dry Contacts, Wifi, Modbus (option), SNMP adaptor (Option), GPRS (Option)



Low input current total harmonic distortion (THDi)

The ESIBO3XP™ Hybrid Inverter Series actively manages the input current total harmonic distortion (THDi) at a low level (2 percent at 100 percent load). E24's unique technology neutralizes the emission of harmonics at the input of the Hybrid Inverter system, providing greater reliability of operations for circuit breakers and extending the overall service life of the equipment. Low harmonic distortion saves unnecessary over sizing of gensets, cabling and circuit breakers, avoids extra heating of input transformers and extends the overall service life of all Hybrid Inverter stream components.

DSP Technology

The ESIBO3XP™ Hybrid Inverter is built on advance Digital Signal Processing technology in order to provide high performance steady and accurate operation over its lifetime while offering outstanding efficiency (up to 96% in online mode).

Standards

The ESIBO3XP™ Hybrid Inverter complies to EN 60950-1 standards.

Intelligent Battery Management

The ESIBO3XP™ Hybrid Inverter includes an intelligent battery charger that offers a float/boost charger and a dynamic cut-off level that reduces battery maintenance and improves battery life.

Modularity up to 6 units (30KW and 50KW up to 4 Units)

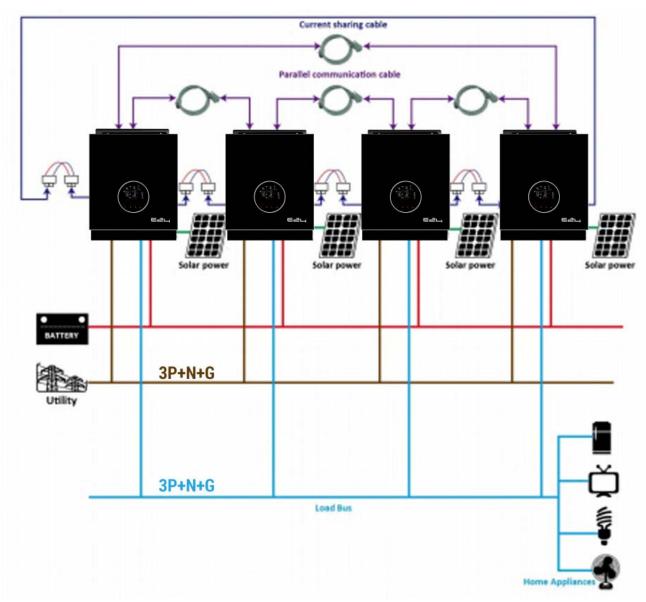
Up to 6 units can be positioned in parallel to provide an maximum power out in three-phase configuration.

Wide Solar Input Voltage Range

Most inverters of small power capacity have an input voltage from solar PVs limited to 100-150Vdc maximum. This limits the numbers of Solar panels that be installed in series rather than in parallel which decreases the energy generation performance. The ESIBO3XP inverters can accept Solar input voltage from 350 to 900Vdc (MPP tracking). Max Solar DC voltage is 1000Vdc.

Fully Protection

The ESIBO3XP is fully automated with large number of protection features built-in. The unit includes surges arrestors and input fuses to protect against input surges. The unit also includes overload protection circuitry that is easily user resetable in case of inadvertently connecting a load above the unit capacity.



Pure Sine Wave Output

The unit provides an impeccable Sine wave output with no noise or any possible interference with your appliances or equipment.

150% start-up power capacity

When turning on electrical equipment, some have high in-rush current at start-up. Air conditioning units, pumps, motors, lazer printers, photocopiers, are typical examples of high in-rush curent equipment. The ESIBO3XP are capable of providing 1.5X the rated capacity of the inverter during the starting up of your equipment allowing you to save on the size of the inverter required.

Up to 96 % efficiency

The ESIBO3XP use the latest high frequency SPWM technology to provide the highest operation efficiency bring the highest possible return on investment.

Unity power factor

An inverter of 3KVA with a power factor of 0.8 is in reality a 2.4KW inverter. E24 inverters are rated at unity power factor delivering 10KW for 10KVA inverters and 15KW for 15KVA inverter and so on.

