# SmartPDU-2U – MANUAL


ORDER-CODES:
KPMDU-RC-1600C13C19-2-16-H, KPMDU-NC-1600C13C19-1-16-H

DATA SHEET SmartPDU-2U

## KentixONE Operating mode

| SiteManager Operation | Stand-alone operation |
| --- | --- |
| | |

Further information on the operating mode

## Overview

The SmartPDU is optimized for power supply of end devices in data and network cabinets

with simultaneous power monitoring, consumption data logging and environmental monitoring and is typically mounted in a 19 inch rack. With the integrated PowerManager and MultiSensor, up to 100 SmartPDUs can be easily managed. The integrated PowerManager is network-compatible and is supplied with power via Power over Ethernet (PoE).

The SmartPDU can be operated as the main device (Main Device mode) or in a network (Satellite Device mode) with other SmartPDUs and other Kentix devices. The KentixONE software is already integrated via the integrated web server (HTTPS). Configuration is performed via web browser and, depending on the operating mode, locally on the SmartPDU itself (operating mode: Main Device) or on a central instance such as SiteManager or PowerManager (operating mode: Satellite Device).

With its small size of only 9 cm (two height units), the SmartPDU-2U is ideal for smaller server racks. Despite its small size, the SmartPDU delivers up to 4.6 kVA of output power, distributed across 16 C13 (IEC 60320-1) appliance outlets. The SmartPDU-2U is also available as a two-phase variant, so that electronic terminal devices are protected against possible failures by two separate power supplies. The two-phase SmartPDU is supplied with power via two C20 (IEC 60320-1) IEC sockets on the rear panel. The single-phase SmartPDU is supplied with power from the rear via a C20 IEC 60320-1 socket.

