kamstrup

Installation and operation guide

READy MTU

Warning!
Read instructions before installation

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Contents

1 Symbols used in this document

Indicates a 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.

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

1.1 Warnings in this document

Battery safety:

Fire, explosion and severe burn hazard.

Please follow these guidelines in order to avoid injury to yourself and others:

- If not disposed of properly, the battery may cause fire or chemical burn
- Do NOT recharge, disassemble, crush, expose to water, heat above 212 °Fahrenheit (100 °Celsius), or incinerate the battery
- Keep away from children

Must be installed to provide a separation distance of at least 20 cm from all persons.

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 this guide is not followed, Kamstrup cannot be held accountable for any malfunctions or misuse of the product.

Do not install outside Lightning Protection Zone 0C. 10 ft/3 m height and depth around the building.

Use only approved accessories with this device. Unapproved modifications or operation beyond or in conflict with these instructions for use may void authorization by the authorities to operate the device.

Ensure that READy MTU is in transport mode when transported by air freight or during decommissioning.

Ensure proper disposal of the product.

Do not disassemble the product as the IP68 sealing will be void, and do not tamper with the internal battery and electronics.

READy MTU is designed to operate at temperatures of -30 °C...65 °C (-22 °F...149 °F). Using the device outside the intended operating temperature range may cause deterioration of battery life or in worst case operating failure.

Must NOT be co-located in conjunction with any other antenna or transmitter.

Do not try to modify or repair the device. Attempts to modify or repair will void the warranty.

Ensure that READy App and READy Manager are synchronized before you proceed with the installation.

Read the guide prior to installation and taking the device into use.

The product may only be installed by trained personnel.

Wire terminations must be properly sealed with a non-conductive gel material to prevent water intrusion (otherwise, this configuration should not be used in a pit environment).

Kamstrup does not recommend using gel connectors in pit environments.

Kamstrup recommends mounting READy MTU in/under non-metallic meter pit lids only. If installing under metal lids, make sure to use the pit antenna.

This radio transmitter "22376-READYMTU" has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list which have a gain greater than the maximum gain indicated for any type listed, are strictly prohibited for use with this device.

Antenna type number:	**Maximum gain:**	
	450-470 MHz	902-928 MHz
1653094	-0.6 dBi	-2.0 dBi
6699490, 6699491	0.5 dBi	-1.6 dBi
6697916, 6697914, 6697915	-5.3 dBi	1.2 dBi

Mount READy MTU as high as possible in the pit, without the antenna being in contact with the pit lid.

Mount READy MTU as high as possible. The MTU should be mounted at or above ground level. Mount READy MTU as high as possible. The MTU should be mounted at or above ground level.

Always install READy MTU in the protection cover (accessory) when the device is installed in sun-exposed areas.

Mount READy MTU at least 6 inches away from any metal objects, including pipes, conduit, and downspouts.

When mounting multiple MTUs in the same location, leave at least 4 inches between the MTUs if mounting side by side and at least 3 inches between MTUs if mounting one above another.

Do not mount READy MTU so that it is transmitting towards a nearby building or fence.

Do not mount READy MTU directly under AC power or telecommunications wires.

Mount READy MTU as high as possible near an exterior wall. The MTU should be mounted at or above grade (ground level).

Mount READy MTU at least 6 inches away from pipes and conduit and several inches below the ceiling.

Mount READy MTU at least 5 feet away from any large metal objects. (e.g. refrigerators, HVAC ducts, furnaces, and hot water heaters).

Do not mount READy MTU in a basement with a metal ceiling.

Do not mount READy MTU directly under AC power wires, circuit breaker panels, or telecommunications wires.

2 Abbreviations

MTU: meter transmission unit
LPZ: Lightning Protection Zone
MDM: meter data management
EO: encoded output
CIS: customer information system

3 FCC caution

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or Kamstrup for help

4 Canadian compliance statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux normes CNR exemptes de licence d'Industrie Canada. Le fonctionnement est soumis aux deux conditions suivantes:

(1) Cet appareil ne doit pas provoquer d'interférences et

(2) Cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité de l'appareil.

Complies with the Canadian ICES-003 Class B specifications.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with RSS 247 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.

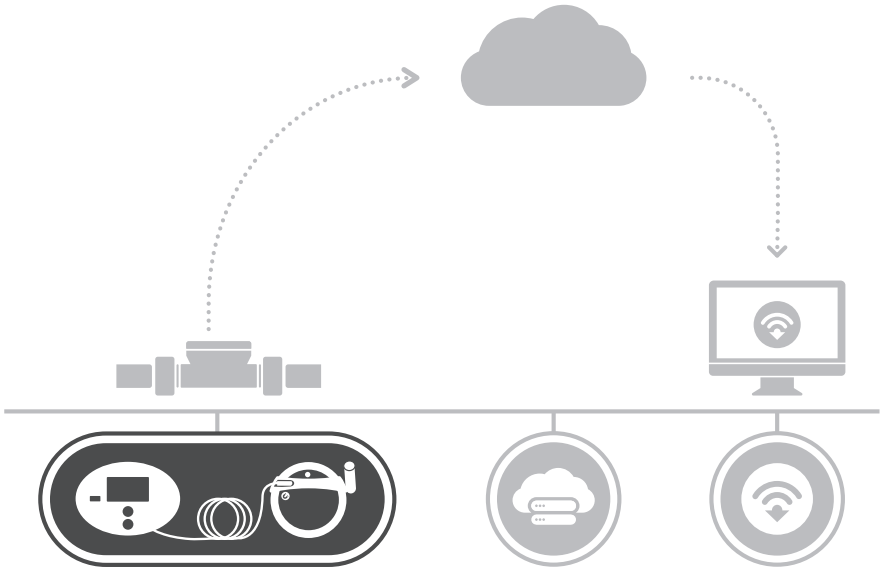
Cet appareil est conforme à la norme canadienne RSS 247. Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

5 Technical data

5.1 Product introduction

READy MTU is a one-to-one meter data transmission unit that connects to meters utilizing the Sensus UI1203 Encoded Output protocol. Data from READy MTU is forwarded to the READy Manager MDM system via Kamstrup's AMI system.

5.2 System overview



READy MTU connects to an encoded output meter and sends data to READy Collector and READy Manager.

5.3 Electrical data

Battery safety:

Fire, explosion and severe burn hazard.

Warning

Please follow these guidelines in order to avoid injury to yourself and others:

- If not disposed of properly, the battery may cause fire or chemical burn
- Do NOT recharge, disassemble, crush, expose to water, heat above 212 °Fahrenheit (100 °Celsius), or incinerate the battery
- Keep away from children

Caution

Do not disassemble the product as the IP68 sealing will be void, and do not tamper with the internal battery and electronics.

