MANUALE DI INSTALLAZIONE, USO E MANUTENZIONE

Caricabatterie *Serie K-Next*

SICUREZZA E AFFIDABILITA'

DI FACILE UTILIZZO

FUNZIONI SPECIALI

EN page

TCE Group Srl

Via Giuseppe di Vittorio 5/9 - 35046 Borgo Veneto (Padova) – ITALY
web: www.tcechargers.com

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INTRODUCTION

This installation, use, maintenance, and configuration manual contains instructions and / or recommendations for users of the K-Next SERIES battery chargers and is an integral part of the battery charger even if the charger is sold to another owner, IN THAT LAST CASE THE WARRANTY IS LOSED.

The general index lists all the topics covered in the entire manual. The numbering of the pages is progressive, and each page shows the number of the same.
Before installing and using the charger, it is necessary to carefully read this manual in all its parts and fully understand the correct procedures for installation, use and maintenance.

This manual must be kept in good condition throughout the life of the charger, away from humid places and always accessible to users.

TCE Group S.r.l. declares that the information contained in this manual complies with the technical and safety specifications of the K-Next SERIES which the manual refers.

A certified copy of this manual is deposited in the technical file of the device, kept at TCE Group S.r.l.

TCE Group S.r.l. does not recognize any documentation that has not been produced, issued or distributed by itself or by its authorized representative.

This manual, like all the technical file, will be kept by the manufacturer for the period required by law (10 years).

During this period, a copy of the documentation accompanying the product may be requested at the time of sale.

The entire technical file remains available for this period exclusively for the supervisory authorities, who may request a copy.

After this period, it will be the obligation and care of whoever manages the product to make sure that both the product and the documentation comply with the regulations in force at the time of the inspection.

Also pay particular attention to the symbols on both the manual and the charger.

SYMBOLS ADOPTED IN THIS MANUAL

NOTE

NOTES CONTAIN IMPORTANT INFORMATION

WARNING

THE WARNING INDICATIONS INDICATE THOSE PROCEDURES WHICH TOTAL OR PARTIAL NON-COMPLIANCE MAY CAUSE DAMAGE TO THE DEVICE, ITS COMPONENTS AND MAY EXPOSE THE USER OR PEOPLE TO DANGERS.

DANGER

THE DANGER INDICATIONS INDICATE THOSE PROCEDURES WHICH TOTAL OR PARTIAL NON-COMPLIANCE CAN CAUSE SERIOUS DAMAGE TO THE EQUIPMENT AND / OR SERIOUS INJURY TO THE HEALTH OF PEOPLE.

ATTENTION

CAUTION INDICATIONS INDICATE THOSE PROCEDURES WHICH TOTAL OR PARTIAL NON-COMPLIANCE CAN CAUSE SERIOUS DAMAGE TO THE EQUIPMENT AND / OR SERIOUS INJURY TO THE HEALTH OF PEOPLE AND THINGS.

SYMBOLS ADOPTED ON THE BATTERY CHARGER

DANGER OF ELECTRIC SHOCK OR ELECTROCUTION

ELECTROCUTION CAN HAPPEN FOR:

1- DIRECT CONTACT
2- INDIRECT CONTACT
3- ELECTRIC ARC

GENERIC DANGER

GENERIC DANGER

1- DANGER FOR PEOPLE
2- DANGER FOR THE EQUIPMENT
3- DANGER FOR THE ENVIRONMENT

ATTENTION!

The SYMBOLS on the charger, which have a safety function, must not be removed, covered or damaged.

MANUFACTURER'S DATA

Builder:	TCE Group s.r.l.
Registered office:	Via G. di Vittorio 5/9 – 35046 Borgo Veneto PD - Italy
VAT number:	04458670280
tel. Office:	+39 0429 89 290
Opening hours:	AM 8:00-12 PM 14:00-18:00

AUTHORIZED TECHNICAL ASSISTANCE

Authorized technical assistance on K-Next Series battery chargers is performed only and exclusively by TCE Group S.r.l. or by a qualified technician appointed by TCE Group S.r.l.

TECHNICAL ASSISTANCE

TCE Group s.r.l.

Via G. di Vittorio 5/9 – 35046 Borgo Veneto PD - Italy

+39 0429 89 290

NOTES ON THE DECLARATION OF CONFORMITY

The **K-Next SERIES** chargers described in this manual are accompanied for sale by the declaration of conformity, drawn up in compliance with the regulations in force in the European territory.

NOTE

BEFORE USING THE DEVICE, CHECK THE PRESENCE OF THE DECLARATION OF CONFORMITY. IF THE DEVICE IS TRANSFERRED TO A THIRD PARTY, ALL THE DOCUMENTATION MUST BE DELIVERED TOGETHER WITH IT, AS AN INTEGRAL PART OF ITSELF.

WARRANTY

The warranty of the charger includes the replacement or repair of components recognized as defective by the manufacturer (factory defect), the costs of collection and shipping remain the responsibility of the buyer.

The warranty clauses, listed below and in full in the purchase contract, are valid only and exclusively if the device is used in compliance with the conditions of use and maintenance provided for in this manual.

