

# The ESIB02XP Series

## Bidirectional Split Phase Inverters (American Standards)

E2L®

P313E



### **Bidirectional, Modular, Split Phase series from 6 to 16KW (American Standards Models)**

The ESIB02XP Series offers a range of modular inverters in 6KW, 8KW, 10KW, 12KW, and 16KW versions ideally suited for applications where energy feed-in to the grid is required under Split Phase Applications (American Standards).

Units may be connected in parallel (up to 4) to increase power in split phase configurations. It is also possible to configure the units to operate in three phase configurations.

The ESIB02XP series include USB, Dry contact, RS485, and Optional 4G interface and Wifi to connect to other control devices while providing an easy web interface for remote management.

# The ESIB02XP™ Inverter Series

The ESIB02XP inverters are built in modules of 6KW, and 8KW, 10KW, 12KW and 16KW each that can be connected in parallel in to reach a maximum power of 64KW (4x16KW) in split phase and 3 x 16KW in three phase configurations.

The ESIB02XP inverters are battery agnostic allowing them to be used with any type of battery (Lead Acid, ELA, Lithium, ...). The ESIB02XP 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 ESIB02XP inverters can be fitted with an optional WiFi or 4G dongle for wireless connection that connects the client to a cloud application allowing him to remotely monitor his energy system. They are highly compact and efficient allowing substantial savings in space and energy.

The ESIB02XP™ 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 operation.

- **Wide Solar input range (120 to 500 Vdc)**
- **Feeds back energy to the grid**
- **Super compact**
- **Works with or without solar panels**
- **Separate Utility/Generator inputs**
- **Intuitive LCD display**
- **Built-in AC coupled function**
- **Seamless Unattended operation**
- **Pure Sine Wave Output**
- **100% Unbalanced load support**
- **Up to 92 % efficiency**
- **Unity power factor**
- **Up to 4 Units in Parallel**
- **Can be connected in 3 phases configuration**
- **Multiple Communication Ports USB, Dry contact, RS485, and Optional 4G and Wifi**
- **Battery Equalization to extend battery life**
- **Easy Replaceable Fans**
- **100A pass through**
- **Operates as on-grid and Off-grid**



ESIB02XP-8KI



# The ESIB02XP™ Unmatched Features

The ESIB02XP™ 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.



- // Plug & Play.
- // Capable of supporting 100% unbalanced loads.
- // Indoor-Outdoor Installation/ IP65 Rating with Touch Screen/ UL1741 SB Certified.
- // 100A pass through.
- // 4 Independent MPPTS/Supports multi machine parallel connection.
- // Grid & diesel Generator separately connected, support storing energy from diesel generator.

## Works with or without solar panels

The ESIB02XP 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 range

The ESIB02XP inverters accept a wide range of input voltage 192V to 288V to remain fully compatible with your utility and generator voltage inputs

## Split Utility/Generator inputs

The inverter has 2 separate inputs allowing to program each input separately (for example it is possible to charge at different rates from the utility than from the generator to save on fuel)

## Intuitive large LCD display

The ESIB02XP inverters has a touch LCD display that provide intuitively all the data about the generated, stored or consumed energy.

## Super compact - Fits Anywhere

The ESIB02XP 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 ESIB02XP™ 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.

### Seamless, easy operation:

The ESIB02XP™ 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 ESIB02XP™ inverter is capable of handling overloads of 110% (30s), 120% (10s), 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 ESIB02XP™ 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: USB, Dry contact, and Optional Wifi and 4G.

### Low input current total harmonic distortion (THDi)

The ESIB02XP™ 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 gen-sets, 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 ESIB02XP™ 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.

### Standards

The ESIB02XP™ Hybrid Inverters are UL Listed (L1741SA all options, UL1699B) and comply to CSA 22.2, IEEE1547 and FCC Part 15 Class B standards.

