KNX®

GIRA

Operating instructions

Area or line coupler
Order no. 2123 00

Product image non-binding

Table of contents

1   Safety instructions

To avoid potential damage, read and follow the following instructions:

Electrical devices may be mounted and connected only by electrically skilled persons.

Danger of electric shock. During installation and cable routing, comply with the regulations and standards which apply for SELV circuits.

This manual is an integral part of the product, and must remain with the customer.

2   System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

The function of this device depends upon the software. Detailed information on loadable software and attainable functionality as well as the software itself can be obtained from the manufacturer´s product database.

The device can be updated. Firmware can be easily updated with the Gira ETS Service App (additional software).

The device is KNX Data Secure capable. KNX Data Secure offers protection against manipulation in building automation and can be configured in the ETS project. Detailed technical knowledge is required. A device certificate, which is attached to the device, is required for safe commissioning. During mounting, the device certificate must be removed from the device and stored securely.

Planning, installation and commissioning of the device is carried out using ETS version 5.7.7. or higher in the case of use as a backbone coupler, line coupler or amplifier or 6.1.1 in the case of use as a backbone coupler, line coupler, segment coupler or secure proxy.
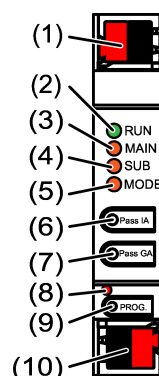
3   Device components

Figure 1: Front view

(1)   KNX device connection terminal, subordinate line **SUB**

(2)	Status LED **RUN**
(3)	Status LED **MAIN**
(4)	Status LED **SUB**
(5)	Status LED **MODE**
(6)	Button **Pass IA**
(7)	Button **Pass GA**
(8)	Programming LED, red
(9)	Programming button **PROG.**
(10)	KNX device connection terminal, higher-order line **MAIN**

Status LED function RUN

Off	Power failure on higher-order line
Lights up green	Ready for operation, higher-order and subordinate lines are supplied with voltage.
Lights up red	Power failure on subordinate line.
Lights up orange	Group address filter function is deactivated
Flashes orange (approx. 1 Hz)	Physical address filter function is deactivated
Flashes orange quickly (approx. 4 Hz)	Both filter functions are deactivated

Status LED function MAIN

Lights up orange for 6 ms	Telegram reception, higher-order line
Lights up red for 6 ms	One-time communication error, higher-order line
Lights up red for 100 ms	Repeated communication error, higher-order line

The display of errors has a higher priority.

Status LED function SUB

Lights up orange for 6 ms	Telegram reception, subordinate line
Lights up red for 6 ms	One-time communication error, subordinate line
Lights up red for 100 ms	Repeated communication error, subordinate line

The display of errors has a higher priority.

Status LED function MODE

Off	Device functions as a backbone coupler or line coupler
Lights up green	Device functions as a segment coupler or line amplifier
Lights up orange	Device functions as a backbone coupler, line coupler or segment coupler; and the secure proxy is activated
Lights up red for 100 ms	**Pass IA** or **Pass GA** button has been pressed

Self-test of the status LED

During restart, the status LEDs light up green for 0.5 seconds and then red in sequence from the top to the bottom

4 Intended use

– Establishes a data link between two KNX lines/segments/backbones and ensures electrical separation between these lines/segments/backbones

– Operation as a backbone coupler, line coupler or segment coupler (from ETS 6.1.1 onwards) or amplifier (up to ETS 5.7.7)

