KNX Line Coupler

Manual -Ver2.1

MG0601

Content

1 Overview

1.1 Product introduction

The MG0601 coupler is a modular installation device that combines the functions of a KNX line coupler and a KNX line repeater. When used as a line coupler, it connects main lines and trunk lines or regional lines. As a line repeater, it can connect more than 64 devices on a bus. Electrical isolation is provided in this way.

The coupler sends physical addresses, group addresses and broadcast messages by path. The physical address message is sent according to the path, and the coupler compares the target physical address with its own physical address. Automatic filtering determines whether the corresponding physical address packets are passed. The packets follow the path or not according to the path depending on the parameter configuration. If the coupler has not received the project-assigned physical address, this may result in the device not being able to communicate during commissioning. The coupler provides a filter table, all group messages present in the filter table will be routed, otherwise they will be blocked, thereby reducing the bus load. The filter table is automatically generated by the ETS software tool according to the commissioning system. It is useful to configure filter group addresses in the filter table, especially during debugging and diagnostics. In the group address, the main group address is 0....13 can configure filtering and other parameters. The main group addresses of group packets 14....31. do not do any isolation configuration. If the coupler sends the message along the path without receiving an acknowledgment or transmission error, repeat the message up to 3 times. At the same time, in order to prevent false repetition of group messages, the two lines of the response are set separately. In the standard setting this parameter can be set separately.

1.2 Topology

1.2.1 Line coupler

As a line coupler, the MG0601 connects a branch line to a main line, each line requiring it to have its own power supply. Line couplers play the role of filtering messages and reducing bus load. When used as a line coupler, its physical address is X.Y.0 (X = 0~15, Y = 0~15), that is, there can be up to 15 main lines, and there can be 64 devices on the main line, including line couplers, which can be relayed through linker segments (up to 3-line repeaters) for up to 3840 devices

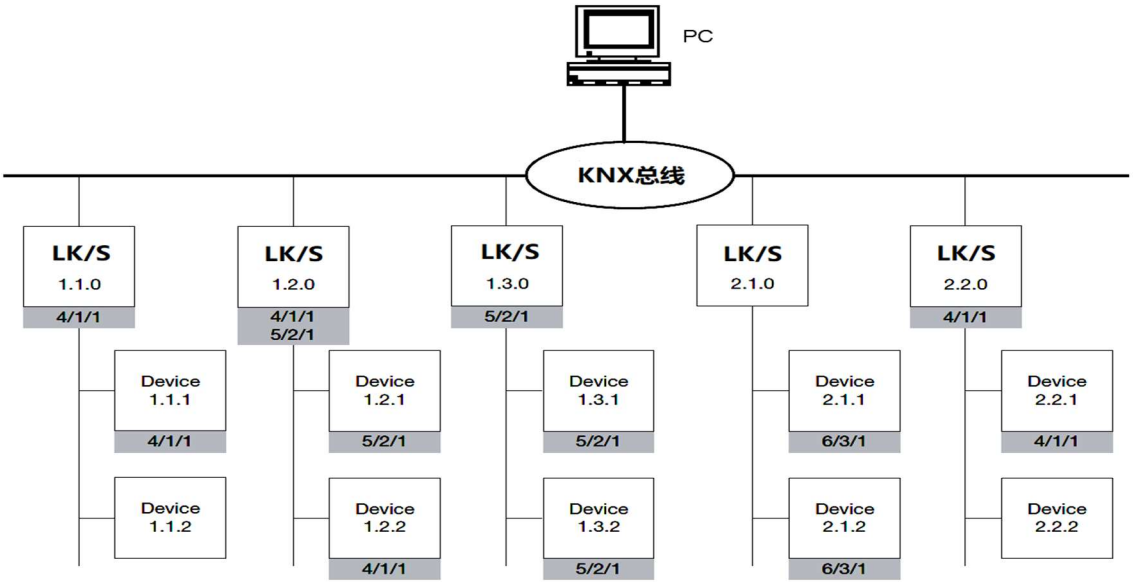


Figure 1.1 Line coupler topology

1.2.2 Zone coupler

As a zone coupler, the MG0601 connects a main line and a zone line, each requiring its own power supply. The regional coupler plays the role of filtering the messages and reducing the bus load. When used as a regional coupler, its physical address is X.0.0 (X = 0~15), that is, there can be up to 15 main lines, each main line can have up to 15 branch lines, and there can be 64 devices on the branch line including lines Couplers that can connect line segments via repeaters (up to 3 epeaters) for up to 57,600 devices

