

### Product Description

The RMT 2000-2 is the perfect solution to allow convenient user access to cold storage controllers that are mounted in hard to reach areas. The RMT 2000-2 can be placed anywhere, and is capable of controlling up to 8 TAR/MSR devices via databus and *E-Link protocol*. The RMT is designed to have the same look and feel as the devices being controlled remotely to allow the user ease and comfort to make any parameter adjustments necessary from a convenient location.

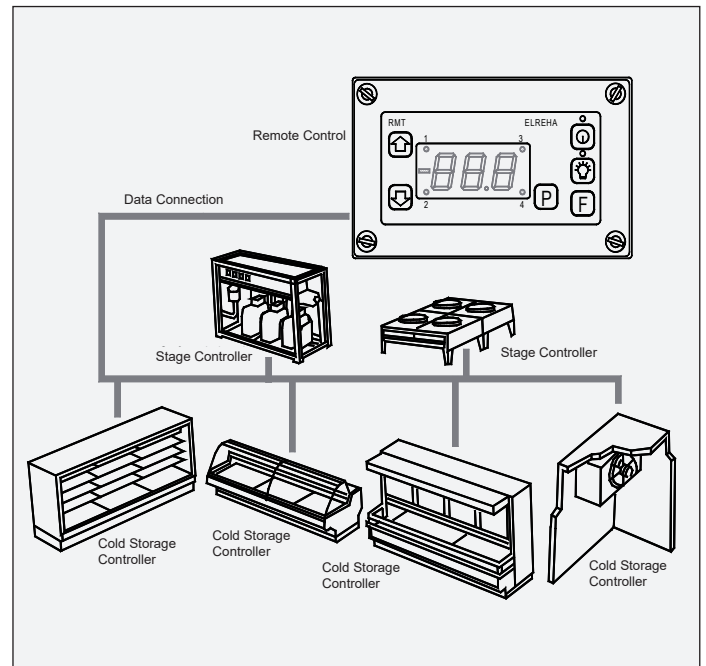
### Functional Overview

- Remote control of up to 8 of any of the following cold storage devices (TAR/MSR 1xxx, 3xxx/3xxx-2, 5xxx and 19xxx).
- Membrane keypad user interface.
- 13mm Red LED Digital Display.
- Same user interface configuration as the TAR and MSR devices.
- ON/OFF key for devices controlled remotely.
- Light key to activate the lighting relay on devices controlled remotely.
- Plastic housing wall mount, IP 54.
- 4-wire data connection.