Any repairs and / or modifications made to the charger carried out by the user or by personnel not expressly authorized by TCE Group S.r.l., causes the immediate forfeiture of the guarantee and at the same time raises TCE Group S.r.l. from any liability in case of damage to people, property and animals.

The Warranty, as per law, covers the products placed on the market by TCE Group S.r.l., for a period of 12 months, solely from manufacturing defects recognized by the manufacturer.

GENERAL WARRANTY CONDITIONS

1- The manufacturer guarantees the product, **with the exception of elements subject to normal wear such as power supply cable on the mains side, charging cable on the battery side, chasiss, cooling fans, capacitor, ecc.,** for a duration **of 1 (one) years** from the date of purchase which must be proven by a documentary evidence (invoice) showing the name of the seller and the buyer and the date on which the sale was made.
2- **Submission of the completed guarantee certificate within 8 days, from the purchase of the charger**.
3- To make the guarantee valid and effective, the installation must be carried out in a workmanlike manner and the appliance must be started up only by qualified personnel who, in the foreseen cases, must issue the user a declaration of conformity of the 'plant and product running smoothly.
4- Installations that do not comply with current standards invalidate the product warranty, as well as improper use and lack of maintenance as provided by the manufacturer.
5- The warranty is valid on the condition that the instructions and warnings contained in the use and maintenance manual accompanying the appliance are observed, in order to allow for more correct use.
6- The replacement of the entire appliance or the repair of one of its component parts does not extend the duration of the warranty which remains unchanged.
7- By warranty we mean the free replacement or repair of parts recognized as faulty at origin due to manufacturing defects, **the cost of collection and shipping of the product is always borne by the buyer, UNLESS DIFFERENT WRITTEN PROVISIONS OF THE MANUFACTURER**.
8- To take advantage of the guarantee, in the event of a defect, the buyer must keep the guarantee certificate and show it together with the document issued at the time of purchase, to the Manufacturer.

LIMITATION OF LIABILITY OF THE MANUFACTURER

WARNING!

TCE Group S.r.l. declines all responsibility for any damage that may derive, directly or indirectly, to people, things and animals due to failure to comply with the prescriptions indicated in this manual and specifically, concerning the warnings regarding the installation, use and maintenance of the battery charger.

CASES OF LIMITATION OF MANUFACTURER'S LIABILITY:

1- THE BATTERY CHARGER HAS NOT BEEN INSTALLED BY QUALIFIED PERSONNEL;
2- THE ELECTRICAL CONNECTIONS OF THE BATTERY CHARGER TO THE ELECTRICITY NETWORK AND TO THE BATTERY TO BE CHARGED, DO NOT RESPOND TO THE MANUFACTURER'S INSTRUCTIONS AND HOWEVER AND EVEN WORSE DO NOT RESPECT THE REGULATIONS IN FORCE AT THE TIME OF ITS INSTALLATION AND COMMISSIONING;
3- THE MANUFACTURER'S INSTALLATION INSTRUCTIONS HAVE NOT BEEN STRICTLY FOLLOWED;
4- THE BATTERY CHARGER HAS NOT BEEN MAINTAINED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS;
5- THE BATTERY TO BE CHARGED IS DEFECTIVE OR INCORRECTLY CONNECTED TO THE CHARGER;
6- THE BATTERY DOES NOT MATCH THE TYPE OF BATTERY THAT THE CHARGER CAN CHARGE;
7- THE BATTERY HAS BEEN DAMAGED DURING CHARGING OR ITS TRANSPORT;
8- THE BATTERY IS DEFECTIVE FROM THE ORIGIN;
9- THE BATTERY CHARGER HAS BEEN USED BY NON-QUALIFIED PERSONNEL AND APPROPRIATELY EDUCATED;
10- THE BATTERY CHARGER HAS ALSO BEEN PARTIALLY "MODIFIED" WITHOUT WRITTEN AUTHORIZATION OF THE MANUFACTURER;
11- NON ORIGINAL BATTERY CHARGER SPARE PARTS HAVE BEEN USED;
12- THE BATTERY CHARGER HAS NOT BEEN INSTALLED IN A WELL AIRED ENVIRONMENT AS PER THE INSTRUCTIONS MANUFACTURER AND AS AN INDICATION OF THE SAFETY RULES IN FORCE AT THE TIME OF ITS INSTALLATION AND COMMISSIONING;
13- THERE HAS BEEN IMPROPER USE OF THE BATTERY CHARGER;
14- THE BATTERY CHARGER IS DAMAGED DURING TRANSPORT;
15- THE BATTERY CHARGER IS DAMAGED DURING THE INSTALLATION OPERATIONS,HANDLING, ETC.
16- IN GENERAL IN ALL THOSE CASES THAT HAVE NOT BEEN COMPLIED WITH THE WARNINGS AND INDICATIONS OF THE MANUFACTURER AND / OR THE INSTALLATION AND SAFETY RULES IN FORCE AT THE TIME OF INSTALLATION AND THE COMMISSIONING OF THE BATTERY CHARGER.

SAFETY CONDITIONS AND WARNINGS

WARNINGS!

