



AirC Wireless

User instructions

M-AirCW-A2205

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Original instructions



IMPORTANT

Read these instructions before using the product.

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1. Important user information

1.1. About this manual

This manual contains important information and guidelines for the installation, operation and service of the control system.

Additional information is available in the User manual for the dehumidifier and/or humidifier to which the control system is connected.



NOTE

Some of the options described are not available for all connectable units.

1.2. Intended use

Munters AirC wireless control system is intended to be used together with humidifiers and dehumidifiers. Any other use, or use which is contrary to the instructions given in this manual, can cause damage to the units and other property.

No modification of the units is allowed without prior approval by Munters. Attachment or installation of additional devices, not described in this manual, is only allowed after written agreement by Munters.

1.3. Warranty

The warranty period is valid from the date the unit left our factory, unless otherwise stated in writing. The warranty is limited to a free exchange of parts or components which have failed as a result of defects in materials or workmanship.

All warranty claims must include proof that the fault has occurred within the warranty period and that the system has been used in accordance with the specifications. All claims must specify the unit type and fabrication number. This information is stamped on the identification plate.

It is a condition of the warranty that the system for the full warranty period is serviced and maintained as described in section *Service*. The service and maintenance must be documented for the warranty to be valid.

1.4. Safety information

Information about dangers are in this manual indicated by the common hazard symbol:



WARNING

Indicates a possible danger that can lead to personal injury.



CAUTION

Indicates a possible danger that can lead to damage to the unit or other property, or cause environmental damage.

**NOTE**

Highlights supplementary information for optimal use of the unit.

1.5. Regulatory conformity

The control system is in conformity with the requirements in:

- Radio equipment Directive 2014/53/EU
- Low voltage Directive 2014/35/EU
- Electromagnetic compatibility Directive 2014/30/EU

Harmonized standards

- Radio: ETSI 300 328 V2.2.2
- Safety: EN60730-1:2016
- EMC: EN61000-6-2:2019, EN61000-6-3:2021

1.6. Copyright

The contents of this manual can be changed without prior notice.

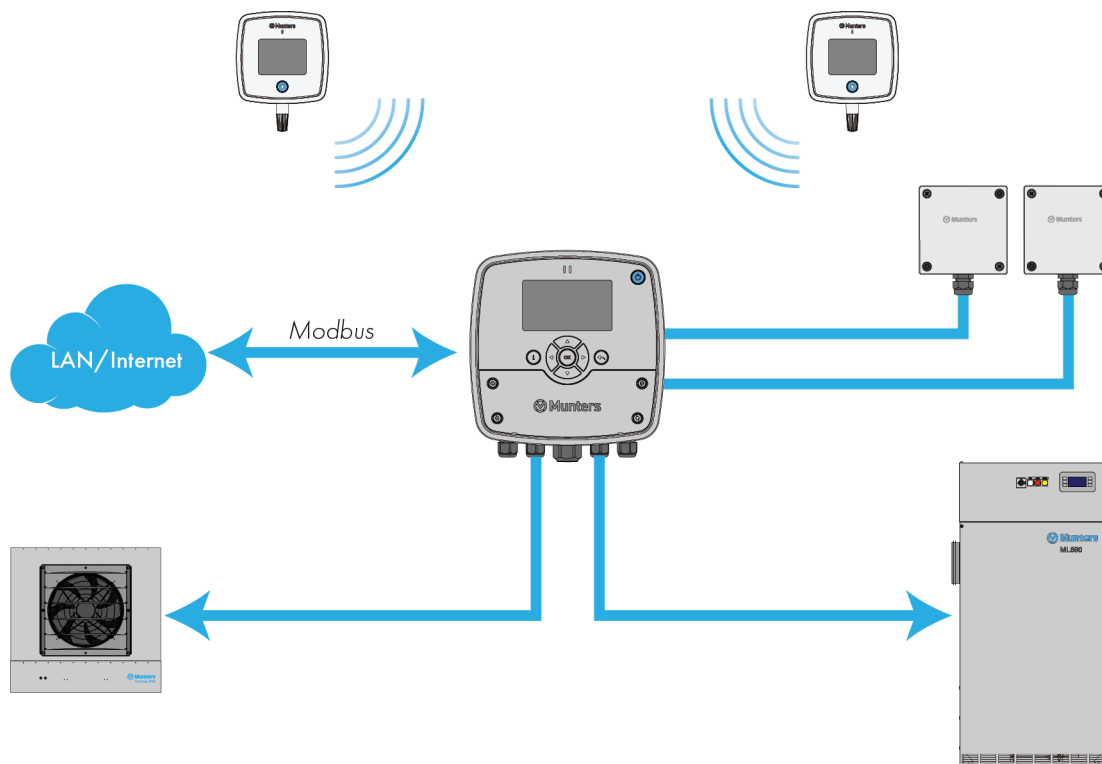
**NOTE**

This manual contains information which is protected by copyright laws. It is not allowed to reproduce or transmit any part of this manual without written consent from Munters.