Battery	D-cell battery
Battery liftetime	Up to 20 years at tBAT < 40 °F Up to 16 years at tBAT < 55 °F Up to 8 years at tBAT < 130 °F

5.4 Mechanical data

Caution

READy MTU is designed to operate at temperatures of -30 °C...65 °C (-22 °F...149 °F). Using the device outside the intended operating temperature range may cause deterioration of battery life or in worst case operating failure.

Protection class	IP68 rated (waterproof/submersible)
Weight	Approx. 525 g / 1.15 Lbs incl. stub antenna
Dimensions	Ø 91.6 mm x 106 mm (Ø 3.6" x 4.2") Ø 91.6 mm x 149.8 mm (Ø 3.6" x 5.9") incl. antenna

5.5 Material

Housing	Polyphenylene sulfide (PPS) with fiberglass (40 %) reinforcement
Top ring	Polycarbonate (grey)

5.6 Communication

Wireless fallback reading and configuration	902 MHz – 928 MHz (license free)
Kamstrup AMI	450 – 470 MHz (FCC licensed)
Antenna	External
Magnet sensor	Activation of MTU radio and installation mode

5.7 Transmission interval

Must be installed to provide a separation distance of at minimum 20 cm from all persons.

Must NOT be co-located in conjunction with any other antenna or transmitter.

Meter reading interval	Hourly top of the hour
Transmission	Every 3 hours

5.8 Input

Single meter/register input	Sensus UI-1203 3-wire encoded
Wire length	5 ft Nicor/Itron/flying wire

5.9 Data security

READy MTU is part of the complete end-to-end data encryption of the READy suite.
Data is AES 128 bit end-to-end encrypted when in transit from READy MTU to READy Manager.

6 Before you begin

6.1 Precautions

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

Do not try to modify or repair the device. Attempts to modify or repair will void the warranty.

Ensure that READy App and READy Manager are synchronized before you proceed with the installation.

Read the guide prior to installation and taking the device into use.

The product may only be installed by trained personnel.

NOTE: Kamstrup recommends using READy Bluetooth optical read-out head to activate the magnet sensor of READy MTU. Magnet power 8.6 lbs/3.9 kg (N35).

6.2 What is in the box

The content of the box depends on the chosen accessories:

- READy MTU
- MTU mounting screw
- Quick guide

6.3 Accessories

READy MTU can be ordered with the following accessories:

- 5 ft cable with flying wire, Nicor or Itron plug
- Wall antenna (packed separately)
- External stub antenna
- 3" pit antenna for installation in pit lids (packed separately)
- Wall/pit bracket
- Protection cover for installation in sun-exposed areas (packed separately)
  Dimensions: 198 mm x 166 mm x 114 mm (7.8" x 6.5" x 4.5")

6.4 Deployment process summary

1. **Before field deployment**
   - Import READy MTU(s) in READy Manager
   - Import non-Kamstrup meters and customer information (optional)
   - Create a group containing non-Kamstrup meters that will be retrofitted with READy MTU
   - Charge READy Converter and mobile device
2. **Field deployment of default or preconfigured MTU**
   a. Default configured MTU: install, activate, and configure READy MTU using READy App and READy Converter
   b. Preconfigured MTU: install and activate READy MTU. No additional configuration is required
3. **The installation and configuration are complete**

7 Before field deployment

Before field deployment, make sure that your READy Manager system is prepared for collecting data from encoded meters via READy MTU by following the steps in this section.

7.1 Import READy MTU from Kamstrup Encryption Key Service

READy MTU is automatically imported into READy Manager if you are logged in with your My Kamstrup account and the **Import new devices** checkbox is ticked.

If not logged in, you can import READy MTUs directly from Kamstrup Encryption Key Service found in My Kamstrup.

Click the **Import devices** button on the start-up page of READy Manager.

More information can be found in the READy Manager guide under **Automatically importing information for new devices** or **Manually importing information for new devices**.

7.2 Import non-Kamstrup meters and customer information in READy Manager

Notice Kamstrup recommends that you import the ID/serial number that is sent on the encoded output as the meter serial number in READy Manager. If not, you are required to overwrite the serial number of the encoded output with the serial number imported in READy Manager for your specific device.

Import non-Kamstrup meters and customer information in READy Manager by selecting **Import customers** on the start-up page of READy Manager.

More information on CIS import can be found in the READy Manager guide under **Automatically importing customer data** or **Manually importing customer data**.

7.3 Create a group of non-Kamstrup meters for READy MTU installation

It is recommended to create a group of non-Kamstrup meters that will be retrofitted with READy MTU that can be synced with READy App.

Create a group:

1. Select the **Meters** view in READy Manager.
2. Select **New group**. Name the group.
3. Select the meters that are to be part of the group and add the meters to the group.

Find more information in the READy Manager guide under **Organizing meters in reading groups**.

7.4 MTU modes and LED blinking scheme

7.4.1 MTU modes

7.4.1.1 Transport mode

When you receive READy MTU, the device is in transport mode. In transport mode, the radio is deactivated. The magnet sensor for activating the MTU is active.

By influencing the magnet sensor for 3 seconds, the LED on the front of READy MTU turns on. The MTU checks if a meter is connected on the encoded interface before turning on the radio. If no meter is connected, READy MTU remains in transport mode.

Remember to enable transport mode when decommissioning READy MTU. See section **9.6 Decommissioning.**

7.4.1.2 Installation mode

After activation, READy MTU starts up in installation mode. The LED turns on and a connection beacon is sent out every 4 seconds.

Installation mode is active for 5 minutes after activation.

After the installation mode period has ended, READy MTU enters normal mode.

When operating in normal mode, installation mode can be triggered by holding the magnet to the front of READy MTU. This will also reactivate the LED.

7.4.1.3 Operation mode

In operation mode, READy MTU can at all times be accessed via READy App. A connection beacon is sent every 30 seconds during normal operation. The LED is not active in normal mode.

7.4.2 LED blinking scheme

1 time every 5 seconds 	Everything is OK. READy MTU is reading the encoded output and sending data via AMI.
3 times every 5 seconds 	Something is wrong. READy MTU is not reading the encoded output or sending data via AMI.

8 Field deployment

Warning Use only approved accessories with this device. Unapproved modifications or operation beyond or in conflict with these instructions for use may void authorization by the authorities to operate the device.

Warning Do not install outside Lightning Protection Zone 0C. 3 meters or 10 ft height and depth around the building.

Caution Wire terminations must be properly sealed with a non-conductive gel material to prevent water intrusion (otherwise, this configuration should not be used in a pit environment).

Notice Complete all cable connections before activating the device using the magnet sensor.

