

## Описание

Интерфейс для контроля потребления и управления нагрузками ekinex® EK-CF2-TP устройство KNX конфигурации S-mode, которое может использоваться для:

- измерения текущего потребления тока в трех однофазных или одной трехфазной электрической цепи;
- приоритетного управления нагрузками.

Измерение текущего потребления осуществляется путем подключения до трех трансформаторов тока ekinex® EK-TA ... Контроль нагрузок осуществляется путем задания пороговых нагрузок, при которых устройство, подключенное к выходным каналам активаторов KNX, отключается соответственно его приоритету. Устройство питается от шины KNX (сверхнизкое напряжение 30 Vdc) и не требует подключения дополнительного питания.

## Функционал

Подключение трансформаторов тока EK-TA... через три физических входа

Возможность измерения до трех однофазных линий или 1 трех-фазной

Возможность получать значения мощности (Вт) от шины

8 порогов мощности (Вт) для стандартного применения (например, активация нагрузок, в зависимости от потребления)

4 логических функции (И, ИЛИ о XOR) с 4 входами

## Контроль потребления

• Непрямое измерение моментального тока (mA) посредством EK-TA... трансформаторов

Расчет моментальной мощности (Вт и кВт)

Расчет суммарной электроэнергии (кВт/ч)

Отправка по шине измеренных значений тока, мощности и энергии

## Управление нагрузками

Возможность независимого управления восьмью нагрузками для каждого измеряемого канала

Пороги мощности для управления нагрузками и соответствующим гистерезисом, задаваемым отдельно для каждого измеряемого канала

Отправка по шине сигнала о превышении установленного порога

Возможность выборочного исключения из шины нагрузок, которые контролируются

Время задержки (сек.) для деактивации нагрузки или повторной активации, устанавливаемой отдельно для каждого канала



**Внимание!** Функция управления нагрузками с заданием пороговых значений не может использоваться в приложениях для систем безопасности. Устройство ни в коем случае не может выполнять функцию защитных устройств, работающих в электрической распределительной цепи.

## Основные характеристики

Пластиковый корпус  
установка в монтажную коробку или на DIN-рейку при помощи установочного суппорта (в соответствии с EN 60715)

Уровень защиты IP20 (для установленного устройства)

По климатической классификации соответствует классу 3K5, по механической классификации - 3M2 (в соответствии EN 50491-2)

Уровень загрязнения окр. среды 2 (в соответствии с IEC 60664-1)

Масса 20 г

Размеры 43 x 43 x 16 мм (ШхВхГ)

## Техническая информация

Питание 30 Vdc от шины KNX

Потребляемый ток < 10 mA

## Условия эксплуатации

Диапазон рабочих температур: - 5 ... + 45°C

Температура хранения: - 25 ... + 55°C

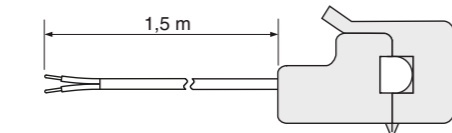
Температура транспортировки: - 25 ... + 70°C

Относительная влажность: 95% без конденсата

## Комплектующие

### Трансформаторы тока (CT)

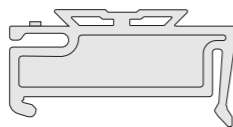
Для измерения текущей мощности устройство должно использоваться в комбинации с трансформаторами тока ekinex® EK-TA... (заказываются отдельно)



Current transformer code	Rated current [A]
EK-TA-05A	0...5
EK-TA-20A	0...20
EK-TA-30A	0...30
EK-TA-40A	0...40
EK-TA-50A	0...50
EK-TA-60A	0...60

### Rail-mounting support

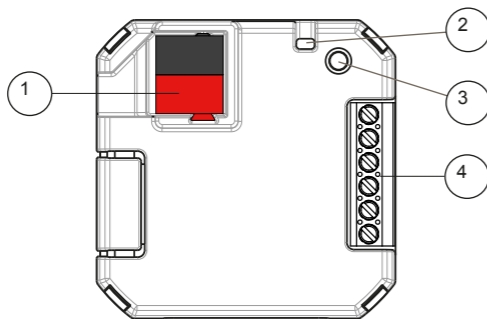
The device can be mounted on 35 mm rail (according to EN 60715) with the support EK-SMG-35 included in the delivery.



EK-SMG-35

## Switching, display and connection elements

The device is equipped with a programming LED and a programming pushbutton, a terminal block for connection of the KNX bus line and a terminal block for connection of current transformers.



