


tiko CD-01.1014-01-P1 D-Box + Socket + Tap User Manual

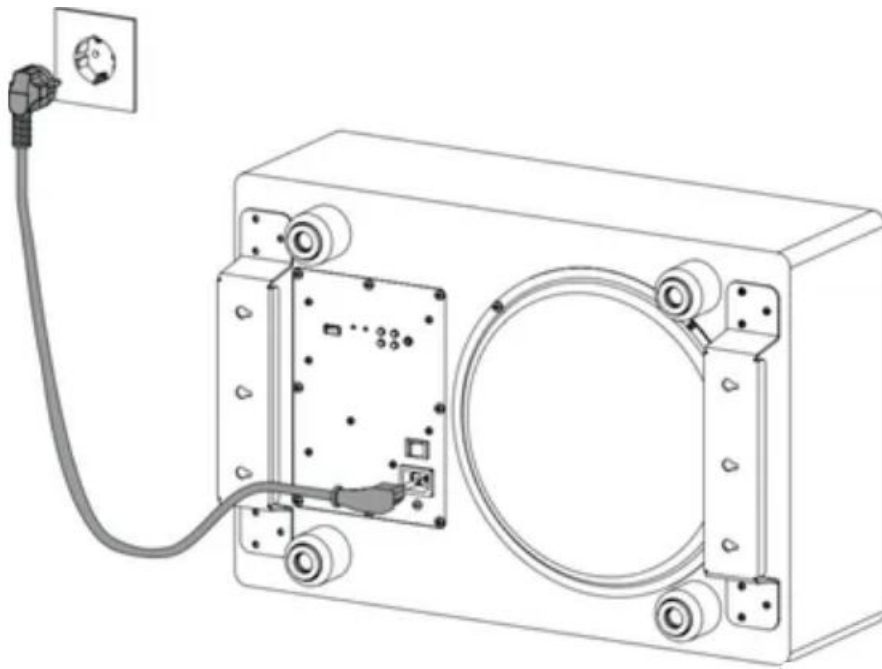
[Home](#) » [tiko](#) » tiko CD-01.1014-01-P1 D-Box + Socket + Tap User Manual 

Contents

- [1 tiko CD-01.1014-01-P1 D-Box + Socket + Tap](#)
- [2 Safety Warnings and Working Instructions](#)
- [3 Safety Instructions](#)
- [4 Overview](#)
- [5 Installation](#)
- [6 Operation](#)
- [7 Uninstalling](#)
- [8 Specifications](#)
- [9 Obtaining the Declaration of Conformity](#)
- [10 Documents / Resources](#)
 - [10.1 References](#)
- [11 Related Posts](#)



tiko CD-01.1014-01-P1 D-Box + Socket + Tap



Safety Warnings and Working Instructions

- Read the user manual before installing and operating this product!
- Installation by a person with electrical expertise and training on this product only!
- Disconnect all power sources before carrying out any manipulation!
- Always use appropriate protection equipment!
- Danger! High voltage!
- Never touch disconnected wires! Life hazard!
- Only use for current/voltage as indicated on the device label! Doing otherwise can cause device damage and may pose an electrical shock or fire hazard!
- Not properly tightened screws can cause a high contact resistance, lead to overheating, and cause a fire hazard!

Warnings

- Read the installation instructions before you connect the system to its power source.
- To prevent the system from overheating, do not operate it in an area that exceeds the maximum admitted ambient temperature of 55 °C.
- This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 230 VAC, 65 A is used on all current-carrying conductors.
- The circuit breaker shall be in front, close to the device, and easily reachable by the operator, and it shall be marked as the disconnecting breaker for the device.
- Do not work on the system or connect or disconnect cables during periods of lightning activity.
- The device is intended for indoor use only.
- Ultimate disposal of this product should be handled according to all national laws and regulations.
- Any usage of this device in a manner that does not conform to this manual specification can impair the provided safety protection.

Safety Instructions

Read these safety instructions carefully.

