

Solution Description – Submetering

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READY

The modern and efficient solution for remote reading of smart heat, cooling, water and electricity meters

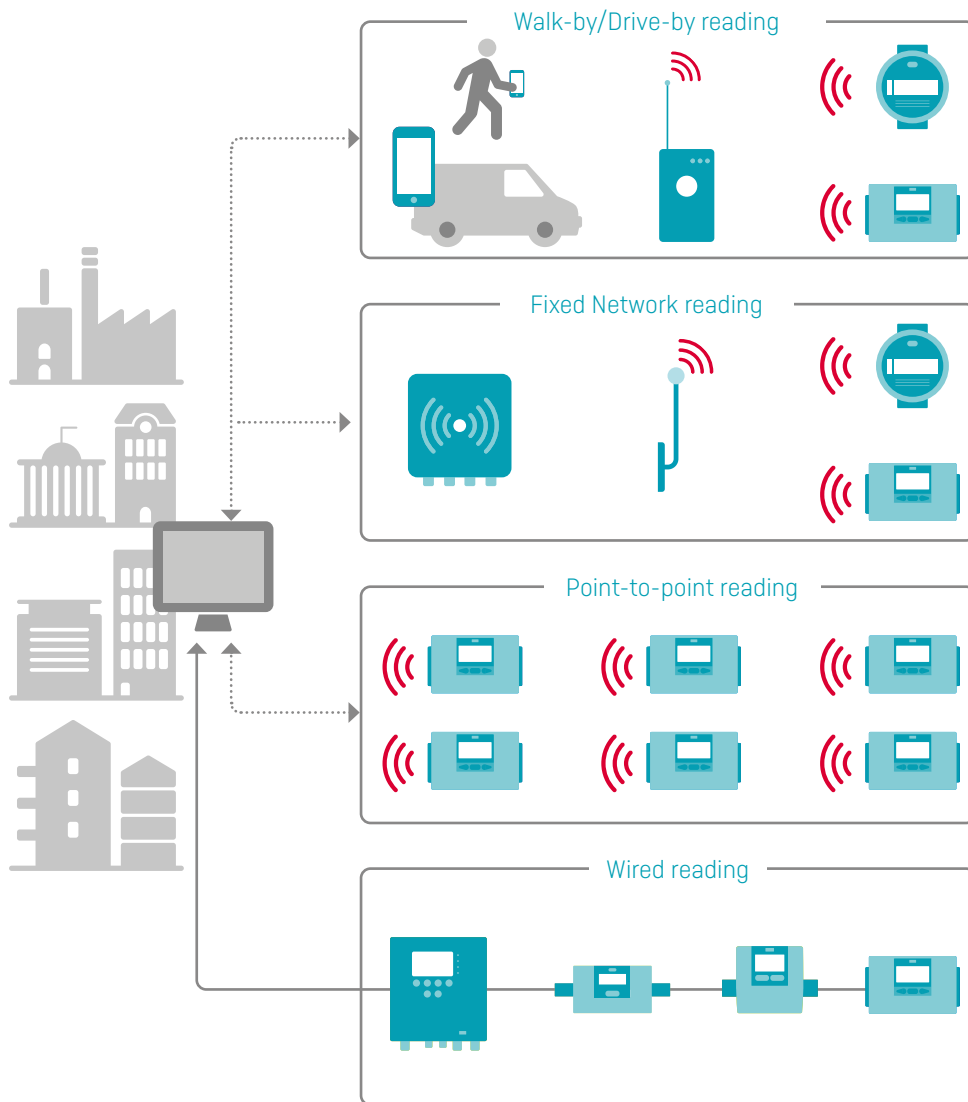


Remote reading – your way

READY offers a variety of remote reading solutions ranging from Walk-by/Drive-by reading of meters to fully automatic reading.

READY is a flexible and modular solution for remote reading of meters. It is always possible to expand the selected reading solution or switch to a new one if needed. Current solutions range from semi-automatic Walk-by/Drive-by reading to fully automatic remote reading and include both wireless and wired reading solutions.

READY can be used for remote reading of electricity, water, heat and cooling meters, combined heat/cooling meters, Kamstrup pressure sensors and third-party products.

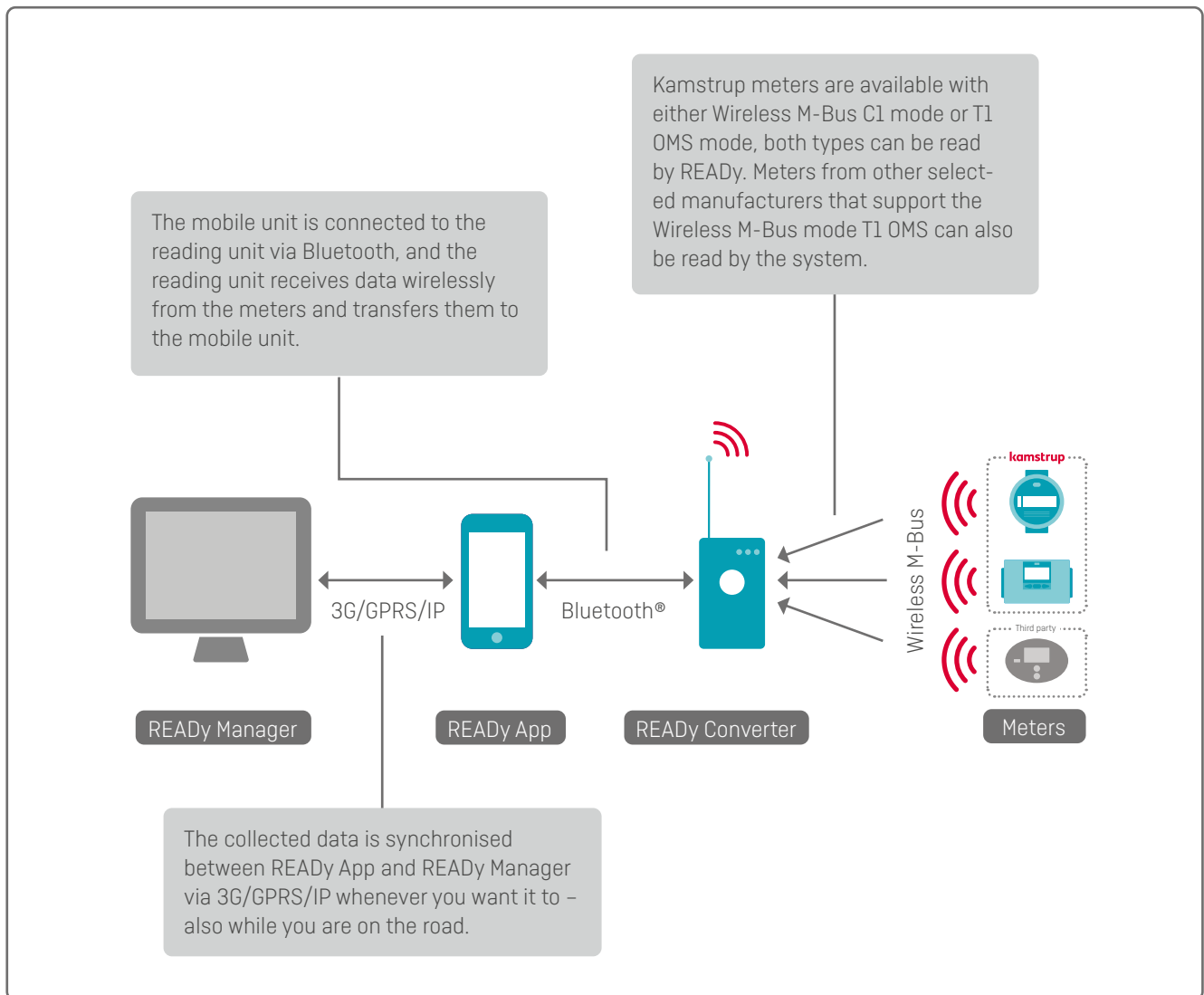


Walk-by/Drive-by reading

In case of Walk-by/Drive-by reading, the meters are read directly by walking or driving around in the reading area with an Android mobile unit (smartphone or tablet) and a small reading unit (READY Converter). The collection of meter data takes place easily and intuitively via the app READY App.