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2. System description

2.1. Functions



The AirC wireless control system is an in-door wireless environment controller with possibility to measure humidity and temperature and to control both dehumidifier and humidifier.

The system consists of:

- AirC Wireless Control Terminal.
- AirC Wireless sensor nodes with directly attached sensor.
- AirC Wireless sensor nodes with sensors optimized for DUCT installation.
- AirC Wireless control nodes showing climate and enable basic settings.

The network is a cognitive coexistence mesh network designed for stability, long range and low power consumption. 32 nodes can be connected to control your climate.

For even greater flexibility, up to 2 wired sensors can also be attached to the terminal.

Setup and maintenance of the system is easily done from the display. Communication through Modbus IP is available.

2.2. Network

2.2.1. Terminal



The terminal is the center of the system. It is the main interface to allow the user to configure, view the status, diagnose and update the entire or part of the system.

Up to two wired sensors can be connected directly to the terminal.

The terminal has a display and button layout that acts as the system HMI (Human-Machine Interface) that allows a user to configure the system.

The system can be set to AUTO or OFF with the on/off button.

2.2.2. Nodes

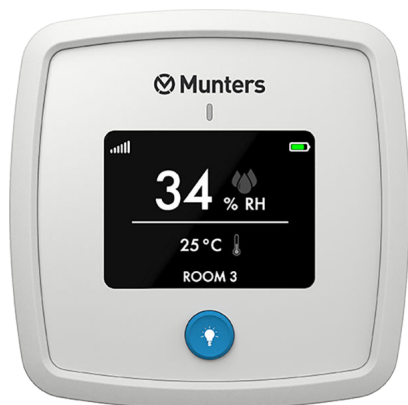
Up to 32 wireless nodes can be connected to the same terminal and be part of the system.

The wireless nodes can be either sensors or control nodes.

The wireless nodes are interconnected in a mesh network. This means that network traffic from one node to another (including the terminal) may be routed through one or several other nodes in a chain-like manner. This is unlike a centralized network (such as a common WiFi-setup) where all network traffic is routed through a single, central router.

By pressing the on/off button for more than 3 seconds the display will turn on and show the information page. Additional information and configuration data will be displayed here.

2.2.3. Sensor node



The sensor node registers and sends humidity and temperature readings to the terminal.

A wall or a duct sensor must be connected to the node.

The display is activated by pressing the button.

The sensor node has one blue and one red LED with the following function:

- Blue LED Single blink: the sensor node is searching for a valid network.
- Blue LED Double blink: a valid network is found and the sensor node is waiting to join.
- Blue LED Off: the sensor has joined the network.
- Red LED Off: Status OK.
- Red LED Single blink: Alarm. Press the button to read the error on the display.
- Red and Blue LED alternating flashing: the sensor node is in Identify mode, activated from the Terminal.

2.2.4. Control node



The control node is used to remotely control the system.

The current operational state is shown in the display.

The system can be set to AUTO or OFF with the on/off button.

The display is activated by pressing any of the buttons.

If running on the external power supply the display will be dimmed instead of turned off when deactivated.

The up and down buttons can be used to input settings. One possibility is to adjust the humidity setpoint.

Unlock the buttons by pressing the up and down buttons simultaneously for 3 seconds.

The control node has one green and one red LED with the following functions:

- Green LED On: The dehumidifier/humidifier is activated (AUTO: ON) and the control node is running on external power supply.
- Green LED Single blink: The dehumidifier/humidifier is activated (AUTO: ON) or the control node is searching for a valid network.
- Green LED Double blink: A valid network is found and the control node is waiting to join.
- Green LED Off: The dehumidifier/humidifier is off and the control node has joined the network.
- Red LED Off: Status OK.
- Red LED Single blink: Alarm. Press the button to read the error on the display.
- Red and Green LED alternately flashing: the control node is in Identify mode, activated from the terminal.

3. Installation



CAUTION

Installation and service on the components must be done by qualified personnel only.

3.1. Install wall or duct sensor

Wall sensor



Push the sensor into the socket.



CAUTION

Do not touch the sensor PCB.



Install the cover.

When placed on a wall, the humidity sensor must be mounted 1–1.5 m above the floor. It must be positioned so that it is not directly exposed to dry air from the unit, or humid air flowing in through doors that are opened and closed. It must not be placed close to a heat source or be exposed to direct sunlight.