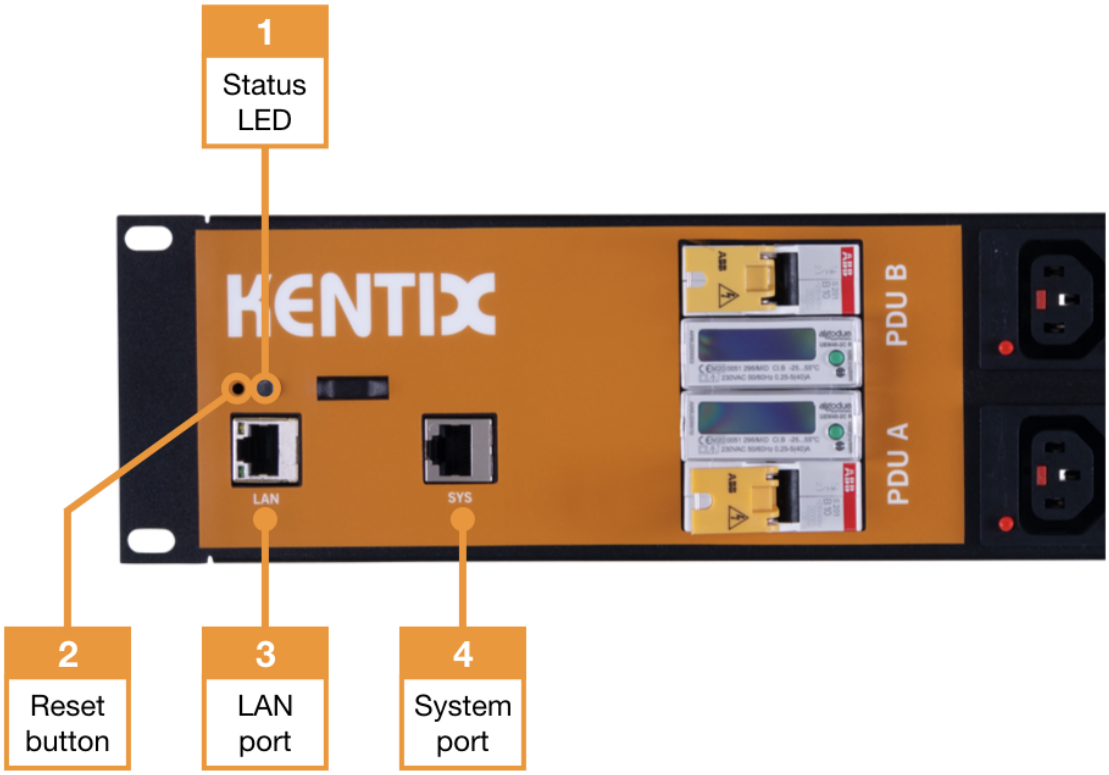
## Safety instructions

Installation
Installation and commissioning may only be carried out by trained specialist personnel in accordance with the instructions.
No modifications of any kind, other than those described in an appropriate manual, are permitted to Kentix GmbH products.
Certain levels of protection must be provided when installing Kentix equipment.
Observe the relevant regulations for installations in the respective environment.
Only operate the products within the defined temperature range.
The instructions should be passed on to the user by the person carrying out the installation.
Kentix accepts no liability for damage to the equipment or components resulting from incorrect installation. No liability is accepted for incorrectly programmed units.
Kentix shall not be liable in the event of malfunctions, damage to property or other damage.
Use of the products, transport and storage
Protect the device during transport, storage and operation from
Protect moisture, dirt and damage.
Battery powered products
Do not use products in potentially explosive atmospheres.
Only operate the products within the defined temperature range.
Installation and battery replacement may only be carried out by trained personnel in accordance with the instructions.
Do not charge, short circuit, open or heat batteries.
When inserting the batteries, pay attention to the correct polarity.
The devices must always be operated with the batteries intended for the product.

When changing batteries, always replace all batteries.
Dispose of old or used batteries properly.
Keep batteries out of the reach of children.
Maintenance
Kentix devices must be checked for functionality as part of annual maintenance.
Disposal
Electrical appliances and batteries must be disposed of separately from household waste.

