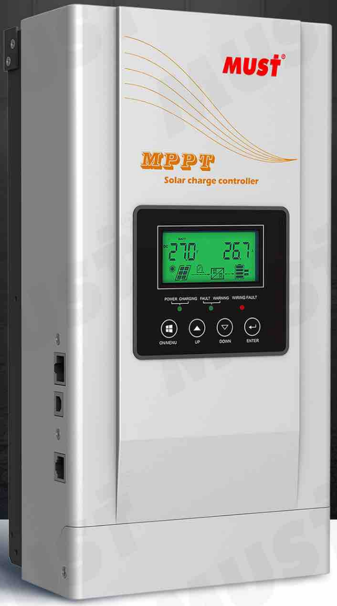
MPPT Solar Charge Controller

PC1800A SERIES (60A / 80A)



MPPT (Maximum Power Point Tracking)Solar Charge Controller offer an efficient, safe, multi-stage recharging process that prolongs battery life and assures peak performance from a solar array. Each Charge Controller allows customized battery recharging.

MUST

Max charging current
60A to 80A

Air cooling

Battery smart charge
design

Multi protection

Battery DC voltage
12V/24V/48V (Auto detection)
36V (Setting)

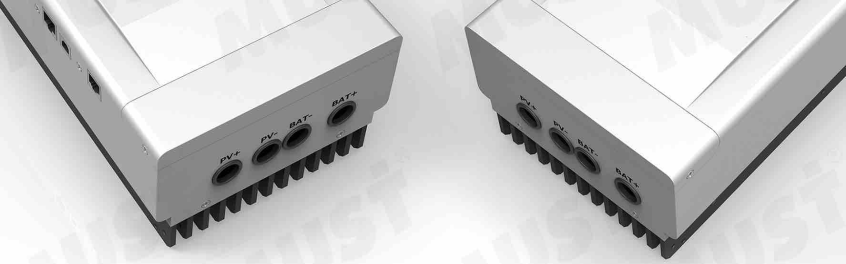
Advanced maximum
power point tracking (MPPT)
technology

High tracking efficiency
> 99.5%

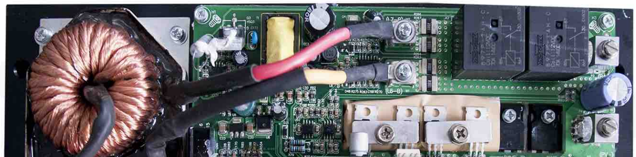
Appearance

MUST
MPPT
Solar charge controller
POWER CHARGING FAULT WARNING WIRING FAULT
ON/MENU
UP
DOWN
ENTER

MUST



Inside Structures



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PRODUCT FEATURES

SMART & INTELLIGENT FEATURES

- LCD display , easy to operate on LCD screen
- Multi stage charging (3-stage charging , parallel charging and equalized charging function)
- BTS - Battery remote temperature sensor terminal
- Enable to charge Li-thium, Gel , lead-acid battery
- With RS485 & USB communication port
- Protection: PV array short circuit, PV reverse polarity, Battery reverse polarity, Over charging, Output short circuit

RS485/USB Communication

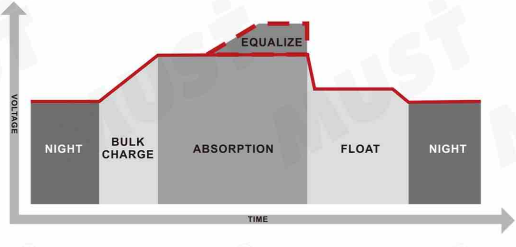
The default communication of the controller is RS485 port.You can use supplied cable to connect RS485,USB port of controller to PC.It can be used for monitoring or upgrade the firmware in short distance.

