

Magic series

MPPT Solar charge controller

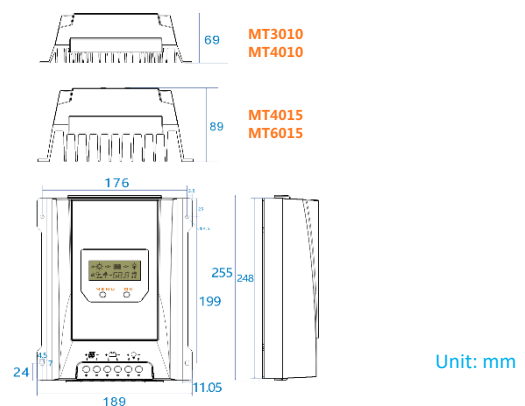
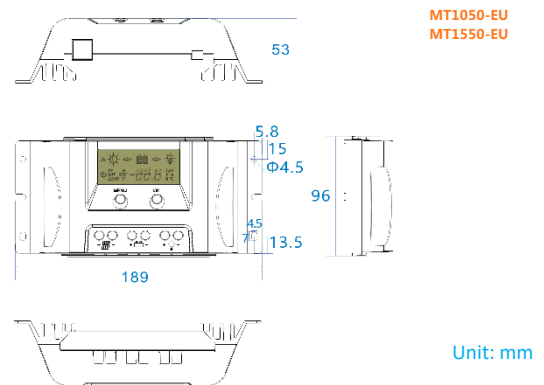
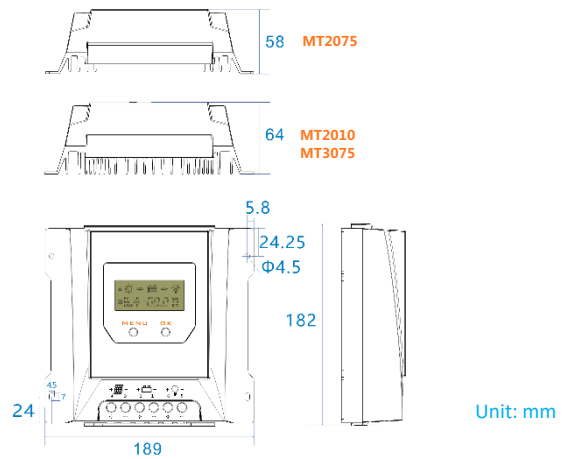
10/15/20/30/40/60A



RS485



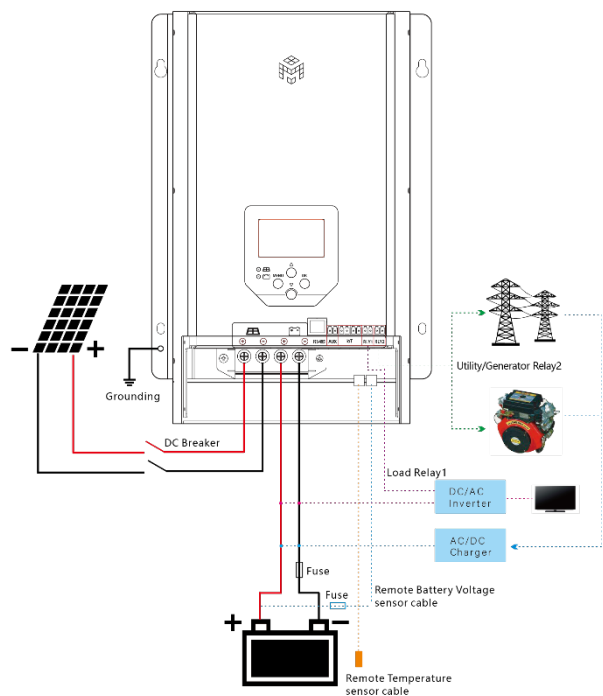
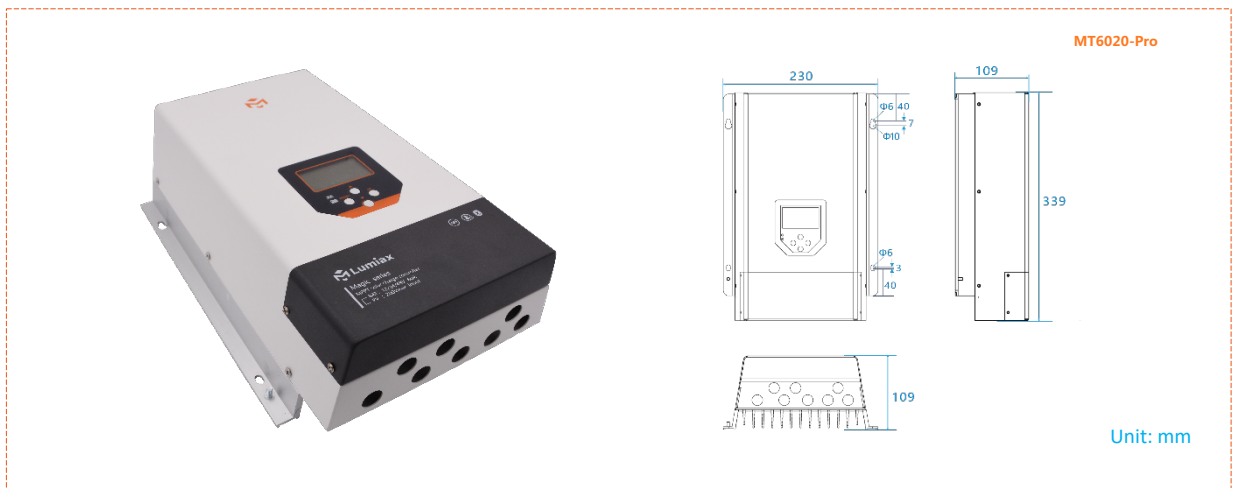
Bluetooth



