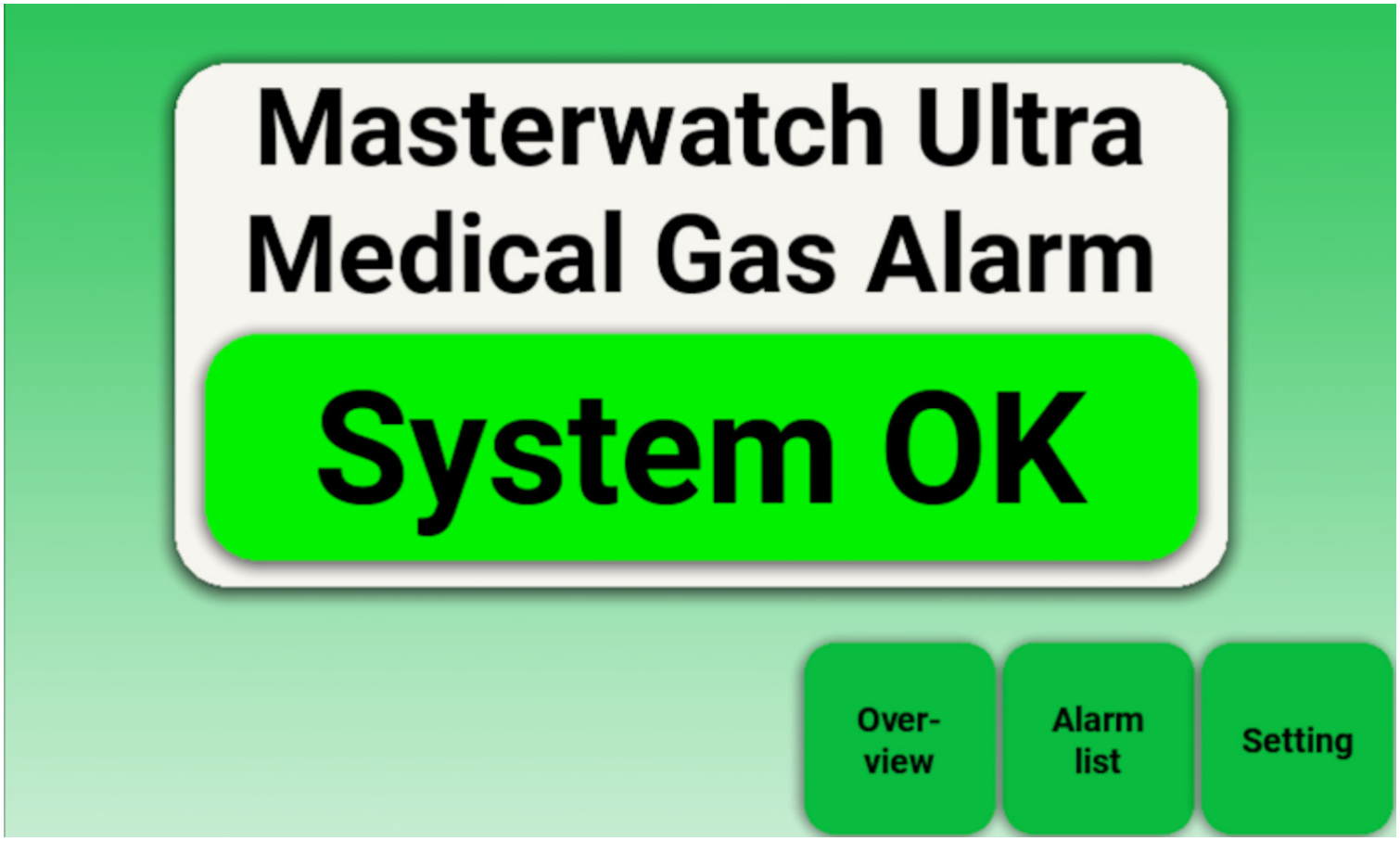
INSTRUCTION FOR USE

Masterwatch Ultra Remote alarm



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Thank you for choosing Masterwatch Ultra from QMT-Tech ab

Your new Masterwatch Ultra is an advanced medical device with high-quality components and features for safe operation and high performance.

Read the information for use before installation, commissioning and use so that you are well informed about how it is installed, commissioned and used safely.

Information on use is supplemented with instructions on installation, operation and maintenance for a long and trouble-free use.

We wish you a long, safe and trouble-free use.

This manual describes the Masterwatch Ultra's functions for safe installation, commissioning and use.

The information for use should be read and understood by all intended users.

The following symbols are used in the user manual:

Warning

Note, important information

Read the information for use

Digital copy can be downloaded from qmt3.com

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Intended use:
The Masterwatch Ultra remote alarm is used to receive and display alarm information from one or more Masterwatch Ultra alarm systems that monitor medical gases. The system is designed to enable a quick overview of current alarm statuses in places where monitoring is needed, for example on expeditions or manned workplaces.

The device is primarily intended for use by healthcare professionals in their daily work. The interface is designed to be easy to understand and accessible, regardless of the user's technical background.

Intended users:
Installation – Installer, pipe fitter, electrician, etc.
Daily use – Healthcare staff and hospital maintenance/operations technicians
Maintenance – Technician from QMT-tech or another technician authorised for the task by QMT-tech AB.

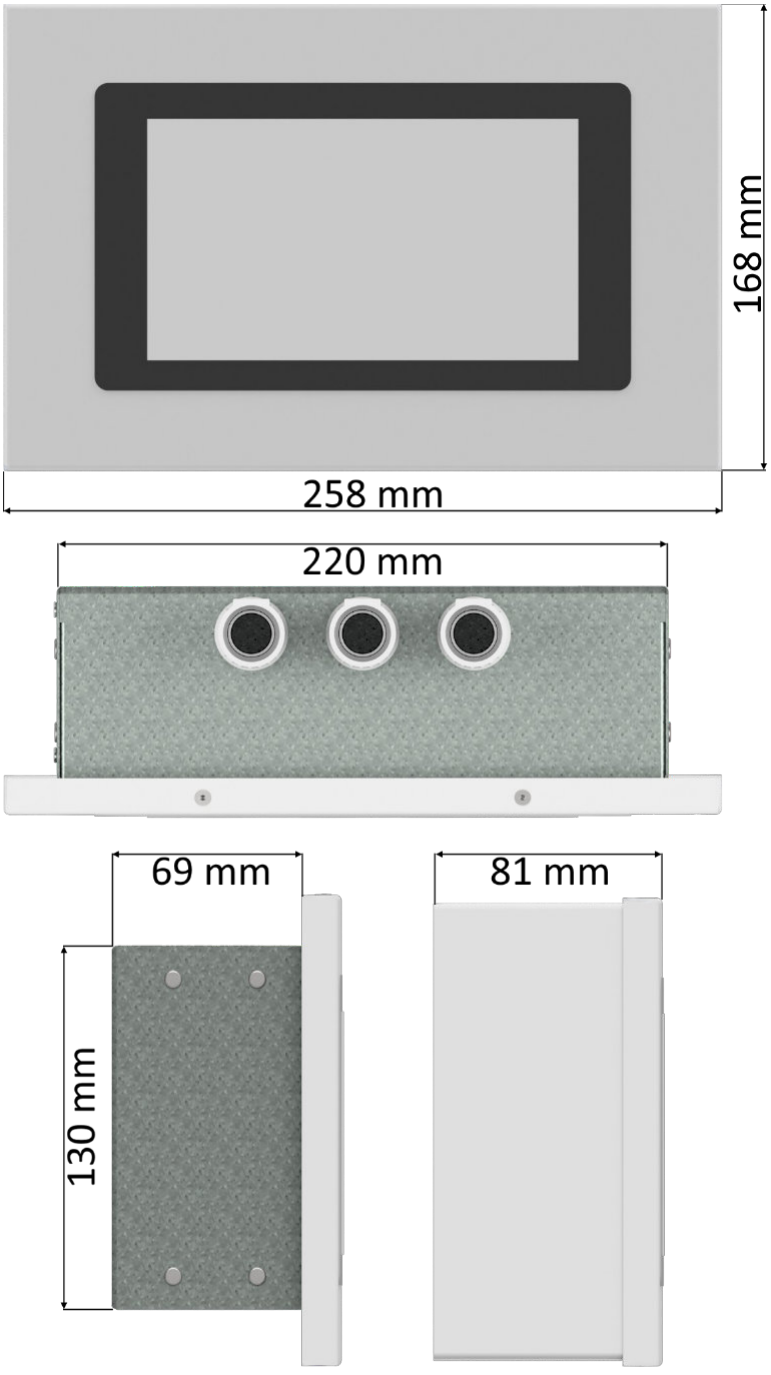
Target group:
Not limited, since medical gases are used in all areas of the hospital.