Duct sensor

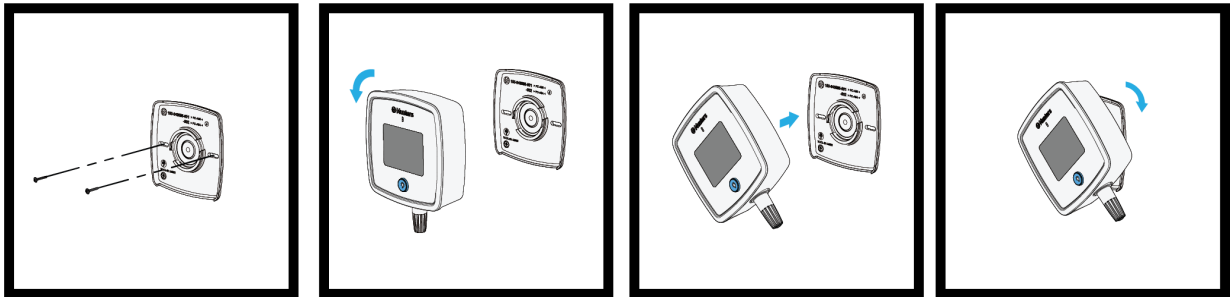


The connector is screwed into the socket.

A duct mounted sensor must be installed far enough from the unit outlet to get a stable humidity reading.

3.2. Attach to the wall

Nodes



Attach the base plate to the wall with screws.

Position the sensor or control node and turn clockwise to lock.

Terminal



1. Screw the first screw into the wall. Hang the terminal on the screw.

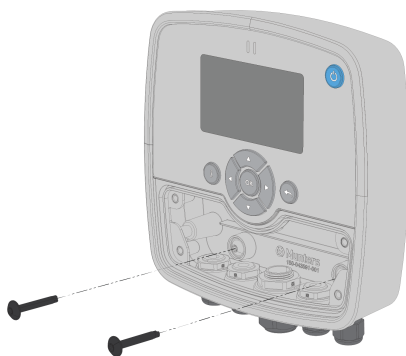


NOTE

Select a screw type suitable for the wall material.