Magic series MPPT Solar charge controller

10/15/20/30/40/60A

IoT RS485 Bluetooth



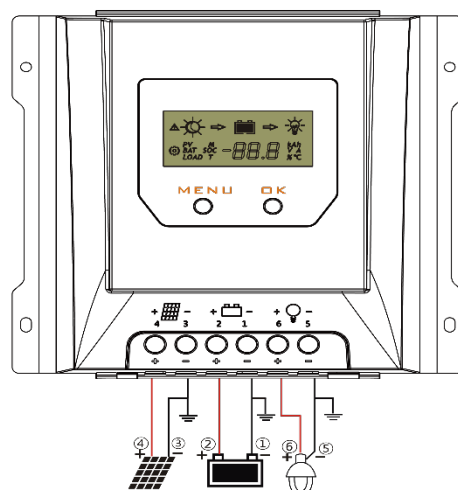
Wiring Diagram

Magic series

MPPT Solar charge controller

10/15/20/30/40/60A

- 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
- Real-time energy statistics function
- 12/24/36/48V automatic recognition
- Liquid, Gel, AGM and Lithium battery for selection
- External temperature sensor, automatic temperature compensation
- Built-in temperature sensor, when the temperature exceeds the set value, the charging current will lower down followed by the decrease of temperature, so as to control the controller' s temperature rise
- Four stages charge way: MPPT, boost, equalization, float
- With current-limiting charging mode, when the power of solar panel is over-sized and charging current exceeds the rated current, the controller will lower the charging power, which enables the system to work under the rated charging current
- Multiple load control modes: Always on, Dusk to Dawn, Evening and Manual
- Two USB interfaces(EU Series)
- IoT Wireless Communication, Bluetooth Communication or RS-485 Communication Functions Optional
- Support Android mobile phone APP, realize wireless monitoring function of solar controller
- Use high performance, ultra-low power consumption Bluetooth dedicated chip
- Adopt Bluetooth 4.2 and BLE technology, communication distance up to 10m
- With the wireless communication function of the IoT, the controller can be connected remotely through IoT/GPRS.
- The IoT can monitor and control the system remotely and in real time through the WeChat /PC program
- Real-time automatic fault alarm
- Charging and discharging quantities can be counted and displayed by item grouping and month
- Based RS-485 standard Modbus protocol, to maximize the communication needs of different occasions
- Perfect EMC & thermal design
- Full automatic electronic protect function