Indications:
Non-specific since medical gases are used in all areas of the hospital for many different conditions.

Contra indications:
Non-specific since medical gases are used in all areas of the hospital for many different conditions.

The Masterwatch Ultra remote alarm is delivered as a wall-mounted unit – either flush-mounted or surface-mounted.

Wall-mounted alarm – recessed or surface-mounted



Mounting the slave panel on the wall:
On the top side of the alarm enclosure there are knockout holes for three 20 mm conduit couplings. All wiring is routed into the enclosure through these.

To access the terminal strips in the alarm, loosen the four screws on the alarm front – two at the top and two at the bottom. The front can then be removed.

Note:
Behind the alarm, only a reasonable amount of wiring should be placed to connect the unit. Excess wiring must not be pushed in behind the unit, but should instead be routed elsewhere in a suitable manner.

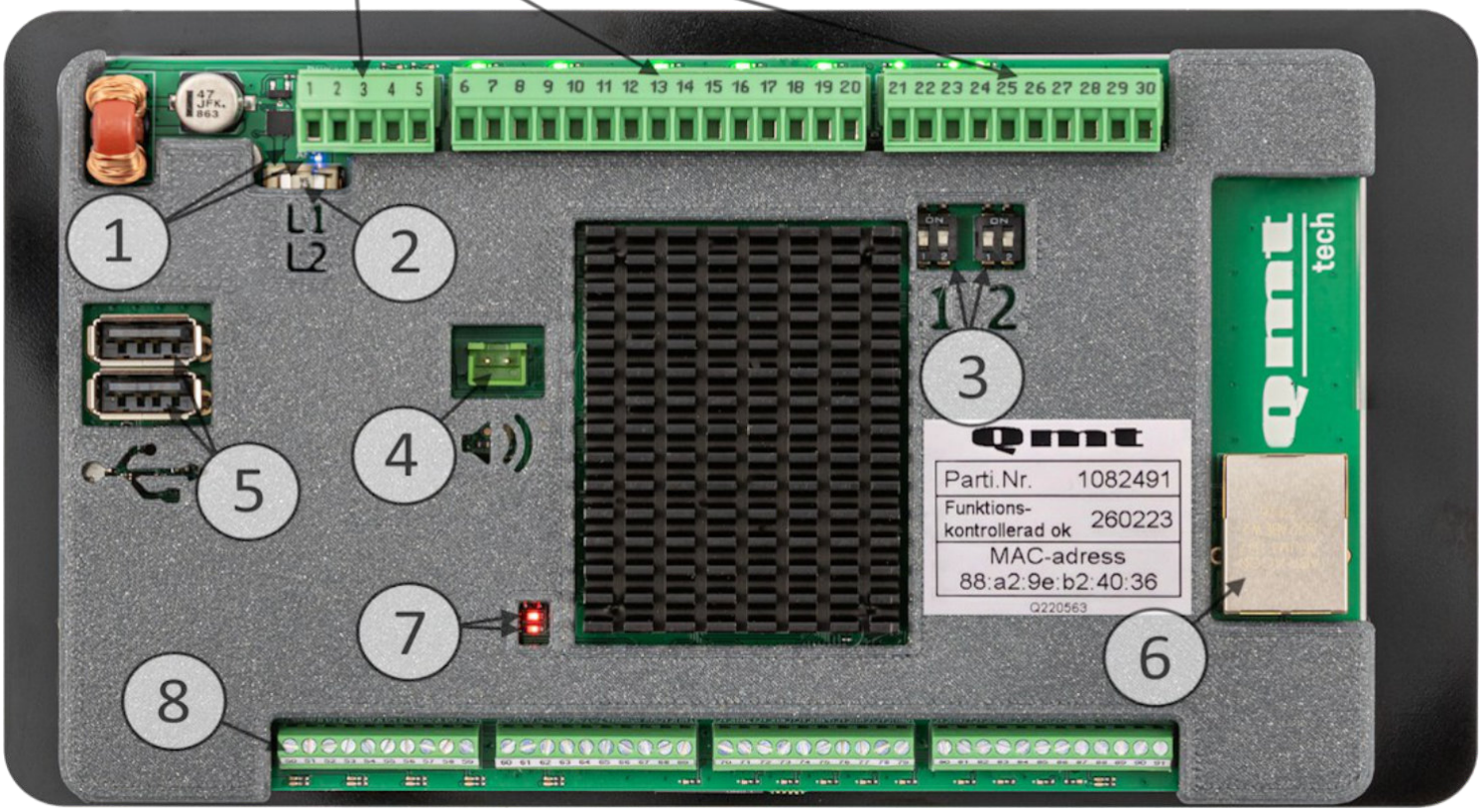
Forcing too much wiring behind the alarm so that it presses against the display may cause the display to be pushed out or come loose from its mounting.

Note:
Since the remote alarm is delivered separately from the devices to be monitored, the Modbus communication between the Masterwatch Ultra devices must be connected and configured.
The wiring diagram and configuration instructions for this can be found on page 12.

Ferrules are recommended when connecting.

Conductor cross-section: 0.25 mm^2 – 1.5 mm^2

Stripping length: 7 mm



1. Status LEDs – indicate the alarm's power supply. (More information on page 10 under *Power supply*)
2. Fuse – protects the PCB against overload.
   (More information on page 10 under *Power supply*)
3. RS-485 termination. (More information on page 10 under *RS-485 termination*)
4. Connector for the alarm loudspeaker.
5. USB port – for updating the alarm and retrieving log files.
6. RJ45 connector – Modbus TCP/IP communication. (Not used)
7. Heartbeat LED – lights and pulses when the system is active
8. Terminal strip – For pressure measurement and valve status. The unit does not monitor any pressures or valves so this terminal strip is not used.

1. Power supply

To ensure correct function, connect a stabilised 24 VDC power supply as follows:

Terminal	Function	Specification
1	+24 VDC	**IMPORTANT! 24 VDC ±10% (Max ripple ≤ 200 mV)**, (More information on page 10 under *Power supply*)
2	0 VDC	
3	Protective earth	

NOTE! Verify the voltage before connection to avoid damage to the unit.

2. UPS

Signals from UPS, if QMT's UPS is used.

Terminal	Function
4	UPS battery operation
5	UPS battery alarm

3. Relay outputs

Relay outputs are used to send alarm signals to nurse call systems, DUC, or other systems.
(More information on page 11 under *Relay outputs*)

Terminal			Function	Max load
6 (NC)	7 (NO)	8 (COM)	Relay 1	4A, 250VAC
9 (NC)	10 (NO)	11 (COM)	Relay 2	4A, 250VAC
12 (NC)	13 (NO)	14 (COM)	Relay 3	4A, 250VAC
15 (NC)	16 (NO)	17 (COM)	Relay 4	4A, 250VAC
18 (NC)	19 (NO)	20 (COM)	Relay 5	4A, 250VAC

2. External alarm outputs

Connections for external control, such as remote alarm basic, remote lamp and remote buzzer.
(More information on page 11 under *External alarm outputs*)

Terminal		Function	Max load
21 (24VDC+)	22 (0V)	Remote alarm basic	1,5A
23 (24VDC+)	25 (0V)	Remote lamp	1,5A
24 (24VDC+)	25 (0V)	Remote buzzer	1,5A

5. Modbus communication

5.1 Modbus RTU (RS-485) to DUC

Not used when the unit is a remote alarm.

