

Gateway

IRKNX-BI

GW640200

Programming manual



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1 General description

The IRKNX-BI (reference GW640200) is an infrared transmitter and receiver capable of learning up to 255 codes. It allows the bidirectional emission and reception of infrared codes to control both IR devices from KNX and KNX elements from infrared controls.

This device is capable of learning any type of infrared signal from audio and video devices, air conditioning systems, etc. thus allowing them to be controlled from the home automation system.

It consists of 3 parts: the microprocessor control board with the bus connection, the receiver and the IR emitter. The device can be hidden in its installation, but the emitter and receiver must be visible and focused on the devices to be controlled.



2 Technical information

Power supply	29 V _{DC} from auxiliary KNX power supply
Current Consumption	20 mA
Connections	BUS connection terminal KNX. Screw terminal for IR receiver and emitter
IR bandwidth	40 kHz
Storage capacity	255 infrared codes
Mounting / Size	Universal distribution box 75x30x12 mm
Environment temperature range	Operation: -10 °C to 55 °C Storage: -30 °C to 60 °C Transportation: -30 °C to 60 °C
Regulation	According to the directives of electromagnetic compatibility and low voltage. EN 50090-2-2 / UNE-EN 61000-6-3:2007 / UNE-EN 61000-6-1:2007 / UNE-EN 61010-1

3 Programming

3.1 Individual address assignment

The device has a programming button for the individual address which is located on the front of the device, near the KNX bus connectors.

A red LED, close to the programming button, lights up when manually pressed or if the device is remotely configured for programming.

The red led automatically turns off if the ETS has assigned the individual address correctly or if the programming button is manually pressed again.



To carry out any code recording, it is necessary to previously assign an individual address and associate the group objects.

3.2 Communication objects

Number	Name	Function	Length	C	R	W	T	U	DPT	Priority
0	Program	Record new IR code	1 byte	C	-	W	-	U	counter pulses (0..255)	Low
1	KNX to IR	Execute IR code number	1 byte	C	-	W	-	U	counter pulses (0..255)	Low
2	Program	IR code recorded	1 bit	C	-	-	T	-	boolean	Low
3	KNX to IR	Command 1	1 bit	C	-	W	-	U	start/stop	Low
4	KNX to IR	Command 2	1 bit	C	-	W	-	U	start/stop	Low
5	KNX to IR	Command 3	1 bit	C	-	W	-	U	start/stop	Low
6	KNX to IR	Command 4	1 bit	C	-	W	-	U	start/stop	Low
7	KNX to IR	Command 5	1 bit	C	-	W	-	U	start/stop	Low
8	KNX to IR	Command 6	1 bit	C	-	W	-	U	start/stop	Low
9	KNX to IR	Command 7	1 bit	C	-	W	-	U	start/stop	Low
10	KNX to IR	Command 8	1 bit	C	-	W	-	U	start/stop	Low
11	KNX to IR	Command 9	1 bit	C	-	W	-	U	start/stop	Low
12	KNX to IR	Command 10	1 bit	C	-	W	-	U	start/stop	Low
13	IR to KNX	Enable/disable mode	1 bit	C	R	W	-	-	enable	Low

14	IR to KNX	Channel 1 output	1 bit	C	-	-	T	-	switch	Low
15	IR to KNX	Channel 2 output	1 bit	C	-	-	T	-	switch	Low
16	IR to KNX	Channel 3 output	1 bit	C	-	-	T	-	switch	Low
17	IR to KNX	Channel 4 output	1 bit	C	-	-	T	-	switch	Low
18	IR to KNX	Channel 5 output	1 bit	C	-	-	T	-	switch	Low
19	IR to KNX	Channel 6 output	1 bit	C	-	-	T	-	switch	Low
20	IR to KNX	Channel 7 output	1 bit	C	-	-	T	-	switch	Low
21	IR to KNX	Channel 8 output	1 bit	C	-	-	T	-	switch	Low
22	IR to KNX	Channel 9 output	1 bit	C	-	-	T	-	switch	Low
23	IR to KNX	Channel 10 output	1 bit	C	-	-	T	-	switch	Low
24	IR to KNX	Channel 11 output	1 bit	C	-	-	T	-	switch	Low
25	IR to KNX	Channel 12 output	1 bit	C	-	-	T	-	switch	Low
26	IR to KNX	Channel 13 output	1 bit	C	-	-	T	-	switch	Low
27	IR to KNX	Channel 14 output	1 bit	C	-	-	T	-	switch	Low
28	IR to KNX	Channel 15 output	1 bit	C	-	-	T	-	switch	Low
29	IR to KNX	Channel 16 output	1 bit	C	-	-	T	-	switch	Low
30	IR to KNX	Channel 17 output	1 bit	C	-	-	T	-	switch	Low
31	IR to KNX	Channel 18 output	1 bit	C	-	-	T	-	switch	Low
32	IR to KNX	Channel 19 output	1 bit	C	-	-	T	-	switch	Low
33	IR to KNX	Channel 20 output	1 bit	C	-	-	T	-	switch	Low
34	IR to KNX	Channel 21 output	1 bit	C	-	-	T	-	switch	Low
35	IR to KNX	Channel 22 output	1 bit	C	-	-	T	-	switch	Low
36	IR to KNX	Channel 23 output	1 bit	C	-	-	T	-	switch	Low
37	IR to KNX	Channel 24 output	1 bit	C	-	-	T	-	switch	Low
38	IR to KNX	Channel 25 output	1 bit	C	-	-	T	-	switch	Low
39	IR to KNX	Channel 26 output	1 bit	C	-	-	T	-	switch	Low

