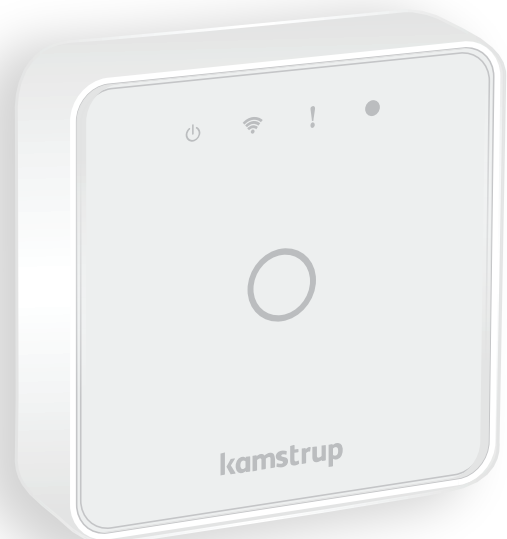


Installation and operation guide

READy Mini Concentrator

Warning!

Read instructions before installation



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Symbols used in this document



Warning

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



Caution

Indicates a situation, which, if not avoided, could result in damage to equipment, mild injury or loss of data.



Note

Important information, e.g. preconditions or necessary steps before proceeding, etc.

Warnings in this document

Warnings:



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.

Cautions:



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.



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.



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



Only use the supplied power adapter: AC/DC Power Adapter SMP0088B050200.



If you have purchased READY Mini Concentrator model 6696-5100, please insert the SIM card before you power on the device.



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



READY Mini Concentrator must be stored within the following conditions.



Dispose of the product correctly.



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

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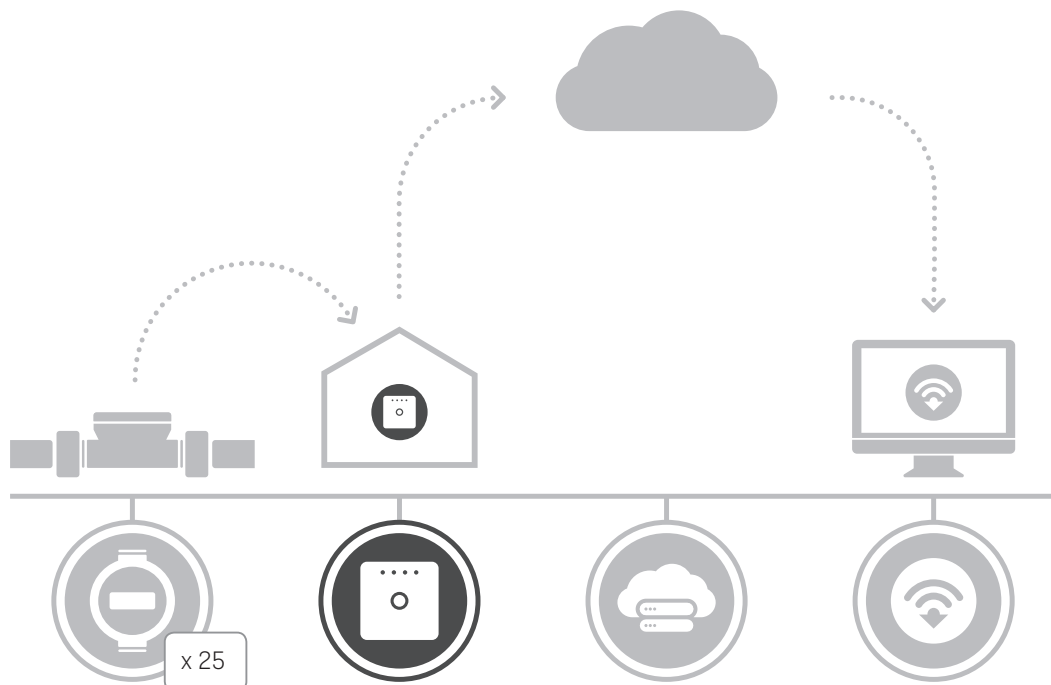
1 Product introduction

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 2G 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/GSM	6696-5100

1.1 System overview



1.2 READy Mini Concentrator overview

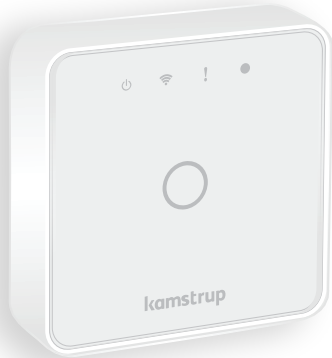


Figure 1 - READy Mini Concentrator front view



Figure 2 - READy Mini Concentrator back view



Figure 3 - READy Mini Concentrator bottom view

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 GSM version (6696-5100) has a micro SIM card slot at the bottom. Two keyhole brackets are featured as well.