Terminal	Function
26	DUC Modbus A
27	DUC Modbus B

5.2 Modbus RTU (RS-485) QMT

Communication with the Masterwatch Ultra units from which the remote alarm will retrieve alarms.
(More information on page 12 under *Configuring and Pairing Masterwatch Ultra and Remote alarms*)

Terminal	Function
28	QMT Modbus A
29	QMT Modbus B
30	GND Modbus DUC/QMT

5.3 Modbus TCP/IP

Not used when the unit is a remote alarm.

Power supply

Masterwatch Ultra must be supplied with 24 VDC ±10% (max rippel ≤200mV).
Only stabilized power supplies may be used.

Using non-stabilized power supply can cause voltage variations and ripple that may damage the unit or negatively affect operation.
During normal operation, current consumption is approximately 350 mA.
Recommended minimum power supply capacity is 1 A (24 W), which provides sufficient margin for safe operation and future options such as remote alarm outputs or other accessories.

> Note: If remote alarm outputs or other accessories are powered from the alarm unit, their current consumption must be included when sizing the power supply and fuse.

The unit has two status LEDs:

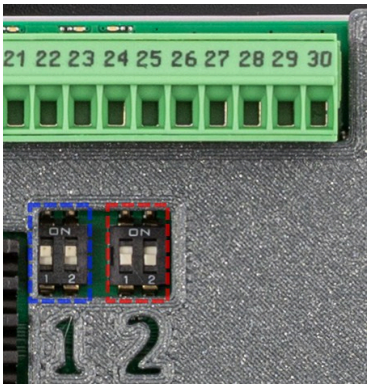
- L1 lights when the unit has supply voltage.
- L2 is located after the internal fuse.

If L1 is on but L2 is off, the PCB fuse (2) has blown. Replace with: Littelfuse SMD fuse, 5 A.

Important: The internal fuse is only a protective device for the device itself.
An external fuse must always be installed upstream, dimensioned for the system total current consumption.

RS-485 termination

Masterwatch Ultra is equipped with two DIP switches for RS-485 termination They are located under the terminals and are marked with numbers **1** (blue frame) and **2** (red frame) in the enclosure.

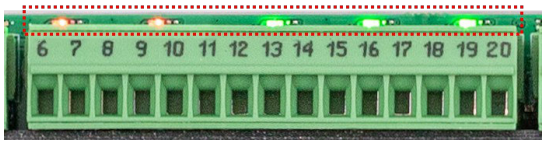


- Switch 1 (blue): Termination for Modbus RS-485 for other systems (e.g., DUC).
- Switch 2 (red): Termination for Modbus RS-485 to QMT accessories.

Each switch has two positions:
- ON on both 1 and 2 = termination enabled (120 ohm).
- OFF position on both = Termination disabled

Note:
For correct RS-485 communication, only one device at each end of the Modbus bus should be terminated.
Therefore, enable termination on Masterwatch Ultra only if it is located at the end of the Modbus line.

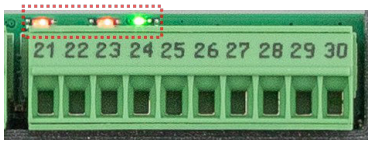
Relay outputs



Each relay has an LED indicating relay status:
Green – Relay is in normal state.
Red – Alarm condition is met and the relay is in alarm state.
Off (no red/green) No power to the alarm; the relay is in alarm state.

Information about relay configuration is found on page 22 under *Relay functions*.

Remote alarm outputs



Each output has an LED indicating output status:
Green – Output is in normal state. No 24 VDC is supplied.
Red – Alarm condition is met; output is in alarm state. 24 VDC is supplied.
Off (no red/green) No power to the alarm; no 24 VDC is supplied.

Each output has a safety function: If an alarm is active and the output supplies 24 VDC, but the current exceeds 1.5 A, the output is automatically shut off.

Note: The LED may still be red even if no 24 VDC is supplied. To reset the safety function:

1. Reset/acknowledge so the output returns to green.
2. Troubleshoot the wiring and connections. The safety function is most often triggered by a short circuit downstream of the alarm.

Information about output configuration is found on page 23 under *External alarm outputs*.

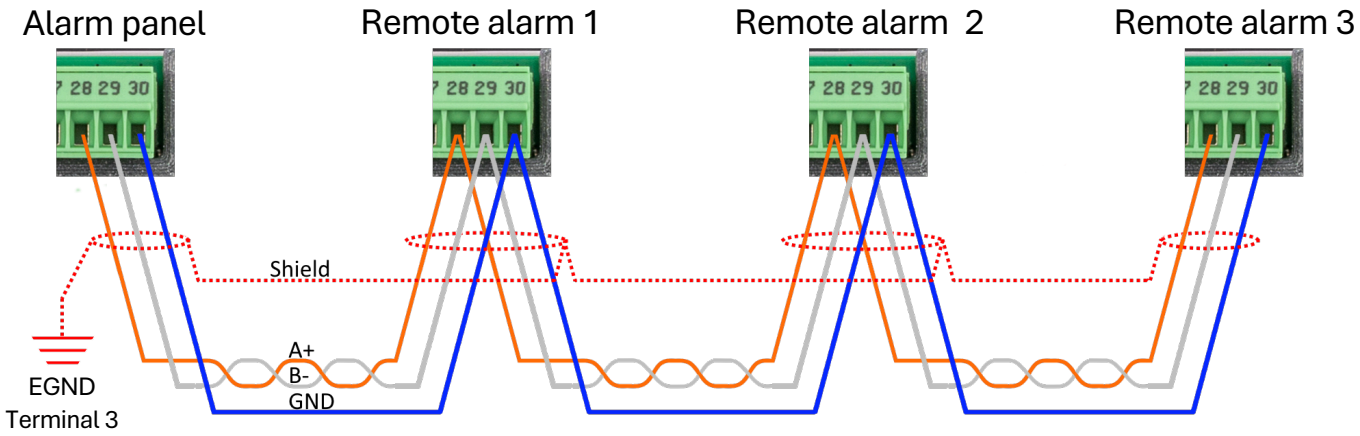
Configuring and Pairing Masterwatch Ultra and Remote alarms

Step 1 – Connect the Masterwatch Ultra Remote alarm

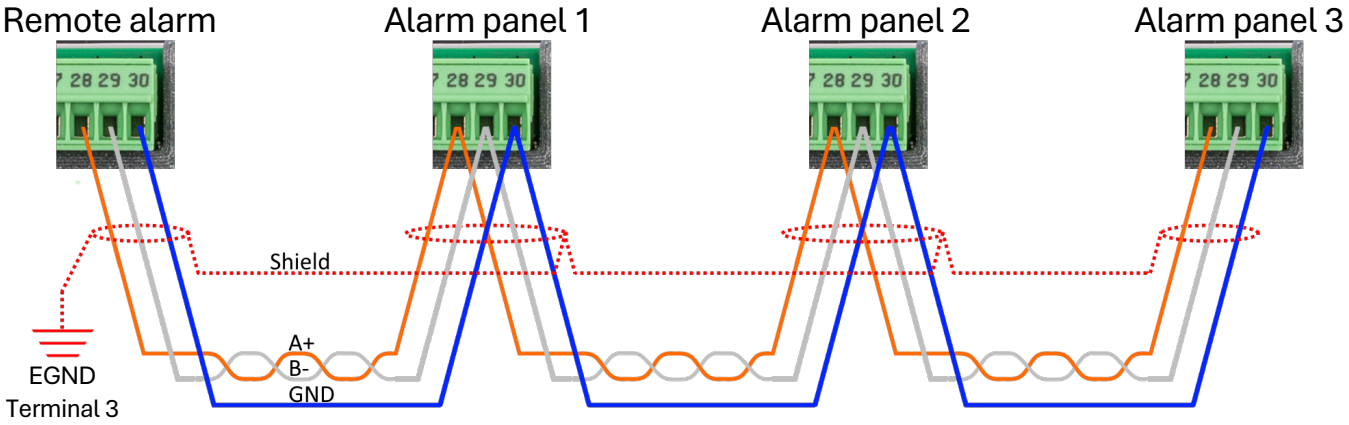
The Masterwatch Ultra Remote alarm can be used in two different configurations.

