## PRODUCT GUIDE CTEK BATTERY CHARGERS



# INTRODUCTION CTEK BATTERY CHARGERS

- CTEK SWEDEN AB designs and develops a unique series of battery chargers and special solutions for all types of lead-acid batteries for both private and professional use.
- Advanced knowledge about batteries and electronics is the cornerstone of CTEK's successful business concept that allows for the development of a new generation of battery chargers - battery chargers that not only meet the increased needs for battery care today, but also for tomorrow.
- Safety, simplicity and flexibility are key words and requirements
  that apply to all the products and solutions developed and sold
  by CTEK. Today we have sold more than three million chargers in
  60 countries and on every continent. CTEK is a reliable supplier
  to many of the world's most prestigious car and motorcycle
  manufacturers.
- CTEK was founded in 1997. The head office and development department are located in Vikmanshyttan, Dalarna, Sweden.



#### **PROBLEMES AND ISSUES**

BATTERY CARE HAS NEVER BEEN MORE IMPORTANT.

Vehicle electronics have developed rapidly in recent years, placing increasingly higher demands on batteries. Batteries therefore require modern chargers and modern charging. A 3A charger of today is equivalent to a conventional 10A charger of just a few years ago. Yesterday's chargers also used more power than today's modern technology requires. CTEK's patented 8-step charging not only makes charging more efficient, but also ensures charging is carried out correctly, preventing early failure of modern batteries.

Batteries work harder than ever, due to the ever-increasing electrical demands from vehicles - even when parked!

Diverse, maintenance-free, lead-acid technologies require different charging regimes

Increasing costs associated with a 'flat' battery (e.g. ECU impact, costs of replacement, etc.)

The vehicle's alternator may not alone be able to satisfactorily re-charge the battery

## THERE ARE 3 MAIN CAUSES OF SHORTENED BATTERY LIFETIMES:

- Sulphating: due to undercharged batteries
- Acid stratification: due to deeply discharged batteries
- Drying out: harmful overcharging 'boils off' battery fluids

Regular care and maintenance charging counteracts early battery failure, ensures capacity is retained and extends lifetimes. Battery lifetimes vary and are dependent on battery type, age and condition. Good battery care can treble battery lifetimes.







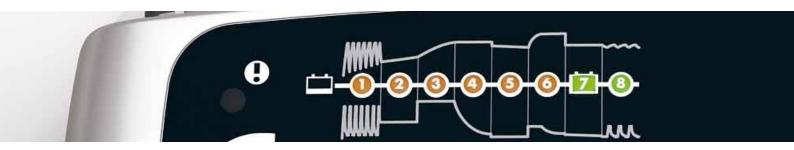




# WHY CTEK IS DIFFERENT

CTEK chargers were the first to employ 'SMART' technology which uses 'Switched Mode' electronics (found in computer technology) making them more flexible and accurate than 'linear' transformers;

this enables CTEK chargers to have dedicated cycles for different battery technologies and problems; and also allows them to be small yet powerful.



### THE CTEK UNIQUE 8-STEP CHARGING PROCESS

- **1. DESULPHATION** Detects sulphated batteries. Pulsing current and voltage removes sulphate from the lead plates of the battery restoring the battery capacity
- **2. SOFT START** Tests if the battery can accept charge. This step prevents charging proceeding with a defective battery
- **3. BULK** Charging with maximum current until approximately 80% battery capacity
- **4. ABSORPTION** (battery ready to use) Charging with declining current to maximize up to 100% battery capacity
- **5. ANALYSE** Tests if the battery can hold charge. Batteries that cannot hold charge may need to be replaced
- **6. RECOND** Choose the RECOND program to add this step to the charging process. The voltage increases during this process to create controlled gassing in the battery. Gassing mixes the battery acid and returns energy to the battery
- **7. FLOAT** (fully charged) Maintaining the battery voltage at maximum level by providing a constant voltage charge
- **8. PULSE, MAINTENANCE CHARGING** Maintaining the battery at 95-100% capacity. The charger monitors the battery voltage and gives a pulse when necessary to keep the battery fully charged

#### **KEY FEATURES AND BENEFITS**

**Safer for people,** CTEK chargers are foolproof to connect, spark proof, reverse polarity protected and there is no need for thebattery to be disconnected