### Intelligent Battery Management

The ESIB02XP™ 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

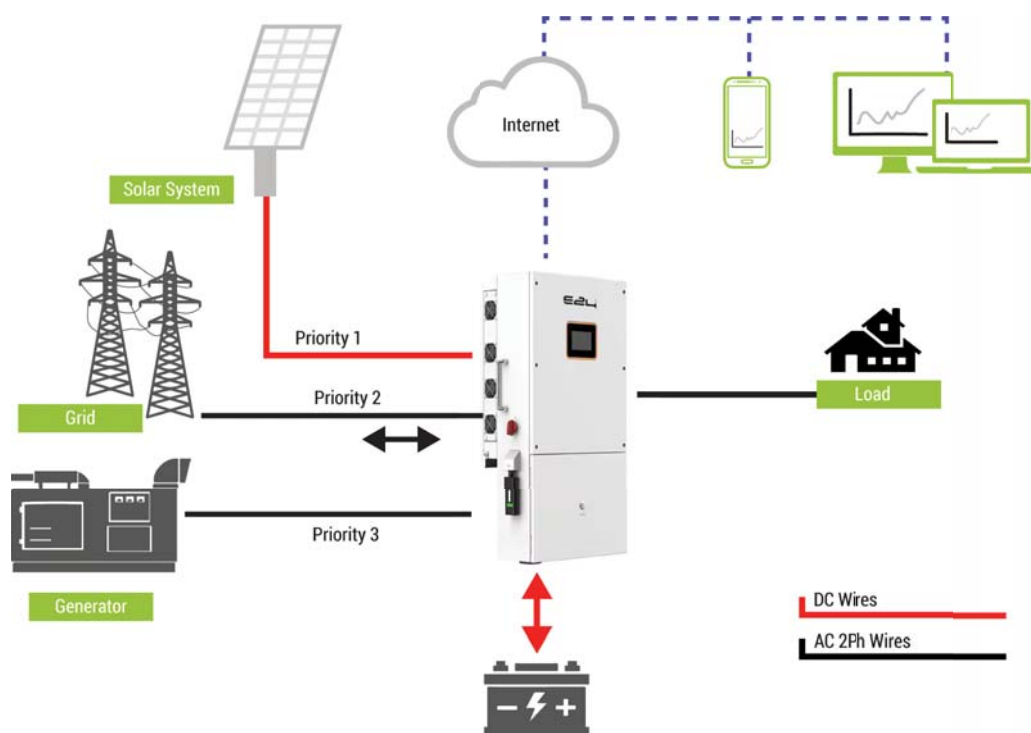
Up to 6 units can be positioned in parallel to provide an maximum power out in three-phase configuration.

### 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 ESIB02XP inverters can accept Solar input voltage from 400 to 800Vdc (MPP tracking). Max Solar DC voltage is 900Vdc.

### Fully Protection

The ESIB02XP 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, laser printers, photocopiers, are typical examples of high in-rush current equipment. The ESIB02XP 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 ESIB02XP 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 USB, Dry contact and Optional Wifi and 4G.**

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**

The ESIB02XP may be operated using lead-acid batteries or Lithium (LFP). When set-up for Lead acid batteries, the inverter includes an internal algorithm to adjust the charging in a manner to equalize all batteries to increase their performance and lifetime.

When used with lithium (LFP) batteries, the ESIB02XP connects with the battery through CAN bus to continuously adjust charging power in a manner to optimise the LFP cells lifetime.

**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 ESIB02XP 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 shut down the generator when the load is decreased below the preset maximum load or when the battery capacity is restored.

# ESIB02XP™ (American Models) Technical Specifications

	ESIBO2XP-5KD	ESIBO2XP-6KD	ESIBO2XP-8KD	ESIBO2XP-10KD	ESIBO2XP-12XP
PV input data					
Max. PV input power (kW)	7.5	9	12	12	15
Max. PV input voltage (V)	500				
Min. PV input voltage (V)	120				
Start-up voltage (V)	120				
MPPT voltage range (without battery)(V)	120~500				
MPPT voltage range@full-load (V)	150~430				
Rated PV input voltage (V)	310				
No. of MPPT trackers	4				
No. of strings per MPPT tracker	1/1/1/1				
Max. input current per MPPT (A)	14/14/14/14				
Max. short-circuit current per MPPT (A)	22/22/22/22				
Battery input data					
Battery type	Lithium-ion / Lead-acid				
Max. charge / discharge power (kW)	5	6	7.6	8	10
Battery voltage range (V)	40~60				
Rated battery voltage (V)	48				
Max. charging / discharging current (A)	120/120	135/135	190/190	190/190	190/210
Rated charge / discharge current (A)	120/120	135/135	190/190	190/190	190/210
Charging strategy for Li-Ion battery	Self-adaption to BMS				
BMS communication	CAN				
AC output data (grid side)					
Rated output power (kW)	5	6	7.6	8	10
Max. apparent output power (kVA)	5.5	6.6	8.4	8.8	11
Rated grid voltage( V)	110-127/208-240V split phase, 240V single phase				
Grid voltage range (V)	192~288				
Rated grid frequency (Hz)	60				
Grid frequency range(Hz)	55 to 65				
Rated output current (A)	20.8	25	31.7	33.3	41.7
Max. AC output current (A)	22.9	27.5	34.8	36.7	45.8
Power factor	0.8leading~0.8lagging				
Max. grid passthrough current(A)	100				
THDi	<3%				
Grid type	2L+N+PE				
AC output data (load side)					
Rated output power (kW)	5	6	7.6	8	10
Max. apparent output power (kVA)	5.5	6.6	8.4	8.8	11
Rated output voltage (L-N/L1-L2) (V)	120/240				
Rated output frequency (Hz)	60				
Rated output current (A)	20.8	25	31.7	33.3	41.7
Max. AC output current (A)	22.9	27.5	34.8	36.7	45.8
Peak output power	110%,30s / 120%,10s / 150%,0.02s				
Back-up switch time (ms)	<20				
THDu	<2%				
Protection					
Supported protection	Arc fault protection, PV reverse polarity protection, Anti-islanding protection, Ground fault protection Leakage current protection, Insulation resistance detection, Backup output short circuit protection, AC under-voltage protection, AC output over-current protection, AC over-voltage protection,				
Surge protection	DC Type II / AC Type II				
Over voltage category	DC Type II / AC Type III				
Certifications and standards					
Certificates	FCC Part 15 Class B; UL1741SA all options, UL1699B, CSA 22.2; IEEE1547				
General data					
Ingress protection	IP65 / NEMA 3R				
Operating temperature range (°C)	-25~+60				
Cooling	Fan cooling				
Relative humidity	0-95%				
Operating altitude (m)	0~4,000(Derating above 2,000 altitude)				
Dimensions W*D*H (mm)	450 x 820 x 240				
Weight (kg)	47				
Topology (solar / battery)	Transformerless / Transformer				
Noise emission (dB)	48				
Display and communication					
Display	Touch panel				
Communication	RS485, 4G(optional), Wi-Fi				