- Follow common household electrical safety practices.
- Read all cautions and warnings on the equipment.
- Do not put power to the electrical panel before putting back the cover of the home distribution box. No live contact shall be accessible.
- Disconnect this equipment from the distribution box before cleaning it. Do not use liquid or sprayed detergent for cleaning. Use a moisture sheet or cloth for cleaning.
- The openings on the enclosure are for air convection and protect the equipment from overheating. Do not cover the openings.
- Do not pour any liquid into the opening. This could cause fire or electrical shock.
- Do not open the enclosure of this product and/or alter this product in any way.
- Have the equipment checked by a service professional if one of the following situations arises:
 - The line is damaged.
 - Liquid has entered the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work properly, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped or damaged.
 - The equipment has obvious signs of breakage.
- Keep this equipment away from excessive or condensing humidity.
- Do not leave this equipment in an unconditioned environment. Temperatures above 55 °C will damage the equipment.
- Keep this guide for later reference.

Feedback

You can submit comments via email to info@tiko.energy

You can also submit your comments via regular mail by writing to the following address:

tiko Energy Solutions AG Alte Tiefenastrasse 6 CH-4600 Bern We appreciate your comments.

Overview

Intended Use

K-Box is a custom energy meter with a remote-controlled relay to be only used in tiko Energy Solutions AG authorized setups. Any installation or usage which does not conform to tiko Energy Solutions AG setup is strictly forbidden. tiko Energy Solutions AG is not responsible for any improper installation/usage of this device.

Features

K- Box features:

- meters instantaneous energy consumption in 3 phases
- remotely controlled relay
- status LEDs showing connection and relay status.

Package Content

Open the package and check that you have all the following items:

- Instruction manual
- K-Box

If any of the parts are incorrect, missing, or damaged, please contact the retailer where you made your purchase. Keep the carton box, including the original packing materials, in case you need to return the unit for repair.

In case your unit does not come with the metal holder, it belongs to the group of legacy kits that are not produced anymore. Your package content will be different. In this case use the following table to check:

	K01- CDK - 01.1 014- 01-P 1	K02- CDK - 01.1 014- 01-P 1	K03- CDK - 01.1 014- 01-P 1	K01- CDK -01.1 016- 01-P 1	K02- CDK 3-01. 1016 -01- P1
D-Box (IMAGE 1 and IMAGE 2)	ü	ü	ü	ü	ü
Instruction manual (REF IM-0007-0013)	ü	ü	ü	ü	ü
A sealed bag of Velcro patches and/or double tape to mount the D-Box to the wall	ü	ü	ü	ü	ü
Socket (REF CDS-01-P1), see IMAGE 3	ü	ü			ü
Pre-wired socket (REF CDS-01-P1), see IMAGE 5			ü	ü	
Tap (REF CATA-01.1103-P1), see IMAGE 4		ü	ü		ü

If any of the parts are incorrect, missing, or damaged, please contact the retailer where you made your purchase. Keep the carton box, including the original packing materials, in case you need to return the unit for repair.

Device

IMAGE 1 shows the device from the front. IMAGE 2 shows the device from the bottom and indicates the phases and neutral terminals. On the bottom side is a label indicating

- The manufacturer
- The device model number (REF) and the current rating
- The hardware (HW) and firmware (FW) version
- The unique serial/MAC address as text and as barcode code (SN/MAC)

Installation

Installation by a person with electrical expertise and training on this product only! Do not install the device unless you have removed the main power supply (main breaker or fuses)!

Installing the K-Box

Step 1	Remove power from the electrical panel.
Step 2	Remove the cover panel so you can access the wires.
Step 3	Verify that there is no tension on the wires you intend to manipulate.
Step 4	Ensure that there is a short-circuit protection for 3 phases (breaker or fuse) before the K-Box not larger than 420 V 65 A .