**Safer for vehicles**, CTEK chargers regulate voltage to protect <u>sensitive electron</u>ic and audio equipment

**CTEK chargers provide** fully automatic charging, maintenance and battery care

**There is no need** for specific battery knowledge or charging technology to get the most from a CTEK charger

**The patented** desulphation function revives drained batteries and extends battery life; float/pulse charging allows 'set and forget' for months at a time without harming the battery

**CTEK chargers are tough**, shockproof, weatherproof, dustproof, approved for outdoor use (IP44-IP65 depending on model) and in temperatures from -20°C to +50°C

With CTEK quality is guaranteed, all chargers have a warranty of either 2 or 5 years depending on model. Customer care and support on line or by telephone

**CTEK chargers are** independently tested, endorsed and used by prestige brands

CTEK FULLY AUTOMATIC BATTERY CHARGERS
ANALYSE, FIX, CHARGE AND MAINTAIN ALL TYPES OF
LEAD-ACID BATTERIES – SAFELY

#### XC 0.8 (56-729)



The XC 0.8 is the ultimate charger choice for 6V vehicles and perfectly suitable for maintaining the batteries of classic cars, motorcycles and other vehicles from 1.2Ah up to 100Ah. Fully automatic, once the battery is charged the XC800 will automatically switch to its maintenance phase. The charger is supplied complete with clamps, permanent connectors and storage bag.

#### **KEY FEATURES**

- · Charges batteries from 1.2 up to 100Ah
- Fully automatic, 4-stage charging includes patented desulphation and pulse maintenance programmes
- · Compact tough design splash resistant & dust-proof to IP65
- 5 year warranty

XS 0.8 (56-707)





This is the ideal maintenance charger for guaranteed starting of occasionally used vehicles. The ideal maintenance charger and perfectly suitable for charging 12V batteries from 1.2Ah to 32Ah, maintaining the batteries of cars, motorcycles and other vehicles up to 100Ah. The charger is supplied complete with clamps, permanent connectors and storage bag.

#### **KEY FEATURES**

- Charges batteries up to 32Ah.
   Maintains larger batteries up to 100Ah
- Fully automatic, 6-stage charging includes patented desuplhation and pulse maintenance programmes
- Compact tough design splash resistant & dust-proof to IP65
- 5 year warranty

MXS 3.6 (56-730)



A versatile charger in a compact format which makes it convenient and easy to charge and maintain all household vehicle batteries. Fully automatic 4-stage charging process, the MXS 3.6 measures battery status and automatically begins charging when needed.

- Charges batteries from 7Ah up to 75Ah.
   Maintains larger batteries up to 120Ah
- Selectable charging power to match smaller (e.g. motorcycle) and larger (e.g. car) batteries
- Optional cold mode more efficient charging in winter temperatures
- Splash resistant & dust-proof to IP65
- 5 year warranty



#### MXS 5.0 (56-721)

The MXS 5.0 is a charger that offers state of the art technology that was previously only found in CTEK's professional product range. The charger can solve a broad range of battery-related problems and is the perfect charger for those with high demands. The MXS 5.0 is a fully automatic 8-step charger that delivers selectable 0.8A or 5A to 12V batteries from 1.2-110Ah and is suitable for maintenance charging up to 160Ah

#### **KEY FEATURES**

- Charges batteries from 1.2Ah up to 110Ah.
   Maintains batteries up to 160Ah
- Splash resistant & dust-proof to IP65
- Cold weather program, for charging in cold conditions and for AGM batteries
- Recond programme special programme to revive deeply discharged batteries
- 5 year warranty



MXS 7.0 (56-731)

The MXS 7.0 is the perfect universal 12V charger. It is ideal for charging larger batteries such as caravan, RV, boat and car batteries. The MXS 7.0 is a fully automatic 8-step charger that delivers 7A to 12V batteries from 14–150Ah and is suitable for maintenance charging up to 225Ah.

#### **KEY FEATURES**

- Charges batteries from 14Ah up to 150Ah.
   Maintains larger batteries up to 225Ah
- Supply mode can be used as a 12V power source to protect electrical settings
- Splash resistant & dust-proof to IP65
- Cold weather programme, for charging in cold conditions and for AGM batteries
- Recond programme special programme to revive deeply discharged batteries
- 5 year warranty



MXS 10 (56-708)

The MXS 10 is a charger that offers state of the art technology. It is ideal for professional use and excellent in workshops, caravans, RVs, boats or cars. The MXS 10 is perfect for solving a broad range of battery problems. It has a power supply mode which allows the battery to be disconnected from the vehicle without losing important configurations. The unique display allows the user to follow the entire charging process. The MXS 10 is a fully automatic 8-step charger that delivers 10A to 12V batteries from 20–200Ah and is suitable for maintenance charging up to 300Ah.