- 1) Terminal block for KNX bus line
- 2) Programming LED
- 3) Programming pushbutton
- 4) 6-pole terminal block for connection of current transformers

### Elementi di comando e segnalazione

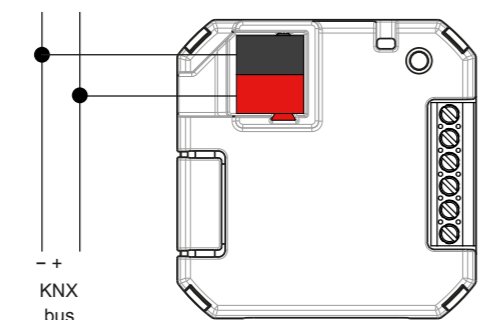
- pushbutton (3) for switching between the normal and programming operating modes
- red LED (2) for indication of the active operating mode (on = programming, off = normal operation)

### Connection elements

- KNX bus terminal block (1)
- 6-pole screw terminal block (4) for connection of current transformers

### Connection of the KNX bus line

The connection of the bus line is made with the KNX terminal block (1) included in delivery and inserted into the slot of the housing.



- +  
KNX  
bus

### Characteristics of the KNX terminal block

- spring clamping of conductors
- 4 seats for conductors for each polarity
- terminal suitable for KNX bus cable with single-wire conductors and diameter between 0.6 and 0.8 mm

- recommended wire stripping approx. 5 mm
- color codification: red = + (positive) bus conductor, black = - (negative) bus conductor



**Warning!** In order to supply the KNX bus lines use only KNX bus power supplies (e.g. ekinex EK-AB1-TP or EK-AG1-TP). The use of other power supplies can compromise the communication and damage the devices connected to the bus.

### Connection of current transformers

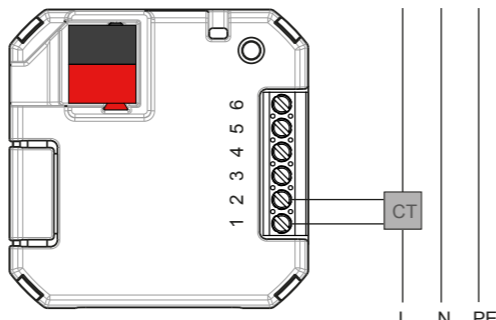
The current transformers (CT) are connected via the 6-pole screw terminal block (4) inserted in the housing located on the back of the device. The transformers are equipped with a two-wire connection cable (length: 1.5 m) with free terminals. For a correct operation the cable can not be extended.

### Characteristics of the terminals

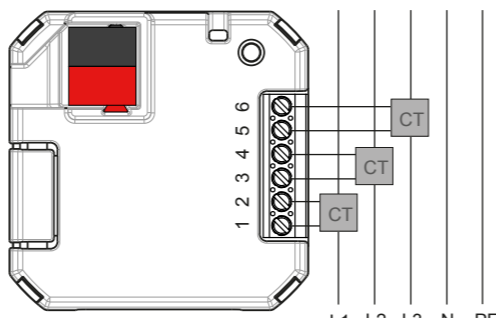
- screw clamping of conductors
- maximum cross section of conductor 1 mm<sup>2</sup>
- recommended wire stripping approx. 5 mm
- torque max 0.2 Nm



**Warning!** The inputs of the device are dedicated exclusively to the connection of ekinex current transformers EK-TA... Connecting other measuring devices or using them as generic inputs is not allowed.



Connection of a single-phase circuit



Connection of a three-phase circuit

Input	Terminal blocks	Connection
1	1-2	CT channel 1
2	3-4	CT channel 2
3	5-6	CT channel 3



**Note.** For very low current values below the minimum detection limit of the current transformers, the value of 0 mA can be transmitted on the bus, despite a current is flowing in the circuit. The minimum detection limit for each version is listed in the following table.

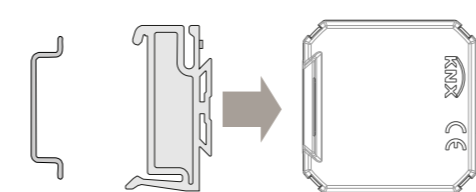
Transformer (CT)	Minimum detection limit [A]
EK-TA-05A	0,1
EK-TA-20A	0,4
EK-TA-30A	0,6
EK-TA-40A	0,8
EK-TA-50A	1,0
EK-TA-60A	1,2



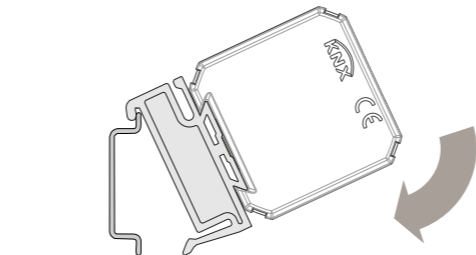
**Warning!** The electrical connection of the device can be carried out only by qualified personnel. The incorrect installation may result in electric shock or fire. Before making the electrical connections, make sure the power supply has been turned off.