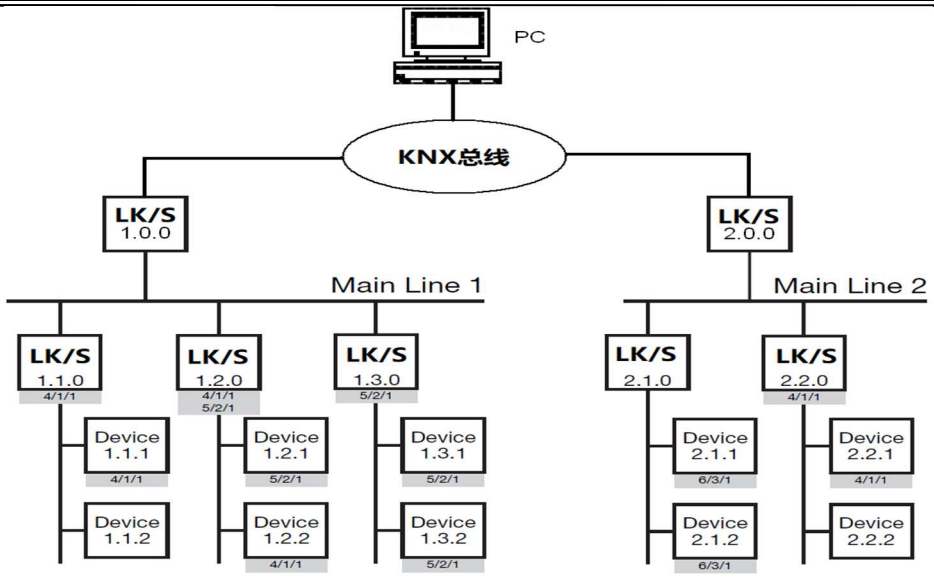


Figure 1.2 Zone coupler topology

1.2.3 Repeaters

The MG0601 acts as a repeater, connecting the data streams of the two line segments but electrically isolated. In a line, up to three repeaters can be connected in parallel to form a line. This is how up to four line segments form the entire branch. Thus, spur lines can be expanded from 64 devices (1 segment) to 256 devices (4 segments). Each line segment must be powered by its own KNX power supply.

Repeaters do not have filter tables, so it does not matter whether the message is initiated within the line, or whether it has been sent from the main line through the repeater, regardless of which segment of the line the message was sent on. .

If there is a transmission error in the physically addressed telegram, the telegram is not repeated. If the repeater routes the telegram and no acknowledgment is received or there is a transmission error, the repeater repeats the telegram up to three times. Using the parameter If an error occurs repeating the group telegram, the responses of the two line segments will be set separately.

When used as a repeater, its physical address is X.Y.Z (X = 0~15, Y = 0~15, Z=1-255). That is, branch line, up to 256 devices.

2 Technical performance

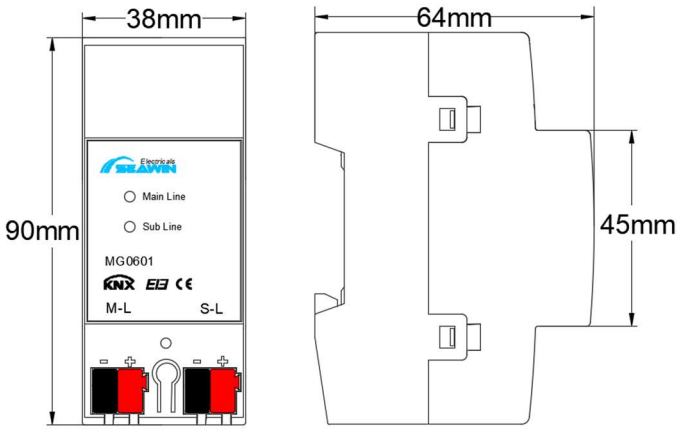
2.1 Technical parameters

Main Input	12~30 VDC
Branch line input	12~30 VDC

Bus current	≤ 10mA
Working power	≤ 3500mW
Connect	Main line / branch line EIB bus connection terminal
Shell material	PA66
Dimension (H x W x D)	90×38×64mm
Weight(approx.)	0.08kg
Installation method	35mm DIN-rail installation
Transportation temperature	- 25°C…+70°C
Working temperature	-5°C- 45°C
Storage temperature	-25℃-55℃
Relative humidity	max 90%