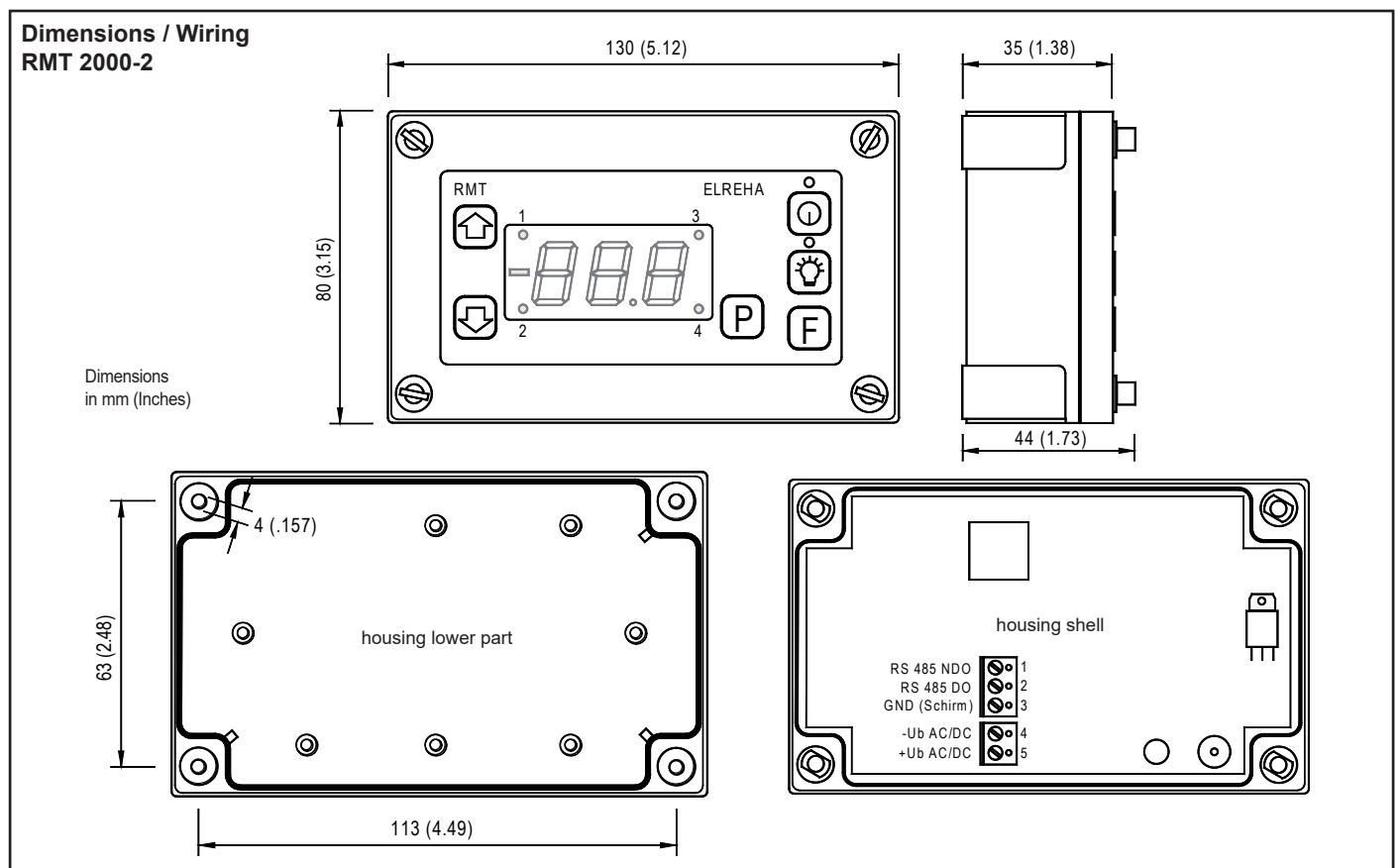
### Technical Data

Supply Voltage..... 12-24 V AC/DC (50-60 Hz)  
 Power Consumption..... max. 2,5 VA  
 Operating- / Ambient Temperature.....-10 .. 45 °C / -30 .. 70 °C  
 Ambient Humidity ..... max. 80% r.F., not condensing  
 Data Storage..... unlimited  
 Internal Beeper ..... 85 dB  
 Data Interface ..... RS 485 / *E-Link* protocol  
 Max. number of devices ..... 8  
 Max. databus length ..... 1000 m  
 Databus cable..... 4x min. 0,75 sqmm, shielded  
 Display ..... 7-segment LED red, 6x 3mm LED red  
 Housing ..... plastic, removable cover, IP 54

### System Overview



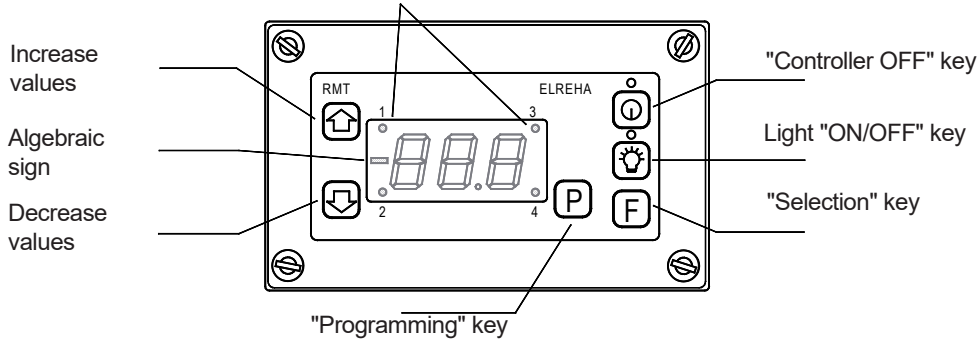
**Caution** Please note Safety Instructions !  
 While replacing older types please note changed functions!



**Operating**

**1. Operating Elements**

Same indicator LEDs as found on the devices controlled remotely by the RMT 2000-2.



