

KTS0-IR 红外学习网关

EIB/KNX Infrared-Gateway

操作说明书



订货号: KTS0-IR

注意

RISK
All work carried out on the unit may only be performed by skilled electricians. Observe the regulations valid in the country of use, as well as the valid KNX guidelines

CAUTION
Do not connect the main voltage (230 V) or any other external voltage to any point of the BUS, except for the specific connections.

概述

基于 EIB/KNX 标准和通信协议的 KTS0-IR 是转换 EIB/KNX 总线信号至红外信号的网关平台。该网关具有红外学习/红外发射的功能,支持载波自适应学习,范围 20kHz-75kHz,可适应市面上 99%的红外受控设备,如电视机/空调/家庭影院/DVD/功放等等。

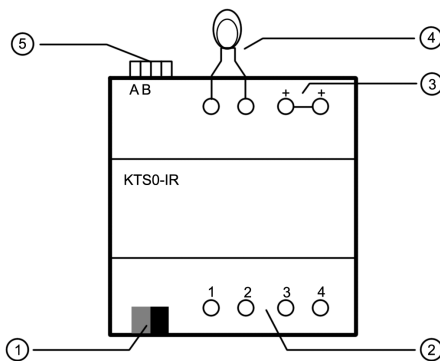
KTS0-IR 为高集成度、超低功耗的红外学习网关,采用高性能超低功耗 32 位微处理器,可以学习不同的红外码,自动检测载波频率,学习成功率高

KTS0-IR 集成了学习+发射二合一功能,既支持纯 ETS 学习和发射,也支持上位机软件学习和发射。

特点及典型应用

- ◆ 支持载波自适应学习,适合 20kHz-75kHz 频率,适用性广,可以匹配多种类型的红外设备终端;
- ◆ 四个独立通道,可接 4 组发射头,每个通道单独控制,且每通道使用独立的 LED 作为发送/学习的状态指示;
- ◆ 集成学习功能,无需另配学习设备即可完成调试;
- ◆ 总线供电,低功耗设计,无须外接电源;
- ◆ 400 组可学习红外发射对象,每组存储长度 424 位,满足常用电器需求;
- ◆ 使用 ETS 或上位机软件二选一即可实现学习和调试;
- ◆ 上位机软件支持导入导出功能,适合批量项目使用;
- ◆ 使用 ETS 设置和绑定组地址,群组监视器可查看发送/学习状态码;
- ◆ 可实现组合红外控制,可以将组合控制与 KNX 的 1Byte 场景调用进行绑定,从而可以实现一键同时对不同通道发送不同的红外指令;

模块说明



- ① EIB/KNX Bus Connector
- ② 红外通道 1~4 (IR-)
- ③ 红外通道公共端 (IR+)
- ④ 红外学习探头
- ⑤ 上位机调试接口

编程调试

方法一：使用 ETS 配置调试

Number	Name	Object Function	Descripti...	Group Address...	Len...
#1	Channel A	IR Send		3/2/1	1 Byte
#2	Channel B	IR Send		3/2/2	1 Byte
#3	Channel C	IR Send		3/2/3	1 Byte
#4	Channel D	IR Send		3/2/4	1 Byte
#5	Status	IR Error Code		3/0/0	1 Byte
#6	Scenes/Groups	Scene/Group Extension		3/0/0	1 Byte
#7	Channel A Learn	IR Learn		3/1/1	1 Byte
#8	Channel B Learn	IR Learn		3/1/2	1 Byte
#9	Channel C Learn	IR Learn		3/1/3	1 Byte
#10	Channel D Learn	IR Learn		3/1/4	1 Byte

- ① **准备工作**:按照“模块说明”接上 KNX 总线,打开 ETS 并导入 KTS0-IR 数据库文件。按照上图所示例子绑定好各个对象的组地址。注:每个通道有效值为 1~100,即每个通道可以有 100 个红外键值。
- ② **红外学习**:通过 ETS 群组监视器,对通道 A 对应的组地址 3/1/1 发 1,则模块处于学习状态,所有通道的指示灯都亮起,此时将受控设备的遥控器对准学习头(建议在 2cm 左右),10 秒内按下所需要学习的按键。
- ③ **学习成功**:模块状态对象绑定的组地址 3/0/0 可反馈操作的状态。当学习成功后,则返回 0,如学习超时则返回 6
- ④ **红外发射**:学习成功后,对学习对应的发射对象发送学习的值即可将学习到的红外码发射出去。上述例子里,接好通道 A 的红外发射线,对 3/2/1 发 1 即可触发红外码。
- ⑤ 按照同样的方法学习 2~100 的键值以及通道 B/C/D 的 1~100 键值。

方法二：使用 KTS IR Tool 软件调试

- ① 按照“模块说明”接上 KNX 总线、AB 总线至电脑端
- ② 打开 KTS IR Tool 软件,找到端口号并打开
- ③ 输入 Channel 和 Key,即可对相应通道的相应键进行学习和发送。
- ④ 可导入/导出所有学习内容。
- ⑤ 学习好后,在 ETS 内绑定相应的发射通道即可进行发送。