40	IR to KNX	Channel 27 output	1 bit	C	-	-	T	-	switch	Low
41	IR to KNX	Channel 28 output	1 bit	C	-	-	T	-	switch	Low
42	IR to KNX	Channel 29 output	1 bit	C	-	-	T	-	switch	Low
43	IR to KNX	Channel 30 output	1 bit	C	-	-	T	-	switch	Low
44	IR to KNX	Channel 31 output	1 bit	C	-	-	T	-	switch	Low
45	IR to KNX	Channel 32 output	1 bit	C	-	-	T	-	switch	Low
46	General	Reset	1 bit	C	-	W	-	-	switch	Low

3.3 Communication objects description

Name	Object 0: Program
Function	1 byte communication object to start the recording mode of the GW640200.
Description	When a value is received through this communication object, the device starts recording the IR code in the memory location corresponding to the byte. The IR remote control must be focused on the GW640200 receiver.
Name	Object 1: Execute
Function	1 byte communication object to send an IR code memorized in the equipment.
Description	When a value is received through this object, the device sends the IR code of the memory location corresponding to the byte. The emitter must focus on the equipment to be controlled.
Name	Object 2: IR code recorded
Function	1-bit communication object for notification of end of recording mode.
Description	The device remains in recording mode until the programmer sends an IR code with the remote control. After recording it, the device sends a '1' through this object to indicate that the operation has been successful.
Name	Object 3 - 12: Command 1 – 10
Function	1 bit communication object to send an IR code memorized in the GW640200.
Description	When the device receives a '1' through this object, it sends the recorded code to the memory location configured in the parameters. Up to 10 bit communication objects are available.
Name	Object 13: IR to KNX – Enable/disable mode
Function	1 bit communication object to send an IR code memorized in the GW640200.
Description	When a '1' is received by this communication object, IR mode is enabled towards KNX. With a '0', it is disabled.
Name	Object 14 - 45: IR to KNX – Channel X output
Function	Send to KNX bus
Description	Communication object through which the selected parameters are transmitted for each code received from an IR command.

Name	Object 16 Reset
Function	Reset
Description	With a '1' for this Object, the IR codes recorded on the device are deleted.

3.4 Parameters

3.4.1 From KNX to IR

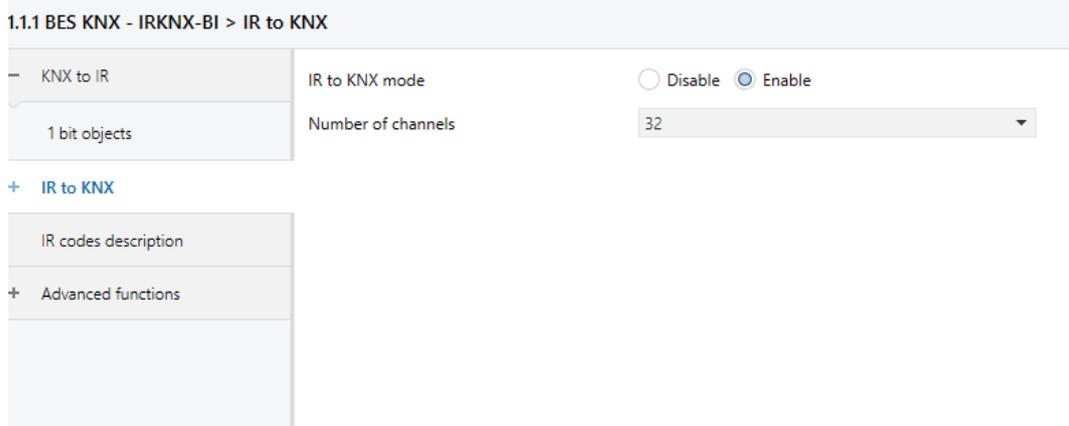
In this tab there is a first parameter that enables 1-bit Objects to send IR telegrams from KNX through communication Objects of this size that are enabled for this purpose. Each of these Objects will correspond to an IR code of those recorded on the device. The number of this code is selected in the parameters within the 1-bit objects tab.