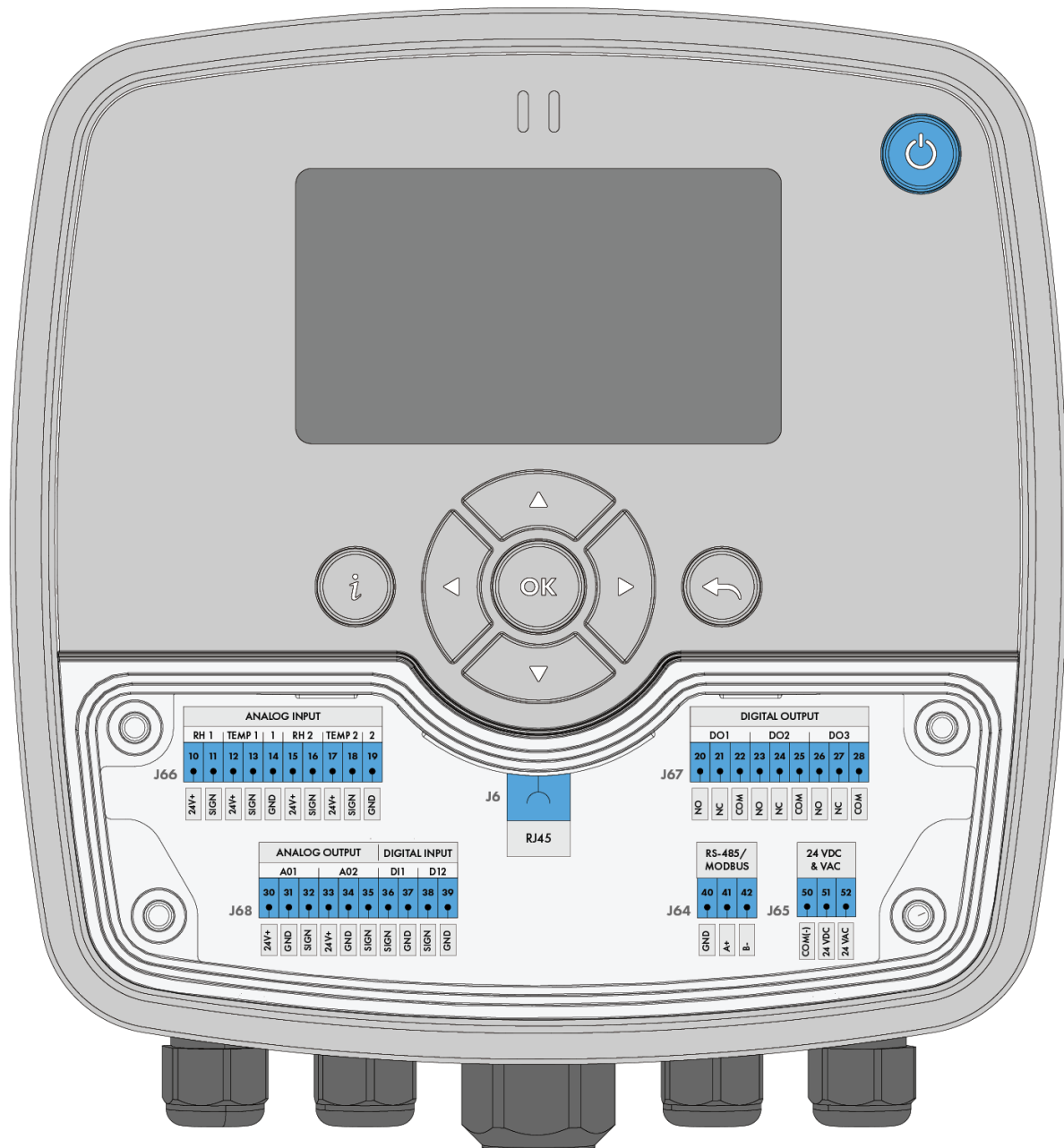


2. Remove the front cover.



3. Screw the two remaining screws through the holes in the terminal into the wall.

3.3. Electrical connections



NOTE

All terminals are for 0,5-1,5 mm² cable size.

Terminals Analog Input (J66)		Default
10, RH1	24 VDC supply, Current depending on the supply source, Max 300 mA	
11, RH1	Input, 0-10 V, 4-20 mA, 0-20 mA	Disabled
12, Temp1	24 VDC supply, Current depending on the supply source, Max 300 mA	
13, Temp1	Input, 0-10 V, 4-20 mA, 0-20 mA	Disabled
14, GND	GND, RH1 and Temp1	
15, RH2	24 VDC supply, Current depending on the supply source, Max 300 mA	
16, RH2	Input, 0-10 V, 4-20 mA, 0-20 mA	Disabled
17, Temp2	24 VDC supply, Current depending on the supply source, Max 300 mA	
18, Temp2	Input, 0-10 V, 4-20 mA, 0-20 mA	Disabled
19, GND	GND, RH2 and Temp2	

Terminals Digital Output (J67)		Default
20, DO1	Digital output 1, NO	Dehumidifier low
21, DO1	Digital output 1, NC	Dehumidifier low
22, DO1	Digital output 1, COM, Configurable Relay, Max 24V 2A	Dehumidifier low
23, DO2	Digital output 2, NO	Dehumidifier high
24, DO2	Digital output 2, NC	Dehumidifier high
25, DO2	Digital output 2, COM, Configurable Relay, Max 24V 2A	Dehumidifier high
26, DO3	Digital output 3, NO	Alarm output
27, DO3	Digital output 3, NC	Alarm output
28, DO3	Digital output 3, COM, Configurable Relay, Max 24V 2A	Alarm output

Terminals Analog Output, Digital/Analog Input (J68)		Default
30, AO1	24V AC or DC output, Current depending on the supply source, Max 0.75A	
31, AO1	GND	
32, AO1	Analog out 0-10 V	Disabled
33, AO2	24V AC or DC output, Current depending on the supply source, Max 0.75A	
34, AO2	GND	
35, AO2	Analog out 0-10 V	Disabled
36, DI1	DI, Potential-free contact	Disabled
37, DI1	GND	
38, DI2	DI, Potential-free contact	Disabled
39, DI2	GND	

Communication RS-485 (J64)		
40, GND	GND, Modbus RTU	
41, A+	A+, Modbus RTU	
42, B-	B-, Modbus RTU	
Power connection 24V DC/AC (J65)		
50, COM	COM (-/0 VAC)	
51, 24 VDC	24 VDC	
52, 24 VAC	24 VAC +/- 10 %	
Communication RJ-45 (J6)		
FW	update	

3.4. System pairing

The pairing wizard is found under “Settings > AirC Network > Pairing Wizard”. To pair a node, follow the instructions presented on the screen.

When used for the first time the node is in deep sleep. To wake and enable the node, push the on/off button firmly for 3 seconds.

The first step is to select which node to pair. All nodes that are available for pairing will be listed in the list. The list will be updated as nodes are detected. If a node is missing, or none is detected, it can take a few minutes for it to show up.

After selecting a node to pair, the wizard moves forward and gives the user the possibility to physically identify the selected node. This step is optional and can be skipped by pressing the “Next” button.

Step 3 is where the actual pairing is performed. Press the “OK” button and the node will be paired.

After successfully pairing the node, the next screen allows the user to either repeat the process with another node, or to exit the wizard. Best practice is to pair all nodes in the system at one time.

Once a node has been paired, it will no longer be listed in the pairing wizard. It is now instead accessed under “Settings > AirC Network > AirC Sensors”. The pairing will persist even if the node is disconnected and/or if the power to the terminal is broken. The node will be listed as disconnected if the terminal has not received any message from it for a few minutes.

When a new node needs to be paired to an already existing network, as a replacement or an extension, the node needs to be within 10 meters of the terminal. Then follow the steps above to pair the new node to the network. Once the pairing wizard is done, the node can be installed in its intended position.

4. User interface

4.1. General

4.1.1. Start/stop from terminal



Press the on/off button in the upper right corner to go to AUTO mode.