- Charges batteries from 20Ah up to 200Ah.
   Maintains larger batteries up to 300Ah
- Recond programme special programme to revive deeply discharged batteries
- Supply programme can be used as a 12V power source to protect electrical settings
- Detachable temperature sensor
- · 2 year warranty



#### MXS 25 (56-732)



This powerful charger provides a host of charging and reconditioning features making it not only ideal for the professional workshop, but also for caravans, RVs and boats. The MXS 25 is an 8-step fully automatic primary switched-mode battery charger and a powerful piece of equipment designed for rapid charging. It has 25A of charging power providing safe, fast charging times. The temperature sensor automatically adjusts the charge voltage to ensure safe and efficient charging in all climates. Importantly for the workshop user the MXS 25 offers the 'SUPPLY' mode to protect and preserve electronic settings.

#### **KEY FEATURES**

- · Charges and maintains batteries from 40Ah up to 500Ah
- Supply programme can be used as a 12V powersource to protect electrical settings or provide battery support during diagnostics up to 25A
- · Includes built-in temperature sensor
- IP44 rated suitable for outdoor use
- · Recond programme
- 2 year warranty

#### MXS 25000 EXTENDED (56-336)



The MXS 25000 Extended adds extra workshop mobility to the MXS 25 offering longer cables and storage/mounting options.

- · 6m, high grade copper cable
- Non-scratch hanger with cable storage hook
- Wall mounting bracket





#### MXTS 70 (56-709)

The MXTS 70 is a very powerful workshop charger with state of the art technology. It is developed to serve both 12V and 24V batteries, offers very sophisticated charging capability and is extremely user friendly. The MXTS 70 is featured with different displays showing the status of charging, charge voltage, current, charge time (h) and energy indication (Ah) for battery condition control. The MXTS 70 is a fully automatic 8-step charger that delivers selectable 50A/12V or 25A/24V to batteries from 40-1500Ah for 12V and 20-750Ah for 24V. The charger is IP 20 rated, housed in heavy duty aluminium for rough environments and designed to protect vehicle electronics

#### **KEY FEATURES**

- · Selectable modes for optimal battery size adaptation
- · Selectable charge algorithm for best flexibility
- Selectable power supply mode for constant voltage output of 13.6V (max 70A) or 27.2V (max 35A)
- · Temperature sensor for optimised charging at all times
- Detachable cables with eyelet attachment option
- · Storage case
- · IP20
- · 2 year warranty



MXT 4.0 (56-733)

A cost effective and reliable charger ideal for wheelchairs, mobility equipment and 24V back-up systems where maintaining batteries at maximum capacity is vital. The MXT 4.0 has been designed to provide charging and maintenance to all 24V lead-acid battery systems.

#### **KEY FEATURES**

- 4A output charges batteries from 8Ah up to 100Ah and maintains larger batteries up to 250Ah
- Fully automatic 8-step charging includes patented desuplhation and pulse maintenance programmes
- · Compact tough design splash resistant & dust-proof to IP65
- Recond programme special programme to revive deeply discharged batteries
- Cold weather programme, for charging in cold conditions and for AGM batteries
- · 2 year warranty



#### MXT 14 (56-734)

A powerful charger ideal for heavy duty and workshop use on commercial vehicles and buses using 24V systems. It is an 8-step fully automatic primary switched-mode battery charger designed for rapid charging. The temperature sensor automatically adjusts the charge voltage to ensure safe and efficient charging in all climates. It has 14A of charging power providing safe, fast charging times. With no need to disconnect, batteries can be charged and reconditioned quickly and conveniently – particularly important for fleet operators where vehicle down time is a major issue.

