

Communication Objects: Zones/Controller Settings (zone 1 active)

Number	Name	Object Function	Length	...	R	W	T	U	Data Type	Priority	Grp
0	ON/OFF - C1Z1	C1Z1	1 bit	C	-	W	-	U	enable	Low	
1	ON/OFF feedback - C1Z1	C1Z1	1 bit	C	R	-	T	-	enable	Low	
2	VOLUME UP/DOWN - C1Z1	C1Z1	1 bit	C	-	W	-	U		Low	
3	VOLUME feedback - C1Z1	C1Z1	1 Byte	C	R	-	T	-	percentage (0..100%)	Low	
4	SOURCE TOGGLE - C1Z1	C1Z1	1 bit	C	-	W	-	U		Low	
5	NEXT/PREV TRACK - C1Z1	C1Z1	1 bit	C	-	W	-	U		Low	
6	CHANNEL UP/DOWN - C1Z1	C1Z1	1 bit	C	-	W	-	U		Low	
7	PLAY/PAUSE - C1Z1	C1Z1	1 bit	C	-	W	-	U	start/stop	Low	
8	RECALL SYS FAV - C1Z1	C1Z1	1 Byte	C	-	W	-	U	counter pulses (0..255)	Low	
9	SOURCE NAME feedback - S/C1Z1	S/C1Z1	14 Byte	C	R	-	T	-	Character String (ASCII)	Low	
10	CHANNEL NAME feedback - S/C1Z1	S/C1Z1	14 Byte	C	R	-	T	-	Character String (ASCII)	Low	
11	PLAYLIST NAME feedback - S/C1Z1	S/C1Z1	14 Byte	C	R	-	T	-	Character String (ASCII)	Low	
12	ARTIST NAME feedback - S/C1Z1	S/C1Z1	14 Byte	C	R	-	T	-	Character String (ASCII)	Low	
13	SONG NAME feedback - S/C1Z1	S/C1Z1	14 Byte	C	R	-	T	-	Character String (ASCII)	Low	
14	ON/OFF - C1Z2	C1Z2	1 bit	C	-	W	-	U	enable	Low	
15	ON/OFF feedback - C1Z2	C1Z2	1 bit	C	R	-	T	-	enable	Low	

Communication Objects for Controller 1 are the same for each of the eight (8) zones of the Controller (see example above – Communication Objects for C1Z1). These Communication Objects correspond to functions of RIO commands, as described in Russound RIO Protocol documentation. The name of the Object describes the function of that object. For example, PLAY/PAUSE – C1Z1 will perform a Play/Pause toggle in Zone 1.

Most of the Communication Objects are 1-bit Objects. A value of “1” issues a positive function, like ON, NEXT, UP, or PLAY, and a value of “0” issues a negative function, like OFF, PREV, DOWN, or PAUSE. SOURCE TOGGLE uses only a value of “1”. Volume can be set from 0 to 50.

The Russound System can store up to 32 Global Favorites. Favorites can be stored and edited by the user with Russound keypads (MDK, TS3) or the MyRussound app (Android, iOS). These Favorites can then be recalled in a zone with the RECALL SYS FAV object. The value assigned to the object determines which Favorites is recalled. Many KNX panels will refer to these values as “scenes”, so assigning “scene 1, scene 2” to two buttons on KNX panel within Group Addressing with RECALL SYS FAV C1Z1 Object will recall Favorite #1 and Favorite #2, respectively for Zone 1. The same Favorites can be recalled in Zone 2 by assigning RECALL SYS FAV C1Z2 to a KNX panel in zone 2, etc.

Note: System Favorites are stored in order. If a user DELETES a System Favorite from a Russound interface, it will no longer be associated with the KNX panel button. Instead, we recommend the user “EDIT” the System Favorite, should they desire a different channel/preset/internet radio station to be recalled by that button.

Note: System Favorites can be used to recall a number of source audio functions, such as an Internet Radio Station, a Cable/Satellite box channel, and AM/FM tuner preset, and others. Depending on the source, some additional programming may be required with the Russound SCS-C5 programming software for MCA Controllers.

Communication Objects: Source Feedback

The KNX-RIO-1 supports Source Metadata Feedback for all 8 sources in a Russound system. The Feedback messages supported are shown in the example above. Each source feedback object is a 14-byte text object. Each Source feedback object exists per zone, so if SOURCE NAME is desired to display on KNX panels, then SOURCE NAME S/C1Z1 would be assigned to a KNX panel for Zone 1, and SOURCE NAME S/C1Z2 would be assigned to a panel for Zone 2, etc.