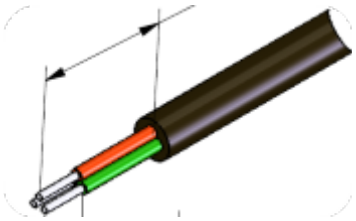
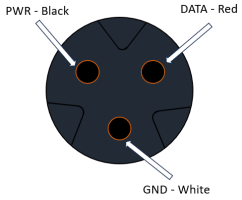
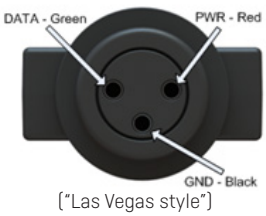
8.1 Installation

READy MTU is intended to be installed in vertical position indoors and outdoors in residential, commercial, and industrial environments. The device is intended to be installed either at ground level, above ground on a wall, or in pits (flooded environment, underground). As READy MTU is IP68 rated, the device is resistant to harmful dust and can be submerged.

8.1.1 Encoded output wiring diagram

Caution Kamstrup does not recommend using gel connectors in pit environments.

Wiring diagram

	Meter/register connector	MTU connector	Configuration
Open end			**Data:** Green **PWR/CLK:** Red **GND:** Black
Itron – Integral			**Data:** Red **PWR/CLK:** Black **GND:** White
Nicor	 ("Las Vegas style")		**Data:** Green **PWR/CLK:** Red **GND:** Black

Function	Kamstrup	Sensus	Neptune	Itron Integral	MAG 8000
DATA	Green	Green	Red	Red	Brown 92
PWR/Clock	Red	Red	Black	Black	Blue 91
GND	Black	Black	Green	White	White 93

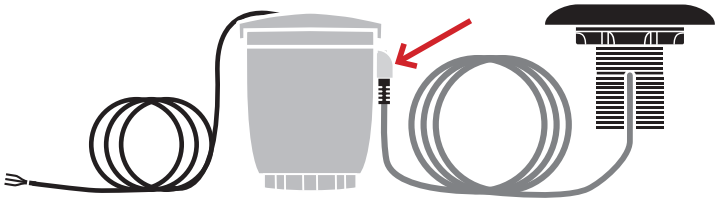
8.1.2 Antennas and connectors

Caution

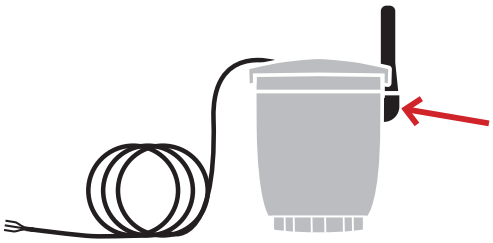
This radio transmitter "22376-READYMTU" has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list which have a gain greater than the maximum gain indicated for any type listed, are strictly prohibited for use with this device.

Antenna type number:	**Maximum gain:**	
	450-470 MHz	902-928 MHz
1653094	-0.6 dBi	-2.0 dBi
6699490, 6699491	0.5 dBi	-1.6 dBi
6697916, 6697914, 6697915	-5.3 dBi	1.2 dBi

When using a pit or wall antenna, please use the grey antenna cover when attaching the antenna to READy MTU.



When using the stub antenna, please use the black antenna cover when attaching the antenna to READy MTU.



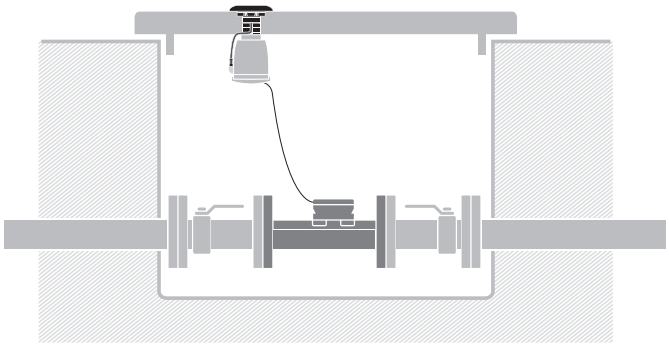
8.1.3 Pit

Caution

Kamstrup recommends mounting READy MTU in/under non-metallic meter pit lids only. If installing under metal lids, make sure to use the pit antenna.

Caution

Mount READy MTU as high as possible in the pit, without the antenna being in contact with the pit lid.



You can use the pit antenna or the wall bracket with a rebar or similar to install READy MTU in pits.

8.1.4 Wall exterior

Caution Mount READy MTU as high as possible. The MTU should be mounted at or above ground level.

Caution Always install READy MTU in the protection cover (accessory) when the device is installed in sun-exposed areas.

Caution Mount READy MTU at least 6 inches away from any metal objects, including pipes, conduit, and downspouts.

Caution When mounting multiple MTUs in the same location, leave at least 4 inches between the MTUs if mounting side by side and at least 3 inches between MTUs if mounting one above another.

Caution Do not mount READy MTU so that it is transmitting towards a nearby building or fence.

Caution Do not mount READy MTU directly under AC power or telecommunications wires.

Notice Finish the field configuration of READy MTU before installing it in the protection cover.

Use the protection cover in sun-exposed areas. When installed in areas without sun exposure, the wall/pit bracket can potentially be used.

8.1.5 Wall interior

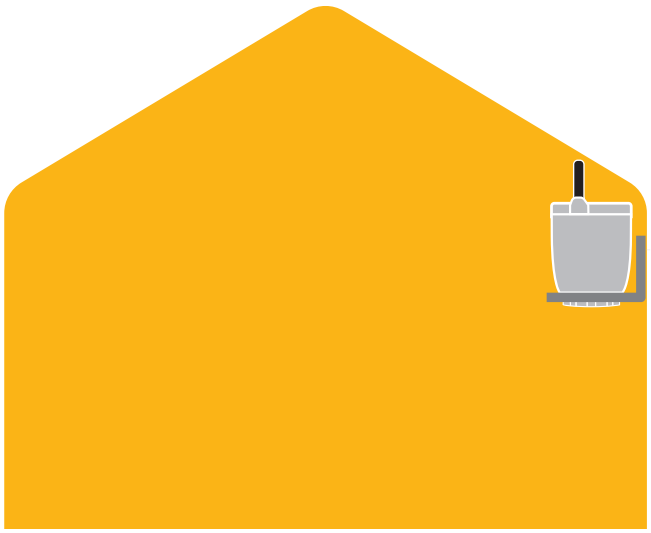
Caution Mount READy MTU as high as possible near an exterior wall. The MTU should be mounted at or above grade (ground level).

Caution Mount READy MTU at least 6 inches away from pipes and conduit and several inches below the ceiling.

Caution Mount READy MTU at least 5 feet away from any large metal objects. (e.g. refrigerators, HVAC ducts, furnaces, and hot water heaters).

Caution Do not mount READy MTU in a basement with a metal ceiling.

