CURTAIN MOTOR · KNX

WS-CM-KNX

Installation, operation and KNX technical manual



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1 Safety notes

- Read this manual completely before installing or using the product.
- Indoor use only. Install in a dry, ventilated location.
- Installation must be carried out by qualified personnel. Disconnect mains power before any work.
- Check that the mains voltage matches the rated input of 100 – 240 VAC.
- Do not use the product if the housing is damaged.
- The ceiling or wall must carry the full weight of the track, motor and curtain fabric.
- Do not dispose of the product with household waste. Return it to an appropriate collection point for electrical and electronic equipment.

2 Product overview

The WS-CM-KNX is a motor for flat (track) curtains. It connects to the KNX bus and works with other KNX devices as part of a building control system. Physical address and parameters are set with ETS. The motor can also be operated with an optional 433 MHz RF remote.

Application. Flat curtains on motorised tracks, up to 12 m and 50 kg.
Packaging. Single unit in kraft paper box, 292 × 112 × 62 mm.

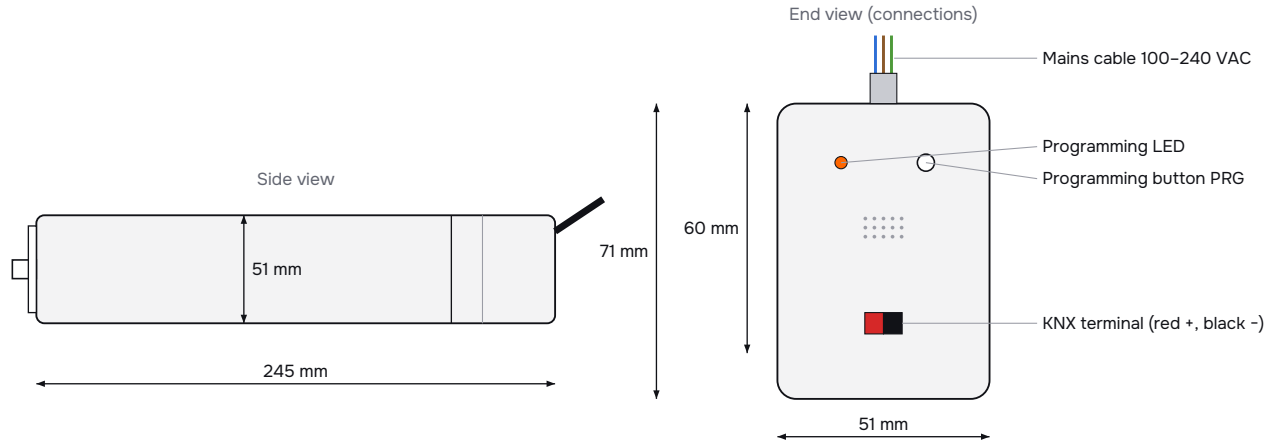
Features

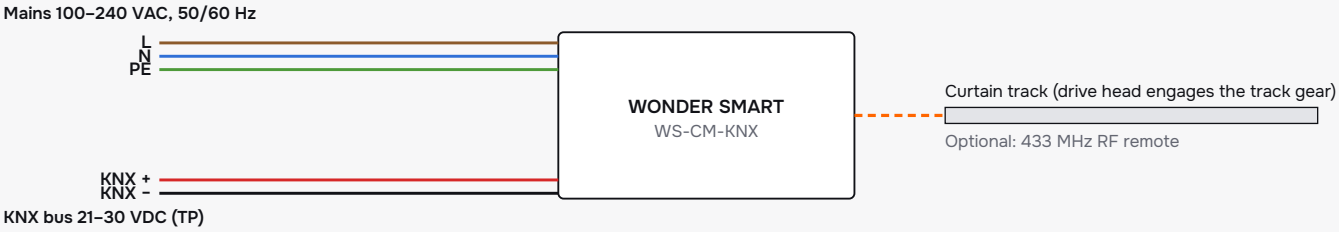
- Hand-pull start: a gentle pull of about 5 cm starts the motor in that direction.
- Manual operation during power failure, like a conventional curtain.
- Obstacle detection: the motor stops automatically when it meets resistance.
- Automatic end-position learning on the first run after power-up.
- Fabric rebound correction: the motor stores the rebound point so the fabric is not compressed at the end stop.
- Position recovery: after the curtain is moved while unpowered, settings are restored at the first end stop.
- Real-time feedback of position, direction and end positions over KNX.
- Two control interfaces: KNX and optional 433 MHz RF remote.
- 8 scenes per channel with scene learning; wind, rain and frost alarms; blocking functions.