MUST

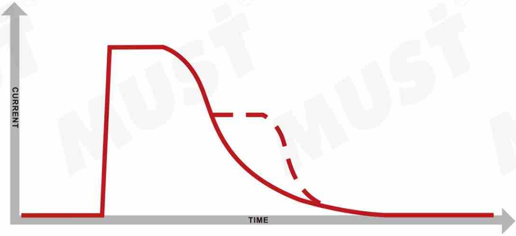
MUST
MPPT
Solar charge controller
PV+
PV-
BAT-
BAT+
DESKTOP PC

Equalize stage charging function

Equalization function is added into solar charge controller. It reverses the buildup of negative chemical effects like stratification, a condition where acid concentration is greater at the bottom of the battery than at the top. Equalization also helps to remove sulfate crystals that might have built up on the plates. If left unchecked, this condition, called sulfation, will reduce the overall capacity of the battery. Therefore, it's recommended to equalize battery periodically.

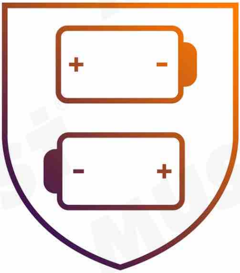


MUST®



Battery reverse protection

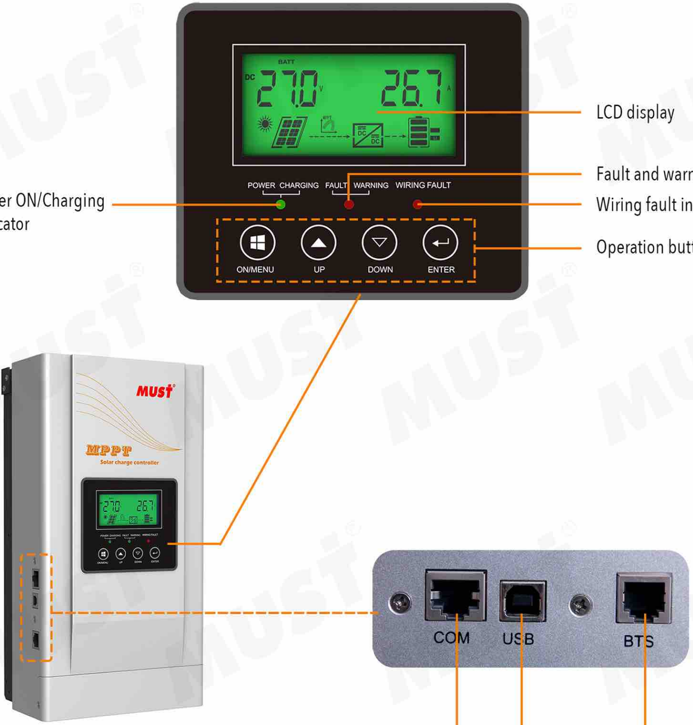
There's a battery reverse protection function in the board, then the controller will be perfectly protected even installer or user connect the battery in reverse pole accidentally