**i** After the RMT 2000-2 has been switched on, the current value of the first connected controller will be displayed. If the display shows "--", there is no communication on the databus. In this case please check cable, screw terminals and polarity.

**2. Select controller device to control remotely**

Action	Display	Note
short	e.g. d01	Number of the devices to control
 	e.g. d03	Number of the desired devices to control
short	e.g. -20.5	Current display content of the selected device

**3. Operating the Controller**

After the desired controller is selected, this device can be operated by the RMTs 'up/down' and 'P' keys like at the device itself. All display contents of the controller will be transmitted to the RMT display at once. For further information, please use the operating instructions of the respective controller.

**4. Special Keys (only valid with TAR controllers)**

The special keys only affect the currently selected controller device.

- Light key.** Relay 4 of a TAR-x810 Cold Storage Controller can be configured as a light relay (alarm mode=6). If such a controller is selected, its light relay can be activated by this key. The LED indicates the state.
- Controller OFF.** Holding this key for > 3 seconds switches the selected TAR controller OFF. The LED is off, the display shows "oFF". Pushing the key another > 3 seconds switches the controller ON again, the display then shows current values.

**Parameter Listing**

No.	Note	Range	Default Value
P01	No. of the devices to control remotely.....	(1..8).....	1
P02	Baudrate (data transmission speed)..... <i>The baudrate can be reduced if distortion occurs, however, the factory setting has been selected to produce optimal results.</i>	1=1200..... 2=2400..... 3=4800..... 4=9600..... 5=19200.....	4
P03	Alarm acknowledgement time in scan mode.....	0.. 120 min.....	5 min
P04	Address of the 1st. connected controller device.....	1-63.....	78
P05	Address of the 2nd. connected controller device.....	1-63.....	0
P06	Address of the 3rd. connected controller device.....	1-63.....	0
P07	Address of the 4th. connected controller device.....	1-63.....	0
P08	Address of the 5th. connected controller device.....	1-63.....	0
P09	Address of the 6th. connected controller device.....	1-63.....	0
P10	Address of the 7th. connected controller device.....	1-63.....	0
P11	Address of the 8th. connected controller device.....	1-63.....	0

**Installation**

Power Supply

The RMT can be powered by any of the following options:

- External transformer.
- DC output power supply.
- One of the connected controller devices.


Connected Controller	Supply RMT from
TAR/MSR design 1xxx	external transformer
TAR design 3xxx	the TAR
TAR design 5xxx	the TAR
TAR/MSR design 19xxx	external transformer
MSR design 3xxx (with press. control)	the MSR
MSR design 3xxx (with press. trans.)	external transformer
MSR design 5xxx (with press. control)	the MSR
MSR design 5xxx (with press. trans.)	external transformer

Construction of the unit

Two-part plastic housing, the upper part contains the complete electronics and the terminals. The bottom part is made to fix the unit at the mounting position. The upper part can be fixed by four T-screws, a rubber gasket between the parts prevents the electronics from exposure to moisture.

Data Connection

Shielded 2-wire cable, (twisted pair), must be used for the data connection. Please connect the shielding as described in the drawings. The maximum length from the RMT 2000-2 to the furthest controller cannot exceed 1000 meters (approx. 3280 feet).