– Installation in small distribution board on a DIN rail according to IEC 60715

5 Product characteristics

– KNX Data Secure

– Secure proxy for connection to an unencrypted and encrypted line

– Electrical separation between the higher-order and subordinate line

– Manual control used to deactivate filter functions

6 Area of use

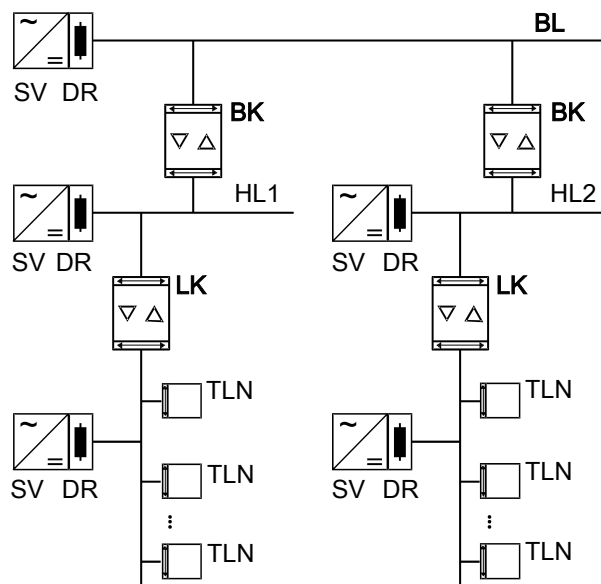## 6.1 Backbone coupler and line coupler

Figure 2: Use as a backbone and line coupler

Backbone coupler (BK): The physical address is the address of a backbone coupler X.0.0 and must match the logical topology of the KNX system.
Connection of a main line (HL) with a backbone line (BL). Alternatively with or without filter function. The coupler is logically assigned to the subordinate line. Observe the instructions in the technical documentation regarding the address.

Line coupler (LK): The physical address is the address of a line coupler X.Y.0 and must match the logical topology of the KNX system.
Connection of a line with a main line (HL). Alternatively with or without filter function. The coupler is logically assigned to the subordinate line. Observe the instructions in the technical documentation regarding the address.

BK = Backbone coupler

LK = Line coupler

TLN = Bus device

SV = KNX power supply

DR = Choke

Each line segment requires a separate power supply (SV) including choke (DR).
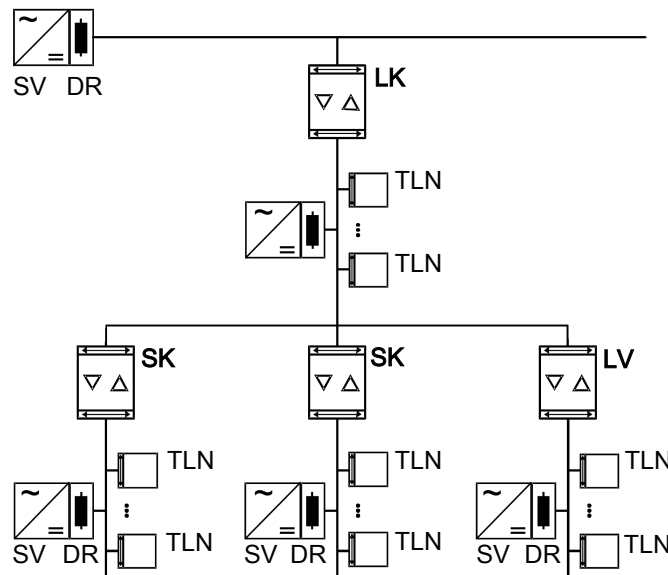
6.2　Segment coupler and amplifier

Figure 3: Use as a segment coupler and amplifier

Segment coupler (SK): The physical address is the address of a normal KNX participant X.Y.Z (Z≠0) and must match the logical topology of the KNX system.
Division of a line (max. 256 participants) into independent line segments. Alternatively with or without filter function. The segment coupler is logically assigned to the subordinate line segment. Observe the instructions in the technical documentation regarding the address.

Amplifier (LV): The physical address is the address of a normal KNX participant X.Y.Z (Z≠0) and must match the logical topology of the KNX system.
Division of a line (max. 256 participants) into independent line segments. Preparation and repetition of telegrams on a line, no filter function. Observe the instructions in the technical documentation regarding the address.

SK = Segment coupler

LV = Amplifier

TLN = Bus device

SV = KNX power supply

DR = Choke

Each line segment requires a separate power supply (SV) including choke (DR).