When the reading has been completed, the meter data is transferred easily to READY Manager, which is a program on your PC that keeps track and stores your meter data.

Communication infrastructure for the Walk-by/Drive-by reading



How it works

READY App is intuitive and easy to use. Reading meters and synchronising data with READY Manager is a completely smooth process.

Data is synchronised wirelessly between READY App and READY Manager by pressing the “Send/Receive” button in READY App.

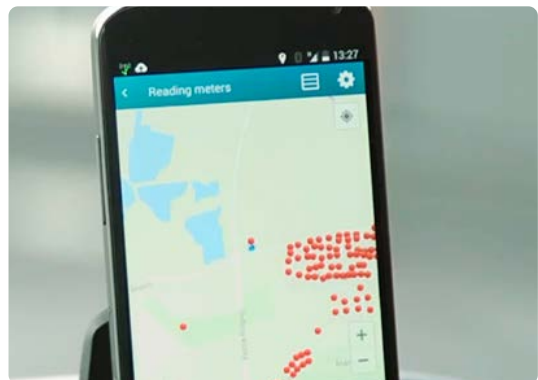
The reading of the meters can then be started by pressing “Read meters” on the start page of READY App.

With the addition of T1 OMS to READY Manager and READY App, it is also possible to perform the actions described in the following for non-Kamstrup meters that are T1 OMS compliant and verified by Kamstrup.



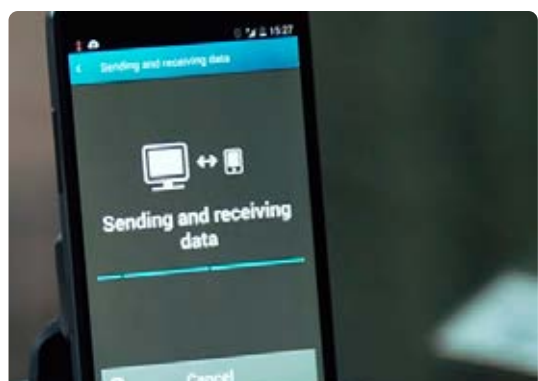
During the reading, an integrated Google Maps feature in READY App shows the meters that have not yet been read in a map that makes the reading very simple and efficient.

As soon as the meters are read, they disappear from the map, which provides the operator with a clear picture of the remaining meters' positions. The map functions both as an indicator of the remaining meters and as navigation help during the reading. The reading continues during conversations, but can also be put on hold and continued later.



When the meters have been read, a single push on the button “Send/Receive” makes all read data available in READY Manager.

This module ensures that the operator reading the meters can continue with other tasks without having to return to the office to transfer data.



REAdy Solution Description – Submetering

Reading of logged data

In addition to reading meters, REAdy App can be used together with a Bluetooth®-connected optical read-out head for manual reading of the data logger of a water, heat or cooling meter.

When placing the optical read-out head on the infrared connection port of the meter, the data logger can be accessed from REAdy App. This makes REAdy App a very strong tool for entering into a dialogue with the consumer and for clarifying any questions and disputes.

Logger data read using the optical read-out head can be made available in REAdy Manager by synchronising it in the same way as data read via a mobile unit.



The display of the daily consumption is a useful tool for entering into a dialogue with consumers and for clarifying disputes.



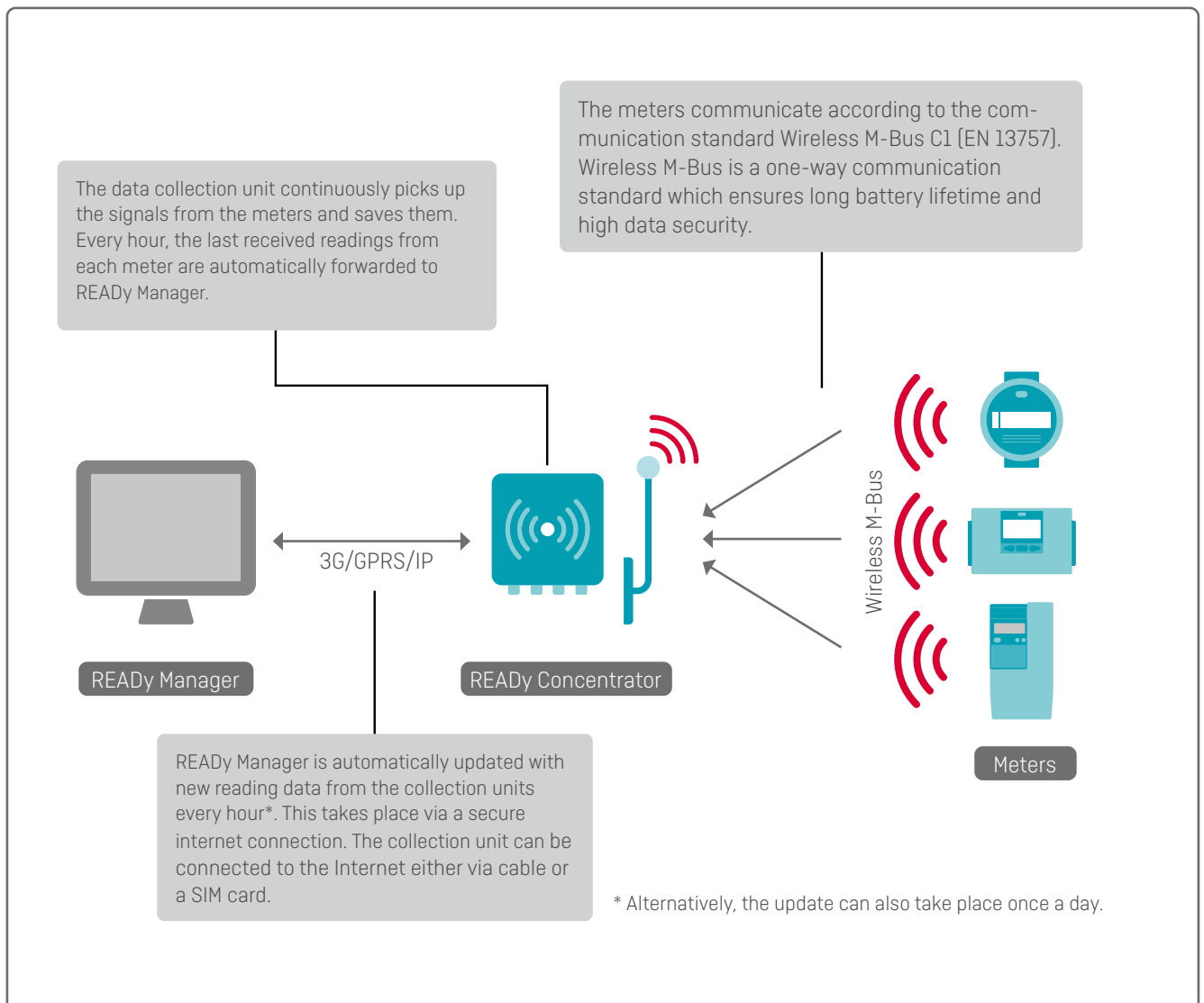
Fixed Network reading

By installing one or more fixed data collection units in the supply area, the meters can be read directly from the utility on a daily or hourly basis.

Fixed data collection units are also ideal for commercial buildings or industries where rewiring to meters is not possible.

Communication infrastructure for Fixed Network reading

A data collection unit consists of one or two antennas, which pick up the signals from the meters via Wireless M-Bus. The antennas are connected via cables to a concentrator that, via GPRS or IP, sends data to READy Manager:



Note: T1 OMS Wireless M-Bus is not supported by Fixed Network solutions.