 **The secondary side of the primary transformer should not be connected to ground.**

**CONNECTION INFORMATION & SAFETY INSTRUCTIONS**



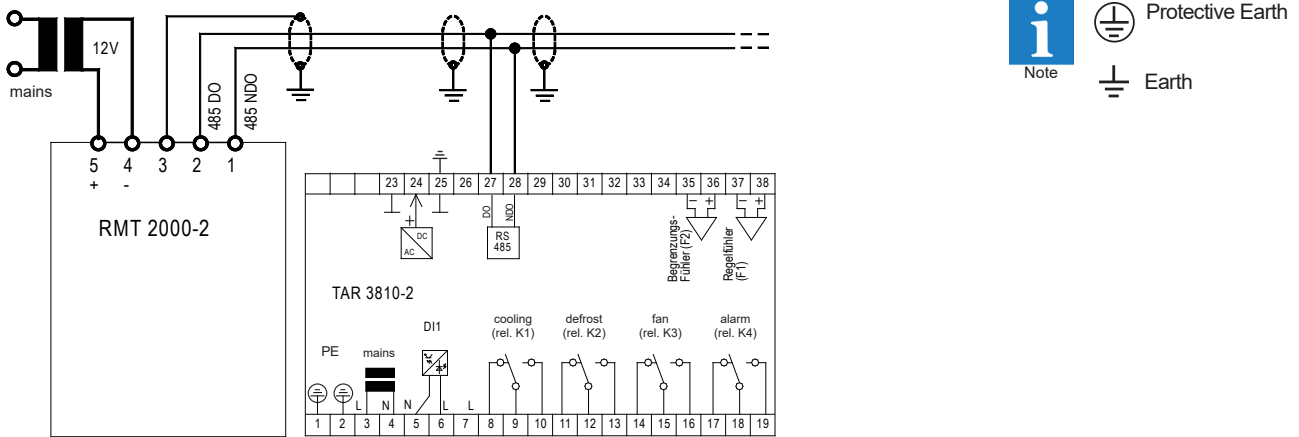
Product warranty does not cover damage caused by failure to comply with these operating instructions, nor will ELREHA be held liable for any personal injury or damage to property caused by improper handling or failure to observe the safety instructions and recommendations contained in this or any other ELREHA supplied document related to this product! This manual contains additional safety instructions throughout the functional description. Please pay close attention to these instructions!



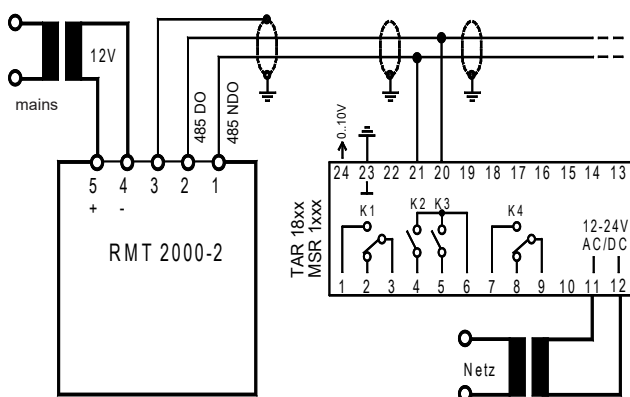
**TO AVOID RISK TO HEALTH OR POSSIBLE LOSS OF LIFE, DO NOT OPERATE IF:**

- The device has visible damage or doesn't work
- After a long storage period under unfavourable conditions
- The device is heavily soiled or wet
- When shipped under inadequate conditions
- Never use this product in equipment or systems that are intended to be used in applications or under circumstances that may affect human life. For applications requiring extremely high reliability, please contact the manufacturer before use.
- **This product may only be used in the applications described on page 1.**
- **Electrical installation and placement into service must be performed by qualified personnel only.**
- **Be sure to observe all local, state, or federal safety regulations in the location that the unit is installed.**
- Mounting the device close to power relays is not recommended, due to the risk of strong electro-magnetic interference, which can cause the unit to malfunction!
- Ensure that the interface wiring meets all the necessary requirements.

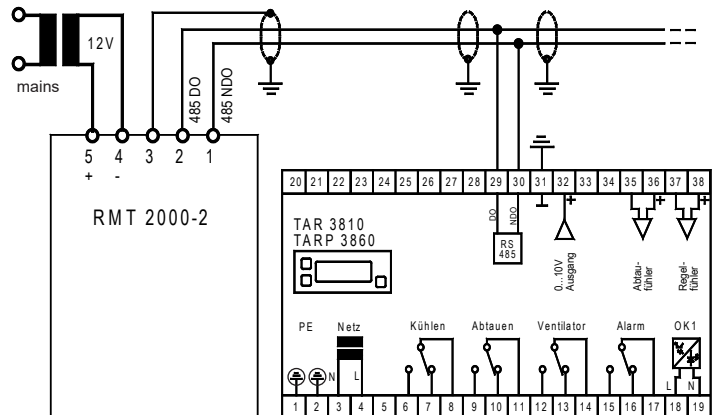
**Data Connection RMT 2000-2 <-> TAR 3810-2**