Power adapter: AC/DC Power Adapter SMP0088B050200

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 license 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

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



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

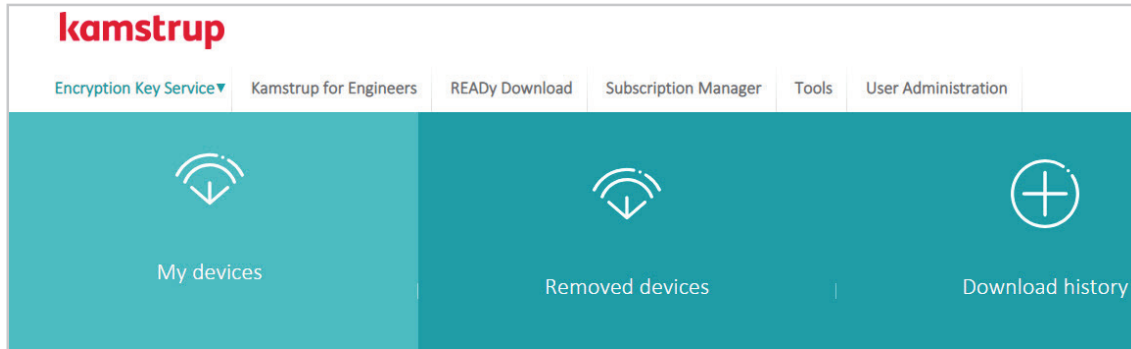
When unpacking READy Mini Concentrator, ensure that all of the following are included:

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

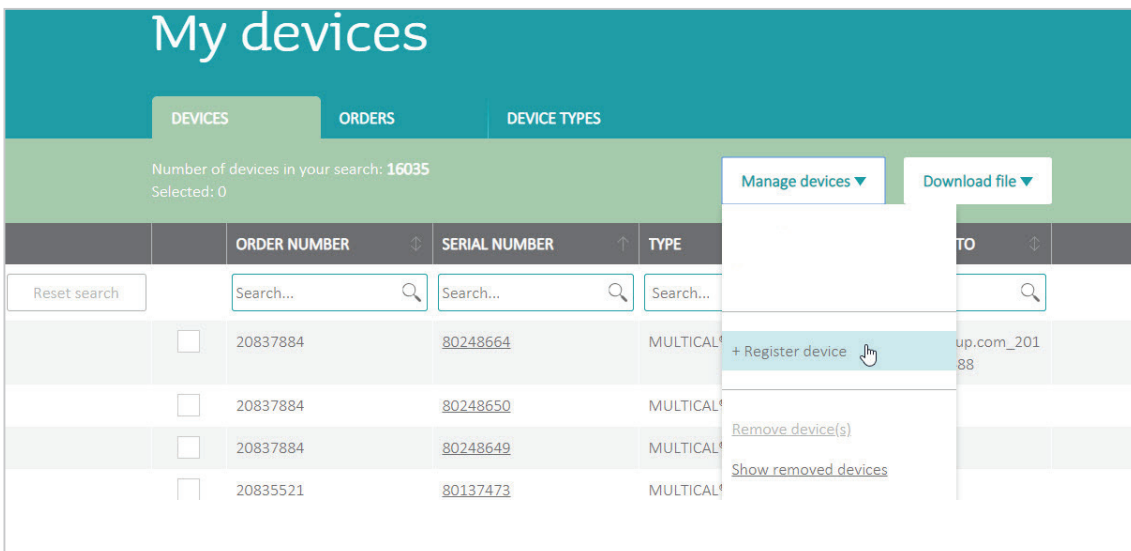
2.2 Register your device

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

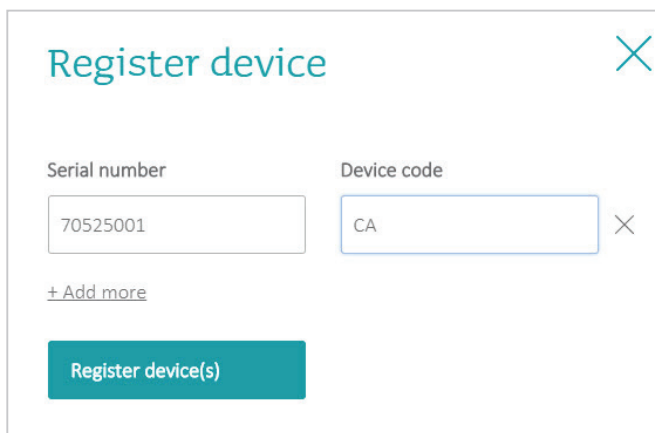
1. Log in to My Kamstrup and go to Encryption Key Service:



2. Go to Manage devices and Register device:



3. Enter the serial number and device code to register READY Mini Concentrator in your My Kamstrup account:



2.3 SIM card and data subscription

If you have purchased READy Mini Concentrator 6696-5100 that includes the 2G GSM modem, a micro SIM card with an active subscription is required to send data.

2.3.1 Configuration

The SIM card needs the following configuration:

- APN = Internet
- No PIN code

If the SIM card is not PIN code free, the PIN code can be removed from the SIM card by using 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

The data subscription can be determined from the following data usage table for READy Mini Concentrator. Firmware upload may take up to 55 MB and is remotely initiated by Kamstrup.






	Normal	Priority data
1 meter	0.25 MB/month	8 MB/month
10 meters	2 MB/month	80 MB/month
25 meters	5 MB/month	200 MB/month

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

3.1 Installation preconditions

-  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.
-  READy Mini Concentrator has an IP20 rating, please install it accordingly.
-  Only use the supplied power adapter: AC/DC Power Adapter SMP0088B050200.
-  If you have purchased READy Mini Concentrator model 6696-5100, please insert the SIM card before you power on the device.
-  If you have purchased READy Mini Concentrator model 6696-5100, ensure to remove the SIM PIN code before installing the SIM card in the device.

3.2 Installation locations

- ! READY Mini Concentrator can be installed both vertically and horizontally.
- ! READY Mini Concentrator has a reach off approximately 40-60 m depending on the installation environment. Install READY Mini Concentrator as close to the meters as possible, however at least 50 cm 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 GSM version 6696-5100
- 2 x screws for wall mounting (not included)

3.3.2 Installation steps



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.



Install READY Mini Concentrator near a wall socket that cannot be switched off by accident.

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 GSM [6696-5100] 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 GSM connection. Follow the instructions for each connection method.

READY Mini Concentrator has 2 different configuration scenarios:



1. Installation within 20 m of the meters that you intend to read. See section 3.4.1 for further information.



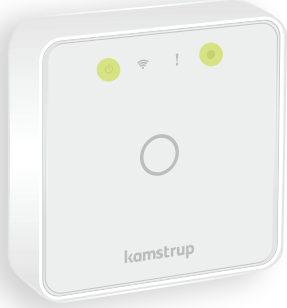
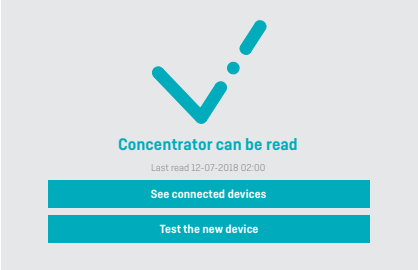
2. Installation more than 20 m away from the meters that you intend to read. See section 3.4.2 for further information.

Requirements:

- READY Mini Concentrator is placed on the final installation site and powered on
- Inserted SIM card for model 6696-5100
- An Ethernet connection or a Wi-Fi network
- A computer or phone for configuration

3.4.1 Configuration within 20 m of the meters that you intend to read

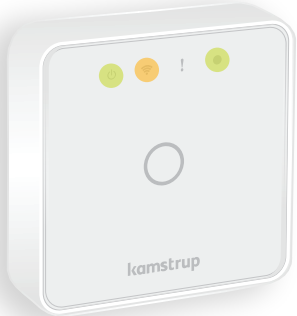
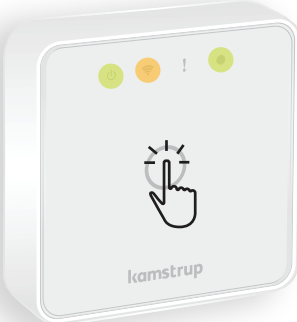
3.4.1.1 For Ethernet and GSM

<ol style="list-style-type: none"> 1. Insert SIM card or Ethernet cable. 2. Connect the power adapter – all LEDs on the front turn on solidly for 30 seconds. 3. The power LED blinks for 4-5 minutes. When the power and dot LEDs are solidly on, the installation is complete. 	
<ol style="list-style-type: none"> 4. Ensure that you can see READY Mini Concentrator on check.kamstrup.com. Note the time of the reading. 	