READy Solution Description – Submetering

READy Concentrator

READy Concentrator is the central data collection unit in the Fixed Network reading solution. It can read up to 10,000 meters. The concentrator is available in two editions: one for indoor mounting and one for outdoor mounting. The collection units only require connection to 230 volt and possibly also IP connection. If IP is not available, the concentrator can be equipped with a GPRS modem and a SIM card for wireless transfer of data.



Antennas

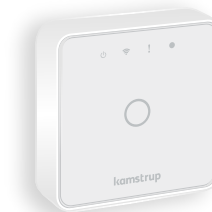
The antennas are installed as high as possible to pick up the signals from most possible meters. Typically, the antennas are installed on the roof of buildings in the area. Normally, an antenna can reach meters in a radius of 500 – 600 m. However, with special antennas placed in for example chimneys, it is possible to achieve ranges of much larger ranges.



READy Mini Concentrator

READy Mini Concentrator is a small collection unit designed for indoor installation. It is connected to a power supply and can collect readings from up to 25 meters and forward data to READy Manager via Ethernet, Wi-Fi or GSM.

Used in combination with a Walk-by/Drive-by reading solution, READy Mini Concentrator allows you to automatically read meters located in remote areas (where Walk-by/Drive-by reading is problematic or inefficient) or meters for which you need more frequent data (down to 5-minute intervals).



READY 4G Bridge

READY 4G Bridge is a battery-powered collection unit that receives wireless M-Bus data from up to 5 meters and sends the data to READY Manager via GSM. It is designed for both indoor and outdoor installation.

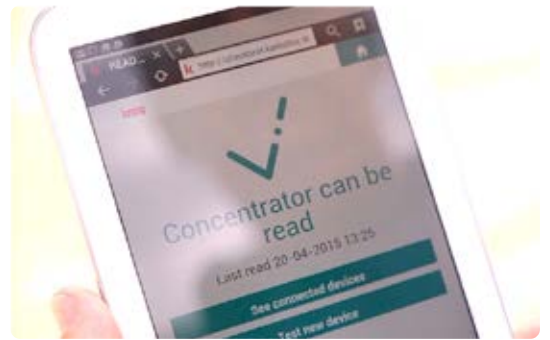


Used in combination with a Walk-by/Drive-by reading solution, READY 4G Bridge enables you to automatically read meters located in remote areas (where Walk-by/Drive-by reading is problematic or inefficient) or meters for which you need more frequent data.

Verification of the connection to the meters

As soon as the concentrator is connected to 230 volt and IP or equipped with a SIM card, it is possible via mobile unit or PC to check which meters the concentrator can read. This can help in the decision of the optimal position of the data collection unit.

Likewise, it is possible to test if the individual meter has established contact with the relevant concentrator, only by entering the meter's serial number on a mobile-friendly website (wireless M-Bus network). Thus, revisits at the consumer's place can be avoided as it already during installation can be clarified if the meter can be read.



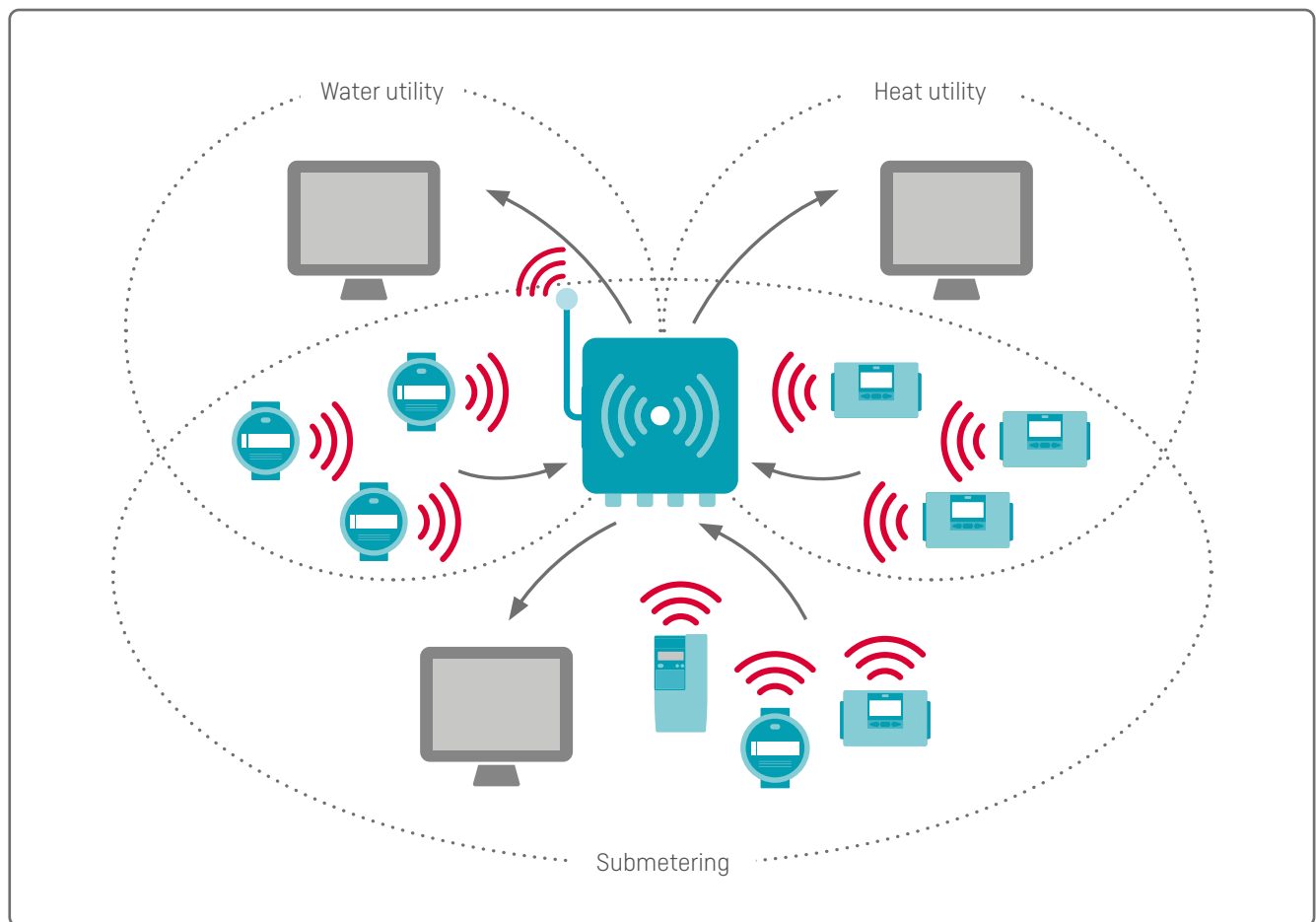
The contact between meter and concentrator can be verified quickly in a mobile-friendly website.



Shared infrastructure for Fixed Network

With a wireless M-Bus network, it is possible to share your infrastructure with others or lease it to them. In general, this means that there is a potential to share concentrators with others, thus reducing the investment cost and making it easier to get onto a fixed network. This solution complies with the GDPR as you will not be able to see each other's data, but only share the infrastructure equipment. Sharing the infrastructure is easy and straightforward and can be done by sharing an ID number with anyone who wants to use your infrastructure and vice versa.

The shared infrastructure feature is only available for READY Fixed Network licences. It is not possible to share infrastructures based on READY Drive-by licences.

