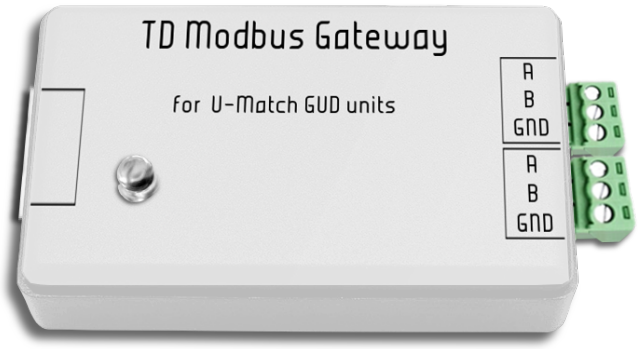
Installation manual

Modbus Gateway
(TD GUD 30/01)

for U-Match R32 units



- Thank you for choosing Modbus Gateway for Gree air conditioners. Please read this manual carefully before operation and retain it for future reference.
- In case of lost manual, please, contact your local dealer or the manufacturer TD metal s.r.o. at info@tdmetal.cz
- TD metal s.r.o. reserves the right to interpret this manual which will be subject to any change due to product improvement without further notice.

Contents

1 General description and application **4**
1.1 Package contents 4
1.2 Application 5

2 RS485 cable requirements **6**

3 Configuration by wired controller **8**
3.1 Activation of Modbus communication 8
3.2 Address settings of indoor unit 8

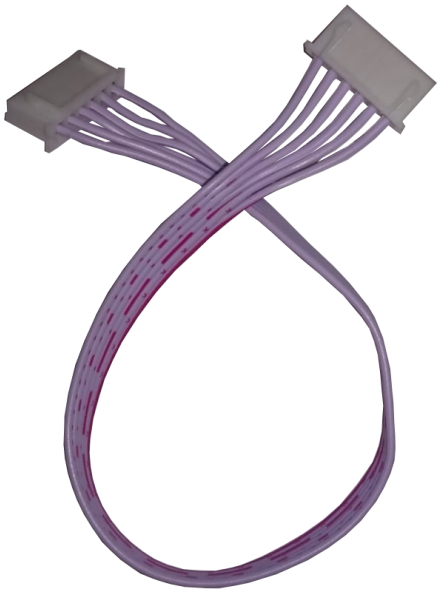
4 Connection **9**

1 General description and application

- Modbus Gateway allows control of all available functions of your Gree air conditioner via BMS, WiFi module Premium or PC
- Please, read this manual thoroughly for correct installation
- In case of installation problems, please, contact the manufacturer: *info@tdmetal.cz*, +420 585 237 171

1.1 Package contents

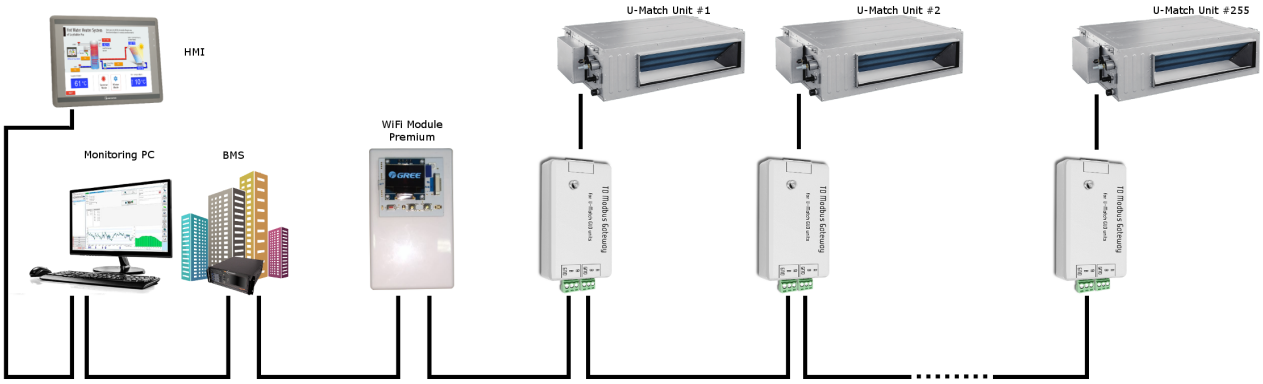
1. Modbus Gateway



2. Communication cable

1.2 Application

- Modbus Gateway must be supplied into each indoor unit, which is to be remotely controlled
- Up to 256 units can be connected to common bus
- Every device, which is able to communicate over Modbus, can be connected to common bus e.g.:
  - BMS system,
  - HMI system,
  - WiFi module Premium,
  - PC with proper software and RS-485 converter (USB cable/module)
- Communication witk units is based on Modbus commands - complete list of the commands is in the separate manual for GREE indoor units.



