High Frequency Solar Inverter

PV1800 PK SERIES (2KVA-5KVA)

THREE COLORS OPTION

● RED

● SILVER

● GREEN

This is a multi-function inverter/charger, combining functions of inverter, 50A/60A PWM and battery charger to offer uninterruptible power support with portable size. Its comprehensive LCD display offers user-configurable and easy-accessible button operation such as battery charging current, AC/solar charger priority, and acceptable input voltage based on different applications.

Features

- Pure sine wave output
- Smart LCD setting(Working modes, Charge Current, Charge Voltage, etc.)
- Built-in PWM 50A/60A solar charge controller
- New SUB working mode(Solar-Utility-Battery working mode) for 4KVA-5KVA series
- Combining solar system, AC utility, and battery power source to supply continuous power
- Overload, short circuit and deep discharge protection
- Parallel operation with up to 3 units (Available for 4KVA/5KVA only)
- Cold start function
- Support USB, RS485 monitoring function with free CD
- Compatible to generator

Rated power
2KVA-5KVA

Battery Voltage
24VDC/48VDC

MAX charging current
120A

WIFI remote
monitoring

MUST

Multi Protection

High frequency above
93% high efficiency

Wide AC input
90-280V

Lead-acid/Lithium Battery
Optional

Appearance

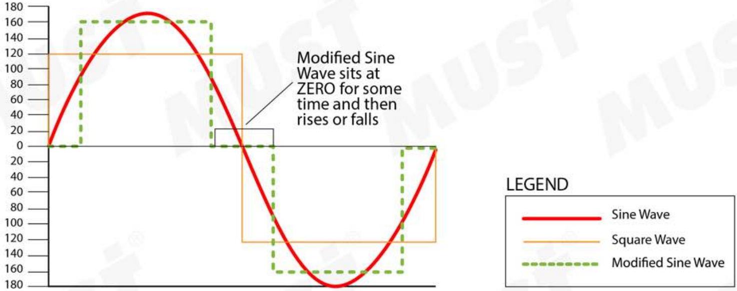
MUST

(2-3KVA)

(4-5KVA)

PRODUCT FEATURES

SMART & INTELLIGENT FEATURES



Modified Sine Wave sits at ZERO for some time and then rises or falls

MUST

Pure Sine Wave Output

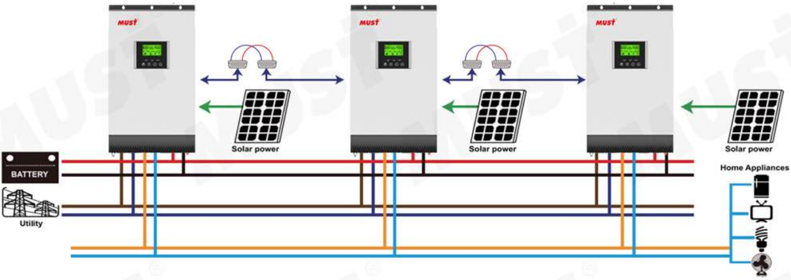
The electrical waveform output of PV1800PK is a pure sine wave, which has the same quality as utility and/or domestic power. This type of waveform is suitable for most all electrical devices, appliances and tools. This pure sine wave unit provides more capabilities than modified sine wave inverters, because it is a cleaner form of power. The pure sine wave also effectively reduces the noise produced while using appliances.

WiFi-RTU
Wi-Fi RTU
RS-232
SolarMust

Wifi communication

you can download this app on your cellphone and monitor the whole system, you will know how much electricity the system generate and sell to utility.

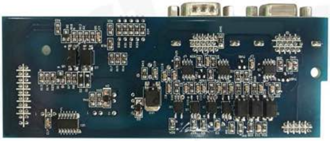
MUST


MUST
MUST
MUST
Solar power
Solar power
Solar power
BATTERY
Utility
Home Appliances

4-5KVA Parallel function

Customer can use 2pcs or 3 pcs inverters to expand the system capacity. Maximum 3pcs parallel to single phase or three phase.