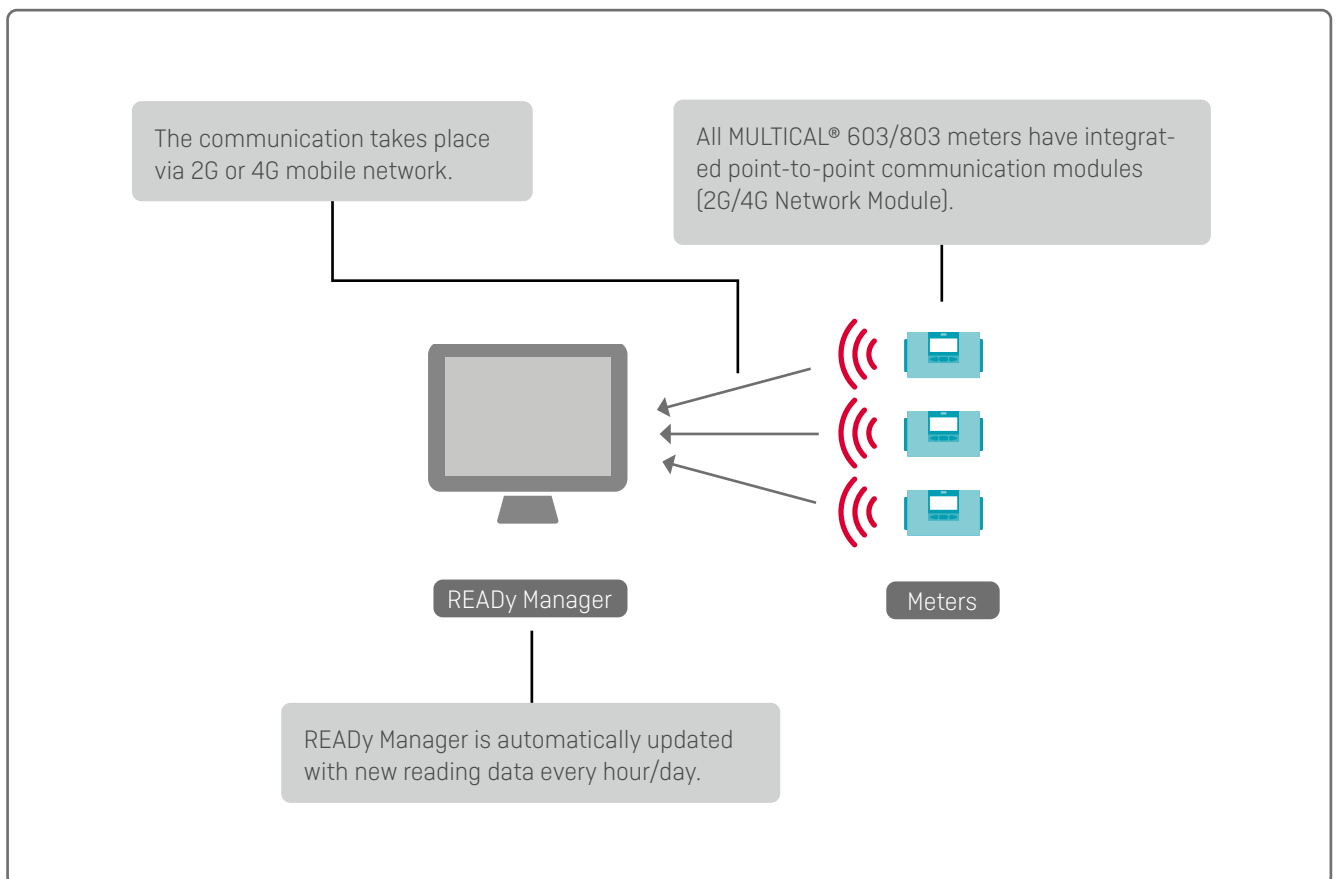


Point-to-point reading

With this reading method, each meter communicates directly with READy Manager via a 2G/4G communication module integrated in the meter.

The reading takes place automatically on an hourly or daily basis and reading data is automatically available in READy Manager. Point-to-point reading is ideal as a supplement to a radio network solution in which single remote meters are hard to reach, or if you prefer an automatic reading solution without infrastructure responsibilities.

This reading solution only applies to MULTICAL® 603 and 803 meters.

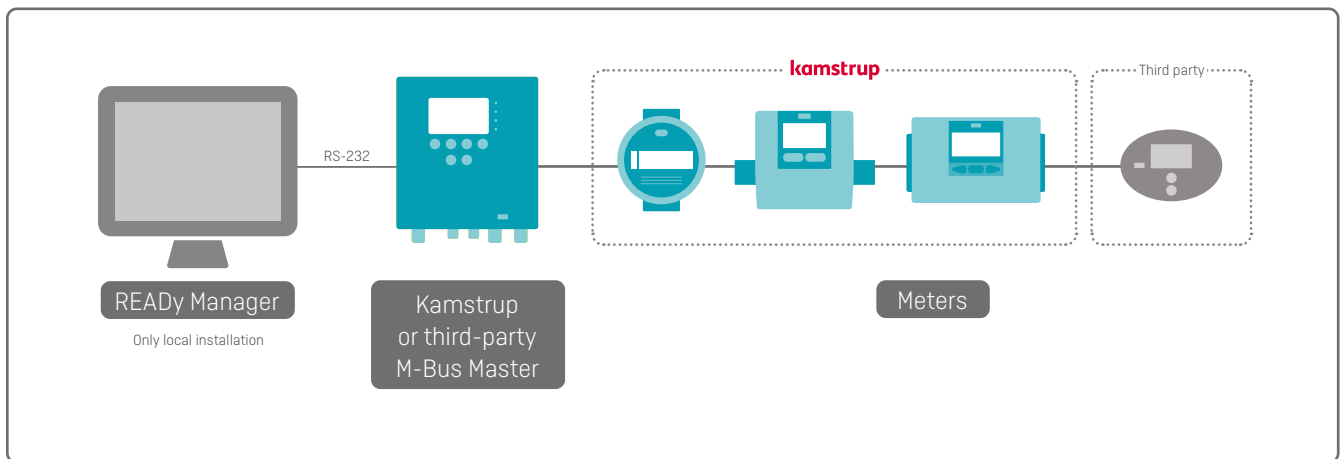


Wired meter reading

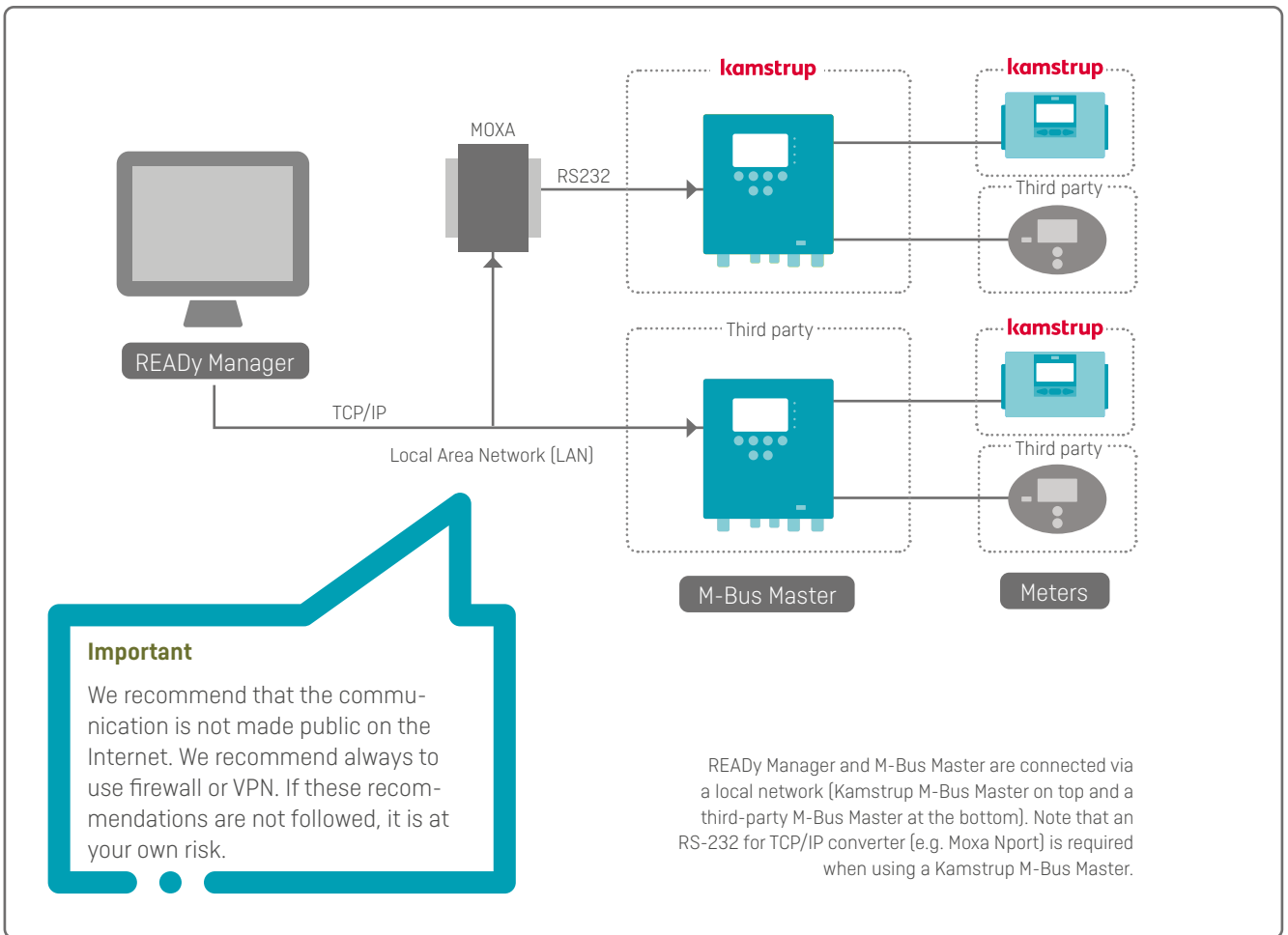
Existing and new meters with Wired M-Bus embedded can be read out by READy Manager via direct wired communication.