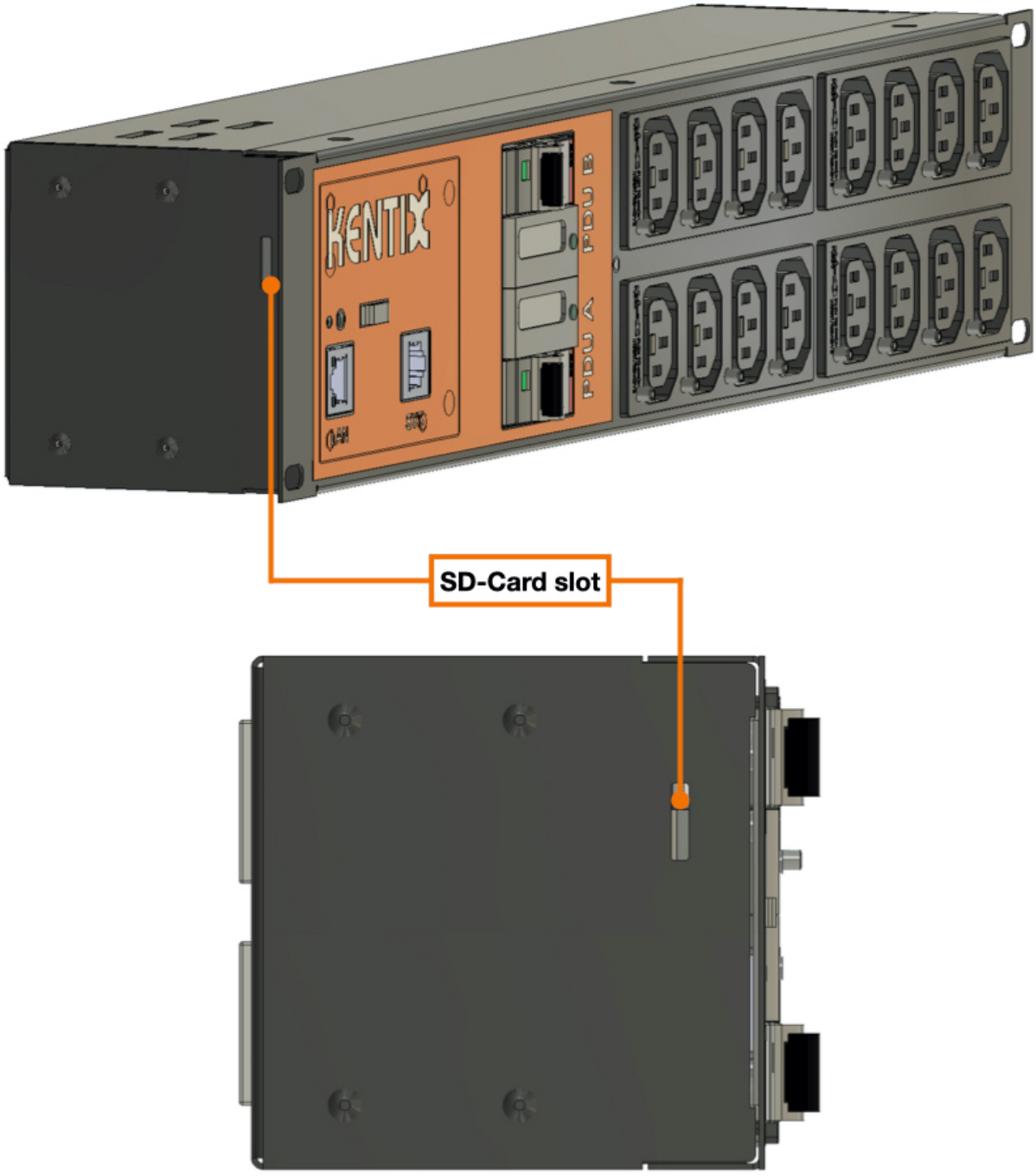
# Controls

## Front




1. Status LED:
   **GREEN:** POWER OK, no alarms pending
   **RED:** POWER OK, alarms pending
2. Reset button
3. Ethernet port with Power over Ethernet (100MBit, PoE Class 3)
4. Kentix system port (type B)

## Side view




SmartPDU-2HE SD card

1. MicroSD card slot

The SD card is required to perform a mass update or to save automatic data backups.

The MicroSD card must be inserted into the PDU in the removed state.

### Back


1. Serial number
2. Power supply via two C20 (IEC 60320-1) IEC sockets (two-phase version)

## SmartPDU-2U Variants

| Types | KPMDU-RC-1600C13C19-2-16-H | KPMDU-NC-1600C13C19-1-16-H |
|---|---|---|
| **Rated power, voltage** | 2x 2.3kVA, 230V | 1x 2.3kVA, 230V |
| **Connector plug** | 2x C20 IEC socket (16A) | 1x C20 IEC socket (16A) |

| | | |
|---|---|---|
| **Residual current measurement** | integrated AC/DC sensitive differential current measurement | / |

# Functionalities

## Cable fuse

Each SmartPDU is equipped exclusively with IEC lock device sockets. This prevents accidental disconnection of the connection cables on the PDU side. When using the appropriate IEC-Lock connection cables, accidental disconnection of the connection cables at the terminal device is prevented. The connection cables are available in black and red.

KPMDU-IL-C13C14-2/3-B (Schwarz)

KPMDU-IL-C13C14-2/3-R (Red)

**KPMDU-IL-C19C20-2/3-B** (Schwarz)

**KPMDU-IL-C19C20-2/3-R** (Red)

## Integrated residual current measurement (RCM): Testing according to DGUV V3

The two-phase SmartPDU-2U has an integrated residual current meter (RCM). This allows the plant inspection to be carried out in accordance with DGUV V3. This residual current measurement allows defective power supplies (server power supplies) to be detected at an early stage.