	ESIBO2XP-12KD	ESIBO2XP-16KD
PV input data		
Max. PV input power (kW)	18	24
Max. PV input voltage (V)		500
Min. PV input voltage (V)		120
Start-up voltage (V)		120
MPPT voltage range (without battery)(V)		120~500
MPPT voltage range@full-load (V)		150~430
Rated PV input voltage (V)		310
No. of MPPT trackers		4
No. of strings per MPPT tracker		1/1/1/1
Max. input current per MPPT (A)	16/16/16/16	20/20/20/120
Max. short-circuit current per MPPT (A)	22/22/22/22	25/25/25/25
Battery input data		
Battery type	Lithium-ion / Lead-acid	
Max. charge / discharge power (kW)	12	13
Battery voltage range (V)		40~58
Rated battery voltage (V)		48
Max. charging / discharging current (A)	250/260	260/280
Rated charge / discharge current (A)	250/260	260/280
Battery charging strategy	Self-adaption to BMS	
BMS communication	CAN	
AC output data (grid side)		
Rated output power (kW)	12	16
Max. apparent output power (kVA)	13.2	16
Rated grid voltage( V)	110-127/208-240V split phase, 240V single phase	
Grid voltage range (V)		240
Rated grid frequency (Hz)		60
Grid frequency range(Hz)		55~65
Rated output current (A)	50	66.7
Max. AC output current (A)	55	73.3
Power factor	0.8leading~0.8lagging	
Max. grid passthrough current(A)	200	
THDi	<3%	
Grid type	2L+N+PE	
AC output data (load side)		
Rated output power (kW)	12	13
Max. apparent output power (kVA)	13.2	13.2
Rated output voltage (L-N/L1-L2) (V)		120/240
Rated output frequency (Hz)		60
Rated output current (A)	50	54
Max. AC output current (A)	55	55
Peak output power	110%,30s / 120%,10s / 150%,0.02s	
Back-up switch time (ms)	<20	
THDu	<2%	
Protection		
Supported protection	Arc fault protection, PV reverse polarity protection, Anti-islanding protection, Ground fault protection Leakage current protection, Insulation resistance detection, Backup output short circuit protection, AC under-voltage protection, AC output over-current protection, AC over-voltage protection,	
Surge protection	DC Type II / AC Type II	
Over voltage category	DC Type II / AC Type III	
Certifications and standards		
Certificates	FCC Part 15 Class B; UL1741,UL1741SA&SB all options, UL1699B, CSA -C22.2 NO.107.1-01,RSD(NEC690.5,11,12)	
General data		
Ingress protection	IP65 / NEMA 3R	
Operating temperature range (°C)	-25~+60	
Cooling	Fan cooling	
Relative humidity	0-95%	
Operating altitude (m)	0~4,000(Derating above 2,000 altitude)	
Dimensions W*D*H (mm)	495 x 900 x 260	
Weight (kg)	55	
Topology (solar / battery)	Transformerless / Transformer	
Noise emission (dB)	48	
Display and communication		
Display	Touch panel	
Communication	RS485, 4G(optional), Wi-Fi	

Hybrid



Storage Inverter



Battery



# 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
ESIB02XP-6KD	Bi-direct. Inverter, IP65, 51.2Vdc, 6KW, Split phase 240V, 50/60Hz, 4x3KWp, 500Vdc, Cloud Mon., USB, CAN, RS485,WiFi
ESIB02XP-8KD	Bi-direct. Inverter, IP65, 51.2Vdc, 8KW, Split phase 240V, 50/60Hz, 4x3KWp, 500Vdc, Cloud Mon., USB, CAN, RS485,WiFi
ESIB02XP-10KD	Bi-direct. Inverter, IP65, 51.2Vdc, 10KW, Split phase 240V, 50/60Hz, 4x3KWp, 500Vdc, Cloud Mon., USB, CAN, RS485,WiFi
ESIB02XP-12KD	Bi-direct. Inverter, IP65, 51.2Vdc, 12KW, Split phase 240V, 50/60Hz, 4x3KWp, 500Vdc, Cloud Mon., USB, CAN, RS485,WiFi
ESIB02XP-16KD	Bi-direct. Inverter, IP65, 51.2Vdc, 16KW, Split phase 240V, 50/60Hz, 4x3KWp, 500Vdc, Cloud Mon., USB, CAN, RS485,WiFi
ESIB02XP-WiFi	Wifi for ESIB02XP Series
ESIB02XP-4G	4G option for ESIB02XP Series



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