GENERAL INFORMATIONS

1- The charger can cause injury or death or damage to other equipment or property if the user and / or installer does not scrupulously observe all federal, state or local safety regulations and all instructions on installation, use and maintenance before using this appliance.

2- Only qualified and previously trained personnel will be able to take care of the installation, use or maintenance of the battery charger.

3- ***Any responsibility for improper use of the battery charger is fully borne by the user and relieves the manufacturer of all civil and criminal liability.***

4- The battery charger must be connected to the power supply via the Magnetothermic switch and / or protection fuses, suitably sized by referring to the plate data shown on the charger label, such as Supply Voltage and Nominal Current.

5- Frequently check the battery charge conductors, in order to exclude the presence of damage to the electrical insulation of the same, in case of wear, switch off the battery charger and have them replaced by qualified personnel.

6- Do not touch the battery terminals for any reason while the charger is operating, danger of electrocution.

7- Do not clean the charger with water or liquids, these could penetrate inside the unit and damage the electrical insulation, causing electric shock or fire.

8- **Install the battery charger in rooms that are not at risk of fire and well ventilated, respecting Federal, state or local regulations.**

9- Ordinary and extraordinary maintenance operations must be carried out only and exclusively by authorized and qualified personnel.

10- Disconnect the charger from the mains before carrying out any maintenance operations.

PREVENTION OF FIRE OR EXPLOSION

During the battery recharging process, they generate hydrogen gas, which at certain concentrations in the air, could generate an explosive atmosphere if ventilation is not sufficient.
The ventilation system must therefore be designed according to federal, state or local regulations, in order to provide an adequate amount of air exchange for the number of batteries to be charged, this is a fundamental requirement for the prevention of fires or explosions.
Avoid sparks, open flames, use of cigarettes, or any other source of combustion in the battery charging room.
Do not interrupt or remove the charging cables FROM THE BATTERIES when the charger is “LIVE”, first turn off the Battery charger and then after 10/20 seconds remove the charging cables from the batteries.
Avoid that metal objects such as work tools or the like may be placed on or near the battery, as these may accidentally generate short circuits or electric arcs between the free poles of the battery resulting in a fire or explosion.

PREVENTION OF BURNS OR BODY INJURY

In the event of a short circuit, the battery produces very high currents, these can cause severe burns or body injuries, make sure to always use the personal protective equipment prescribed by the standards federal, state, or local.
Some types of batteries contain highly corrosive acid which can cause burns or bodily injury if contacted, be sure to always use the personal protective equipment prescribed by federal, state or local regulations.

ELECTRIC SHOCK FIRST AID MEASURES

ATTENTION! ELECTRIC SHOCKS CAN BE DEADLY

If the user has suffered an electric shock and is unconscious, do not touch him if he is in contact with the charger or with the battery or charging cables or other electrical circuit components that are live.
Disconnect power from the wall switch, then START First Aid PROCEDURES and notify MEDICAL SERVICE IMMEDIATELY.

TRANSPORT AND STORAGE

ATTENTION!

Always observe the standards and regulations related to accident prevention when handling the CHARGER, whether federal, state or local.

1- Pay attention when handling the Battery Charger.
2- Inspect the packaging to detect any damage suffered during transport.
3- Note any damage suffered during transport on the receipt or on the transport document, or immediately notify the manufacturer by e-mail.
4- Unpack the charger carefully.
5- For handling, never grab the charger by the power cables and / or charging cables.

STORAGE

1- If the charger is not installed immediately after delivery, store it in a dry environment with humidity and temperature as indicated in points 2 and 3.
2- Storage humidity from 20% to 60%.
3- Storage temperature from 10 ° C to 60 ° C
4- Make sure that the battery chargers are not stacked on top of each other.

RETURN

1- In case of returning the Battery Charger, fill in a technical sheet where it must be reported in detail the reason for the return.
2- Pack the battery charger as in the original or in any case with safe packaging.
3- We do not accept RETURNS of Chargers with makeshift packaging.
4- Contact TCE Group S.r.l. for specific instructions on how to return the charger
5- Obtain the RETURN Authorization from TCE Group S.r.l.
6- No other procedure other than that specified in points 1,2,3,4,5 will be accepted by the Manufacturer, with consequent forfeiture of the Warranty.

DISPOSAL

1- Dispose of the charger and its accessories in accordance with applicable federal, state or local regulations.
2- TCE Group S.r.l. declines all responsibility in case of non-observance of the disposal precautions of the charger, which must be taken to the collection point indicated for the recycling of the electrical and electronic equipment, in accordance with applicable federal, state or law locals.

DESCRIPTION CHARGER K-Next SERIES

The K-Next series encloses a family of isolated high-frequency rectifiers characterized by an active PFC and a DC/DC output stage with full-bridge resonant technology.

Standard protection degree IP21.

It is made with a certified IPX4 degree of protection (***under request***) to withstand work environments which are less suitable for ordinary battery chargers.

There is the possibility of interacting with the programming of the battery charger itself via the integrated display.

SAFETY DEVICES INSIDE THE BATTERY CHARGER

The **K-Next SERIES** chargers are equipped with various safety devices to ensure safe and reliable use over time.