Parallel kit picture as below:



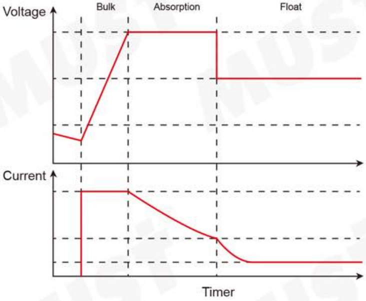
Charging algorithm

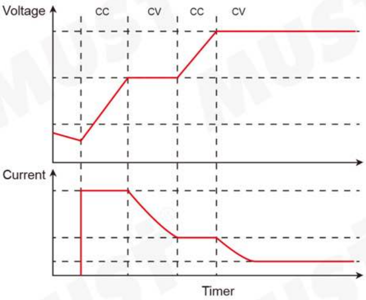
3-Step (Flooded Battery, AGM/Gel/Lithium Battery),4-Step(LI)

Charging algorithm for lead acid battery

Charging algorithm for Lithium battery

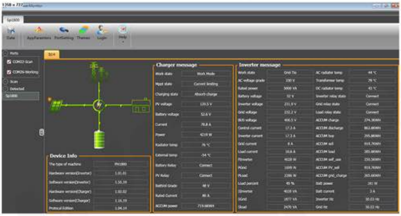
MUST

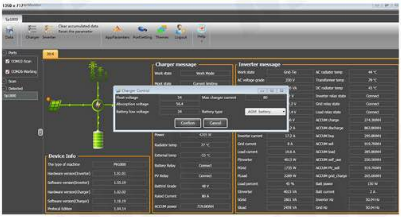


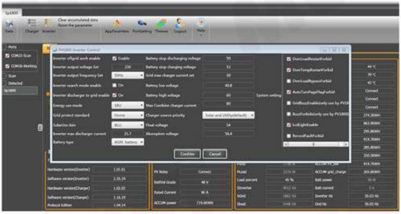


Monitoring system

With USB can connect with computer monitoring the working stage and the data of PV, AC and battery. LCD setting is also available in computer.


Charger message
Inverter message
Device Info


Charger message
Inverter message
Charger Control
Confirm
Cancel
Device Info


Sp1800
Date
Charger
Inverter
Clear accumulated data
Reset the parameter
AppParameters
PortSetting
Themes
Logout
Help
Ports
COM20-Scan
COM26-Working
Scan
Detected
Sp1800
PV1800 Inverter Control
Confirm
Cancel

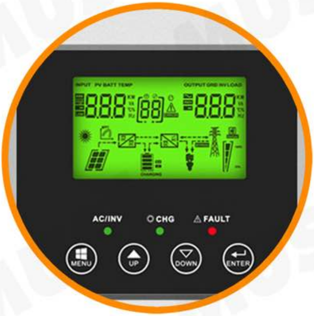
Inverter offgrid work enable ☑ Enable
Inverter output voltage Set 230
Inverter output frequency Set 50Hz
Inverter search mode enable ☐ On
Inverter discharger to grid enable ☑ On
Energy use mode SBU
Grid protect standard Home
SolarUse Aim BLU
Inverter max discharger current 25.7
Battery type AGM battery
Battery stop discharging voltage 50
Battery stop charging voltage 52
Grid max charger current set 30
Battery low voltage 40.8
Battery high voltage 60
Max Combine charger current 80
Charger source priority Solar and Utility(default)
Float voltage 54
Absorption voltage 56.4

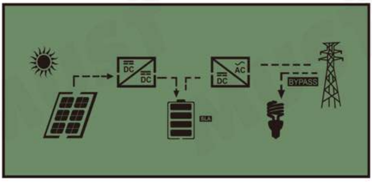
System setting
☑ OverLoadRestartForbid
☑ OverTempRestartForbid
☐ OverLoadBypassForbid
☑ AutoTurnPageFlagForbid
☐ GridBuzzEnable(only use by PV18
☐ BuzzForbide(only use by PV1800)
☑ LcdLightEnable
☐ RecordFaultForbid