Caution Do not mount READy MTU directly under AC power wires, circuit breaker panels, or telecommunications wires.



Use the wall bracket to install READy MTU in interior environments.

8.2 Configuration of READy MTU

Required:

- Android device
- READy App (synchronized with READy Manager)
- READy Converter
- Magnet

8.3 Default or preconfigured

If your READy MTU has been ordered preconfigured, please follow section **8.3.1 Configuration of preconfigured MTU**.

If your READy MTU has been ordered default configured, please follow section **8.3.2 Configuration of default configured MTU**.

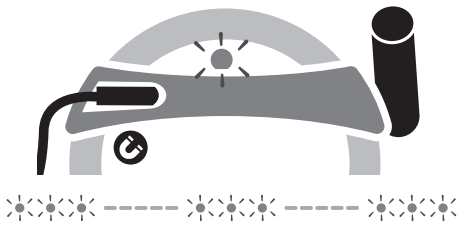
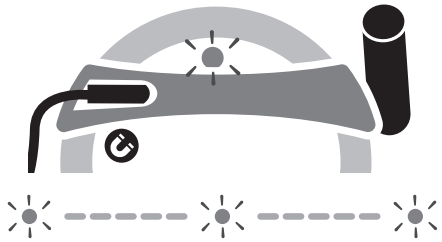
If in doubt, follow **8.3.2 Configuration of default configured MTU**.

8.3.1 Configuration of preconfigured MTU

Notice A preconfigured MTU requires that the device serial number imported in READy Manager equals the device ID read on the encoded output.

Notice Complete all cable connections before activating the device using the magnet sensor.

If the device serial number imported in READy Manager does not equal the ID read by the MTU on the encoded output, please follow the installation and configuration instructions for default configured MTU in section **8.3.2 Configuration of default configured MTU**.

1. The LED starts blinking 3 times every 5 seconds. **NOTE: Finish all cable connections before activating READy MTU.**	
2. When the LED blinks 1 time every 5 seconds, everything is OK. READy MTU is reading the encoded output and sending data via AMI.	

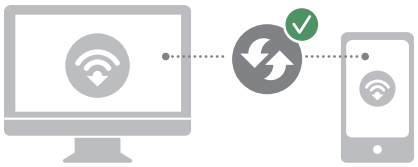
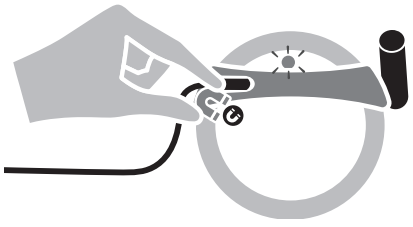
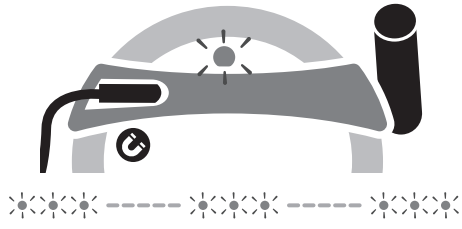
The LED automatically stops blinking after 5 minutes. No further configuration is needed.

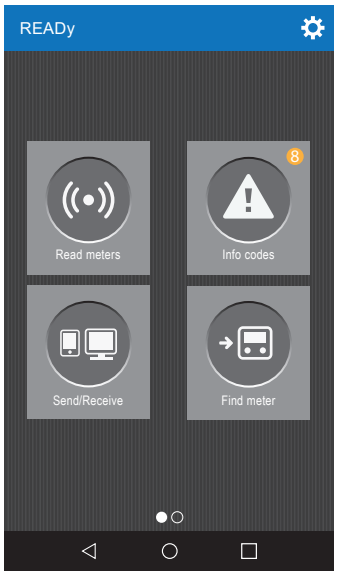
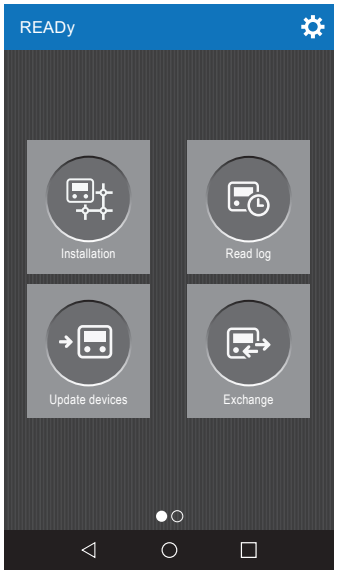
The configuration of a preconfigured MTU can at all times be read and changed by following the steps in section **9.5 Reconfiguration**.

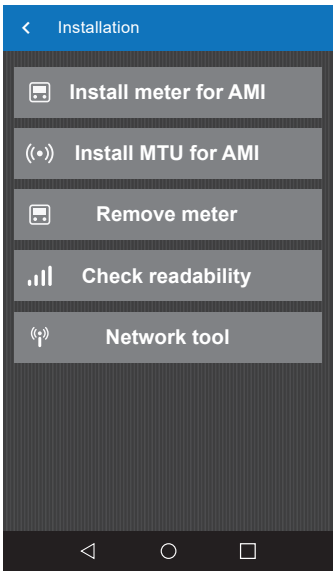
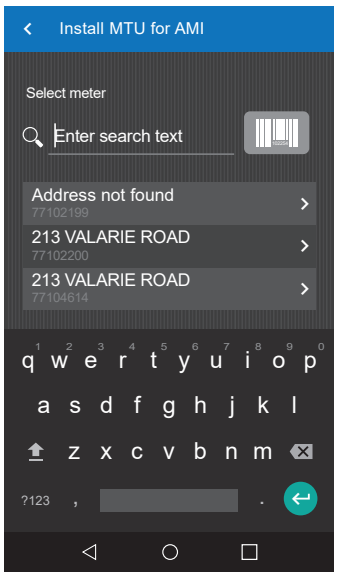
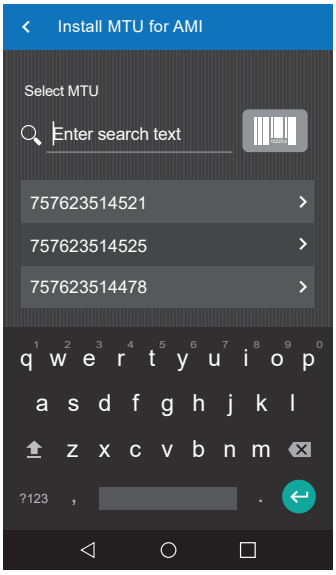
8.3.2 Configuration of default configured MTU

Notice A default configured MTU requires configuration using READy App.

