

Installation Manual

Green RTU RX Module



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Climate Controllers

Ag/MIS/ImEn-2765-05/20 Rev 1.3
P/N: 116812



Green RTU RX Module

User Manual

Revision: N.1.3 of 05.2022

Product Software: N/A

This manual for use and maintenance is an integral part of the apparatus together with the attached technical documentation.

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1 Introduction

1.1 Disclaimer

Munters reserves the right to make alterations to specifications, quantities, dimensions etc. for production or other reasons, subsequent to publication. The information contained herein has been prepared by qualified experts within Munters. While we believe the information is accurate and complete, we make no warranty or representation for any particular purposes. The information is offered in good faith and with the understanding that any use of the units or accessories in breach of the directions and warnings in this document is at the sole discretion and risk of the user.

1.2 Introduction

Congratulations on your excellent choice of purchasing a GREEN RTU Receiver Unit!

In order to realize the full benefit from this product it is important that it is installed, commissioned and operated correctly. Before installation or using the device, this manual should be studied carefully. It is also recommended that it is kept safely for future reference. The manual is intended as a reference for installation, commissioning and day-to-day operation of the Munters Controllers.

1.3 Notes

Date of release: May 2020

Munters cannot guarantee to inform users about the changes or to distribute new manuals to them.

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2 Radio Receiver Module Installation

- Mounting the RX
- Connecting the Output Devices to the Radio Receiver Module
- Connecting the Output Devices to the Receiver Module Equipped with the Plug Connection Format
- Connecting the Output Devices to the Receiver Module Equipped with the Output Wire Loom Format
- Programming the Radio Receiver Module
- Applying Power to the Radio Receiver Module
- Resetting the Radio Receiver Module
- Installing the Protection Hood
- General Notes

2.1 Mounting the RX

- Always mount the radio receiver module in clear open air.
- Mount the module in the horizontal plain with the window facing downwards as shown in the Figure 1 below.

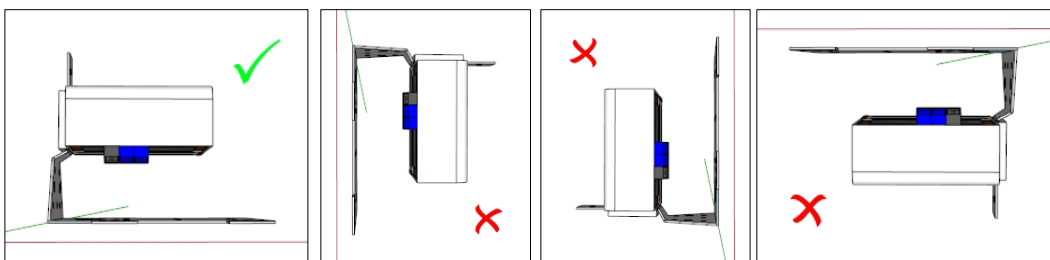


Figure 1: Mounting the Receiver

- Mount the receiver module onto a stainless steel receiver bracket using the modules mounting slot as shown in Figure 2 below. Insert an M5 machined screw through the hole provided in the top of the modules mounting bracket and lock this in place with a machine nut to secure the module.

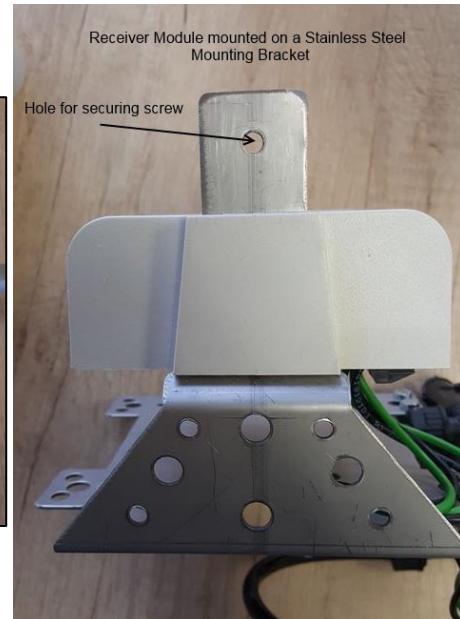


Figure 2: Receiver Brackets

- Mount the receiver module along with its bracket on a solid pole or other suitable solid structure as high as is practically possible. Refer to Figure 3 below as example.



