



โชคทวีคุณ เทรนนิ่งและซัพพลาย



SOLAR ENERGY Day & Night

More than just an inverter, the innovative X-Hybrid is an intelligent energy management system that stores surplus energy in batteries for later use.

The X-Hybrid works by storing surplus energy in batteries for later use, making it possible to utilise solar power time-independently by storing unused capacity. It converts and directs solar power to where it is needed, when it is needed. X-Hybrid is also supplied with a built-in EPS, allowing the end-user to use their stored energy in the event of a power outage.



SK-TL
X-Hybrid Ready Inverter

SK-SU
X-Hybrid Inverter

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Inverter ■

Optional Function of Solar Pumping Inverter

SMS Module

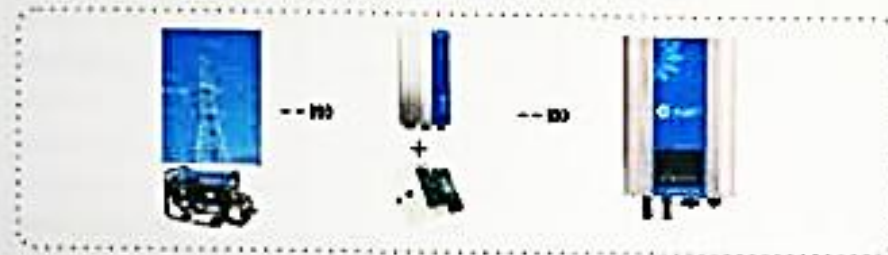
Using your mobile phone can control the system simply whenever and wherever possible.



AC power supply controller for hybrid power

It switches to AC power for back up supply when the solar power is insufficient or at night. So the system can work for 24 hour.

This AC power supply controller can be used in all the solar pumping systems.





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Features of Integrated Solar Pumping Inverter

- No need of extra junction box & reactor, reducing connection wires and easy to install
- No need to customize a protection case, directly for outdoor use
- Unique heat dissipation & fan channel design, increasing the service life of inverter
- Enclosed design, keeping off intentional actions
- Double insulation design, efficiently preventing from electrical shock





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MNE Integrated Solar Pumping Inverter

No misoperation
Will be allowed to operate until the key is inserted

IP54 Degree
Directly suitable for outdoor use

Lightning proof
Protect the whole system from lightning and short-circuit

DC terminal
Wide input voltage to optimize PV modules configuration

AC terminal for hybrid power
Connect to mains power or generator; Allow DC & AC input at the same time

Digital control
DSP & IGBT module; Automatic operation; Full protection

LCD + LED display
User friendly; System status display, EG. real-time voltage and frequency, error code, electricity production

SMS remote control (optional)
Check real-time working status; Re-set inverter default menu; Command the system to start/stop

Protection
Reduce the drive value of inverter output voltage; Increasing the service life of motor; Prevent circuit interference and protect inverter

Radiator
Heat dissipation design; Long life span

AC output terminal for motor
Suitable for 1-PH 220V, 3-PH 220V/380V/415V; Wide range from 0.37-110kW; Customized for bigger ones

Water level switch
Detect water levels for both well and tank; Protect from over-pumped and burnout; Automatic restart once water level recover