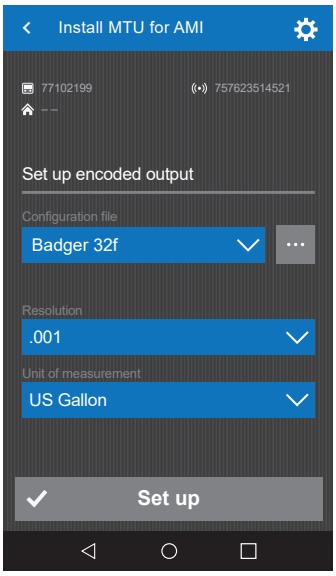
Notice The reading on the encoded output must match the imported meter ID/serial number in READy Manager. If the IDs do not match, you can overwrite the encoded output reading to ensure data flows to the correct meter.

1. Sync READy Manager and READy App before proceeding to step 2.	
2. Activate READy MTU by pointing a magnet at the designated spot.	
3. The LED starts blinking.	

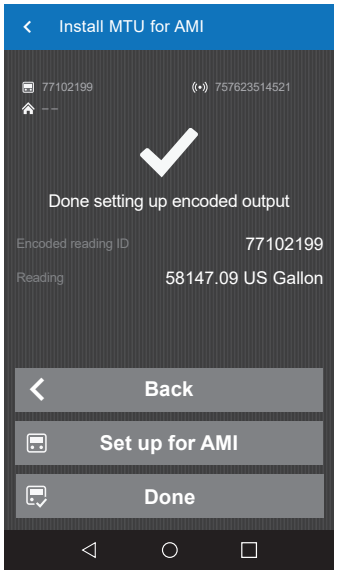
4. Turn on READy Converter. 5. Open READy.	
6. Go to the menu item **Installation**.	
7. Pair with READy Converter.	

8. Choose the menu item **Install MTU for AMI**.	
9. Select the meter on which you want to install READy MTU. You can search by serial number or address.	
10. Select the MTU that you want to install on the meter. You can search by serial number.	

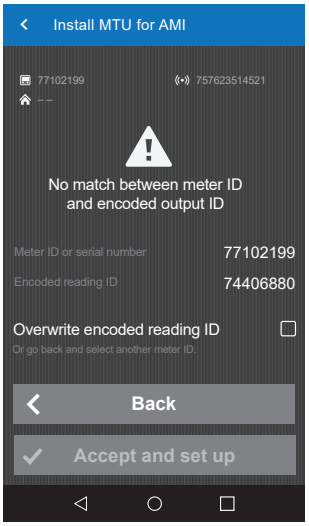
11. Set up the encoded output parameters.
    If a configuration exists, it is shown in the drop-down menu. If no configuration exists, create one and press **Next**.
    The latest used configuration will always be chosen by default.

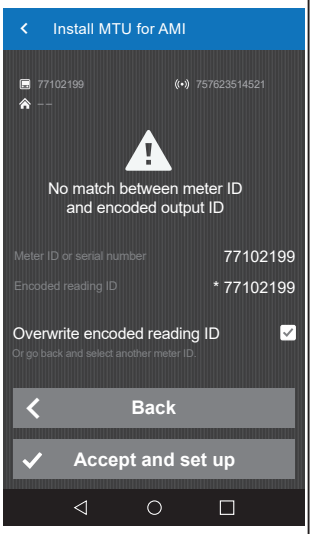


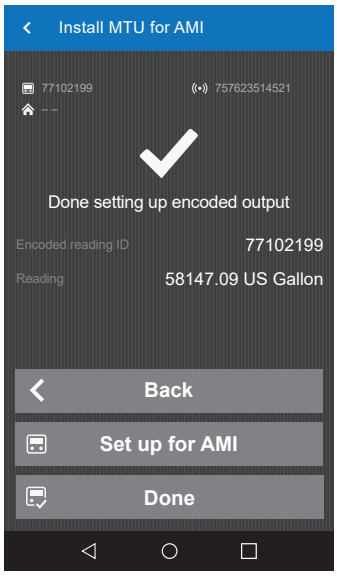
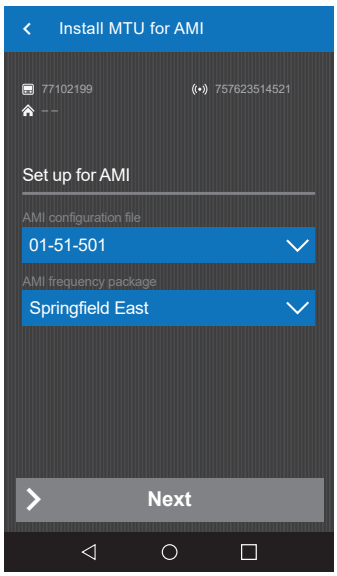
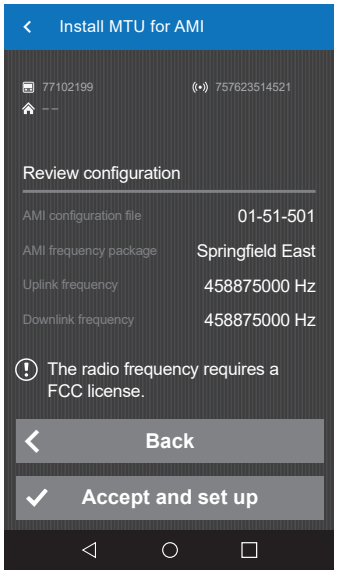
12. A.
    Ensure that the **Reading** is correct before proceeding. If not, go back and change the encoded output parameters.

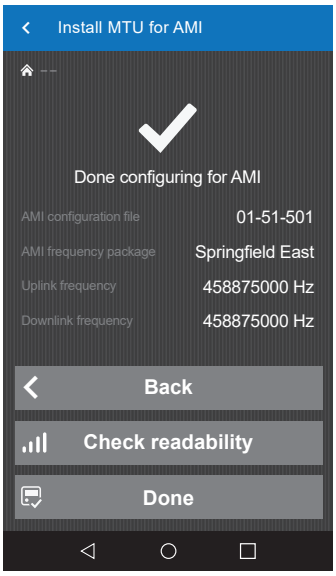
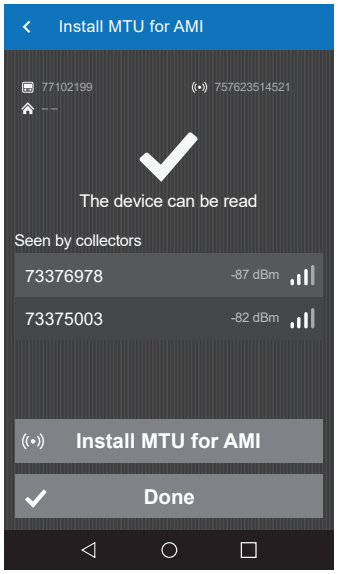


12 B.
    If there is no match between the encoded output reading and the chosen meter ID/serial number, choose **Overwrite** or **back.**
    By overwriting the encoded reading ID, READy MTU will forward the chosen meter ID/serial number and data will flow to the correct meter.
    Press **Back** to choose another meter.
    Press **Accept and set up** to continue.