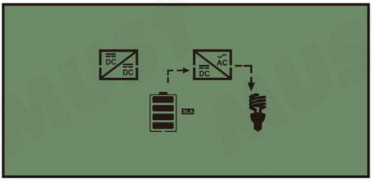
Hardware version(Inverter) 1.01.01
Software version(Inverter) 1.55.19
Hardware version(Charger) 1.02.02
Software version(Charger) 1.16.19
Protocol Edition 1.04.14
PV Relay Connect
BattVol Grade 48 V
Rated Current 80 A
ACCUM power 719.6KWH

44 ℃
79 ℃
42 ℃
Connect
Connect
Connect
274.36KWH
863.90KWH
295.80KWH
919.70KWH
285.80KWH
250.50KWH
ACCUM PV_sell 919.70KWH
Pload 2376 W
ACCUM grid_charge 265.60KWH
Load percent 45 %
Batt power
SInverter 4012 VA
Batt current
SGrid 1862 VA
Inverter Hz 50.03 Hz
Sload 1448 VA
Grid Hz 50.03 Hz

Easy to read all working modes and parameters in LCD


INPUT PV BATT TEMP
OUTPUT GRID INV LOAD
888
88
888
CHARGING
AC/INV
CHG
FAULT
MENU
UP
DOWN
ENTER


DC
DC
AC
DC
BYPASS
SLA

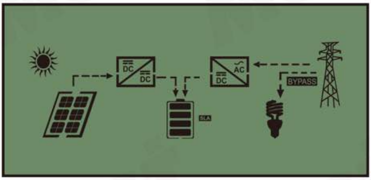

DC
DC
AC
DC
SLA

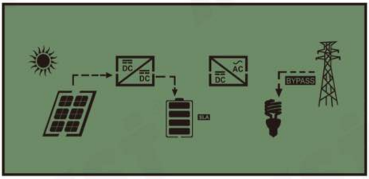
Utility-Tie state

PV energy is charger into the battery and utility provide power to the AC load

Charge state

PV energy and grid can charge batteries.


DC
DC
AC
DC
BYPASS
SLA

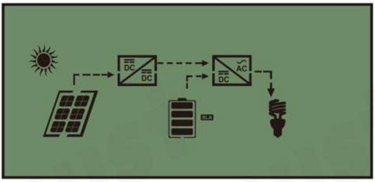

DC
DC
AC
DC
BYPASS
SLA

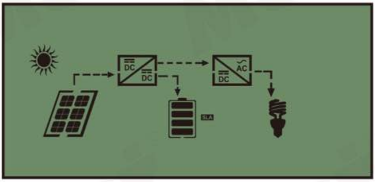
Bypass state

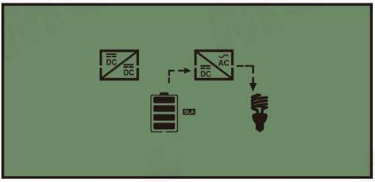
Error are caused by inside circuit error or external reasons such as over temperature, output short circuited and so on.