Inverter

Model	Power (kW)	Max. DC open circuit voltage (V)	Min. MPP voltage (V)	Max. DC input current (A)	Max. AC input current (A)	Rated output current (A)	Matched pump spec	Suggested PV spec	Suggested PV strings
MNE-SPC370V3	0.37	820	500	2	2.5	2.0	3PH 380V 0.37kW 50/60Hz	25W Vmpp-18.7V Voc-22.2V	30pcs*1set
MNE-SPC550V3	0.55	820	500	2.5	3.1	2.5	3PH 380V 0.55kW 50/60Hz	35W Vmpp-18.2V Voc-21.8V	30pcs*1set
MNE-SPC750V3	0.75	820	500	3	4.0	3.2	3PH 380V 0.75kW 50/60Hz	45W Vmpp-18.3V Voc-21.7V	30pcs*1set
MNE-SPC1K3V3	1.1	820	500	4	4.7	4.0	3PH 380V 1.1kW 50/60Hz	65W Vmpp-17.9V Voc-21.6V	30pcs*1set
MNE-SPC1K5V3	1.5	820	500	5.4	5.9	5.0	3PH 380V 1.5kW 50/60Hz	75W Vmpp-18.8V Voc-22.4V	34pcs*1set
MNE-SPC2K3V3	2.2	820	500	7.6	8.0	7.2	3PH 380V 2.2kW 50/60Hz	120W Vmpp-18.8V Voc-22.4V	31pcs*1set
MNE-SPC3K3V3	3	820	500	9.5	10.0	9.0	3PH 380V 3kW 50/60Hz	250W Vmpp-30V Voc-36V	18pcs*1set
MNE-SPC3K5V3	3.7	820	500	12	12.2	11.0	3PH 380V 3.7kW 50/60Hz		22pcs*1set
MNE-SPC4K3V3	4	820	500	13	14.4	13.0	3PH 380V 4kW 50/60Hz		22pcs*1set
MNE-SPC5K5V3	5.5	820	500	16	15.8	14.5	3PH 380V 5.5kW 50/60Hz		18pcs*1set
MNE-SPC7K5V3	7.5	820	500	22	21.7	20.0	3PH 380V 7.5kW 50/60Hz		22pcs*1set
MNE-SPC9K3V3	9.2	820	500	27	27.1	25.0	3PH 380V 9.2kW 50/60Hz		18pcs*1set
MNE-SPC11K3V3	11	820	500	31	29.5	28.0	3PH 380V 11kW 50/60Hz		22pcs*1set
MNE-SPC13K3V3	13	820	500	35	34.7	33.0	3PH 380V 13kW 50/60Hz		20pcs*1set
MNE-SPC15K3V3	15	820	500	40	41.1	39.0	3PH 380V 15kW 50/60Hz		18pcs*1set
MNE-SPC18K5V3	18.5	820	500	48	47.4	45.0	3PH 380V 18.5kW 50/60Hz		18pcs*1set
MNE-SPC22K3V3	22	820	500	56	54.7	52.0	3PH 380V 22kW 50/60Hz	19pcs*1set	
MNE-SPC26K3V3	26	820	500	64	63.2	60.0	3PH 380V 26kW 50/60Hz	20pcs*1set	
MNE-SPC30K3V3	30	820	500	75	73.7	70.0	3PH 380V 30kW 50/60Hz	20pcs*1set	
MNE-SPC37K3V3	37	820	500	91	86.7	85.0	3PH 380V 37kW 50/60Hz	20pcs*1set	
MNE-SPC45K3V3	45	820	500	106	102.0	100.0	3PH 380V 45kW 50/60Hz	20pcs*1set	
MNE-SPC55K3V3	55	820	500	133	127.6	125.0	3PH 380V 55kW 50/60Hz	20pcs*1set	
MNE-SPC75K3V3	75	820	500	171	163.3	160.0	3PH 380V 75kW 50/60Hz	20pcs*1set	
MNE-SPC93K3V3	93	820	500	223	204.1	200.0	3PH 380V 93kW 50/60Hz	20pcs*1set	
MNE-SPC110K3V3	110	820	500	262	250.0	245.0	3PH 380V 110kW 50/60Hz	20pcs*1set	

for above 25 mod... output voltage is 0-380V, and output frequency is 0-50/60Hz

LEICA DUAL CAMERA



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Inverter

MNE Solar Pumping Inverter

MNE solar pumping inverter is specially designed for watering system. A high converting efficiency of 96% and advanced MPPT technology make the solar energy fully used. It converts DC power into AC to drive all kinds of motors. The intelligent design protects the pumps from many abnormal cases, such as over-loading, over-voltage, dry-running, over-heating, low frequency and etc.

Modified AC power supply terminal
Suitable for single-phase 220V,
3-phase 380V and three phase 220V systems.
Applicable to all kinds of AC motors from 370W – 110KW.

