



REAL SMART HOME

REAL SMART HOME GmbH

**APPMODULE**

**MODBUS TCP Connect App**

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# TABLE OF CONTENTS

- 1 Introduction..... 4**
  - IMPORTANT INFORMATION ON THE OPERATING INSTRUCTIONS.....4
- 2 MODBUS TCP Connect – Functional overview ..... 5**
  - 2.1 Highlights.....5
- 3 The innovative, modular App-concept for the building automation ..... 6**
  - 3.1 Information about the APPMODULE.....6
- 4 App installation / Update ..... 7**
- 5 App Settings ..... 8**
  - 5.1 Instance.....8
    - 5.1.1 General Modbus Settings .....8
    - 5.1.2 Inputs and Outputs .....9
      - 5.1.2.1 MoDbus-Elemente.....9

# 1 INTRODUCTION

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Thank you for your trust, and the purchase of the **MODBUS TCP Connect**-app for the BAB **APPMODULE**. With the **MODBUS TCP Connect** -app you get simple use of Modbus® registers in building automation. This documentation will help you get started with the app and aims to improve your setup experience.

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## IMPORTANT INFORMATION ON THE OPERATING INSTRUCTIONS

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Important information on the operating instructions

We reserve the right continually improve the product. This entails the possibility that parts of this documentation might be out-of-date. You will find the latest information at:

[www.bab-appmarket.de](http://www.bab-appmarket.de)

This app is an independent product, with no legal ties to Modbus®. Neither **BAB APP MARKET** GmbH nor the developer of this app take any claim in the trademarks owned by Modbus®.

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## 2 MODBUS TCP CONNECT – FUNCTIONAL OVERVIEW

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With this app you can connect an existing Modbus gateway, via TCP, to the KNX world in no time at all. The App works as a Modbus TCP Master.

### 2.1 HIGHLIGHTS

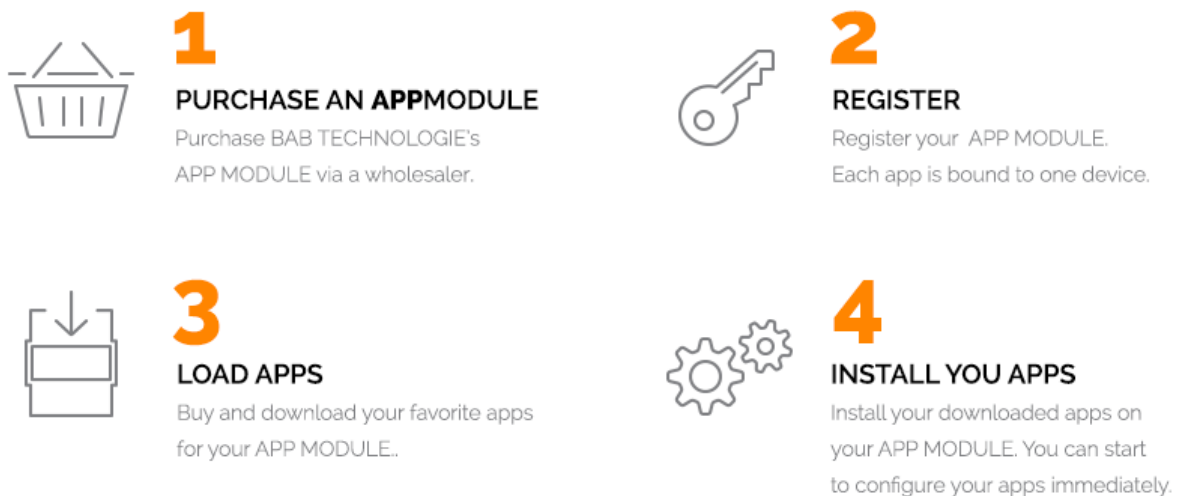
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- Cull meter readings e. g. for natural gas, water, energy, etc.
- Controlling Analog Outputs
- 1 Bit, 1 Byte, 2 Byte and 4 Byte data
- Read and write registers
- Easy usage of Modbus meter readings in KNX
- Full interoperability with other apps and features

## 3 THE INNOVATIVE, MODULAR APP-CONCEPT FOR THE BUILDING AUTOMATION

The innovative, modular app concept for building automation. The **APPMODULE** brings the innovative, modular app concept into building automation. You can mix and match any of the diverse applications that are available to integrate third-party solutions. With these apps from the dedicated **BAB APP MARKET**, the **APPMODULE** becomes a tailor-made integration unit for your building automation.

### HOW IT WORKS



Manufacturer of the **APPMODULE** [BAB TECHNOLOGIE GmbH](#)

Distribution of all apps for the **APPMODULE** [BAB APP MARKET GmbH](#)

App developer [REAL SMART HOME GmbH](#)

### 3.1 INFORMATION ABOUT THE APPMODULE

Please refer to the separate product documentation of the **APPMODULE** for a detailed product description and setup instructions.

[http://www.bab-tec.de/index.php/download\\_de.html](http://www.bab-tec.de/index.php/download_de.html)

#### Product variants:

The **APPMODULE** is available in three variants:

- **APPMODULE** KNX/TP – for stand-alone use on KNX/TP Bus
- **APPMODULE** EnOcean – for stand-alone use in the EnOcean wireless network
- **APPMODULE** Extension – for use in an IP-based KNX installation (KNXnet/IP) or as extension for an EIBPORT

## 4 APP INSTALLATION / UPDATE

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Please proceed as follows to install an App.

