

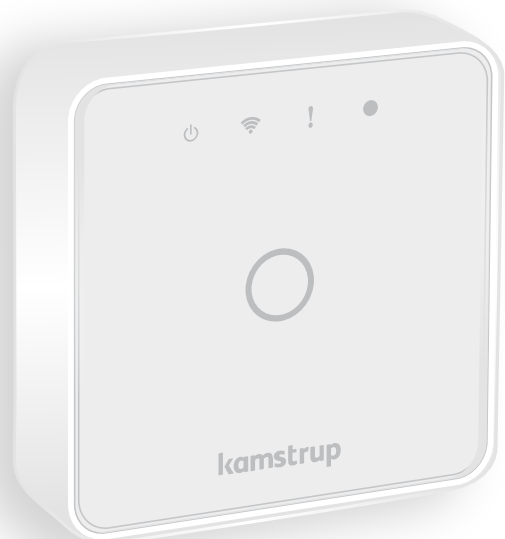
Installation and operation guide

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## **READy Mini Concentrator**

### **Warning!**

Read instructions before installation



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## Symbols used in this document

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Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in moderate injury, damage the product, or lead to loss of data.



Indicates a hazardous situation which, if not avoided, may seriously impact operations.

## Contents

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<b>1</b>	<b>Product introduction</b>	<b>5</b>
1.1	System overview	5
1.2	READY Mini Concentrator overview	6
1.3	Data security	6
1.4	Data transmission	6
1.5	Data persistence	6
<b>2</b>	<b>Before you begin</b>	<b>7</b>
2.1	Precautions	7
2.2	Register your device	8
2.3	SIM card and data subscription	9
2.3.1	Configuration	9
2.3.2	Data subscription	9
2.3.3	Disposal or decommissioning	9
<b>3</b>	<b>Installation and configuration</b>	<b>9</b>
3.1	Installation preconditions	9
3.2	Installation locations	10
3.2.1	Installation for priority data	10
3.2.2	Installation for hourly data	10
3.3	Installation of READY Mini Concentrator	10
3.3.1	Preconditions	10
3.3.2	Installation steps	11
3.4	Configuration of READY Mini Concentrator	11
3.4.1	Configuration	11
<b>4</b>	<b>Operation</b>	<b>15</b>
4.1	Normal operation	15
4.2	Decommissioning	15
4.3	Redeployment and configurations	15
<b>5</b>	<b>Maintenance and support</b>	<b>16</b>
5.1	Transport	16
5.2	Firmware updates	16
5.3	Log and additional settings	16
5.4	Kamstrup support	16
<b>6</b>	<b>Storage</b>	<b>17</b>
<b>7</b>	<b>Disposal</b>	<b>17</b>
7.1	Disposal by Kamstrup A/S	17
7.2	The customer sends for disposal	17
7.3	Disposal by the customer	17
<b>8</b>	<b>Troubleshooting and FAQ</b>	<b>18</b>
8.1	Installation	18
8.2	Operation	19
8.3	Maintenance	19
<b>9</b>	<b>Warranty</b>	<b>20</b>
<b>10</b>	<b>Markings</b>	<b>20</b>