Figure 3: Receiver on a Pole

- When mounting the receiver module and bracket to the outside of a building, make sure to locate the module on the building wall that is facing the transmitter's antennae. In built up areas this may not be possible but test this location to make sure you obtain acceptable signal quality before mounting the unit.
- It is generally best practice to locate the switching devices such as solenoids and relays as close as possible to the receiver module. This will be explained in more detail under the "Connecting the Output Devices to the Radio Receiver Module" section.
- NOTE!!!
 - Do not mount the receiver module on any structure that is subjected to vibration. E.g. Avoid mounting the receiver module on a valve riser assembly as the riser assembly is subjected to vibration while water flow takes place.
 - Avoid mounting the radio receiver module in a metal or concrete enclosure or structure. Even a metal cage will negatively influence radio signal. It is acceptable to mount the receiver module within a plastic enclosure as shown in Figure 4.

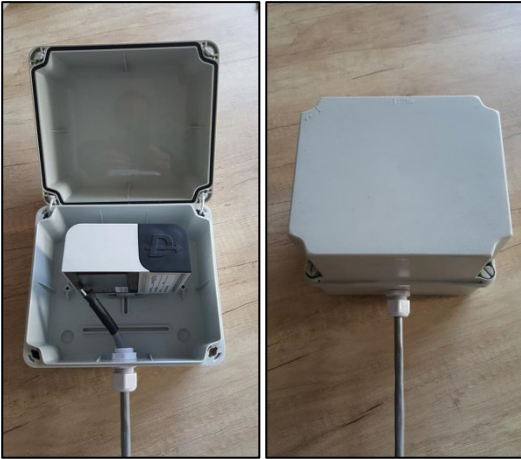


Figure 4: Receiver on Plastic

- Avoid mounting the radio receiver in any location where corrosive gases are present.
- Do not mount the receiver module underground.
- Do not mount the receiver module in any location that can become flooded.
- Avoid mounting the receiver module where it will be subjected to water jet/s. E.g. Do not mount the unit directly next to a sprinkler where the jet of water being emitted by the sprinkler hits the receiver module.
- Avoid locating the receiver module in dense vegetation and foliage.
- Make certain acceptable radio reception is achievable when locating a receiver module in the vicinity of high voltage power lines.

2.2 Connecting the Output Devices to the Radio Receiver Module

- The Green RTU RX radio receiver module is available in two output connection formats.
 - The output plug format as shown in Figure 5 below



Figure 5: Plug Format

- The output wire loom format as shown in Figure 6 below

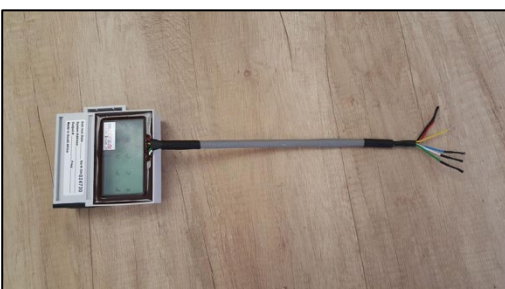


Figure 6: Wire Loom Format

- It is advisable to locate the output devices to be switched by the radio receiver module, such as solenoids and relays, as close to the receiver module as is practically possible. These output devices are activated with a short DC pulse signal and long cable/wire run lengths between the output device and the radio receiver module can be problematic (can cause intermittent operation).
- We do not suggest that you exceed 5m in total cable/wire length between the radio receiver module and the output device to be controlled. Use a wire size of 1.5mm² if you intend to locate the output device/s away from the receiver module up to 5m away.
- The Green RTU RX radio receiver module uses a two wire 12VDC pulse signal of 60mSec in length. Compatible output devices should be selected to meet this specification and tested properly for reliable use with the radio receiver module. Consult with Munters for a list of approved devices.