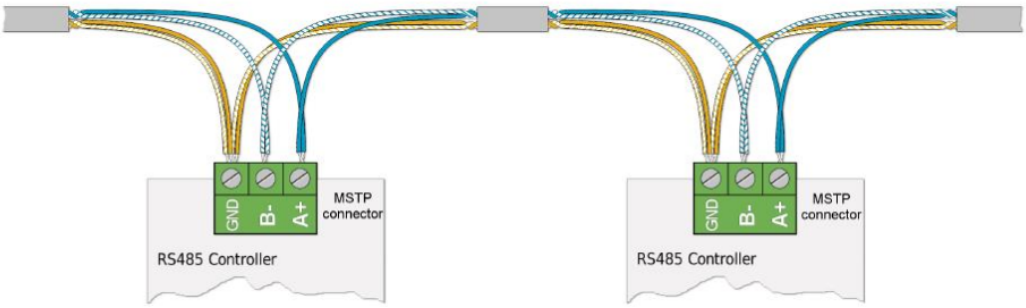
Connectable devices to Modbus Gateway bus

2 RS485 cable requirements

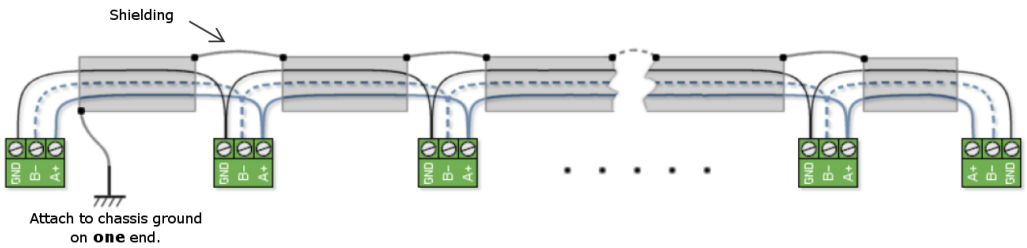
The communication is running on RS485 line and must be connected by cables specially designed for this. These cables should conform demands by EIA-485 specification. (E.g. see BELDEN 3016A)

It requires shielded twisted 2-pair cable or 1.5-pair cable. Recommended thickness of cable lines is 0,2 - 0,32 mm^2 (24 - 22 AWG, ⌀0.5 - 0.65 mm)

One twisted pair is used for connection of A and B. Remaining line(s) are used for GND connection.



Shielding of the cable must be attached on the chassis of **one** of the devices. Best practice is to attach it on the outmost indoor unit chassis.



RS485 network topology must be arranged as **bus** (point to point), connection to **star**, **ring** or **triangle** is not possible !!!

Maximal length of RS485 line is **500 meters.**

The first and the last device on the bus should have terminating resistor **120** Ω between **A** and **B** lines. (some devices do already have this implemented inside, it can be activated by DIP-switch or by software command - see manual to specific device)

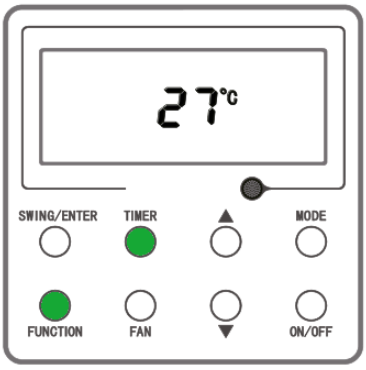
Meeting these requirements is essential for seamless communication, particularly in environments with high surrounding electromagnetic interference (i.e. substations, server rooms, utility rooms).

3 Configuration by wired controller

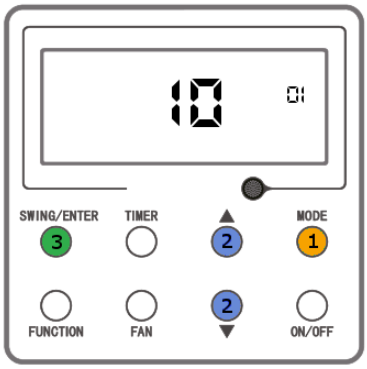
For activation of Modbus communication and address settings of indoor unit, you will need wired controller **XK117** (Z4K351GJ)

3.1 Activation of Modbus communication

In default settings, the unit is ready to communicate with central controller, it is required to activate it for Modbus communication.