Off-Grid state

The inverter will provide output power from battery and PV power


DC
DC
AC
DC
SLA


DC
DC
AC
DC
SLA

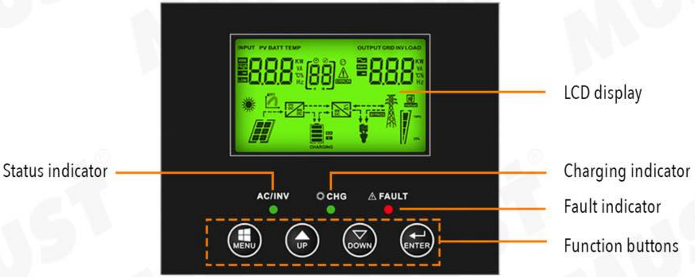

DC
DC
AC
DC
SLA

MUST

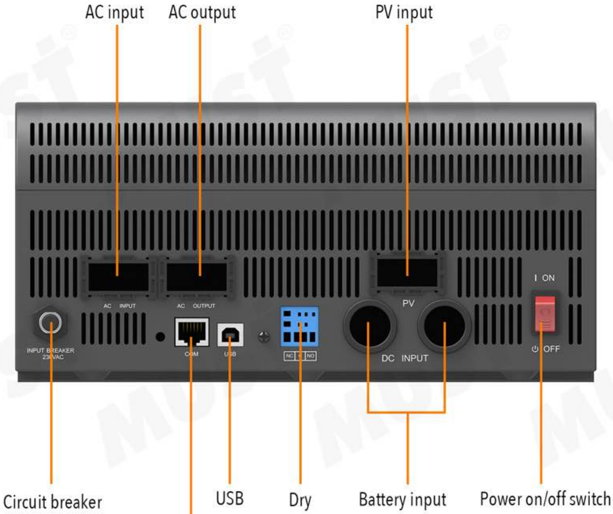
PRODUCT DETAILS

MUST HELP YOU CONTROL EVERY DETAIL

Details reflect quality


INPUT PV BATT TEMP
OUTPUT GRID INV LOAD
CHARGING
LCD display
Status indicator
Charging indicator
AC/INV
CHG
FAULT
Fault indicator
MENU
UP
DOWN
ENTER
Function buttons

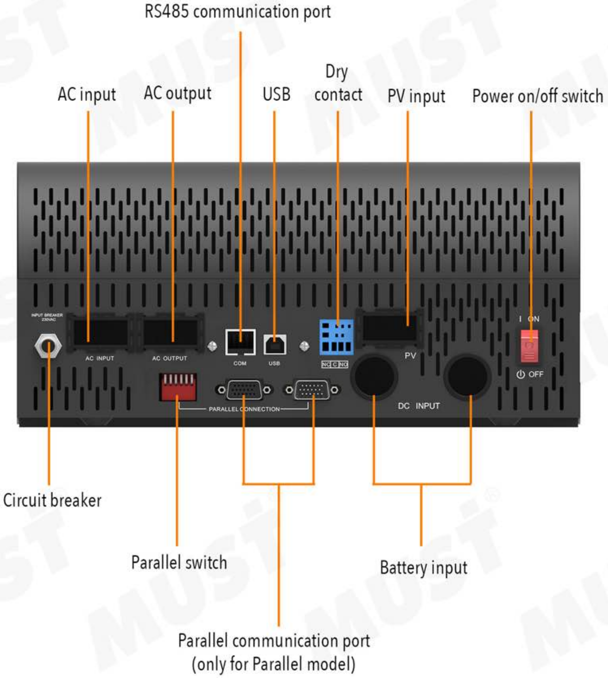
MUST


AC input
AC output
PV input
AC INPUT
AC OUTPUT
PV
I ON
INPUT BREAKER 230VAC
COM
USB
NC NO
DC INPUT
OFF
Circuit breaker
USB
Dry
Battery input
Power on/off switch

contact

RS485 communication port

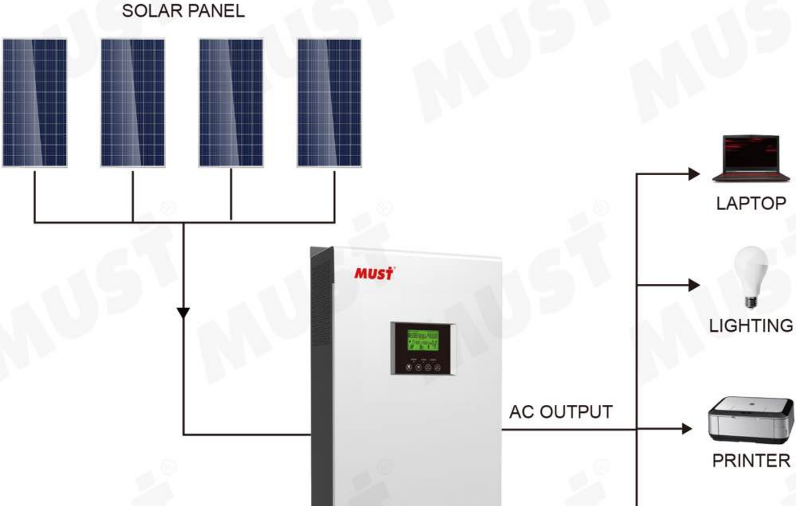
(2KVA-3KVA)