2.3 Connecting the Output Devices to the Receiver Module Equipped with the Plug Connection Format

This version of the Green RTU radio receiver module is equipped with a 6 terminal pins and a plug (black and blue) as shown in Figure 7 below.



Figure 7: Terminal Pins

Looking from the rear (the mounting slot end) of the radio receiver module the terminals are as follows:

- Terminal 1 - Common (Black)
- Terminal 2 - Common (Black)
- Terminal 3 - Output #1 (Blue)
- Terminal 4 - Output #2 (Blue)
- Terminal 5 - Output #3 (Blue)
- Terminal 6 - Output #4 (Blue)

Figure 8 below shows two solenoid valves that have wire to the radio receiver modules terminal plug. The green wire (plus) from solenoid valve #1 is wired to the first blue terminal (terminal 3 being the closest blue terminal to the black terminals). The green wire (plus) from solenoid valve #2 is wired to the second blue terminal (terminal 4). The black wires (minus) are wired to the black terminals in no specific order. The two black terminals are the same.

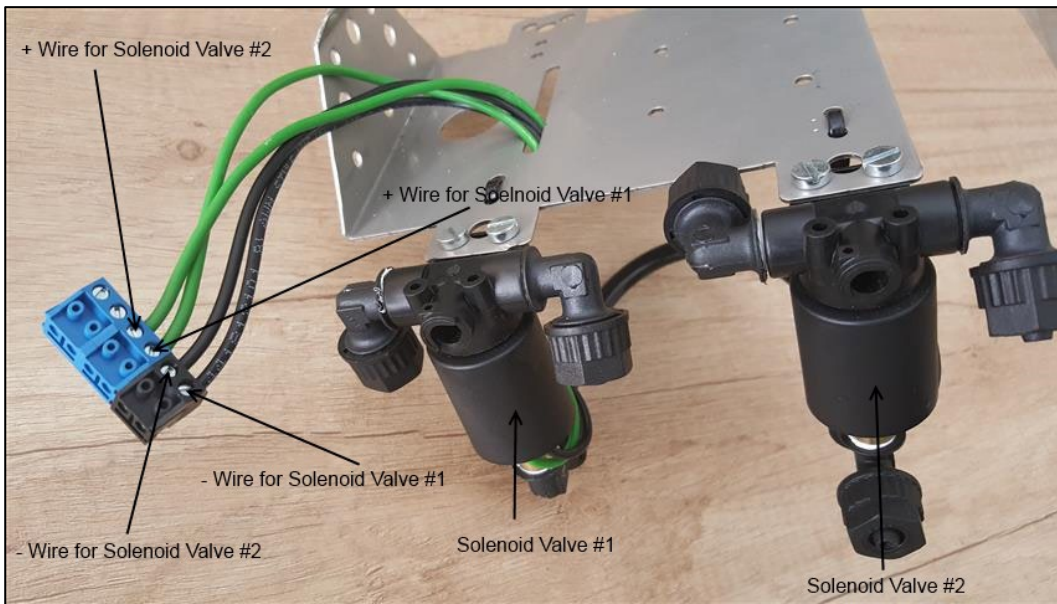


Figure 8: Solenoid Valves

Wiring the 3 and 4 output would entail connecting the green wire for the 3rd output device to terminal 5 (blue block) and the green wire for the 4th output device to terminal 6 (blue block). The black wires from both output devices would connect to either terminal 1 or 2 (the black blocks).

Once the wiring of the output devices to the terminal connector has been completed the connector can be plugged into the pins on the base of the radio receiver module as shown in Figure 9 below.



Figure 9: Connecting the Pins

CAUTION We recommend to remove this terminal connector from the radio receiver module once a year and to clean the pins on the module as well as to thoroughly clean the plug. Apply a good quality anti rust inhibitor spray such as silicone before reattaching the connector to the receiver module.