The safety devices are used to protect the charger, the battery and the surrounding environment.

The control board guarantees the charging cycle, as it monitors the various stages of the charge, making sure that the controlled values (Times and Current) are always within the range that determines the optimal battery charge.

The fuse installed inside the device protects against short circuit and polarity inversion.

MECHANICAL DIMENSIONS

Module	Drawing	Dimensions	Weight	Cable lenght
MK1N		311,5 x 170 x 146	8 Kg	Cavo AC 1,9mt +/- 5% Cavo DC 2,5mt +/- 5%
TK1N		501,5 x 346,5 x 174	21Kg	Cavo AC 1,9mt +/- 5% Cavo DC 2,5mt +/- 5%
MTK3N		511 x 380 x 170	22Kg	Cavo AC 1,9mt +/- 5% Cavo DC 2,5mt +/- 5%
TK2N		503,4 x 352 x 297	42Kg	Cavo AC 1,9mt +/- 5% Cavo DC 2,5mt +/- 5%
TK4N		1000 x 349 x 300	84Kg	Cavo AC 1,9mt +/- 5% Cavo DC 2,5mt +/- 5%

INSTALLATION

ATTENTION!

The connection operation can only be carried out by qualified personnel, in compliance with the regulations in force whether they are federal, state or locals.

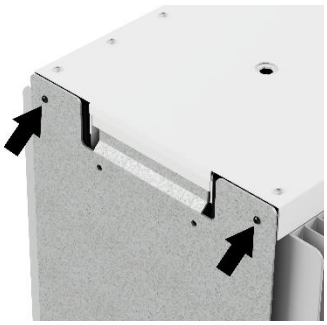
1- Place the charger in the appropriate charging room.

2- Connect the power cable located on the side of the battery charger to a thermomagnetic switch sized according to the indications given by the manufacturer on the battery charger label (Supply Voltage, Nominal Current, Nominal Power), use CEMBRE PKC model crimp ferrules or similar to install the power plug which must be adequate for the rated power of the battery charger. Procedure to be carried out where the CEE 7/4 (Schuko) plug is not already installed.

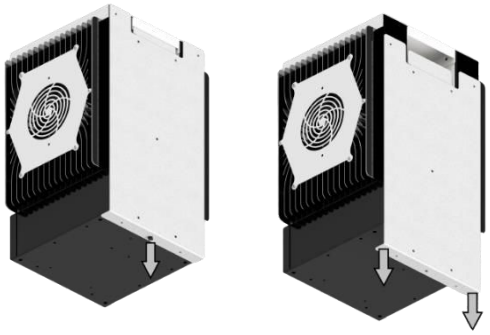
3- Connect the polarized connector (charged to the customer and in any case not supplied with the battery charger) to the two DC SIDE cables (battery charging cables), make sure it is compatible with the connector used on the battery.

4- The connection operation can only be carried out by qualified personnel, in compliance with applicable federal, state or local regulations, using the individual safety devices prescribed by them.

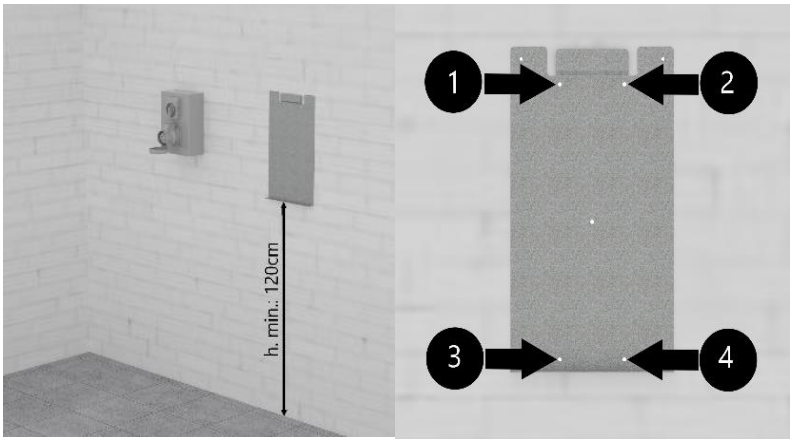
ASSEMBLY INSTRUCTIONS – TK2N MODULE



1- Remove the product from the packaging box making sure to remove all protections. Also make sure that there is no superficial damage and that all the components indicated in the product data sheet are present. If present, remove the two safety screws from the fixing plate. If the charger will be installed on the wall it is not necessary to re-mount them.



2- Proceed to remove the fixing plate from the body of the product by unscrewing the safety bolt located under the product and then sliding the plate downwards.



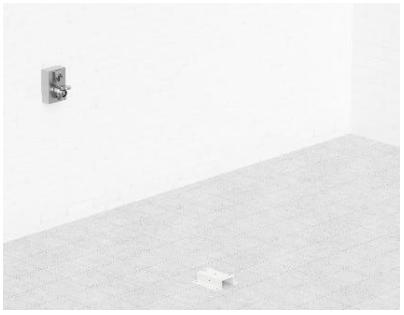
3- Place the plate on a wall making sure there is a suitable power socket nearby. Using the holes on the plate, mark the positions of the fixing holes on the wall.
We recommend a minimum height of 120cm with reference to the central hole of the fixing plate.

