PolarPlus±

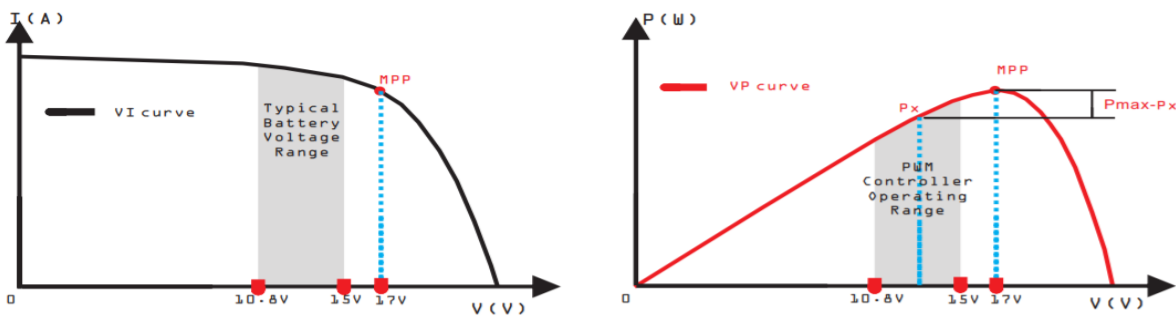# 40A MPPT Charge Controller with Display and Bluetooth

PolarPlus 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%.
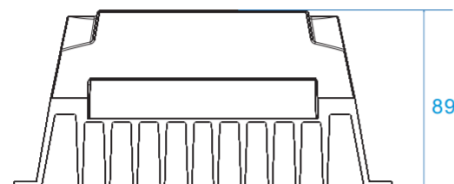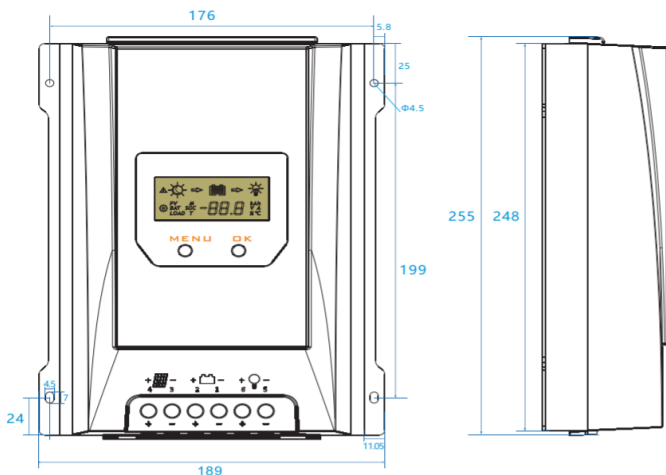
It comes with a number of outstanding features, such as

> Innovative Max Power Point Tracking(MPPT) technology, tracking efficiency >99.9%
> Full digital technology, high charge conversion efficiency up to 98%
> Real-time energy statistics function
> 12/24V 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
> 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.
> Full automatic electronic protect function
> LCD display design, read operating data and working condition easily

Nominal 12 Volt Solar Module I-V curve and output power graph

Contrast with the traditional PWM controller, MPPT controller could play a maximum power of the solar panel so that a larger charging current could be supplied. Generally speaking, the MPPT controller's energy utilization efficiency is 15%~20% higher than PWM controller.

40A MPPT Charge Controller with Display and Bluetooth

Specification:

		P40LMBT
Battery Parameters:	System voltage	12V/24V automatical recognization
	Max charging current	40A
	MPPT charging voltage	<14.5V/29.0V@25℃
	Boost voltage	14.0~14.8V/28.0~29.6V @25℃（default:14.5/29V）
	Equal voltage	14.0~15.0V/28.0~30.0V @25℃（default:14.8/29.6V）
	Float voltage	13.0~14.5V/26.0~29.0V @25℃（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）
	Over charge protect	15.8/31.3V
	Temp copensation	-4.17mV/K per cell (Boost, Equalization), -3.33mV/K per cell (Float)
	Charging target voltage	10.0~32.0V(Lithium, default: 12.6V)
	Charging recovery voltage	9.2~31.8V(Lithium, default: 12.4V)
	Low voltage disconnect	9.0~30.0V(Lithium, default: 9.0V)
	Low voltage reconnect	9.6~31.0V(Lithium, default: 9.8V)
	Battery type	GEL, AGM, Liquid, Lithium （default: GEL)
	Max battery voltage	35V
Panel Parameters:	Max solar voltage	100V(-20℃), 90V(25℃)
	Max input power	520W (12V) / 1040W (24V)
	Day/Night threshold	3.0~20.0V（default: 8.0/16.0V）
	Day/Night delay time	0~30min（default: 0min)
	MPPT tracking range	(Battery Voltage + 1.0V）~Voc*0.9
Load (lamp symbol):	Output current	30A
	Work mode	Always on, Dusk to Dawn, Evening, Manual
System Parameters:	Max tracking efficiency	>99.9%
	Max charge conversion	98 %
	Dimensions(mm)	189x255x69
	Weight	1.4kg
	Self consumption	7mA + Bluetooth 6mA
	Grounding	Common Negative
	Power terminals	6AWGx (16mm²)
	Ambient temperature	-20 ~ +55℃
	Storage temperature	-25 ~ +80℃
	Ambient humidity	0~100%RH
	Protection degree	IP32
	Max altitude	4000m