Multiple Communication Ports (Wifi, RS485, RS232, CAN, Dry Contact for BMS)

Communication ports are used to exchange information between different systems in order build a fully integrated solution. When using lithium batteries, it is necessary for the batteries to exchange information with the inverter. Similarly, when using an E24 optional Energy Storage controller, it is necessary for the controller to read information from the inverter and battery for it to take the proper decisions (for example start the generator etc...)

Battery Equalization to extend battery life

When operating multiple batteries in series for a given time, some batteries may be slightly more charged than others. As a result the entire system may loses some of its performance due to the fact that batteries are not 100% equal to each other. The ESIBO3XP includes an internal algorithm that forces batteries to equalize which substantially increase system performance and battery life.

USB-ON-THE-GO function

The ESIBO3XP include a USB port to plug a USB drive in order to download historical data of the system that can be used for analysis and to rapidly program the inverter from a laptop.

Dual Output

ESIBO3XP series has 2 separate outputs allowing the user to perform load management where one output is at a higher priority than the other. This offers users the option to disconnect one output in the event where battery is starting to deplete in order to extend runtime on the priority output.

Easy Replaceable Fans

One of the components that must be replaced with time on inverters are the fans that run continuously. These fans must be easy to replace in order to avoid downtime. The ESIBO3XP is engineered in a way to allow easy replacement of the fans with minimal complexity and downtime.

OPTIONAL Automatic control of Generator

When used with the E24 optional Energy Controller it is possible to automatically start and stop an auxiliary generator in the event where the power drawn by the load either exceeds a preset level or when batteries start to be depleted.

The controller will automatically shuts down the generator when the load is decreased below the preset maximum load or when the battery capacity is restored.



ESIBO3XP[™] Technical Specifications (European Models in 400/230Vac)

Model ESIBO3XP-XXX	8KI	10KI	12KI	16KI	20KI	24KI	30KI	36KI	40KI
Battery Data									
Battery type					Li-ion				
Battery voltage range(V)					80~800				
Max. charging/discharging current(A)					60/60				
Rated charging current/discharging curren	it(A)				50/50				
Charging strategy for Li-ion battery				Self-	adaption to				
Communications					RS485, CAN	<u> </u>			
PV String DC Input Data									
Recommended max. PV power(KW)	8	10	12	16	20	24	30	36	40
Max. input voltage(V)					1100				
Start-up voltage(V)/ Min.input DC operation voltage(V)					50/40				
MPPT voltage range(V)					100~1000				
Max. input current(A)	20/20		20/20/20				20/20/40		
Max. short circuit current(A)	30/30		30/30/30				30/30/60		
MPPT number	2		3				3		
Strings number per MPPT	1/1		1/1/1				1/1/2		
AC Output Data(On-Grid Side)									
Rated output power(KW)	4	5	6	8	10	12	15	18	20
Rated/Max. apparent output power(KVA)	4/4	5/5	6/6	8/8	10/10	12/12	15/15	18/18	20/20
Rated grid output current(A)	5.8	7.2	8.7	11.6	14.5	17.4	21.7	26.1	29.0
Max. output current(A)	5.8	7.2	8.7	11.6	14.5	17.4	21.7	26.1	29.0
Operation phase					3P				
Rated grid voltage/range(V) (3P/N/PE)				220/380, 23	30/400, 240/	415, 312~52	0		
Rated grid frequency(Hz)					50/60				
Power Factor				>0.99, (-	0.8 to +0.8 c	adjustable)			
THDi					< 3 %				
AC Output Data(Back-Up/UPS Side)								
Rated output power(KW)	4	5	6	8	10	12	15	18	20
Peak apparent output power(KW), for 60S	8	10	12	16	20	24	30	36	40
Back-Up/UPS switch time(ms)					<10				
Rated output voltage/range(V) (3P/N/PE)				220/380, 23	80/400, 240/	415, 312~520	0		
Rated frequency(Hz)					50/60				
Rated output current(A)	5.8	7.2	8.7	11.6	14.5	17.4	21.7	26.1	29.0
THDv(@linear load)					< 2%				
Efficiency									
Max. efficiency					98.8%				
EU efficiency					98.3%				
Protection									
Ground fault monitoring					Yes				
Output over voltage protection					Yes				
Anti-islanding protection					Yes				
Integrated AFCI					Optional				
DC reverse-polarity protection					Yes				
AC short circuit protection					Yes				
Leakage current protection					Yes				
Surge protection					Yes				
DC switch(solar)					Yes				
Battery input reverse polarity protection Over voltage category				4.0	Yes	Nacel			
Over voltage category				AC	ClassIII/PV (JUSSI			
General Data					507*522*19	4			
Dimensions(mm) (W*H*D) Shell material					50/*522*19 Iuminium ali				
Weight(Kg)					iominiom ai 25	ОУ			
Operating ambient temperature range					-25~60 °C				
Topology				Т	ransformerle	255			
Ingress protection				- '	IP66	,,,,			
Cooling concept				Smart far	n&Natural c	onvection			
Max. operation altitude(m)				amun idi	3000	OTIVECTION			
Grid connection standard					021, G99:202			0, VDE-AR-N 41	
	CE	EI0-21, CEI0-			::2019, PPDS:: EC-61000-6-1			C61727&62161	
Satety/EMC standard			IEC-	02107-1/-2, [L-0-01UUU-0-1	1-41-0, ND/132	1004		
Safety/EMC standard DC connection					MC4/D4				