## 1 Product introduction

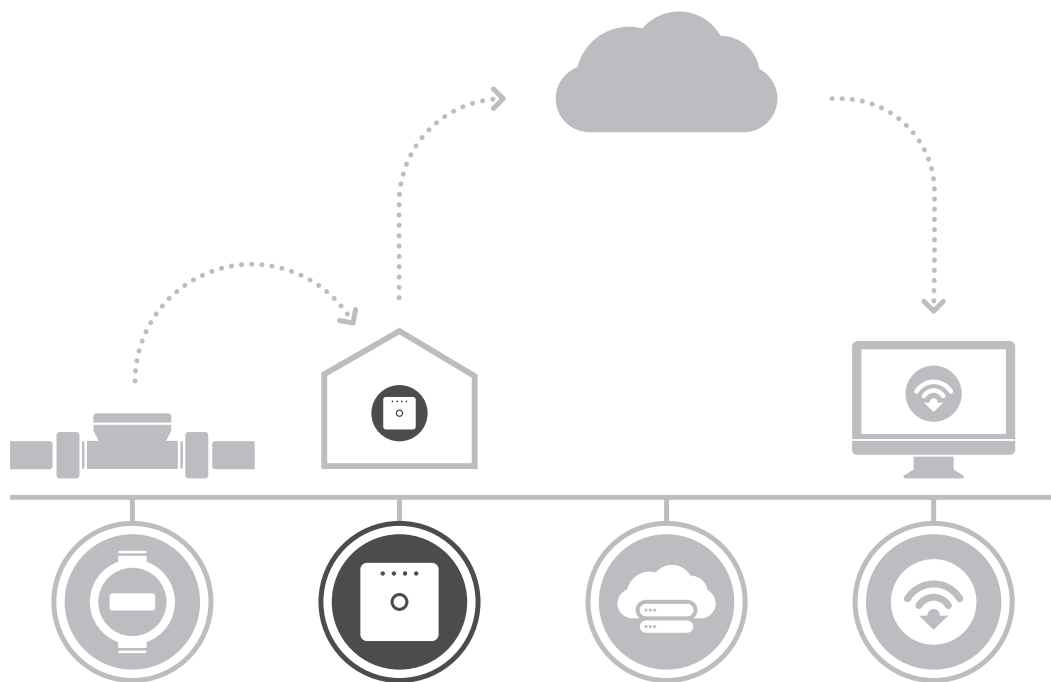
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REAdy Mini Concentrator is a small data collector that collects wireless M-Bus signals from smart energy and water meters or sensors and transmits the data via Ethernet, Wi-Fi cellular 4G connection to REAdy Manager. REAdy Mini Concentrator has a reach of approximately 40-60 m depending on the installation environment.

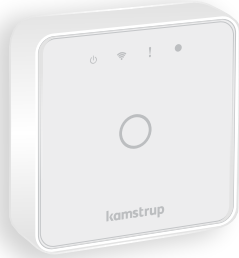

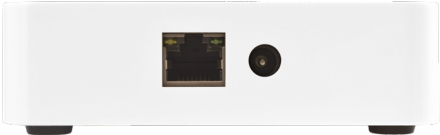
REAdy Mini Concentrator is available in two versions:

Description	Type number
Ethernet/Wi-Fi	6696-5000
Ethernet/Wi-Fi/Modem	6696-5300

### 1.1 System overview



### 1.2 READy Mini Concentrator overview

<p>At the front:</p> <ul style="list-style-type: none"> <li>• Button for turning on Wi-Fi</li> </ul>	
<p>At the back:</p> <ul style="list-style-type: none"> <li>• USB connection (not in use)</li> <li>• Pinhole for complete reset</li> <li>• Micro SIM card slot [1] 66965100</li> <li>• Micro SIM card slot [2] 66965300 under lid</li> <li>• Keyhole brackets</li> </ul>	
<p>At the bottom:</p> <ul style="list-style-type: none"> <li>• Ethernet connection</li> <li>• Power supply input. Power adapter AC/DC</li> </ul>	

READY Mini Concentrator features a power plug-in and Ethernet port on the back.

**At the front:** On the front side of READy Mini Concentrator, a button is available for turning on Wi-Fi on the device. This is used to configure a Wi-Fi connection from READy Mini Concentrator to an available Wi-Fi network.

**At the bottom:** At the bottom of READy Mini Concentrator, there is a USB connection, which has no functionality. The 6696-5300 version has a micro SIM card slot at the bottom. Two keyhole brackets are featured as well.

**Power adapter:** AC/DC Power Adapter

### 1.3 Data security

READY Mini Concentrator is part of the complete end-to-end data encryption in the READy Suite.

Data is AES 128 bit end-to-end encrypted from the meter to READy Manager, and READy Mini Concentrator only has the ability to forward data transparently.

### 1.4 Data transmission

READY Mini Concentrator forwards data depending on your READy Manager subscription. READy Manager subscriptions include:

1. Daily values
2. Hourly values (requires a READy licence with *hourly values*)
3. Priority data (requires the *Priority data* add-on in READy Manager)

### 1.5 Data persistence

In case of connection issues to READy Manager, daily and hourly data received by READy Mini Concentrator is persisted for 14 days. Priority data is persisted for the last hour.

