METRON

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PC01Z+, PC03Z+, PC03ZT+, PC01ZG+, PC03ZG+, PC03ZGT+, PC01ZJ+, PC03ZJ+, PC03ZJT+

SMART Portable EV Chargers

USER MANUAL



INTRODUCTION

METRON "Z+" series SMART portable chargers are extremely compact & light weight and designed to charge electric vehicles from standard household sockets (e.g. Schuko).

The design is truly unique as there is no bulky in-cable control box present like on all regular portable chargers what ensures easier usage and saves space/weight.

ALL models have built-in temperature sensors closely to both power pins (L-phase & N-neutral) and the temperature is constantly monitored. If the household socket is weak/bad/old the temperature will rise too much during charging. If that happens, the protective system will first reduce the charging current/power in an attempt to limit overheating. If this proves insufficient, it will stop the charging process to prevent melting or fire of household socket and portable charger plug. When it cools down the charging will restart automatically. User can also observe temperature of both pins in Charge Control application.

"Z+" series SMART portable EV chargers actually convert any power outlet/socket to EV charging station with maximum user safety features and smart charging capability through built-in Metron proprietary Wireless Dynamic Power Control system and MODBUS TCP/IP support. There is also a user friendly local WiFi Metron Charge Control application that runs on built-in WiFi web server and internet cloud based Metron Device Access application for remote monitoring and control.

Any other use is not allowed and is regarded as improper use.
Before using the portable EV charging station, please thoroughly read this manual and follow the instructions provided therein. Please keep the manual for future use. If you are unsure about the proper usage, please contact the manufacturer or your dealer before usage.

IMPROPER USE

Improper use can lead to property damage or personal injury. In such cases, the manufacturer and retailer accept no liability. Warranty will be voided in case of improper use.
You must not:

- modify / manipulate the portable EV charging station!
- drive over the portable EV charging station!
- connect unsuitable plugs and cables!
- draw more than maximum specified charging current from the portable EV charging station!
- use the portable EV charging station if damaged!

GENERAL SAFETY INSTRUCTIONS

- **Carefully read this security instructions before using the product!**
- **Never draw more than maximum specified charging current from the portable EV charging station!**
- **Children are not allowed to use the portable EV charging station.**
- **Keep animals away while using the portable EV charging station.**
- **Avoid liquids entering the portable EV charging station. Never use the portable EV charging station if the socket or plug are wet.**
- **Only connect undamaged, designated and labelled plugs & cables to the portable EV charging station.**

SYMBOLS USED

The following symbols are used in this manual and on the product:

⚠	This symbol indicates a danger with a risk of coursing serious injury or death or damage if not avoided.
CE	CE symbol is a mark of conformity indicating that a product complies with European Union directives and regulations.
	This symbol signifies the requirement for separate disposal of electrical and electronic waste. See chapter disposal.

	Please read the manual before using the portable EV charging station.
	Risk of electric shock due to dangerous voltage when used incorrectly.
Tamb	Do not use and store the adapter below or above the specified temperature.

GET STARTED

- **Check the portable EV charging station before use. Do not use the portable EV charging station if damaged!**
- **Never draw more than maximum specified charging current from the portable EV charging station!**
- **Do not use the portable EV charging station if the socket and plug are wet.**
- **Only connect undamaged, designated and labelled plugs & cables to the portable EV charging station.**
- **Don't unplug during charging process.**
- **Always operate in the specified order of steps.**
- **Socket will provide a high voltage (230 V)!**
- **Avoid using multiple adapter / power strips as they can lead to overload.**

First plug the portable EV charger in the wall outlet. Immediately STATUS LED starts blinking: number of blinks tells you what is the saved charging power/speed setting (see the next page). Afterwards STATUS LED glows constantly till AC power is present indicating standby/ready status. When you plug it into the vehicle Type 1/2 socket the STATUS LED starts blinking slowly what means the vehicle is charging. When your electric vehicle is fully charged the STATUS LED glows constantly again.
You can also use built-in Metron Charge Control app and/or cloud based Metron Device Access app to set charging power, monitor charging&house&solar power & energy, set scheduled charging, activate solar SURPLUS charging, charge per current market price of electricity and much more (see chapter "Local WiFi METRON Charge Control application and internet based Metron Device Access app." for more info).
If wireless Metron Dynamic Power Control system that offers smart charging is installed the SIGNAL LED glows what indicates the charging power is dynamically controlled in order to not blow main house fuses; this system is also smartly taking into account the solar/wind/hydro power plant if house has it installed (see chapter "METRON Wireless Dynamic Power Control" for more info).