Before starting the installation, connect the devices according to one of the two options below:

Mode 1 (Multiple remote alarms are connected to one and same alarm panel and display its alarms.)



Mode 2 (Multiple alarm panels are connected to a remote alarm that displays all alarms.)
In this mode, either the DUC or QMT (Modbus RTU) port can be used in the alarm panel. If the alarm panel's QMT port is already used by Modbus accessories, the DUC port can be used, provided that it is not already used by a superior system.

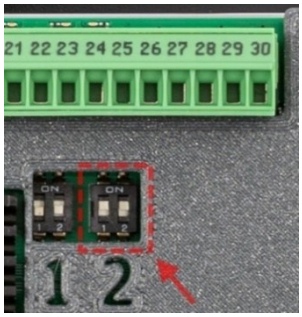


If Mode 2 above is used and alarm data from the connected alarm panels needs to be displayed on additional remote alarms, proceed as follows:

1. Connect a new Modbus RTU loop from terminal 26 (A) and 27 (B) on the remote alarm above operating in Mode 2. Route the cable to terminal 28 (A) and 29 (B) on the additional remote alarms.
2. Set the additional remote alarms to Mode 1. They will then receive and display the alarm data forwarded from the remote alarm operating in Mode 2.

- A Modbus RTU loop should always be connected in **series (daisy-chain)** and must never be connected in parallel or as a star connection.
- Recommended cables: Belden 9842LW, Belden 3106A or equivalent cable of similar quality. (Please note that QMT does not supply or sell cables. Cables are ordered separately from an electrical wholesaler or other supplier of installation materials.)
- Shield should be connected to terminal 3 (Protective Earth) on the unit on the left in the images above.

Step 2 – Termination Resistor



The Modbus RTU loop should be terminated with 120 Ω at both ends.

- In the examples above, the first and last Masterwatch Ultra units in the loop should be terminated.
- The alarm panel has a built-in termination resistor.
- Set both switches at **Switch 2** to **ON** to enable termination mode.

Step 3 – Connection and Start-up

3.1 Connect all devices to the **24VDC** power supply.

3.2 Turn on the power and allow the system to start up.

3.3 Before the Modbus communication has been configured, some alarms may be incorrectly triggered in the remote alarm because the communication is not yet working. This is normal and will be addressed in the next step.

Step 4 – Configure Modbus communication

Mode 1: Multiple remote alarms connected to one alarm panel

If multiple remote alarms are to present alarms from one alarm panel, follow these steps to configure the communication in the devices. The menu contains texts that guide you through the process.

Remote alarm configuration

4.1.1 Go to a remote alarm and log in to settings, Settings > Other > Remote alarm setup

4.1.2 If "Mode 1" is not selected, activate it with the button.

4.1.3 If only one remote alarm is connected to the alarm panel, proceed to step 4.1.5

4.1.4 If multiple remote alarms are used:

- Go to the next remote alarm and repeat steps 4.1.1 and 4.1.2
- Enter a unique address for each remote alarm.
- The default address is 16, but all devices in the loop must have different addresses. Choose another address of your choice between 17 and 100.

Alarm panel configuration

4.1.5 Once all remote alarms are configured, go to the alarm panel and log in to Settings, Settings > Other > Remote alarm setup

4.1.6 At the bottom of the screen, enter a name for the alarm:

- This name will be visible in the alarm text on all remote alarms.
- Choose a name that indicates where the alarm comes from.

4.1.7 If "Mode 1" is not selected in the alarm panel, activate it with the button.

4.1.8 Now everything is configured so that the alarm panel sends out alarms to all remote alarms.

- Test by generating an alarm and checking that it is displayed on all remote alarms.

Monitoring of communications

- The alarm panel **does not** monitor which remote alarms are connected in the loop.
- Each remote alarm is responsible for its own communication monitoring. If a remote alarm loses contact with the alarm panel, an alarm is generated after 60 seconds to indicate a communication error.

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Mode 2: Multiple alarm panels are connected to a remote alarm.
If a remote alarm is to present alarms from multiple alarm panels, follow these steps to configure the communication. The menu contains texts that guide you through the process.

Configuration of alarm panels

4.2.1 Go to an alarm panel and log in to settings, Settings > Other > Remote alarm setup

4.2.2 Enter a name for the alarm panel at the bottom of the screen:

- This name will be visible in the alarm text on the remote alarm.
- Choose a name that indicates where the alarm comes from.

4.2.3 If "Mode 2" is not selected in the alarm panel, activate it with the button.

4.2.4 Set a unique Modbus address for the alarm panel:

- The address must not be the same as any other alarm panel in the loop.
- The default address is 16, but you can choose any address between 16 and 100.
- Note the address and name from 4.2.2, as you will need this information in 4.2.9

4.2.5 Repeat steps 4.2.1 – 4.2.4 for all alarm panels that are to be connected to the remote alarm.

If Mode 2 cannot be selected in step 4.2.3 because the alarm panel is already using the Modbus RTU – QMT port for other Modbus accessories from QMT, use the Modbus RTU to DUC port instead. Do steps 4.2.1 and 4.2.2, then go to Modbus RTU Setup and set: Baud rate 9600, Parity None, Data bits 8, Stop bits 1, Address 16 – 100 (any unique).

Remote alarm configuration

4.2.6 Go to the remote alarm and log in to settings, Settings > Other > Remote alarm setup

4.2.7 If "Mode 2" is not selected, activate it with the button.

4.2.8 When "Mode 2" is activated, the slave panel must be configured to retrieve alarms from the correct alarm panels, Click the configuration button at the bottom.

4.2.9 A pop-up will appear with instructions for the configuration. If you have followed steps 4.2.1 – 4.2.5, continue:

- The slave panel will now automatically search for alarm panels on the Modbus loop.
- When the search is complete, a list of the addresses that have responded will be displayed.
- Check that all addresses that you noted in 4.2.4 are included.

4.2.10 The configuration is now complete! Test the system by generating alarms from all alarm panels and verify that the slave panel displays all alarms correctly.

Communication monitoring

- The alarm panels do **not** monitor whether the remote alarm is connected in the loop.
- The Slave Panel is responsible for monitoring the communication itself.
  If the remote alarm loses contact with any alarm panel, an alarm is generated after 60 seconds to indicate a communication error.

Troubleshooting Slave Panel Communication

If the remote alarm cannot contact the alarm panel, it will display a communication failure alarm after 60 seconds. This means that it cannot mirror the alarms generated in the alarm panel. Communication failure with the alarm panel is classified as a B alarm, which means that the alarm sound sounds once upon activation but does not repeat. However, the alarm will continue to appear in the remote alarm's alarm list as long as the error persists, and the background on the screen will be yellow.

Check communication status

To view the status of the communication in the remote alarm:

1. Go to Settings > Other > Remote alarm setup.
2. There you will find a list showing all the alarm panels that the remote alarm is configured to mirror alarms from. If the communication is working, it will say "OK". If there are problems, it will say "Error". If the remote alarm is showing communication errors, follow these troubleshooting steps depending on which mode you are using:

Common Errors and How to Resolve Them

1. Remote alarm alarms for communication error in Mode 1

If the remote alarm is set to **Mode 1** but is displaying communication errors, check the following:

Cables are connected correctly – Check that all cables are connected correctly as instructed in *Step 1*.

All devices have power – Make sure the alarms are receiving 24VDC power and are powered up.

Mode 1 is enabled on all devices – Check that both the alarm panel and the remote alarms have Mode 1 enabled and that each remote alarm has a unique Modbus address as instructed in step *4.1.4*.

Termination only at the ends of the loop – Check that any RS485 termination is enabled only at the two physical ends of the loop. Termination must not be enabled on units in the middle of the loop, as this cause communication disturbances and communication errors.