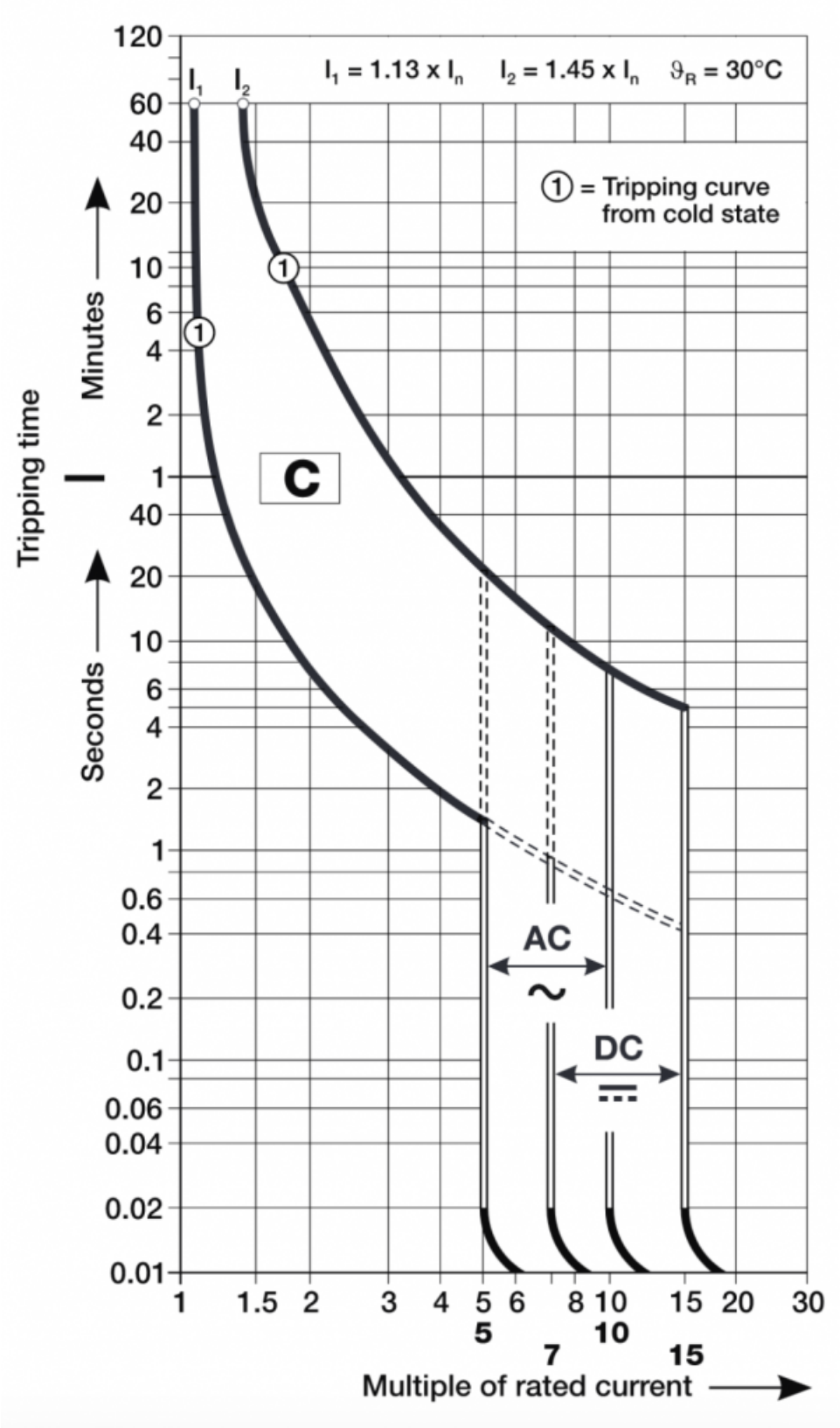
## Circuit breaker

The SmartPDU is equipped with 10A circuit breakers per segment. Both circuit breakers have type C tripping characteristics for increased inrush current. This ensures that in the event of a power failure and subsequent power recovery, the fuses are not immediately tripped by the inrush current when the connected terminal devices are started

simultaneously. The inrush current can therefore be 5 times the rated current for a short time. Details of the current curve can be taken from the following diagram.

*I1= Fixed non-tripping current at 30°C*

*I2= Fixed tripping current at 30°C*



Fuse characteristic with C-characteristic

## Factory settings

For initial configuration, use the IP address printed on the device or the address assigned via DHCP in a web browser (HTTPS). Please note the network settings of your connected PC.