3.4.1.2 For Wi-Fi installation

See the configuration steps for installations where the READY Mini Concentrator is more than 20 m away from the meter(s)/sensor(s) that you intend to read. See section 3.4.2 for further information.

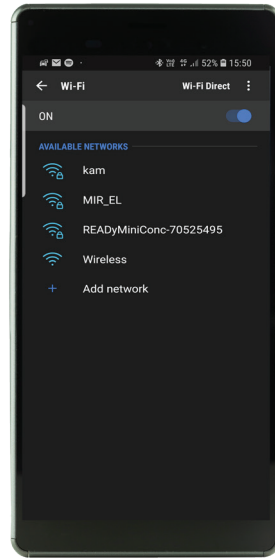
3.4.2 Configuration more than 20 m from the meters that you intend to read

<ol style="list-style-type: none"> 1. When the power and dot LEDs are solidly on, the configuration can begin. This may take up to 5 minutes. 	
<ol style="list-style-type: none"> 2. Press the top button on READY Mini Concentrator (the Wi-Fi LED turns on solidly). 	

3. Use your phone/tablet/computer to connect to the Wi-Fi SSID of READy Mini Concentrator.

The Wi-Fi SSID posted by READy Mini Concentrator will present itself as READyMiniConc_ SERIAL where SERIAL is the serial number of your device.

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.



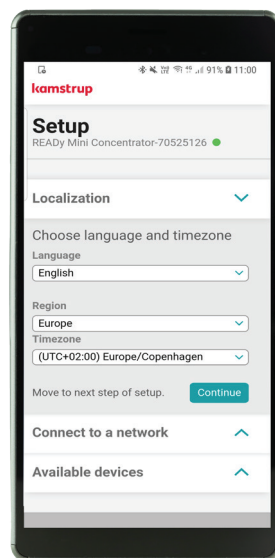
4. Enter the 8-digit WLAN code found at the bottom of READy Mini Concentrator.

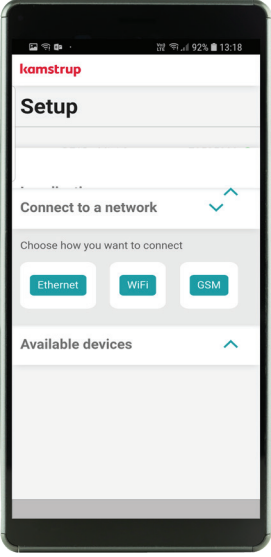
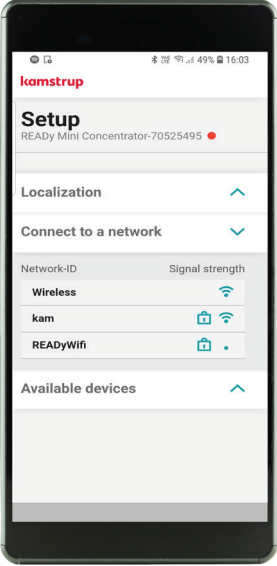
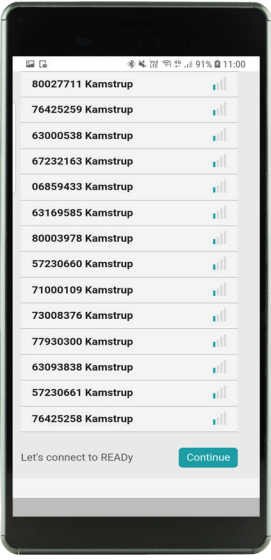