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2. The remote alarm cannot communicate with the alarm panels in Mode 2

If you are trying to configure **Mode 2**, but the remote alarm cannot find any alarm panels, verify following:

The cables are connected correctly – Double check that the cables are connected according to *Step 1*.

All devices have power – Make sure the alarms are receiving 24VDC power and are powered up.

Mode 2 is enabled – Make sure Mode 2 is enabled on both the alarm panels and the remote larm.

Termination only at the ends of the loop – Check that any RS485 termination is enabled only at the two physical ends of the loop. Termination must not be enabled on units in the middle of the loop, as this cause communication disturbances and communication errors.

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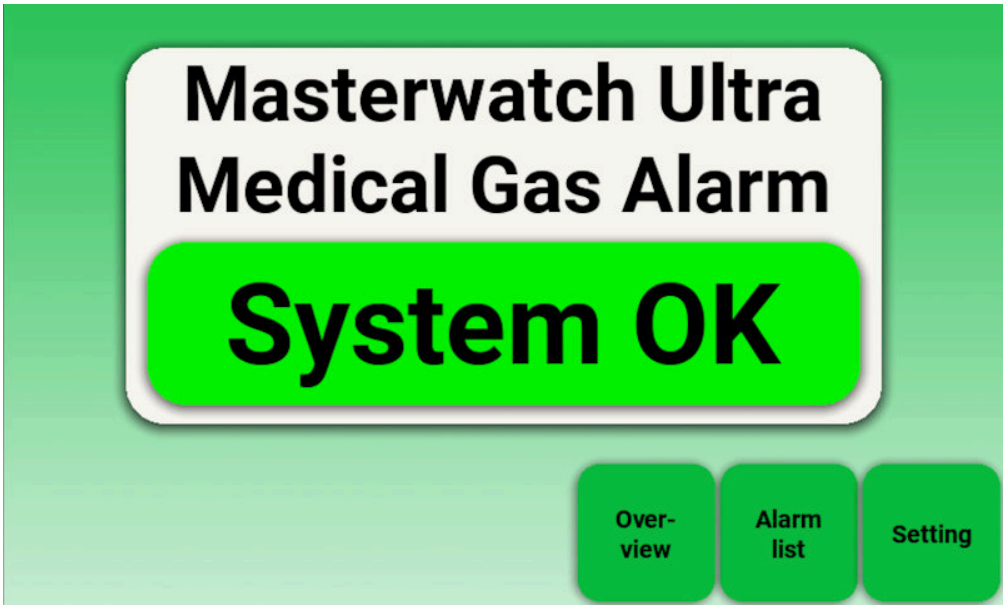
3. The remote alarm can only communicate with some alarm panels in Mode 2

If the remote alarm can communicate with some alarm panels but not all, check the following: **Wiring at the alarm panel –** Double check that the cables are connected according to *Step 1* of the installation guide at the alarm panel that the remote larm cannot communicate with.

The alarm panel is powered on – Make sure the alarm panel are receiving 24VDC power and are powered up.

Unique addresses – Make sure Mode 2 is enabled on the alarm panels that cannot communicate and that all alarm panels have different Modbus addresses.

Start screen



The start screen is the view normally shown during normal operation of Masterwatch Ultra remote alarm. It provides a quick overview of system status and is always available. If there is no activity within 5 minutes and no alarms are active, the system automatically returns to this view.

System status
The current system status is clearly displayed in the center in a colored box.
During normal operation, the text ”System OK” is shown in green.
If an alarm occurs, both text and color change automatically to indicate the deviation.

Navigation buttons

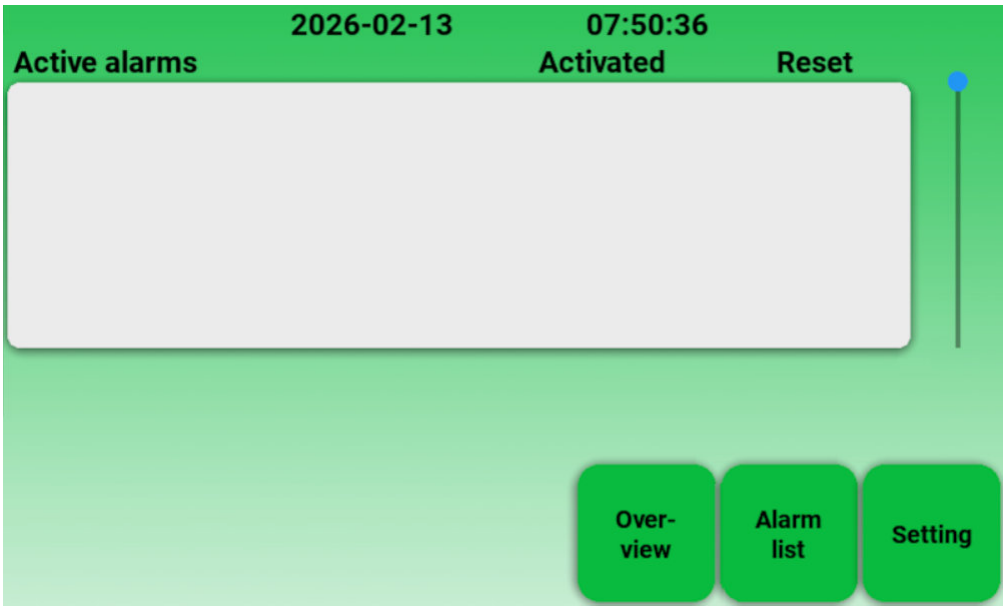
- **Overview** window displays status information and measured values from connected Masterwatch Ultra units. This function is available in Masterwatch Ultra with software version 2.06 or later.
- **Alarm list** shows all current alarms received from connected Masterwatch Ultra devices.
- **Settings** provides access to system settings such as relay functions and communication. Access requires a code.

If you are in the Alarm list, you can quickly return to the start screen by swiping down on the display.

Overview

The overview window displays the name of the Masterwatch Ultra unit from which the status and values originate at the top. If the remote alarm receives alarm data from multiple Masterwatch Ultra units, the user can browse between the units using the arrows.

Alarm list



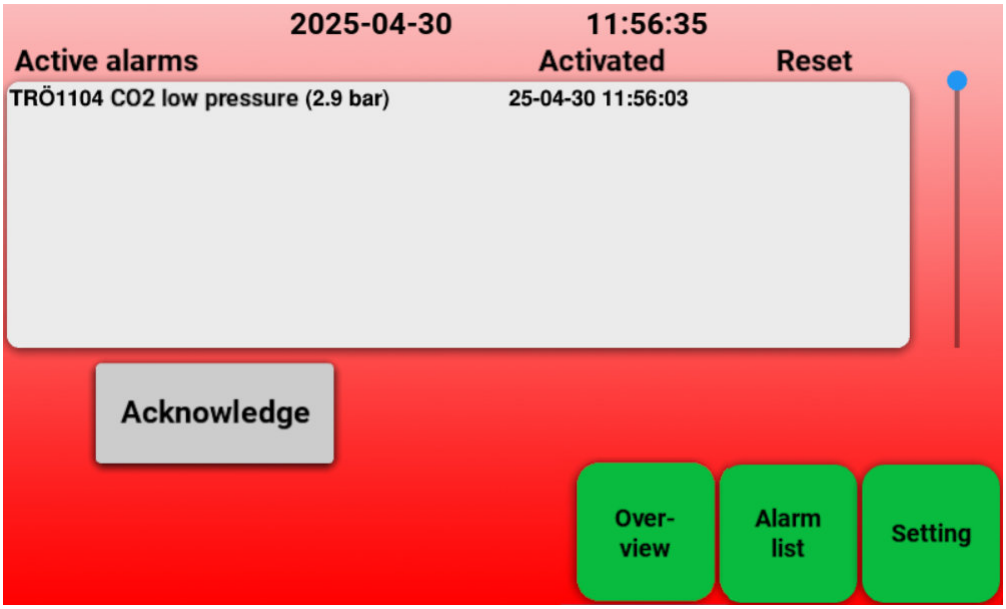
The alarm list shows an overview of all active alarms received from connected Masterwatch Ultra devices.