4- Once the 8 mm diameter holes have been drilled (points 1,2,3,4), insert the plugs into the holes on the wall (present in the packaging), position the fixing plate and insert the screws (make sure to firmly fix the plate to the wall).

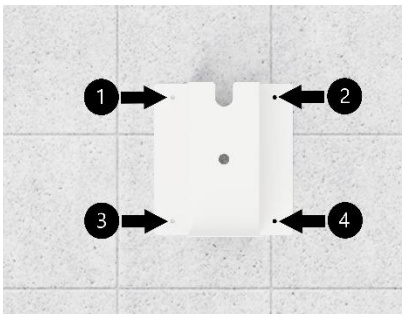
5- To proceed with the final assembly, place the body of the product on the plate and carefully slide it until it comes into contact with the centering pins (***we recommend carrying out this operation by 2 people to have control over both sides of the battery charger***). Finally, screw the safety bolt firmly located under the machine body

ASSEMBLY INSTRUCTIONS – TK4N MODULE

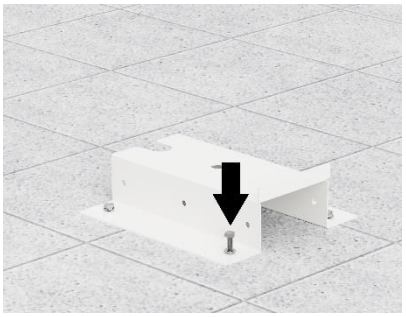
1- Remove the product from the packaging box making sure to remove all protections. Also make sure there is no surface damage and that it is present all components indicated in the product sheet.



2- Place the fixing plate near a power socket adequate for the purpose.



3- Mark the position of the fixing holes on the ground and then drill 4 holes (POINTS 1,2,3,4) Ø 10mm and insert the metal plugs.



4- Insert and screw the 4 fixing screws purchased after an analysis of the ground where the charger will be fixed.

5- Place the product on the plate, paying attention to the centering of the holes for the connection fixing. Pay attention to do not damage the AC cables.

6- Tighten the product fixing bolts onto the plate securely.

START-UP

ATTENTION!

The START-UP operation can only be carried out by qualified personnel, in compliance with current regulations whether they are federal, state or local.

NOTE: Make sure you have carried out ALL the indications in points 1,2,3 on page 43 (INSTALLATION) and proceed as follows.

ATTENTION!

PERFORM ALL OPERATIONS ACCORDING TO THE ORDER OF THE POINTS LISTED BELOW, FIRST CONNECT THE BATTERY TO THE CHARGE CABLE AND ONLY AFTER TURN ON THE MAGNETOTHERMAL SWITCH THAT POWERS THE BATTERY CHARGER FOLLOWING THE PRECISE ORDER OF THE INSTRUCTIONS.
PAY SPECIAL ATTENTION TO POINT 1.

START-UP PROCEDURE

1- Connect the battery to the battery charger with the appropriate connector (not supplied by TCE, but to be paid by the customer), make sure that the battery charger satisfies the battery voltage, that the charging current is appropriate to the battery capacity and that the charging dynamics charging present is correct for the type of battery to be recharged. It is recommended to place a fuse between the charger and the battery. The fuse must be installed along the connection to the positive terminal of the battery. The value of the fuse must be sized according to the nominal output current of the battery charger, the section of the cable used and the environment where it is installed.

2- Turn on the thermomagnetic switch that powers the battery charger.

3- Make sure that the LED flashes as in *Table "A".*

4- After having turned on the magneto-thermal switch (respecting points 1,2), make sure that the LED in the cabinet is turned on as indicated in point 3, with the help of figure 1 on page 19, in the section "WARNINGS REGARDING THE START-UP PROCEDURE".

5- If you notice any kind of operating anomalies, turn off the thermomagnetic switch and call TECHNICAL ASSISTANCE.

USE AND INSTRUCTIONS FOR USE K-Next series

K-Next Series

Figure 1

WARNINGS!

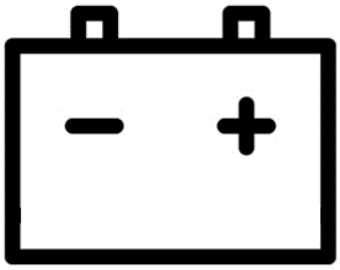
THE BATTERY CHARGER MUST BE USED ONLY BY QUALIFIED AND PROPERLY TRAINED PERSONNEL

ATTENTION!

CARRY OUT ALL THE OPERATIONS ACCORDING TO THE ORDER OF THE POINTS BELOW, BEFORE CONNECT THE BATTERY TO THE CHARGING CABLE, TURN ON THE MAGNETOTHERMAL SWITCH THAT POWERS THE BATTERY CHARGER FOLLOWING THE PRECISE ORDER OF THE INSTRUCTIONS.