Magic series

MPPT Solar charge controller

20/30/40A

	Item	MT2075	MT3075	MT2010	MT3010	MT4010
Battery Parameters	System Voltage	12V/24V automatical recognition				
	Max Charging Current	20A	30A	20A	30A	40A
	MPPT Charging Voltage	before boost or equal charging stage				
	Boost Voltage	14.5V/29V @25°C *3				
	Equal Voltage	14.8V/29.6V @25°C(Liquid, AGM)				
	Float Voltage	13.7V/27.4V @25°C				
	Low Voltage Disconnect	10.8~11.8V/21.6~23.6V, SOC1~5 (default: 11.2/22.4V)				
	Reconnect Voltage	11.4~12.8V/22.8~25.6V (default: 12.0/24.0V)				
	Overcharge Protect	15.8V/31.3V				
	Charging Target Voltage	10.0~32.0V(Lithium, default: 14.4V)				
	Charging Recovery Voltage	9.2~31.8V(Lithium, default: 14V)				
	Low Voltage Disconnect	9.0~30.0V(Lithium, default: 10.6V)				
	Low Voltage Reconnect	9.6~31.0V(Lithium, default: 12V)				
	Max Voltage On Battery Terminal	35V				
Temperature Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)					
Battery Type	Liquid, Gel, AGM , Lithium					
Panel Parameters	Max Voltage On PV Terminal (-20°C)	55V *1		100V		
	Max Voltage On PV Terminal (25°C)	50V		90V		
	Max Input Power	260W/520W	390W/780W	260W/520W	390W/780W	520W/1040W
	Dusk/Dawn Detect Voltage	8V/16V				
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2				
Load Parameters	Output Current	20A	30A	20A	30A	
	Work Mode	Standard, D2D, Street lamp, User-defined mode				
System Parameters	Max Tracking Efficiency	>99.9%				
	Max Charge Conversion	98%				
	Dimensions (mm)	189*182*58		189*182*64		189*255*69
	Weight (g)	1000	1300		2000	
	Self Consumption	≤8mA (12V); ≤12mA (24V)				
	Communication	RS485 (RJ11 interface)				
	Grounding	Common Negative				
	Power Ternimals	6AWG (16mm ²)				
	Ambient Temperature	-20 ~ +55°C				
	Storage Temperature	-25 ~ +80°C				
	Ambient Humidity	0~100%RH				
Protection Degree	IP32					
Max Altitude	4000m					

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

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

Magic series

MPPT Solar charge controller

40/60A

	Item	MT4015	MT6015
Battery Parameters	System Voltage	24V/48V automatical recognition	24V/36V/48V automatical recognition
	Max Charging Current	40A	60A
	MPPT Charging Voltage	before boost or equal charging stage	
	Boost Voltage	29V/58V @25°C	29V/43.5V/58V @25°C *3
	Equal Voltage	29.6V/59.2V @25°C (Liquid, AGM)	29.6V/44.4V/59.2V @25°C(Liquid, AGM)
	Float Voltage	27.4V/54.8V @25°C	27.4V/41.1V/54.8V @25°C
	Low Voltage Disconnect	21.6~23.6V/43.2~47.2V, SOC1~5(default: 22.4/44.8V)	21.6~23.6V/32.4~35.4V/43.2~47.2V, SOC1~5
	Reconnect Voltage	22.8~25.6V/45.6~51.2V (default: 24.0/48.0V)	22.8~25.6V/34.2~38.4V/45.6~51.2V
	Overcharge Protect	31.3V/62.3V	31.3V/46.8V/62.3V
	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)	
	Max Voltage On Battery Terminal	65V	
Temperature Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)		
Battery Type	Liquid, Gel, AGM , Lithium		
Panel Parameters	Max Voltage On PV Terminal (-20°C)	150V *1	
	Max Voltage On PV Terminal (25°C)	138V	
	Max Input Power	1000W/2000W	1600W/2400W/3200W
	Dusk/Dawn Detect Voltage	16V/32V	16V/24V/32V
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2	
Load Parameters	Output Current	30A	—
	Work Mode	Standard, D2D, Street lamp, User-defined mode	—
System Parameters	Max Tracking Efficiency	> 99.9%	
	Max Charge Conversion	98.7%	
	Dimensions (mm)	189*255*89	to be confirmed
	Weight (g)	2500	
	Self Consumption	8mA	
	Communication	RS485 (RJ11 interface)	RS485 (RJ11 interface), BlueTooth
	Grounding	Common Negative	Common Positive
	Power Ternimals	6AWG (16mm ²)	4AWG (25mm ²)
	Ambient Temperature	-20 ~ +55°C	
	Storage Temperature	-25 ~ +80°C	
	Ambient Humidity	0~100%RH	
Protection Degree	IP32		
Max Altitude	4000m		

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

*3.Around oblique line value separately on behalf of 24V , 36V and 48V system's value.