The view provides a quick overview of which alarms are current, when they were activated and when they were reset. This makes it easy for staff to identify both the alarm type and the location to which the alarm applies.

The list field shows the alarm text, date and time of activation, and the date and time of reset if the alarm is no longer active. Alarms that have been reset and acknowledged are automatically deleted from current alarms.

The name of the alarm system from which the alarm originates – the one specified in the remote alarm configuration at each Masterwatch Ultra panel – is also displayed in the alarm list, so that it is clear which device or location the alarm generated from.

In alarm



In the event of an alarm, the alarm list is automatically displayed. It shows all active alarms received from the Masterwatch Ultra units connected to the remote alarm.

The name of the unit from which the alarm comes – the one specified when configuring the remote alarm setup – is displayed together with the alarm text.

> In the example above, the unit name is TRÖ1104.

If an alarm is based on a measured value (e.g. pressure), the current value is also displayed in the alarm text.

> In the example above, the pressure for carbon dioxide is specified as 2.9 bar.
> When the alarm is reset, the value is removed from the list, as the value has returned to normal.

If an alarm is reset before it is acknowledged:

- The screen background returns to green when no more alarms are active
- The alarm sound continues until the user acknowledges

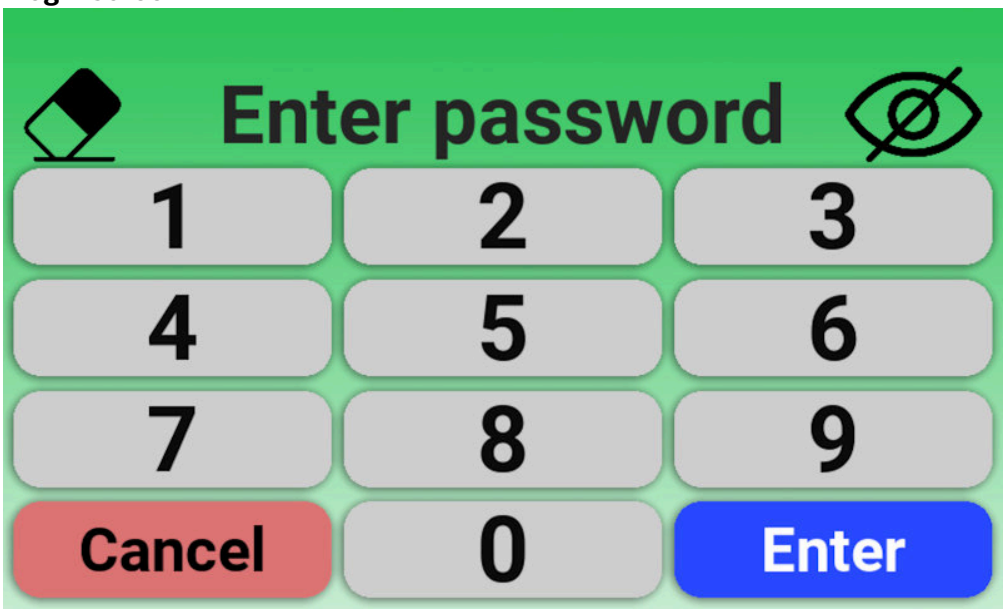
If the alarm list in the remote alarm contains only active alarm, it is shown in an enlarged text format for improved readability at long distance. When the alarm is acknowledged or reset, or if multiple alarms are present in the alarm list, the display returns to the standard alarm list so that all alarms can be presented in a clear and easy-to-overview manner.

Acknowledgement and further action

When the user presses "Acknowledge":

- The alarm sound is silenced
- The user should then go to the Masterwatch Ultra alarm that triggered the alarm and take the necessary action
- The alarm remains in the alarm list until the alarm is acknowledged and reset

Login screen



Before access to system settings is granted, a login screen is shown.
Enter the code to gain authorization.

The screen includes:

- Delete symbol (top left), clears entered code.
- Eye symbol (top right), shows/hides the entered code (default hidden as ”X”)

If no code is entered within 60 seconds, the system returns to the start screen.

On delivery, the standard code is active from previous materwatch series. The code can be changed to a user-defined code up to 8 digits. To change the code, contact a QMT technician who will provide a temporary one-time code to change the code.

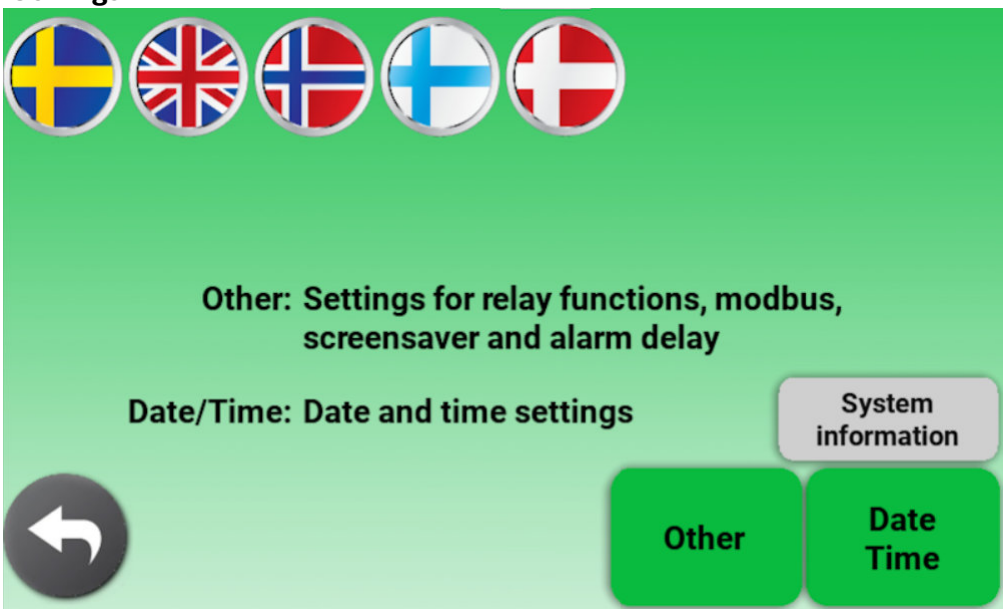
Traceability and security
After successful login, the user gets access to Settings.
All changes are automatically logged and cannot be deleted.

Path: Other > System configuration > Logged system changes
The log shows:

- Logged-in user type (customer or QMT)
- What was changed
- Date and time for each change

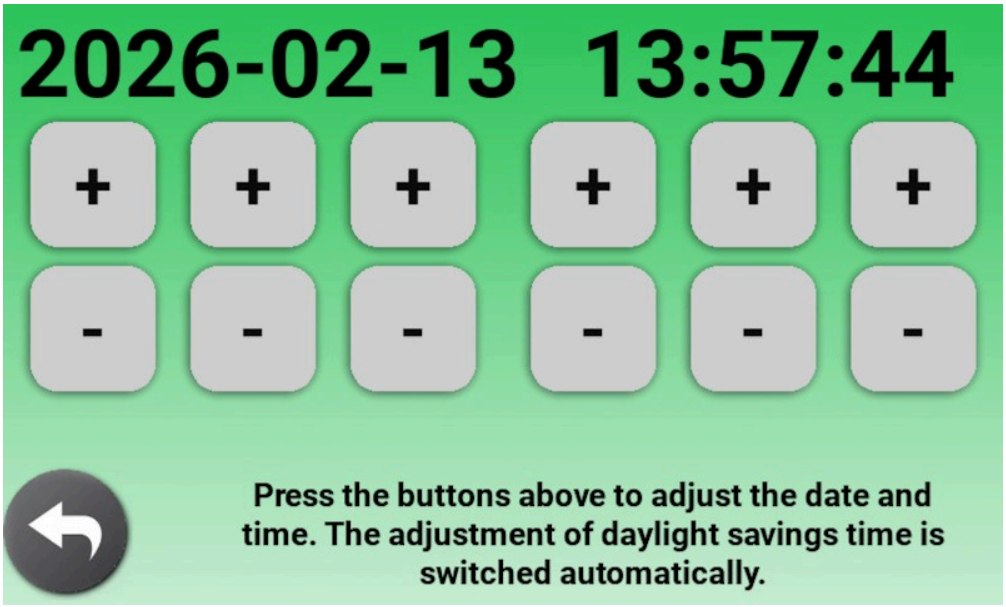
If the user is inactive in Settings for more than 10 minutes, the user is automatically logged out and returned to the start screen.

