



Supplementary manual

KNX module

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Principles

Together with the CAN bus converter CAN-BC2, this module provides the link between the CAN bus from Technische Alternative and the KNX bus (KNX-TP).

It is programmed using TAPPS2 software.

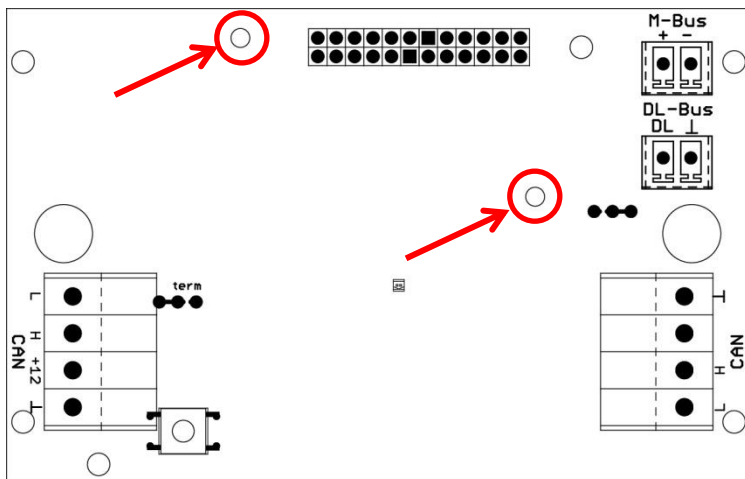
The CAN-BC2 including MD-KNX can be operated via the UVR16x2 controller, CAN-MTx2 or the C.M.I. interface.

The same minimum system requirements apply as for the CAN bus converter CAN-BC2.

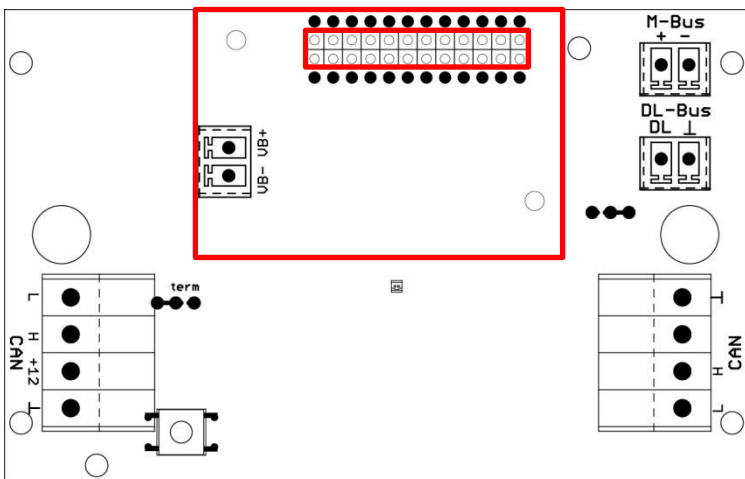
This manual describes only the features that are relevant to this module. The CAN-BC2 manual contains all other relevant information for the CAN bus converter.

Installation and connection

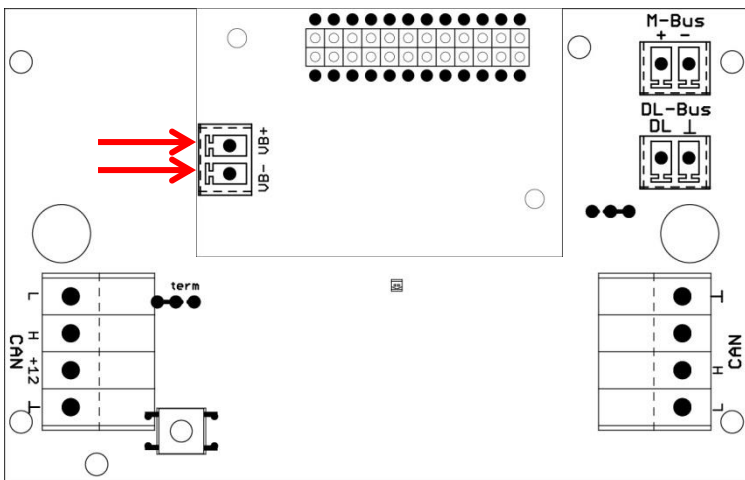
1. Attach the 2 supplied spacers to the PCB of the CAN-BC2.



2. The module is attached to the pins provided on the PCB of the CAN-BC2. The spacers ensure the correct distance to the converter PCB. **The module may only be installed when the CAN-BC2 is switched off.**



3. Connect the KNX bus cable, taking note of the **polarity**



The KNX bus cable must be routed in accordance with KNX specifications.