The factory IP addresses at a glance:

| | |
|---|---|
| **SiteManager and AlarmManager** | 192.168.100.222 |
| **MultiSensor** | 192.168.100.223 |
| **AccessManager** | 192.168.100.224 |
| **PowerManager** | 192.168.100.225 |
| **SmartPDU** | 192.168.100.226 |
| **Leakage sensor** | 192.168.100.227 |

Factory IP addresses, subnet mask: 255.255.255.0

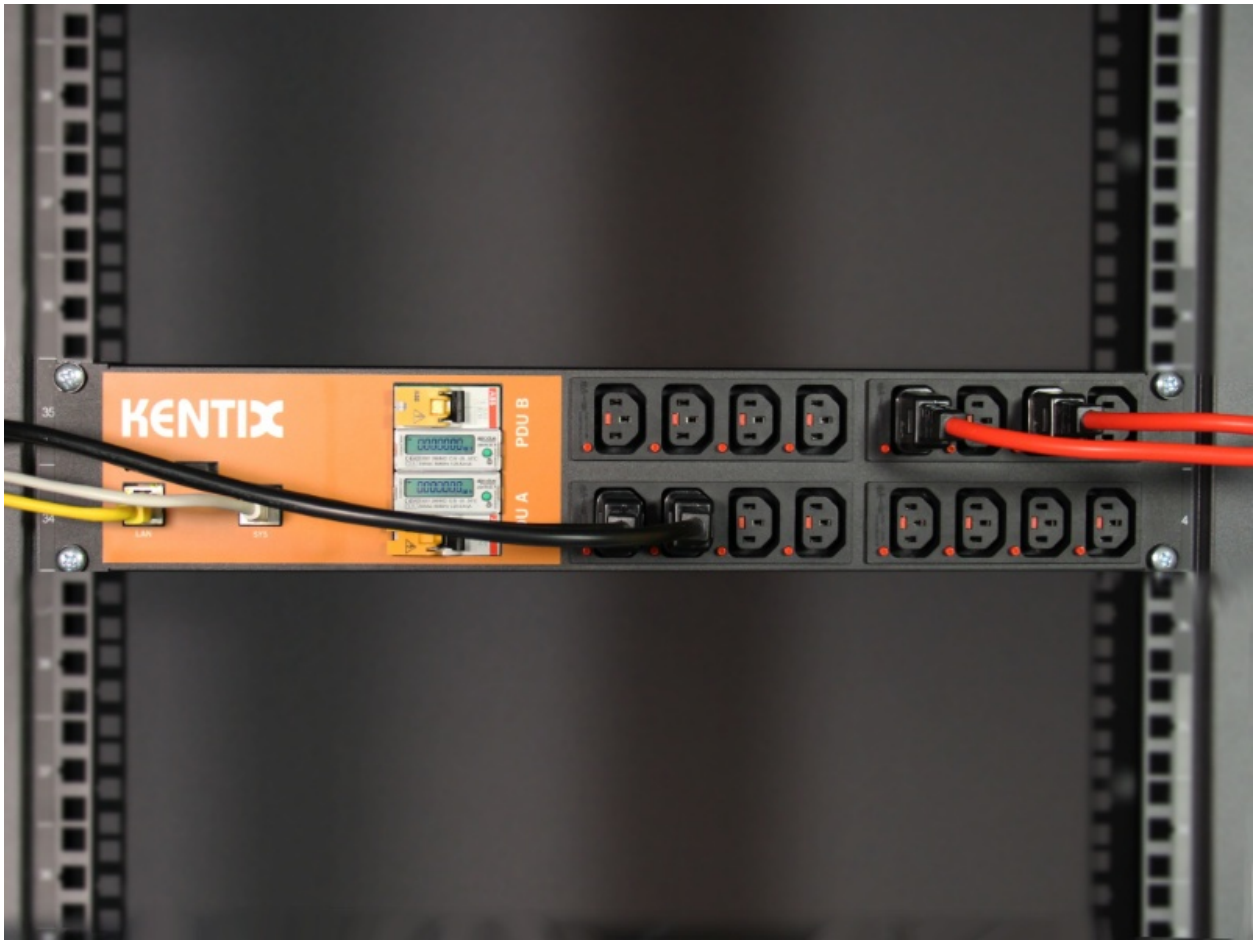
For devices with a firmware version lower than 8.x.x, the login data for the preset administrator account are: admin / password

