Theben 4940225

Theben RM 16 S KNX 16-Channel Switching Actuator User Manual

Model: RM 16 S (Part No. 4940225)

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Theben RM 16 S KNX 16-Channel Switching Actuator. Please read this manual carefully before using the device to ensure proper functionality and safety.

The Theben RM 16 S KNX is a DIN rail mounted switching actuator designed for KNX bus systems. It features 16 independent relay outputs for controlling various electrical loads.

2. SAFETY INSTRUCTIONS

Important: Installation and commissioning must only be carried out by a qualified electrician in accordance with national regulations and safety standards.

- Disconnect power before installation or maintenance.
- Ensure proper grounding.
- Do not expose the device to moisture or extreme temperatures.
- Observe maximum load ratings for each channel.
- The device is designed for commercial and private use.

3. PRODUCT OVERVIEW

The Theben RM 16 S KNX is a 16-channel switching actuator for KNX installations. It is designed for DIN rail mounting and occupies 8 TE (standard width units).
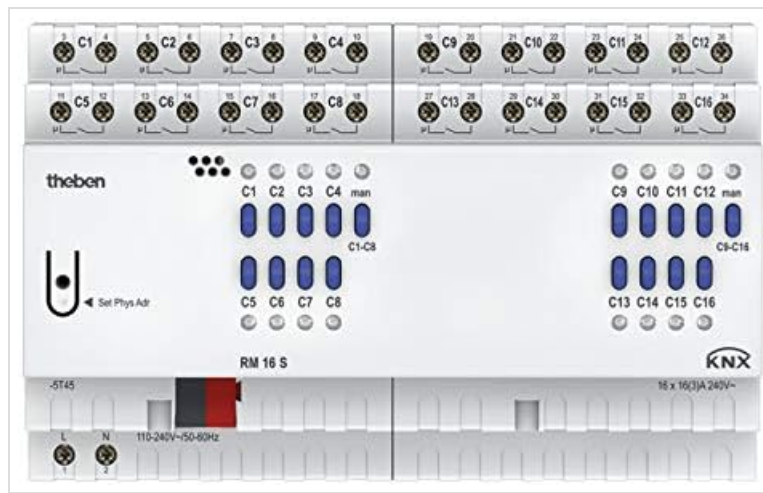
Figure 3.1: Front view of the Theben RM 16 S KNX Switching Actuator. This image shows the device with its 16 output terminals (C1-C16) at the top, manual override buttons (C1-C8 and C9-C16) with LED status indicators, and the KNX bus connection point. The bottom section displays the power input terminals (L, N) and the operating voltage range (110-240V~50-60Hz). The 'Set Phys Adr' button for physical address assignment is also visible.

3.1. Key Features

- 16 independent relay outputs.
- LED status indicator for each channel.
- Manual override switches with status display (even without bus voltage).
- KNX bus coupling unit integrated.
- Functions: ON/OFF, pulse, ON/OFF delay, staircase lighting with pre-warning (according to DIN 18015-2).
- Logical links: lock, AND, release.
- Central objects with and without priority.
- Scene recall and storage (object), scene object for each channel.
- DIN rail mounting (8 TE width).

4. INSTALLATION

4.1. Mounting

1. Ensure the main power supply is disconnected.
2. Mount the device on a standard DIN rail (35 mm) in a distribution board or suitable enclosure.
3. Ensure adequate ventilation around the device.

4.2. Wiring

Refer to the wiring diagram below and the labels on the device for correct connections.

- **Power Supply:** Connect the main power supply (110-240V~50-60Hz) to the L and N terminals at the bottom of the device.
- **KNX Bus:** Connect the KNX bus line to the dedicated bus terminals.
- **Load Connections:** Connect the loads to the C1-C16 output terminals. Each channel supports a maximum switching current of 16 A and a maximum switching power of 2000 W (output power 3680 W). Different phases

can be connected.

Note: Always ensure correct polarity and secure connections to prevent damage or malfunction.

5. Setup and Commissioning

5.1. Physical Address Assignment

To assign the physical address for the device within the KNX system:

1. Apply bus voltage to the device.
2. Press the 'Set Phys Adr' button (indicated by a 'U' symbol with an arrow) on the front of the device. The programming LED will illuminate.
3. Use the ETS (Engineering Tool Software) to download the physical address and application program to the device.
4. Once programmed, the programming LED will turn off.

5.2. ETS Configuration

The full functionality of the RM 16 S KNX is configured via the ETS software. This includes:

- Assigning group addresses to individual channels.
- Configuring switching functions (ON/OFF, pulse, delay, staircase lighting).
- Setting up logical operations (AND, OR, lock).
- Defining scene control parameters.
- Configuring feedback objects for each channel.

6. Operation

6.1. Manual Operation

Each channel (C1-C16) has a corresponding manual override button on the front panel. These buttons allow for local control of the outputs, independent of the KNX bus voltage.

- Pressing a button toggles the state of the corresponding relay output.
- The LED next to each button indicates the current switching status of the channel (ON/OFF).

