

# Basic Installation Guide

(Rev.1.0)

Cash drawers Virtuos Flip top – FT-460Cx / EKN00xx (variety of color and equipment)

## • Warnings and Cautions

	1. Avoid metal contact with device connectors 2. Use the device outside the environment with flammable gases
	If the following situations occur, immediately shut down the host computer, unplug the device, and consult your nearest dealer. 1. Smoke, unusual odor or sounds coming from the device 2. Dropping the device with visible damage to the cover
	Never do the following: 1. Do not use the device in extremely humid places, or expose it to excessive temperature changes. 2. Do not use the device in extremely humid places, or expose it to excessive temperature changes. 3. Do not place the device in an oily or steamy environment such as kitchen, etc. 4. Do not leave the device without adequate ventilation, under the cloth, in any cover or package. 5. Do not insert foreign objects or pour water into the device openings. 6. Do not touch or carry this device with your hands wet. 7. Do not use anti-slip gloves containing plasticizers when working with this device. 8. Never use organic solvents such as gasoline, thinners, insecticides, etc. for cleaning. This could result in fire or electric shock. 9. Do not pull or unnecessarily bend the connecting cables or place heavy objects on them.
	Do not look into the light sources of the device and do not point the light source at the eyes of others. This may cause irreversible eye damage.
	Do not leave the device in unstable locations where there is a risk of falling and consequent danger of injuring people.
	Once damage to the power cord is detected, such as damage to the insulation, stop using the device immediately and contact your dealer. Fire or electric shock could occur.

## • Basic Information

This guide provides a brief overview of the information necessary to install the product. More detailed information about the product can be found at [www.virtuos.cz/download](http://www.virtuos.cz/download).

## • Features

- Mechanically resistant design with powder coated paint
- Robust plastic construction bill and coin tray with adjustable compartments for placement up to 6 banknotes side by side
- Internal removable tray can be supplied with a lockable cover (different key than the main drawer)
- Electronic control of drawer closing by microswitch
- **Universal connector Virtuos® RJ50 10p10c** allowing to connect any device to the cash drawer
- Electronic opening independent of voltage level 9 - 24 V
- Possibility of inserting checks and banknotes through the slot in the front bezel without opening

## • Specification

Compartments	6 x for bills 8 x for coins
Material	Cash Drawer - Steel Construction Tray - Durable Plastic
Key Lock	3 Positions (locked, electr. opening, opened)
Connector	<b>RJ50 10p10c</b> for external connecting cable
Closing check	Internal microswitch (opened = disconnect)
Recomm. pulse length	100 till 250 ms
Electrical parameters	Voltage 9V/12V/24V, current max. 1A ±10%
Interface	Unlimited – depends on external cable choosing; Cable RJ12 24V (P/N EKA0518) is included in the package by default
Drawer Dimensions	460 (W) × 100 (H) × 170 (D) mm
Package Dimensions	510 (W) × 140 (H) × 220 (D) mm
Weight	5 kg (w/o), 5.5 kg (w/package)
Ambient temperature	Operating 0 to 50°C, storage -20 to 70°C
Humidity	5 to 95% non-condensing
MTBF	More than 1,000,000 openings
EMI	Complies with CE

## • Package contents



Note: Keys are attached to the top part of the drawer in the plastic bad.  
\* Model EKN0008 / FT-460C1 does not include a lockable cover

## • Optional accessories

- EKN9001 – USB adaptor for cash drawer to USB port using virt. serial port
- EKN9002 – RS232 adaptor for cash drawer to serial port
- EKN9003 – another 6/8 plastic cash tray
- EKN9004 – additional cover with lock and keys for EKN9003 tray
- EKN9005 – spare lock for FT-460Vx cash drawer including two keys
- EKN9012 – steel construction tray with removable coin binders 6/8
- For complete spare parts (including bearings, springs, holders, dividers, locks, rubber feet etc.) search on [www.virtuos.cz](http://www.virtuos.cz).