REMOTE CHARGE PORT OPEN & PLUG UNLOCK for TESLA electric vehicles

When PC03ZT+, PC03ZGT+ or PC03ZJT+ is plugged into the wall outlet/socket (power applied), pressing a "2-function" button on the vehicle Type 2 plug sends a remote-control signal to your TESLA vehicle charge port which then opens. Signal range is usually between 3 and 15 meters. This feature eliminates user "touching" the smart phone or Tesla central screen in order to open the charge port. Remote-control signal also wakes-up the Tesla vehicle from sleep - sometimes the button needs to be pressed several times to wake-up the vehicle.
To unplug the PC03ZT+/PC03ZGT+/PC03ZJT+ while still charging or when charging completed press and hold the "2-function" button for a second. The car will unlock the vehicle plug (only if car is unlocked/owner nearby!) and then you can unplug it. Plug unlock function works even if the PC03ZT+/PC03ZGT+/PC03ZJT+ is not connected to power source. This feature once again eliminates the need for user "touching" the smart phone or Tesla central screen in order to unlock the PC03ZT+/PC03ZGT+/PC03ZJT+ plug from Tesla charge port.



SETTING THE DESIRED CHARGING CURRENT / POWER without WiFi connection

METRON portable EV chargers allow users to set desired charging current / power before being plugged in the electric vehicle charging socket. Procedure is simple:

- Press and hold the push button: STATUS LED switches off immediately.
- After 5 seconds STATUS LED starts blinking slowly.
- Releasing the push button after a certain number of blinks determines charging current/power as follows:

PC01Z+, PC03Z+, PC03ZT+

Number of LED blinks	Charging current / power
1	6 A / 1,4 kW
2	8 A / 1,8 kW
3	10 A / 2,3 kW
4	13 A / 3,0 kW
5	16 A / 3,7 kW

PC01ZG+, PC03ZG+, PC03ZGT+

Number of LED blinks	Charging current / power
1	6 A / 1,4 kW
2	8 A / 1,8 kW
3	10 A / 2,3 kW
4	13 A / 3,0 kW

PC01ZJ+, PC03ZJ+, PC03ZJT+

Number of LED blinks	Charging current / power
1	6 A / 1,4 kW
2	8 A / 1,8 kW
3	10 A / 2,3 kW

New charging current / power setting is stored in the memory and it stays the same (even after the power supply is not present anymore) until the next setting change is performed.

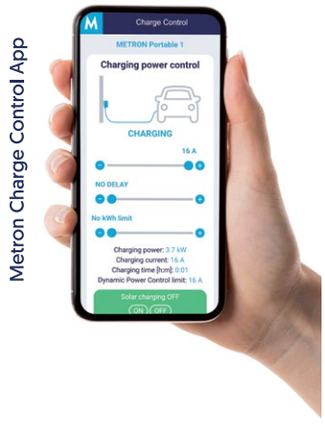


Local WiFi METRON Charge Control app. and internet based Metron Device Access app.

Each "+" Portable EV charger features a built-in WiFi access point with the preloaded **Metron Charge Control App** (web server), allowing installers and users to connect locally using smartphone, tablet, or PC — no additional app installation required & no internet access required. Additionally, when the Portable EV charger is connected to the internet via WiFi, users gain access to a second web-based application — **Metron Device Access**. This cloud-based (Metron HUB) platform can be accessed over the internet from anywhere.

Using the Metron Charge Control app and Metron Device Access app user can:

- Set the desired charging current, limit charging energy, set weekly scheduled charging.
- Turn on/off solar SURPLUS charging if solar power plant is installed.
- Charging based on current MARKET electricity prices.
- See all the measurements of charging power, charging current and charging energy.
- OTA (over-the-air) install UPDATES for application firmware.
- Set system parameters (Charge Control app only).
- If METRON Dynamic EV Charging Unit for SMART charging with house main fuse protection is installed the user can also see house load, house energy consumption, solar power and solar energy production.



In order to connect to the WiFi METRON Charge Control application you need to do the following:

- Connect portable charger to power, scan the first QR code you find on the label to connect to portable charger WiFi access point and then scan the second QR code to open web browser and Metron Charge Control application.

