

KNX RF/TP Coupler 670

Bidirectional gateway between KNX-RF and the KNX-bus

Installation and operating manual



Fig. 1: KNX RF/TP Coupler 670

Application

The KNX RF/TP Coupler 670 connects wireless KNX devices (KNX-RF) with the KNX bus (KNX TP). The communication is bidirectional, allowing the state-feedback. This, for example, also allows the switching of wired actuators via a wireless radio switch or the switching of a wireless actuator via a wired switch. In addition the WaveLink can act as a radio transmitter.

The KNX RF/TP Coupler 670 comes with 24 channels. Each channel can be assigned to one of the following functions:

- * As receiver (actuator)
 - Switch
 - Dim
 - Blinds
 - LED-display
 - Temperature sensor
- * As transmitter (sensor)
 - Switch
 - Switch with scene
 - Dim with scene
 - Blinds with scene
 - LED-display

In addition, every channel which is configured as receiver forward the battery status of the connected wireless devices on the bus. Here, the "battery low" status of the radio device can only be set "0" to "1" by the radio device itself. A reset of the status to "0" has to be made from the KNX bus side.

Installation and connection

The KNX RF/TP Coupler 670 is supplied in a surface mounted housing. For activation, just connect the gateway to the KNX bus.

When selecting the mounting location for the WaveLink you have to consider the position and the range of the

KNX-RF devices which have to be associated with the WaveLink. You should avoid shielding objects (eg metal cabinets) or jamming objects (eg computers, electronic transformers, ballasts ...) close to the WaveLink.



Fig. 2: KNX RF/TP Coupler 670 open

The device is connected to the KNX bus by using the bus terminal. The polarity of the bus terminal has to be considered (s. inscription on circuit board). The power supply of the device is exclusively on the bus.

Initial state

A new WaveLink has the physical address of 15.15.255. There are no preset group addresses and connections to KNX-RF devices.

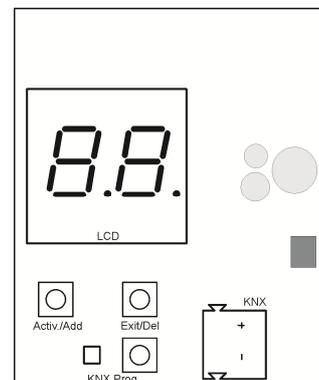


Fig. 3: Device with top open

To program the physical address (KNX) on the ETS, press the programming key („**KNX Prog**“). This causes the red LED to light up. The LED goes out as soon as the device has received its physical address. The group address and parameter settings can then be programmed.

Linking KNX-RF devices

Before linking the gateway to KNX-RF devices, the functions of the individual channels must be programmed on the ETS. The varied configuration of the channels allows you to realize miscellaneous functions.

Learn mode

The learning process is controlled via the two buttons below the display:

- Left briefly: „Activ.“: enter learn mode / switch channel
- Left long: „Add“: connect RF device
- Right briefly: „Exit“: leave learn mode
- Right long: „Del“: delete RF device connection

A long key press is detected when a key is pressed longer than 1 second.

If the device is in normal operation mode, the left button („**Activ./Add**“), when pressed briefly, switches the device in learn mode and activates the LCD.

Another brief press on the left button (“**Activ./Add**”) switch the channel (1→24→1). The display shows the current channel number alternately the current channels configuration. The encoding of the displayed configuration is shown in Table 1.

A certain KNX-RF device is connected to the actual channel by a long key press of the left button (“**Activ./Add**”). The connection will only work if the channel configuration in the ETS fits the device Type of the KNX-RF device.

To establish a connection between a channel and a KNX-RF device also the RF-device has to enter the learn mode (s. manual of KNX RF-device). You have to consider that always the device that acts as actor (receiver) has to enter it's learn mode first. If a channel of the KNX RF/TP Coupler 670 is configured as receiver the device indicates its readiness to link a sensor by flashing the letters “PS” on the display.

By briefly pressing the right button (“**Exit/Del**”), a running linking process can be stopped or the learning mode can be terminated.

Deleting assignments

A long key press of the right button („**EXIT/Del**“) during learning mode an already established channel connection can be deleted. To unlink a channel also the RF-device has to be set in learn mode (s. manual of KNX RF-device). The unlink procedure deletes the channel link in both devices simultaneously.

By a simultaneously long key press of left and right button („**Activ./Add**“ and „**Exit/Del**“) in learn mode, all allocated device links of the active channel will be deleted. To avoid inconsistency within the KNX installation, you have to delete the links of the RF-devices also (s. manual of KNX RF-devices).

If you reprogram an already linked KNX RF/TP Coupler 670 by ETS, only the links of channels will be deleted where the configuration (function) has changed. To avoid inconsistency within the KNX installation, you have to delete the links of the RF-devices also (s. manual of KNX RF-devices). By reprogramming the WaveLink while the ETS Parameter „Delete all RF channels“ is set to „Yes“ all links of all channels will be deleted. To avoid inconsistency within the KNX installation, you have to delete the links of the RF-devices also (s. manual of KNX RF-devices).