PROCEDURE FOR USE K-Next SERIES

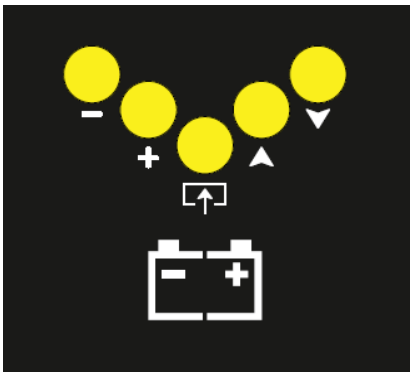
1- Once you have connected the battery to the charger, press the central illuminated button . If the battery voltage is within the pre-established range depending on the charger voltage, charging will begin automatically. If the wording "*LOW BAT*." is displayed on the display, at the operator's discretion it is possible to force the start by keeping the **CENTRAL** button pressed for 5 seconds.
2- If the LED indicator is present, the color will change from BLUE to fixed RED to indicate that the battery is between 0% and 80%.
3- Once the 80% has been exceeded, the LED will change color and become YELLOW until reaching the end of the charge in which it will become GREEN.
4- When the battery is fully charged, the charging process will be automatically stopped.
5- In case of values outside the pre-established range or if the device reaches the completion of the safety timer, charging will be automatically stopped
6- In the event of a blackout during the charging phase, the battery charger will automatically resume the cycle when the blackout is over.
7- If the charger is still connected to the battery after 10 hours (Wet Deep curve) from the end of charging, the equalization cycle will begin automatically. The color of the LED during this phase will be PURPLE.
8- During the equalization waiting phase the color of the LED will be LIGHT BLUE.
9- Before disconnecting the battery, it is always advisable to press the button again.

TABLE "A"		
LED battery logo	**Color sequence**	**Status**
	LED off	The charger is not powered
	Blue with breath	Idle, waiting for battery connection
	Solid red	Charging cycle in the Bulk phase (0-80%)
	Solid yellow	Charging cycle in the ABS phase (80-100%)
	Solid green	Finished charging cycle or final phase
	Solid blue	Waiting for equalization
	Solid purple	Equalization
	Flashing blue	Desulfation cycle
	Flashing red	Anomaly (check the display for error code)
	Solid red (during programming)	ST-LINK V2 programming connector incorrect connection

MENU NAVIGATION

ATTENTION!

The operations carried out to change the charging parameters must be carried out only and exclusively by qualified personnel.



Symbol (–) Decreases the value shown on the display
Symbol (+) Increases the value shown on the display
Symbol (▲) scrolls the menu upwards
Symbol (▼) scrolls the menu downwards
"CENTRAL" button ( ) allows you to confirm the choice

To access the menu, press the "CENTRAL" enter button, select the "User" menu and hold the "CENTRAL" enter button pressed for 10 seconds. This operation allows you to enter the menu to access other submenus that allow you to change the charging parameters:

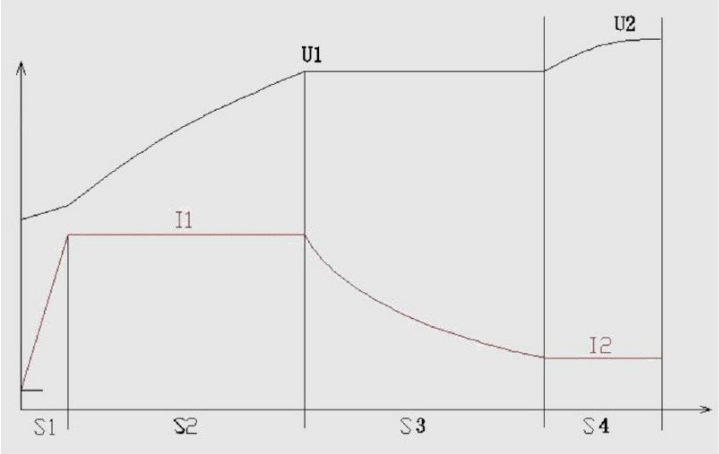
1- Charging current
2- Battery type
3- Curve creation function
4- Charge history
5- Desulfation function
6- Firmware version information
7- Change language
8- Exit (to return to the previous menu)

ATTENZIONE!

Il cambiamento dei parametri di carica potrebbero causare danni alla batteria. Prima di procedere, assicurarsi che i nuovi valori desiderati siano compatibili con la batteria che si andrà a caricare.

CHARGING CURVES

IUIa - heavy traction lead acid charging curve



***Note**: the equalization phase begins at the end of a 10-hour waiting period calculated from the end of S4.*
If the parameters of phase S1 are not reached, the charger will move directly to phase S3

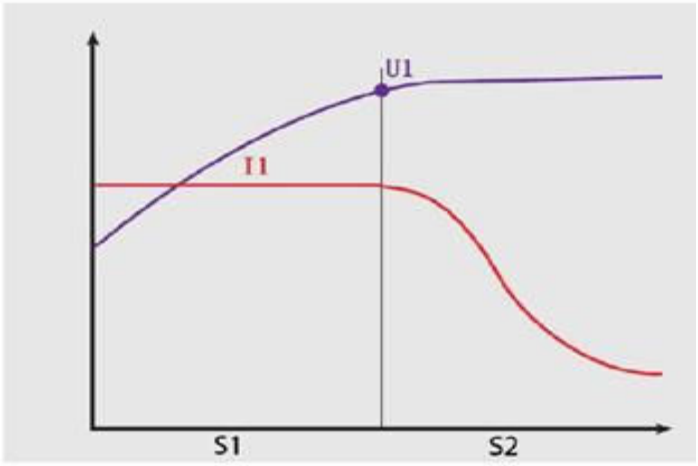
S1: The current increases until it reaches I1= 100% in "soft start" mode.