4.1.2. Start Page

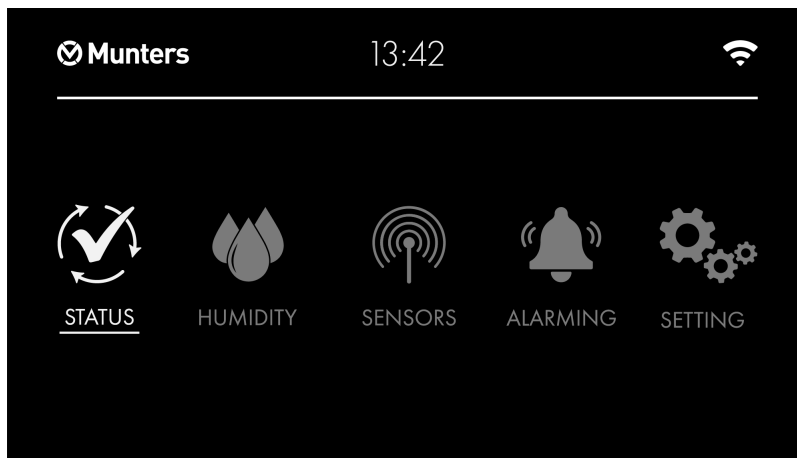


The start page displays the following information:

- Humidity
- Temperature
- Operation mode
- Humidity setpoint

4.1.3. Main Index

Select the icon for the desired menu and press OK.

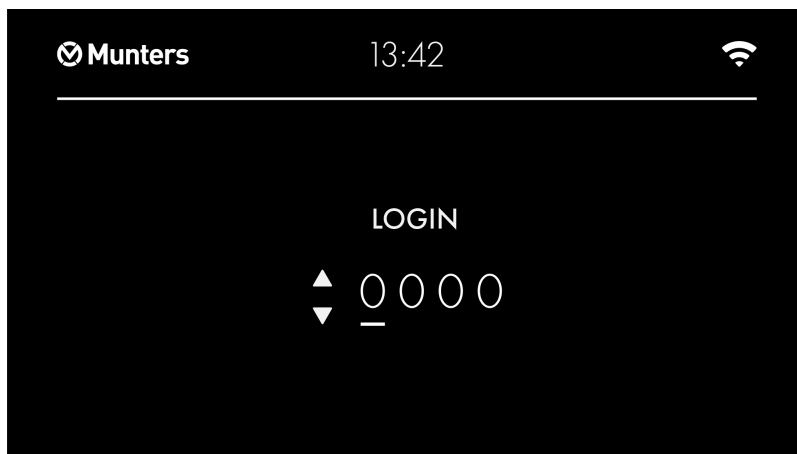


NOTE

Menu contents can vary depending on configuration.

4.1.4. Login

The Login page will appear for access to protected pages.



User login password is **1111**.

Password enter

Press ◀ or ▶ to select the position.

Press ▲ or ▼ to change the digit.

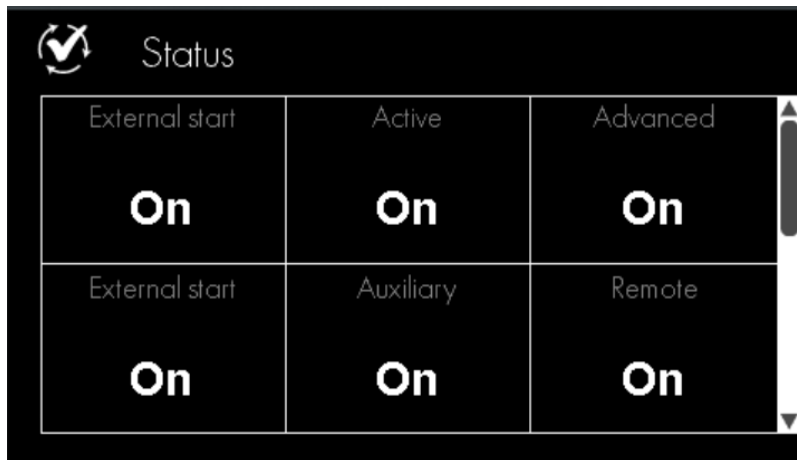
Press OK to confirm the correct PIN-code.

Press ↶ to go to the Start page.

4.2. Status

Select the icon "Status" on the Main index and press OK.

The status page displays current operational data.



4.3. Humidity

Select the icon "Humidity" on the Main index and press OK.

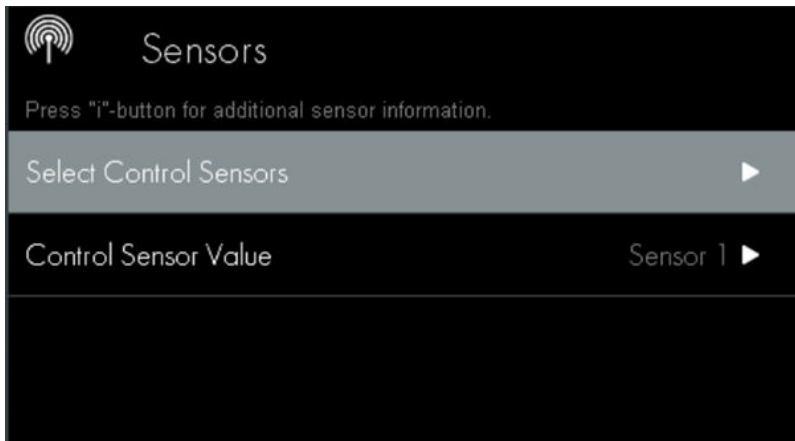
User password or higher is required.