3 Technical data

Model		WS-CM-KNX · KNX curtain motor
ELECTRICAL	Supply voltage	100 – 240 VAC, 50/60 Hz
	Rated motor power	45 W
	Mains connection	3-core cable: L Brown, N Blue, PE Green/Yellow
KNX	Bus voltage	21 – 30 VDC (KNX TP)
	Bus current consumption	< 5 mA
	Bus connection	KNX terminal (red/black)
	Commissioning	ETS; physical address via PRG button
	Channels	1 curtain channel (channel A)
CONTROL	Control interfaces	KNX; RF remote 433 MHz (optional)
	Local operation	Hand-pull start; manual operation during power failure
	Feedback	Position (0 – 100 %), direction / movement, end positions
MECHANICAL	Rated torque	1.2 N·m
	Travel speed	14 cm/s
	Maximum curtain load	50 kg
	Track length	0.9 – 12 m
	Rated continuous run time	4 min
	Noise level	33 dB
	Dimensions	245 × 51 × 71 mm
	Weight	0.55 kg
ENVIRONMENT	Operating temperature	-10 … +55 °C
	Ingress protection	IP20, indoor use only

4 Dimensions and connections

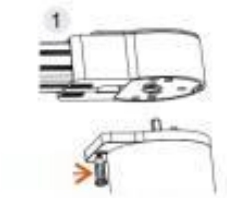




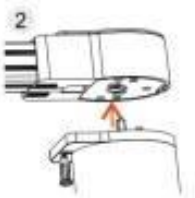
Power-up order. Power the motor from the mains first, or at the same time as the KNX bus. If the KNX bus is powered first, the physical address may fail to download.

5 Installation and removal

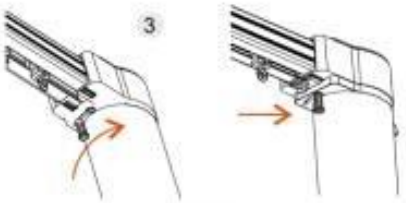
Installation



1 Check the head lock. If it is on the right, pull the lock to the left.

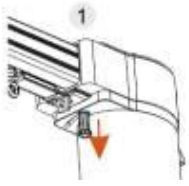


2 Insert the motor into the track drive box.

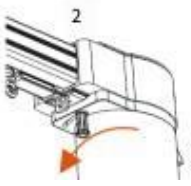


3 Push the lock lever to the right until the head drops into the limit hole.

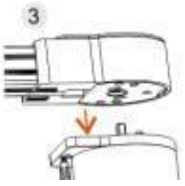
Removal



1 Pull the head lock bar down to release it from the limit hole.



2 Pull the head lock lever to the left.



3 Remove the motor.

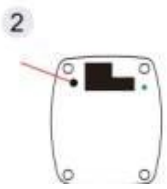
6 RF remote control (optional)

The motor can be used without a remote: all functions are available from KNX panels. An optional 433 MHz remote can be paired as follows.

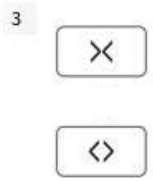
Pairing a remote



1 Switch on the mains power to the motor.

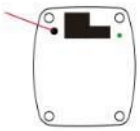


2 Press and hold the function key on the motor for more than 3 s, then release.



3 Press the Open or Close key on the remote. The remote is paired.

Clearing all paired remotes



Press and hold the function key on the motor for more than 5 s until the indicator flashes quickly. All paired remotes are deleted.

