

CERTIFICATE

Jiangsu Koyoe Energy Technology Co., Ltd.

No.40, Wangwu Road, Wuzhong District,
Suzhou City, Jiangsu Province, P.R. China

is authorized to provide the product(s) mentioned below with the mark as illustrated:



Description of product(s) (details see Annex 2):

Hybrid Inverter

It is certified by **TÜV NORD CERT GmbH** that the product(s) described above has(have) been assessed according to the certification program mentioned below and found in compliance with the requirements of below specified certification fundamental(s). This certification is based on evaluation results as documented in test report(s) referenced below and production site(s) audit results as documented in factory inspection report(s) referenced in Annex 1. This certificate is valid in conjunction with these quoted report(s).

Certification program:	P31-VA-01 Rev. 02 / 04.20	
Certification fundamental(s):	IEC 62109-1:2010; IEC 62109-2:2011; IEC 62477-1:2012+AMD1:2016	
Registered no.:	44 780 21 406749 - 255	
Manufacturer and factory(-ies):	See Annex 1	
Report no.:	492011780.001 492011714.001	
File no.:	PVP04039/21E-01 PVP04039/21E-02	Valid from: 2021-11-22 Valid Until: 2026-11-21



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Manufacturer:

Jiangsu Koyoe Energy Technology Co., Ltd.
No.40, Wangwu Road, Wuzhong District,
Suzhou, P.R. China

Factory(-ies):

Factory :
Jiangsu Koyoe Energy Technology Co., Ltd.
No.40, Wangwu Road, Wuzhong District,
Suzhou, P.R. China
Factory inspection report no.: 862010578.001

Remark:

Factory inspection is mandatory to be performed annually. Please refer to factory inspection report for detailed information.

A blue ink signature, likely of a representative from TÜV NORD CERT.

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TÜV NORD CERT GmbH

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Description of product(s):

Model type	KY-EST20KH		
General information			
Type of inverter	Non-Isolated	Separated by.....	Transformer-less
Safety Class	Class I	IP grade.....	IP65
Over-voltage Category.....	PV & Battery: II, Main: III	Pollution degree	External:3 Internal:2
Operating temperature.....	-25°C ~60°C (>45°C derating)	Altitude	4000m
Weight.....	28kg	Dimension (W x H x D)	505mm x 630mm x 220mm
Firmware of ARM.....	V32000	Firmware of DSP	V30000(main) V31000(slave)
PV input			
Vmax	1000V d.c.	Isc.....	25/25A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking.....	2
Back-feed current.....	0A	Rated input current.....	23/23A d.c.
Grid AC output/input			



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Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....	50/60Hz
Max. continuous power	20000W	Rated. apparent power	20000VA
Rated. output current	31A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....	50/60Hz
Max. continuous power	20000W	Rated. apparent power	20000VA
Rated. output current	31A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Battery Port			
Operating voltage range	180-700V d.c.	Rated. Charge/Discharge current	50/50A d.c.
Max. input/output power	20000W/20000 W	Battery type	Li-ion/Lead-acid

Model type	KY-EST17KH		
General information			
Type of inverter	Non-Isolated	Separated by	Transformer-less
Safety Class	Class I	IP grade	IP65
Over-voltage Category.....	PV & Battery: II,	Pollution degree.....	External:3



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	Main: III		Internal:2
Operating temperature.....:	-25°C ~60°C (>45°C derating)	Altitude	4000m
Weight.....:	27kg	Dimension (W x H x D)	505mm x 630mm x 220mm
Firmware of ARM.....:	V32000	Firmware of DSP	V30000(main) V31000(slave)
PV input			
Vmax.....:	1000V d.c.	Isc	25/25A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking	2
Back-feed current.....:	0A	Rated input current.....:	23/23A d.c.
Grid AC output/input			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency	50/60Hz
Max. continuous power	17000W	Rated. apparent power	17000VA
Rated. output current	25A a.c.	Power factor.....:	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency	50/60Hz



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Max. continuous power	17000W	Rated. apparent power	17000VA
Rated. output current	25A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Battery Port			
Operating voltage range	180-700V d.c.	Rated. Charge/Discharge current	50/50A d.c.
Max. input/output power	17000W/17000 W	Battery type	Li-ion/Lead-acid

Model type	KY-EST15KH		
General information			
Type of inverter	Non-Isolated	Separated by	Transformer-less
Safety Class	Class I	IP grade	IP65
Over-voltage Category	PV & Battery: II, Main: III	Pollution degree	External:3 Internal:2
Operating temperature	-25°C ~60°C (>45°C derating)	Altitude	4000m
Weight	27kg	Dimension (W x H x D)	505mm x 630mm x 220mm
Firmware of ARM	V32000	Firmware of DSP	V30000(main)



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			V31000(slave)
PV input			
Vmax	1000V d.c.	Isc	13.5/25A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking	2
Back-feed current.....	0A	Rated input current.....	12.5/23A d.c.
Grid AC output/input			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency	50/60Hz
Max. continuous power	15000W	Rated. apparent power	15000VA
Rated. output current	22A a.c.	Power factor.....	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency	50/60Hz
Max. continuous power	15000W	Rated. apparent power	15000VA
Rated. output current	22A a.c.	Power factor.....	>0.99(-0.8 ~+0.8)
Battery Port.			
Operating voltage range	180-700V d.c.	Rated. Charge/Discharge current.....	50/50A d.c.
Max. input/output power	15000W/15000 W	Battery type.....	Li-ion/Lead-acid