2.4 Connecting the Output Devices to the Receiver Module Equipped with the Output Wire Loom Format

This version of the Green RTU radio receiver module is equipped with a short piece of 6 core cable which is attached on one end to the radio receiver module using a waterproof joint. The other end of the cable has 6 soldered tinted wire ends exposed with ends, ready for attaching to the output devices as shown in Figure 9 below.

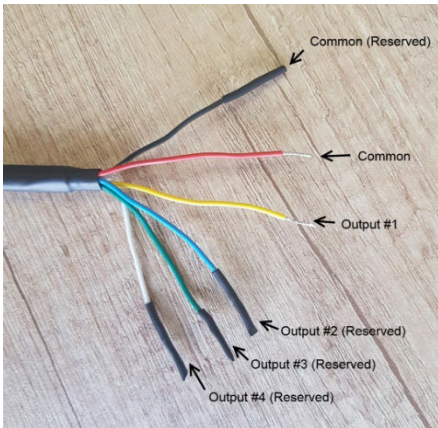


Figure 10: Output Wire Loom Format Wiring

The 6 wires are allocated as follows -

- Red: Common
- Black: Common Reserved (Reserved for future use. Remove the temporary heat shrink if you will use this wire)
- Yellow: Output #1
- Blue: Output #2 (Reserved for future use. Remove the temporary heat shrink if you will use this wire)
- Green: Output #3 (Reserved for future use. Remove the temporary heat shrink if you will use this wire)
- White: Output #4 (Reserved for future use. Remove the temporary heat shrink if you will use this wire)

It is recommended to make a waterproof connection between these wires and the output device wires. This can be achieved by terminating the connections in an additional enclosure or using a waterproof gel type connector such as the sample shown in Figure 11 below.



Figure 11: Termination

2.5 Programming the Radio Receiver Module

The Green RTU RX radio receiver module is programmed using a Hand Held Programmer. Information relating to this process is available in a separate document titled "Green RTU RX Module Programming Guide". If you do not have this document on record, feel free to contact Munters and we will forward a copy.

2.6 Applying Power to the Radio Receiver Module

The Green RTU radio receiver module makes use of a 3.6VDC 19A/Hr Lithium-thionyl Chloride battery to power the unit. This battery pack is equipped with a wire loom and a connector socket as shown in Figure 12 below



Figure 12: Battery Pack

The Green RTU radio receiver module has two wire looms located in the battery compartment of the module as shown in Figure 13 below. The Green, White and Purple wire loom is used for programming the receiver module using the hand held programmer. The red and black wire look fitted with the connector plug is the module power point that is to be connected to the battery when power is to be applied.

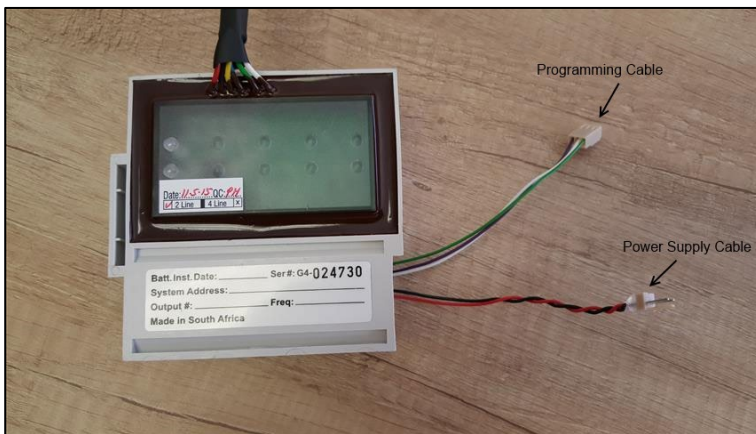


Figure 13: Programming and Power Cables

- Open the battery housing on the receiver module by removing the rubber plug from the receiver modules battery compartment (Do not use any sharp instruments to achieve this).
- Referring to Figure 13 above, extract the battery, battery cable and the programming cable out of the receiver modules battery compartment.
- Referring to Figure 14 below, plug the battery connector socket into the radio receiver modules power connector plug (red and black wires).