7 KNX commissioning

Complete KNX commissioning before setting the curtain travel.

1. Power the motor from the mains first, then connect the KNX bus.
2. Press the programming button PRG. The programming LED lights up.
3. Import the WS-CM-KNX ETS application into the ETS project and use channel A.
4. Set the parameters, then download the physical address and application. When the download is complete the programming LED goes off.
5. Link the group addresses of the KNX panels or push buttons to the motor objects.

> On the first run after power-up the motor learns the end positions automatically: run it fully open and fully closed once. Position feedback is valid after this run.

8 Communication objects

Objects 0 – 3 are global objects. They are shown even when no channel is active, and each channel can be set to respond to them or not. The motor uses channel A, objects 13 – 32. Objects are shown or hidden depending on the parameter settings.

Global objects

No.	Object	Size	DPT	Function
0	Shutter up/down	1 bit	1.008	Open / close all channels that respond to global objects
2	Stop	1 bit	1.001	Stop movement
3	Absolute position	1 byte	5.001	Move to an absolute position (0 – 100 %)

Channel A objects

No.	Object	Size	DPT	Function
13	Shutter up/down	1 bit	1.008	Open (0) / close (1)
14	Short time operation	1 bit	1.007	Short step movement; stops a running motor
15	Stop	1 bit	1.017	Stop movement
16	Scene	1 byte	18.001	Call / save scenes 1 – 64
17	Status actual direction / Status of movement	1 bit	1.008	Direction (1 = up, 0 = down) or movement (1 = moving)
18	Absolute position	1 byte	5.001	Move to position: 0 % = fully open, 100 % = fully closed
20	Status actual position	1 byte	5.001	Actual position feedback
22	Act. position valid	1 bit	1.002	1 = position is calibrated and valid

No.	Object	Size	DPT	Function
23	Start driving to reference	1 bit	1.001	Hand-pull start: 1 = on, 0 = off
25	State upper position	1 bit	1.002	1 = curtain fully open
26	State lower position	1 bit	1.002	1 = curtain fully closed
27	Block absolute position	1 bit	1.003	1 = absolute position commands ignored
28	Block universal mode	1 bit	1.003	Blocks the functions selected in parameters
29	Wind alarm	1 bit	1.005	1 = alarm active, 0 = alarm cleared
30	Rain alarm	1 bit	1.005	1 = alarm active, 0 = alarm cleared
31	Frost alarm	1 bit	1.005	1 = alarm active, 0 = alarm cleared
32	Block	1 bit	1.003	Simple blocking: 1 = blocked, 0 = released

9 ETS parameters

Default values are shown in **bold**.

9.1 Channel selection

Parameter	Values	Description
Channel A	not active / **Shutter**	Set channel A to Shutter for the curtain motor. Channel B is not used.

9.2 Shutter settings

Parameter	Values	Description
Time for short term operation (ms)	50 – 1000 [**200**]	Duration of a single step for the short-time object.
'1' – Close/Down	0 % / **100 %**	Position assigned to the Close command. Only 0 % or 100 % are valid.
'0' – Open/Up	**0 %** / 100 %	Position assigned to the Open command. Only 0 % or 100 % are valid.
Stop way (running direction)	**Motor stop way A** / Motor stop way B	A: default direction. B: reversed direction, for motors installed on the opposite side.

Travel time parameters are not needed: the motor learns its travel automatically.

9.3 Position and status objects

Parameter	Values	Description
Object for reference drive	**not active** / active	Default state of hand-pull start. not active: hand-pull on. active: hand-pull off; object 23 "Start driving to reference" appears to switch it.
Object for absolute position	**not active** / active	Shows object 18.
Status objects	**not active** / active	Shows objects 20, 22, 25 and 26.
Status object for visualisation	**Status actual direction** / Status of movement	Content of object 17: direction (1 = up, 0 = down) or movement (1 = moving).