LCD +LED display
User-Friendly.
System status display.
-Real-time voltage and
frequency indication.
-Error type instruction to
facilitate troubleshooting.

DC terminal
Wide input voltage range to
optimize PV modules
configurations.

Digital control system
DSP & IGBT module
inside.
Auto-operation.
Full protection.



Terminal for water level switches
Water level detection both in well and tank.
Protection from over-pumped and motor
burnout.
Automatic start once water level recovered.

**AC terminal for hybrid
power**
Convenient transfer to grid
power and generators to
enable system to work
continuously in weak
sunshine.

Terminal for SMS module
Remote monitor of real-time working status.
Facilitate two-way communication between user and system.

Aluminum casing and cooling fan
Heat dissipation design. Lightweight casing.
Long life span. Models above 37KW will use metal plate.



ช็อคทวีคูณ เทรนนิ่งและซัพพลาย

Inverter ■

MNE Solar Pumping Booster Inverter

Model	Power (kW)	Min. MPP voltage (V)	Max. DC open circuit voltage (V)	Max. DC input current (A)	Max. AC input current (A)	Rated output current (A)	Matched pump spec	Suggested PV spec	Suggested PV strings
MNE-SPC370V2B	0.37	80	400	13.8	2.7	2.60	3PH 220V 0.37kW 50/60HZ	250W Vmpp=30V Voc=36V	3pcs*1set
MNE-SPC550V2B	0.55	80	400	13.8	4	3.80	3PH 220V 0.55kW 50/60HZ		4pcs*1set
MNE-SPC750V2B	0.75	95	400	13.8	5	4.80	3PH 220V 0.75kW 50/60HZ		6pcs*1set
MNE-SPC1k1V2B	1.1	130	400	13.8	6.5	6.00	3PH 220V 1.1kW 50/60HZ		8pcs*1set
MNE-SPC1k5V2B	1.5	160	400	13.8	9.8	9.20	3PH 220V 1.5kW 50/60HZ		11pcs*1set
*For above five models: input voltage is 3PH 220V, rated input frequency is 50/60Hz, output voltage is 0-220V, and output frequency is 0-50/60Hz									
MNE-SPC370V3B	0.37	80	600	13.8	2	2.00	3PH 380V 0.37kW 50/60HZ	250W Vmpp=30V Voc=36V	3pcs*1set
MNE-SPC550V3B	0.55	80	600	13.8	2.5	2.50	3PH 380V 0.55kW 50/60HZ		4pcs*1set
MNE-SPC750V3B	0.75	95	600	13.8	3	3.20	3PH 380V 0.75kW 50/60HZ		6pcs*1set
MNE-SPC1k1V3B	1.1	130	600	13.8	4	4.00	3PH 380V 1.1kW 50/60HZ		8pcs*1set
MNE-SPC1k5V3B	1.5	160	600	13.8	5.4	5.00	3PH 380V 1.5kW 50/60HZ		11pcs*1set
MNE-SPC2k1V3B	2.2	200	600	13.8	7.6	7.20	3PH 380V 2.2kW 50/60HZ		15pcs*1set
MNE-SPC3kV3B	3	270	600	13.8	9.5	9.00	3PH 380V 3kW 50/60HZ		9pcs*1set
MNE-SPC3k7V3B	3.7	330	600	13.8	12	11.00	3PH 380V 3.7kW 50/60HZ		11pcs*1set
*For above eight models: input voltage is 3PH 380V, rated input frequency is 50/60Hz, output voltage is 0-380V, and output frequency is 0-50/60Hz									
MNE-SPC370V4B	0.37	80	600	13.8	2	1.80	3PH 415V 0.37kW 50/60HZ	250W Vmpp=30V Voc=36V	3pcs*1set
MNE-SPC550V4B	0.55	80	600	13.8	2.5	2.30	3PH 415V 0.55kW 50/60HZ		4pcs*1set
MNE-SPC750V4B	0.75	95	600	13.8	3	3.00	3PH 415V 0.75kW 50/60HZ		6pcs*1set
MNE-SPC1k1V4B	1.1	130	600	13.8	4	3.60	3PH 415V 1.1kW 50/60HZ		8pcs*1set
MNE-SPC1k5V4B	1.5	160	600	13.8	5.4	4.50	3PH 415V 1.5kW 50/60HZ		11pcs*1set
MNE-SPC2k1V4B	2.2	200	600	13.8	7.6	6.60	3PH 415V 2.2kW 50/60HZ		15pcs*1set
MNE-SPC3kV4B	3	270	600	13.8	9.5	8.20	3PH 415V 3kW 50/60HZ		9pcs*1set
MNE-SPC3k7V4B	3.7	330	600	13.8	12	10.00	3PH 415V 3.7kW 50/60HZ		11pcs*1set
*For above eight models: input voltage is 3PH 415V, rated input frequency is 50/60Hz, output voltage is 0-415V, and output frequency is 0-50/60Hz									