- · Charges batteries from 28Ah up to 300Ah.
- Maintains larger batteries up to 500Ah
- Supply programme can be used as a 12V power source to protect electrical settings
- IP44
- Recond programme special programme to revive deeply discharged batteries
- · 2 year warranty



#### M45 (56-385)



Even small boats with 12V batteries (7-75Ah and up to 120 Ah for maintenance charging) require a charger designed to withstand the demanding marine environment. M45 is a high quality 4-step charger with unique functions such as desulphating and safe maintenance charging between seasons. M45 features different charging programs: one for small batteries supplying 0.8A; one for normal size batteries (approx. 40-75Ah) and one for AGM-batteries (which require slightly higher charging voltage of 14.7V instead of the usual 14.4V) supplying 3.6A.

#### **KEY FEATURES**

- Charges batteries from 7Ah up to 75Ah.
   Maintains larger batteries up to 120Ah.
- · Compact rugged design water splash resistant & dust-proof
- Selectable charging power to match smaller or larger batteries
- IP65 rated splash resistant & dust-proof
- 5 year warranty



#### M100 (56-386)





A 7A marine charger that provides complete battery care for small boats with a 12V-battery, and which can serve as a starter and service battery charger. M100 is a fully automatic 8-step charger that supplies 7A and is ideal for charging batteries between 14-150Ah and up to 225Ah for maintenance charging. AGM mode provides optimum charging of AGM batteries that require a slightly higher charging voltage.

#### **KEY FEATURES**

- Charges batteries from 14Ah up to 150Ah.
   Maintains larger batteries up to 225Ah
- · Compact tough design splash resistant & dust-proof to IP65
- Optional cold programme more efficient charging in winter temperatures
- Supply programme can be used as a 12V power source to protect electrical settings
- Recond programme special programme to revive deeply discharged batteries
- 5 year warranty

#### M200 (56-220)



M200 is the perfect solution to charge large 12V batteries. The charger has a 4m long secondary cable with eyelet connections and a temperature sensor for optimised charging irrespective of temperature, which gives extra flexibility in permanent installations. M200 is a fully automatic 8-step charger that supplies 15A and is ideal for batteries between 28-300Ah and up to 500Ah for maintenance charging. If you intend to stay overnight onboard you can switch to Night Mode for silent charging.

- Charges batteries from 28Ah up to 300Ah.
   Maintains larger batteries up to 500Ah
- Analysis step checks if battery can hold charge
- IP44 suitable for outdoor use
- Supply programme can be used as a 12V power source to protect electrical settings
- · Silent night programme
- 5 year warranty

M300 (56-298)

M300 is the recommended charger for boats with larger service batteries. The powerful 12V 25A M300 is perfect for analysis, charging and maintenance of all types of boat batteries up to 500Ah.

- Charges batteries from 50Ah up to 500Ah Maintains larger batteries up to 120Ah.
- 10 day float maintenance for maximum charge level
- IP44 Rated suitable for outdoor use
- Supply programme can be used as a 12V power source to protectelectrical settings
- · Night Mode for silent running when sleeping
- 5 year warranty



CTEK now offer a new series of innovative DC/DC onboard battery charging and energy regulation equipment with the launch of the D250S Dual and SmartPass. CTEK's DC/DC chargers are powered from the alternator and will not only charge domestic batteries used in for example motorhomes, boats and trucks, but also condition and extend their life, saving valuable time and money. For 24V systems there is the D250TS.



#### D250S DUAL (56-677)

The D250S Dual refines all DC sources including alternators and solar power, to perfectly match the amount of charge the battery requires whilst minimising charge time. The D250S Dual is a 20A multi-step charger that automatically adjusts the charging voltage and current according to the battery state of charge and temperature to ensure that the battery is safely optimised for performance.

#### **KEY FEATURES**

- · 90% efficiency
- · Adapts to parallel energy sources, use with alternator, solar or both
- · Automatic starter/service battery separation
- · Input voltage 12.9-22V DC; 14.4V Charge Voltage
- · Max charge current 20A; charges batteries 40Ah to 300Ah
- IP65 rated splash and dust proof
- · Temperature sensor
- · 2 year warranty



#### **SMARTPASS (56-676)**

Available to work in tandem with the D250S Dual, SmartPass is a total energy regulator for energy production, usage and storage in any 12V DC system. Smart-Pass allows energy produced from solar, wind, AC chargers and alternators to be synchronised to maximise output and minimise charge time. The energy is then able to be distributed to different battery banks and/or equipment such as lights and navigational systems that need additional energy supply, while ensuring the battery remains fully charged.