Step 5	<p>Put the K-Box on the DIN rail of the home distribution box and ensure the hook is locked properly (IMAGE 3).</p> <p>Remove the protection covers from the terminals (IMAGE 4).</p>
Step 6	<p>Prepare the cables. Refer to <i>Specifications</i> on page 8 for supported ratings and cable diameters.</p>
Step 7	<p>Connect the wires to the K-Box (IMAGE 6):</p> <ul style="list-style-type: none"> · From left to right, connect Phase 1, Phase 2, Phase 3, and Neutral. · Wires for top terminals are coming from the source. · Wires for bottom terminals are going to load.
	<p><i>Tighten all clamp screws with enough torque. Insufficient clamping force can result in high contact resistance that leads to device heating and can result in a fire hazard.</i></p>
Step 8	<p>Lift the cover of the relay terminals (IMAGE 5). Connect the relay contacts as indicated in IMAGE 7:</p> <ul style="list-style-type: none"> · COM – Change over · NC – Normally closed · NO – Normally open

	<p><i>Danger! An external voltage source can be present on the wires to be connected to the relay clamps!</i></p> <p><i>An auxiliary source (e.g., ripple control, UPS, generator, PV, emergency PSU) can supply voltage even if all the main counters are open/disconnected.</i></p> <p><i>Before any handling verify that there is no voltage on any wires you handle.</i></p>
Step 9	Close the relay cover. Put back the protective covers for the phase and neutral terminals (IMAGE 8). Ensure the orientation of the covers (IMAGE 9).
Step 10	Put back the cover panel of the home distribution box to cover the electrical contacts. Be sure that no electrical contact can be touched.
Step 11	Power on the system by enabling power in the electrical panel.
Step 12	To finalize the installation , all tiko devices must be configured using the installation app .

Operation

Device Operation

The operation of the K-Box is subject to the control of the full system and operated by the Data Center through the Gateway (M-Box). No user interaction is required.

On the front, there are two buttons, offering the following functionalities:

- Service – not used anymore (no function assigned)
- Heating Powered
 - Single Press – change relay state. If the K-Box is connected to the backend, the relay might switch back as it is overwritten by the backend settings.
 - Long press (10 s) – reset device.

LED Explanation

The D-Box features one LED in the middle of the device. It is only visible when lit.

- In normal operation:

LED	Status	Notes
Off	Operational	
Blinking yellow, 2x per second	No PLC connectivity	
Blinking yellow, 1x per second	No connection to cloud /back-end	
Red	Power-on self-test failure.	For example, when wrongly wired
Blinking red	Emergency mode	Device is damaged or has hardware malfunction. The relay is closed so that the heater can be operated manually.

- In firmware upgrade mode:

LED	Status	Notes
Blinks yellow/green 2x per second	Device running firmware upgrade	

- If the button is pressed for one second, the LED displays the quality of the communication to the Gateway:

LED	Status	Notes
Steady Red	No connectivity	Since the last start of the device, it did not receive any data.
Blinking yellow, 4x per second	No communication for 2 minutes	At least one data packet was received, but for 2 minutes the device did not receive any signal.
Steady Green	The communication is in the optimal state	

- In Heater Test mode: see section Heater Test.

Heater Test

A long press of the button (more than 5 seconds) triggers a test of the electrical heater. With this, the D-Box can check if the wiring is correct. The test is executed locally on the D-Box and does not need any connectivity to the Gateway or the back-end. The test is available for both Fil Pilote and Relay mode. To choose the correct mode, the D-Box must have been properly configured in the install app.

The test consists of the following steps:

1. Switch the heater ON.
2. Wait for it to consume a certain amount of energy during a certain time.
3. Switch the heater OFF.
4. Ensure if the heater stops consuming.
5. Repetition of steps 1 to 4.
6. Display of the result:

LED	Status
Off	Test not running or stopped.
Blinking Green	Test in progress.
Steady Green	Test completed successfully.
Steady Red	The test failed during a switch.
Blinking Red	The test failed while trying to keep the heater on or off.