OR

- Connect portable charger to power, go to WiFi menu in your smart phone/tablet/PC and search for WiFi networks.
- Find "METRON Portable 1" (default) network and connect to it; enter the WiFi password 12345678.
- open your favorite web browser and type in the following IP address: http://192.168.4.4 -> The METRON Charge Control application will be loaded immediately.

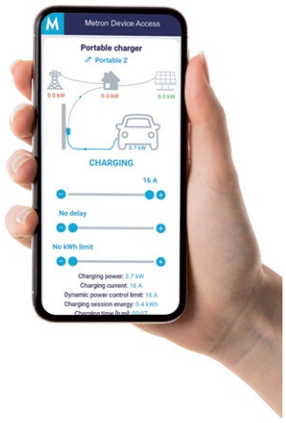
For accessing the Metron Device Access cloud based app you need to connect to Charge Control app, enter the “Settings” menu and connect the smart portable charger to local WiFi network with internet access. After that the smart portable charger starts communicating with Metron HUB cloud and Metron Device Access app becomes accessible via the following internet address: https://metron-app.eu/<controller serial number> (link is shown in Charge Control app). Default user access password is “12345678” (it’s recommended to change it).

The METRON Charge Control and Metron Device Access applications are intuitive and usually don’t need more instructions to be used; just browse and explore the functions. Where the additional user info is required, important user instructions are explained under “notes”. If you don’t understand something please feel free to contact Metron.

NOTE: If you changed Charge Control WiFi password and forgot it, you need to do the following to reset it to default:

- Disconnect the station from power, press the “Push Button” and keep it pressed.
- Connect the station to power. The blue STATUS LED starts blinking 2 times.
- After 30 seconds the STATUS LED will turn-on for 3 seconds and then turn-of.
- Release the “Push Button” and WiFi name (ssid) & password are reset to default values.

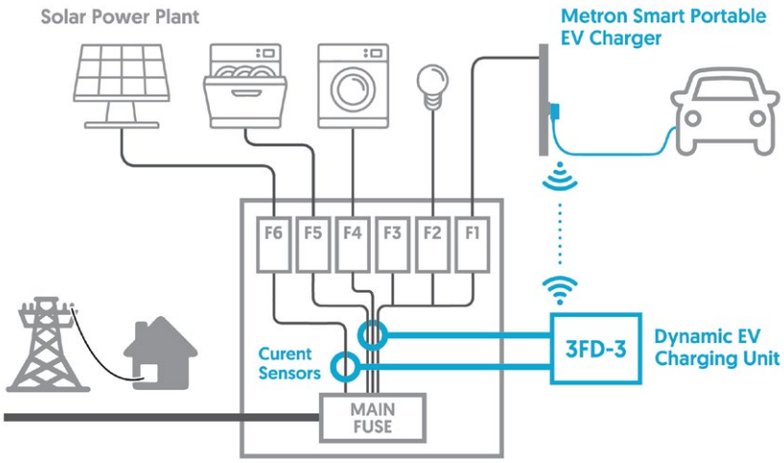
Metron Device Access App



METRON Wireless Dynamic Power Control

Smart portable EV chargers are equipped with Wireless Dynamic Power Control system that is always monitoring the load at house main fuse with electric current sensors and dynamically adjusting (lowering or rising) the charging current/power of your electric vehicle in the way the main house fuse never gets overloaded (never blows-up). If the house has a solar (or wind/hydro) power plant installed this system allows higher current/power charging than would be allowed by the main fuse and it also enables the possibility of user activated solar SURPLUS charging what means the vehicle will be charged only with excess solar power without taking any energy from the grid. METRON Wireless Dynamic Power Control system is designed to work with 1-phase and 3-phase power systems.
To be short, METRON Dynamic Power Control system enables users to charge their electric vehicle without worrying about the load other household appliances might draw from the in-house grid.
Beside owning the smart portable EV charger all you need is to install one METRON Dynamic EV Charging Unit (model 3FD-3/3.1/3.2) and current sensors. This way up to 150 Metron portable AND/OR wall-box style EV charging stations can be wirelessly controlled and main fuses with rated currents up to 1000A are supported.

NOTE: Wireless signal has enough range to cover at least one house.



Detailed schematics for installing METRON Dynamic Power Control system are located in a separate installation manual intended for qualified installers only.

MOBDUS TCP/IP COMMUNICATION

Smart portable chargers support Modbus TCP/IP communication protocol what enables third party home automation systems to monitor and control each portable charger connected to local WiFi network. Modbus MASTER device can read real time charging power, current, voltage and charging energy information from portable charger and also set the charging current. The needed Metron **MODBUS TCP/IP REGISTER TABLE** is available for download from Metron web shop/site.