Inverter ■

MNE Normal Solar Pumping Inverter-1PH

Model	Power (kW)	Min. MPP voltage (V)	Max. DC open circuit voltage (V)	Max. DC input current (A)	Max. AC input current (A)	Rated output current (A)	Matched pump spec	Suggested PV spec	Suggested PV strings
MNE-SPC370V2U	0.37	80	430	12.3	5.2	4.0	1PH 220/230/240V 0.37kW 50/60HZ	250W Vmpp=30V Voc=36V	4pcs*1set
MNE-SPC550V2U	0.55	105	430	13	7.7	5.5	1PH 220/230/240V 0.55kW 50/60HZ		5pcs*1set
MNE-SPC750V2U	0.75	135	430	13	10.5	7.2	1PH 220/230/240V 0.75kW 50/60HZ		6pcs*1set
MNE-SPC1k1V2U	1.1	190	430	13	15.4	10.0	1PH 220/230/240V 1.1kW 50/60HZ		8pcs*1set
MNE-SPC1k5V2U	1.5	245	430	13	18	13.0	1PH 220/230/240V 1.5kW 50/60HZ		11pcs*1set
MNE-SPC2k1V2U	2.2	190	430	20	26	19.0	1PH 220/230/240V 2.2kW 50/60HZ		7pcs*1set
MNE-SPC3kV2U	3	245	430	20	-	24.0	1PH 220/230/240V 3kW 50/60HZ		9pcs*1set
MNE-SPC3k7V2U	3.7	270	430	24	-	28.0	1PH 220/230/240V 3.7kW 50/60HZ		11pcs*1set
*For above eight models: input voltage is 1PH 220/230/240V, rated input frequency is 50/60Hz, output voltage is 0-220/230/240V, and output frequency is 0-50/60Hz									

MNE Normal Solar Pumping Inverter-3PH

Model	Power (kW)	Max. DC open circuit voltage (V)	Min. MPP voltage (V)	Max. DC input current (A)	Max. AC input current (A)	Rated output current (A)	Matched pump spec	Suggested PV spec	Suggested PV strings
MNE-SPC370V2	0.37	450	280	2.7	3.3	2.6	3PH 220V 0.37kW 50/60HZ	45W Vmpp=18.2V Voc=21.7V	17pcs*1set
MNE-SPC550V2	0.55	450	280	4	4.8	3.8	3PH 220V 0.55kW 50/60HZ	65W Vmpp=17.9V Voc=21.6V	17pcs*1set
MNE-SPC750V2	0.75	450	280	5	6.3	5.0	3PH 220V 0.75kW 50/60HZ	75W Vmpp=18.8V Voc=22.4V	18pcs*1set
MNE-SPC1k1V2	1.1	450	280	6.5	7.1	6.0	3PH 220V 1.1kW 50/60HZ	120W Vmpp=18.8V Voc=22.4V	17pcs*1set
MNE-SPC1k5V2	1.5	450	280	9.8	10.8	9.2	3PH 220V 1.5kW 50/60HZ	150W Vmpp=18.8V Voc=22.4V	17pcs*1set
*For above five models: input voltage is 3PH 220V, rated input frequency is 50/60Hz, output voltage is 0-220V, and output frequency is 0-50/60Hz									