Item	Values	Default
Relative humidity	0.0... 100.0 %RH	
Humidity setpoint	0.0... 100.0 %RH	50 %RH
Humidity hysteresis start	-10.0... +10.0 %RH	5 %RH
Humidity hysteresis stop	-10.0... +10.0 %RH	5 %RH
Loop controllers	Dehumidifier/Humidifier Control	
Log out		

4.4. Sensors

Select the icon "Sensors" on the Main index and press OK.



Item		
Select Control Sensors	▶	
Control Sensor Value	▶	

Select Control Sensors

Item		Default
Wired sensor 1		Disabled
Wired sensor 2		Disabled
Node name 0		Enabled
Node name 1		Disabled
Node name 2		Disabled
etc.		

Control Sensor Value

Item		Default
Average		Enabled
Minimum		Disabled
Maximum		Disabled

4.5. Alarming

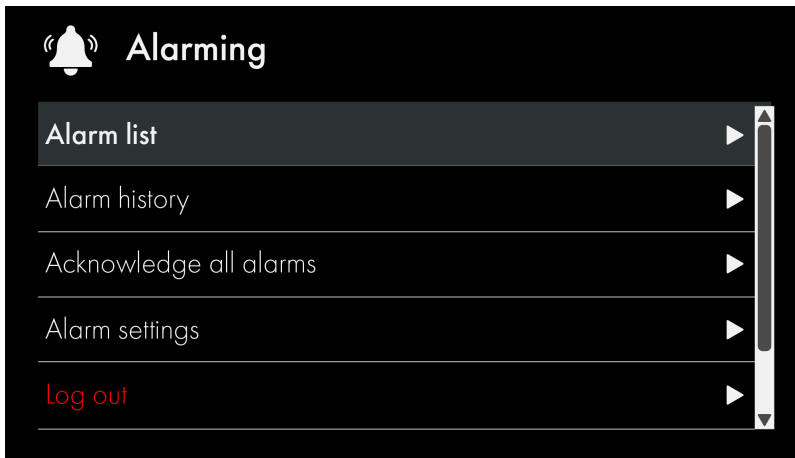
4.5.1. Alarm types

The control system can give two different types of notifications:

- Alarm - disables all outputs. Needs to be manually reset.
- Information - warning or indication of service need.

4.5.2. Alarm menu

Select the icon "Alarming" on the Main index and press OK.

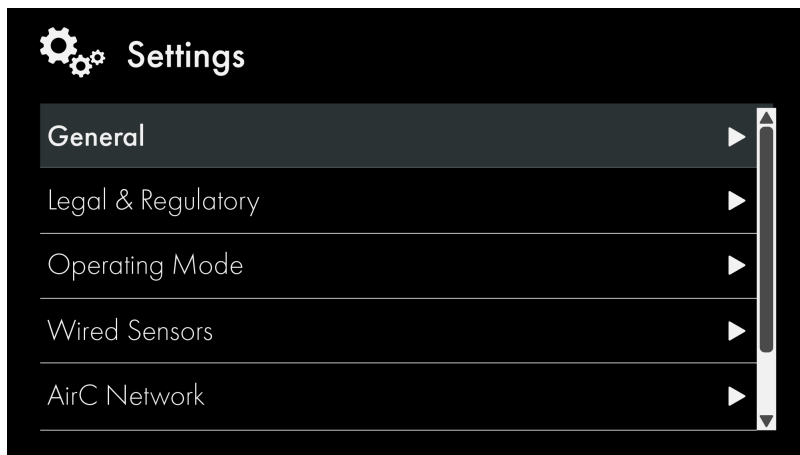


Alarm settings

Item		Default
Humidity deviation	▶	Disabled
Temperature deviation	▶	Disabled
Humidity sensor 1 fault delay	▶	120 sec
Humidity sensor 2 fault delay	▶	120 sec
Temp sensor 1 fault delay	▶	120 sec
Temp sensor 2 fault delay	▶	120 sec
Clear alarm history	▶	

4.6. Settings

Select the icon "Settings" on the Main index and press OK.



NOTE

Menu contents can vary depending on configuration.