Absolute position: 0 – 100 % in 1 % steps; 0 % = fully open, 100 % = fully closed. End-position objects send 1 when the end position is reached and 0 when the curtain leaves it.

9.4 Scenes

Each channel supports 8 scenes. A scene number (1 – 64) and a target position are set for each. With learning active, the current position is stored when a save command arrives on object 16.

Parameter	Values	Description
Save scene	**not active** / active	Enables scene learning. If not active, save commands are ignored.
Scene A … H position	0 – 100 % [**0 %**]	Target position of the scene.
Scene number A … H	1 – 64 [**1**]	Scene number. Each scene in a channel needs a unique number.

Scene number	Call value (dec / hex)	Save value (dec / hex)
1	0 / 0x00	128 / 0x80
2	1 / 0x01	129 / 0x81
8	7 / 0x07	135 / 0x87
n	n - 1	n - 1 + 128
64	63 / 0x3F	191 / 0xBF

ETS converts scene numbers automatically: scene 1 is sent as value 0.

9.5 Weather alarms

Wind, rain and frost alarms move the curtain to a safe position. The alarm function must be activated first. Only the alarm with the highest priority is processed; lower-priority alarms are handled after it is cleared.

Parameter	Values	Description
Order of alarms	**Wind, Rain, Frost, Block** / Wind, Rain, Block, Frost / Wind, Block, Rain, Frost / Block, Rain, Wind, Frost	Priority of alarms and blocking.
Wind / Rain / Frost alarm	**not active** / active	Shows objects 29 / 30 / 31.
Cycle time	0 – 120 min [**30 min**]	Cyclic monitoring. The alarm object must receive 0 within this time, otherwise the alarm is triggered. 0 = monitoring off.
Action	**no action** / drive to top / drive to bottom	Reaction when the alarm is triggered.

Set the cyclic sending time of the weather station shorter than the monitoring time to avoid false alarms. If the weather station fails or a cable breaks, the alarm is triggered when the monitoring time runs out.

9.6 Blocking

Parameter	Values	Description
Action at blocking (value = 1)	**no action** / drive to top / drive to bottom	Reaction when object 32 receives 1. While blocked, the channel ignores other commands.
Action at reset of alarms / block	**no action** / drive to former position / drive to top / drive to bottom	Executed after all alarms and blocks are reset.
Reaction when bus power up	**no action** / drive to top / drive to bottom	Action on KNX bus recovery.
Reaction when bus power down	**no action** / drive to top / drive to bottom	Has no effect in practice: the motor is no longer controlled when the bus fails.

9.7 Extended blocking

Parameter	Values	Description
Object "Block absolute position"	**not active** / active	Shows object 27. With value 1, absolute position commands are ignored; 0 restores normal operation.
Block of absolute position via objects "Up/Down"	**not active** / active	Up/Down commands still move the curtain while absolute position is blocked.
Block override if upper position is reached	**not active** / active	Reaching the upper position cancels the absolute position block.
Object "Block universal mode"	**not active** / active	Shows object 28. Select what it blocks: manual control, up/down movement, absolute position, automatic mode, scenes.

All blocking objects are enabled with 1 and released with 0. Example: a channel blocked by a weather alarm can still be moved manually with Up/Down when that option is active.

10 Troubleshooting

Problem	Possible cause	Solution
Motor does not respond to the switch	Wrong wiring	Check the wiring against section 4.
Motor runs but the curtain does not move	Track not installed correctly	Check and adjust the clearance between the track gear and the belt.
Curtain moves by itself	Another transmitter was paired by mistake	Clear all paired remotes and pair the remote again (section 6).
Curtain cannot be pulled by hand	Power failure while running, or hand position blocked	Pull in the opposite direction first, then back; move the hand position back about 10 cm.
Physical address download fails	KNX bus powered before the mains	Power the motor from the mains first, then reconnect the KNX bus.

11 Support

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