RS485 communication port
AC input
AC output
USB
Dry contact
PV input
Power on/off switch
INPUT BREAKER 230VAC
AC INPUT
AC OUTPUT
COM
USB
NC C NO
PV
I ON
OFF
PARALLEL CONNECTION
DC INPUT
Circuit breaker
Parallel switch
Battery input
Parallel communication port (only for Parallel model)

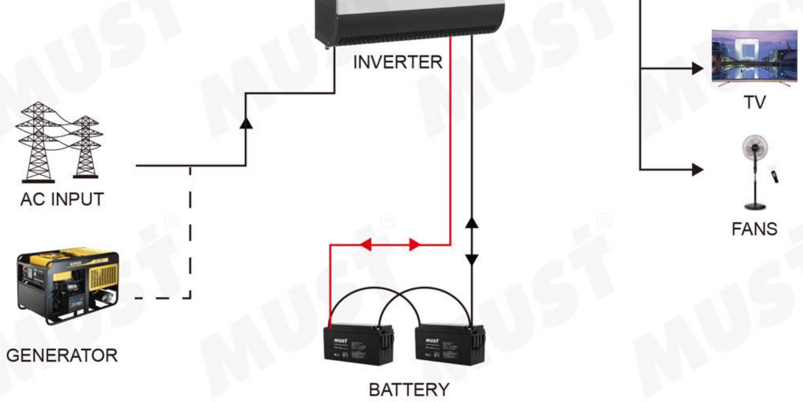
(4KVA-5KVA PARALLEL MODEL)

INVERTER SYSTEM CONNECTION

INVERTER + SOLAR PANELS + GRID + APPLICATION LOADS


SOLAR PANEL
LAPTOP
MUST
LIGHTING
AC OUTPUT
PRINTER

MUST


INVERTER
TV
AC INPUT
FANS
GENERATOR
BATTERY

PRODUCT PARAMETERS

MAKE SURE EACH PARAMETER IS TRUE

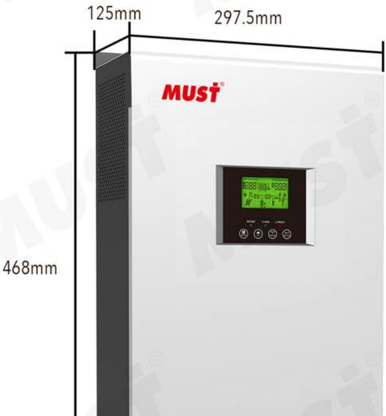
Learn more about the product

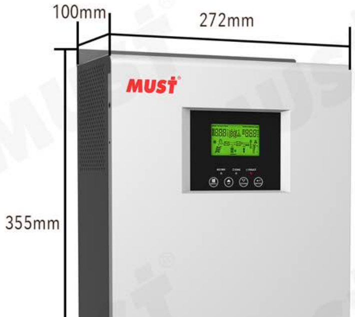
MODEL		PV18-2024 PK	PV18-3024 PK	PV18-4048 PK	PV18-5048 PK
Nominal Battery System Voltage		24VDC	24VDC	48VDC	48VDC
INVERTER OUTPUT	Rated Power	1600W	2400W	3200W	4000W
	Surge Power	4000VA	6000VA	8000VA	10000VA
	Waveform	Pure sine wave			
	AC Voltage Regulation (Batt.Mode)	(220VAC ~ 240VAC)±5%			
	Inverter Efficiency (Peak)	93%			
	Transfer Time	10ms（For Personal Computers）20ms（For Home Appliance)			