STATUS NOTIFICATION BY LED BLINKS

STATUS LED state	NOTIFICATION
Slow blinking when power supply is applied	Indicating previous saved current setting
Constantly on when not plugged in	Stand-by / Ready to charge
Slow blinking when plugged in	Charging
Constantly on when plugged in	Electric vehicle fully charged
Slow blinking 2 times when plugged in	Electric vehicle requests room ventilation (no charging)
Slow blinking 5 times (plugged in or not plugged in)	Portable charger overheated (no charging); restarts charging automatically when it cools down
Slow blinking 6 times (plugged in or not plugged in)	Leakage current detected by built-in RCD (charging stopped); unplug to reset
Slow blinking 7 times (plugged in or not plugged in)	RCD self test failed (charging not allowed), station fault
Slow blinking 8 times (plugged in or not plugged in)	One or more power contact welded (charging not allowed), station fault
Rapid blinking (plugged in or not plugged in)	Station or vehicle fault

SIGNAL LED state	NOTIFICATION
Constantly ON	Wireless signal from METRON Dynamic EV Charging Unit is GOOD, ALL SMART charging features enabled
Constantly OFF	NO Wireless signal from METRON Dynamic EV Charging Unit, REGULAR charging activated

TECHNICAL SPECIFICATIONS

	PC01Z+, PC01ZG+, PC01ZJ+	PC03Z+, PZ03ZG+, PC03ZJ+, PC03ZT+, PC03ZGT+, C03ZJT+
EV Side Socket Type	Type 1 (SAE J1772) Female	Type 2 (IEC 62196) Female
Wall socket/grid side Standard Plug Types	Schuko – type F/E --> PC01Z+ type G (UK) --> PC01ZG+ type J (Swiss) --> PC01ZJ+	Schuko – type F/E --> PC03Z+, PC03ZT+ type G (UK) --> PC03ZG+, PC03ZGT+ type J (Swiss) --> PC03ZJ+, PC03ZJT+
Max. Charging Current	16 A - Schuko – type F/E --> PC01Z+ 13 A - type G (UK) --> PC01ZG+ 10 A - type J (Swiss) --> PC01ZJ+	16 A - Schuko – type F/E --> PC03Z+, PC03ZT+ 13 A - type G (UK) --> PC03ZG+, PC03ZGT+ 10 A - type J (Swiss) --> PC03ZJ+, PC03ZJT+
Possible charging current settings	6/8/10/13/16 A - Schuko – type F/E --> PC01Z+ 6/8/10/13 A - type G (UK) --> PC01ZG+ 6/8/10 A - type J (Swiss) --> PC01ZJ+	6/8/10/13/16 A - Schuko – type F/E --> PC03Z+, PC03ZT+ 6/8/10/13 A - type G (UK) --> PC03ZG+, PC03ZGT+ 6/8/10 A - type J (Swiss) --> PC03ZJ+, PC03ZJT+
Max. Charging Power	3,7 kW - Schuko – type F/E --> PC01Z+ 3,0 kW - type G (UK) --> PC01ZG+ 2,3 kW - type J (Swiss) --> PC01ZJ+	3,7 kW - Schuko – type F/E --> PC03Z+, PC03ZT+ 3,0 kW - type G (UK) --> PC03ZG+, PC03ZGT+ 2,3 kW - type J (Swiss) --> PC03ZJ+, PC03ZJT+
Rated Voltage	230 Vac (1-phase)	230 Vac (1-phase)
Operating voltage/frequency range	from 90 V to 270 V (50/60 Hz)	from 90 V to 270 V (50/60 Hz)
TESLA remote CHARGE PORT OPENER & PLUG UNLOCKER	N/A	PC03ZT+, PC03ZGT+, PC03ZJT+ only
Wall plug integrated OVER-TEMPERATURE PROTECTION	yes	yes
Internal self-resetable overtemperature protection	yes	yes
Integrated ground fault protection device (RCD)	30 mA AC + 6 mA DC	30 mA AC + 6 mA DC
Automatic RCD self-test	yes	yes
Power contactor weld detection (although very unlikely to occur due to special contact weld protection system)	yes	yes
Wireless Dynamic Power Control system	yes	yes
MODBUS TCP/IP support	yes	yes
WiFi Metron Charge Control app.	yes	yes
Supported WiFi standards	IEEE 802.11b/g/n	IEEE 802.11b/g/n
WiFi speed	up to 150 Mbit/s	up to 150 Mbit/s
WiFi security	WPA2	WPA2
WiFi signal range	up to 20 m	up to 20 m
UV resistance	yes (all parts)	yes (all parts)
Operating Ambient Air Temperature Range	from -30°C to +50°C	from -30°C to +50°C
Drive-over proofness	yes	yes
IP Rating	IP67 wall plug / IP44 EV plug	IP67 wall plug / IP44 EV plug
IK Rating	IK10 (impact/shock proof)	IK10 (impact/shock proof)
Weight	1,5 (5 m cable) + 0.16 kg per each additional meter of cable	1,5 kg (5 m cable) + 0.16 kg per each additional meter of cable