PRODUCT DETAILS

MUST HELP YOU CONTROL EVERY DETAIL

Details reflect quality



LCD display

Fault and warning indicator

Power ON/Charging indicator

Wiring fault indicator

Operation button

USB

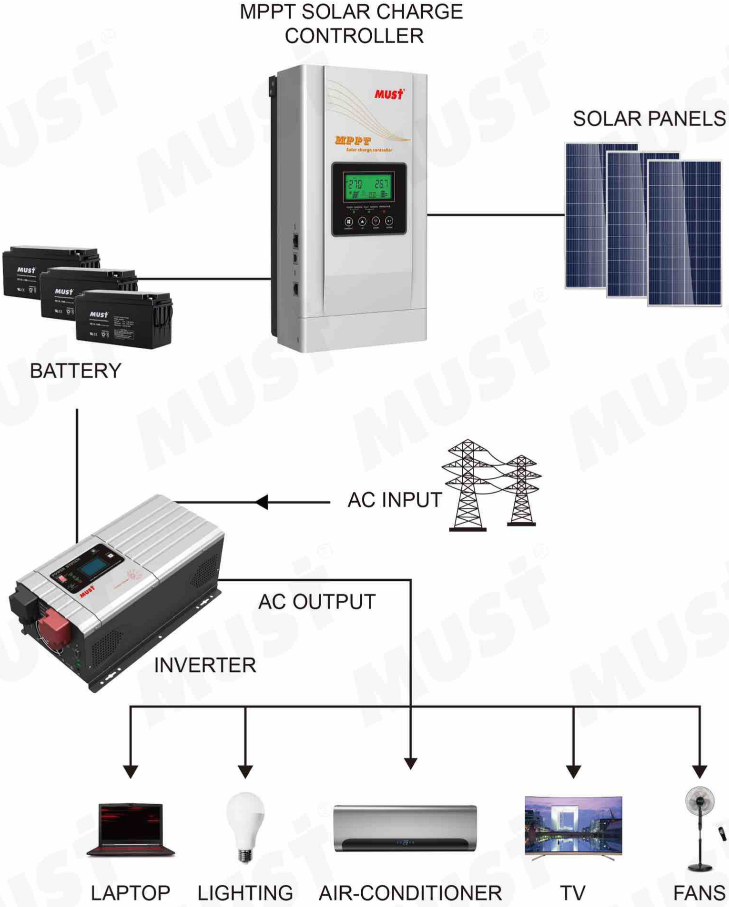
Battery temperature sensor terminal

RS485 communication port

MUST

SOLAR SYSTEM CONNECTION

INVERTER + SOLAR CHARGE CONTROLLER + BATTERY + SOLAR PANELS + GRID + APPLICATION LOADS



MPPT SOLAR CHARGE CONTROLLER

SOLAR PANELS

BATTERY

AC INPUT

AC OUTPUT

INVERTER

LAPTOP

LIGHTING

AIR-CONDITIONER

TV

FANS

MUST

PC1800A solar inverter system， it can work with inverter , battery and solar panel , as a complete solar system and back up power for normal home power demands , which take use of sunshine free and save lots of electricity bill for you . This kind of solar inverter systems are widely used in home ,farm ,school,shops etc .

PRODUCT PARAMETERS

MAKE SURE EACH PARAMETER IS TRUE

Learn more about the product

Model		60A		80A	
Electrical Specifications	Nominal System Voltage	12V,24V,48V(Auto detection) ; 36V(setting)			
	Maximum Battery Current	60Amps		80Amps	
	Battery Voltage	12V	24V	36V	48V
	Maximum Solar INput Voltage	100V	145V		
	PV Array MPPT Voltage Range	15~95V	30~130V	45~130V	60~130V
	Maximum Input Power	12 Volt-940W 24 Volt-1880W 36 Volt-2820W 48 Volt-3760W		12 Volt-1250W 24 Volt-2500W 36 Volt-3750W 48 Volt-5000W	
	Protections	Solar high voltage disconnect Solar high voltage reconnect Battery high voltage disconnect Battery high voltage reconnect High temperature disconnect High temperature reconnect			

MUST

Battery Charging	Charging Algorithm	3-Step or 4-Step (LI)	
	Charging stages	Bulk, Absorption, Float	
	Temperature compensation coefficient	-5mV / °C / cell (25°C ref.)	
	Temperature compensation range	0°C to +50°C	
	Temperature compensation set points	Absorption, Float	
	Charging set points	Absorption Stage	Float Stage
	Flooded Battery	14.2V/28.4V/42.6V/56.8V	13.7V/27.4V/41.1V/54.8V
	AGM / GEL / LEAD battery(Default)	14.4V/28.8V/43.2V/57.6V	13.7V/27.4V/41.1V/54.8V
	Over-charging voltage	15.5V/30.0V/45.0V/60.0V	
	Over-charging comeback voltage	14.5V/29.5V/44.5V/59.0V	
	Battery defect voltage	10.0V/17.0V/25.5V/34.0V	
Mechanical and Environment	Product size(W*H*D,mm)	315*160*135	
	Product weight(kg)	4.7kg	
	Ambient Temperature Range	-10°C to 55°C	
	Storage Temoerature	-40°C to 75°C	
	Humidity	0%-90% RH(No condensing)	
	Enclosure	IP20	