Model	ESIBO3XP-40KI	ESIBO3XP-47KI	ESIBO3XP-48KI	ESIBO3XP-56KI	ESIBO3XP-64KI	ESIBO3XP-72KI	ESIBO3XP-80KI		
Battery Data									
Battery type				Li-ion					
Battery voltage range(V)				200~800					
Max. charging/discharging current(A)			6	0A + 60A/120A	١				
Rated charging current /discharging current(A)			5	0A + 50A/100/	٨				
Number of battery input				2/1					
Charging strategy for Li-ion battery			Self	-adaption to E	2Ms				
Communications			3611	R\$485, CAN	1113				
PV String DC Input Data				10400, CAIN					
Recommended max. PV power(KW)	40	47.84	48	56	64	72	80		
Max. input voltage(V)	40	47104		1100	04	7.2			
Start-up voltage(V)/				50.110					
Min. input DC operation voltage(V)				50/40					
MPPT voltage range(V)				100~1000					
Max. input current(A)				4)/40/40/40					
Max, short circuit current(A)				60/60/60/60					
MPPT number				4					
Strings number per MPPT				2					
AC Output Data(On-Grid Side)									
Rated output power(KW)	25	29.9	30	35	40	45	50		
Rated/Max. apparent	25/25	29.9/29.9	30/30	35/35	40/40	45/45	50/50		
output power(KVA) Rated grid output current(A)	36.2	40.0	49.5	EO 7	E0.0	(5.0	70.5		
Max. output current(A)	36.2	43.3	43.5 43.5	50.7	58.0	65.2	72.5		
Operation phase	30,2	43.3	43.5	50.7 3P	58.0	65.2	72.5		
Rated arid voltage/									
range(V) (3P/N/PE)	220/380, 230/400, 240/415, 312~520								
Rated grid frequency(Hz)	50/60								
Power Factor			>0.99,	(-0.8 to +0.8 ac	djustable)				
THDi				< 3 %					
AC Output Data(Back-Up/UPS Side	e)								
Rated output power(KW)	25	29.9	30	35	40	45	50		
Peak apparent output power(KW), for 60S	50	58.8	60	70	80	90	100		
Back-Up/UPS switch time(ms)				<10					
Rated output voltage/ range(V) (3P/N/PE)			220/380.	230/400, 240/4	15. 312~520				
					,				
Rated frequency(Hz) Rated output current(A)	36,2	43.3	43.5	50/60	58.0	65.2	70.5		
THDv(@linear load)	30.2	40.0	40.0	< 2%	36.0	03.2	72.5		
Efficiency				~ Z/0					
Max. efficiency				98.8%					
EU efficiency				98.3%					
Protection				70.0/0					
Ground fault monitoring				Yes					
Output over voltage protection				Yes					
Anti-islanding protection				Yes					
ntegrated AFCI				Optional					
DC reverse-polarity protection				Yes					
AC short circuit protection				Yes					
Leakage current protection				Yes					
Surge protection				Yes					
DC switch(solar)				Yes					
Battery input reverse polarity protection				Yes	lacell				
Over voltage category General Data			AC	C ClassIII/PV C	IGSSII				
Dimensions(mm) (W*H*D)				800*631*315	5				
Shell material									
Weight(Kg)				Aluminium all 72	υy				
Operating ambient temperature range				-25~60 °C					
Тороюду				Transformerle	ess				
Ingress protection				IP66					
Cooling concept			Smart f	an&Natural c	onvection				
Max. operation altitude(m)				3000					
Grid connection standard	AS	/NZS4777:2020, EN CEI0-21, CEI0-16,							
			IEC-62109-17	-2. FC-61000-6-	1/-2/-3, NB/T320	104			
Safety/EMC standard			120-02107-17	MC4/D4					
Safety/EMC standard DC connection			120-02107-17		., ., ., .,				