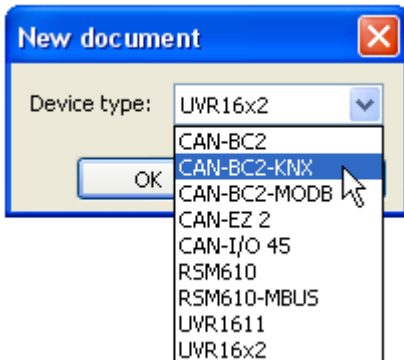
KNX bus interface

The KNX bus connects sensors and actuators within a domestic installation. It works with a two-core cable. The slaves draw their power supply from the bus. The data rate is fixed at 9.6 kBd.

Data types **DPT 1 (EIS 1)** (digital) and **DPT 9 (EIS 5)** (analogue) are supported. It is possible to transmit 64 values of each type in each direction (KNX -> CAN and CAN -> KNX).

No application (product database) for ETS software is available.

Programming with TAPPS2



To program a bus converter with KNX module, the right device type must be selected.

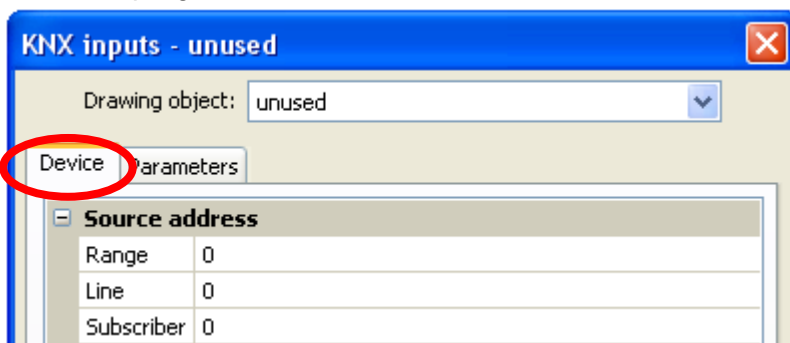
If the module is **retrofitted** to the bus converter and the bus converter (**without** module) has already been programmed, the following procedure must be followed to continue programming (**with** module):

1. Open the **existing** program (**without** module).
2. Create a **new drawing** for the device type with the relevant auxiliary module (CAN-BC2-KNX).
3. **Select** (Ctrl + a) and then **copy** (Ctrl + c) the whole content of the **existing** drawing.
4. **Paste** (Ctrl + v) the copied drawing into the **new** drawing (**with** module).
5. Create function data (*.dat file) for the **existing** program (**without** module) ("**Export**").
6. **Import** this function data into the **new** drawing (**with** module).

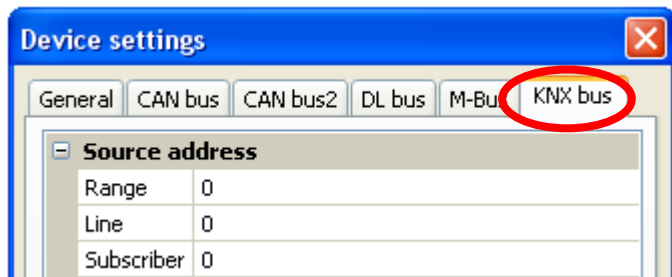
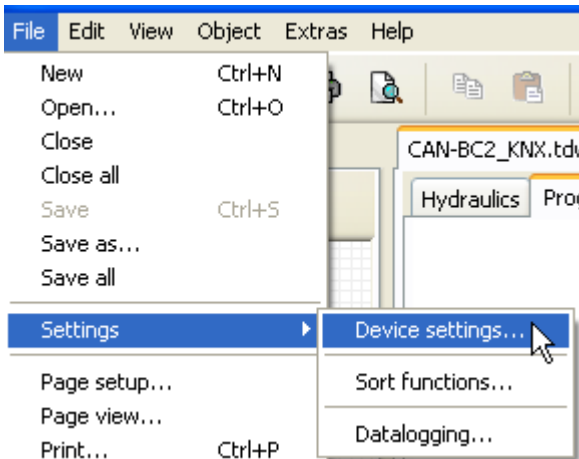
This will result in all settings from the original program being applied to the new drawing and you can then continue programming the auxiliary module.

Device settings for KNX bus

If a KNX input or KNX output is inserted into the drawing, the device settings can be defined for the first time (= **physical source address** in the KNX bus network). These settings subsequently apply to the entire program.