Magic series

MPPT Solar charge controller

20/30/40A

	Item	MT2075-BT	MT3075-BT	MT2010-BT	MT3010-BT	MT4010-BT
Battery Parameters	System Voltage	12V/24V automatical recognition				
	Max Charging Current	20A	30A	20A	30A	40A
	MPPT Charging Voltage	before boost or equal charging stage				
	Boost Voltage	14.0~14.8V/28.0~29.6V @25°C (default:14.5/29V) *3				
	Equal Voltage	14.0~15.0V/28.0~30.0V @25°C (default:14.8/29.6V) (Liquid, AGM)				
	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)				
	Reconnect Voltage	11.4~12.8V/22.8~25.6V (default: 12.0/24.0V)				
	Overcharge Protect	15.8V/31.3V				
	Max Volt On Battery Terminal	35V				
	Temp. Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)				
	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)					
Battery Type	Liquid, Gel, AGM, Lithium					
Panel Parameters	Max Volt On PV Terminal (-20°C)	55V		100V	*1	
	Max Volt On PV Terminal (25°C)	50V		90V		
	Max Input Power	260W/520W	390W/780W	260W/520W	390W/780W	520W/1040W
	Dusk/Dawn Detect Voltage	3.0~20.0V (default: 8.0/16.0V)				
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2				
Load Parameters	Output Current	20A	30A	20A	30A	
	Work Mode	Always on, Dusk to Dawn, Evening, Manual				
System Parameters	Max Tracking Efficiency	>99.9%				
	Max Charge Conversion	98%				
	Dimensions (mm)	189*182*58	189*182*64		189*255*69	
	Weight (g)	1000	1300		2000	
	Self Consumption	≤13mA				
	Communication	BlueTooth				
	Grounding	Common Negative				
	Power Terminals	6AWG (16mm ²)				
	Ambient Temperature	-20 ~ +55°C				
	Storage Temperature	-25 ~ +80°C				
	Ambient Humidity	0~100%RH				
Protection Degree	IP32					
Max Altitude	4000m					

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

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

Magic series

MPPT Solar charge controller

40A

	Item	MT4015-BT
Battery Parameters	System Voltage	24V/48V automatical recognition
	Max Charging Current	40A
	MPPT Charging Voltage	before boost or equal charging stage
	Boost Voltage	28.0~29.6V/56.0~59.2V @25°C(default:29.0/58.0V) *3
	Equal Voltage	28.0~30.0V/56.0~60.0V @25°C(default:29.6/59.2V)
	Float Voltage	26.0~29.0V/52.0~58.0V @25°C(default:27.4/54.8V)
	Low Voltage Disconnect	21.6~23.6V/43.2~47.2V, SOC1~5(default: 22.4/44.8V)
	Reconnect Voltage	22.8~25.6V/45.6~51.2V(default: 24.0/48.0V)
	Overcharge Protect	31.3V/62.3V
	Max Volt On Battery Terminal	65V
	Temp. Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)
	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)	
Battery Type	Liquid, Gel, AGM, Lithium	
Panel Parameters	Max Volt On PV Terminal (-20°C)	150V *1
	Max Volt On PV Terminal (25°C)	138V
	Max Input Power	1000W/2000W
	Dusk/Dawn Detect Voltage	6.0~40.0V (default: 16.0/32.0V)
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2
Load Parameters	Output Current	30A
	Work Mode	Always on, Dusk to Dawn, Evening, Manual
System Parameters	Max Tracking Efficiency	>99.9%
	Max Charge Conversion	98.7%
	Dimensions (mm)	189*255*89
	Weight (g)	2500
	Self Consumption	≤13mA
	Communication	BlueTooth
	Grounding	Common Negative
	Power Terminals	6AWG (16mm ²)
	Ambient Temperature	-20 ~ +55°C
	Storage Temperature	-25 ~ +80°C
	Ambient Humidity	0~100%RH
Protection Degree	IP32	
Max Altitude	4000m	