A wired communication for both Kamstrup and non-Kamstrup meters is very useful in applications such as high-rise buildings, shopping malls, other commercial buildings, service buildings, etc. where wireless networks are challenged by concrete and heavy traffic on publicly available frequencies. Wired communication is completely free of disturbances and ensures full meter readings in tough surroundings.

The meters are wired through cable and connected to an M-Bus Master unit. The M-Bus Master unit is connected to READy Manager either through a cable or via a local network.



READy Manager and M-Bus Master connected through cable.



M-Bus Master

M-Bus Master is designed for the connection of up to 250 meters with M-Bus interface. M-Bus Master can be used as a master, a transparent level converter and as a repeater. The total number of meters in one M-Bus system can be up to 1250 meters. Kamstrup offers two different M-Bus masters.

MultiPort 250D

With display and interface for Kamstrup optical read-out head



MultiPort 250L

Without display and interface for Kamstrup optical read-out head



Log reading and remote configuration of meters

Meters with built-in two-way communication such as MULTICAL® 403, 603 and 803 can be configured remotely via READy App.

This means that it is possible to update the meters with new settings from the street, completely without disturbing the consumer and without logistic issues in relation to gaining access to the meter.

It is possible to set parameters such as tariffs and data logging intervals as well as pulse inputs. Furthermore, the remote configuration can be used to change the information that the meter sends in the Wireless M-Bus data package. The settings of the meters can thus be adapted to the changing requirements of the utility for data and new invoicing concepts.

In addition, the two-way technology enables remote reading of the meter's log. The logged data can be read from the street by using READy App. Thereby, the meters with abnormal consumption patterns can be investigated further without the need for prior agreement and without disturbing the consumer unnecessarily.



The two-way communication makes it possible to change the meter settings and read loggers from the meters from the street.



Remote reading of analogue input sensors with MULTICAL® 603 and 803

Sensors such as temperature, pressure, air velocity, air energy content and air humidity sensors can be read remotely in READY via MULTICAL® 603 and 803 meters in all reading networks (drive-by, fixed network, point-to-point and wired meter reading).

The reading takes place by connecting the sensor to a MULTICAL® 603 or 803 meter fitted with an analogue input module. Module configuration can be done by using a configuration program and a module programming cable. 1 or 2 external sensors can be connected to each meter. The sensor values are logged in the P1 and P2 registers of the meter.



READy Manager – handling and storage of meter data

The handling of meters and reading data takes place in READy Manager. READy Manager has a simple and logical user interface with a start page and icon-based navigation.

This makes the program very intuitive and easy to use. Information about the most basic features becomes available by clicking the help icon on the start page.

Both Kamstrup meters and third-party meters can be read via READy Converter and READy App in Walk-by/Drive-by installations. A number of non-Kamstrup meters have been whitelisted for this purpose.

READy Manager handles meter encryption keys to support the best security possible. Once your meter encryption keys have been installed, you can read data from your meters.

In the map view, you can see both Kamstrup meters and non-Kamstrup meters, and they are visually differentiated to provide a better overview.

Once the meters have been read via READy App, data is synchronized with READy Manager and data is available for further actions.

READy Manager supports up to 100,000 metering points and comes in either a local or hosted solution. If you choose a hosted solution, meter data is stored and kept safe at Kamstrup. If you choose a local solution, meter data is stored locally on your own computer.

Presentation of meter data

READy Manager can visualise the consumption of individual meters in a bar chart over time. This eases troubleshooting and makes it easy to conclude and make decisions based on data. In the same chart, any info codes are also shown, making it possible to correlate consumption data and info codes.



READy Manager has a simple and logical user interface, making it very intuitive to use.



Compare data

It is possible to compare values for different meters. It is also possible to compare different values for the same meter. For example, if you compare the supply and return temperatures for a priority meter (a meter read at 5-minute intervals), you can check that the return temperature decreases as the supply temperature rises to see if the heat is transferred as intended.



Priority meters

If you have established Fixed Network reading, you quickly discover the benefit of receiving data from the meters frequently. In some cases, it may be desirable to receive data with very short reading intervals. For this purpose, READY Manager offers the functionality Priority meters, which enables you to read up to 50 meters at 5-minute intervals.

The short reading interval provides you with a far more varied picture when you need to troubleshoot certain parts of the network. The feature is also very useful in relation to pressure monitoring. With a reading interval of 5 minutes, pressure differences as a result of the flow in parts of the network can be mapped and the pressure optimised.