AC INPUT	Voltage	230VAC	
	Selectable Voltage Range	170~280VAC(For Personal Computers)、90~280VAC(For Home Appliances)、184~253VAC(VDE4105)	
	Frequency Range	50Hz/60Hz (Auto sensing)	
BATTERY	Normal voltage	24VDC	48VDC
	Floating Charge Voltage	27VDC	54VDC
	Overcharge Protection	31VDC	60VDC
SOLAR CHARGER & AC CHARGER	Maximum PV Array Open Circuit Voltage	70VDC	105VDC
	Standby Power Consumption	2W	2W
	(PWM) Maximum Solar Charge Current	50A	60A
	Maximum AC Charge Current	20A or 30A	60A
	Maximum Charge Current	80A	120A
MECHANICAL SPECIFICATION	Machine Dimensions (W*H*D)(mm)	272*355*100	297.5*468*125
	Package Dimensions (W*H*D)(mm)	465*373*231	618*415*261
	Net Weight(kg)	7.8	12
	Gross Weight(kg)	10.3	13.5
OTHER	Humidity	5% to 95% Relative Humidity (Non-condensing)	
	Operating Temperature	0°C -55°C	
	Storage Temperature	-15°C -60°C	

*** Product specifications are subject to change without further notice.**

Size

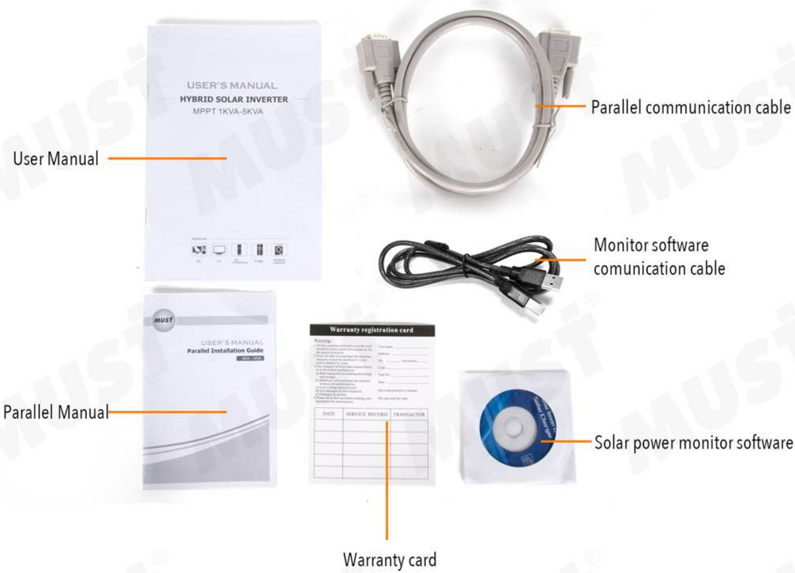

125mm
297.5mm
MUST
468mm


100mm
272mm
MUST
355mm

(4-5 KVA)

(2-3 KVA)

Package


USER'S MANUAL
HYBRID SOLAR INVERTER
MPPT 1KVA-5KVA
Parallel communication cable
User Manual
Monitor software comunication cable
MUST
USER'S MANUAL
Parallel Installation Guide
Warranty registration card
DATE
SERVICE RECORD
TRANSACTOR
Parallel Manual
Solar power monitor software
Warranty card

MUST
Green Energy Advocates
USER'S MANUAL
CE

Packaging

Applicable appliances

ELECTRONIC PRODUCT	APPLIANCE	ELECTRONIC PRODUCT	APPLIANCE	ELECTRONIC PRODUCT	APPLIANCE
LED LIGHT	✓	WASHING MACHINE	✓	ELECTRIC IRON	✓
INCANDESCENT LAMP	✓	HAND MILL	✓	HOT WATER BOTTLE	✓
FAN	✓	HAND DRILL	✓	DRYER	✓