S2: The current remains constant at 100% until U1=2.4 V/cell is reached or the maximum time allowed for this phase of 7 hours is reached.

S3: Upon reaching 2.4 V/cell, the current is reduced until it reaches I2=30% or reaches the maximum time allowed for this phase of 5 hours.

S4: The current remains constant I2=30%, the voltage remains within a predefined value or reaches the maximum time allowed for this phase of 4 hours.

IUa - gel/agm/lead light traction charging curve



S1: The current increases at I1=100% in "soft start" mode until U1 is reached or the maximum time allowed for this phase of 8 hours is reached.

S2: The voltage remains constant U1, the current drops until I2 = 15% or reaches the maximum time allowed for this phase of 6 hours.

U1 values
WET: 2.40 V/Cell
GEL: 2.35V/Cell
AGM1: 2.38V/Cell
AGM2: 2.45V/Cell

TROUBLESHOOTING GUIDE

K-Next SERIES

Description	Cause	Solution
STATIC display values (ex. time) Red LED on and Ampere output dropped to zero	Bad ground contact	Check that the power plug has an earthing conductor
Display not working, battery symbol and charger working properly	Possible display malfunction	Contact TCE Group Srl for a display check
Display off with CB powered	Problems connecting the display to the control board	Check the correct insertion of the display PINs and the three-pole terminal that powers the board
The charger does not deliver the correct current but a lower one	A phase is missing or mains power is missing	Lower the Ampere setting to 20%. Turn the CB back on and check correct delivery. If correct, act on the DC
The battery charger turns the display on and off (only for models K24150T/K3675T/K4875T/ K48105T/K7275T/K8065//K4875T/K24150T)	Lack of neutral phase “N”	Use a 5-pole network connector and connect the Neutral to the appropriate pole

MAINTENANCE

ATTENTION!

ONLY QUALIFIED AND PROPERLY INSTRUCTED PERSONNEL CAN PERFORM MAINTENANCE AND / OR PUT OUT OF SERVICE OF THE BATTERY CHARGER, IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND COMPLYING WITH THE REGULATIONS IN FORCE, WHETHER THEY ARE FEDERAL, STATE OR LOCAL.

PERIODIC MAINTENANCE

DANGER

DISCONNECT THE SYSTEM FROM THE ELECTRICITY NETWORK BEFORE CARRYING OUT ANY CLEANING OR MAINTENANCE OPERATION.

Periodically it is necessary to clean the charger from dust and / or dirt, which over time may have deposited on the external surface.
Use a dry cloth or possibly an air compressor to blow the dust, make sure that there is no moisture in the compressed air circuit.
You can also use a slightly damp, non-abrasive cloth that is free of alcohol or aggressive solvents.
Do not use abrasive sponges, chemical solvents or detergents.
During cleaning, avoid water touching internal electrical parts of the device.

EXTRAORDINARY MAINTENANCE

DANGER

DISCONNECT THE SYSTEM FROM THE ELECTRICITY NETWORK AND CALL THE MANUFACTURER'S TECHNICAL ASSISTANCE.

Extraordinary maintenance is required in the event of faults or breakages, inappropriate use of the battery charger or its malfunction and / or wear.
The situations that can arise from time to time are completely random and unpredictable, so it is not possible to describe them.
If necessary, consult the manufacturer's technical service to receive the appropriate instructions for the situation.

PUTTING OUT OF SERVICE

PUTTING THE BATTERY CHARGER OUT OF SERVICE

ATTENTION!

ONLY QUALIFIED AND APPROPRIATELY TRAINED PERSONNEL CAN PERFORM THE BATTERY CHARGER OUT OF SERVICE OPERATIONS, IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND COMPLYING WITH THE REGULATIONS IN FORCE, WHETHER THEY ARE FEDERAL, STATE OR LOCAL.

DANGER

DISCONNECT THE SYSTEM FROM THE ELECTRICITY NETWORK AND CALL THE MANUFACTURER'S TECHNICAL ASSISTANCE.

If the charger has been seriously damaged, such as to make it impossible to repair, it must be permanently taken out of service!!
When the battery charger is taken out of service, it can no longer be used and must follow the DISPOSAL procedure as indicated on page 33.

ATTENTION!

AFTER PUTTING THE CHARGER OUT OF SERVICE, IT WILL NO LONGER BE USED, IT MUST BE DISPOSED OF ACCORDING TO THE REGULATIONS IN FORCE, WHETHER THEY ARE FEDERAL, STATE OR LOCAL.