Item		Default
General	▶	
Operating mode	Timer ▶	Disabled
Wired Sensors	Humidity/Temperature	
AirC Network	▶	
Communication	TCP/IP / Modbus	
Service	▶ Service Login required	

General

Item		Default
About	▶ Factory no./Software version/Hardware Revision	
Language	▶	English
Control type	Relative Humidity [%RH]	
Temperature Unit	▶	°C
Screen saver	▶	Yes
Screen saver delay	▶	5 minutes
Auto logout delay	▶	5 minutes
Time & Date	▶	
Restart	▶	

AirC Network

Item		
Pairing Wizard	▶	
AirC Sensors	Paired Nodes▶	
AirC Remote Control	Paired Nodes▶	
Advanced	▶	
Restart	▶	

5. Service



CAUTION

Installation and service on the components must be done by qualified personnel only.

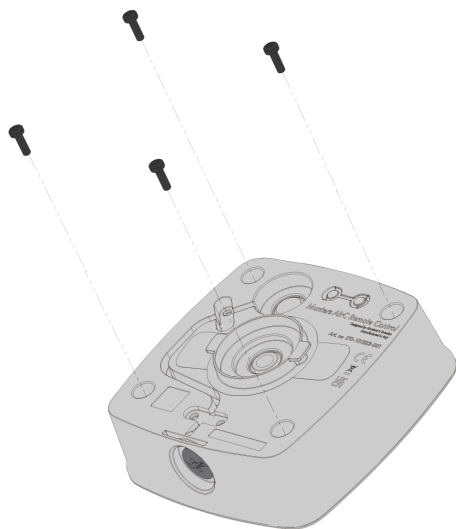
The AirSense units should be serviced once per year.

Follow these steps:

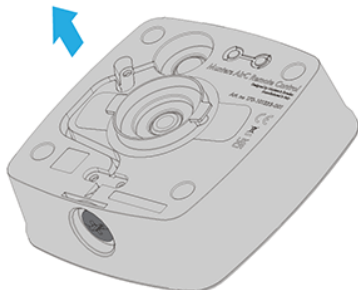
- Visual inspection.
- Replace batteries.
- Sensor adjustment.

5.1. Replace batteries

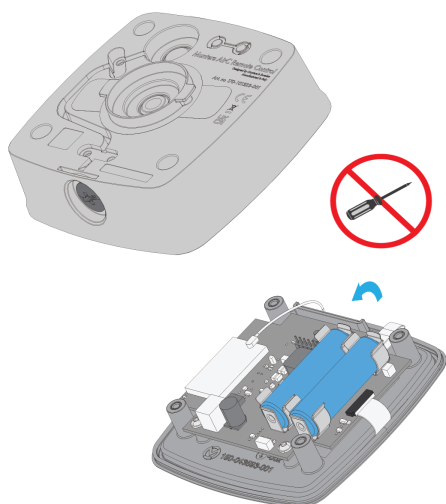
The node will inform the user when the expected battery capacity is 20% or less.



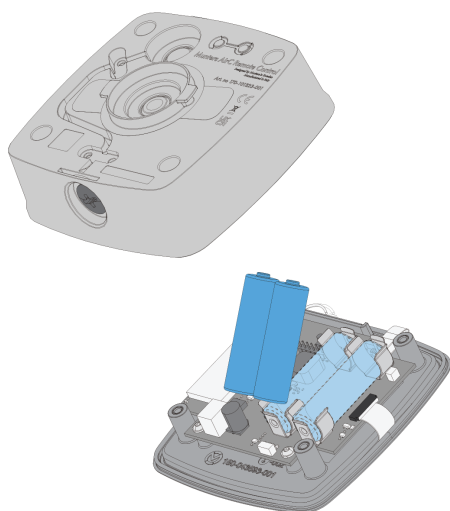
1. Unscrew the four screws on the back side of the unit.



2. Remove the back cover.



3. Remove both old batteries to reset the battery capacity calculation. Do not use tools to avoid damaging the node.



4. Insert two fresh 3.6V 14500 Li-SOCl₂ batteries. Contact Munters Service for ordering batteries.



CAUTION

Note the polarity.

Mixing old and new batteries, or not inserting with the correct polarity can cause the batteries to heat up and damage the unit.

Do not touch the electronic components.

5.2. Sensor adjustment

Both the wired and wireless sensors can require an adjustment to provide more accurate measurements. This is performed by setting offset values that compensate for any potential measurement error.

For wireless sensors, these settings can be found under "*Settings > AirC Network > AirC Sensors > Name of sensor > Sensor Adjustment*". Typically, there will be a setting to adjust the temperature and a setting to adjust humidity.

A control node will typically not include any sensors, so this option is hidden when entering the submenu of a control node.

The adjustment for wired sensors can be found under "*Settings > Wired Sensors > Humidity/Temperature > Sensor Adjustment*".

**NOTE**

The sensor adjustment for the wired sensors is the only setting that will persist after performing a factory reset.

5.3. Factory reset

On the inside of the node there is a button marked RESET. Pushing the factory reset button for more than 3 seconds will start the factory reset process. Wait 10 seconds for the process to complete, indicated on the display.

The node will restart with a cleared configuration, reset to factory settings. All configurations except Remaining Battery Capacity and Sensor Adjustment are cleared. The node starts in deep sleep mode after factory reset, see *System pairing*.

