

# TOMMATECH ENT-P SERIES BATTERY CHARGER



## TT ENT-P SERIES BATTERY CHARGER ENT-P-60V-15A



PFC  $\geq$  0.98



Overvoltage Protection



Over Temperature Protection



Short Circuit Protection

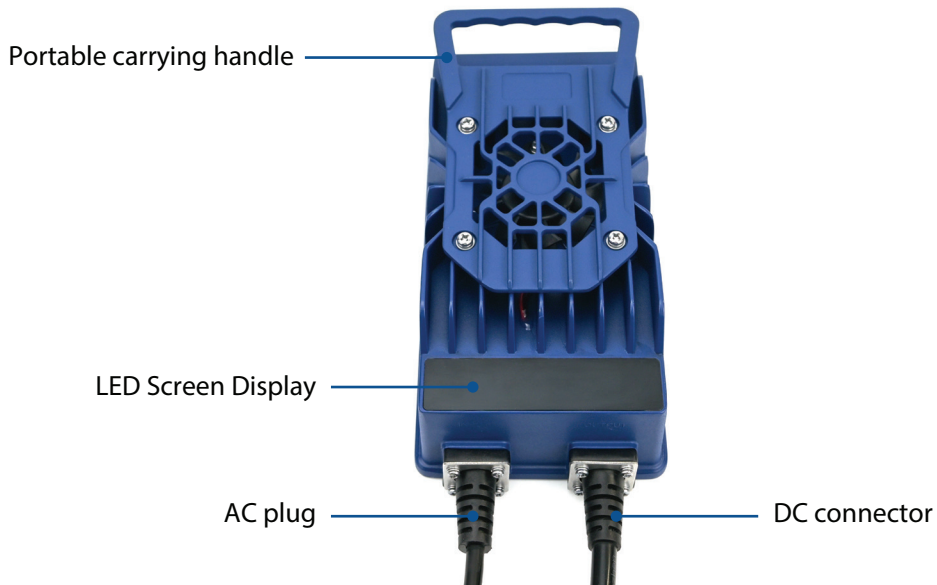


IP65 Waterproof

## Technical Data

Model Name		ENT-P-60V-15A
<b>Input</b>		
Voltage range		90~264Vac
Frequency range		45~65Hz
Input current (max.)		6.3A
Power Factor (Typ.)		≥0.98 (Test at half power or above)
Inrush current (Typ.)		50A/220Vac
leakage current (Typ.)		<0.75mA/220Vac
<b>Output</b>		
Charging phases		Pre-charge + constant current + constant voltage
Applicable battery		60V
Max. output power		1024W
Max. output current		16A
Output Voltage		35~75V
Max. current ripple		500mA <sub>p-p</sub> (Above half power)
Output short circuit protection		Available
Over temperature protection		Available
<b>System Parameter</b>		
Display screen functionality		Displays output current, output voltage, charging percentage,
Communication mode		fault information, etc.
Maximum efficiency (Typ.)		Non/RS485/CAN
Static power		93%
Output response time		< 3W
Cooling		≤3S
IP rating		Fan cooling
Vibration resistant		IP67 ((immersion at a depth of 1 meter for 30 minutes)) 10 ~ 500HZ, 2G 10minutes/cycle, X, Y, Z axis each 60 minutes
<b>Environment</b>		
Working Temp.		-20 ~ 50°C
Working humidity		10% ~ 90%RH non-condensing
Storage temp., humidity		-30 ~ 80°C, 10% ~ 90%RH non-condensing
<b>Safety &amp; EMC</b>		
Safety standards		CB IEC60335-2-29
Withstand voltage		I/P-O/P : 3KVAC I/P-FG : 1.5KVAC O/P-FG : 0.5KVAC
Isolation resistance		I/P-O/P, I/P-FG, O/P-FG : 100Mohms/500VDC/25°C/70% bağıl nem
		Standard
		EN55032(CISPR32)
		EN55032(CISPR32)
EMC		EN61000-3-2 : 2019
		EN61000-4-2 : 2009
		EN61000-4-5:
		2014+A1:2017
<b>Others</b>		
MTBF		1505.4K hrs min. Telcordia TR/SR-332(Bellcore);
Weight/Dimensions		2.3kg/203mm*108mm*77mm