Settings



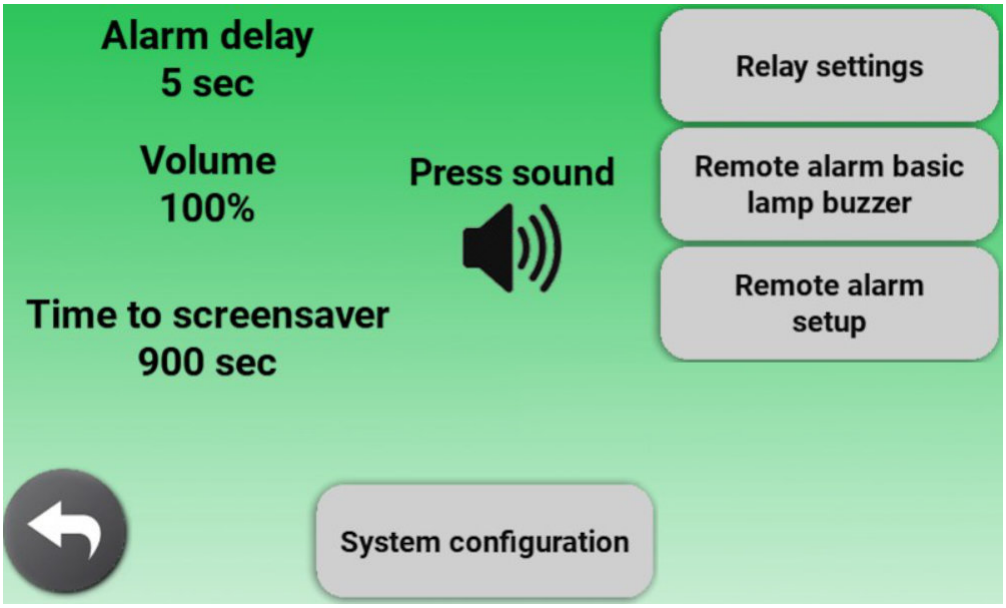
After login, the main Settings menu is shown.
At the top you can select the desired language for the user interface.

Date and time



Adjustment of date and time.

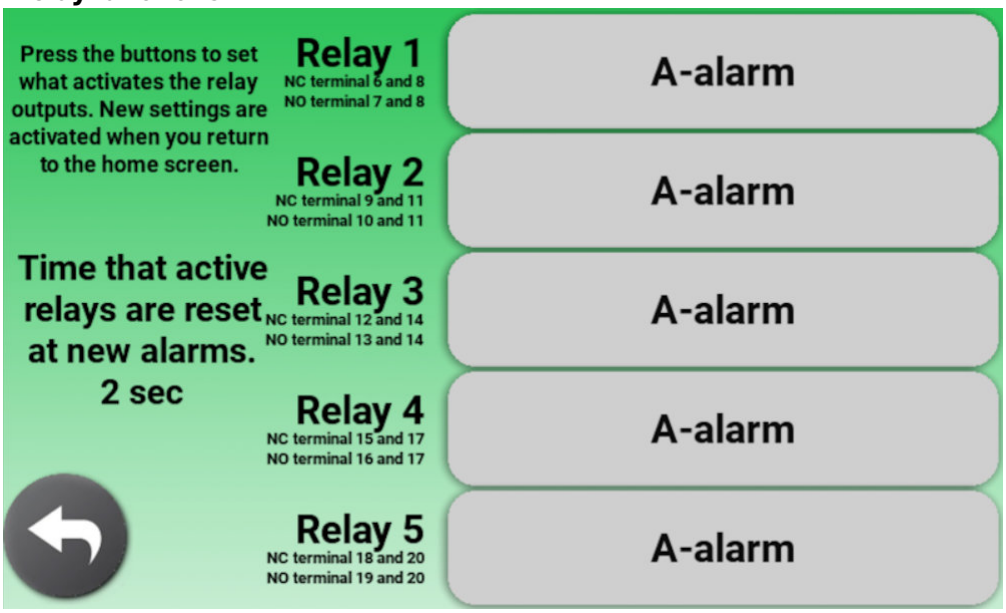
Other



The ”Other” menu contains settings related to volume, communication and relay functions.

Note:
System configuration is intended for technically skilled personnel.
It contains advanced settings affecting monitoring fundamentals, and functions such as logs, software update, and sensor calibration.
If unsure - contact QMT before making changes.

Relay functions

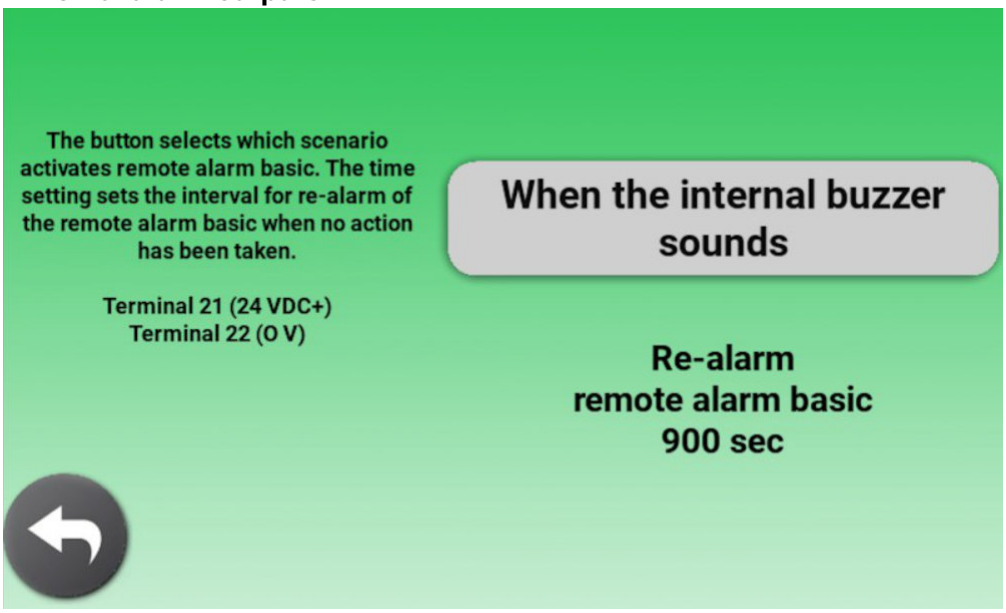


Here you define what activates each relay output. There are five relays, each programmable.
How it works:

- Select a relay (e.g., Relay 1).
- Choose the desired function from the list. Only the functions and gases that are activated in the system can be selected.
- Changes apply only when leaving Settings and returning to the start screen.

Function	Description
In the event of a power failure	The relay remains in the **non-alarmed state**. It only goes to the alarmed state when the alarm is de-energized. Used to indicate a power failure.
Common alarm	The relay is activated if any alarm is active in the alarm panel.
A-alarm	The relay is activated if any A-alarm is active in the alarm panel. A-alarms are critical alarms, e.g. in case of incorrect pressure.
B-alarm	The relay is activated if any B-alarm is active in the alarm panel. B-alarms are non-critical alarms, e.g. in case of reserve gas supply.
Buzzer	The relay is active as long as the internal buzzer in the alarm sounds.
Common alarm once	The relay is activated if any alarm is active in the alarm panel. It returns to the non-alarmed state when the alarm is acknowledged, but the alarm remains. This means that the relay is only activated once per alarm event.
A-alarm once	The relay is activated if any A-alarm is active in the alarm panel. It returns to the non-alarmed state when the alarm is acknowledged, but the alarm remains. This means that the relay is only activated once per alarm event.
B-alarm once	The relay is activated if any B-alarm is active in the alarm panel. It returns to the non-alarmed state when the alarm is acknowledged, but the alarm remains. This means that the relay is only activated once per alarm event.