Model	ESIBO3XP-75KI	ESIBO3XP-80KI	ESIBO3XP-90KI	ESIBO3XP-100KI	ESIBO3XP-110K
Battery Input Data					
Battery type			Li-ion		
Battery voltage range(V)			300~800		
Max. charging/discharging current(A)			160/160		
Rated Charging current(A)	70.000.000.00	10000000	160		2001-001/A-301-0
Max. Charging/Discharging Power	75KW	80KW	90KW	100KW	110KW
Charging Strategy for Li-ion battery		100	Self-adaption to BN	AS	4.00
Communications			R\$485, CAN		
PV String DC Input Data					
Recommended max. PV power(KW)	150	160	180	200	220
Max. input voltage(V)			1000		
Start-up voltage(V)/					
Min.input DC operation voltage(V)			50/40		
MPPT voltage range(V)			100~900		
Max. input current(A)		7*40		9*40	
Max. short circuit current(A)		7*60		9*60	
MPPT number		7			
Strings number per MPPT		2/14		2/18	
AC Output Data(On-Grid Side)					
Rated output power(KW)	75	80	90	100	110
Rated/Max. apparent output power(KV	(A) 75/75	80/80	90/90	100/100	110/110
Rated grid output current(A)	108.7	115.9	130.4	144.9	159.4
Max. output current(A)	108.7	115.9	130.4	144.9	159.4
Operation phase			3P/N/PE	0.0007000	
Rated grid voltage(V) (3P/N/PE)		220	V/380V, 230V/400V, 2	40V/415	
Rated grid frequency(Hz)			50/60	141,11	
Power Factor		>0	.99 (0.8 leading ~ 0.8 la	agging)	
THDi			< 3 %		
AC Output Data(Back-Up/UPS \$	ide)				
Rated output power(KW)	75	80	90	100	110
Peak apparent output power(KW), for 6	OS	1	10% - 150 % of rated p	ower	77460
Back-Up/UPS switch time(ms)			<10		
Rated output voltage/range(V) (3P/N/F	PE)	220/	380, 230/400, 240/415,	312~520	
Rated frequency(Hz)	M.S.	2000	50/60		
Rated output current(A)	108.7	115.9	130.4	144.9	159.4
THDv(@linear load)		1,000,000,000	< 2%		27.00
Efficiency			40.00		
Max. efficiency			98.8%		
EU efficiency			98.3%		
Protection					
Ground fault monitoring			Yes		
Output over voltage protection			Yes		
Anti-islanding protection			res Yes		
Integrated AFCI			Optional		
DC reverse-polarity protection			Yes		
AC short circuit protection			Yes		
Leakage current protection			Yes		
Surge protection			Yes		
DC switch(solar)			Yes		
Battery input reverse polarity protection	r.		Yes		
Over voltage category		40		Clarell	
General Data		AC	ClassIII/PV ClassII/BAT	CIGSSII	
			1323*978*338		
Dimensions(mm) (W*H*D)			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Shell material			Aluminium alloy		
Weight(Kg)			110		
Operating ambient temperature range	i e		-25~60 °C		
Topology			Transformerless		
Ingress protection		VIII -	IP66		
0 5		Sm	art fan&Natural conve	ection	
			3000		
Max. operation altitude(m)	17.707.107.107.107	CONTRACTOR OF THE PARTY OF THE	G98:2021, G99:2021, N	C RFG, ABNT NBR 16150	THE STREET WAY TO SEE THE STREET
Max. operation altitude(m) Grid connection standard	17.707.107.107.107	B0-16, RD1699, NA/EEA	G98:2021, G99:2021, N L, C10:2019, PPDS:2021	, Tor+R25, IEC61683, IEC	THE RESERVE OF THE PARTY OF THE
Cooling concept Max. operation altitude(m) Grid connection standard Safety/EMC standard DC connection	17.707.107.107.107	B0-16, RD1699, NA/EEA	G98:2021, G99:2021, N	, Tor+R25, IEC61683, IEC	THE RESERVE TO SERVE THE PARTY OF THE PARTY



