

SpaceLogic KNX

SpaceLogic KNX Valve Drive Controller

Product information

This document is based on the installation instructions of the device and provides you with further information, e.g. about functions and operation, etc.

MTN6730-0002

21.07.2020



Legal information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a non-exclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.

Safety information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that accompany this symbol to avoid possible injury or death.



DANGER!

DANGER

indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING!

WARNING

indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION!

CAUTION

indicates a hazardous situation which, if not avoided, could result in minor or moderate injury

Additional notes



You will find additional information here to make your work easier.

Table of Contents

1	For your safety	5
1.1	Safety instructions	5
2	Device components	6
3	Function	7
4	Operation	9
5	Information for electrically skilled persons	12
5.1	Fitting and electrical connection	12
5.2	Commissioning	14
6	Technical data	15
7	Troubleshooting	16

1 For your safety



DANGER!

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Safe electrical installation must be carried out only by skilled professionals. Skilled professionals must prove profound knowledge in the following areas:

- Connecting to installation networks
- Connecting several electrical devices
- Laying electric cables
- Connecting and establishing KNX networks
- Safety standards, local wiring rules and regulations

Failure to follow these instructions will result in death or serious injury.

1.1 Safety instructions



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

Serious injuries, fire or property damage possible. Please read and follow manual fully.

Danger of electric shock. Always disconnect before carrying out work on the device or load. In so doing, take all the circuit breakers into account, which support dangerous voltages to the device and or load.

Danger of electric shock. Device is not suitable for disconnection from supply voltage. The load is not electrically isolated from the mains even when the device is switched off.

These instructions are an integral part of the product, and must remain with the end customer.

2 Device components

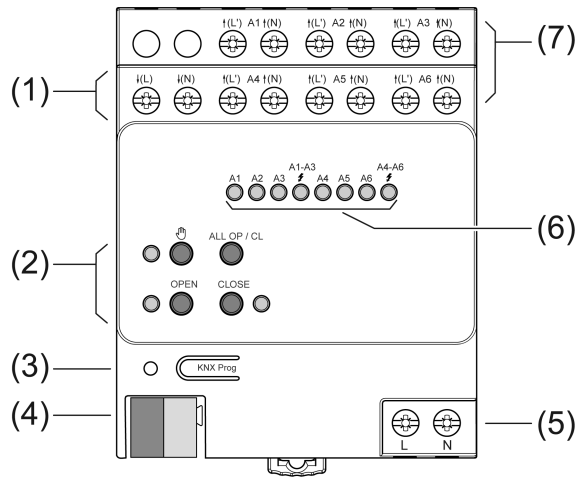


Image 1: Front view

- (1) Supply of electrothermal valve drives
- (2) Button field for manual operation
- (3) Programming button and LEDs
- (4) KNX connection
- (5) Connection for mains supply
- (6) Status LEDs for outputs
- (7) Connection of electrothermal actuators

3 Function

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. Planning, installation and commissioning of the device are carried out with the aid of KNX-certified software. The latest versions of product database and the technical descriptions are available on our website.

Intended use

- Switching of electrothermal actuators for heaters or cooling ceilings
- Installation in sub-distribution units on DIN rail according to EN 60715

Product characteristics

- Switching operation or PWM operation
- Actuators with characteristics opened or closed without power controllable
- Valve drives 230 V or 24 V controllable
- Outputs can be operated manually, construction site mode
- Feedback in manual mode and in bus mode
- Disabling of individual outputs manually or by bus
- Overload-protected, short circuit-protected, error message with LED
- Protection against jamming valves
- forced position
- Various setpoints for forced position or emergency operation in case of bus failure for summer or winter
- Cyclical monitoring of the input signals can be parameterized
- Feedback via bus, e.g. in case of mains failure, overload or sensor failure
- Bus connection with standard bus connecting terminal



PWM operation: electrothermal actuators only have the positions "open" and "closed". In PWM operation, switch-on and switch-off during the drive's cycle time achieves an almost constant behaviour.