1.1.1 BES KNX - IRKNX-BI > KNX to IR > 1 bit objects

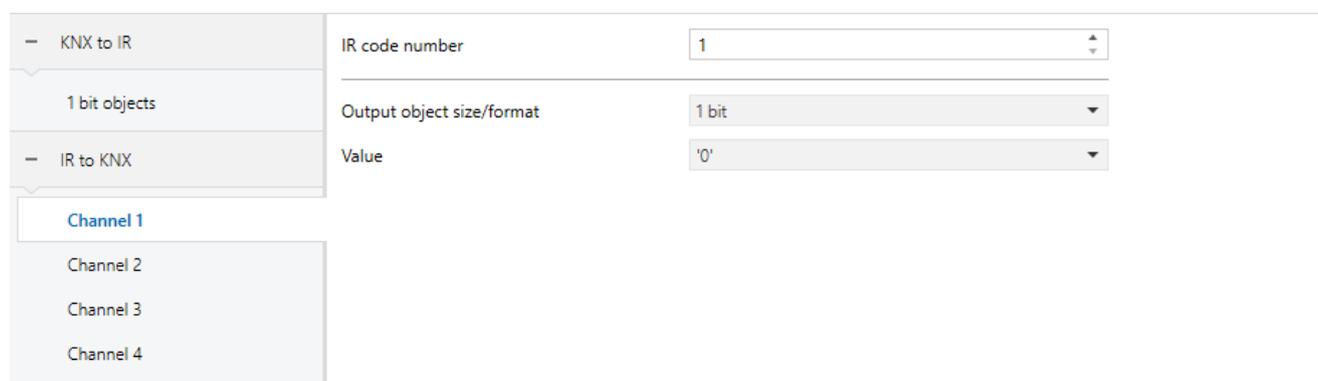
- KNX to IR	Command 1 - IR code number	<input style="width: 95%;" type="text" value="1"/>
1 bit objects	Command 2 - IR code number	<input style="width: 95%;" type="text" value="2"/>
+ IR to KNX	Command 3 - IR code number	<input style="width: 95%;" type="text" value="3"/>
IR codes description	Command 4 - IR code number	<input style="width: 95%;" type="text" value="4"/>
+ Advanced functions	Command 5 - IR code number	<input style="width: 95%;" type="text" value="5"/>
	Command 6 - IR code number	<input style="width: 95%;" type="text" value="6"/>
	Command 7 - IR code number	<input style="width: 95%;" type="text" value="7"/>
	Command 8 - IR code number	<input style="width: 95%;" type="text" value="8"/>
	Command 9 - IR code number	<input style="width: 95%;" type="text" value="9"/>
	Command 10 - IR code number	<input style="width: 95%;" type="text" value="16"/>

3.4.2 From IR to KNX

In the IR to KNX tab there is a parameter to enable this mode so that the communication objects that allow its use are displayed. In addition, the channels, up to 32, are selected that allow data to be sent to the KNX bus from IR controls.



For each of these channels, the number of the IR code in which it has been recorded is selected following the steps that will be explained in this manual. In addition, the data size to be sent to the KNX bus can be selected, as well as the content of this data when the received IR code corresponds to that recorded in the number indicated by the IR code number parameter.