DESKTOP PC	✓	IMPACT DRILL	✓	PROJECTOR	✓
LAPTOP	✓	SUBMERSIBLE PUMP	✓	AIR DUCT	✓
ELECTIRC COOKER	✓	AIR-CONDITIONING FAN	✓	PRINTER	✓
TV	✓	CRT TV	✓	VACUUM CLEANER	✓
REFRIGERATOR	✓	SOYMILK MACHINE	✓	DIGITAL PRODUCT	✓

MUST

PRACTICAL APPLICATION

APPLICABLE PLACE

MARIVAN
Shop / Supermarket

Solar power system

Industrial intellectual control system

Ventilation systems

PROJECT REFERENCE

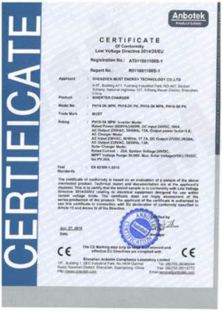
MUST
MUST
MUST
MUST
MUST

MUST®

PROFESSIONAL CERTIFICATION

CE SAA ISO9001

High quality and high standard


CERTIFICATE

Anbotek
Product Safety

CERTIFICATE
Of Conformity
Low Voltage Directive 2014/35/EU

Registration No.: AT0116011005-1

Report No.: R0116011005-1

Applicant : SHENZHEN MUST ENERGY TECHNOLOGY CO.,LTD

Product : INVERTER CHARGER

Model No. : PH18-2K MPK, PH18-2K PK, PH18-3K MPK, PH18-3K PK

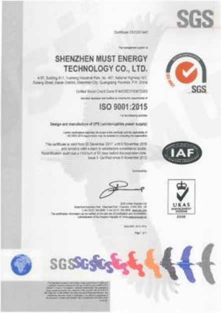
Trade Mark : MUST

Jun. 27, 2016
Date

Certified by
Manager

CE CE

Shenzhen Anbotek Compliance Laboratory Limited


SGS

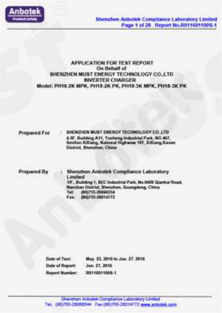
SHENZHEN MUST ENERGY
TECHNOLOGY CO., LTD.

ISO 9001:2015

Design and manufacture of UPS (uninterruptible power supply)

IAF

UKAS
MANAGEMENT
SYSTEMS


Anbotek
Product Safety

Shenzhen Anbotek Compliance Laboratory Limited
Page 1 of 28 Report No.R0116011005-1

APPLICATION FOR TEST REPORT
On Behalf of
SHENZHEN MUST ENERGY TECHNOLOGY CO.,LTD
INVERTER CHARGER
Model: PH18-2K MPK, PH18-2K PK, PH18-3K MPK, PH18-3K PK

Prepared For : SHENZHEN MUST ENERGY TECHNOLOGY CO.,LTD
4-5F, Building A11, Yusheng Industrial Park, NO.467,
Section XiXiang, National Highway 107, XiXiang,Baoan
District, Shenzhen, China

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited
1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road,
Nanshan District, Shenzhen, Guangdong, China
Tel: (86)755-26066554
Fax: (86)755-26014772

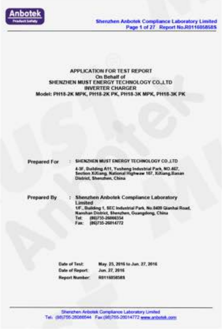
Date of Test: May. 25, 2016 to Jun. 27, 2016
Date of Report: Jun. 27, 2016
Report Number: R0116011005-1

Shenzhen Anbotek Compliance Laboratory Limited
Tel. (86)755-26066544 Fax:(86)755-26014772 www.anbotek.com