13. Choose the menu item **Set up for AMI**.	
14. Choose the correct configuration for your AMI network. Press **Next**.	
15. Review the configuration. Press **Accept and set up**.	

16. The AMI configuration has been completed, check the readability of the MTU by the AMI network before leaving the installation.	
17. If the readability is successful, the configuration is complete.	

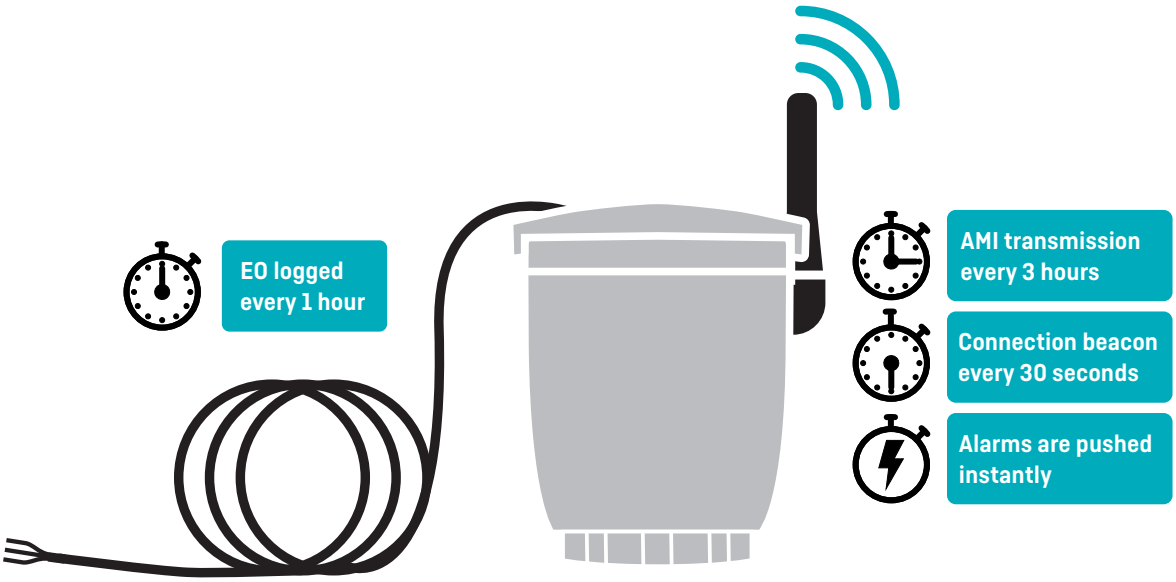
9 Operation

9.1 Normal operation

After configuration, READy MTU starts forwarding data to READy Collector and READy Manager. The transmission interval is determined by your READy Manager license:

- Hourly readings sent every 3 hours
- Daily readings sent daily

Hourly data is collected and logged via the 3-wire encoded input at the top of the hour and stored for transmission every 3 hours.



As long as READy MTU is in operation, it continues to forward data from the connected meter/register. If the MTU is moved from the installation, it is important to decommission the device into transport mode by deactivating the radio. Please see section **9.6 Decommissioning**.

READy MTU can at all times be accessed via READy App and READy Converter. Make sure to synchronize READy Manager and READy App before attempting to connect to READy MTU.

The MTU sends a connection beacon every 30 seconds during normal operation. The connection beacon interval can be speed up to every 4 seconds (installation mode) by pointing the magnet at the magnetic sensor. After 5 minutes, READy MTU disables installation mode and goes into operation mode.

If you need to reconfigure READy MTU, please see section **9.5 Reconfiguration**.

9.2 Alarms/info codes

Notice Remember to enable transport mode when exchanging or decommissioning READy MTU. If this is not done, the MTU will keep sending alarms with **Reading error** to the previously connected meter in READy Manager.

9.2.1 Battery low

Meaning: READy MTU will forward a **Battery low** alarm when the expected battery capacity left allows for approximately 6 months of normal operation.

MTU behavior: READy MTU will keep forwarding data as long as possible until the battery is depleted and AMI transmission is not possible anymore.

9.2.2 Reading error

Meaning: Data cannot be collected on the encoded communication interface.

Possible reasons:

- The encoded output cable may be malfunctioning or broken
- READy MTU has been disconnected from the meter without enabling transport mode

MTU behavior: READy MTU will forward a reading error. The alarm/info code will disappear when a successful reading is obtained again. If the MTU has been removed from the installation and transport mode is not enabled, READy MTU will keep forwarding the reading error until transport mode is enabled or the MTU is installed and reconfigured.

9.3 Device exchanges

Notice Remember to enable transport mode when exchanging or decommissioning READy MTU. If this is not done, the MTU will keep sending alarms with no reading/communication error to the previously connected meter in READy Manager.

9.3.1 Exchange of preconfigured MTU

If exchanging a preconfigured with a new preconfigured MTU, please see section **9.6 Decommissioning** for decommissioning of the old MTU and section **8.3.1 Configuration of preconfigured MTU** for deployment of the new MTU.

9.3.2 Exchange default configured MTU

If exchanging a default configured with a new default configured MTU, please see section **9.6 Decommissioning** for decommissioning of the old MTU and section **8.3.2 Configuration of default configured MTU** for deployment of the new MTU.

9.3.3 Meter/register exchange

Before exchanging a meter or register, please determine which device scenarios you are using in your system and which device is tracked/CIS imported in READy Manager.

9.3.3.1 Device scenarios

A) Meter holds volume

Meter (holds volume)	Register	MTU

B) Register holds volume

Meter	Register (holds volume)	MTU

C) Meter holds volume

Meter (holds volume)	MTU

9.3.3.2 Device scenario A: Meter ID is tracked/CIS imported in READy Manager

Meter exchange:

- Perform a meter exchange in READy App
- Perform an MTU installation in READy App

Register exchange:

- Perform a MTU installation in READy App

9.3.3.3 Device scenario A: Register ID is tracked/CIS imported in READy Manager

Meter exchange

If one of the following steps are not taken, the consumption graphs in READy Manager will fail:

- Track register serial number in CIS instead
- Change meter in CIS manually
- Swap both meter and register

Register exchange

- Perform a meter exchange in READy App

9.3.3.4 Device scenario B: Meter ID is tracked/CIS imported in READy Manager

Meter exchange:

- Perform a meter exchange in READy App
- Perform an MTU installation in READy App

Register exchange:

If one of the following steps are not taken, the consumption graphs in READy Manager will fail:

- Track meter serial number in CIS instead
- Change register in CIS manually
- Swap both meter and register

9.3.3.5 Device scenario B: Register ID is tracked/CIS imported in READy Manager

Meter exchange:

- No action required

Register exchange:

- Perform a meter exchange in READy App
- Perform an MTU installation in READy App

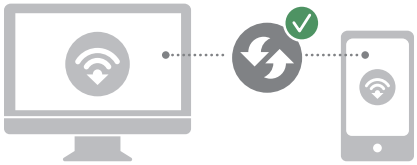
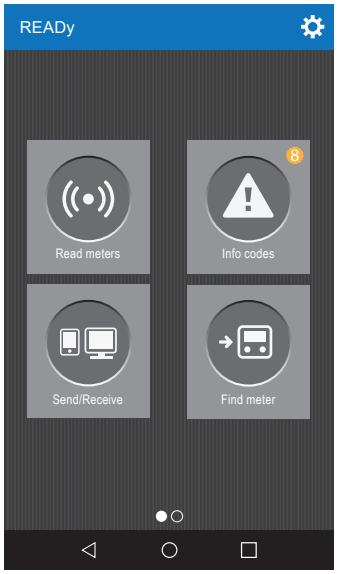
9.3.3.6 Device scenario C: Meter ID is tracked/CIS imported in READy Manager Meter exchange

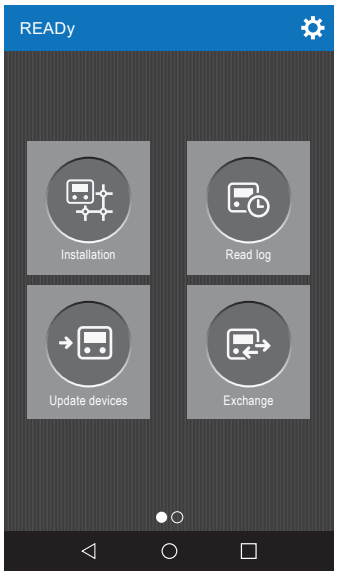
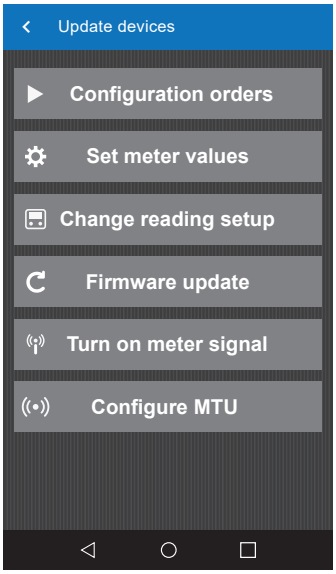
- Perform a meter exchange in READy App
- Perform an MTU installation in READy App

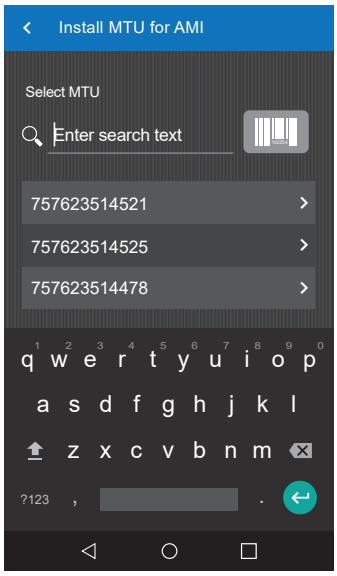
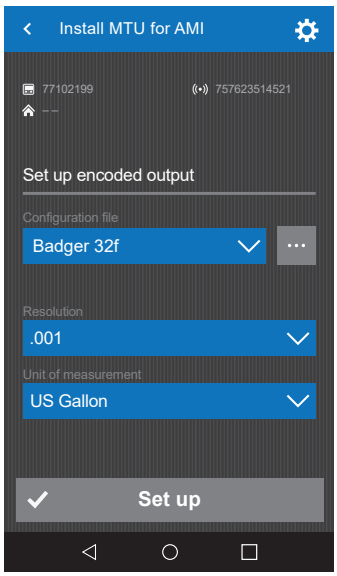
9.4 Fallback and log readings

Please follow the instructions in the READy Manager guide under **Fallback reading for two-way radio network (AMI) meters** and **Collecting logged data from meters with two-way communication**.

9.5 Reconfiguration

1. Sync READy Manager and READy App before proceeding to step 2.	
2. Turn on READy Converter. 3. Open READy App.	

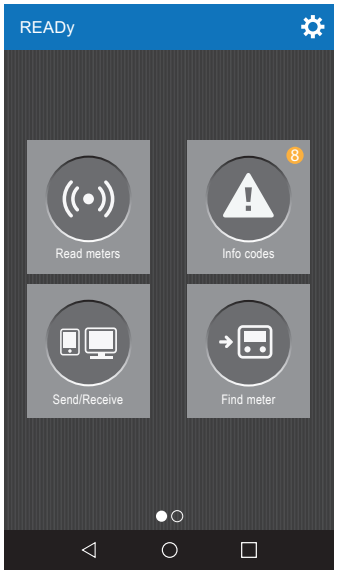
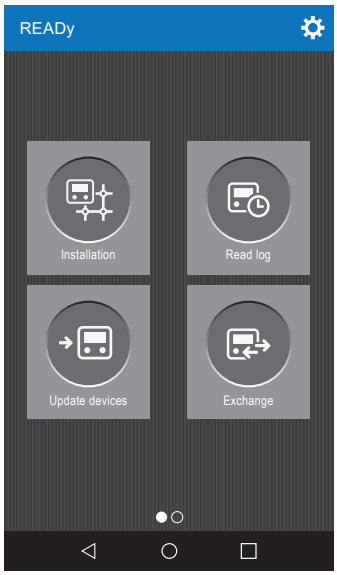
4. Swipe left and go to the menu item **Update devices**.	
5. Choose the menu item **Configure MTU.**	
6. Pair with READy Converter.	