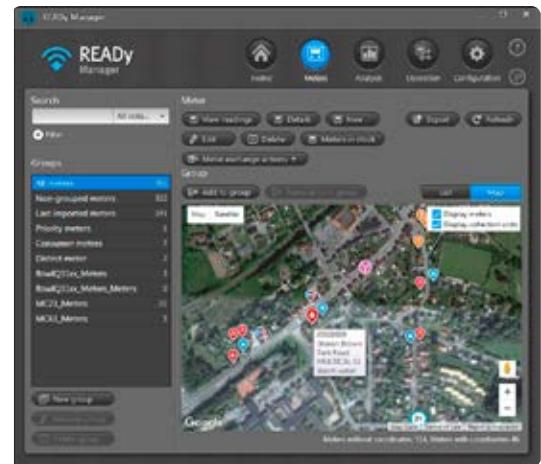


READY Solution Description – Submetering

See the meters on a map

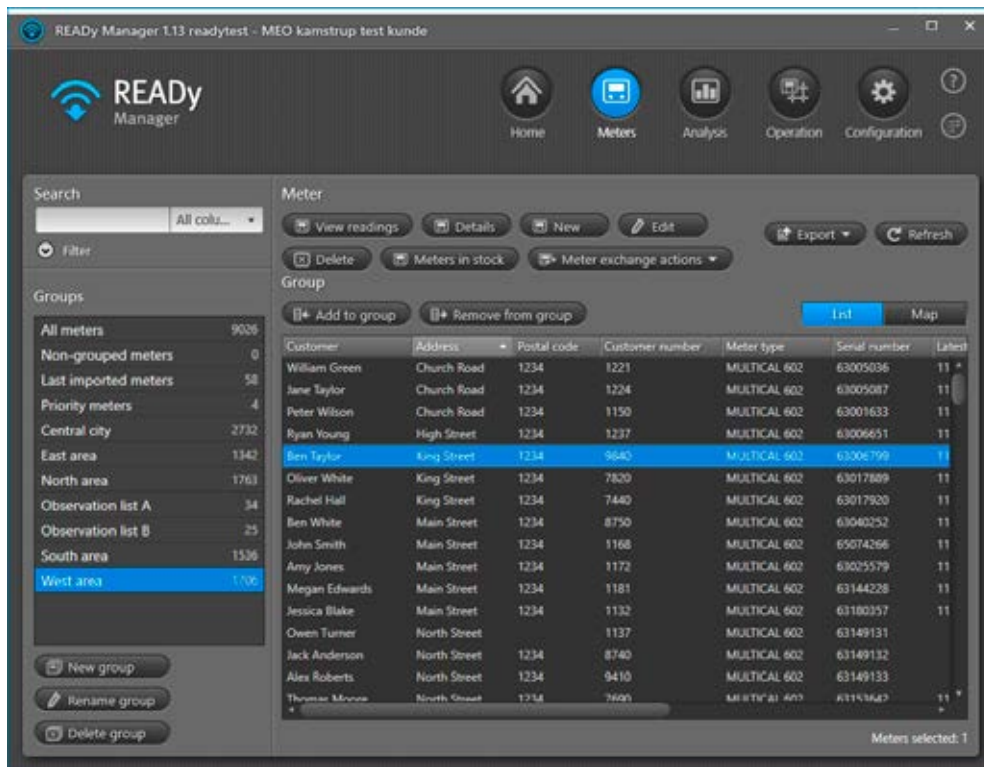
To ensure the best overview of the installed meters, the location of each meter is shown directly on a map in READY Manager. By clicking a meter on the map, further information about this meter is shown. The map is based on Google Earth and it is thus possible to use the Street View function to see comprehensive details about the installation sites.

If collection units are installed in your network to collect meter data, they can also be shown on the map. Kamstrup meters are displayed in blue, red or green. Non-Kamstrup meters are displayed in orange. Collection units are displayed in purple.



Grouping of meters

To get an overview of the meters in your distribution network, you can divide your meters into groups. Groups can be used to filter out which meters you want to show on the map and on the list in READY Manager. They can also be used to create logical reading groups and groups of meters that need special attention. You can create as many meter groups as you like, and a meter can be part of more than one group, if required.

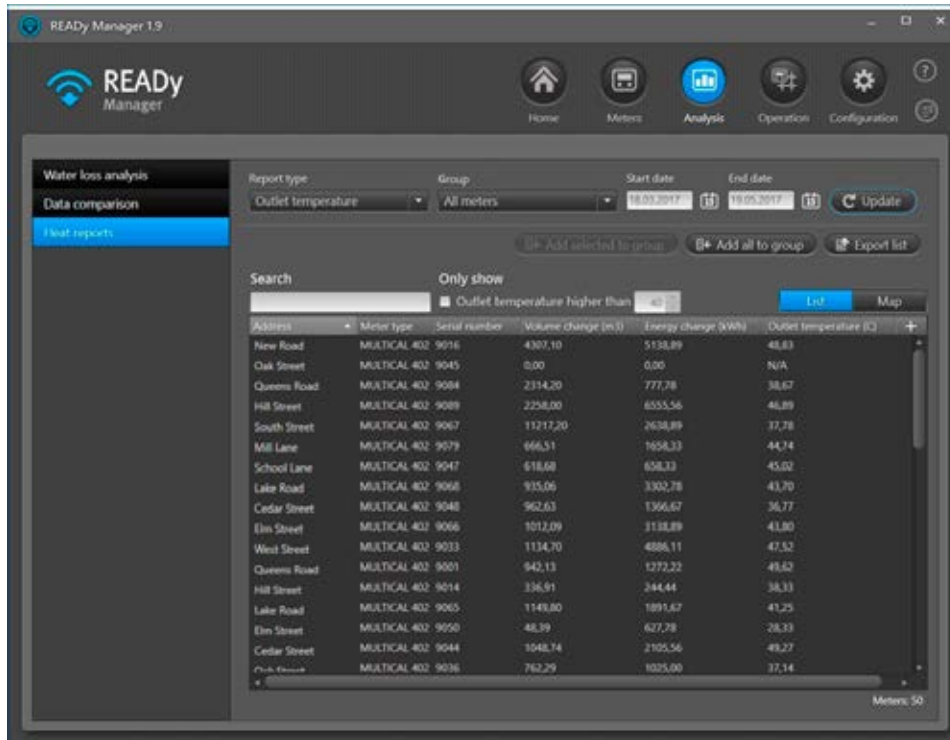


Heat reports

Keep track of supply temperatures, return temperatures and cooling performance (temperature difference).

Three types of heat reports can be generated in READY Manager:

- Cooling performance (temperature difference)
- Supply temperature
- Return temperature

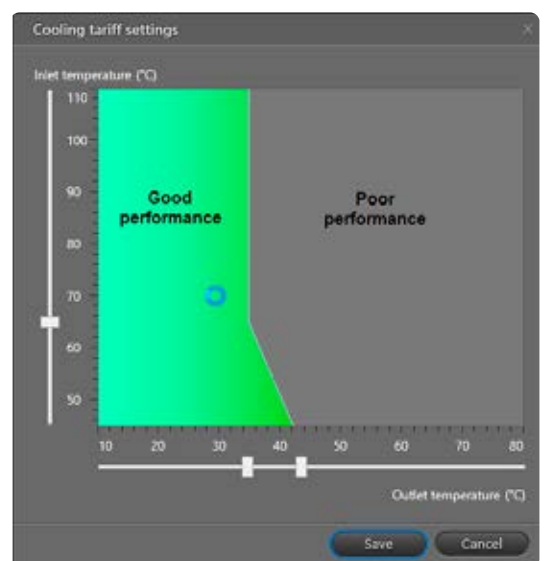


How it works

The reports can be generated for specific meter groups and time intervals.

For cooling performance reports, you can filter on performance level and differential temperature. The definition of poor and good performance is customisable.

All reports can be exported for further analysis purposes.



Reading performance reporting and visualization

For remote reading networks, the demand for a very high performance is more and more evident. To have the right tool to validate and document the data collection success is therefore necessary. With the performance reading reporting and visualization module, it is hassle-free to get a network performance overview of meters selected.

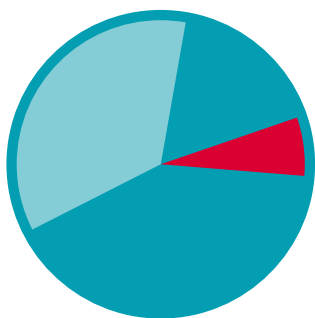
You define what is good and what is bad performance. With a single setting of a parameter, you determine when meters are performing poorly.

How it works – Performance overview

Address	Postal code	City	Serial number	Last missing reading in period	Average performance
			6791223	8/3/2016	0.00 %
			69744164	8/3/2016	0.00 %
			69744165	8/3/2016	0.00 %
			69744166	8/3/2016	0.00 %

Meters that are available in READY Manager are listed for an easy overview. Each meter is shown within a user-defined interval, with its percentage of data messages received.

It is possible to create a report that shows the reading performance of a group of meters according to user-defined parameters. It is, for example, possible to retrieve a complete list of all poor-performing meters that are due to further investigation and optimization. If required, you may add comments to the generated report.



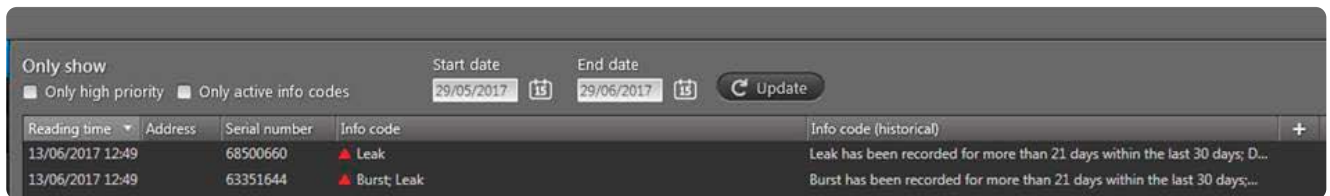
Alarms and other meter notifications

All meters with alarms and other meter notifications are shown in the overview menu “Info codes”.