- Integrated room temperature control with setpoint value specification
- Six independent controllers to control up to six independent rooms
- Controller function for heating and cooling operation

Overload protection

In order to protect the device and connected actuators, in case of overload the device determines which output is involved and switches it off. Non-overloaded outputs continue to work, which means that the rooms in question are still heated.

- In case of major overloads the actuator initially switches all off the outputs **A1...A6** off.

- In the case of more minor overloads the actuators switches output groups **A1...A3** and/or **A4...A6** off.
- The actuator determines the overloaded output in up to 4 test cycles.
- If in the event of only a minor overload it is not possible to unambiguously identify any output as overloaded, then the actuator switches individual outputs off one after the other.
- The overload can be reported to the bus for each output.

LED display:

- Overload LED flashes slowly: Test cycle active.
- Overload LED flashes quickly: Test cycle completed.

4 Operation

Operating elements

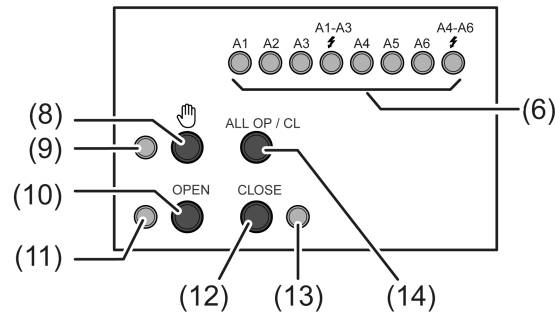


Image 2: Operating elements – Overview

- (6) **A1...A6:** Status LEDs for outputs
⚡1-3, ⚡4-6: Display "Overload/short-circuit" for output group
- (8) Button – Manual operation
- (9) LED – On: Continuous manual mode active
- (10) **OPEN** button – Open valve
- (11) LED **OPEN** – On: Valve opened, manual operation
- (12) **CLOSE** button – Close valve
- (13) LED **CLOSE** – On: Valve closed, manual operation
- (14) **ALL OP / CL** button – Central operating function for all outputs: Open and close all valve alternatively

Status display and output behaviour

The Status LEDs **A1...A6** (6) show whether the current flow is switched on or switched off at the appropriate output. The connected heating or cooling valves open and close according to their characteristics.

Pilot valve	LED on	LED off
Deenergised closed	Heating/cooling Valve opened	Off Valve closed
Deenergised opened	Off Valve closed	Heating/cooling Valve opened

- LED flashes slowly: Output in manual mode
- LED flashes quickly: Output disabled via continuous manual mode

Operating modes

- Bus operation: Operation via push-button sensors or other bus devices
- Short-term manual operation: Manual operation locally with button field, automatic return to bus operation.
- Continuous manual mode: Exclusively manual operation on the device



No bus operation is possible in manual mode.



No manual mode is possible in case of bus failure.



The behaviour after bus failure and return can be set.



The manual mode can be disabled in ongoing operation via a bus telegram.

Switching on the temporary manual control

Operation using the button field is programmed and not disabled.

- Press the button briefly.
LED **A1** flashes, LED remains off.



After 5 seconds without a button actuation, the actuator returns automatically to bus operation.

Switching off temporary manual operation

The device is in short-term manual mode.

- No button-press for 5 seconds.
- or -
- Press button briefly as many time as necessary until the actuator leaves the short-time manual mode.
LEDs **A1...** no longer flash, but rather indicate the output status.

Switching on permanent manual control

Operation using the button field is programmed and not disabled.

- Press the button for at least 5 seconds.
LED is illuminated, status LED **A1** flashes, continuous manual mode is switched on.

Switching off permanent manual control

The device is in continuous manual mode.

- Press the button for at least 5 seconds.
LED is off, bus operation is switched on.

Operating the outputs

In manual operation the outputs can be operated instantly.

The device is in continuous or short-term manual mode.

- Press button briefly, < 1 s, as many times as necessary until the desired output is selected.
The LED of the selected output **A1...A6** flashes.
The LEDs **OPEN** and **CLOSE** indicate the status.
- Press **OPEN** button.
Valve opens.
- Press **CLOSE** button.
Valve closes.
The LEDs **OPEN** and **CLOSE** display the valve stats.