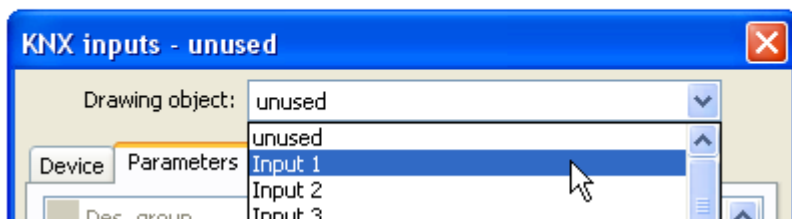


These settings can also be made in the "File / Settings / Device settings..." menu:

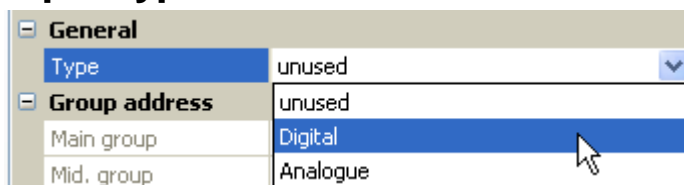


KNX inputs

Up to 64 KNX inputs can be programmed. They are defined through the specification of type (analogue/digital), the **group address** and other settings that relate to how the value received is processed. The KNX inputs are then available as sources to the other bus outputs, the function input variables, visualisation or datalogging.



Input type



Choose whether the value applied by the KNX bus is analogue (numeric) or digital (ON/OFF).

Designation

Every KNX input can be given its own designation. The designation can be selected from various designation groups or can be user defined.

Example:

Device	Parameters
Des. group	Temperature actual value
Designation	T.room
Des. index	1

Group address

Group address	
Main group	0
Mid. group	0
Sub. group	0

Entry of the group address of the KNX device from which the value is taken.

Divisor/Factor

Divisor/Factor	
Divisor	1
Factor	1

Only for **analogue** values: Entry of a divisor or factor to adjust the value read to the actual quantity (e.g. correct positioning of the decimal point).

Unit

Unit	
Unit	Temperature °C
Sensor correction	0,0 K
Start value	0,0 °C

Every KNX bus input must be assigned a **unit** as the data is transmitted without dimensions. A wide range of units is available to choose from.

Sensor correction

The value of the KNX bus input can be corrected by applying a fixed differential value.

Start value

Definition of a start value which is shown after the bus converter is restarted until a new value is applied by the KNX bus.

Sensor check

The sensor check can only be activated for **analogue** KNX bus inputs.

If you set the sensor check to "Yes", the **sensor error** of the KNX bus value is available as a digital input variable for a function.

This application is only useful if **user defined** threshold and output values are specified for the sensor error.

Sensor check	
Sensor check	Yes

Sensor error

This setting is only displayed if the **sensor check is active**.

Sensor error: Status **"No"** for a correct value **within** the threshold values and **"Yes"** for a value **outside** the thresholds. This allows the controller to react to the failure of a KNX bus device, for example.

Sensor check	
Sensor check	Yes
Short circuit threshold	Standard
Threshold value	
Short circuit value	Standard
Output value	
Lead break threshold	Standard
Threshold value	
Lead break value	Standard
Output value	

In order to make good use of the sensor check, the short circuit and lead break thresholds should be changed from "Standard" to **"User defined"** and the required threshold values defined. The required short circuit and lead break values will subsequently also be defined by the user.

If the measurement read is **below** the defined **short circuit threshold** or **exceeds** the **lead break threshold**, the relevant **output values** will be applied instead of the measurement.

By selecting suitable thresholds and output values, a fixed value can be specified for the bus converter in the event of a measurement failure, to allow a function to continue operating in emergency mode (fixed hysteresis: 10 or 1.0 °C).

The short circuit threshold can only be defined **below** the lead break threshold.

Example: Temperature

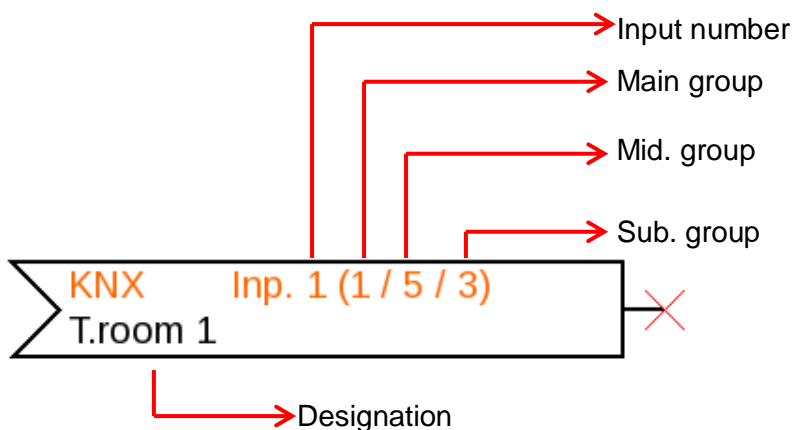
Sensorcheck	
Sensorcheck	Ja
Kurzschlusschwelle	Standard
Schwellwert	Standard
Kurzschlusswert	Benutzerdef.
Ausgabewert	