Smart portable EV chargers models PC01Z+, PC03Z+, PC03ZT+, C01ZG+, PC03ZG+, PC03ZGT+, C01ZJ+, PC03ZJ+ and PC03ZJT+ can have some additional designation next to the number such as PC03Zxyz+ where "x" and "y" and "z" may be any alphanumeric character or blank, representing a color or wall plug type, or lower than standard charging current limit or factory version, or any possible future product differentiations, which do not have an impact on general technical specifications.

⚠ **It is only allowed to use Metron original charging adaptors in combination with "Z+" series portable EV chargers.**

WHAT IS RCD AND HOW DOES IT WORK?

RCD is an acronym for Residual Current Device - sometimes it can be called also Earth Leakage Circuit Breaker or Safety Switch. Its purpose is to prevent you from getting a fatal electric shock if you touch live part, such as a bare copper wire under high voltage. RCDs offer a level of personal protection that ordinary fuses/circuit-breakers cannot provide. RCD constantly monitors the electric current flowing through one or more circuits which it protects. If it detects electricity flowing down an unintended path, such as through a person who has touched a live part, the RCD will switch the circuit off very quickly, significantly reducing the risk of death or serious injury. Every portable charging station has integrated Type A 30mA AC + 6mA DC RCD what ensures maximum possible level of personal protection as it protects users from AC, pulsating DC and pure DC leakage currents.

CLEANING & STORAGE

Use only a dry or damp cloth for cleaning the unplugged portable EV charging station. Do not use cleaning detergents. Please secure portable EV charging station while transporting it in your vehicle to avoid damage. Store at a dry place.

⚠
- **Portable EV charging station must be completely unplugged before cleaning!**
- **Secure portable EV charging station while transporting!**
- **Avoid water getting to contact parts!**

DISPOSAL

The symbol "crossed-out trash can" signifies the requirement for separate disposal of electrical and electronic waste. These devices may contain hazardous and environmentally harmful substances. Please take such devices to a designated collection point for the recycling of electrical and electronic equipment and do not dispose of them in regular household waste. You can obtain further information from local waste disposal services or the company from which you purchased the product.

GREEN PRODUCTION

All our products are produced in a carbon neutral way by using "Sustainable energy cycle" method. Production plant where we make charging cables and portable charging stations is the first fully sustainable production facility for EV charging cables. All energy needed for the heating and cooling of the building, production process and for transportation of goods and employees (except deliveries of heavy materials by trucks), is produced by 2 photovoltaic power plants and stored in 4 storage batteries. Almost all of the raw materials we use (cables, plugs) are produced in EU, to shorten supply routes and support local economy. Buying our products helps developing sustainable economy.

LIMITED WARRANTY

METRON warrants its product to the original consumer purchaser that it will repair, or replace, any product that is determined to be defective for the following terms: **Two (2) years from date of purchase on all components.** To be eligible for repair or replacement under this warranty, the product in question must be sent back to METRON within the warranty period and the original consumer purchaser must comply with the following conditions: The product thereof must not have been modified or altered in any way by an unauthorized source; The product thereof must have been used in accordance with the user manual. This limited warranty does not cover: Damage due to improper use; Accidental or intentional damage; Misuse, abuse, corrosion, or neglect; Product impaired by severe natural conditions, such as excessive hail storms, lightning strikes, tornados, flooding, ice or other natural occurrences; Damage due to improper packaging on return shipment.
Any and all labor charges for troubleshooting, removal or replacement of the product are not covered by this warranty and will not be honored by METRON. All shipping costs regarding repair or replacement of the product is to be pre-paid by the original consumer purchaser.