## • Installation

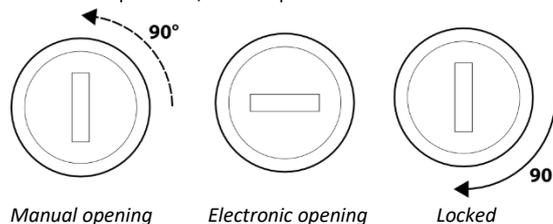
1. Turn off the device to which you will connect the cash drawer.
2. Insert matching external cable connector\* into **RJ-50 10P10C** socket on the back of the cash drawer.
3. Plug the second cable connector into the host device socket given for the connecting the drawer (printer, cash register...) or adaptor (USB, RS232).
4. Make the software settings of your system according to the supplier's instructions.



\* Cable RJ12 24V (P/N EKA0518) is included in the package, for another cable types, please, look below for an overview of external replaceable cables or look at [www.virtuos.cz](http://www.virtuos.cz)

## • Basic Lock Functions

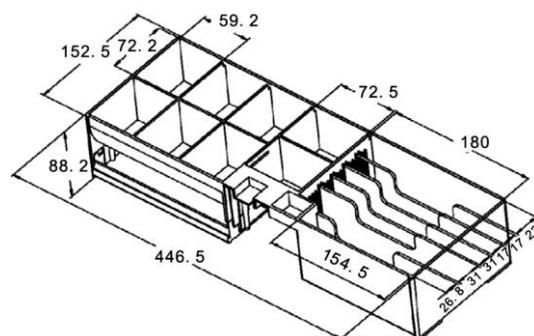
The lock has three positions, the first position 90° to the left returns.



**Caution:** To reduce the risk of key damage or breakage, do not leave the key in the lock during normal operation!

## • Cash and coin tray

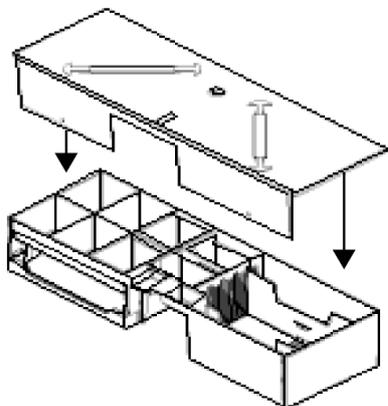
Tray dimensions in millimeters:



### • Lockable tray cover\*

The cash drawer also includes removable lockable cover for cash tray that allows the service to carry the cash away from tightly mounted drawer (after placing the cover on the top of the tray and locking it). It is advantageous to use multiple trays with covers for individual shifts or cashiers.

Placing the cover is done by slight sliding from the top to the bottom and then turning the key in the lock. Taking out the tray with cover is done by evenly pulling by the two plastic hitches at the right angle upwards. The cover can be handled as you please even outside the drawer, see picture:



Keep the cover out of the drawer during normal operation.

\* Model EKN0003 / FT-460V1 does not include a lockable cover.

### • Most common malfunctions and their elimination

#### 1. The drawer cannot be electronically opened

If you have everything set up correctly in the cash register system, you have checked the connection and the cable, the problem can be loosened RJ50 connector on the board inside the drawer or solenoid damaged by voltage overload. In this case the repair in Virtuos Service Centre is necessary.

#### 2. Lost or damaged key

There are limited number of key inserts for the drawers. There is no any universal key, it is always necessary to use the key and insert with the same number. If the drawer is locked, it is necessary to open it first. Either by force – by breaking the insert using flat screw driver and turning with it inside the lock and/or by picking it using, for example, a paper clip. The lock does not have any special security features, i.e. skillful user can open it this way. Please, remember then, the drawer IS NOT SAFE a do not leave it unsecured with having a lot of cash in it. After opening it you can replace the old lock for new one, please, see spare part on [www.virtuos.cz](http://www.virtuos.cz).