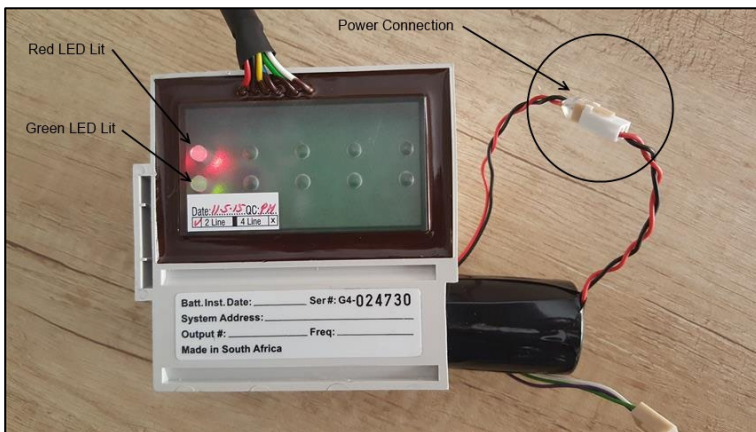


Figure 14: Battery Plugged in

- You will observe that both the Red and the Green LED's will illuminate together.

- When the green LED extinguishes, an audible click will be heard from each of the solenoids connected to the receiver module as a reset of each output device takes place. Other output devices do not necessarily omit this audible clicking noise during the resetting procedure.
- The Red LED will remain on for approximately 2 to 3 minutes after the battery was reconnected.
- While the Red LED is illuminated and should a radio signal applicable to this receiver module (ID being the same as the transmitted signal), be received by the unit, the green LED will flash briefly.
- If data that pertains to one or more of the outputs has been received by the module, the output/s will be activated or deactivated dependant on the status requested. At this time the green LED will also flash briefly.
- The Red LED will extinguish after 2 to 3 minutes to conserve power consumption. No LED's can be observed after this time.
- Gently insert the battery along with the wires and connectors into the radio receiver modules battery compartment. Firmly secure the rubber plug into the receiver modules battery compartment making sure that the "D" is facing upwards and that the plug is fully inserted.

2.7 Resetting the Radio Receiver Module

From time to time the system operator may wish to clean a solenoid valve/s or check on the condition of the radio receiver modules battery or simply reset the radio receiver module processor. The best way to achieve this is to reset the radio receiver module which is explained as follows –

- Open the battery housing on the receiver module by removing the rubber plug from the receiver modules battery compartment (Do not use any sharp instruments to achieve this).
- Gently extract the battery, battery cable and the programming cable out of the receiver modules battery compartment.
- Disconnect the battery connectors socket from the receiver modules connector plug.
- To perform a reset on the receiver module power needs to be fully removed. When the battery is unplugged it could take up to 60 minutes for power in the module to dissipate. To hasten this process it is possible to use a hand held programmer to reset the module however If you do not have a Hand Held Programmer available you will need to perform a manual reset.
- Bridge out the black wires terminal pin with the green wires terminal socket for about 2 seconds on the receiver module as shown in Figure 15 below.

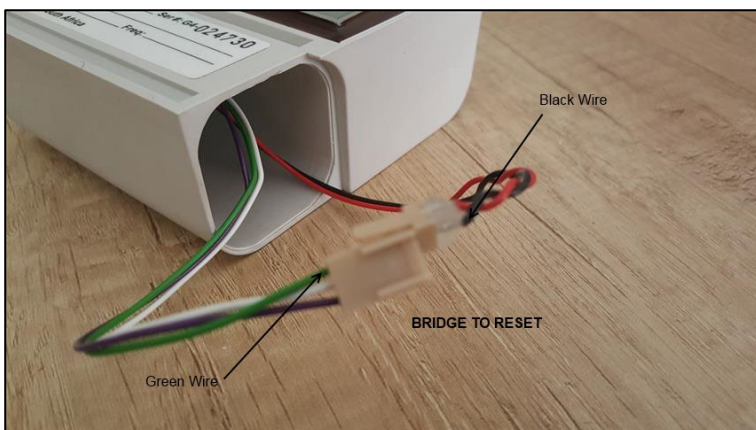


Figure 15: Resetting the RX

- Referring to Figure 16 below, plug the battery connector socket into the radio receiver modules power connector plug (red and black wires).