1. Open the APPMODULE web page: Enter <IP Address of **APPMODULE** > into your browser's address bar and press Enter. The APPMODULE web interface will appear.
2. Log in to your **APPMODULE** with your login data. How to log in to the **APPMODULE** can be found in the **APPMODULE** documentation.
3. Click on the menu entry "App Manager"
4. You are now on the page where already installed Apps are listed. The list will be empty if no apps have been installed. Click "Install App" in order to install a new app.
5. Now click on "Select App"; a file selector window will appear. Choose the Smart Home App »MODBUS TCP Connect« and click "OK".  
The Smart Home App "MODBUS TCP Connect" must first be downloaded from the **BAB APP MARKET** ([www.bab-appmarket.de](http://www.bab-appmarket.de)).
6. After the message "Installation successful" appears, click "OK". The app has been updated. Your instance configurations will remain unchanged.
7. To update an already installed app, click on the App icon in the "App Manager".
8. The detail view of the App appears. Click on "Update App" to select the app package and start the update.  
The update version must be downloaded from the **BAB APP MARKET**.

### **Information**

Please use Google Chrome as your browser to configure the app.

## 5 APP SETTINGS

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With this app you can connect an existing Modbus gateway via TCP to the KNX world in next to no time.

### **Information**

The browser-session expires after a period of 60 minutes due to inactivity. Unsaved changes to the configuration will be lost.

## 5.1 INSTANCE

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Once the app is installed, you can create an "instance". In order to create an instance, click on the symbol "Create Instance".

### **Instance Name:**

Choose a name for this new instance.

### **Comment:**

Insert a description what this instance does.

### Note on communication with the Modbus Gateway:

After an interruption of the network connection, e.g. by restarting the Modbus TCP Slave, failure of the power supply, or similar, the Modbus TCP Connect App reconnects automatically under normal circumstances.

Nevertheless, this should be checked and, if necessary, the corresponding instance of the app should be restarted.

### 5.1.1 GENERAL MODBUS SETTINGS

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#### **Gate Address:**

The share address can be used to activate or deactivate the instance of this app. If this address is not set, the instance remains active as long as it is not stopped via the web interface.

#### **Modbus TCP Host:**

The IP address of the Modbus TCP gateway the connection is established to.

#### **Modbus TCP Port:**

The Modbus TCP port (number) of the Modbus gateway the connection is established to.

#### **Modbus TCP Unit ID:**

The ID (number) of the Modbus TCP slave device that behaves connected with the above IP address. Many Modbus devices ignore the Unit ID.

However, if there are several Modbus slaves under a single IP address, addressing without Unit ID is impossible.

#### **Swap Byte Order:**

According to the Modbus standard, a register typically contains first the high byte and then the low byte. This corresponds to the so-called BigEndian representation. If the Exchange Byte Sequence option is activated, the Modbus TCP Connect App exchanges the first and second bytes in the corresponding registers after reading or before writing.



### **Swap Word Order:**

If several registers of one word (2 bytes) each are read out, e.g. for a 32 bit (4 byte) number, the first and then the second register are used according to the Modbus standard.

This corresponds to the BigEndian representation. If the option Swap Word Sequence is activated, the Modbus TCP Connect App swaps the first word with the second word after reading or before writing.

## 5.1.2 INPUTS AND OUTPUTS

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### **Modbus Elements:**

This list contains the Modbus elements which should be read from or written to.

### 5.1.2.1 MODBUS-ELEMENTE

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#### **Description:**

An identifier can be selected to identify the Modbus element.

#### **Direction of transport:**

Decide to transport from KNX to Modbus or Modbus to KNX.

**IMPORTANT:** It is essential that you use different group addresses for different directions.

#### **Register type:**

The register type defines the type of the specified register (address). Possible registers are:

- Coil (1 bit write and read),
- Discrete Input (1 bit read),
- Input register (16 bit read),
- Holding register (16 bit write and read).

These four types are defined by the Modbus standard.

#### **Datatype:**

The data type that is read from the Modbus register(s).

The following data types are available:

- BOOL
- BYTE
- UBYTE (unsigned)
- UINT16 (unsigned)
- UINT32 (unsigned)
- INT32 (DWORD)
- FLOAT16
- FLOAT32

**Offset Bits:**

Bitwise shifting of data types that do not completely fill a register.

For example, there are 16 possible positions for a single bit in a register. A byte can be written to either the first digit (high) or the second digit (low).

**Register:**

The Modbus register from which the value is read.

**Factor:**

The value read out is multiplied by a factor.

**Offset:**

The value read out is added with the offset.

**Polling Interval (seconds):**

The Modbus polling interval defines the time intervals at which the value is read out via the Modbus-TCP gateway.

**Difference Threshold:**

The value is only forwarded from Modbus to KNX or from KNX to Modbus if the difference to the current value is greater than the value specified here.

This serves to reduce the telegram load and should not be selected too small.

This prevents that no telegram is sent to the KNX bus if the value does not change.

**KNX Address:**

The KNX group address to which the read value is written or which serves as input for a value.

**KNX Data Type:**

Configure the data type of the value:

- EIS 1 (1 Bit)
- EIS 10 signed (2 Byte -32768...32767)
- EIS 14 signed (1 Byte -128...127)
- EIS 14 unsigned (1 Byte 0...255)
- EIS 5 (2 Byte Floating Point)
- EIS 6 (1 Byte Scaled 0...100)
- EIS 9 (4 Byte Floating Point)
- EIS 10 unsigned (2 Byte 0...65535)
- EIS 11 signed (4 Byte Integer)
- EIS 11 unsigned (4 Byte Integer)