TEST REPORT

Have quality inspection to use with confidence

MUST



Anbotek
Product Safety

Shenzhen Anbotek Compliance Laboratory Limited
Page 1 of 27 Report No.R011605858S

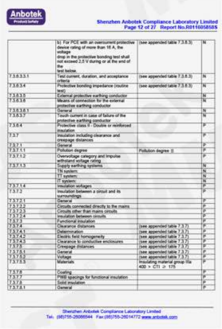
APPLICATION FOR TEST REPORT
On Behalf of
SHENZHEN MUST ENERGY TECHNOLOGY CO.,LTD
INVERTER CHARGER
Model: PH18-2K MPK, PH18-2K PK, PH18-3K MPK, PH18-3K PK

Prepared For : SHENZHEN MUST ENERGY TECHNOLOGY CO.,LTD
4-3F, Building A11, Yusheng Industrial Park, NO.467, Section XiXiang, National Highwaw 107, XiXiang,Baoan District, Shenzhen, China

Prepared By : Shenzhen Anbotek Compliance Laboratory Limited
1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China
Tel: (86)755-26066354
Fax: (86)755-26014772

Date of Test: May. 25, 2016 to Jun. 27, 2016
Date of Report: Jun. 27, 2016
Report Number: R011605858S

Shenzhen Anbotek Compliance Laboratory Limited
Tel: (86)755-26066544 Fax:(86)755-26014772 www.anbotek.com



Anbotek
Product Safety

Shenzhen Anbotek Compliance Laboratory Limited
Page 12 of 27 Report No.R011605858S

	b) For PCE with an overcurrent protective device rating of more than 16 A, the voltage drop in the protective bonding test shall not exceed 2,5 V during or at the end of the test below.	(see appended table 7.3.8.3)	N
7.3.6.3.3.1	Test current, duration, and acceptance criteria	(see appended table 7.3.8.3)	N
7.3.6.3.4	Protective bonding impedance (routine test)	(see appended table 7.3.8.3)	N
7.3.6.3.5	External protective earthing conductor		N
7.3.6.3.6	Means of connection for the external protective earthing conductor		N
7.3.6.3.6.1	General		N
7.3.6.3.7	Touch current in case of failure of the protective earthing conductor		N
7.3.6.4	Protective class II - Double or reinforced insulation		P
7.3.7	Insulation including clearance and creepage distances		P
7.3.7.1	General		P
7.3.7.1.1	Pollution degree	Pollution degree II	P
7.3.7.1.2	Overvoltage category and impulse withstand voltage rating		P
7.3.7.1.3	Supply earthing systems		N
	TN system:		N
	TT system:		N
	IT system:		N
7.3.7.1.4	Insulation voltages		P
7.3.7.2	Insulation between a circuit and its surroundings		P
7.3.7.2.1	General		P
7.3.7.2.2	Circuits connected directly to the mains		P
7.3.7.2.3	Circuits other than mains circuits		P
7.3.7.2.4	Insulation between circuits		P
7.3.7.3	Functional insulation		P
7.3.7.4	Clearance distances	(see appended table 7.3.7)	P
7.3.7.4.1	Determination	(see appended table 7.3.7)	P
7.3.7.4.2	Electric field homogeneity	(see appended table 7.3.7)	P
7.3.7.4.3	Clearance to conductive enclosures	(see appended table 7.3.7)	P
7.3.7.5	Creepage distances	(see appended table 7.3.7)	P
7.3.7.5.1	General	(see appended table 7.3.7)	P
7.3.7.5.2	Voltage	(see appended table 7.3.7)	P
7.3.7.5.3	Materials	Insulating material group IIIa 400 > CTI ≥ 175	P
7.3.7.6	Coating		P
7.3.7.7	PWB spacings for functional insulation		P
7.3.7.8	Solid insulation		P
7.3.7.8.1	General		P

Shenzhen Anbotek Compliance Laboratory Limited
Tel: (86)755-26066544 Fax:(86)755-26014772 www.anbotek.com

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Product Safety

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