Here, alarms can be sorted quickly so that the newest and most important can easily be found. The consumer individually defines which alarms are relevant and can be notified quickly to limit expensive consequential damages.

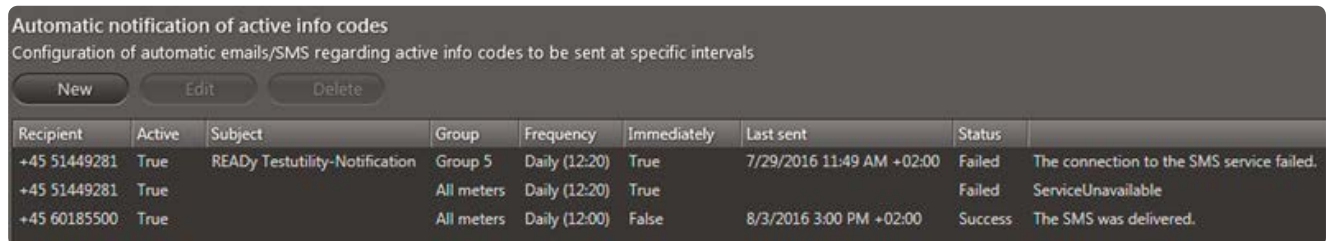
Once consumers with active info codes have been located, it is easy to export the list of info codes if further consumer interaction is needed. The export data is defined by the consumer, which ensures flexibility.

To ease the overview, an icon representing the info codes is displayed in the meter overview window. This enables fast identification of consumers with active info codes.



Immediately after the synchronisation, the read data is available in REAdy Manager. Alarms and other meter notifications are shown under “Info codes”.

System notification feature



In remote reading networks, it can be a big headache to follow occurring info codes and act accordingly. On the basis of customizable parameters, the Notification feature filters which info codes are relevant and which are not. The Notification feature forwards an info code by text message and/or email to a user-defined number of recipients. Forwarding settings determine if an info code is transmitted or not.

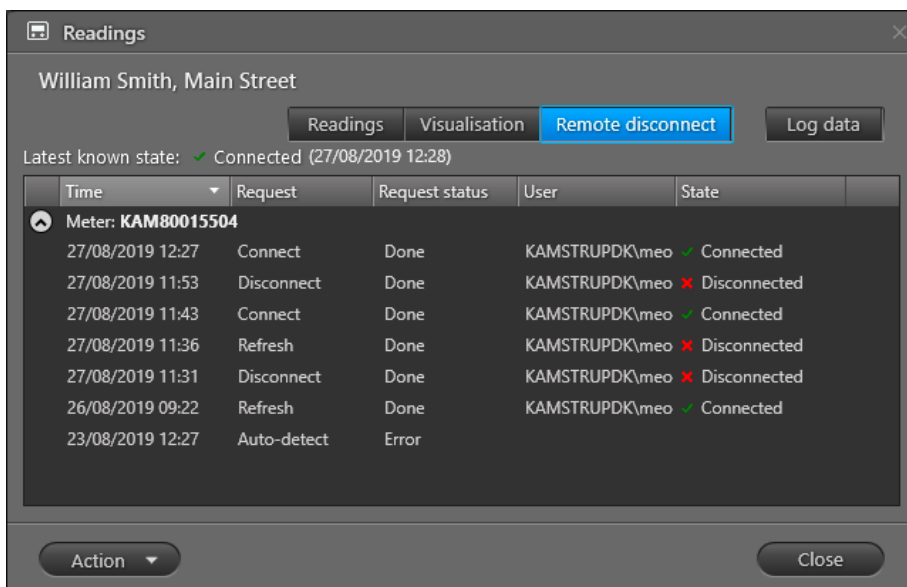
The Notification feature increases the occurrence of important info codes, to a large extent giving the consumer full control of meter events.

Remote disconnect of the heat supply (Wired M-Bus reading only)

For MULTICAL® 403, 603 and 803 meters, which are read in a wired M-Bus network, it is possible to remotely disconnect and connect the heat supply from READY Manager. This means that if you need to disconnect the heat supply due to non-payment, energy savings, maintenance, detection of a leakage, etc., you can do this from the utility company.

How it works

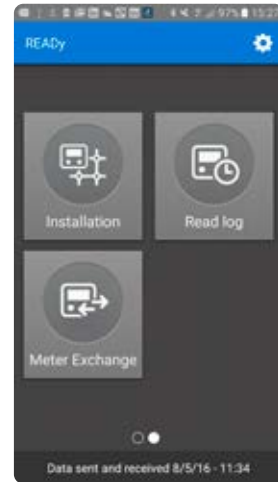
The heat supply is disconnected through remote control of a normally open or normally closed valve that is connected with the heat meter in your network. In READY Manager, you can select the meter and disconnect or connect the heat supply with a few clicks. You can also check if the heat supply is currently connected or disconnected:



Meter exchange

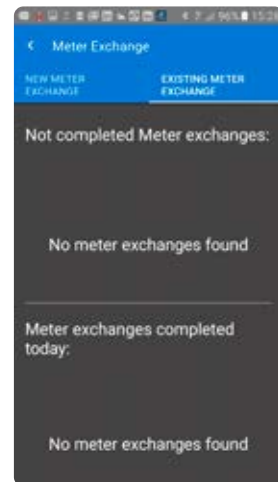
Many manual tiring processes are involved in the running maintenance of meters and the handling of meter exchanges.

The meter exchange feature in READY Manager and READY App simplifies the handling and maintenance of the meter exchange process that to a very high degree frees human resources to other tasks. In addition, the risk of manually caused errors is reduced to a virtual zero, which adds to the total efficiency of your utility.



How it works

Exchanging a meter is a guided action that is generally performed via READY App, but it is also available in READY Manager. Once the meter is exchanged, READY App is synchronized with READY Manager where the historical data is stored. This flexibility leaves an option for you to perform meter exchange on-site or before the actual consumer visit.



READY Solution Description – Submetering

Export of data

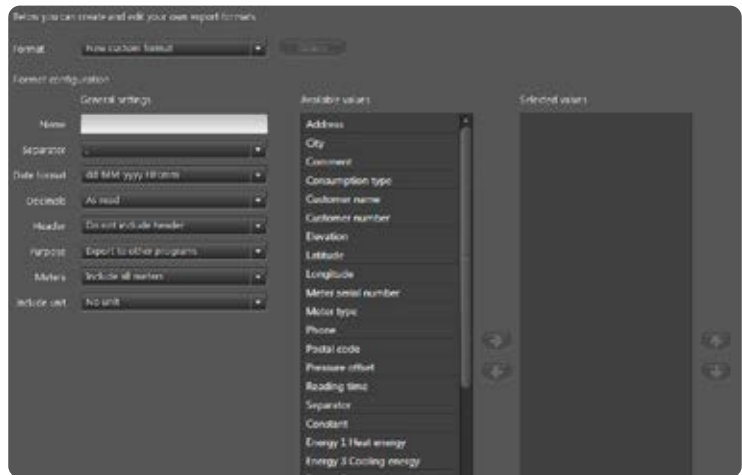
To simplify the integration with billing systems, READY Manager makes it possible to export data in flexible export formats. It is possible to generate most formats by selecting the data to export, the order and the separator.

Data can be either exported ad hoc or by creating an automatic job that exports the read data to a selected place at certain intervals. Alternatively, you can set up READY Manager to automatically send the read data via email at certain intervals.

Billing systems may require fixed width formats. This is solved with the flexible custom export function that supports both dynamic and fixed export widths together with a long list of data variables that can be exported. Once the meter reading is received by READY Manager, the data can be exported to other programs for further processing.