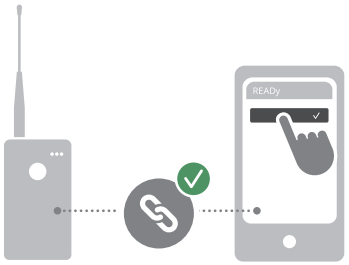
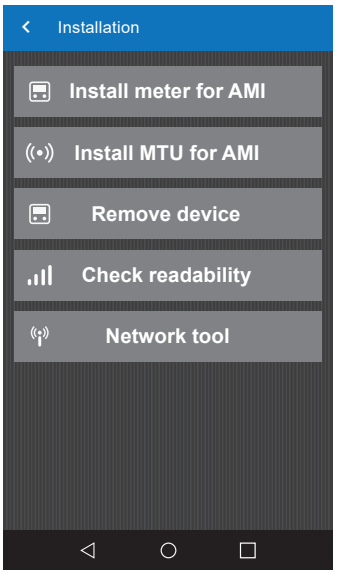
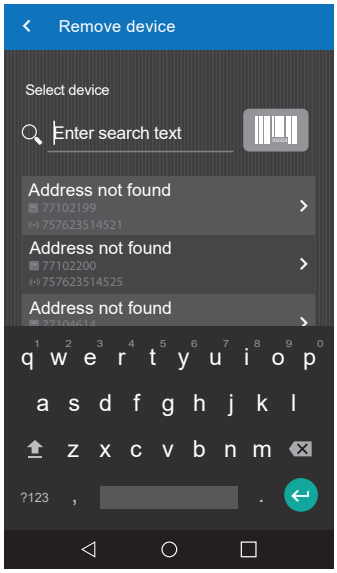
7. Select the MTU you want to update. You can search by serial number.	
8. The configuration shown is the current configuration of the MTU. You can rename the configuration by tapping the three dots next to the **Configuration file** combo box.	
9. The configuration continues as normal. See section **8.4.2 Configuration of default configured MTU** for further details.	

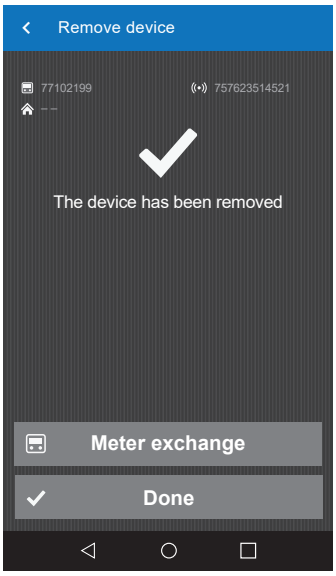
9.6 Decommissioning

Warning Ensure that READy MTU is in transport mode when transported by air freight or during decommissioning.

Notice Remember to enable transport mode when exchanging or decommissioning READy MTU. If this is not done, the MTU will keep sending alarms with **Reading error** to the previously connected meter in READy Manager.

1. Sync READy Manager and READy App before proceeding to step 2.	
2. Turn on READy Converter. Open READy App.	
3. Swipe left and go to the menu item **Installation**	

4. Pair with READy Converter.	
5. Choose the menu item **Remove device**	
6. Select the device you wish to decommission/deactivate. You can search by serial number or address.	

7. Confirm that you want to remove/ decommission the device.	
8. The radio has been deactivated and the device removed from the installation point.	

If the product is decommissioned for disposal, please follow the disposal instructions in section **11 Disposal**.

9.7 Kamstrup support

Hotline: 404-835-6716
Email: supportus@kamstrup.com

10 Storage

READy MTU is recommended to be stored according to the following conditions:
IP class 68
Relative humidity: 95 %, non-condensing
Storage temperature: +20 °C to +35 °C (+68 °F to + 95 °F)

11 Disposal

Ensure proper disposal of the product.

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. Please ensure correct disposal of all parts of the device. The enclosure must be disassembled to dispose of the batteries, electronics, and enclosure correctly.

11.1 Disposal by Kamstrup A/S

Kamstrup A/S accepts READy MTUs 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.

11.2 The customer sends for disposal

READy MTU must not be disassembled prior to dispatch. The complete meter is handed in for approved national/local disposal. Enclose a copy of this page in order to inform the recipient of the contents.

11.3 Disposal by the customer

READy MTU should be disassembled as described below and the separate parts handed in for approved destruction. The batteries must not be exposed to mechanical impact and the lead-in wires must not be short-circuited during transport. Please see the disposal table below.

Please send any questions you may have regarding environmental matters to:

Kamstrup A/S
Att.: Quality and environmental dept.
Fax.: +45 89 93 10 01
info@kamstrup.dk

11.4 Instructions for disposal

Item	Material	Recommended disposal
Unit housing	PPS +GF	Plastic recovery
Lithium cell	Lithiumthionylcloride >UN 3090< D-cell	Approved deposit of lithium cells
Hybrid Layer Capacitor	Lithium Intercalated Compounds HLC	Approved deposit of lithium cells
Printed circuits	Coppered epoxy laminate, components soldered on	PCB scrap for metal recovery
Sight glass	Soda lime glass	Glass recovery
Moisture absorbers	98 % Bentonite 2 % Quarz	Ordinary disposal
Other plastic parts	PC + GF	Plastic recovery
Packing	Environmental cardboard	Cardboard recycling

12 Ordering details

12.1 Type number

Type number is static at the moment. There might be changes in the future.

US AMI MTU types are described in below table:

READyMTU	6696	□□	□□	□	□□	□	□□
Input							
3-wire encoded input		22					
Communication							
AMI, dual-band, capable, (2-way)			01				
Power supply							
D-cell				D			
No choice					00		
Meter type							
MTU						8	
Country code							
North America/Canada, FCC approved/ISED approved							20

12.2 US AMI MTU configuration is described below:

	JJ □□	MMMM □□□□	RR □□	T □	YYZZZ □□□□□
GMT offset					
Time zone					
GMT -4.00 (Atlantic)	32				
GMT -5.00 (Eastern)	28				
GMT -6.00 (Central)	24				
GMT -7.00 (Mountain)	20				
GMT -8.00 (Pacific)	16				
Customer label					
Default		0000			
Data logger profile					
Default			01		
Encryption level					
Encryption with seperately forwarded key				3	
Data package and transmission					
AMI					
Standard, 3 hour - Vol (default)					51502

12.3 Other MTU ordering data

Resolution/Multiplier	ID
Blank (configurable with READy APP/READy Manager)	1
.001	2
.01	3
.1	4
1	5
10	6
100	7
1000	8
10,000	9
Unit of measure	
Blank (configurable with READy APP/READy Manager)	1
Gallon US (USgal)	2
Imperial gallon (IMPgal)	3
Liter	4
Cubic feet	5
Cubic meters	6
Timing parameters	
Automatic (default)	
AMI frequency	
Customer specific	

12.4 Accessories

A choice of bracket for installation, antenna and cable is required:

Cable connector:

- Flying wire
- Nicor connector
- Itron connector

Antenna

- External stub antenna
- 3" Pit antenna for installation in pit lids
- Wall antenna

Installation

- Wall/pit bracket
- Protection cover for wall installation in sun exposed areas
  Dimensions: 7.8" x 6.5" x 4.5" (198 mm x 166 mm x 114 mm)

Kamstrup Water Metering, LLC
2855 Forsyth Commerce Way, Building 200
Cumming, GA 30040, USA
T: +1 (404) 835-6716
info-us@kamstrup.com
kamstrup.com