## 2 Before you begin

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### 2.1 Precautions



The contents of this guide and the quick guide included with the device must be followed at all times when installing, configuring or handling the device in general. If these guides are not followed, Kamstrup cannot be held accountable for any malfunctions or misuse of the product.



The product may only be installed by trained personnel.



Do not remove the product labels as they contain important information.



Read the Kamstrup Wireless M-Bus radio network installation guide before installation.

**Notice**

The device must be registered in EKS before it can be imported into READy Manager.

When unpacking READy Mini Concentrator, ensure that all of the following are included:

- 1 x READy Mini Concentrator
- 1 x power adapter
- 1 x 1 m Ethernet cable
- 1 x quick installation guide

## 2.2 Register your device

Please register your READy Mini Concentrator in your My Kamstrup account in order to get the encryption key. Please follow these steps:

1. Log in to My Kamstrup and go to **Manage encryption keys**:



2. Go to **Register**:

A screenshot of a web interface. At the top, there are four buttons: "Transfer", "Read rights", "Download", and "Register". The "Register" button is highlighted in teal. Below the buttons is a modal window titled "REGISTER DEVICES" with a close button (X). The modal contains two input fields: "Serial number" with the placeholder text "E.g. KAM12345678" and "Device code" with the placeholder text "E.g. AO". Below these fields is a button labeled "Add to list".

3. Enter the serial number and device code to register READy Mini Concentrator in your My Kamstrup account, **remember to add KAM in front of the READy Mini Concentrator serial number**:

A screenshot of the "REGISTER DEVICES" modal window. The "Serial number" field now contains the text "KAM70515001" and the "Device code" field contains "CA". The "Add to list" button is now highlighted in teal.

## 2.3 SIM card and data subscription

If you have purchased READy Mini Concentrator 6696-5300 that includes the internal 4G-modem, a micro SIM card with an active subscription is required to send data.

### 2.3.1 Configuration

Kamstrup recommends the following SIM card configuration::

- APN = Internet
- No PIN code

If another configuration is used, SIM cards can be configured from the web interface on READy Mini Concentrator. See section 3.4.1.

If you want to remove the PIN code from the SIM card, it can be done with your phone:

1. Insert the SIM card in your phone
2. Go to settings and security to deactivate the SIM PIN code
3. Reboot the phone to check that the SIM card does not ask for a PIN code

### 2.3.2 Data subscription

A data subscription up to > 1 GB per month is recommended. Firmware upload may take up to 65 MB and is remotely initiated by Kamstrup.

### 2.3.3 Disposal or decommissioning

When disposing of/decommissioning the product, remember to cancel the data subscription associated with the SIM card.

## 3 Installation and configuration

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### 3.1 Installation preconditions



**Caution**

READy Mini Concentrator is designed to operate from 0 °C to 50 °C. Using the device outside the intended operating temperature may cause deterioration of lifetime or in worst case operating failure.



**Caution**

READy Mini Concentrator has an IP20 rating, please install it accordingly.



**Caution**

Only use the supplied power adapter: AC/DC Power Adapter.



**Caution**

If you have purchased READy Mini Concentrator model 6696-5300, please insert the SIM card before you power on the device.

**Notice**

If you have purchased READy Mini Concentrator model 6696-5300, ensure to remove the SIM PIN code before installing the SIM card in the device.

## 3.2 Installation locations

**Notice** READY Mini Concentrator can be installed both vertically and horizontally.

READY Mini Concentrator has a reach of approximately 40-60 m depending on the installation environment.

**Notice** Install READY Mini Concentrator as close to the meters as possible, however at least 50 m from the meters you intend to read.

READY Mini Concentrator can be installed both vertically and horizontally. It is designed to be installed indoors in residential or commercial environments either on public or private property. The device can be installed on a wall using the keyhole bracket at the bottom of the device or placed on a plain surface.

Consider aspects as reflection and absorption of radio signals when installing READY Mini Concentrator. Install READY Mini Concentrator up high to allow free radiation around the built-in antenna.



Figure 4 - READY Mini Concentrator orientation

### 3.2.1 Installation for priority data

To maintain a stable priority data reception from the meter to READY Mini Concentrator, install READY Mini Concentrator with line of sight to the meter, no more than 20 m away.