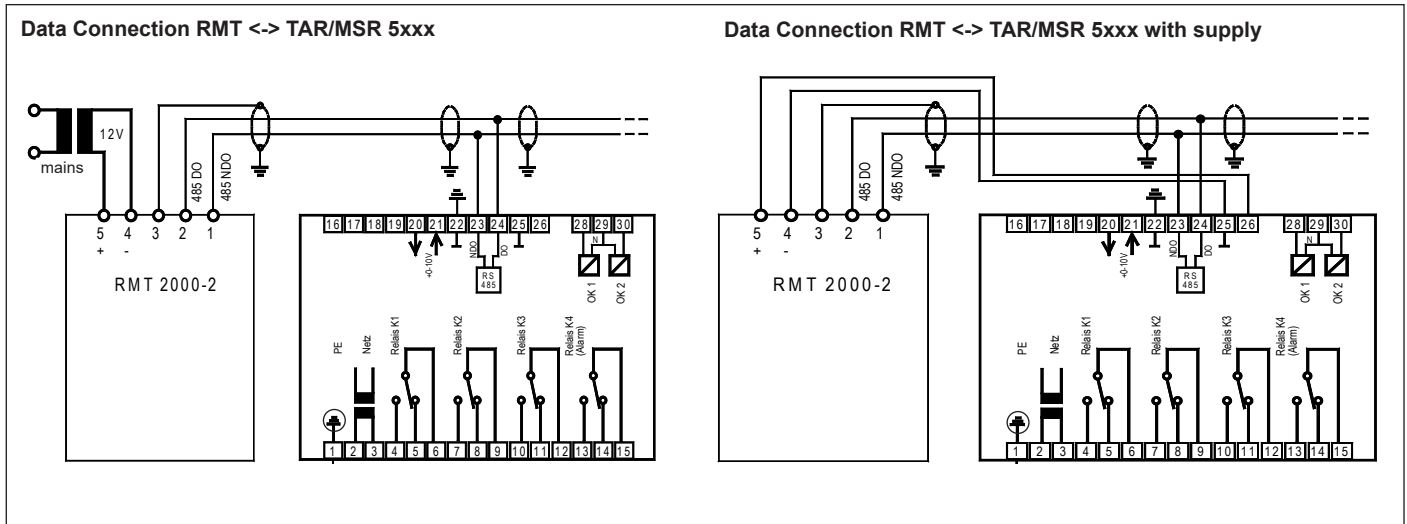


**Data Connection RMT 2000 <-> TAR/MSR 1xxx**



**Data Connection RMT 2000 <-> TAR/MSR 3xxx**





**Start-up**

1. Switch on all controller units on the bus
2. Start-up the units like described in their manual
3. Set an individual network address at each of the 8 controller units
4. Push "F" at the RMT for > 3 sec., "P01" (ParameterNo.) appears, the LED's at the "Light"- and "OFF"- switch will begin blinking.
5. Select P04 by "↑/↓".
6. Push "P": A value (network address) appears.
7. By "↑/↓", set the address of the first connected controller device.
8. Push "P": Address stored, ParameterNo. appears again.
9. Repeat from step 5 (with P05...P11), until all device addresses are stored, (max 8), in the RMT 2000-2.
10. Push "F" at the RMT for > 3 sec. The current display of the first connected device will appear.

**EC Declaration of Conformity** **CE**

For the device **RMT 2000-2** we state the following:  
 When operated in accordance with the technical manual, the criteria have been met that are outlined in the EMC Directive 2014/30/EC and the Low Voltage Directive 2014/35/EC. This declaration is valid for those products covered by the technical manual which itself is part of the declaration.

Following standards were consulted for the conformity testing to meet the requirements of EMC and Low Voltage Guidelines:  
**EN 55011:2016, EN 61010-1:2010, EN 61326-1:2013** **CE marking of year: 2017**

This statement is made for the manufacturer / importer **ELREHA Elektronische Regelungen GmbH** by:  
**D-68766 Hockenheim** **Werner Roemer, Technical Director**  
 www.elreha.de **Hockenheim .....17.11.2017.....**  
 (Name / Address) City Date Signature

**i** This manual, which is part of the product, has been set up with care and our best knowledge, but mistakes are still possible. Technical details can be changed without notice, especially the software. Please note that the described functions are only valid for units containing the software with the version-number shown on page 1 of this manual. Units with an other version number may work a little bit different.