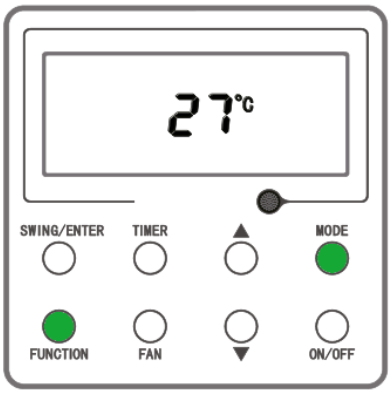
1. Under **OFF** state, hold buttons **FUNCTION** and **TIMER** for more than 5 seconds.



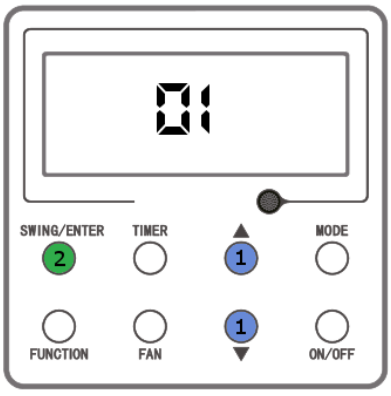
2. Press **MODE** multiple times to get to **10th** settings parameter (middle number), by **arrows** choose option **01** and confirm by pressing **SWING/ENTER** button.

3.2 Address settings of indoor unit

When there are several Modbus Gateways on the common bus, each indoor unit has to be assigned with **unique** address. Otherwise it is recommended to keep the default address **1**.



1. Under **OFF** state, hold buttons **FUNCTION** and **MODE** for more than 5 seconds.

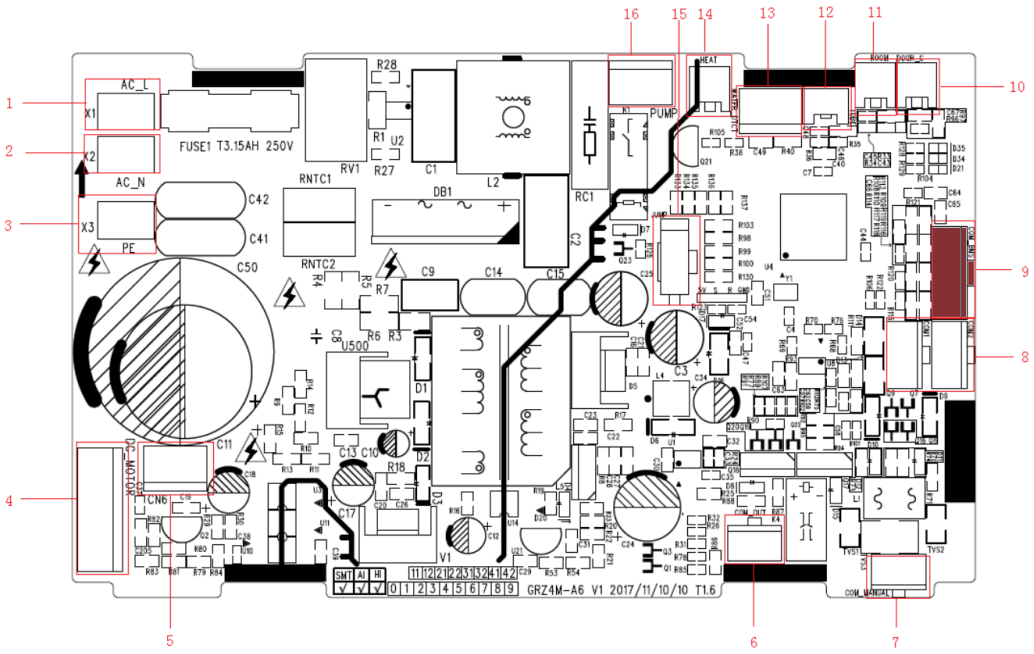


2. By **arrows** choose unit's address and confirm by pressing **SWING/ENTER** button.

4 Connection

Modbus Gateway can be connected to all types of U-Match R31 indoor units (duct-type, cassette, floor/ceiling)

Connect Modbus Gateway easily by plugging in the attached 6-pin cabel to **brownish red** socket of the mainboard labeled as ***COM-BMS*** *(9)*



Duct-type unit Mainboard

The other of the cable connect to Modbus Gateway socket labeled as ***UNIT***

Connect bus lines **A**, **B** and **GND**. If the Modbus Gateway is the last device on bus, plug terminating resistor (120 Ω) between the connectors **A** and**B**

Notes

Notes

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