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

Size

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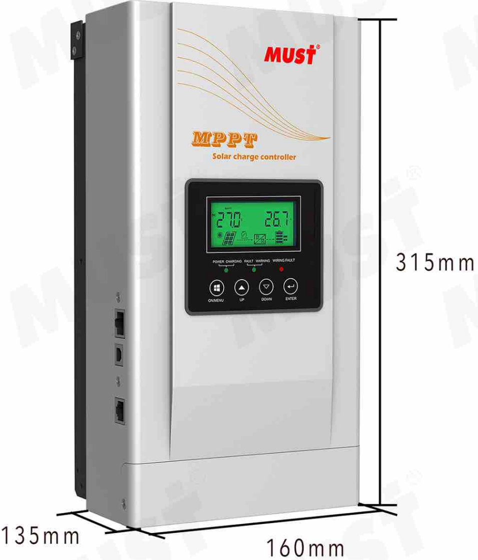
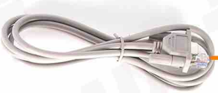


Package

25A/150V 30A/150V 40A/150V
MPPT Solar Charge Controller
User's Manual
Installation and Programming
User Manual



MUST

Warranty Card

Warranty registration card

Warning

User name:

Address:

Tel.: Associator:

Code:

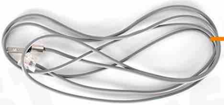
Type No.:

Date:

Sales representative (stamp)

The type and the code

DATE	SERVICE RECORD	TRANSACTOR



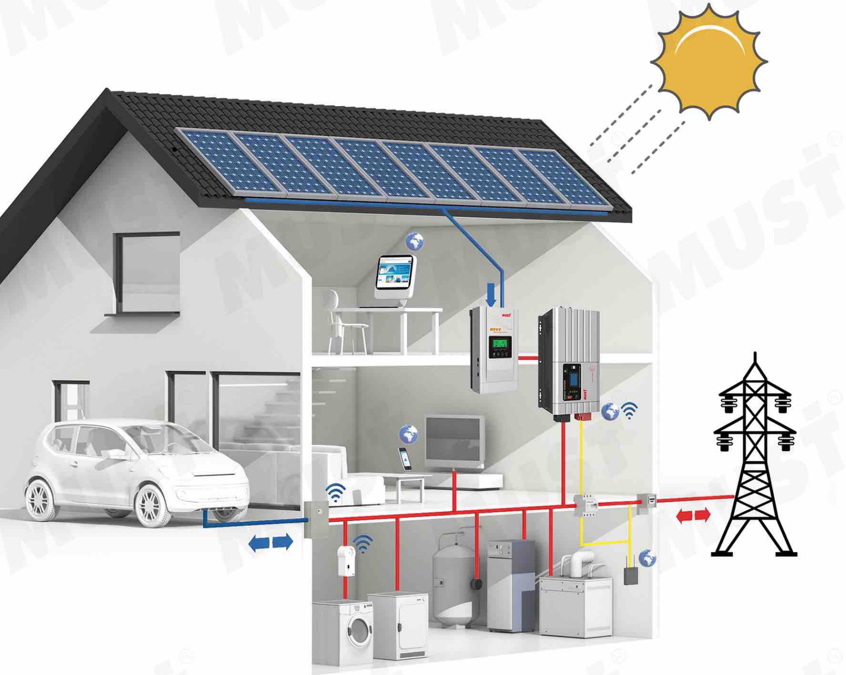
BTS Cable

COLOR BOX DIMENSION		
COLOR BOX SIZE : 355*185*217 (1PC)	CARTON SIZE : 770*365*235MM （4PCS/CARTON）	
LOADING		
20GP	40GP	40HQ
1600pcs	3300pcs	4100pcs

PRACTICAL APPLICATION

APPLICABLE PLACE

MUST



The solar charge controller is an automatic control device , it can be used in all solar power systems to control solar panel array to charge batteries .