备注：

- 1) 学习时请确保遥控器和模块发射头之间的间距在 **5cm 以内**。若某键值没有学习成功,请重新学习
- 2) 发射头与受控设备不超过 **40cm**
- 3) 发射线总长不超过 **100m**

功能	状态码	描述
红外发送	0x00	发送成功
	0x01	所发送红外键未学习
	0x02	所发送红外键超出范围
红外学习	0x00	学习成功
	0x01	红外码过长或一直按下
	0x02	载波超范围
	0x03	红外码长度超范围
	0x04	红外码存储出错
	0x05	红外学习出现乱码
	0x06	红外学习超时

技术参数

电源供电	21~30V dc EIB/KNX Bus
电流消耗	< 10 mA
接口	Wago 243-211 KNX 端子 1 路学习通道 4 路发射通道
工作温度	0°C ... +70°C
防护等级	IP20
模块尺寸	4 X 17.5mm DIN-Rail

KTS0-IR Gateway

EIB/KNX Infrared-Gateway

Operation Manual



Order No. KTS0-IR

Attention

RISK
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CAUTION
Do not connect the main voltage (230 V) or any other external voltage to any point of the BUS, except for the specific connections.

Description

KTS0-IR is the Gateway-Module which can convert EIB/KNX signal to IR signal. This Module has both IR-Learn and IR-Transmit functions. It supports wide range of the IR frequency (between 20kHz to 75kHz), so it is suitable for the most Infrared devices such as TV, Air-conditions, Theater, DVD, etc.

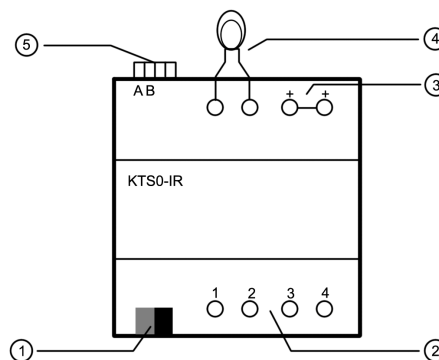
KTS0-IR has a built-in Learning-circuit, so you need not any accessories to finish all the project work.

It can be configured by ETS Software or by our special software tool named "KTS IR Tool".

Main Features

- ◆ Suitable for the IR frequencies between 20kHz~75kHz
- ◆ Four independent channels and one Learn Channel.
- ◆ Powered by EIB/KNX Bus only.
- ◆ Max. 100 keys for each channel, each key supports max. 424 bytes.
- ◆ Configured/programmed by ETS or KTS IR Tool.
- ◆ When using KTS IR Tool, you can make the import and export of all channels and keys.
- ◆ When using ETS, you can monitor the status of each action.
- ◆ Support group-control which normally used for KNX scene control.

Operating elements



- ① EIB/KNX Bus Connector
- ② IR Transmit Channels 1~4 (IR-)
- ③ IR Transmit Channel Common port (IR+)
- ④ IR Learning-sensor
- ⑤ IR Debug interface for KTS IR Tool

Programming and debugging

Using ETS software:

Number	Name	Object Function	Descripti...	Group Address...	Len...
#1	Channel A	IR Send		3/2/1	1 Byte
#2	Channel B	IR Send		3/2/2	1 Byte
#3	Channel C	IR Send		3/2/3	1 Byte
#4	Channel D	IR Send		3/2/4	1 Byte
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- ① **Preparing:** Wiring the module according to the "Operating elements". Then opening the ETS software and import the VD-files of the KTS0-IR. Link each objects like above.
Please note that each channel has 100 keys, so the valid value of each channel should be 1~100.
- ② **Learning:** opening the Group-monitor of the ETS software, write "1" to the group-address "3/1/1", and then the module are in the IR-Learning mode. The LED indicator should be ON, and then you should take the IR-remote controller of the device which you want to learn, and then facing toward the Learning-sensor of the KTS0-IR. Click the button-key of the remote controller within 10 seconds.
- ③ **Learning result:** the LED indicator should be OFF; the status feedback ("3/0/0") should indicate the return code.
- ④ **Transmitting:** after learning you can send the value of the key which you learned. In this example, you now can write "1" to the group-address "3/2/1" when you finished the wiring and learning.
- ⑤ Continue the steps and finish all the IR-commands which you need.

Using KTS IR Tool:

- ① Connecting the KNX/EIB Bus and the A/B Terminal of the RS485 to PC.
- ② Opening the KTS IR Tool software, and its Port.
- ③ Type the Channel No. and the Key No.
- ④ Click the buttons: "Learn", "Read", and the "Send"
- ⑤ After finishing the Learn, you should export all the work by clicking "Export", and you can copy all the work by clicking "Import"

Remark:

- 4) **The distance of the two head max. 5cm. If the learn fails, please retry.**
- 5) **The distance of the transmit-head and the controlled device is max. 40cm**
- 6) **the length of the transmit line should be less than 100m**

Technical Data

Power supply	21~30V dc EIB/KNX Bus
Consumption	< 10 mA
Interfaces	Wago 243-211 KNX Terminator 1 x Learning channel 4 x Transmit channel
Work temperature	0°C ... +70°C
IP Class	IP20
Size	4 X 17.5mm DIN-Rail