Short-term manual operation: After running through all of the outputs the device exits manual mode after another brief press.


Operate all outputs simultaneously

The device is in continuous manual mode.

- Press the **ALL OP / CL** button.
All the valves open and close alternately.

Disabling individual outputs

The device is in continuous manual mode.


- Press the  button briefly as many times as necessary until the desired output is selected.
The status LED of the selected output **A1...** flashes.
- Press buttons **OPEN** and **CLOSE** simultaneously for at least 5 seconds.
Selected output is disabled.
The status LED of the blocked output **A1...** flashes quickly.
- Activate bus mode (see section Deactivating permanent manual control).



A disabled output can be operated in manual mode.

Re-enabling outputs

The device is in continuous manual mode.

- Press the  button briefly as many times as necessary until the desired output is selected.
- Press buttons **OPEN** and **CLOSE** simultaneously for at least 5 seconds.
Selected output is enabled.
The LED of the enabled output flashes slowly.
- Activate bus mode (see section Deactivating permanent manual control).

5 Information for electrically skilled persons

5.1 Fitting and electrical connection

DANGER!

Electrical shock when live parts are touched.

Electrical shocks can be fatal.

- Before carrying out work on the device or load, disengage all the corresponding circuit breakers. Cover up live parts in the working environment.

Fitting the device

Observe the temperature range. Ensure adequate cooling.

- Mount device on DIN rail. Output terminals must be at the top.

Connecting the device

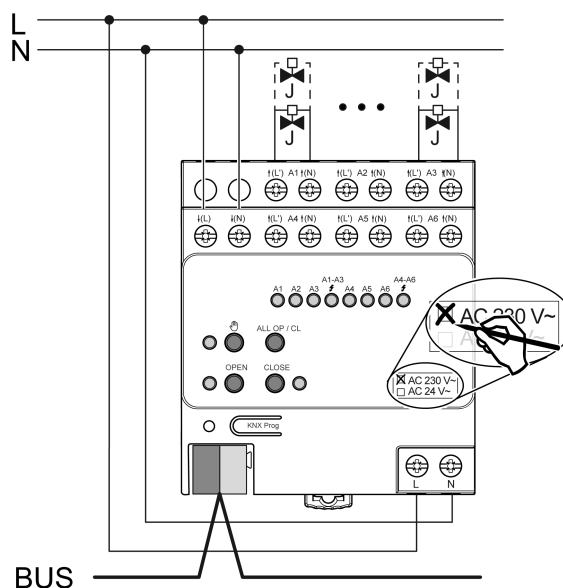


Image 3: Connection of actuators 230 V

Connect valve drives of AC 230 V or AC 24 V to all the outputs.

Only connect valve drives with the same characteristics to each output (deenergised closed/opened).

Do not connect any other loads.

Connect actuators for frost-sensitive rooms to outputs **A1** and **A4**. These are switched off last in the event of overload.

Do not exceed maximum number of actuators per output (see "Technical data").

Observe the technical data of the valve drives used.

Do not connect the neutral conductor from the output terminals through to additional devices.

- Connect the AC 230 V valve drives according to the connection diagram (see figure 3).
- Connect the AC 24 V valve drives according to the connection diagram (see figure 4).
- Connect the supply for the valve drives to the terminals ↓(L) and ↓(N) (1).
- Connecting the mains voltage to the terminals (5).
- Connect bus line with device connection terminal.



The device can draw its power either only from the bus voltage or only from the mains voltage.

Only bus supply: The settings for the behaviour on bus failure have no effect. The outputs switch to the deenergised state.

Only mains supply: Operation of the outputs with the button field or emergency operation according to the programming is possible.