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Model type	KY-EST12KH		
General information			
Type of inverter	Non-Isolated	Separated by.....	Transformer-less
Safety Class.....	Class I	IP grade.....	IP65
Over-voltage Category.....	PV & Battery: II, Main: III	Pollution degree	External:3 Internal:2
Operating temperature.....	-25°C ~60°C (>45°C derating)	Altitude	4000m
Weight.....	26kg	Dimension (W x H x D)	505mm x 630mm x 220mm
Firmware of ARM.....	V32000	Firmware of DSP	V30000(main) V31000(slave)
PV input			
Vmax.....	1000V d.c.	Isc.....	13.5/13.5A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking.....	2
Back-feed current.....	0A	Rated input current.....	12.5/12.5A d.c.
Grid AC output/input			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....	50/60Hz
Max. continuous power.....	12000W	Rated. apparent power	12000VA



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Rated. output current	18A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....	50/60Hz
Max. continuous power	12000W	Rated. apparent power	12000VA
Rated. output current	18A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Battery Port			
Operating voltage range	180-700V d.c.	Rated. Charge/Discharge current	50/50A d.c.
Max. input/output power	12000W/12000 W	Battery type	Li-ion/Lead-acid

Model type	KY-EST10KH		
General information			
Type of inverter	Non-Isolated	Separated by	Transformer-less
Safety Class	Class I	IP grade	IP65
Over-voltage Category	PV & Battery: II, Main: III	Pollution degree	External:3 Internal:2
Operating temperature	-25°C ~60°C (>45°C derating)	Altitude	4000m



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Weight.....:	24kg	Dimension (W x H x D)	505mm x 570mm x 220mm
Firmware of ARM.....:	V32000	Firmware of DSP	V30000(main) V31000(slave)
PV input			
Vmax.....:	1000V d.c.	Isc.....:	13.5/13.5A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking.....:	2
Back-feed current.....:	0A	Rated input current.....:	12.5/12.5A d.c.
Grid AC output/input			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....:	50/60Hz
Max. continuous power.....:	10000W	Rated. apparent power	10000VA
Rated. output current	15A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....:	50/60Hz
Max. continuous power.....:	10000W	Rated. apparent power	10000VA
Rated. output current	15A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Battery Port			



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Operating voltage range	180-550V d.c.	Rated. Charge/Discharge current	25/30A d.c.
Max. input/output power	10000W/10000 W	Battery type	Li-ion/Lead-acid

Model type	KY-EST08KH		
General information			
Type of inverter	Non-Isolated	Separated by	Transformer-less
Safety Class	Class I	IP grade.....	IP65
Over-voltage Category.....	PV & Battery: II, Main: III	Pollution degree	External:3 Internal:2
Operating temperature.....	-25°C ~60°C (>45°C derating)	Altitude	4000m
Weight.....	24kg	Dimension (W x H x D)	505mm x 570mm x 220mm
Firmware of ARM	V32000	Firmware of DSP	V30000(main) V31000(slave)
PV input			
Vmax.....	1000V d.c.	Isc.....	13.5/13.5A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking.....	2



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Back-feed current..... :	0A	Rated input current..... :	12.5/12.5A d.c.
Grid AC output/input			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency..... :	50/60Hz
Max. continuous power..... :	8000W	Rated. apparent power	8000VA
Rated. output current	12A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency..... :	50/60Hz
Max. continuous power..... :	8000W	Rated. apparent power	8000VA
Rated. output current	12A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Battery Port			
Operating voltage range	180-550V d.c.	Rated. Charge/Discharge current	25/30A d.c.
Max. input/output power	8000W/8000W	Battery type	Li-ion/Lead-acid
Model type			
KY-EST06KH			
General information			
Type of inverter	Non-Isolated	Separated by..... :	Transformer-less
Safety Class..... :	Class I	IP grade..... :	IP65



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Over-voltage Category.....:	PV & Battery: II, Main: III	Pollution degree	External:3 Internal:2
Operating temperature.....:	-25°C ~60°C (>45°C derating)	Altitude	4000m
Weight.....:	23kg	Dimension (W x H x D)	505mm x 570mm x 220mm
Firmware of ARM.....:	V32000	Firmware of DSP.....:	V30000(main) V31000(slave)
PV input			
Vmax.....:	1000V d.c.	Isc.....:	13.5/13.5A d.c.
MPP voltage range	180-900V d.c.	Number of MPPT tracking.....:	2
Back-feed current.....:	0A	Rated input current.....:	12.5/12.5A d.c.
Grid AC output/input			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....:	50/60Hz
Max. continuous power.....:	6000W	Rated. apparent power	6000VA
Rated. output current	10A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Off-Grid AC output			
Rated Output Voltage	400/380V a.c., 3L/N/PE	Rated Output Frequency.....:	50/60Hz



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Max. continuous power	6000W	Rated. apparent power	6000VA
Rated. output current	10A a.c.	Power factor	>0.99(-0.8 ~+0.8)
Battery Port			
Operating voltage range	180-550V d.c.	Rated. Charge/Discharge current	25/30A d.c.
Max. input/output power	6000W/6000W	Battery type	Li-ion/Lead-acid

Remark:

For detailed product information, please refer to CDF (Constructional Data Form) in Annex 1 of test report.



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