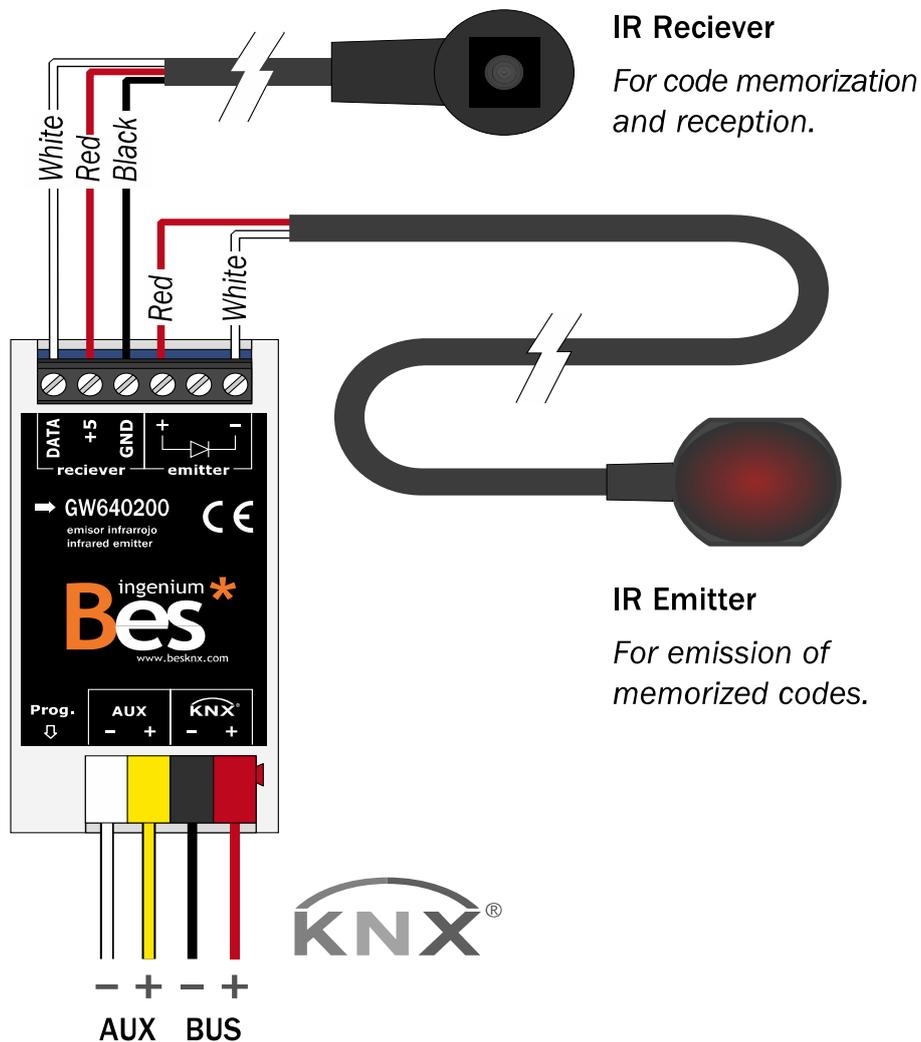


3.5 How to record a new IR code

To record a new IR code in the unit's memory, follow these steps:

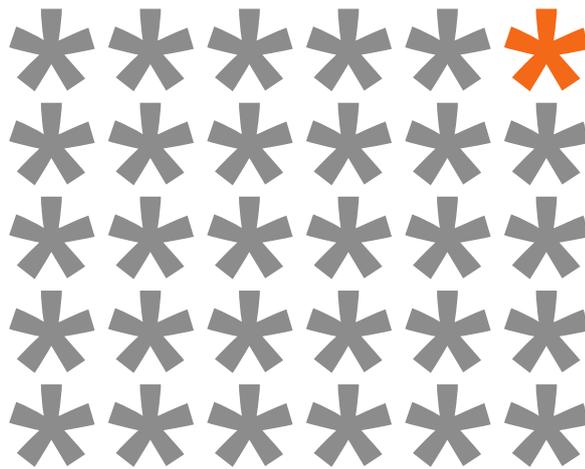
- 1- Start the recording mode of the equipment by sending a value from 0 to 255 to Communication Object 0 (Program). The value sent is the position in the internal memory where the IR code will be recorded.
- 2- Focus the IR remote on the receiver of the equipment and press the button to memorize it. Do not do it far from the receiver and try that the receiver is not to the direct exposure of other types of lights, especially fluorescent ones.
- 3- The team sends a 1 through Communication Object Number 2 to indicate that the recording was correct.

4 Installation



Feed the Low Voltage lines (bus and inputs) into separate conduits from the main supply (230 V) and from the outputs to ensure that there is sufficient insulation and to avoid interference.

Do not connect the main power (230 V) or any other external voltage to any point on the bus or to the equipment inputs.



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