Sensor check	
Sensor check	Yes
Short circuit threshold	User def.
Threshold value	5,0 °C
Short circuit value	User def.
Output value	20,0 °C
Lead break threshold	User def.
Threshold value	40,0 °C
Lead break value	User def.
Output value	20,0 °C

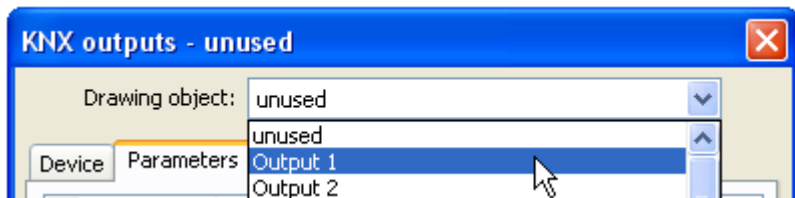
If the measurement is below 5 °C, 20 °C will be issued; if it exceeds 40 °C, 20 °C will also be issued.

Depiction of the KNX input once the parameter entries have been completed by pressing **OK** in **TAPPS2**

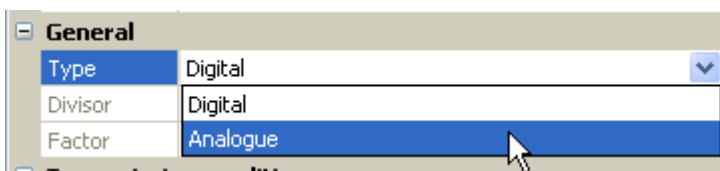


KNX outputs

Up to 64 KNX outputs can be programmed. They are defined by specifying the source in the bus converter, the type and the group address.



General



Type: Choose whether the value is analogue (numeric) or digital (ON/OFF).

Divisor / Factor: Only for **analogue** values: Entry of a divisor or factor to adjust the output value to the format required in the KNX bus.

Designation

Every KNX output can be given its own designation. The designation can be selected from various designation groups or can be user defined.

Example:

Parameters	
Des. group	Temperature actual value
Designation	T.heating circ. rtn
Des. index	1

Input variable

Input variable	
Source type	DL input
Source	2: T.heating circ. rtn 1
Variable	Measurement

After the source has been linked to the input variables in TAPPS2, the source type, source and variable will be shown.

Variable

Variable	Measurement
Group address	
Main group	RAS mode
Mid. group	Sensor error
Sub. group	Network error

4 different source variables can be selected for **analogue** values. For **digital** values, only the measurement (ON/OFF) and the network error are available.

- **Measurement** – the value captured by the sensor
- **RAS mode** – subject to the setting of the switch on the room sensor (RAS, RASPT, RAS-PLUS, RAS-F), the following analogue values will be issued:

Automatic	0
Standard	1
Lowered	2
Standby	3
- **Sensor error** – digital value; ON if a sensor error occurs
- **Network error** – digital value; ON if a timeout is active (= error).

Group address

Group address	
Main group	0
Mid. group	0
Sub. group	0

Entry of the group address in the KNX bus network.

Transmission conditions

Analogue values:

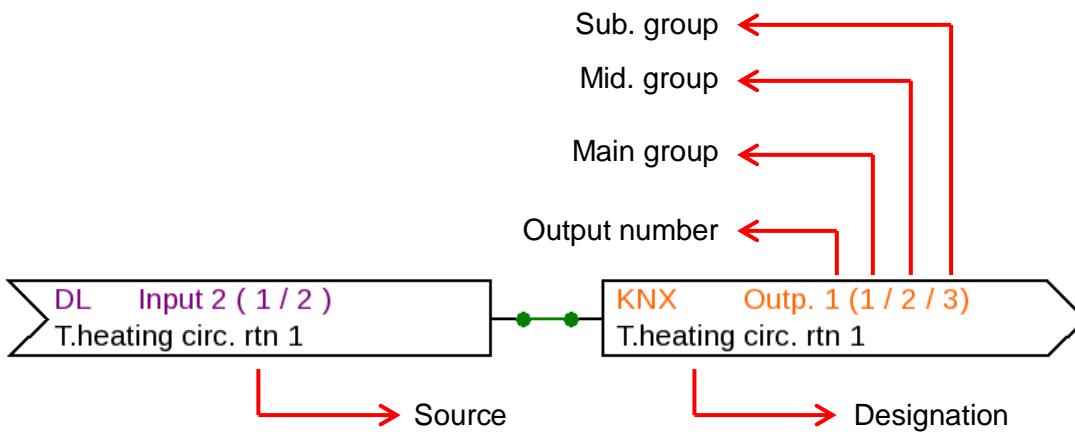
Transmission conditions	
If change >	10
Blocking time	00:10 [mm:ss]