Packaging	330mm*180mm*155mm
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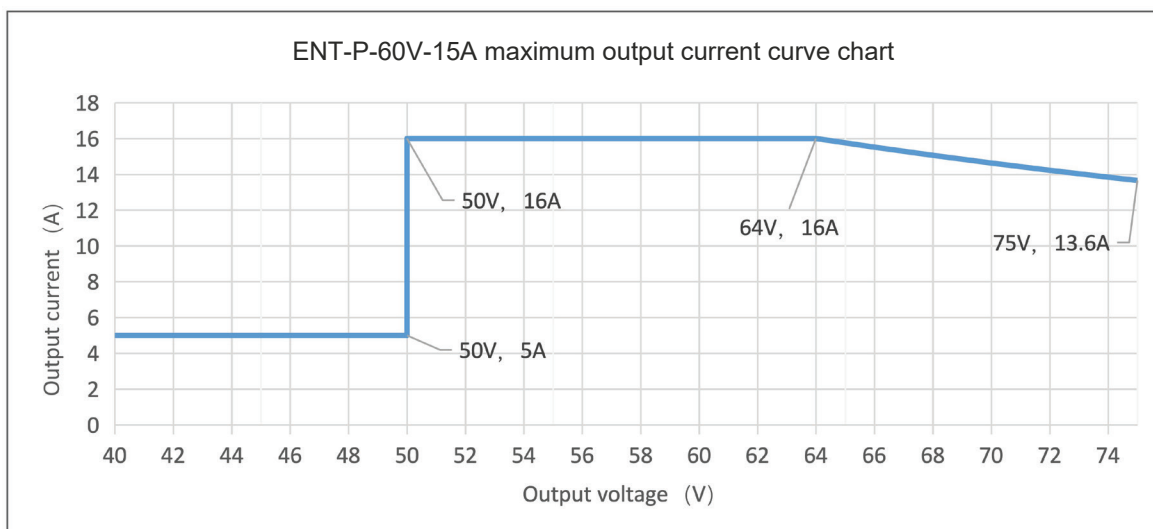
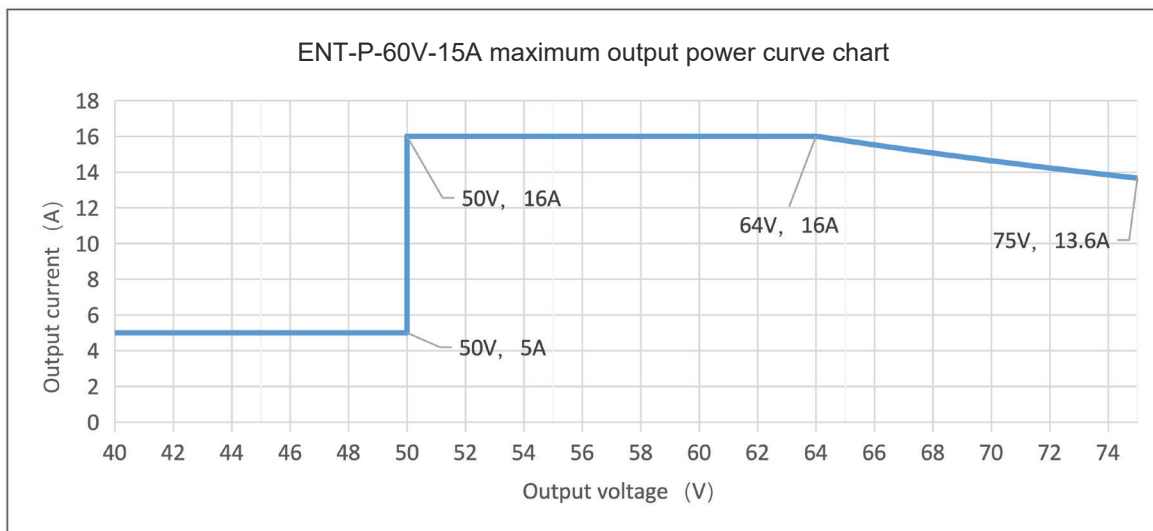
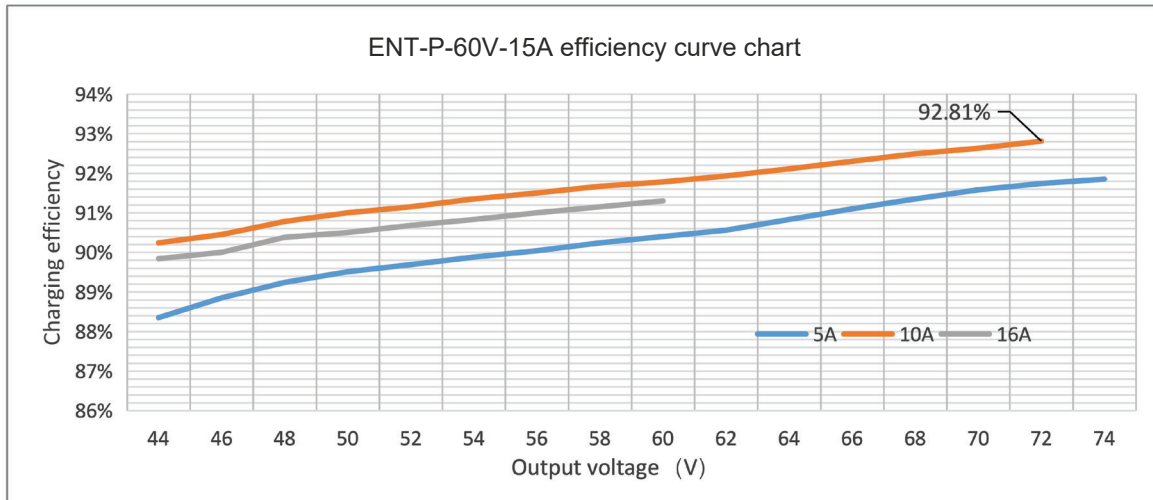
	Display output voltage, output current
	Display output voltage, SOC
	Display fault information