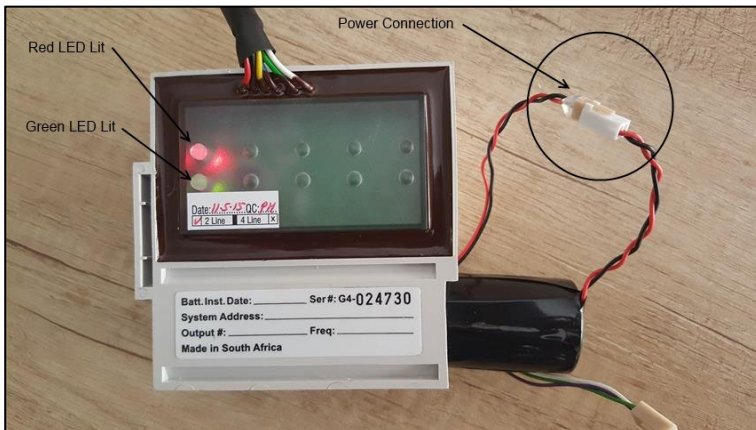


Figure 16: Plugged in Unit

- You will observe that both the Red and the Green LED's will illuminate together.
- When the green LED extinguishes, an audible click will be heard from each of the solenoids connected to the receiver module as a reset of each output device takes place. Other output devices do not necessarily omit this audible clicking noise during the resetting procedure.
- The Red LED will remain on for approximately 5 minutes after the battery was reconnected.
- While the Red LED is illuminated and should a radio signal applicable to this receiver module (ID being the same as the transmitted signal), be received by the unit, the green LED will flash briefly.
- If data that pertains to one or more of the outputs has been received by the module, the output/s will be activated or deactivated dependant on the status requested. At this time the green LED will also flash briefly.
- The Red LED will extinguish after 2 to 3 minutes to conserve power consumption. No LED's can be observed after this time.
- Gently insert the battery along with the wires and connectors into the radio receiver modules battery compartment. Firmly secure the rubber plug into the receiver modules battery compartment making sure that the "D" is facing upwards and that the plug is fully inserted.

2.8 Installing the Protection Hood

The radio receiver protection hood provides additional protection to the radio receiver module against various environmental conditions (bird and other animal defecation, temperature, moisture, sunlight, etc.). Follow the procedures as described below to fit the hood to an existing receiver modules installation.

- Remove the M5 securing screw from the hole in the top of the receiver modules stainless steel mounting bracket.
- Install the protection hood by inserting the blade of the mounting bracket through the slot in the hood as shown in Figure 17 below.



Figure 17: Protection Hood

- Push the hood down making sure that the locating lips are behind the stainless steel bracket as shown in Figure 18 below. Do not force the hood down and make sure a gap is retained between the receiver module and the hood.