Factory-Reset

To reset the KNX RF/TP Coupler 670 to delivery state you have to disconnect the device from the bus. Then press and hold the left and right button („**Activ./Add**“ and „**Exit/Del**“) simultaneously and reconnect the device to the KNX bus. After the learn LED starts to glow you can release the buttons and the reset process starts.

Normal mode

The LCD shows the channel number on which a telegram is received or transmitted.

Gateway functions

For each of the 24 channels of KNX RF/TP Coupler 670 one of the secondary described functions can be selected. The selection is made in the parameter dialog of the ETS.

Receiver / Switching

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: Switch	1.001 (EIS 1)	1 Bit

On activation of parameter „State switch“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: State switch	1.001 (EIS 1)	1 Bit

On activation of parameter „Timed“, the following communication object is added to the channel::

Comm.-object	Type KNX	Size
Channel ...: Timed	1.001 (EIS 1)	1 Bit

On activation of parameter „Switch scened“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Light scened	18.001 (-)	1 Byte

On activation of parameter „Battery low“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Battery low	1.002 (EIS 1)	1 Bit

Receiver / Dimming

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: Switch	1.001 (EIS 1)	1 Bit
Channel ...: Dimming relative	3.007 (EIS 2)	4 Bits

On activation of parameter „State switch“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: State switch	1.001 (EIS 1)	1 Bit

On activation of parameter „Battery low“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Battery low	1.002 (EIS 1)	1 Bit

Receiver / Shutter

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: Move	1.008 (EIS 1)	1 Bit
Channel ...: Step/Stop	1.008 (EIS 1)	1 Bit

On activation of parameter „Battery low“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Battery low	1.002 (EIS 1)	1 Bit

Receiver / LED-Bargraph

On a channel with function „LED-Bargraph“, up to four wireless window contacts (such as Busch-Jaeger universal detector 6721) can be linked. Their current values are associated by OR operation with one another. The following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Switch	1.001 (EIS 1)	1 Bit
Channel ...: Value	5.001 (EIS 6)	1 Byte

On activation of parameter „Battery low“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Battery low	1.002 (EIS 1)	1 Bit

Receiver / Temperature sensor

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: Temperature outdoor	9.001 (EIS 5)	2 Bytes
Channel ...: Temperature indoor	9.001 (EIS 5)	2 Bytes

On activation of parameter „Battery low“, the following communication object is added to the channel:

Comm.-object	Type KNX	Size
Channel ...: Battery low	1.002 (EIS 1)	1 Bit

Transmitter / Switch

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: State switch	1.001 (EIS 1)	1 Bit
Channel ...: Switch	1.001 (EIS 1)	1 Bit

Transmitter / Switch scened

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: State switch	1.001 (EIS 1)	1 Bit
Channel ...: Switch	1.001 (EIS 1)	1 Bit
Channel ...: Timed	1.001 (EIS 1)	1 Bit
Channel ...: Forced	2.001 (EIS 8)	2 Bits
Channel ...: Light scened	18.001 (-)	1 Byte

Transmitter / Dimmer scened

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: State switch	1.001 (EIS 1)	1 Bit
Channel ...: State value	5.001 (EIS 6)	1 Byte
Channel ...: Switch	1.001 (EIS 1)	1 Bit
Channel ...: Dimming relative	3.007 (EIS 2)	4 Bits
Channel ...: Dimming value	5.001 (EIS 6)	1 Byte
Channel ...: Timed	1.001 (EIS 1)	1 Bit
Channel ...: Forced	2.001 (EIS)	2 Bits
Channel ...: Light scened	18.001 (-)	1 Byte

Transmitter / Shutter scened

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: State move	1.008 (EIS 1)	1 Bit
Channel ...: Move	1.008 (EIS 1)	1 Bit
Channel ...: Step/Stop	1.008 (EIS 1)	1 Bit
Channel ...: Forced	2.001 (EIS)	2 Bits
Channel ...: Wind	1.002 (EIS 1)	1 Bit
Channel ...: Rain	1.002 (EIS 1)	1 Bit
Channel ...: Light scened	18.001 (-)	1 Byte

Transmitter / LED-Bargraph

The following communication objects are provided on KNX bus side:

Comm.-object	Type KNX	Size
Channel ...: Switch	1.001 (EIS 1)	1 Bit
Channel ...: Value	5.001 (EIS 6)	1 Bit

Display symbols

Table 1: Display symbols and their meanings

Symbol	Meaning
-.-	Channel not used
1-24	Channel number, alternating channel configuration
S	Channel to link a sensor (channel config.)
A	Channel to link an actuator (channel config.)
EE	Error in linking process
PS	Sensor linking process
PA	Actuator linking process
ES	Deleting sensor link
EA	Deleting actuator link
E-	Deleting all links of one channel
FU	Channel full, no further connections possible



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