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

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

Magic series

MPPT Solar charge controller

60A

	Item	MT6020-Pro
Battery Parameters	System Voltage	12V/24/48V automatical recognition
	Max Charging Current	60A
	MPPT Charging Voltage	before boost or equal charging stage
	Boost Voltage@25°C	14.0~14.8V/28.0~29.6V/56.0~59.2V(default: 14.5/29.0/58.0V) *3
	Equal Voltage@25°C	14.0~15.0V/28.0~30.0V/56.0~60.0V (default: 14.8/29.6/59.2V)
	Float Voltage@25°C	13.0~14.5V/26.0~29.0V /52.0~58.0V(default: 13.7/27.4/54.8V)
	Low Voltage Disconnect	10.8~11.8V/21.6~23.6V/43.2~47.2V(default: 11.2/22.4/44.8V)
	Reconnect Voltage	11.4~12.8V/22.8~25.6V/45.6~51.2V(default: 12.0/24.0/48.0V)
	Overcharge Protect	15.8/31.3/62.3V
	Charging Target Voltage	10.0~64.0V(Lithium, default: 29.4V)
	Charging Recovery Voltage	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)
	Temperature Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)
	Battery Type	Liquid, GEL, AGM, Lithium
Max Voltage On Battery Terminal	65V	
Panel Parameters	Max Voltage On PV Terminal(-20°C)	190V *1
	Max Voltage On PV Terminal(25°C)	170V
	Max Input Power	750/1500/3000W
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2
System Parameters	Max Tracking Efficiency	>99.9%
	Max Charge Conversion	98%
	Dimensions (mm)	339*230*109
	Mounting Dimensions (mm)	220*215
	Mounting Hole Size	φ6
	Terminals	2AWG (35mm ²)
	Recommended Cable	6AWG (16mm ²)
	Communication	BLE, IoT, RS485 (default: RJ11 interface)
	Grounding	Common Positive
	Historical Data Preservation	5 years
	Lcd Temperature	-20 ~ +70°C
	Storage Temperature	-25 ~ +80°C
	Ambient Humidity	5~95%RH
Protection Degree	IP20	
Max Altitude	4000m	

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

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

Magic series

MPPT Solar charge controller

10/15A

	Item	MT1050-EU	MT1550-EU
Battery Parameters	System Voltage	12V	
	Max Charging Current	10A	15A
	MPPT Charging Voltage	before boost or equal charging stage	
	Boost Voltage	14.5V @25°C	
	Equal Voltage	14.8V @25°C (Liquid, AGM)	
	Float Voltage	13.7V @25°C	
	Low Voltage Disconnect	10.8~11.8V, SOC1~5	
	Low Voltage Reconnect	11.6~12.8V	
	Overcharge Protect	15.5V	
	Max Voltage On Battery Terminal	20V	
	Temperature Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)	
Battery Type	Liquid, Gel, AGM		
Panel Parameters	Max Voltage On PV Terminal(-20°C)	45V	35V *1
	Max Voltage On PV Terminal(25°C)	40V	30V
	Max Input Power	130W	200W
	Dusk/Dawn Detect Voltage	8V	
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2	
Load	Output Current	10A	
	Usb Interface	5V, 2A	
	Work Mode	Standard, D2D, Street lamp, User-defined mode	
System Parameters	Max Tracking Efficiency	> 99.9%	
	Max Charge Conversion	97.5%	
	Dimensions (mm)	189*96*53	
	Weight (g)	420	
	Self Consumption	7mA	
	Grounding	Common Negative	
	Power Terminals	8AWG (10mm ²)	
	Ambient Temperature	-20 ~ +55°C	
	Storage Temperature	-25 ~ +80°C	
	Ambient Humidity	0~100%RH	
Protection Degree	IP32		
Max Altitude	4000m		

Type	MT1050-EULi	MT1550-EULi
Charging Voltage Target	10.0~17.0V(Programmable) *3	
Charging Voltage Recovery	9.2~16.8V (Programmable)	
Low Voltage Disconnect	9.0~15.0V (Programmable)	
Low Voltage Reconnect	9.6~16.0V (Programmable)	
MPPT Charging Voltage	< Charging Voltage target	
Battery Type	Lithium	
Max Input Power	120W(3 series)~150W(4 series)	180W(3 series)~225W(4 series)