Digital values:

Transmission conditions	
If change	Yes
Blocking time	00:10 [mm:ss]

If change > 10	A new transmission will be made if the current value has changed by more than the quantity specified (1.0 K in this example) compared to the last transmitted value. In the converter, the unit of the source is applied together with the corresponding decimal place. (Minimum value: 1)
If change Yes/No	Transmission of the value if a status change occurs
Blocking time 00:10 [mm:ss]	If the value changes within 10 seconds of the last transmission by more than 1.0 K, the value is nevertheless only transmitted again after 10 seconds. (Minimum value: 1 sec)
Send in intervals Yes	The value is transmitted every 5 minutes even if it has not changed by more than 1.0 K since the last transmission.
Interval time 5 min	Setting range: 30 s – 1 d

Depiction of the KNX output once the parameter entries have been completed by pressing **OK** in **TAPPS2**



Subject to technical modifications

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EU Declaration of Conformity

Document number / Date: TA17066 / 23/03/2017
Manufacturer: Technische Alternative RT GmbH
Address: A-3872 Amaliendorf, Langestrasse 124

The manufacturer bears sole responsibility for issuing this Declaration of Conformity.

Product designation: MD-KNX
Brand names: Technische Alternative RT GmbH
Product description: KNX module for CAN bus converter

The item described above complies with the following directives:

2014/35/EU Low Voltage Directive
2014/30/EU Electromagnetic compatibility
2011/65/EU RoHS directive on restricting the use of certain hazardous substances

The following harmonised standards have been applied:

EN 60730-1: 2011 Automatic electrical controls for household and similar use. Part 1: General requirements
EN 61000-6-3: 2007 Electromagnetic compatibility (EMC). Part 6-3: Generic standards. Emission standard for residential, commercial and light-industrial environments
+ A1: 2011
+ AC2012
EN 61000-6-2: 2005 Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Noise immunity for industrial environments
+ AC2005
EN 50581: 2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Attachment of CE label: On packaging, operating instructions and type plate



Issued by: Technische Alternative RT GmbH
A-3872 Amaliendorf, Langestrasse 124

Authorised signature

A handwritten signature in black ink, appearing to read 'Schneider Andreas'. The signature is written in a cursive, flowing style.

Dipl.-Ing. Andreas Schneider, Managing Director,
23/03/2017

This declaration certifies conformity with the listed directives, but does not guarantee any properties. The safety instructions in the product documents supplied must be observed.

Guarantee conditions

Note: The following guarantee conditions do not limit statutory rights to a warranty, but rather expand your consumer rights.

1. Technische Alternative RT GmbH provides a two-year guarantee from the date of purchase to the end user for all devices and parts it sells. Defects must be reported immediately upon detection and within the guarantee period. Technical support can supply the correct solution no matter what the issue. In this respect, contacting us immediately will help to avoid unnecessary expense and effort in troubleshooting.
2. The guarantee includes free repair (but not the cost of on-site fault finding, removal, refitting and shipping) due to processing and material defects which impair operation. Goods will be replaced in the event that a repair is uneconomical in the opinion of Technische Alternative for reasons of cost.
3. Excluded are losses resulting from the effects of a voltage surge or abnormal ambient conditions. Likewise, no liability can be accepted if the device defect is due to: transport damage for which we are not responsible, incorrect assembly and installation, incorrect use, failure to observe the operating and installation instructions or incorrect maintenance.
4. The guarantee will become void if repairs or actions are carried out by people who are not authorised to perform them or have not been so authorised by us, or if our devices are operated with spare parts, auxiliary parts or accessories that are not considered to be original parts.
5. Faulty parts must be returned to our factory with a copy of the proof of purchase and a precise fault description. Processing is accelerated if an RMA number is requested via our homepage www.ta.co.at. The defect must be clarified with our technical support beforehand.
6. Services provided under guarantee result neither in an extension of the guarantee period nor in a commencement of a new guarantee period. The guarantee period for fitted parts ends with the guarantee period of the whole device.
7. Further or other claims, especially those for compensation for losses other than to the device itself, insofar as such liability is not required by statute, are excluded.

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