If READY Mini Concentrator does not have line of sight to the meter, the distance between READY Mini Concentrator and the meter should not exceed 10 m.

### 3.2.2 Installation for hourly data

Hourly data gives READY Mini Concentrator much longer time to collect and log data from the meter. This installation scenario is less demanding than the installation for priority data with 5-minute values. This means that you can install READY Mini Concentrator further away from the meter. Kamstrup advises you to check the signal quality of READY Mini Concentrator during commissioning on the installation website. If the signal bar is 1 or more, the installation is acceptable.

## 3.3 Installation of READY Mini Concentrator

### 3.3.1 Preconditions

**Required items:**

- READY Mini Concentrator
- Power adapter
- Optional SIM card for version 6696-5300
- 2 x screws for wall mounting (not included)

### 3.3.2 Installation steps

**Notice** Ensure that READy Mini Concentrator can read the intended meters at/near the final installation site before proceeding. See section 3.4 “Configuration of READy Mini Concentrator” for configuration.

**Notice** Install READy Mini Concentrator near a wall socket that cannot be switched off by accident.

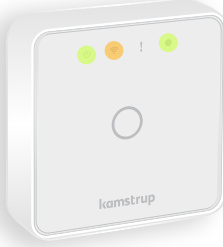
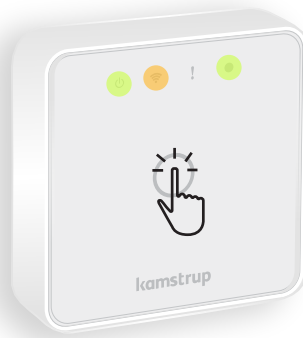
**Notice** For the best user experience with READy Mini Concentrator, ensure that the firmware has been updated to firmware 1.3.205 or newer. It is recommended to update the firmware via an Ethernet connection. See section 5.2 for further details.

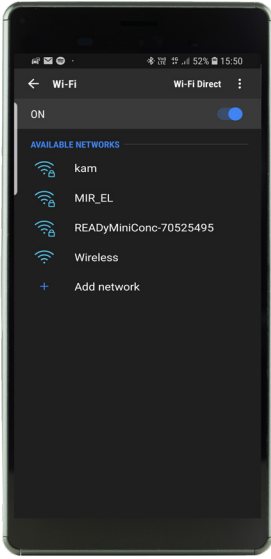

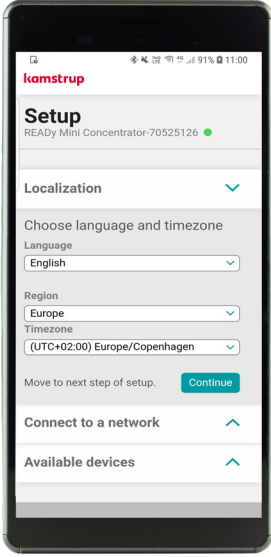
1. Unbox READy Mini Concentrator, the power adapter and the quick guide
2. Place READy Mini Concentrator on the intended installation site:
  - a. Install READy Mini Concentrator on a wall using the keyhole brackets at the bottom of the device
  - b. Place READy Mini Concentrator on a plain surface
3. If you have purchased the 6696-5300 version of the product, insert the SIM card before powering on the product
4. Insert the power adapter in a wall socket and READy Mini Concentrator
5. The installation is complete. Follow the configuration steps to ensure that READy Mini Concentrator can read the intended meters/sensors

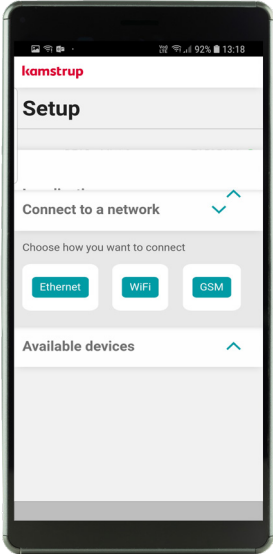
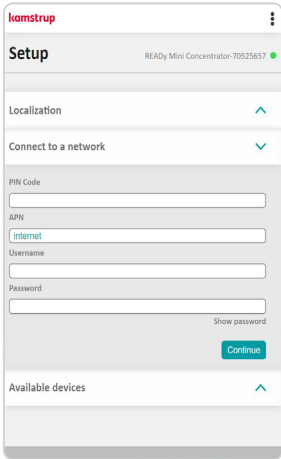
### 3.4 Configuration of READy Mini Concentrator