Specifications

Power supply: from KNX Bus

Power consumption: Max. 80 mA using only KNX Bus terminal, Max. 10 mA connecting 12 – 24 VDC to the auxiliary screw terminal

CAT-5 connection: RJ-45 (T568A standard)

Dimensions: 3.5”H x 1.4”W x 2.4”D, (9cm x 3.6cm x 6.2cm)

Weight: 1.6 oz (45 gr)



Limited Warranty

The Russound KNX-RIO-1 is guaranteed against all defects in materials and workmanship for two (2) years from the date of purchase. During this period, Russound will replace any defective parts and correct any defect in workmanship without charge for either parts or labor. For this warranty to apply, the unit must be installed and used according to its written instructions. If service is necessary, it must be performed by Russound. The unit must be returned to Russound at the owner’s expense and with prior written permission. Accidental damage and shipping damage are not considered defects, nor is damage resulting from abuse or from servicing by an agency or person not specifically authorized in writing by Russound. This Warranty does not cover: Damage caused by abuse, accident, mis-use, negligence, or improper installation or operation; Power surges and lightning strikes; Normal wear and maintenance; Products that have been altered or modified; Any product whose identifying number, decal, serial number, etc. has been altered, defaced or removed. Russound sells products only through authorized Dealers and Distributors to ensure that customers obtain proper support and service. Any Russound product purchased from an unauthorized dealer or other source, including retailers, mail order sellers and online sellers will not be honored or serviced under existing Russound warranty policy. Any sale of products by an unauthorized source or other manner not authorized by Russound shall void the warranty on the applicable product.

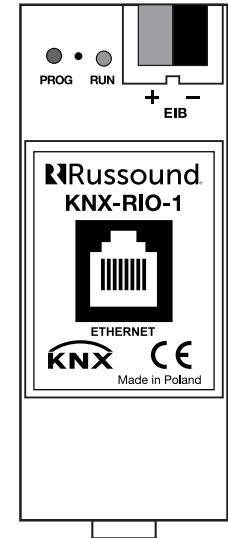
Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis or the retail value of the parts and labor. To return for repairs, the unit must be shipped to Russound at the owner’s expense, along with a note explaining the nature of service required. Be sure to pack the unit in a corrugated container with at least three (3) inches of resilient material to protect the unit from damage in transit. Before returning a unit for repair, call Russound at 866.888.7466 for a Return Authorization number. Write this number on the shipping label and ship to: Russound, ATTN: Service, 1 Forbes Road, Newmarket, NH 03857.

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KNX-RIO-1
 KNX Gateway
 Installation Manual

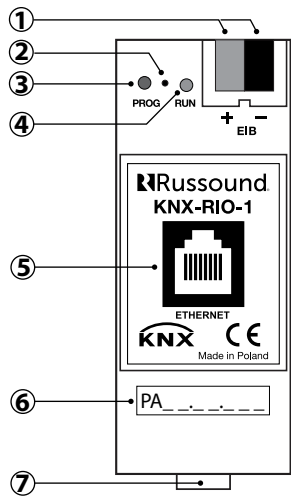


Overview

The Russound KNX-RIO-1 Gateway is a device that allows KNX panels and keypads to operate Russound controllers that support the RIO protocol. The KNX-RIO-1 gateway supports control of 2 MCA Controllers for up to 16 zones, or one X5 for 1 zone.

The KNX-RIO-1 can be configured in the standard KNX ETS Software program to perform a number of control functions, including basic Zone control. The KNX-RIO-1 also supports metadata feedback for those sources that support metadata (i.e. Russound streamers) and KNX keypads and panels that can display the metadata.

The Russound KNX-RIO-1 has standard KNX Bus connections and two LED lights (Red and Green) to indicate connection status and programming download status. The KNX-RIO-1 also contains an Ethernet port with standard Ethernet status lights for connecting to a local network. The KNX-RIO-1 is designed to be installed on 35mm DIN Rails and is powered by the KNX Bus or a separate dedicated power supply (sold separately).



- 1 **KNX Bus terminal:** Red (+) and grey (-) for KNX Bus connection.
- 2 **PROGRAM Button:** Physical address programming button.
- 3 **PROGRAM LED:** Solid RED indicates KNX-RIO-1 is ready for KNX Bus Physical Address download via ETS software.
- 4 **RUN LED:** Blinks GREEN until connection with Russound controller is established. (Average time is less than 1 minute depending on the router). After connection is first established, future reconnections (power on/off, Ethernet disconnect/reconnect) should take less time to connect (a few seconds).