6. Technical data

RH/T Sensor

Relative humidity (wall RH/T sensor)	
Measurement range	0... 100 %RH
Operating range	10... 90 %RH
Accuracy	+/- 2 %RH (10... 80 %RH)
Resolution	0.1 %RH
Long term stability	Typ. <0.25 %RH/year
Temperature (wall RH/T sensor)	
Measurement range	-25... +50 °C (-13... +122 °F)
Operating range	-20... +40 °C (-4... +104 °F)
Accuracy	+/- 0.3 °C (0... 40 °C)
Resolution	0.1 °C
Long term stability	max <0.3 °C/year
Relative humidity (duct RH/T sensor)	
Measurement range	0... 100 %RH
Operating range	10... 90 %RH
Accuracy	+/- 2 %RH (10... 80 %RH)
Resolution	0.1 %RH
Long term stability	Typ. <0.25 %RH/year
Temperature (duct RH/T sensor)	
Measurement range	-35... +100 °C (-95... +212 °F)
Operating range	-20... +40 °C (-4... +104 °F)
Accuracy	± 0.3 C (0...40 °C)
Resolution	0.1 °C
Long term stability	max <0.3 °C/year
General	
Supply voltage	2 x Lithium battery 3.6 V 14500 Li-SOCl ₂
Expected battery life length	Minimum 1 year, typically 3 years
Operating temperature electronics	-20... +40 °C (-4... +104 °F)
Storage temperature (batteries included)	-20... +70 °C (-4... +158 °F)
	Battery life affected above +30 °C (+86 °F)



CAUTION

The sensor must not get in close contact with volatile chemicals such as solvents or other organic compounds. Especially high concentration and long exposure must be avoided. Ketenes, Acetone, Ethanol, Isopropyl Alcohol, Toluene, etc. are known to cause drift of the humidity reading – irreversibly in most of the cases.

Note that such chemicals are integral parts of epoxies, glues, adhesives, etc. and out-gas during baking and curing. These chemicals are also added as plasticizers into plastics used for packaging materials, and out-gas for some period.

Acids and bases can affect the sensor irreversibly and must be avoided: HCl, H₂SO₄, HNO₃, NH₃ etc. Also Ozone in high concentration or H₂O₂ have the same effect and must therefore be avoided.

Note that the above examples do not represent a complete list of harmful substances.

Remote control

Value presentation	
Resolution for setpoint and actual value	0.1 %RH
Change of setpoint	0.5 %RH/push
General	
Supply voltage	2 x Lithium battery 3.6 V (14500 Li-SOCl ₂) Can be connected to a 12 VDC supply
Expected battery life length	Minimum 1 year, typically 3 years
Operating temperature electronics	-20... +40 °C (-4... +104 °F)
Storage temperature (batteries included)	-20... +70 °C (-4... +158 °F) Battery life affected above +30 °C (+86 °F)

Terminal

Analog inputs 1-4	
Measurement range for voltage	0... 10 V
Resolution for voltage measurement	0.01 V
Accuracy for voltage measurement	+/-0.05 V
Measurement range for current	0... 20 mA
Resolution for current measurement	0.016 mA
Accuracy for current measurement	+/-0.08 mA
Power supply for each analog input	24 VDC/200 mA
Analog outputs 1-2	
Output range for voltage signal	0... 10 V
Resolution for voltage signal	0.01 V
Accuracy for voltage signal	+/-0.05 V
Output range for current signal	0... 20 mA
Resolution for current signal	0.016 mA
Accuracy for current signal	+/-0.08 mA
Digital output relays 1-3	
Contact function	CO (Change Over)
Voltage	max 24 V AC/DC
Current	max 2 A
Digital inputs 1-2	
Input function	NO or NC or resistance measurement
Resistance measurement type	For future use
General	
Supply voltage	24 V AC/DC
Operating temperature electronics	-20... +40 °C (-4... +104 °F)
Storage temperature	-20... +70 °C (-4... +158 °F)

Regulatory

Regulatory and protection classification	
Classification as per EN 60730	Type 1
Operation of automatic controller	
Software classification	A
Degree of pollution	3
Overvoltage category	II
Degree of protection of housing to EN 60529	IP54
Product standard	EN 60730-1
Electromagnetic compatibility	For residential, commercial, and industrial environments
Radio	
Automated Cognitive Coexistence	Yes
Dynamic adaptive frequency hopping	Yes
Operational frequency range	2402-2480 MHz
RF output power	20 dBm
Range in line of sight	Up to 100 m

7. Disposal

When the product reaches end of service, do not dispose of it with your household waste. The equipment contains battery and electronic components that can be harmful to the environment.

The equipment can be returned to any Munters distributor for recycling free of charge. Follow local legislation for disposal of batteries and electronic components.

8. Contact Munters

Find your nearest Munters office at www.munters.com.

Click [here](#) or scan below to find your local Munters Service Team.



www.munters.com