IF THE CORRECT DISPOSAL PROCEDURES ARE NOT FOLLOWED, THE MANUFACTURER DECLINES ANY CIVIL OR CRIMINAL LIABILITY ARISING FROM THE NON-COMPLIANCE OF THE REGULATIONS BY THE OWNER OF THE BATTERY CHARGER OR ANYONE FOR IT.

WARRANTY CERTIFICATE

TYPE OF CHARGER	SERIAL NUMBER S/N	DATE OF PURCHASE GG/MM/AAAA

SERIES : …… **S/N:**…… **DATE:** _ _ /_ _ /_ _ _ _

MANUFACTURER:

TCE Group S.r.l.

BUYER'S STAMP and SIGNATURE

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The manufacturer guarantees the product, **with the exception of elements subject to normal wear such as power supply cable on the mains side, charging cable on the battery side, chassis, , cooling fans, capacitor, etc.**, for a duration of **1 (one) years**. from the date of purchase which must be proven by documentary evidence (invoice) that shows the name of the seller and the buyer and the date on which the sale was made.
The warranty of the charger includes the replacement or repair of components recognized as defective by the manufacturer (factory defect), the costs of collection and shipping remain the responsibility of the buyer.
Any repairs and / or modifications made to the charger carried out by the user or by personnel not expressly authorized by TCE Group S.r.l., determines the immediate forfeiture of the guarantee and at the same time raises TCE Group S.r.l. from any liability in case of damage to people, property and animals.
The Warranty, as per law, covers the products placed on the market by TCE Group S.r.l., solely from manufacturing defects recognized by the manufacturer, for a period of 12 months from the date of sale.
This WARRANTY CERTIFICATE must be completed in all its parts and must be forwarded to TCE Group Srl within 8 days. from the purchase, otherwise the Warranty expires.

TCE Group Srl

Via Giuseppe di Vittorio 5/9 - 35046 Borgo Veneto (Padova) – ITALY
Tel.: +39 0429 89 290 - web: www.tcechargers.com

DICHIARAZIONE CE DI CONFORMITA'

CE DECLARATION OF CONFORMITY

TCE GROUP s.r.l. Via G. di Vittorio, 9 35046–Borgo Veneto-Padova-ITALY –Tel.+39 0429 89290 WEB: www.tcechargers.com dichiara sotto la propria esclusiva responsabilità che i(l) prodotto(i):
declare under our sole responsibility that the product(s):

nome / descrizione: CARICABATTERIA PER USO INDUSTRIALE
name / description: *Industrial Battery-charger*

Modello(i): K(X-Y)T*, K(X-Y)M*
model(s): *K represents the series, X represents the nominal output voltage, Y represents the nominal output current, T represents power supply three-phase, M represents power supply single-phase*

risultano in conformità a quanto previsto dalle seguenti direttive comunitarie
is in conformity with the provisions of the following EU/EC directives

2014/35/UE (Direttiva Bassa Tensione) concernente l'armonizzazione delle legislazioni degli Stati membri relative alla messa a disposizione sul mercato del materiale elettrico destinato a essere adoperato entro taluni limiti di tensione
2014/35/EU (Low Voltage Directive) on the harmonization of the laws of the Member States relating to the making available on the market ofelectrical equipment designed for use within certain voltage limits

2014/30/UE (Direttiva EMC) concernente l'armonizzazione delle legislazioni degli Stati membri relative alla Compatibilità Elettromagnetica
20\4/130/EU (EMC Directive) on the harmonization of the laws of the Member States relating to Electromagnetic Compatibility

2011/65/CEE (Direttiva RoHS) Restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche
2011/65/EEC (ROHS Directive) Restriction of the use of certain hazardous substances in electrical and electronic equipment

e che sono state applicate le norme armonizzate seguenti:
that the following harmonized standard have been applied

Sicurezza:elettrica *Electrical Safety*	EN 60335-1:2012 +A11:2014 +A13:2017 +A1:2019 +A14:2019 +A2:2019 +A15:2021	Household and similar electrical appliances - Safety - Part 1: General requirements
	EN 60335-2-29:2021 +A1: 2021	Household and similar electrical appliances - Safety - Part 2-29: Particular requirements for battery chargers
	EN62233:2008	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure
Compatibilità Elettromagnetica *ElectroMagnetic Compatibility*	EN IEC 61000-6-4:2019	Electromagnetic Compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
	EN IEC 61000-6-2:2019	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards. Immunity standard for industrial environments.
	EN IEC 61000-3-2:2019	Electromagnetic compatibility (EMC) -Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16A per phase)
	EN 61000-3-3:2013 +A1:2019	Electromagnetic compatibility (EMC) — Part 3-3: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection
R.o.H.S. Restriction of the use of certain hazardous substances in electrical and electronic equipment	EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Informazioni supplementari:

Supplementary information:

Sulla base del/i test/s report/s allegati al Fascicolo Tecnico, il prodotto e' ritenuto conforme alle norme sopra indicate riconosciute come base per la presunzione di conformità ai requisiti essenziali delle Direttive Europee specificate.

Based on the test/s report/s attached to the Technical File, the product is intended in conformity with the standards above that's recognized as giving presumption of conformity with the essential requirements in the specified European Directives

Il responsabile legale / *legal manager*