External alarm outputs

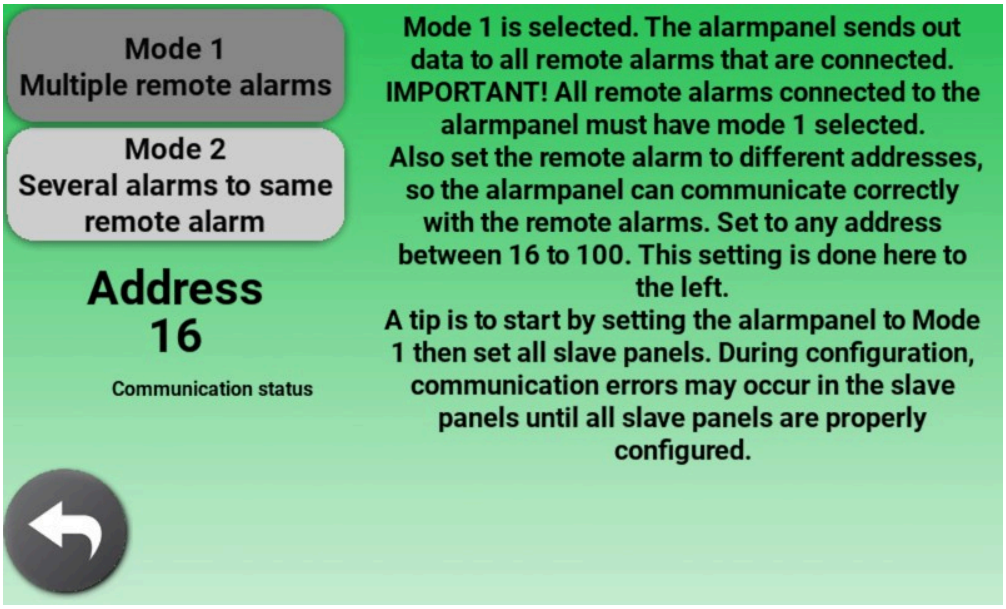


Here you define which scenario activates each external output (remote alarm basic, lamp, buzzer).
How it works:

- Select the output to configure.
- Choose the desired function from the list.
- Only functions and gases enabled in the system are shown.
- Additional options such as re-alarm time are described on the screen.

Function	Description
(Output) disabled	The output remains inactive regardless of which alarms are activated.
When the internal buzzer sounds	The output outputs 24V DC as long as the internal buzzer in the alarm sounds.
When an alarm is active in the panel	The output outputs 24V DC as long as any alarm is active in the alarm panel.
A-alarm	The output outputs 24V DC as long as an A-alarm is active in the alarm panel. A-alarms are critical alarms, e.g. in case of incorrect pressure.
B-alarm	The output outputs 24V DC as long as a B-alarm is active in the alarm panel. B-alarms are non-critical alarms, e.g. during backup gas supply.

Remote alarm



The Masterwatch Ultra remote alarm is not delivered pre-configured. Once all Masterwatch Ultra units have been connected via a Modbus loop, the communication between them must be configured in this menu.

Detailed instructions are provided on page 12.

The text on the screen guides you step by step through the settings.

It is important to follow the on-screen instructions carefully, so that the address settings and operating modes are set correctly.
This is crucial for the communication between the units to work properly.

Below is a guide to troubleshooting common questions and problems related to operating the Masterwatch Ultra.

The alarm does not start

- Verify that the power supply is connected correctly.
- See page 10 Power supply.

Relay signal does not work as expected

- Check that the receiving equipment works correctly.
- Check wiring of the relay outputs (page 9 and page 11).
- Verify that the correct relay function is selected (page 22).

External alarm output does not work

- Check wiring of the output (page 11).

Masterwatch Ultra is designed to be maintenance-free during normal operation, except for the touch display.

Display – cleaning and care:

- Clean with a soft, lint-free cloth.
- Do not use cleaners containing alcohol, ammonia or solvents.
- If very dirty, wipe lightly with water or mild soap solution.

This product is a medical gas monitoring alarm system. To ensure safe and correct operation, the following points must be observed:

General warnings

- Masterwatch Ultra should be supplied with 24 VDC ±10% (max rippel ≤200mV). **Only stabilized power supplies may be used.**
- Installation must be performed by personnel with knowledge of Masterwatch Ultra and medical gas systems.
- Reconfiguration/service may only be performed by authorized personnel.
- Incorrect installation may result in the alarm not functioning.

During commissioning/configuration

- Settings take effect only after leaving Settings.

Logging/traceability

- Changes are logged with date/time and user type.
- Logs cannot be deleted and provide full traceability over the system life cycle.

Manufacturer:	QMT-tech AB Amerikavägen 6 39354 Kalmar
Basic UDI-DI:	73402061007KD
UDI-DI:	7340206100061
Product name:	Masterwatch Ultra
Article number:	QMT8ULTRA0X

Power consumption:	8,4 Watt
Supply voltage:	24 VDC ±10% (max rippel ≤200mV)
Display:	7-inch touchscreen, 800×480 pixels (RGB), active area 154,08×85,92 mm (B×H)
Relay outputs:	5 st potential-free changeover contacts (NO/NC), Max 4A, 250VAC
External alarm outputs:	3 st 24 VDC-outputs, max1,5 A per output
Communication:	2 st Modbus RTU (RS-485), 1 st Modbus TCP/IP (Ethernet)
Storage:	-20 till 70 °C dry indoor
Operating:	-20 till 70 °C dry indoor

Technical lifetime:	10 years (provided maintenance is performed according to this manual)

CE

Artikelnummer

- QMT8ULTRA01 – Masterwatch Ultra remote alarm flush wall mounting
- QMT8ULTRA02 – Masterwatch Ultra remote alarm surface wall mounting

Accessories

Masterwatch Ultra is supplied as a complete product for monitoring the gas system. However, there are a number of accessories that can be used to power the unit, monitor or to forward alarms to other locations in the facility. Below is a list of available accessories with name, part number, power consumption (if applicable) and a short description:

- Power supply UNO-PS (QMT7TU6PS)
  60W, 24vdc transformer. Used to power Masterwatch Ultra if no 24vdc is available at the facility. QMT7TU6PSK transformer in plastic housing 130x180x125mm.

- Remote alarm basic (QMT704206U) - about 50 mA
  Remote alarm basic that is supplied with 24 VDC from Masterwatch Ultra in case of alarm. When activated, an LED lights up and a buzzer sounds.
  The buzzer can be silenced locally with the acknowledgement button on the box.

- Indicator panel(QMT704209) - up to 150 mA
  An external box with lamp and buzzer that is powered by 24 VDC from the Masterwatch Ultra in the event of an alarm. Suitable for installations where the Masterwatch Ultra is placed in, for example, a gas niche cabinet and is not clearly visible or audible.

Manufacturer:	QMT-tech AB Amerikavägen 6 39354 Kalmar
SRN:	SE-MF-000007550
Basic UDI-DI:	73402061007KD
UDI-DI:	7340206100061
Product name:	Masterwatch Ultra
Article number:	QMT8ULTRA0X
EMDN code:	Z120309

Complies with:

EN ISO 7396-1	2016
EN 60601-1	2006
IEC 60601-1-8	2006 + A1:2012
EN 61000-3-2	2014
EN 61000-3-3	2013
EN 61000-6-2	2005
EN 61000-6-4	2007 + A1:2011

CE

Masterwatch Ultra is an electronic product and must not be disposed of with household waste.

At end of life, handle as electrical and electronic waste according to local regulations.
Deliver the unit to an approved recycling facility or equivalent receiver.

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