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	SK-TL (Compatible with BMU) X-Hybrid Ready Inverter			SK-SU X-Hybrid Inverter		
	SK-TL3000E	SK-TL3700E	SK-TL5000E	SK-SU3000E	SK-SU3700E	SK-SU5000E
INPUT (DC)						
Max. recommended DC Power (W)	3300	4000	5000	3300	4000	5000
Max. DC Voltage (V)		550			550	
Nominal DC operating voltage (V)		360			360	
MPPT voltage range (V)		125-530			125-530	
Max. input current (A)		12/12		12	12/12	12/12
Max. short circuit current (A)		15/15		15	15/15	15/15
No. of MPPT trackers		2		1	2	2
Strings per MPPT tracker		1		1	1	1
OUTPUT AC						
AC Nominal Power (W)	3000	3680	4600	3000	3680	4600
Nominal AC Voltage, Range (V), Frequency (Hz)		230,180-270, 50/60			230,180-270, 50/60	
AC Nominal Current (A)	13	16	20	13	16	20
Max. AC Current (A)	14.4	18	21.7	14.4	18	21.7
Total Harmonic Distortion (THD) (%)		<3			1	
Power Factor (Rated Power)		0.8 leading to 0.8 lagging			0.8 leading to 0.8 lagging	
Displacement power factor						
EFFICIENCY						
MPPT efficiency (%)		99.9			99.9	
Euro efficiency (%)		97.0			97.0	
Max. efficiency (%)		97.6			97.6	
Standby Losses (W)		<7			<7	
DISPLAY						
LCD		Backlight 16*4 character			Backlight 16*4 character	
Communications		Ethernet/WiFi/ Dry Contact			Ethernet/WiFi/ Dry Contact	
Led light		4			4	
Button		4			4	
BATTERY CHARGER (INTERNAL)						
Compatible Battery Type		Leading-acid battery/lithium battery			Leading-acid battery/lithium battery	
Nominal Battery Voltage (V)		48			48	
Battery Voltage Range (V)		40-60			40-60	
Max. Charging Current (A)		50(adjustable)			50(adjustable)	
Charging Curve		3-stage adaptive with maintenance			3-stage adaptive with maintenance	
Over Current Protection/Over Temperature Protection		Yes			Yes	
Communication Interfaces		Can/RS232			Can/RS232	
OTHERS						
DC switch		Optional			Optional	
Max. No. of Supported External Charger		1			0	
Operating Temperature Range (°C)		-10--+50 (derating at 40)			-10--+50 (derating at 40)	
Storage Stability Range (°C)		-20--+60			-20--+60	
Altitude Limit (m)		<2000			<2000	
Cooling Concept		Forced airflow			Forced airflow	
Noise Emission (typical) (dB)		<40			<40	
Humidity (%)		0-95 (non-condensing)			0-95 (non-condensing)	
Protection Class		IP20 (indoor use)			IP20 (indoor use)	
Overvoltage Category		III (electric supply side), II (PV SIDE)			III (electric supply side), II (PV SIDE)	
EMC Standard		IEC61000-6-1/2/3			IEC61000-6-1/2/3	
Topology		Transformer-less			Transformer-less	
Warranty (years)		5			5	
Dimensions W*H*D (mm)		475*591*151			700*591*151	
Weight (kg)		21.5			27.7	
Certification		VDE 4105 / AS/NZS4777.2 / C10 11 / EN50438-NL / EN50438-DK / OVE/ONORME 8001/ G83.G59 / CEI 0-21			VDE 4105 / AS/NZS4777.2 / C10 11 / EN50438-NL / EN50438-DK / OVE/ONORME 8001/ G83.G59 / CEI 0-21	
X-HYBRID INVERTER (EMERGENCY POWER SUPPLY)EPS (WITH INTERNAL CHARGER)						
EPS Rated Power (VA)		2000/3000		2000	230,50/160	
EPS rated Voltage(V), Frequency (Hz)					8.7	
EPS Rated Current (A)		8.7/13		1.5xRated, 10	1.5xRated, 10	1.5xRated, 10
EPS Peak Power (A),Duration (s)		1.5xRated, 10			<3	<5
Total Harmonic Distortion (THD) (%)		<3			<3	<5
Switch Time (s)		<5				



โชคทวีคูณ เทรนนิ่งและสหภาพ

X1-LX
SINGLE PHASE DUAL MPPT

SOLAX
POWER

X1-LX

SINGLE PHASE DUAL MPPT

X1-LX are high quality economy dual MPPT inverters offering efficiency and reliability.