#### **KEY FEATURES**

- · Handles inputs of up to 80A and battery capacity of 75 - 800Ah
- · 'Battery Watch' battery and critical consumer protection
- · Temperature sensor
- · IP 65 rated splash and dust proof
- · 2 Year Warranty







D250 TS (56-740)

A fully automatic charger with built in voltage sensitive relay suitable for all 24V lead acid battery types - no need to remove if the fitted battery type changes. The D250TS is a multi-step charger that automatically adjusts the charging voltage and current according to the battery state of charge and temperature to ensure that the battery is safely optimised for performance.

- · 95% efficiency
- Automatic battery separation
- · Input voltage 14-30V DC; 28.8V charge voltage
- Max charge current 10A; charges batteries 28Ah to 200Ah
- 10 day float maintenance for maximum charge level
- IP65 rated splash and dust proof
- · 2 year warranty



#### **COMFORT CONNECT - Eyelet**



COMFORT CONNECT - EYELET is a handy accessory that enables you to charge batteries that are in hard to reach places where using clamps is inconvenient or impossible. They are easy to fit, splash proof and dust proof. The eyelet connection mount can be fitted directly to the vehicle battery with the connector placed in a convenient position for charging. Should charging be required the cap can be removed from the unit and the CTEK charger plugged in to restore the battery to fully charged status.

#### **KEY FEATURES**

- · 400mm cable length
- Compatible with: XC 0.8, XS 0.8, MXS 3.6, MXS 5.0, MXS 7.0, MXS 10, M45, M100

Comfort Connect M6 - 6.4mm (56-260) Comfort Connect M8 - 8.4mm (56-261) Comfort Connect M10 - 10.4mm (56-329)

#### **COMFORT CONNECT - Cig Plug**



COMFORT CONNECTOR CIG PLUG is an easy to fit adapter that allows charging through the 12V cigarette lighter or accessory socket from a CTEK compatible charger. NB to allow operation the socket must be 'live' when the ignition is turned off.

#### **KEY FEATURES**

- · 400mm cable length
- Compatible with: XC 0.8, XS 0.8, MXS 3.6, MXS 10, MXS 5.0, MXS 7.0, M45, M100

Comfort Connect - Cig Plug (56-263)

#### **COMFORT CONNECT - Cig Socket**



COMFORT CONNECT CIG-SOCKET is a useful accessory to increase the usage of the CTEK Comfort Connect battery connector by enabling the user to create a 'cig socket' connection direct to the battery to allow charging of GPS, mobile 'phones, handlebar heaters and heated clothing etc. The adaptor plugs into the existing CTEK Comfort Connect or Comfort Indicator to provide a Cig-Socket accessory point able to deliver power directly from the battery to an accessory. The unit is finished to a high standard with the 1 metre cable fully covered to protect against dirt and water ingress. Any 12V accessory utilising a 21 mm cig plug can be used up to an output of 5A.

- 1000mm cable length
- · 5A (blade type) fuse
- Compatible with CTEK Connectors: Comfort Connector, Comfort Indicator (Clamp / Eyelet / Panel)
- 5A maximum current
- · 21mm cig plug diameter

#### **COMFORT INDICATOR**

COMFORT INDICATOR uses a simple 'traffic light' system to show state of charge of your battery. A flashing green light shows the battery does not require charging. Orange means the battery should be charged to avoid harmful acid stratification. A red light warns that the battery is discharged to a point where sulphation – the main battery killer – is occurring and also that the vehicle may be in danger of not starting. Easy to use, there are a number of options for permanent connection close to the battery (eyelet), remotely (panel) or temporary (clamp) – ideal for workshops and showrooms. Should charging be required the cap can be removed from the unit and a compatible CTEK charger plugged in to restore the battery to fully charged status.