E24 Modular Range Of Products For Building Easy, Flexible & Evolutive Solutions

E24 products dynamically evolve with the lifestyle and work style of its customers while easing the installation process.

E24 products are conceived in modules allowing for an easy upgrade to adjust with the needs of the customers. Being modular and easy to connect E24 products allow installers to easily configure the required modules for an optimal solution while offering easy upgrade options.



Ordering Information

Ref Number	Description
ESIB03XP-10KI	Mod. Solar Hybrid Inverter, 80-800Vdc, 10KW, 3 Ph., 400/230V, 50/60Hz, 20KWp, 1100Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-12KI	Mod. Solar Hybrid Inverter, 80-800Vdc, 12KW, 3 Ph., 400/230V, 50/60Hz, 24KWp, 1100Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-15KI	Mod. Solar Hybrid Inverter, 80-800Vdc, 15KW, 3 Ph., 400/230V, 50/60Hz, 30KWp, 1100Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-18KI	Mod. Solar Hybrid Inverter, 80-800Vdc, 18KW, 3 Ph., 400/230V, 50/60Hz, 36KWp, 1100Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-20KI	Mod. Solar Hybrid Inverter, 80-800Vdc, 20KW, 3 Ph., 400/230V, 50/60Hz, 40KWp, 1100Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-30KI	Mod. Solar Hybrid Inverter, 300-850Vdc, 30KW, 3 Ph., 400/230V, 50/60Hz, 48KWp, 1000Vdc, RS485, CAN, (Wifi, 4G, GPRS, Bluetooth) Optional
ESIB03XP-40KI	Mod. Solar Hybrid Inverter, 300-850Vdc, 30KW, 3 Ph., 400/230V, 50/60Hz, 64KWp, 1000Vdc, RS485, CAN, (Wifi, 4G, GPRS, Bluetooth) Optional
ESIB03XP-50KI	Mod. Solar Hybrid Inverter, 300-850Vdc, 30KW, 3 Ph., 400/230V, 50/60Hz, 80KWp, 1000Vdc, RS485, CAN, (Wifi, 4G, GPRS, Bluetooth) Optional
ESIB03XP-60KI	Mod. Solar Hybrid Inverter, 300-850Vdc, 30KW, 3 Ph., 400/230V, 50/60Hz, 96KWp, 1000Vdc, RS485, CAN, (Wifi, 4G, GPRS, Bluetooth) Optional
ESIB03XP-75KI	Mod. Solar Hybrid Inverter, 300-800Vdc, 75KW, 3 Ph., 400/230V, 50/60Hz, 150KWp, 1000Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-80KI	Mod. Solar Hybrid Inverter, 300-800Vdc, 80KW, 3 Ph., 400/230V, 50/60Hz, 160KWp, 1000Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-90KI	Mod. Solar Hybrid Inverter, 300-800Vdc, 90KW, 3 Ph., 400/230V, 50/60Hz, 9180KWp, 1000Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-100KI	Mod. Solar Hybrid Inverter, 300-800Vdc, 100KW, 3 Ph., 400/230V, 50/60Hz, 200KWp, 1000Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN
ESIB03XP-110KI	Mod. Solar Hybrid Inverter, 300-800Vdc, 110KW, 3 Ph., 400/230V, 50/60Hz, 220KWp, 1000Vdc, Wifi, 4G, GPRS, Bluetooth, RS485, CAN









www.e24solutions.com