## Reset to factory settings

1. Restart the device (disconnect and reconnect the power supply).
2. The status LED lights up briefly and then goes out.
3. As soon as the status LED lights up green continuously, press and hold the reset button for 15 seconds until the device emits an acoustic feedback.
4. The device loads the factory settings and performs a restart.
5. After approx. 2 minutes, the device can be reached with the factory settings.

**All existing settings and data will be irrevocably deleted !**
**We recommend regular backup of the system**.

## Assembly instructions



SmartPDU-2U Application example

The SmartPDU-2U is installed horizontally in a 19 inch rack. The SmartPDU requires two height units for installation. 4 cage nuts and the corresponding screws are used for fastening. These are not included in the scope of delivery.

## Calibration of the room temperature measurement

Kentix MultiSensors record all important environmental values of a room, including the room temperature. In order to achieve the most accurate temperature possible and to trigger an alarm if the room temperature exceeds the limit value, we recommend calibrating the temperature measurement at the final installation location. This is especially necessary for sensors with Ethernet (PoE) connection, since a certain intrinsic heat falsifies the measurement. For MultiSensors with radio and battery supply, the influence of the intrinsic heat is not present.

Kentix MultiSensors are not calibrated measuring devices, but alarm devices whose measuring accuracy is completely sufficient for reliable reporting and documentation of limit value violations.

However, in order to obtain a good measurement result with reproducible measured values in the event of an alarm, the MultiSensor should be calibrated to the respective installation location after installation. To do this, the temperature in the immediate vicinity (approx. 5-10 cm away) of the MultiSensor must be measured comparatively with a room thermometer that is as accurate as possible. If there is a deviation in temperature between the MultiSensor and the thermometer, the temperature value can be corrected. This is done by entering the determined temperature difference between the MultiSensor and the room thermometer as a correction offset in the KentixONE software. The correction also has a direct influence on the measurement of the relative humidity and on the dew point calculation of the MultiSensor.

| Step | Note |
|---|---|
| Install MultiSensor at the destination. | The position and orientation of the sensor should not be changed afterwards.<br>Please note the following:<br>– Mount with the X air opening facing downwards<br>– Do not mount in the air flow<br>– Ventilation vents of the sensor must be unobstructed |
| Perform configuration of the MultiSensor with Kentix ONE. | |
| At the earliest 30 minutes after commissioning<br>, adjust the temperature of the MultiSensor to the room temperature. | To do this, measure the temperature with an external reference thermometer in the immediate vicinity, approx. 5-10 cm from the MultiSensor. It should be noted that this thermometer also acclimatizes to the room and displays the correct room temperature only after a few minutes. |
| If a difference between the MultiSensor and the thermometer is detected, this can be entered in the “Offset” field in the KentixONE configuration of the MultiSensor. After saving, the sensor then provides the corrected measured value. | The offset can only be specified by whole degrees, i.e. without decimal places.<br>This results in an accuracy for the temperature of +/- 0.5 degrees. |

## Configuration with KentixONE

The device is configured via the web browser in KentixONE. The device must be accessible to the central KentixONE instance on the network side. Depending on the device type, a communication key and the IP address or DHCP name of the central KentixONE instance must also be set on the device (MultiSensors, AccessManager, SmartPDU). IP cameras or IO modules, on the other hand, can be integrated directly into KentixONE.

All information about the software can be found in the KentixONE section and the associated documentation.

Before starting the configuration, make sure that the software on all network-compatible Kentix devices is up-to-date. The version status must match on all devices.
**You can perform a software update for your KentixONE main instance and all connected satellites at any time via “System – Update”.**

Solutions to frequently asked questions about Kentix products can be found in the general FAQ section.