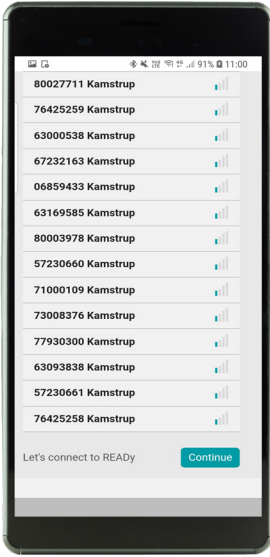
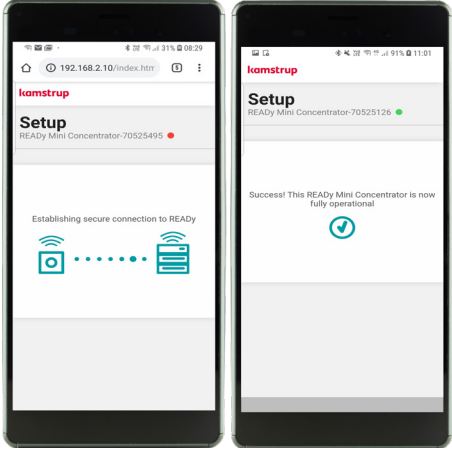
READy Mini Concentrator can connect to READy Manager via Ethernet, Wi-Fi or the optional modem connection.

#### 3.4.1 Configuration

<ol style="list-style-type: none"> <li>1. Connect the power adapter – all LEDs on the front turn on solidly for 30 seconds.</li> </ol>	
<ol style="list-style-type: none"> <li>2. When the power and dot LEDs are solidly on, the configuration can begin. This may take up to 5 minutes.</li> </ol>	
<ol style="list-style-type: none"> <li>3. Press the top button on READy Mini Concentrator (the Wi-Fi LED turns on solidly).</li> </ol>	

<p>4. Use your phone/tablet/computer to connect to the Wi-Fi SSID of READY Mini Concentrator.</p> <p>The Wi-Fi SSID posted by READY Mini Concentrator will present itself as READYMiniConc_ SERIAL where SERIAL is the serial number of your device.</p> <p>The Wi-Fi SSID posted by READY Mini Concentrator is active for 15 minutes. If the Wi-Fi timer runs out, press the top button again.</p>	
<p>5. Enter the 8-digit WLAN code found at the back of READY Mini Concentrator.</p>	
<p>6. Open a browser window and enter 192.168.2.10.</p> <p>6.1 Enter your language, region and time zone.</p> <p>6.2 Press <b>Continue</b>.</p>	

<p>7. Choose your connection method:</p> <ul style="list-style-type: none"> <li>• Ethernet/Wi-Fi 6696-5000</li> <li>• Ethernet/Wi-Fi/Modem 6696-5300</li> </ul>	 <p>The screenshot shows a smartphone screen with the 'kamstrup' logo at the top. Below the logo is the word 'Setup'. Underneath, there is a section titled 'Connect to a network' with a downward arrow. Below this, it says 'Choose how you want to connect' and lists three options: 'Ethernet', 'WiFi', and 'GSM', each in a blue button. At the bottom, there is a section titled 'Available devices' with an upward arrow.</p>
<p>8. Connect.</p> <p>8.1a <b>For Wi-Fi:</b> Choose the Wi-Fi that you want to connect to and enter the associated Wi-Fi password.</p> <p>8.1b <b>For Ethernet:</b> READY Mini Concentrator recognizes the connection and shows that it is connected.</p> <p>8.1c <b>For Modem:</b> If the SIM card is configured with APN internet and no PIN, press <b>Continue</b>. Otherwise please enter the SIM configuration before continuing.</p> <p>8.2 Press <b>Continue</b>.</p>	 <p>The screenshot shows a smartphone screen with the 'kamstrup' logo at the top. Below the logo is the word 'Setup' and the text 'READY Mini Concentrator-70525657'. Underneath, there is a section titled 'Localization' with an upward arrow. Below this, there is a section titled 'Connect to a network' with a downward arrow. Below this, there are four input fields: 'PIN Code', 'APN' (pre-filled with 'internet'), 'Username', and 'Password'. Below the 'Password' field, there is a 'Show password' link and a blue 'Continue' button. At the bottom, there is a section titled 'Available devices' with an upward arrow.</p>