Non-Kamstrup metering data is exportable in the same way as Kamstrup metering data. Note that T1 OMS data read from a non-Kamstrup meter, or meters that have been manually read, does not have the same amount of data variables as a Kamstrup heat/cooling or water meter.

When exporting data, you can activate the data interpolation function, which is a digital tool that improves the data quality by filling in missing values through advanced algorithms. Note that this function requires a Fixed Network reading solution.



Import of meters and consumers

Meters and consumers can be easily imported into READY Manager either ad hoc or automatically. Meters are imported automatically from My Kamstrup. Consumers are imported automatically by setting up an automatic job that imports data from a selected location at certain intervals. The import format of consumer data is flexible and can be defined by selecting the separator between the values and by mapping imported consumer values to values in READY.

Electricity meters

With Fixed Network reading and Walk-by/Drive-by meter reading, it is possible to read electricity meters. The electricity meter supported in READY Manager is Kamstrup OMNIPower®.

Available data in READY Manager: A+, A-, P+, P-.



READY Solution Description – Submetering

Role-based access control

To protect your meter, reading and consumer data from potentially unwanted operations, such as delete, edit or rename, the permission to perform certain operations in READY Manager can be restricted by user roles. There are three types of user roles: user, superuser and administrator.

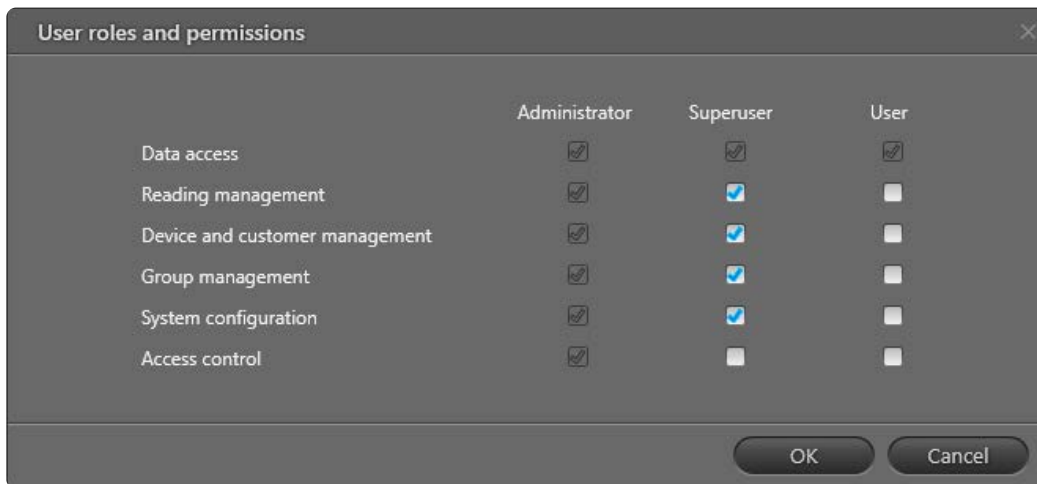
With the user roles and permission setup in READY Manager, you can control the access to various operations in READY Manager and change the permissions of user roles in the future.

How it works

Your access to features in READY Manager is restricted by your user role. The role “user” enables you to, for example, view meters and other data and export information from READY Manager. However, you are not allowed to import, configure, create, edit or delete data.

Your READY Manager user role is attached to the login information you use when you log into READY Manager.

Users with the role “administrator” can change the permissions of the “user” and “superuser” roles.



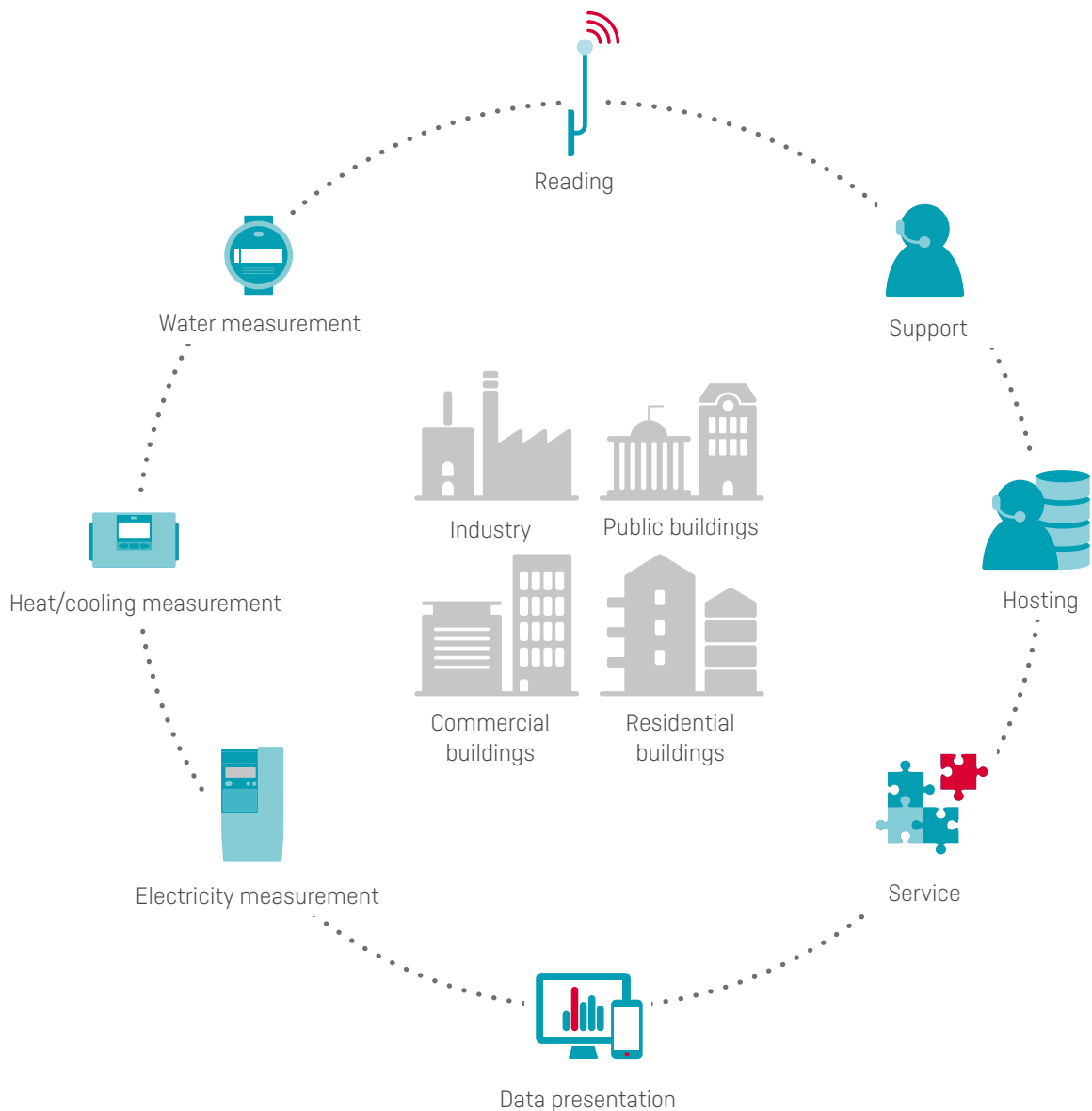
The General Data Protection Regulation

At Kamstrup, we strive to protect your data and ensure that you can focus on what is important, rather than worrying about protecting your data.

With the addition of the General Data Protection Regulation (GDPR), we have ensured that each user now has his own personal login. This means that you must use your My Kamstrup login credentials to get access to our products.



Submetering



58116310_C1_GB_02.2021

Think forward

Kamstrup A/S

Industrivej 28, Stilling
DK-8660 Skanderborg
T: +45 89 93 10 00
F: +45 89 93 10 01
info@kamstrup.com
kamstrup.com