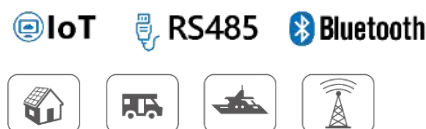


Magic series

MPPT Solar charge controller



MT1050EU/RS485
MT1550-EU/RS485
MT2075
MT2010
MT3075
MT3010
MT4010
MT4010-E
MT2015
MT4015
MT4017

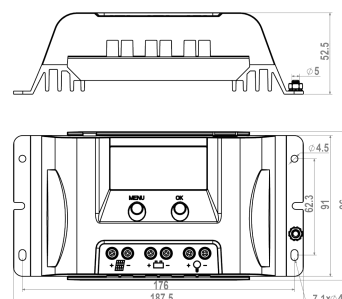
Overview

Magic series solar controller is based on an advanced maximum power point tracking (MPPT) technology developed, dedicated to the solar system, the controller conversion efficiency up to 98%. It comes with a number of outstanding features, such as:

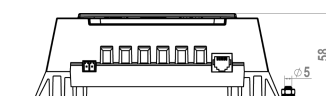
- 12/24/36/48V automatic recognition
- Optional APP version for Bluetooth communication
- Real-time energy statistics function
- Perfect EMC & thermal design
- A combination of multiple tracking algorithms enables tracking the maximum power point quickly and accurately
- Innovative Max Power Point Tracking(MPPT) technology, tracking efficiency >99.9%
- Full digital technology, high charge conversion efficiency up to 98%
- LCD display design, read operating data and working condition easily
- Flexible System battery selection: Liquid, Gel, AGM and Lithium
- Extends battery life through accurate remote temperature sensor
- The Controller is protected against over-temperature due to built-in power reduction function
- Four stages battery charging process: MPPT, boost, equalization, float
- Dual automatic protection to avoid exceeding the rated charging power and current
- Multiple load control modes: Always on, Street lamp, User-defined Mode
- Two USB interfaces(only -EU model)
- IOT Wireless communication or Bluetooth communication functions optional
- With the wireless communication function of the IOT , the controller can be connected remotely through IoT/GPRS
- Monthly charging data can be calculated and displayed by grouping and graphs
- Based RS-485 standard Modbus protocol with RJ11 interface to maximize the communication needs of different occasions.
- Full automatic electronic protect function for increased charge controller availability

