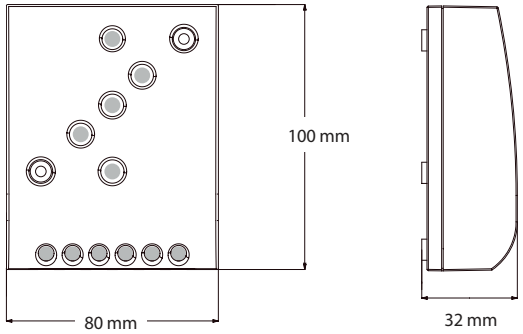
CML-USB Series (5-20 A)

Solar Charge Controllers w/ USB Charging Output

Technical Drawing



Product Introduction

The CML-USB series is designed for-low cost applications and is ideal for small solar systems in need of a low battery disconnect feature. The electronic circuit is equipped with a microcontroller that provides high-efficiency charging technology together with a number of outstanding features like status display, warning and safety functions.

Leisure and rural electrification systems are the typical applications for the CML-USB controllers. They provide a perfect solution for cost-sensitive systems that require state-of-the-art system management.

A built-in USB charging output is ideal for charging mobile devices off a solar home system. Low-voltage disconnect prevents battery damage from deep discharging.

Product Features

- 3 battery state-of-charge LEDs
- 4-stage PWM regulation
- Load disconnect prewarning by acoustic signal
- Boost, equalization, and float charging
- USB charging output for mobile devices

Optional Accessories

CX-DR2

- DIN rail mounting plate that enables mounting the CML-USB controller on standard 35 mm DIN rail

Technical Data

Type	CML-USB-05	CML-USB-10	CML-USB-20
System Voltage	12 / 24 V auto recognition		
Max. Charge/Load Current	5 A	10 A	20 A
Float Charge	13.8 / 27.6 V (25 °C)		
Main Charge	14.4 / 28.8 V (25 °C), 0.5 h daily		
Boost Charge	14.4 / 28.8 V (25 °C), 0.5 h daily activation: battery voltage <12.3 / 24.6 V		
Equalization Charge	14.8 / 29.6 V (25 °C), 0.5 h daily activation: battery voltage <12.1 / 24.2 V (at least every 30 days)		
Deep-Discharge Protection	11.4-11.9 V / 22.8 -23.8 V (by SOC) 11.0 / 22.0 V (by voltage)		
Reconnect Level	12.8 / 25.6 V		
Overvoltage Protection	15.5 / 31.0 V		
Undervoltage Protection	10.5 / 21.0 V		
Max. PV Panel Voltage	30 V / 50 V		
Temperature Compensation	-24 mV/K (12 V); -48 mV/K (24 V)		
Idle Self-Consumption	< 4 mA		
Grounding	Common Positive		
Ambient Temperature	-40 to +45 °C		
Max. Altitude	4,000 m above sea level		
Battery Type	Lead acid (gel, AGM, flooded)		
USB Charging Port	5 V, 700 mA		
Max. Wire Cross Section	16 mm² (AWG 6)		
Dimensions (WxHxD)	80 x 100 x 32 mm / 3.1 x 4 x 1.3 in		
Weight	0.16 kg / 0.35 lb		
Ingress Protection	IP20		
Certificates	CE compliant, RoHS compliant		
Warranty	5 years		