<p>9. Ensure that the meter(s)/sensor(s) that you intend to read is/are shown on the list and that the signal strength is acceptable (minimum 1 bar).</p> <p>9.1 Press <b>Continue</b>.</p>	 <p>The image shows a smartphone screen displaying a list of 14 Kamstrup meters. Each entry includes a unique meter ID and a signal strength indicator consisting of three vertical bars. At the bottom of the list, there is a text prompt "Let's connect to READy" and a green "Continue" button.</p>
<p>10. READy Mini Concentrator connects to READy Manager, and the configuration is now complete.</p>	 <p>The image shows two smartphone screens side-by-side. The left screen displays the "Setup" page for a READy Mini Concentrator (ID: 70525495). It shows a progress bar and the text "Establishing secure connection to READy" with a Wi-Fi icon and a server icon connected by a dotted line. The right screen displays the "Setup" page for a READy Mini Concentrator (ID: 70525126), showing a green checkmark and the text "Success! This READy Mini Concentrator is now fully operational".</p>

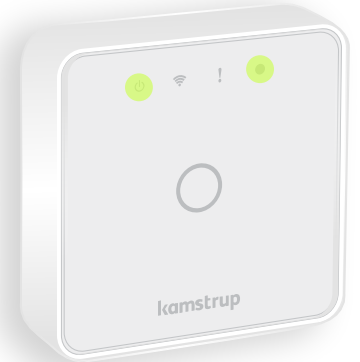
## 4 Operation

### 4.1 Normal operation

When REAdy Mini Concentrator is in normal operation, the power and dot LEDs are on solidly. Data is sent according to your REAdy Manager subscription, and REAdy Mini Concentrator automatically changes the transmission scheme if your REAdy subscription or settings change.

If the power supply is disconnected or interrupted and connected later, the device automatically connects to REAdy Manager again – there is no need for reconfiguration.

If the exclamation mark LED blinks red, REAdy Mini Concentrator has lost connection to the Internet. Reconfigure REAdy Mini Concentrator through the WLAN interface.



LED	Meaning
Power LED blinks	Booting
Power LED is continuously on	Boot complete
Dot LED is continuously on	Application is running
! LED blinks	No internet connection
WiFi LED on	Connectable via WLAN to web

### 4.2 Decommissioning



**Caution**

If the product is decommissioned for disposal, see section 7 'Disposal'.

If REAdy Mini Concentrator is to be decommissioned, simply unplug the power supply. REAdy Mini Concentrator will immediately stop sending data to REAdy Manager and is ready to be installed at a new location or disposed of.

### 4.3 Redeployment and configurations

For redeployment of REAdy Mini Concentrator, follow the installation and configuration steps in section 2.2.

## 5 Maintenance and support

READY Mini Concentrator does not require any maintenance other than cleaning.

### 5.1 Transport

When unplugged, READY Mini Concentrator is ready to be transported. If possible, use the standard packaging when transporting READY Mini Concentrator.

### 5.2 Firmware updates

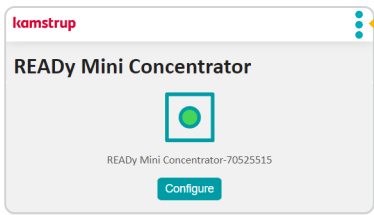
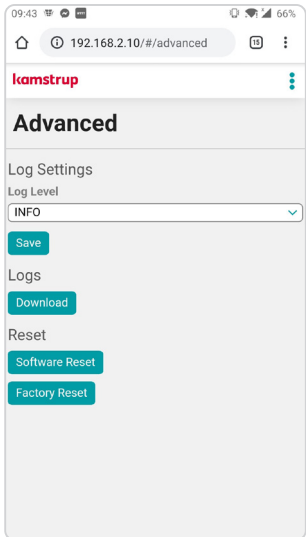
READY Mini Concentrator supports FOTA and automatically updates its firmware if necessary. Firmware is pushed directly to the device from Kamstrup.