Dimensions

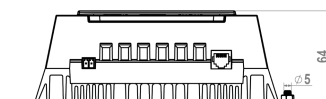
Unit:mm



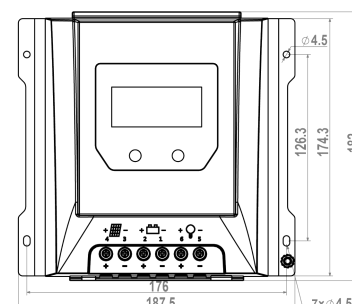
**MT1050-EU
MT1550-EU**



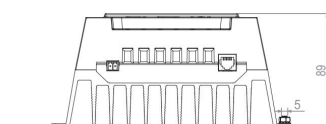
MT2075



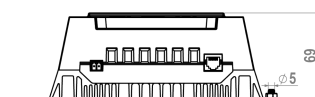
**MT2010
MT3075**



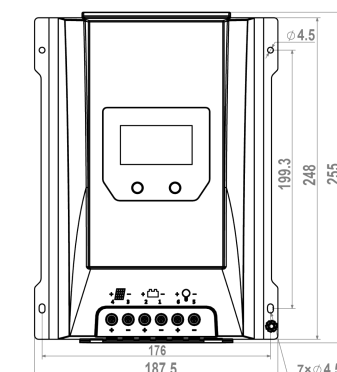
**MT4015
MT4017**



**MT2015
MT3010
MT4010-E**

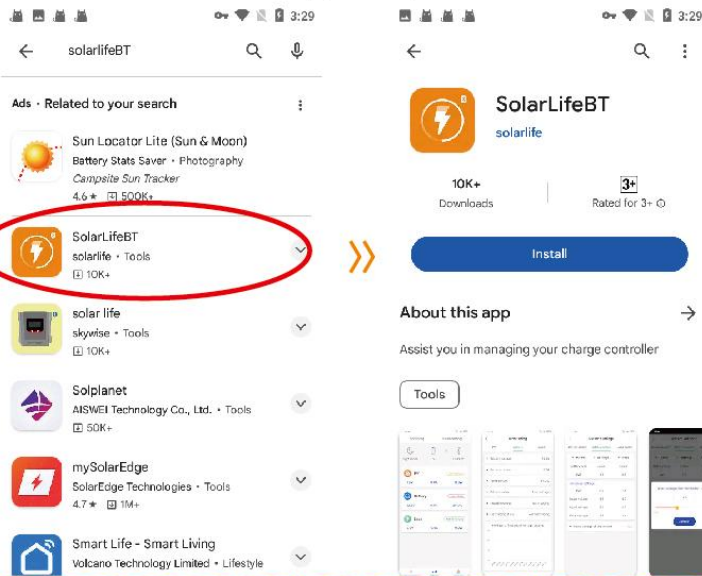


MT4010

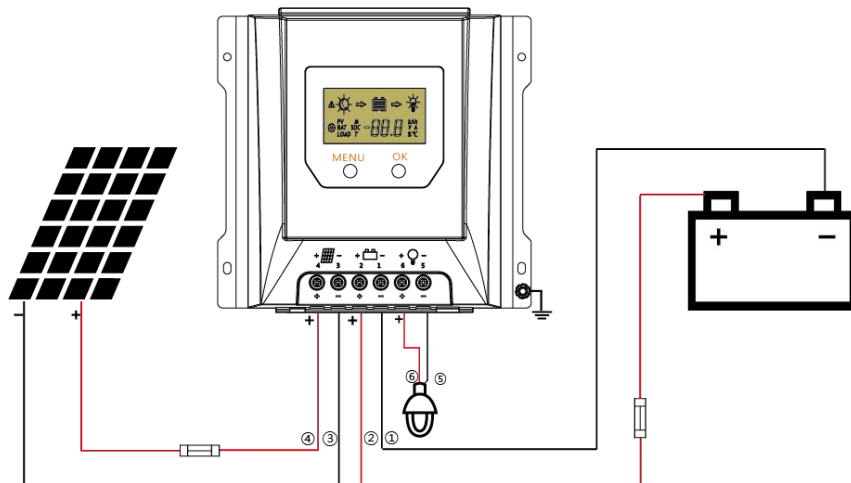


APP download

For Android Phone, download “SolarLife BT”
in Google Play Store.



For iPhone, download “SolarLife BT”
in Apple APP Store.



Technical Data

Battery Parameters	Item		MT1050-EU	MT1050-RS485	MT1550-EU	MT1550-RS485
	System Voltage		12V			
	Max Charging Current		10A		15A	
	MPPT Charging Voltage		before boost or equalization charging stage			
	Gel, AGM, Liquid	Boost Voltage	14.5V@25°C			
		Equalization Voltage	14.8V@25°C(Liquid ,AGM)			
		Float Voltage	13.7V@25°C			
		Low voltage disconnect	10.8~11.8V, SOC1~5 (default: 11.2V)			
		Overcharge Protect	15.5V			
		Temp. Compensation	-4.17mV/K per cell (Boost, Equalization), -3.33mV/K per cell (Float)			
	Lithium	Charging target voltage	10.0~17.0V(Programmable, default: 14.4V)			
		Low voltage disconnect	9.0~15.0V(Programmable, default: 10.6V)			
	Battery Type		Gel, AGM, Liquid, Lithium (default: Gel)			
Max volt on Bat. Terminal		20V				
Panel Parameters	Max volt on PV *1		45V		35V	
	Max input power		130W		200W	
	Day/Night threshold		8.0V			
	MPPT tracking range *2		(Battery Voltage + 1.0V)~Voc*0.9*2			
Load Parameters	Output Current		10A			
	USB interface		5V, 2A	/	5V, 2A	
	Load mode		Always on, Street lamp, User-defind Mode			
System Parameters	Max tracking efficiency		>99.9%			
	Max charge conversion		97.5%			
	Dimensions		96*187.5*52.5mm			
	Weight		0.42Kg			
	Self consumption		0.2W			
	Communication		/	RS485(RJ11 port)	/	RS485(RJ11 port)
	Grounding		Common Negative			
	Power terminals		8AWG (10mm2)			
	Ambient temperature		-20~+45°C			
	Storage temperature		-25~+70°C			
	Ambient humidity		≤95% RH, No condensation			
	Protection degree		IP32			