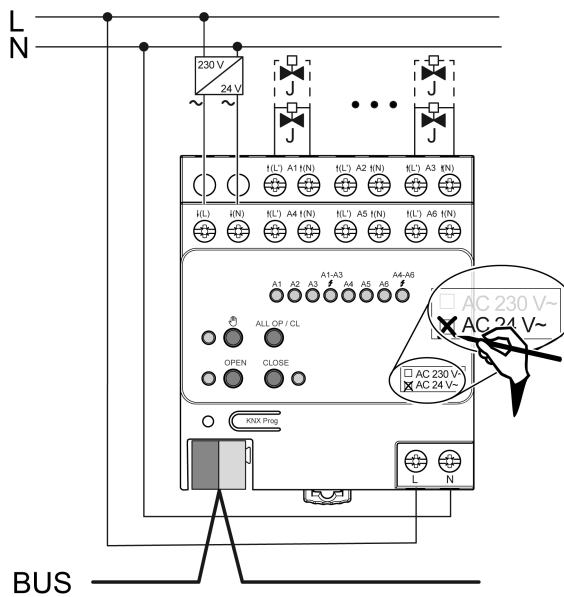


Image 4: Connection of actuators 24 V

Installing the cover

It is necessary to install a cover to protect the bus connection against hazardous voltages in the connection area.

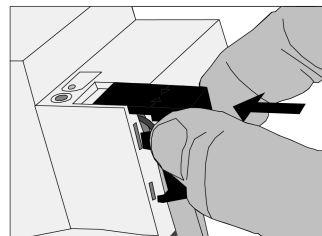


Image 5: Installing the cover

- Route the bus line towards the rear.
- Install cover on top of the bus terminal so that it snaps into place (see figure 5).

Removing the cover

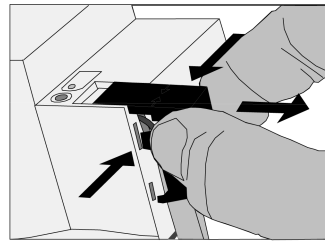


Image 6: Removing the cover

- Press the cover to the side and pull it off (see figure 6).

5.2 Commissioning

Load the address and the application software

- Switch on the bus voltage.
- Press the programming button.
- Load the physical address into the device.
- Load the application software into the device.
- Note the physical address on the device label.

6 Technical data

Supply	
Rated voltage	AC 110 ... 230 V ~
Mains frequency	50 / 60 Hz
Standby power	max. 0.4 W
Power loss	max. 1 W
KNX	
KNX medium	TP
Commissioning mode	S-mode
Rated voltage KNX	DC 21 ... 32 V SELV
Power consumption KNX	max. 250 mW
Ambient conditions	
Ambient temperature	-5 ... +45 °C
Storage/transport temperature	-25 ... +70 °C
Heating outputs	
Contact type	Semi-conductor (Triac), ε
Switching voltage	AC 24 / 230 V ~
Mains frequency	50 / 60 Hz
Switching current	5 ... 160 mA
Switch-on current AC 230 V	max. 1.5 A (2 s)
Switch-on current AC 24 V	max. 0.3 A (2 min)
Number of drives per output	
230 V drives	max. 4
24 V drives	max. 2
Housing	
Fitting width	72 mm / 4 module
Connection of outputs	
Connection mode	Screw terminal
single stranded	0.5 ... 4 mm ²
Finely stranded without conductor sleeve	0.5 ... 4 mm ²
Finely stranded with conductor sleeve	0.5 ... 2.5 mm ²

7 Troubleshooting

Actuators of an output or all outputs do not switch

Cause: An output is overloaded.

Determine cause of the overload switch-off. Eliminate short-circuits, replace defective actuators. Check number of actuators connected to the output, reduce if necessary. Do not exceed max. switching current.

Reset overload switch-off: disconnect device from mains completely for approx. 5 seconds, switch off miniature circuit-breaker. Then switch on again.



In case of overload, initially one or both output groups switch off for approx. 6 minutes. After that the device determines which output is overloaded and switches it off permanently. This rest and test phase lasts 6 to 20 minutes.



After resetting of the overload switch-off it is no longer possible for the device to determine which output is overloaded. If the cause is not eliminated, overload switch-off will occur again.

Schneider Electric Industries SAS

If you have technical questions, please contact the Customer Care Centre in your country.

se.com/contact

© 2020 Schneider Electric, All rights reserved