#### **KEY FEATURES**

- · 15A (blade type) fuse
- Compatible with: XS 0.8, MXS 3.6, MXS 7.0, MXS 10, M45, M100
- · Back current drain ~ 1 Ah / Month
- · 10A maximum current
- · -20 °C +50 °C temperature range

Eyelet M6 550mm cable (56-629)
Eyelet M8 550mm cable (56-382)
Panel 1500mm cable (56-380)
Panel 3300mm cable (56-531)
Clamp 1500mm cable (56-384) bulk







#### **WALL HANGER**

WALL HANGER has been specially designed to allow the larger CTEK chargers to be mounted on wall, ramp posts or hung off vehicle doors. WALL HANGER comprises a plate that can be attached directly to the back of the charger (screws provided) with a hook for safely storing cables. A bracket is provided that can be fixed to a wall or ramp post which the charger can then be hung on for storage or at a work station. The hanger has rubber feet to avoid scratching vehicle paintwork. Additional wall brackets are available separately

#### **WALL Hanger 300**

- for use with MX\$ 25, MXT 14, M200, M300 (56-314)

#### **WALL HANGER 100**

- for use with MXS 7.0, MXS 10, M 100 (56-335)

#### **WALL BRACKET (additional)**

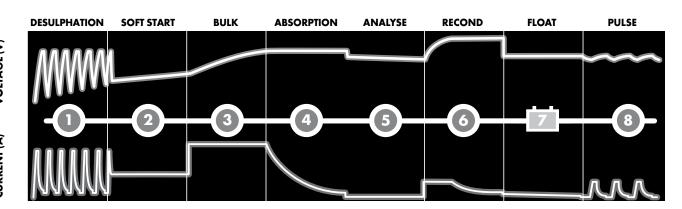
- for use with Wall Hanger 100 or 300 (56-345)





				MAX CHARGING	CHARGING CURRENT		
PRODUCT CODE	PART NO.	DESCRIPTION	PAGE	CURRENT (A)	STEPS		
XC 0.8	56-729	6V, 0.8A, 4-step	4	0.8	1,3,4,8		
XS 0.8	56-707	12V, 0.8A, 6-step	4	0.8	1,3,4,5,7,8		
MXS 3.6	56-730	12V, 3.6A, 4-step	4	3.6	1,3,4,8		
MX\$ 5.0	56-721	12V, 5A, 8-step	5	5	1,2,3,4,5,6,7,8		
MXS 7.0	56-731	12V, 7A, 8-step	5	7	1,2,3,4,5,6,7,8		
MXS 10	56-708	12V, 10A, 8-step	5	10	1,2,3,4,5,6,7,8		
MXS 25	56-732	12V, 25A, 8-step	6	25	1,2,3,4,5,6,7,8		
MXS 25000 EX	56-336	12V, 25A, 8-step	6	25	1,2,3,4,5,6,7,8		
M45	56-385	12V, 3.6A, 4-step	8	3.6	1,3,4,8		
M 100	56-386	12V, 7A, 8-step	8	7	1,2,3,4,5,6,7,8		
M200	56-220	12V, 15A, 8-step	8	15	1,2,3,4,5,6,7,8		
M300	56-298	12V, 25A, 8-step	9	25	1,2,3,4,5,6,7,8		
D250S DUAL	56-677	12V, 20A, 4-step	11	20	1,3,4,7,8		
SMARTPASS	56-676	12V, DC/DC	11	80	N/A		
MXTS 70	56-709	12/24V, 70/35A	7	50/25	1,2,3,4,5,6,7,8		
D250TS	56-740	24V, 10A, DC	11	10	1,3,4,8		
MXT 4.0	56-733	24V, 4A, 8-step	7	4	1,2,3,4,5,6,7,8		
MXT 14	56-734	24V, 14A, 8-step	7	14	1,2,3,4,5,6,7,8		

### CTEK UNIQUE 8-STEP CHARGING



		MIN/MAX BATTERY CAPACITY (Ah)	BATTERY CAPACITY						
INSULATION	WARRANTY YEAR		2Ah	8Ah	20Ah	60Ah	100Ah	225Ah	500Ah
IP65	5	1.2-100							
IP65	5	1.2-100							
IP65	5	1.2-120							
IP65	5	1.2-160							
IP65	5	14-225							
IP65	2	20-300							
IP44	2	40-500							
IP44	2	40-500							
IP65	5	1.2-120							
IP65	5	14-225							
IP44	5	28-500							
IP44	5	40-500							
IP65	2	40-300							
IP65	2	75-800	Variable	depending	g on charg	er fitted a	nd alterno	tor output	
IP20	2	40-1500/20-750			Dep	ending o	n voltage	and currer	nt selected
IP65	2	28-200							
IP65	2	8-250							
IP44	2	28-500							



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THE SMARTEST BATTERY CHARGERS IN THE WORLD