*1. Maximum solar panel voltage at minimum ambient operating temperature

*2. Voc: PV-Module open circuit voltage

Technical Data

	Item	MT2010	MT3010	MT2075	MT3075
Battery Parameters	Max Charging Current	20A	30A	20A	30A
	System Voltage	12V/24V automatical recognition			
	Battery Type	Gel, AGM, Liquid, Lithium (default: Gel)			
	Max volt on Bat. Terminal	35V			
	Gel, AGM, Liquid	MPPT Charging Voltage	before boost or equalization charging stage		
		Boost Voltage	14.0~14.8V/28.0~29.6V @25°C (default: 14.5/29V)		
		Equalization Voltage	14.0~15.0V/28.0~30.0V @25°C (default: 14.8/29.6V)		
		Float Voltage	13.0~14.5V/26.0~29.0V @25°C (default: 13.7/27.4V)		
		Low voltage disconnect	10.8~11.8V/21.6~23.6V, SOC1~5 (default: 11.2/22.4V)		
		Low voltage reconnect	11.4~12.8V/22.8~25.6V (default: 12.0/24.0V)		
		Overcharge Protect	15.8/31.3V		
		Temp. Compensation	-4.17mV/K per cell (Boost, Equalization), -3.33mV/K per cell (Float)		
	Lithium	Charging target voltage	10.0~32.0V (Lithium, default: 14.4V)		
		Charging recovery voltage	9.2~31.8V (Lithium, default: 14.0V)		
		Low voltage disconnect	9.0~30.0V (Lithium, default: 10.6V)		
		Low voltage reconnect	9.6~31.0V (Lithium, default: 12.0V)		
Panel Parameters	Max volt on PV terminal *1	100V@-20°C, 90V@25°C		55V@-20°C, 50V@25°C	
	Max input power	260/520W	390/780W	260/520W	390/780W
	Day/Night threshold	3.0~20.0V (default: 8.0/16.0V)			
	Day/Night delay time	0~30min (default: 0min)			
	MPPT tracking range*2	(Battery Voltage + 2.0V)~Voc*0.9			
Load Parameters	Output Current	20A	30A	20A	30A
	Load mode	Always on, Street lamp, User-defind Mode			
System Parameters	Max tracking efficiency	>99.9%			
	Max charge conversion	98.0%			
	Dimensions(mm)	182*187.5*64mm	255*187.5*63mm	182*187.5*58mm	182*187.5*64mm
	Weight	1.3Kg	1.5Kg	1Kg	1.3Kg
	Self consumption	≤8mA(12V), ≤12mA(24V)			
	Communication	RS485(RJ11 interface)			
	Optional	IoT, Cyber-BT (Internal / External)			
	Grounding	Common Negative			
	Power terminals	6AWG (16mm ²)			
	Ambient temperature	-20~+45°C			
	Storage temperature	-25~+70°C			
	Ambient humidity	≤95% RH, No condensation			
	Protection degree	IP32			

*1. Maximum solar panel voltage at minimum ambient operating temperature

*2. Voc: PV-Module open circuit voltage

*3. Slash separate values for 12V and 24V nominal system voltage

Technical Data

	Item	MT4010	MT4010-E
Battery Parameters	Max Charging Current	40A	
	System Voltage	12V/24V automatical recognition	
	Battery Type	Gel, AGM, Liquid, Lithium (default: Gel)	
	Max volt on Bat. Terminal	35V	
	Gel, AGM, Liquid	MPPT Charging Voltage	before boost or equalization charging stage
		Boost Voltage	14.0~14.8V/28.0~29.6V @25°C (default:14.5/29V)
		Equalization Voltage	14.0~15.0V/28.0~30.0V @25°C (default:14.8/29.6V)
		Float Voltage	13.0~14.5V/26.0~29.0V @25°C (default:13.7/27.4V)
		Low voltage disconnect	10.8~11.8V/21.6~23.6V, SOC1~5 (default: 11.2/22.4V)
		Low voltage reconnect	11.4~12.8V/22.8~25.6V (default: 12.0/24.0V)
		Overcharge Protect	15.8/31.3V
		Temp. Compensation	-4.17mV/K per cell (Boost, Equalization), -3.33mV/K per cell (Float)
	Lithium	Charging target voltage	10.0~32.0V (Lithium, default: 14.4V)
		Charging recovery voltage	9.2~31.8V (Lithium, default: 14.0V)
		Low voltage disconnect	9.0~30.0V (Lithium, default: 10.6V)
		Low voltage reconnect	9.6~31.0V (Lithium, default: 12.0V)
Panel Parameters	Max volt on PV terminal *1	100V@-20°C,90V@25°C	
	Max input power	520/1040W	
	Day/Night threshold	3.0~20.0V (default: 8.0/16.0V)	
	Day/Night delay time	0~30min (default: 0min)	
	MPPT tracking range*2	(Battery Voltage + 2.0V)~Voc*0.9	
Load Parameters	Output Current	30A	
	Load mode	Always on, Street lamp, User-defind Mode	
System Parameters	Max tracking efficiency	>99.9%	
	Max charge conversion	97.0%	95.5%
	Dimensions(mm)	255*187.5*69mm	255*187.5*63mm
	Weight	2.05Kg	1.5Kg
	Self consumption	≤8mA(12V),≤12mA(24V)	
	Communication	RS485(RJ11 interface)	
	Optional	IoT, Cyber-BT (Internal / External)	
	Grounding	Common Negative	
	Power terminals	6AWG (16mm ²)	
	Ambient temperature	-20~+45°C	
	Storage temperature	-25~+70°C	
	Ambient humidity	≤95% RH, No condensation	
	Protection degree	IP32	