7. Now the button must be pressed again to exit from the test.

If step 7 – exit the test by pressing again the button – is forgotten, the LED will continue to display the result status. In case this step was forgotten during the installation process, just press the button again. The test relies on a proper configuration of the Relay vs. Fil Pilote mode of the D-Box. For example, if the Heater features Fil Pilote, but the D-Box is set to Relay Mode, the test will complete successfully (but maybe the heater will beep or switch on and off). The other way around the test will fail.

Uninstalling

External voltage risk! An external voltage source can be connected to the K-Box relay terminals. Even if all the main counters are open/disconnected, there could still be high voltage on the relay terminal clamps coming from an auxiliary source (e.g., ripple control, UPS, generator, PV, emergency PSU). Before any handling verify that there is no voltage source wired to the K-Box.

Step 1	Remove power from the electrical panel.
Step 2	Remove power from any auxiliary circuit (e.g., ripple control, UPS, generator, PV, emergency PSU).
Step 3	Verify that there is no tension on the K-Box clamps.
Step 4	Remove the cover panel. Unwire and remove the device.
Step 5	Put the cover panel back. Ensure that no electrical contact can be touched.
Step 6	Power on the system.
Step 7	If the device remains property of <i>tiko Energy Solutions AG</i> or its authorized reseller, it must be returned. Otherwise, the ultimate disposal of a device shall be handled according to national laws and regulations.

Specifications

Device Characteristics	
Product Number	01.9004
Input / Output Voltage	3 x 230/400 VAC
Input / Output Current	max. 65 A
Input / Output Wire Specification*	2.5 mm ² – 25 mm ² (AWG 4 ~ 14)
Relay Switching Voltage	100 V – 240 V
Relay Switching Current	max. 10 A
Relay Wire Specifications	0.14 mm ² – 1.5 mm ² (AWG 16 ~ 26)
Frequency	50 Hz
Voltage of breaker before K-Box	max. 420 V (3 phases)
Current of breaker before K-Box	max. 65 A

Min. Measurable Current	0.1 A
Max. Measurable Current	65 A
Measurement Tolerance	± 1% @ 1 A – 65 A
User Interface	2 push buttons, 2 LEDs (green)
Connectivity	PLC HomePlug GreenPHY
Dimensions	106 x 92 x 70 mm
Weight	430 g
Max. Power Consumption	Relay activated: less than 2 W Relay deactivated: less than 1.5 W

A wire cross-section of 1.5 mm² / AWG 16 may be used as long as an appropriate boot-lace ferrule is properly crimped onto the wire.

	Operating Conditions	Storage Conditions
Temperature (min.)	-10 °C	-20 °C
Temperature (max.)	+55 °C	+70 °C
Relative Humidity	10% – 85% no condensation	5% – 95% no condensation
Maximum Altitude	2000 m	—

Obtaining the Declaration of Conformity

Intended Use

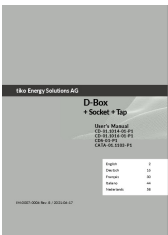
The K-Box is a custom three-phase energy meter with a remotely controlled switch to be only used in tiko Energy Solutions AG authorized setups.

Safety Information



tiko Energy Solutions AG Pflanzschulstrasse 7 CH-8004 Zürich info@tiko.energy

The product 01.9004 in the form as delivered conforms to the provisions of the following European directives: 2011/65/EU on hazardous substances, 2014/35/EU on low voltage devices, 2014/30/EU on electromagnetic compatibility, partially 2004/22/EU on measuring instruments. Furthermore, the product 01.9004 in the form as delivered conforms to the relevant notices of the following Australian/New Zealand acts as required by ACMA: Radiocommunications Act 1992, Telecommunications Act 1997. A copy of the declaration of conformity can be requested by writing to the postal address or is available on <http://um.tiko.energy/1014> or <http://um.tiko.energy/1016> respectively.

Documents / Resources

	<p>tiko CD-01.1014-01-P1 D-Box + Socket + Tap [pdf] User Manual CD-01.1014-01-P1, CD-01.1016-01-P1, CDS-01-P1, D-Box Socket Tap</p>
---	---

References

-  um.tiko.energy/1014
-  um.tiko.energy/1016

Manuals+.