3 Dimension & wiring diagrams

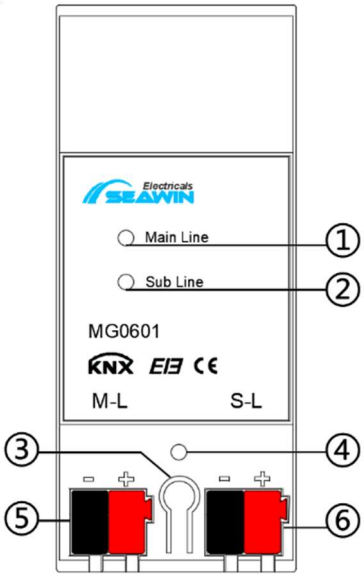
Dimension



Wiring diagrams

Main Line Branch Line

4 Instructions and operations



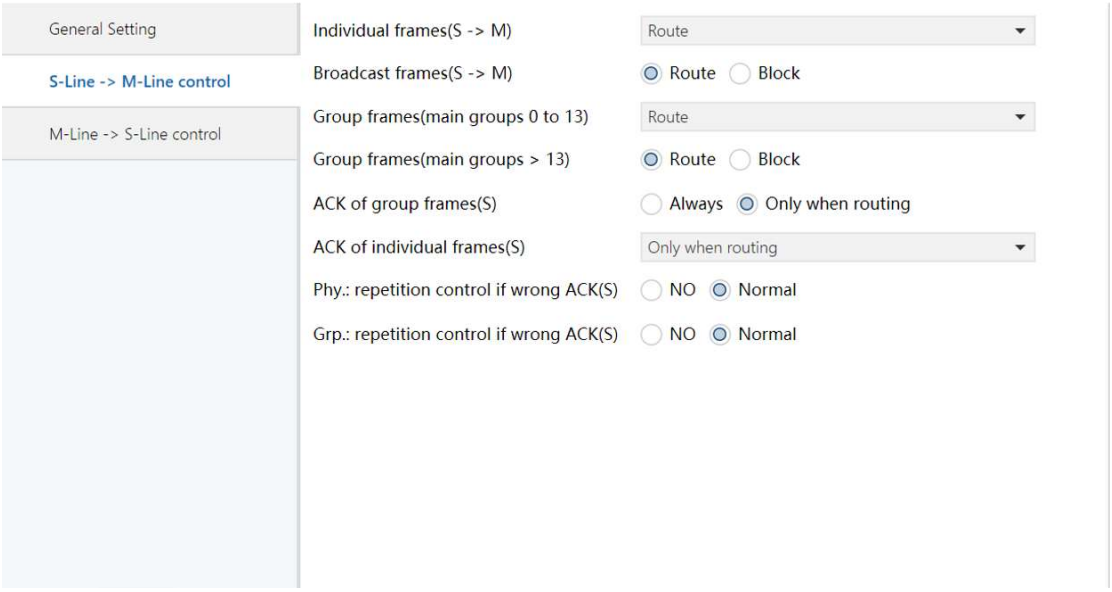
Nr.	Name	Function
①	Main Line indicator light	Steady light indicates that the main line is connected normally; flashing indicates that the main line has communication
②	Sub LineBranch line indicator	Blinking means there is communication on the branch line.
③	Programming button	Button is used to enter/exit KNX programming mode.
④	programming light	A solid light indicates programming mode.
⑤	M-L is KNX main line terminal	To connect to the KNX main line, use standard KNX terminals.
⑥	S-L is KNX branch line terminal	To connect to the KNX branch line, use standard KNX terminals.

5 Function configuration

MG0601 is configured through ETS4/5, which can be configured by parameters, associated with the address of the communication object group, etc.

General Settings configuration parameters, the parameter "Device name" represents the device name, the device name can be edited freely, and a maximum of 30 bytes are allowed.

5.1 S-Line -->M- Line control



Note: The group address format is A/B/C, where A is the main group address;

The parameter "Individual framers(S->M)" indicates the filtering behavior of single frame from branch line to main line. The options are: Router (passing), Block (blocking), Filter (filtering).

The parameter "Broadcast framers (S->M)" indicates the filtering behavior of broadcast frames from branch lines to main line packets. The options are: Router (pass), Block (block).

The parameter "Group framers (main groups 0 to 13)" indicates the filtering behavior of group frames in the group address packets whose main group address is 0~13. The options are: Router (pass), Block (block), Filter (filter) .

The parameter "Group framers (main groups > 13)" indicates the filtering behavior of group framers whose main group address is greater than 13. The options are: Router (pass) and Block (block).