*1. Maximum solar panel voltage at minimum ambient operating temperature

*2. Voc: PV-Module open circuit voltage

*3. Slash separate values for 12V and 24V nominal system voltage

Technical Data

	Item	MT2015	MT4015	MT4017	
Battery Parameters	Max Charging Current	20A	40A		
	System Voltage	24V/48V automatical recognition			
	Battery Type	Gel, AGM, Liquid, Lithium (default: Gel)			
	Max volt on Bat. Terminal	65V			
	Gel, AGM, Liquid	MPPT Charging Voltage	before boost or equalization charging stage		
		Boost Voltage	28.0~29.6V/56.0~59.2V @25℃ (default:29.0/58.0V)		
		Equalization Voltage	28.0~30.0V/56.0~60.0V @25℃ (default:29.6/59.2V)		
		Float Voltage	26.0~29.0V /52.0~58.0V@25℃ (default:27.4/54.8V)		
		Low voltage disconnect	21.6~23.6V/43.2~47.2V,SOC1~5(default: 22.4/44.8V)		
		Low voltage reconnect	22.8~25.6V/45.6~51.2V (default: 24.0/48.0V)		
		Overcharge Protect	31.3/62.3V		
	Temp. Compensation	-4.17mV/K per cell (Boost, Equalization), -3.33mV/K per cell (Float)			
	Lithium	Charging target voltage	20.0~64.0V (Lithium, default: 29.4V)		
		Charging recovery voltage	18.2~63.8V (Lithium, default: 28.7V)		
Low voltage disconnect		18.0~60.0V (Lithium, default: 21.0V)			
Low voltage reconnect		18.6~62.0V (Lithium, default: 22.4V)			
Panel Parameters	Max volt on PV terminal *1	150V@-20℃; 138V@25℃		170V@-20℃; 155V@25℃	
	Max input power	500/1000W	1000/2000W		
	Day/Night threshold	6.0~40.0V (default: 16.0/32.0V)			
	Day/Night delay time	0~30min(default: 0min)			
	MPPT tracking range *2	(Battery Voltage + 1.0V) ~Voc*0.9			
Load Parameters	Output Current	20A	30A		
	Load mode	Always on, Street lamp, User-defind Mode			
System Parameters	Max tracking efficiency	>99.9%			
	Max charge conversion	97.0%			
	Dimensions	255*187.5*63mm	255*187.5*89mm		
	Weight	1.4Kg	2.5Kg		
	Self consumption	≤8mA			
	Communication	RS485(RJ11 interface)			
	Optional	IoT, Cyber-BT(Internal / External)			
	Grounding	Common Negative			
	Power terminals	6AWG(16mm2)			
	Ambient temperature	-20~+45℃			
	Storage temperature	-25~+70℃			
	Ambient humidity	≤95% RH, No condensation			
	Protection degree	IP32			

*1. Maximum solar panel voltage at minimum ambient operating temperature

*2. Voc: PV-Module open circuit voltage

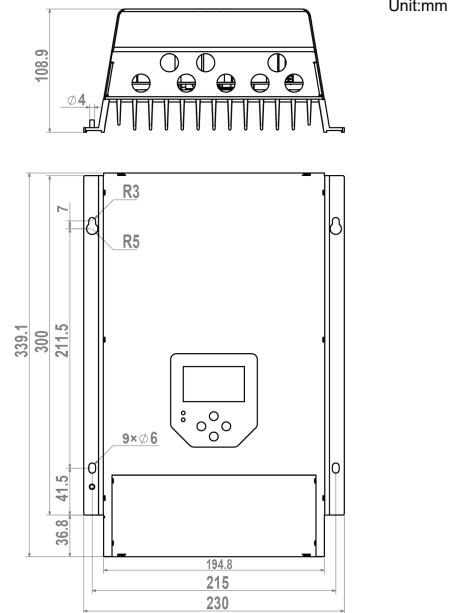
*3. Slash separate values for 24V and 48V nominal system voltage

MT6020-Pro

MPPT Solar charge controller



Dimensions



Overview

Magic series solar controller is based on an advanced maximum power point tracking (MPPT) technology developed, dedicated to the solar system, the controller conversion efficiency up to 98%. The controller can rapidly track the maximum power point(MPP) of PV array to obtain the maximum energy of the panel, especially in case of a clouded sky, when light intensity is changing continuously, an ultra fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers.