For the best user experience, it is recommended to ensure that the device is updated to firmware version 1.3.205 or higher.

- You can check the firmware version in the Infrastructure section in READY Manager
- READY Mini Concentrator checks for new firmware around 11:00 and 23:00 every day
- It is recommended to use an Internet connection without extended firewall restrictions until the device has been updated
- An Ethernet/LAN connection is recommended for the fastest firmware update time
- If using the modem connection, it may take 24-48 hours for the firmware update to complete

### 5.3 Log and additional settings

In case additional settings or logs are required from READY Mini Concentrator, the Advanced menu is found in the top right corner of the web interface.

<p>Press the 3 dots in the top right corner.</p>	
<p>From the Advanced menu, you can:</p> <ul style="list-style-type: none"><li>• Download the internal log</li><li>• Set log info level if instructed to by Kamstrup</li><li>• Software or factory reset READY Mini Concentrator</li></ul>	

### 5.4 Kamstrup support

Hotline: +45 8993 1110  
Email: [supportdesk@kamstrup.com](mailto:supportdesk@kamstrup.com)  
Support site: <https://support.kamstrup.dk>

## 6 Storage

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READy Mini Concentrator must be stored under the following conditions:

- IP class 20
- Relative humidity: 5 % - 85 %, non-condensing
- Recommended storage temperature: 15 °C to 30 °C

## 7 Disposal

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Dispose of the product correctly.



When disposing of the product, remember to cancel the data subscription associated with the SIM card.

Kamstrup A/S holds an environmental certification according to ISO 14001 and as part of our environmental policy, we use materials that can be disposed of in an environmentally sustainable manner to the greatest extent possible. Ensure correct disposal of all parts of the device. The enclosure must be disassembled to dispose of the batteries, electronics and enclosure correctly.

### 7.1 Disposal by Kamstrup A/S

Kamstrup A/S accepts READy Mini Concentrator by the end of operation for environmentally correct disposal according to previous agreement. The disposal is free of charge to the customer, except for the cost of transportation to Kamstrup A/S.

### 7.2 The customer sends for disposal

Hand in the complete READy Mini Concentrator for approved national/local disposal. Enclose a copy of this page to inform the recipient of the contents.

### 7.3 Disposal by the customer

For disposal of READy Mini Concentrator, see table below.

Any questions about environmental conditions can be directed to:

Kamstrup A/S

Att.: Miljø- og kvalitetsafd.

Fax.: +45 89 93 10 01

[info@kamstrup.dk](mailto:info@kamstrup.dk)

Topic	Material information	Recommended disposal
Printed circuit board	Coppered epoxy laminate, components soldered on	PCB scrap for metal recovery
Plastic enclosure	PPS	Plastic recovery
Power adapter		Electronic waste
Cardboard packaging		Cardboard recycling
Plastic insert in packaging	PPS	Plastic recovery

Table 1 - Disposal table

## 8 Troubleshooting and FAQ

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### 8.1 Installation

**Q: Where should I install READy Mini Concentrator?**

**A:** As close to or in the vicinity of the meters/sensors that you intend to read data from. The maximum reach is 40-60 m depending on the building and obstacles to the radio signal.

**Q: Should READy Mini Concentrator be installed vertically or horizontally?**

**A:** The orientation of READy Mini Concentrator does not matter.

**Q: Where and how do I download the encryption key for READy Mini Concentrator?**

**A:** Register READy Mini Concentrator in your My Kamstrup account in Encryption Key Service using the serial number and the two-letter device code, e.g.: 70525001/CA. Remember to add KAM in front of the serial number when registering the device.

The device will now be available to download and import into READy Manager.

**Q: The meters that I want to read are not seen in the on-screen configuration, what can I do?**

**A:** Make sure that the meter/sensor radio is on. Depending on the meter configuration, it can take up to 96 seconds to receive a data package.

Move closer to the meter that you want to receive data from – depending on the building and potential obstacles to the radio signal, the range of reception may be limited.