6.2. KNX Bus Operation

The primary operation of the device is via the KNX bus system. Commands sent over the bus will control the switching states of the 16 channels based on the ETS configuration.

- **Switching:** Control individual channels or groups of channels (e.g., lights, blinds).
- **Scene Control:** Recall or save predefined scenes that involve multiple channels.
- **Central Commands:** Respond to central ON/OFF commands or continuous ON/OFF states.

7. Maintenance

The Theben RM 16 S KNX is designed for maintenance-free operation. However, periodic checks are recommended:

- Ensure all connections are secure and free from corrosion.
- Keep the device free from dust and debris.
- Do not use abrasive cleaners or solvents.

In case of malfunction, refer to the troubleshooting section or contact qualified personnel.

8. Troubleshooting

Problem	Possible Cause	Solution
Device not responding to KNX commands.	No bus voltage; incorrect physical address; application program not loaded; bus line fault.	Check bus voltage; verify physical address in ETS; download application program; check bus line for shorts or breaks.
Channel not switching.	No power supply to device; load exceeding maximum rating; faulty wiring; relay malfunction.	Check main power supply; verify load current; inspect wiring connections; if relay faulty, contact support.
Manual override not working.	Device not powered; internal fault.	Ensure device has power; if problem persists, contact support.

If the problem persists after attempting these solutions, please contact Theben technical support or a qualified electrician.

9. Technical Specifications

Parameter	Value
Model Number	RM 16 S (4940225)
Manufacturer	Theben
Number of Channels	16
Operating Voltage	110-240V~50-60Hz
Max. Switching Current per Channel	16 A

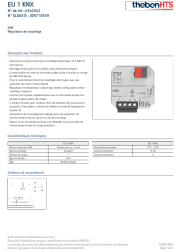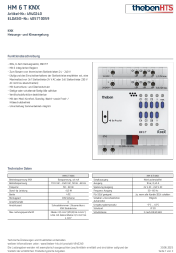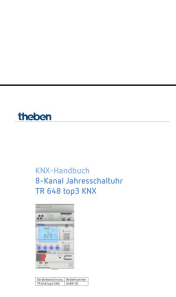| Parameter	Value
Max. Switching Power	2000 W
Output Power	3680 W
Mounting Type	DIN Rail (REG)
Width in Division Units (TE)	8 TE
Protection Class (IP)	IP20
Product Dimensions	8.4 x 6.4 x 14 cm
Weight	590 g
Usage	Commercial and private use
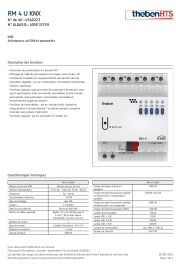
10. WARRANTY AND SUPPORT
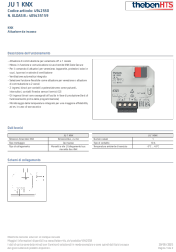
For warranty information and technical support, please contact your local Theben distributor or visit the official Theben website. Keep your purchase receipt as proof of purchase.

Theben GmbH
Hohenbergstraße 32
72401 Haigerloch
Germany

Note: Specific warranty terms may vary by region. Please consult the official Theben documentation or website for the most up-to-date information.

Related Documents - 4940225

[Theben RM 4 U KNX Actuator: Technical Specifications and Functions](#)
Detailed technical specifications, functions, and connection diagrams for the Theben RM 4 U KNX actuator, a 4-channel DIN rail switch actuator for KNX systems.

[Theben JU 1 KNX Flush-Mounted Actuator: Technical Specifications and Features](#)
Detailed technical specifications and functional description for the Theben JU 1 KNX flush-mounted actuator. Learn about its features, connection diagrams, and compatible accessories for KNX smart home systems.

[Theben EU 1 KNX: Compact Heating Actuator for KNX Systems](#)
Discover the Theben EU 1 KNX, a compact and secure flush-mounted actuator for electric heating systems. This document details its functions, technical specifications, and connection diagrams, highlighting its KNX Data Secure compatibility and integrated temperature monitoring.

[Theben FCA 2 KNX Fan Coil Actuator for Heating and Climate Control](#)
Technical specifications and functional description of the Theben FCA 2 KNX fan coil actuator, designed for heating and climate control systems using KNX technology. Includes wiring diagrams, dimensions, and accessory information.

[Theben HM 6 T KNX: 6-Way Heating Actuator for KNX Systems](#)
Detailed technical specifications and functional description of the Theben HM 6 T KNX, a 6-way heating actuator for KNX TP systems, designed for controlling thermal actuators in heating and climate control applications.

[KNX-Handbuch: 8-Kanal Jahresschaltuhr TR 648 top3 KNX](#)
Umfassendes Handbuch für die 8-Kanal Jahresschaltuhr Theben TR 648 top3 KNX. Enthält technische Daten, Beschreibung des Applikationsprogramms, Kommunikationsobjekte und Parameterseiten für die intelligente Gebäudeautomatisierung.