Solid Green LED: Indicates a properly downloaded and running ETS application and Ethernet connection with Russound controller is active.
LED is OFF: Either no KNX bus is detected or the ETS application is not present.
- 5 **Ethernet Connection:** GREEN indicates LAN connection is established. YELLOW indicates DHCP data transmission.
- 6 **KNX Physical Address label:** Enter the physical address of the device.
- 7 **Power Supply Connection:** 12-24VDC, (optional).

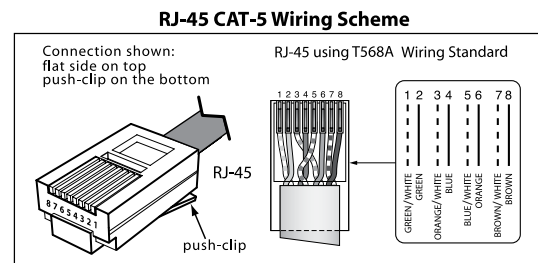
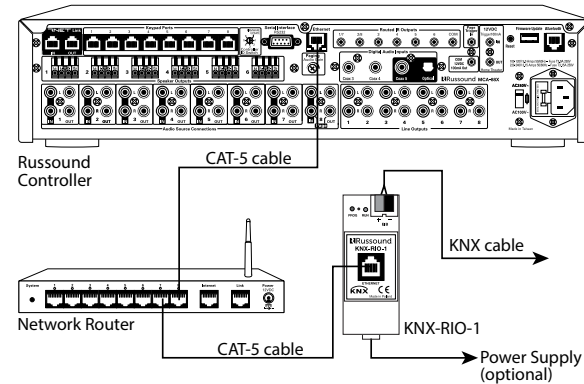
Note:
The KNX-RIO-1 comes packaged with a Seal on the device. Removing this seal will void the Warranty.

Installation and Connection Instructions

1. Snap KNX Russound gateway KNX-RIO-1 to DIN rail 35 x 7.5 mm (in accordance with EN 60715)
2. Connect KNX cable to the bus terminal
3. Connect Russound controller ID 1 to local network
4. Connect KNX-RIO-1 to local network
5. Turn on Russound controller(s) and set Controller ID 1 to a static IP address
6. Turn on KNX bus or separate power supply.
7. Edit KNX-RIO-1 ETS file and enter parameter "IP Address of Controller = 1"
8. Download Phys. Address to device with ETS. Press PROG button (LED will be solid RED)
9. RUN LED should become solid green (about a minute)

BUS POWER SUPPLY OPTION - (Not recommended) Bus current consumption - max. 80mA when only bus is connected

BUS + AUXILIARY POWER OPTION - (Recommended) Bus current consumption - max. 10 mA when aux. voltage is supplied (use SELV power supply)



ETS Application

Application for KNX Russound gateway KNX-RIO-1 can be downloaded from the Russound Support Center under Documents and Files > Integration. <http://www.russound.com/portal>

Device in ETS after its application import - For more information please reference ETS Help documentation.

All Devices	Address	Room	Trade	Descripti...	Application Program	Adr Prq Par Grp Cfg	Manufactur...	Order Number	Product
Dynamic Folders					RussoundKNX_Gateway	- - - - -	Russound, Inc.	KNX-RIO-1	KNX-RIO-1
KNX-RIO-1									

Application window: General setting

Device: 1.0.3 KNX-RIO-1

General

Zones/Controller

IP address of controller ID = 1: 192.168.1.1

Function	Settings	Description
IP address of controller ID = 1	Default: 192.168.1.1	Enter the IP address assigned for the main Russound controller. The KNX-RIO-1 can be used with 2 MCA controllers for up to 16 zones.

Application window: Zones/Controller settings (Select controller ID)

Device: 1.0.3 KNX-RIO-1

General

Zones/Controller

NOTE: Controller ID's must be different and set ascending!

First controller ID: 1

Zone 1: none

Zone 2: 1

Zone 3: 2

Zone 4: 3

Zone 5: 4

Zone 6: 5

Zone 7: 6

Function	Settings	Description
First controller ID / Second controller ID	none/1/2/3/4/5/6 (default: none)	Choose the controller ID setting.

Application window: Zones/Controller settings (zone activation)

Device: 1.0.3 KNX-RIO-1

General

Zones/Controller

NOTE: Controller ID's must be different and set ascending!

First controller ID: 1

Zone 1: active

Zone 2: active

Zone 3: not active

Zone 4: not active

Zone 5: active

Function	Settings	Description
Zone 1 through 8 for First controller ID / Second controller ID	Not active/active (default: not active)	Activates Zones 1 through 8 as needed for the controllers as specified by their controller IDs. Once activated, communication objects will appear (see below) When using the KNX-RIO-1 with an X5, only select Controller 1, Zone 1 to Active.