### • Basic summary of external replaceable cables

External replaceable cables connect the drawer to a host device (POS terminal, printer, cash register etc.). The cables vary according to the types of interfaces of the individual devices that they are meant for. The cable length is usually 1.1 m.

There is RJ12 24V cable (P/N EKA0518) included in the package. This cable is suitable for the most of the POS printers (see specification in the table below). Other cables can be purchased individually on demand.

Cable	P/N	Color	Recommended system
RJ12 24V	EKA0518	black	Most of the POS printers EPSON, Star, OKPRINT**, USB adaptor EKN9001, RS232 adaptor EKN9002
RJ12 24V*	EKA0511	black	
RJ12 9-12V	EKA05112	black	9-12V cash registers and printers
RJ45 12V	EKA0517	black	Euro 50, Euro mini Efox
RJ45 12V	EKA0520	black	Euro E100, E200, 150TE, Incotex
RJ10 24V	EKA05014	beige	Euro 500TX
RJ10 24V	EKA05114	black	
RJ10 12V	EKA0513	black	Euro 500T, 500TE, 2500
DB15 12V	EKA0514	black	Euro 1000/2000
Univer. w/o connector	EKA0521	black	For you own connection

\*Like EKA0518 – this is though old version of the cable suitable for the drawer C4x0A only!

\*\* Never mistake 24V cables for their 12V versions, this could lead to irreversible damage of the drawer or the printer!

If you do not find your system or printer in this table, please contact HOTLINE Virtuos, we will be pleased to advise you and possibly design and manufacture the required cable.

Thanks to the universal RJ50 10P10C Virtuos® connector, the cash drawer can be connected to any system by simply changing the cable, i.e. changing the system does not require replacing the entire drawer.

### • Basic programming commands and settings

The cash drawer can be electronically opened by sending an electrical pulse to the solenoid, which releases the opening mechanism and the drawer opens. To do so, you need a device or a computer port + control software. The drawer is usually opened directly by the cash register software and in the settings of these programs, the type of drawer and the type of its connection are selected and you do not have to worry about anything. Yet, let us give you some examples of how to do it:

#### 1. By cash drawer

The most common case of opening the drawer is opening it through a POS printer. The drawer is opened when the appropriate control command is sent to the printer. This command is different for each printer model and can be found in the printer's technical documentation. E.g. STAR printers use: <BEL> (07h); EPSON printers use: <ESC> "p" "0" "6" "6" (1Bh 70h 30h 36h 36h).

The printer can also monitor the state of the drawer, i.e. whether is opened or closed.

#### 2. By USB or RS232 interface

Another option is to use special additional adaptor, that you will place between the system and the drawer (connecting cable) and you plug it to the POS system (computer, tablet ...). Either directly to the RS232 serial port or USB port, which then will simulate the RS232 interface. You will open the drawer by sending any character directly to a given port. The drawer status, i.e. whether it is opened or close, can be read from serial port control characters. You will find more information in USER manuals of these adaptors.

#### 3. By cash register

Individual cash drawers have direct function of drawer opening. You only need to select the right cable and connect the drawer to the cash register. Then you should be able to open the drawer directly from the cash register keyboard, after the device prints the receipt or after account closing. In the list of external cables, you will find a complete range of cables needed for Euro cash registers. For other brands or types, the cable can be supplied upon request.

For detailed instructions with programming examples, visit [www.virtuos.cz](http://www.virtuos.cz) or contact HOTLINE Virtuos.

### • Maintenance

The moving drawer parts should be cleaned and lubricated regularly. The frequency depends on the usage and environment in which the socket is located. The typical recommended frequency is once every 3-6 months. Wipe the old grease and dirt off the inside and outside of the moving parts with a dry, lint-free cloth. Do not use water or other cleaning fluids. Use oil or grease to lubricate bearings. Grease other friction surfaces evenly several times with grease so that only a thin layer of lubricant is formed.