7 Operation

Deactivating the physical address filter function

- Press the **Pass IA** button.
  The status LED **MODE** briefly lights up red.

  The status LED **RUN** displays the state of the filter functions, (see figure 1).

  The filter is deactivated until the **Pass IA** button is pressed again.

Deactivating the group address filter function

- Press the **Pass GA** button.
  The status LED **MODE** briefly lights up red.

  The status LED **RUN** displays the state of the filter functions, (see figure 1).

  The filter is deactivated until the **Pass GA** button is pressed again.

8 Information for electrically skilled persons

⚠ **DANGER!**

Electric shock when live parts are touched.
Electric shocks can be fatal.
Cover up live parts in the installation environment.

8.1 Mounting and electrical connection

Secure operation

- Secure commissioning in the ETS is activated.
- Remove the device certificate from the device and store it securely.
- Enter or scan the device certificate and add it to the project. Recommendation: Use a high resolution camera to scan the QR code.
- Document all passwords and keep them safe.

Mounting and connecting the device

- ■   Observe cable routing and spacing
- ■   Mount device on DIN rail.
- ■   Connect bus lines to KNX device connection terminals (see figure 1) observing the correct polarity.
- ■   Connect the higher-order line to the lower device connection terminal (10). Power is supplied to the device via this terminal.
- ■   Connect the subordinate line to the upper device connection terminal (1).
- ■   Attach the cover caps to the KNX connections as protection against hazardous voltages.

   ⓘ   The subordinate line requires a separate power supply.

8.2   Commissioning

Programming the physical address and application programme with ETS

- ■   Switch on the bus voltage.
- ■   Press the programming button (9) **PROG.**.

     The programming LED (8) lights up.

- ■   Programming the physical address.

     The programming LED goes out.

- ■   Program the application programme and filter table.

8.2.1   Safe-state mode and master reset

Activating safe-state mode

The safe-state mode stops the execution of the loaded application program.

   ⓘ   Only the system software of the device is still functional. ETS diagnosis functions and programming of the device are possible. No telegrams are transmitted.

- ■   Switch off the bus voltage or remove the KNX device connection terminal (10) of the higher-order line.
- ■   Press and hold down the programming button for approx. 15 seconds.
- ■   Switch on the bus voltage or attach the KNX device connection terminal. Release the programming button only after the programming LED starts flashing slowly.

     The safe-state mode is activated.

By briefly pressing the programming button again, the programming mode can also be switched on and off in the safe-state mode. If the programming mode is active, the programming LED stops flashing.

Deactivating safe-state mode

- Switch off the bus voltage for approx. 15 seconds or trigger a restart via the ETS.

Master reset

The master reset restores the basic device settings (physical address 15.15.0, firmware remains in place). The device must then be recommissioned with the ETS.

In secure operation: A master reset deactivates device security. The device can then be recommissioned with the device certificate.

Performing a master reset

Precondition: The safe-state mode is activated.

- Press and hold down the programming button for > 5 s.

  The programming LED flashes quickly.

- Release the programming button.

  The device performs a master reset, restarts and is ready for operation again after approx. 5 s.

Restoring the device to factory settings

The device can be reset to factory settings with the Gira ETS Service App. This function uses the firmware contained in the device that was active at the time of delivery (delivered state). Restoring the factory settings causes the device to lose its physical address and configuration.

9 Technical data

Ambient temperature	-5 ... +45°C
Storage/transport temperature	-25 ... +70°C
Protection class	III
Weight	90 g
Installation width	18 mm / 1 HP
KNX medium	TP256
Commissioning mode	S mode
Rated voltage KNX	DC 21 ... 32 V SELV
Current consumption KNX	
Higher-order line	9 mA
Subordinate line	5 mA
Connection mode KNX	Device connection terminal

10 Warranty

The warranty is provided by the specialist trade in accordance with statutory requirements. Please submit or send faulty devices postage paid together with a fault description to your responsible salesperson (specialist trade / installation company / electrical specialist trade). They will forward the devices to the Gira Service Center.

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