**Q: READy Mini Concentrator did not successfully connect to READy Manager, what can I do?**

**A: Ethernet:** Make sure that the router, which READy Mini Concentrator is connected to, has a working Internet connection.

Make sure that no firewall is blocking the communication on HTTPS port 443. If the issue persists, check the Internet connection with a phone/tablet/computer. If there is no Internet connection, contact your Internet service provider.

**Wi-Fi:** Make sure that you enter the correct Wi-Fi password for the specific Wi-Fi that you want READy Mini Concentrator to use. Also, ensure that the router has a working Internet connection.

Make sure that no firewall is blocking the communication on HTTPS port 443. If the issue persists, check the Internet connection with a phone/tablet/computer. If there is no Internet connection, contact your Internet service provider.

**Modem:** Make sure that the SIM card is configured correctly.

**Q: READy Mini Concentrator is not responding, what can I do?**

**A:** Insert a pin in the small hole at the bottom of READy Mini Concentrator until the power LED starts flashing. READy Mini Concentrator will factory reset. Set up READy Mini Concentrator again.

## 8.2 Operation

**Q: I do not receive data from READY Mini Concentrator in READY Manager, what can I do?**

**A:** Go to [check.kamstrup.com](https://check.kamstrup.com) and make sure that READY Mini Concentrator can be read.

If READY Mini Concentrator can be seen on [check.kamstrup.com](https://check.kamstrup.com), make sure that you have imported READY Mini Concentrator and the meters that you want to read into READY Manager.

If READY Mini Concentrator cannot be seen on [check.kamstrup.com](https://check.kamstrup.com), the device may not have Internet connection. Simply try to reboot the device. If the issue persists, go through the configuration of READY Mini Concentrator.

**Q: How do I import READY Mini Concentrator?**

**A:** READY Mini Concentrator is imported into READY Manager like any other READY infrastructure device by automatic import from Encryption Key Service on My Kamstrup or manual KEM file import.

**Q: Can I change the connection method of READY Mini Concentrator?**

**A:** Yes. Simply go through the web interface configuration again. If changing from a modem connection to either Wi-Fi or Ethernet, remember to disconnect the SIM card.

**Q: Do I have to pair the devices that I want to read data from with READY Mini Concentrator?**

**A:** No. READY Mini Concentrator will automatically read your devices once they are imported into READY Manager.

If you add more devices near READY Mini Concentrator in the future, simply import the devices into READY Manager and they will automatically be read.

**Q: READY Mini Concentrator is not responding, what can I do?**

**A:** Insert a pin in the small hole at the bottom of READY Mini Concentrator until the power LED starts flashing. READY Mini Concentrator will factory reset. Set up READY Mini Concentrator again.

**Q: The exclamation mark LED is blinking on READY Mini Concentrator, what does this mean?**

**A:** READY Mini Concentrator has lost its connection to READY Manager. Ensure that the device has a working Internet connection.

## 8.3 Maintenance

**Q: Do I have to update READY Mini Concentrator?**

**A:** No. READY Mini Concentrator supports FOTA and will automatically update its firmware if necessary.

## 9 Warranty

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Kamstrup standard product warranty:

- 2 years starting from the delivery date
- Covers defects in workmanship and mechanical errors
- In case of any errors covered by the standard warranty, the product is repaired or replaced free of charge
- The warranty also covers all product components including consumables

For extended warranty, please contact Kamstrup support:

Hotline: +45 8993 1110

Email: [supportdesk@kamstrup.com](mailto:supportdesk@kamstrup.com)

Support site: <https://support.kamstrup.dk>

## 10 Markings

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### 10.1 Markings

Radio Equipment Directive (RED) 2014/53/EU

### 10.2 CE

- EN 300 220-1 V3.1.1
- Draft EN 300 220-2 V3.2.0
- EN 301 511 V12.5.1 [2017-03]
- EN 301 908-1 V11.1.1 [2016-07]
- EN 301 908-2 V11.1.2 [2017-08]
  
- EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013
- EN 62311: 2008
  
- Draft EN 301 489-1 V2.2.0
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- Final draft ETSI EN 301 489-3 V2.1.1
- Draft EN 301 489-52 V1.1.0
- Draft EN 301 489-17 V3.2.0

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