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

*3.The nominal voltage of a single lithium battery is 3.7V and the charging voltage target is 4.2V

Magic series MPPT Solar charge controller

20/30/40A

	Item	MT2075-IoT	MT3075-IoT	MT2010-IoT	MT3010-IoT	MT4010-IoT
Battery Parameters	System Voltage	12V/24V automatical recognition				
	Max Charging Current	20A	30A	20A	30A	40A
	MPPT Charging Voltage	before boost or equal charging stage				
	Boost Voltage	14.0~14.8V/28.0~29.6V @25°C (default:14.5/29V) *3				
	Equal Voltage	14.0~15.0V/28.0~30.0V @25°C (default:14.8/29.6V) (Liquid, AGM)				
	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)				
	Reconnect Voltage	11.4~12.8V/22.8~25.6V (default: 12.0/24.0V)				
	Overcharge Protect	15.8V/31.3V				
	Max Volt On Battery Terminal	35V				
	Temp. Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)				
	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)					
Battery Type	Liquid, Gel, AGM, Lithium					
Panel Parameters	Max Volt On PV Terminal (-20°C)	55V		100V *1		
	Max Volt On PV Terminal (25°C)	50V		90V		
	Max Input Power	260W/520W	390W/780W	260W/520W	390W/780W	520W/1040W
	Dusk/Dawn Detect Voltage	3.0~20.0V (default: 8.0/16.0V)				
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2				
Load	Output Current	20A	30A	20A	30A	
	Work Mode	Always on, Dusk to Dawn, Evening, Manual				
System Parameters	Max Tracking Efficiency	>99.9%				
	Max Charge Conversion	98%				
	Dimensions (mm)	189*182*58	189*182*64		189*255*69	
	Weight (g)	1000	1300		2000	
	Self Consumption	≤13mA				
	Communication	GPRS				
	Grounding	Common Negative				
	Power Terminals	6AWG (16mm ²)				
	Ambient Temperature	-20 ~ +55°C				
	Storage Temperature	-25 ~ +80°C				
	Ambient Humidity	0~100%RH				
	Protection Degree	IP32				
Max Altitude	4000m					

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

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

Magic series

MPPT Solar charge controller

40A

	Item	MT4015-IoT
Battery Parameters	System Voltage	24V/48V automatical recognition
	Max Charging Current	40A
	MPPT Charging Voltage	before boost or equal charging stage
	Boost Voltage	28.0~29.6V/56.0~59.2V @25°C(default:29.0/58.0V) *3
	Equal Voltage	28.0~30.0V/56.0~60.0V @25°C(default:29.6/59.2V)
	Float Voltage	26.0~29.0V/52.0~58.0V @25°C(default:27.4/54.8V)
	Low Voltage Disconnect	21.6~23.6V/43.2~47.2V, SOC1~5(default: 22.4/44.8V)
	Reconnect Voltage	22.8~25.6V/45.6~51.2V(default: 24.0/48.0V)
	Overcharge Protect	31.3V/62.3V
	Max Volt On Battery Terminal	65V
	Temp. Compensation	-4.17mV/K per cell (Boost, Equal), -3.33mV/K per cell (Float)
	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)	
Battery Type	Liquid, Gel, AGM, Lithium	
Panel Parameters	Max Volt On PV Terminal (-20°C)	150V *1
	Max Volt On PV Terminal (25°C)	138V
	Max Input Power	1000W/2000W
	Dusk/Dawn Detect Voltage	6.0~40.0V (default: 16.0/32.0V)
	MPPT Tracking Range	(Battery Voltage+1V) ~ Voc*0.9 *2
Load Parameters	Output Current	30A
	Work Mode	Always on, Dusk to Dawn, Evening, Manual
System Parameters	Max Tracking Efficiency	> 99.9%
	Max Charge Conversion	98.7%
	Dimensions (mm)	189*255*89
	Weight (g)	2500
	Self Consumption	≤13mA
	Communication	GPRS
	Grounding	Common Negative
	Power Terminals	6AWG (16mm ²)
	Ambient Temperature	-20 ~ +55°C
	Storage Temperature	-25 ~ +80°C
	Ambient Humidity	0~100%RH
	Protection Degree	IP32
Max Altitude	4000m	

*1.PV panel Voc can not exceed this value, otherwise it will damage the controller.

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

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



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