## Mounting

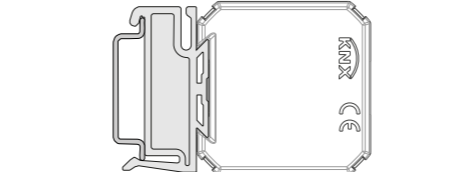
The device has degree of protection IP20, and is therefore suitable for use in dry interior rooms. The support EK-SMG-35 allows the mounting on 35 mm rail in boards or cabinets for electrical distribution.



a) Insert the mounting support into the appropriate shaped profile of the interface



b) Place the support clamping tooth on the top edge of the mounting rail and rotate device and support towards the guide until it completely engages



c) Once fastened, connect the bus line and the current transformers

## Configuration and commissioning

Configuration and commissioning of the device require the use of the ETS® (Engineering Tool Software) program V4 2.0 or later releases. These activities must be carried out according to the design of the building automation system done by a qualified planner.



**Note.** The configuration and commissioning of KNX devices require specialized skills. To acquire these skills, you should attend the workshops at KNX certified training centers.

### Configuration

For the configuration of the device parameters the corresponding application program or the whole ekinex® product database must be loaded in the ETS program. For detailed information on configuration options, refer to the application manual of the device available on the website www.ekinex.com.

Product code	Application software (## = release)	Comm. objects (max nr.)	Group addresses (max nr.)
EK-CF2-TP	APEKCF2TP##.knxprd	224	254

### Commissioning

For commissioning the device the following activities are required:

- make the electrical connections as described above;
- turn on the bus power supply;
- switch the device operation to the programming mode by pressing the programming pushbutton located on the front side of the housing. In this mode of operation, the programming LED is turned on;

- download into the device the physical address and the configuration with the ETS® program.

At the end of the download the operation of the device automatically returns to normal mode; in this mode the programming LED is turned off. Now the bus device is programmed and ready for use.

### Reset of the device

To reset the device remove the bus connection by extracting the bus terminal from its seat. Keeping pressed the programming pushbutton, reinsert the bus terminal in his seat; the programming LED blinks fast. Release the programming button and remove the bus terminal again; the reset was carried out. Now you need to address and configure again the device via ETS.



**Warning!** The reset restores the device back to the condition of delivery from the factory. The address and the value of the parameters set during configuration are lost.

### Marks

- KNX
- CE: the device complies with the Low Voltage Directive (2014/35/EU) and the Electromagnetic Compatibility Directive (2014/30/EU). Tests carried out according to EN 50491-5-1:2010 and EN 50491-5-2:2010

### Maintenance

The device is maintenance-free. To clean use a dry cloth. It must be avoided the use of solvents or other aggressive substances.

### Disposal



At the end of its useful life the product described in this datasheet is classified as waste from electronic equipment in accordance with the European Directive 2012/19/EU (WEEE recast), and cannot be disposed together with the municipal solid waste.



**Warning!** Incorrect disposal of this product may cause serious damage to the environment and human health. Please be informed about the correct disposal procedures for waste collecting and processing provided by local authorities.

### Warnings

- Installation, electrical connection, configuration and commissioning of the device can only be carried out by qualified personnel in compliance with the applicable technical standards and laws of the respective countries
- The use of the device in safety applications is not allowed. The device may however be used for auxiliary signaling functions
- Opening the housing of the device causes the immediate end of the warranty period
- In case of tampering, the compliance with the essential requirements of the applicable directives, for which the device has been certified, is no longer guaranteed
- ekinex® KNX defective devices must be returned to the manufacturer at the following address: SBS S.p.A. Via Novara 35, I-28010 Vaprio d'Agogna (NO) Italy

### Other information

- The instruction sheet must be delivered to the end customer with the project documentation
- For further information on the product, please contact the ekinex® technical support at the e-mail address: support@ekinex.com or visit the website www.ekinex.com

- Each ekinex® device has a unique serial number on the label. The serial number can be used by installers or system integrators for documentation purposes and has to be added in each communication addressed to the SBS technical support in case of malfunctioning of the device

- ekinex® is a registered trademark of SBS S.p.A.
- KNX® and ETS® are registered trademarks of KNX Association cvba, Brussels

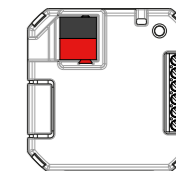
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# ekinex

Load monitoring and control interface Code: EK-CF2-TP



Instructions



EK-CF2-TP

ekinex is a registered brand of sbs

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FISPCF2TP  
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### Direct access to documentation

The QR code allows the direct access to the technical documentation using mobile devices (smart phones, tablets) with a standard QR code reader.

EK-CF2-TP