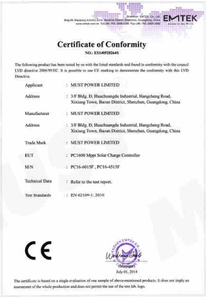
Solar Inverter System Connection: Power Inverter + Solar Charge Controller + Battery + Solar Panels + Grid + Applicaiton Loads

PROJECT REFERENCE

PROFESSIONAL CERTIFICATION

CE FCC ISO ISO9001

High quality and high standard



EMTEK

Certificate of Conformity

NO.: ES140528264S

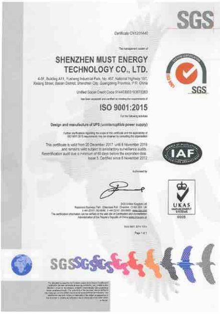
The following product has been tested by us with the listed standards and found in conformity with the council LVD directive 2006/95/EC. It is possible to use CE marking to demonstrate the conformity with this LVD Directive.

Applicant : MUST POWER LIMITED
Address : 3/F Bldg. D, Huachuangda Industrial, Hangcheng Road, Xixiang Town, Baoan District, Shenzhen, Guangdong, China
Manufacturer : MUST POWER LIMITED
Address : 3/F Bldg. D, Huachuangda Industrial, Hangcheng Road, Xixiang Town, Baoan District, Shenzhen, Guangdong, China
Trade Mark : MUST POWER LIMITED
EUT : PC1600 Mppt Solar Charge Controller
M/N : PC16-6015F , PC16-4515F
Technical Data : Refer to the test report.
Test Standards : EN 62109-1: 2010

CE

(Manager)
July 01, 2014

The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo.



SGS

Certificate CN1231440

The management system of

SHENZHEN MUST ENERGY TECHNOLOGY CO., LTD.

4-5F, Building A11, Yusheng Industrial Park, No. 467, National Highway 107, Xixiang Street, Baoan District, Shenzhen City, Guangdong Province, P.R. China

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

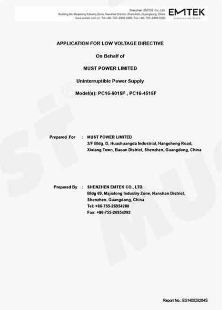
Design and manufacture of UPS (uninterruptible power supply)

Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2015 requirements may be obtained by consulting the organisation

This certificate is valid from 20 December 2017 until 8 November 2018 and remains valid subject to satisfactory surveillance audits. Recertification audit due a minimum of 60 days before the expiration date. Issue 5. Certified since 8 November 2012

Authorised by

Page 1 of 1



EMTEK

APPLICATION FOR LOW VOLTAGE DIRECTIVE

On Behalf of

MUST POWER LIMITED

Uninterruptible Power Supply

Model(s): PC16-6015F , PC16-4515F

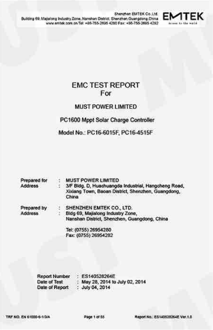
Prepared For : MUST POWER LIMITED
3/F Bldg. D, Huachuangda Industrial, Hangcheng Road,
Xixiang Town, Baoan District, Shenzhen, Guangdong, China

Prepared By : SHENZHEN EMTEK CO., LTD.
Bldg 69, Majialong Industry Zone, Nanshan District,
Shenzhen, Guangdong, China
Tel: +86-755-26954280
Fax: +86-755-26954282