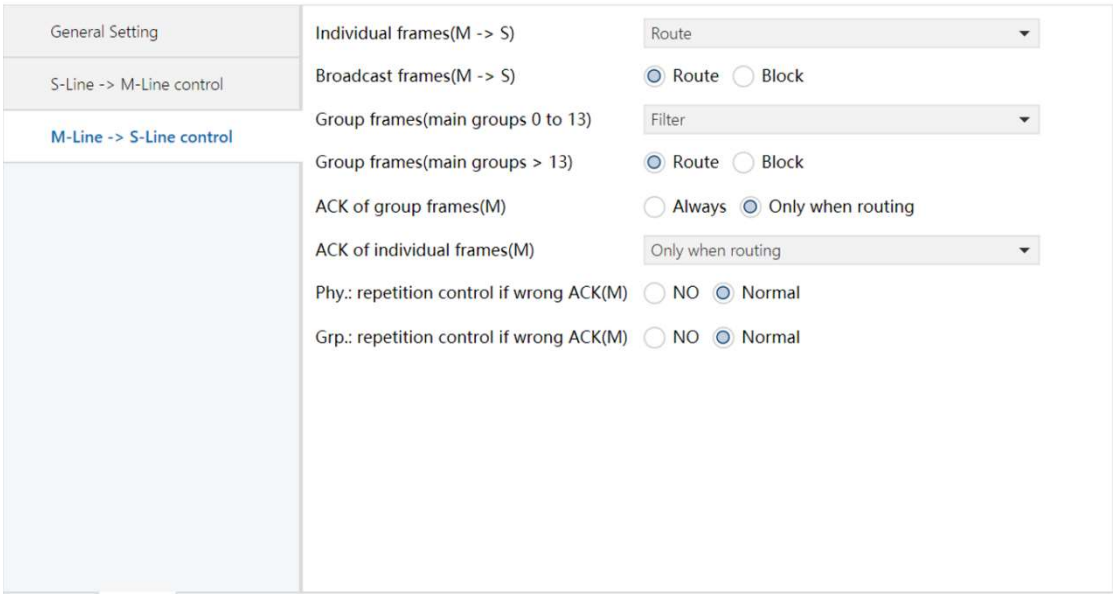
The parameter "ACK of group frames(S)" indicates the ACK of branch line framing. The options are: Always (always), Only when routing (only when Routing is available).

The parameter "ACK of individual frames(S)" represents the ACK of a single frame of the branch line. The options are: Only when routing (only when routing), Always ACK (always ACK), Always NACK (always NACK).

The parameter "Ph. Repetition control if wrong ACK(S) means that if the branch line ACK is wrong, the device will resend the physical address data, the options are: No (no), Normal (can).

The parameter "GRP Repetition control if wrong ACK(S) means that if the branch line ACK is wrong, the device will resend the group address data, the options are: No (no), Normal (can)

52 M-Line -->S- Line control



Note: The group address format is A/B/C, where A is the main group address;

The parameter "Individual framers (M->S)" indicates the filtering behavior of a single frame from the main line to the branch line. The options are: Router (passing), Block (blocking), Filter (filtering).

The parameter "Broadcast framers((M->S))" indicates the filtering behavior of broadcast frames from the main line to the branch line. The options are: Router (pass), Block (block).

The parameter "Group framers (main groups 0 to 13)" indicates the filtering behavior of group frames in the group address packets whose main group address is 0~13. The options are: Router (pass), Block (block), Filter (filter).

The parameter "Group framers (main groups > 13)" indicates the filtering behavior of group framers whose main group address is greater than 13. The options are: Router (pass) and Block (block).

The parameter "ACK of group frames (M)" represents the ACK of the main line frame, and the options are: Always (always), Only when routing (only when Routing is available).

The parameter "ACK of individual frames (M)" represents the ACK of a single frame on the main line. The options are: Only when routing (only when routing), Always ACK (always ACK), Always NACK (always NACK).

The parameter "Phy..repetition control if wrong ACK (M) means that if the main line ACK is wrong, the device will resend the physical address data, options: No (no), Normal (can).

The parameter "Grp.. repetition control if wrong ACK(M) means that if the main line ACK is wrong, the device will resend the group address data, the options are: No (no), Normal (can).

6 Safe use and maintenance

(1) Read all instructions carefully before use。

(2) Create a good ventilation environment.

(3) During use, pay attention to moisture, shock and dust.

(4) Strictly forbid to rain, contact with other liquids or corrosive gases.

(5) If it is wet or attacked by liquid, it should be dried in time.

(6) When the machine fails, please contact professional maintenance personnel or our company.

7 Contact

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