The limitation function of the charging power and current, and automatic power reduction function fully ensure the stability when works with oversize PV modules and operate under high temperature environment.

- Innovative Max Power Point Tracking(MPPT) technology, tracking efficiency >99.9%
- Full digital technology, high charge conversion efficiency up to 98%
- LCD display design, read operating data and working condition easily
- LCD can display latest daily/monthly/yearly charging data, total 5 years
- 12/24/48V automatic recognition
- Liquid, Gel, AGM and Lithium battery for selection
- The separate ports for remote temperature sensor and voltage sensor, make battery temperature compensation and voltage detection more accurate
- Automatic power reduction when over-temperature
- Relay control the switching signals of external loads and chargers for hybrid power supply system like solar energy with utility electricity or gas generation
- Dual automatic restriction function when exceeding rated charging power and charging current
- 5-year memory battery voltage and historical charging data
- Android APP version for Bluetooth communication
- IoT wireless or RS485 communication functions optional
- Monthly charging data can be calculated and displayed by grouping and graphs
- Modbus protocol based on RS485 standard for remote communication need
- Multi-functional AUX port can meet customized requirements
- Common positive design, suitable for telecom applications
- Perfect EMC & thermal design
- Full automatic electronic protect function

Technical Data

	Item	MT6020-Pro	
Battery Parameters	Max charging current	60A	
	System voltage	12/24/48V	
	System voltage setting	Automatic/12V/24V/48V	
	Gel, AGM, Liquid	MPPT charging voltage	before boost or equalization charging stage
		Boost Voltage	14.0~14.8V/28.0~29.6V/56.0~59.2V (default: 14.5/29.0/58.0V)
		Equal Voltage	14.0~15.0V/28.0~30.0V/56.0~60.0V (default: 14.8/29.6/59.2V)
		Float Voltage	13.0~14.5V/26.0~29.0V /52.0~58.0V (default: 13.7/27.4/54.8V)
		Overcharge Protect	10.8~11.8V/21.6~23.6V/43.2~47.2V (default: 11.2/22.4/44.8V)
		Low voltage disconnect	11.4~12.8V/22.8~25.6V/45.6~51.2V (default: 12.0/24.0/48.0V)
		Low voltage reconnect	15.8/31.3/62.3V
	Temp compensation	-4.17mV/K per cell (Boost, Equalization), -3.33mV/K per cell (Float)	
	Lithium	Charging voltage target	10.0~64.0V(Lithium, default: 29.4V)
		Charging voltage recovery	9.2~63.8V(Lithium, default: 28.7V)
		Low voltage disconnect	9.0~60.0V(Lithium, default: 21.0V)
		Low voltage reconnect	9.6~62.0V(Lithium, default: 22.4V)
Battery type	Gel, AGM, Liquid, Lithium (default: Gel)		
Panel Parameters	Max volt on Bat. Terminal	65V	
	Max volt on PV terminal	190V(@-20°C), 170V(@25°C) *1	
	Max input power	750/1500/3000W	
	MPPT tracking range	(Battery Voltage + 2.0V) ~Voc*0.9 *2	
System Parameters	Max tracking efficiency	>99.9%	
	Max charge conversion	97%	
	Efficiency at full load	96.5%	
	Self consumption	< 5W	
	Grounding	Common Positive	
	Data memory	5 years	
	Relay	3A/30VDC	
	Communication	BLE, IoT, RS485 (Default, RJ11 interface)	
	Dimensions	339*230*109mm	
	Mounting Dimensions	220*215mm	
	Mounting hole size	φ6mm	
	Weight	5Kg	
	Terminal size	2AWG(35mm2)	
	Recommended cable	6AWG(16mm2)	
	Operating temperature	-20~+60°C	
	Derating	From > 65°C internal	
	Fan	Internal, temperature controlled	
	LCD temperature range	-20~+70°C	
	Storage temperature	-25~+80°C	
	Ambient humidity	5~95%RH(No condensation)	
	Protection degree	IP20	
	Max Altitude	4000m	

*1.The maximum PV open circuit voltage must never exceed 170V at 25°C environment temperature

*2.Voc means the open circuit voltage of the solar panel

*3.Around oblique line value separately on behalf of 12/24/48V system's value