5. Open a browser window and enter 192.168.2.10.

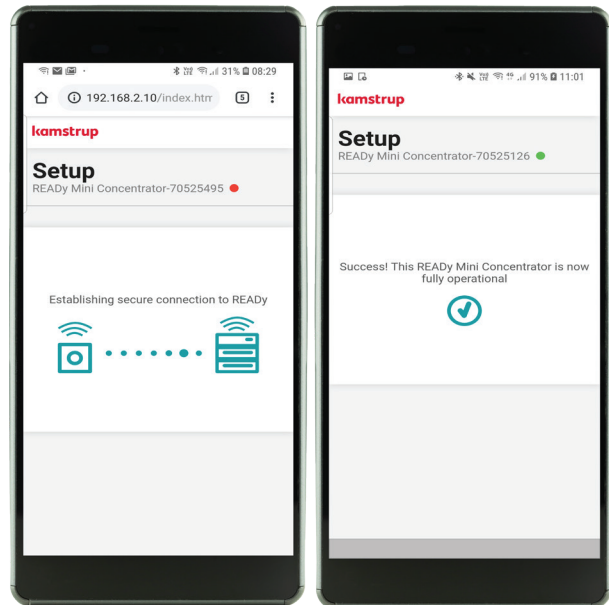
5.1 Enter your language, region and time zone.

5.2 Press **Continue**.

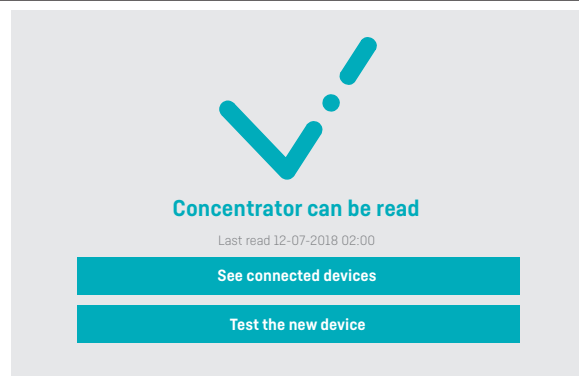


<p>6. Choose your connection method:</p> <ul style="list-style-type: none">• Ethernet/Wi-Fi 6696-5000• Ethernet/Wi-Fi/GSM 6696-5100	 <p>The screenshot shows the 'Setup' screen of the Kamstrup app. At the top, it says 'Kamstrup' and 'Setup'. Below that, there's a section 'Connect to a network' with a dropdown arrow. Underneath, it says 'Choose how you want to connect' and has three buttons: 'Ethernet', 'WiFi', and 'GSM'. Below the buttons is a section 'Available devices' with another dropdown arrow.</p>
<p>7. Connect.</p> <p>7.1a For Wi-Fi: Choose the Wi-Fi that you want to connect to and enter the associated Wi-Fi password.</p> <p>7.1b For Ethernet/GSM: READy Mini Concentrator recognizes the connection and shows that it is connected.</p> <p>7.2 Press Continue.</p>	 <p>The screenshot shows the 'Setup' screen of the Kamstrup app. It says 'Kamstrup' and 'Setup'. Below that, it says 'READy Mini Concentrator-70525495'. There are sections for 'Localization', 'Connect to a network', and 'Available devices'. Under 'Connect to a network', there are two options: 'Wireless' with a Wi-Fi icon and 'READyWifi' with a Wi-Fi icon and a lock icon. The 'Wireless' option is selected.</p>
<p>8. 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>8.1 Press Continue.</p>	 <p>The screenshot shows the 'Setup' screen of the Kamstrup app. It displays a list of meters/sensors with their IDs and signal strength bars. The list includes: 80027711 Kamstrup, 76425259 Kamstrup, 63000538 Kamstrup, 67232163 Kamstrup, 06859433 Kamstrup, 63169585 Kamstrup, 80003978 Kamstrup, 57230660 Kamstrup, 71000109 Kamstrup, 73008376 Kamstrup, 77930300 Kamstrup, 63093838 Kamstrup, 57230661 Kamstrup, and 76425258 Kamstrup. At the bottom, it says 'Let's connect to READY' and has a 'Continue' button.</p>

9. REAdy Mini Concentrator connects to REAdy Manager, and the configuration is now complete.



10. Ensure that you can see REAdy Mini Concentrator on check.kamstrup.com.



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.

4.2 Decommissioning



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.

5.3 Kamstrup support

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



6 Storage



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



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 himself

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

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

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

Q: READY Mini Concentrator will not connect to the Wi-Fi network, what can I do?

A: Make sure that you enter your password for the specific Wi-Fi correctly. Try to access the network with your phone/tablet/computer to ensure that the connection has been established. If the issue persists, reboot READY Mini Concentrator, wait for the dot and power LEDs to be solidly on, and go through the configuration again.

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.

GSM: Make sure that the SIM card is configured correctly. Removed PIN code and APN = Internet.

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 and make sure that READY Mini Concentrator can be read.

If READY Mini Concentrator can be seen on 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, 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 GSM 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

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

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

10 Markings



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