Troubleshooting of LED Display					
Number	Display	Status	Number	Display	Status
1	Err 1	Output Overvoltage	8	Err 8	Output Short Circuit
2	Err 2	Battery Voltage High	9	Err 9	Input Overvoltage
3	Err 3	Battery Voltage Low	10	Err 10	Input Undervoltage
4	Err 4	Battery Reverse Connection	11	Err 11	Relay Sticking
5	Err 5	Abnormal Battery Voltage	12	Err 12	Battery Not Connected
6	Err 6	Output Overcurrent	13	Err 13	Communication Error
7	Err 7	Overtemperature	14	Err 14	

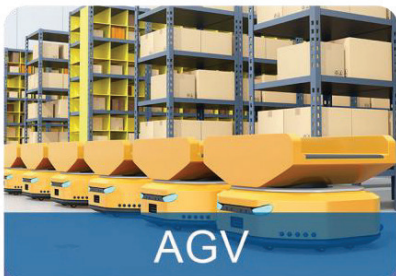
Note: During charging, the output voltage and output current will be displayed (if SOC is available, the current and SOC will alternate on the display every 3 seconds)

## Charging curve

### Charging efficiency curve chart

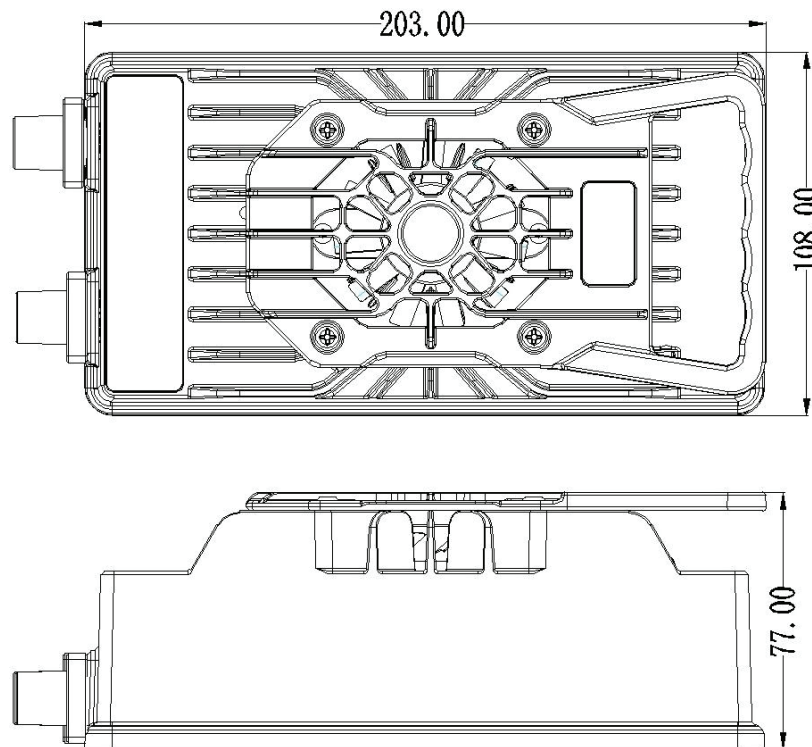


## Application fields



## Product Dimension

Dimensions (Unit: mm)



Portable type(Drawing 1)