Report No.: ES140528264S

TEST REPORT

Have quality inspection to use with confidence



EMC TEST REPORT
For
MUST POWER LIMITED

PC1600 Mppt Solar Charge Controller

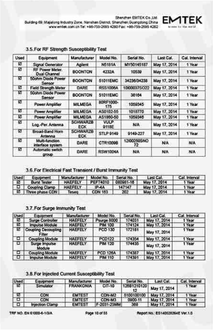
Model No.: PC16-6015F, PC16-4515F

Prepared for : MUST POWER LIMITED
Address : 3/F Bldg. D, Huachuangda Industrial, Hangcheng Road, Xixiang Town, Baoan District, Shenzhen, Guangdong, China

Prepared by : SHENZHEN EMTEK CO., LTD.
Address : Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

Tel: (0755) 26954280
Fax: (0755) 26954282

Report Number : ES140528264E
Date of Test : May 28, 2014 to July 02, 2014
Date of Report : July 04, 2014



3.5.For RF Strength Susceptibility Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Signal Generator	Agilent	N5181A	MY50145187	May 17, 2014	1 Year
☑	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 17, 2014	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	34236/34238	May 17, 2014	1 Year
☑	Field Strength Meter	DARE	RSS1006A	10800037SO22	May 17, 2014	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	38164	May 17, 2014	1 Year
☑	Power Amplifier	MILMEGA	80RF1000-175	1059345	May 17, 2014	1 Year
☑	Power Amplifier	MILMEGA	AS0102-55	1018770	May 17, 2014	1 Year
☑	Power Amplifier	MILMEGA	AS1860-50	1059346	May 17, 2014	1 Year
☑	Log.-Per. Antenna	SCHWARZBECK	VULP 9118E	N/A	May 17, 2014	1 Year
☑	Broad-Band Horn Antenna	SCHWARZBECK	STLP 9149	9149-227	May 17, 2014	1 Year
☑	Multi-function interface system	DARE	CTR1009B	12I00250SNO72	N/A	N/A
☑	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A

3.6.For Electrical Fast Transient / Burst Immunity Test

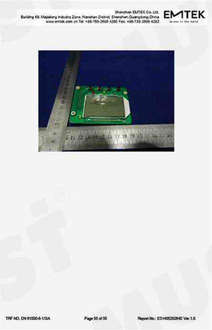
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Burst Tester	HAEFELY	PEFT4010	080981-18	May 17, 2014	1 Year
☐	Coupling Clamp	HAEFELY	IP-4A	147147	May 17, 2014	1 Year
☑	Three phase CDN	Teseq	CDN 163	202	May 17, 2014	1 Year

3.7.For Surge Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Surge Controller	HAEFELY	Psurge 8000	174031	May 17, 2014	1 Year
☑	Impulse Module	HAEFELY	PIM 100	174124	May 17, 2014	1 Year
☑	Coupling Decoupling Filter	HAEFELY	PCD 130	172181	May 17, 2014	1 Year
☐	Coupling Module	HAEFELY	PCD122	174354	May 17, 2014	1 Year
☐	Surge Impulse Module	HAEFELY	PIM 120	174435	May 17, 2014	1 Year
☐	Coupling Module	HAEFELY	PCD 126A	174387	May 17, 2014	1 Year
☐	Impulse Module	HAEFELY	PIM 110	174391	May 17, 2014	1 Year

3.8.For Injected Current Susceptibility Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Simulator	FRANKONIA	CIT-10	126B1210120 12	May 17, 2014	1 Year
☑	CDN	EMTEST	CDN-M2	5100100100	May 17, 2014	1 Year
☐	CDN	EMTEST	CDN-M3	0900-11	May 17, 2014	1 Year
☐	Injection Clamp	EMTEST	F-2031-23MM	368	May 17, 2014	1 Year



SHENZHEN MUST ENERGY TECHNOLOGY CO.,LTD.