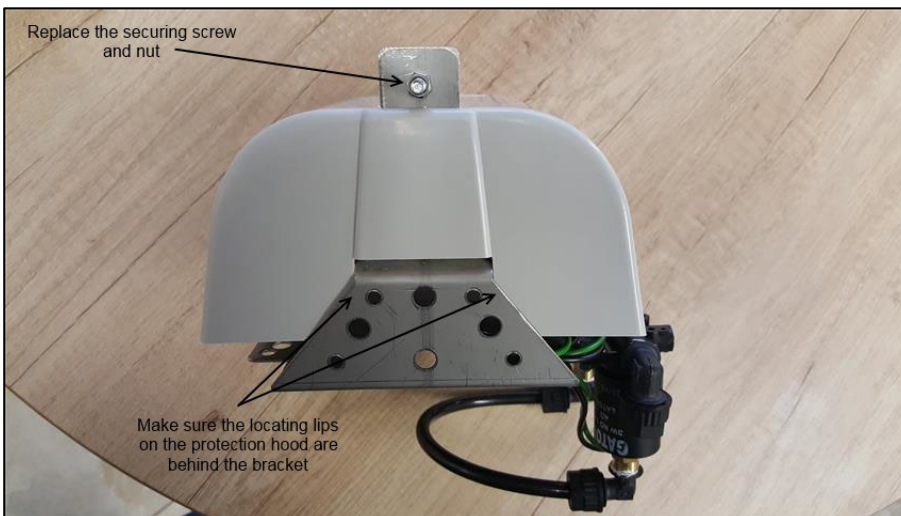


Figure 18: Hood in Place

2.9 General Notes

- Do not drop the receiver module as this could lead to permanent damage to sensitive electronic components.
- Keep the receiver module in its original packaging until the unit is on site and ready to be installed. This provides optimum protection to the equipment during the transport process.
- Avoid exposing the module to high vibration and or shock as this can lead to permanent damage to the equipment.
- Do not attempt to modify the equipment or the electronics as this will deem the warranty void and may lead to permanent damage of the equipment.

3 Warranty

Warranty and technical assistance

Munters products are designed and built to provide reliable and satisfactory performance but cannot be guaranteed free of faults; although they are reliable products they can develop unforeseeable defects and the user must take this into account and arrange adequate emergency or alarm systems if failure to operate could cause damage to the articles for which the Munters plant was required: if this is not done, the user is fully responsible for the damage which they could suffer.

Munters extends this limited warranty to the first purchaser and guarantees its products to be free from defects originating in manufacture or materials for one year from the date of delivery, provided that suitable transport, storage, installation and maintenance terms are complied with. The warranty does not apply if the products have been repaired without express authorisation from Munters, or repaired in such a way that, in Munters' judgement, their performance and reliability have been impaired, or incorrectly installed, or subjected to improper use. The user accepts total responsibility for incorrect use of the products.

The warranty on products from outside suppliers fitted to the Receiver, (for example cables, antennas, etc.) is limited to the conditions stated by the supplier: all claims must be made in writing within eight days of the discovery of the defect and within 12 months of the delivery of the defective product. Munters has thirty days from the date of receipt in which to take action, and has the right to examine the product at the customer's premises or at its own plant (carriage cost to be borne by the customer).

Munters at its sole discretion has the option of replacing or repairing, free of charge, products which it considers defective, and will arrange for their despatch back to the customer carriage paid. In the case of faulty parts of small commercial value which are widely available (such as bolts, etc.) for urgent despatch, where the cost of carriage would exceed the value of the parts, Munters may authorise the customer exclusively to purchase the replacement parts locally; Munters will reimburse the value of the product at its cost price.

Munters will not be liable for costs incurred in demounting the defective part, or the time required to travel to site and the associated travel costs. No agent, employee or dealer is authorised to give any further guarantees or to accept any other liability on Munters' behalf in connection with other Munters products, except in writing with the signature of one of the Company's Managers.

WARNING: *In the interests of improving the quality of its products and services, Munters reserves the right at any time and without prior notice to alter the specifications in this manual.*

The liability of the manufacturer Munters ceases in the event of:

- dismantling the safety devices;
- use of unauthorised materials;
- inadequate maintenance;
- use of non-original spare parts and accessories.

Barring specific contractual terms, the following are directly at the user's expense:

- preparing installation sites;
- providing an electricity supply (including the protective equipotential bonding (PE) conductor, in accordance with CEI EN 60204-1, paragraph 8.2), for correctly connecting the equipment to the mains electricity supply;
- providing ancillary services appropriate to the requirements of the plant on the basis of the information supplied with regard to installation;
- tools and consumables required for fitting and installation;
- lubricants necessary for commissioning and maintenance.

It is mandatory to purchase and use only original spare parts or those recommended by the manufacturer.

Dismantling and assembly must be performed by qualified technicians and according to the manufacturer's instructions.

The use of non-original spare parts or incorrect assembly exonerates the manufacturer from all liability.

Requests for technical assistance and spare parts can be made directly to the nearest [Munters office](#).