The single phase dual MPPT inverters boast a wide voltage range to allow for more energy harvesting and at 97.6% have the highest maximum efficiency available on the market today.

In addition, all SolaX single phase inverters are IP65 rated and have no internal fan.

Key features

- X** High MPPT efficiency up to 99.9%
- X** Max DC to AC efficiency up to 97.6%
- X** Fanless design, quiet, low maintenance cost and long life span.
- X** Load control function
- X** Integrated DC switch.
- X** Integrated WIFI and cabling function with free monitoring system.



X1-LX 3600
X1-LX 4600
X1-LX 5200



Monitor your system day and night in real time via the X-Cloud.

All SolaX Hybrid inverters come with WiFi as standard.

TECHNICAL DATA X1-LX

MODEL	X1-LX 3600	X1-LX 4600	X1-LX 5200
INPUT DC			
Max. DC input power [W]			
Max. PV voltage [V]	4000	4600	5200
Rated input voltage [V]		550	
		360	
Max. DC input current per string [A]	12/12	12/12	12/12
Max. DC short-circuit per input [A]	15/15	15/15	15/15
MPPT voltage range [V]	125-530	125-530	125-530
Start input voltage [V]	100	100	100
Start output voltage [V]	150	150	150
Shut down voltage [V]	70	70	70
No. of MPPT inputs	2	2	2
No. of strings per MPPT input	1	1	1
DC switch		Optional	
Output (AC)			
Rated output power [W]	3680	4200	4600
Rated grid voltage (Range) [V]		220/230/240 (180 to 280)	
Rated grid frequency (Range) [Hz]		50 (45 to 55) / 60 (55 to 65)	
Nominal AC current [A]	16	18	20
Max. output current [A]	16	20	22
Total harmonic distortion (THD)		<3%	
Maximum output overcurrent protection [A]		25	
Displacement power factor, adjustable		0.9 leading to 0.9 lagging	
Feed in phase		Single-phase	
Over voltage category		III (electric supply side), II (PV side)	
Efficiency			
MPPT efficiency	99.9%	99.9%	99.9%
Euro-efficiency	97.0%	97.0%	97.0%
Max. efficiency	97.6%	97.6%	97.6%
Safety and Protection			
Over voltage/under voltage protection		Yes	
DC isolation impedance monitoring		Yes	
Grid monitoring		Yes	
Ground fault current monitoring		Yes	
DC injection monitoring		Yes	
Residual current detection		Yes	
Anti-islanding protection		Yes	
Overload protection		Yes	
Overheat protection		Yes	
Others			
Dimension (W/H/D) [mm]		384 x 462 x 152.5	
Dimension of packing (W/H/D) [mm]		504 x 614 x 234	
Weight [kg]		17	
Gross weight [kg]		20	
Cooling concept		Natural cooling	
Noise emission [dB]		<25	
Operating temperature range [°C]		-20--+60 (derating at 45)	
Store temperature [°C]		-20--+60	
Max. permissible relative humidity (non-condensing)		0%-90%	
Altitude [m]		<2000	
Degree of protection		IP65	
Topology		Transformer-less	
Internal consumption [W]		<3	
LCD display		Backlight 16*4 character	
Communication interface		Ethernet / WiFi / Dry contact / I/O (Optional) / Smart meter (Optional)	
Standard warranty		5 year	



โชคทวีคูณ เทรนนิ่งแอนด์ซีพพลาย

หากส่งสัยการใช้งาน
ในด้านเทคนิค ท่าน
สามารถสอบถามที่
081-8241332 ครับ