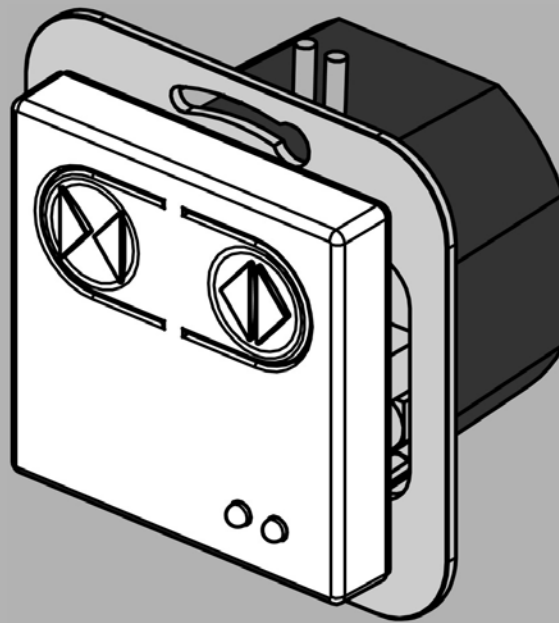


## INSTRUCTIONMANUAL



### 24V motor control device for flush box mounting

Product group:	shutters, sliding windows, sliding shutters
Version:	1.1
Language:	english
Orig. language:	german
Document:	-----



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### Document information

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### Declaration of conformity

This product fulfills the basic requirements of the applicable European Directives. The conformity was detected. The original of the Declaration of conformity is available as a separate document from the manufacturer.

### Technical subjects to change

Our products are always under further development and get improved. The data used for this document represents the state of the product at the time of the creation of this document.

Changings of technical details are excepted. Please use the latest version of the document and contact the manufacturer in case of doubt.



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## 1 About this document

### 1.1 Target group

This document addresses qualified personnel. Mounting is only done by technical educated, trained and qualified personnel. Electrical wirings are only done by the specialist.

This document has to be accessible for the executor, has to be understood and used.

### 1.2 Objective of this document

This document contains important information for mounting and wiring the product. This document has to be read before all working, handed and explained to the operator as well as kept available all the time as a part of the product.

### 1.3 Reference to other documents, guidelines and standards

Additional documents like guidelines, standards and laws for product of this art, have to be considered.



#### Hint

The fabricator has an increased duty to advise the customer. The relevant guidelines, standards and laws have to be considered.



## 1.4 Used Symbols



### Hint

A hint gives important and additional information.

---

### NOTICE

#### Description of type and source of hazards

Warnings, marked with this symbol, are related to safety.

Disregard may result in property damage.

- Steps to avoid hazards.
- 

### CAUTION



#### Description of type and source of hazards

This symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and/or property damage.

The following levels of warning show the severity and probability of possible hazards, in ascending order.

- CAUTION, coloured yellow
- WARNING, coloured orange
- DANGER, coloured red

- Steps to avoid hazards.
- 

- symbolizes a list with no specific order

**List**

1. symbolizes a list or instruction in specific order

- symbolizes an action
- symbolizes a reference
- ✓ symbolizes the result of the action

**Instruction**



## 2 Safety

### DANGER



#### Electric Shock

Danger to life and health due to electrical shock.

- Electrical connections have to be installed by approved personnel only
- Switch off power before carrying out work and secure power against being switched on.
- Observe relevant safety instructions.

### 2.1 Requirements for operation



#### Hint

Read the instruction manual before performing the initial operation.

#### 2.1.1 Ambient conditions

The 24 V motor control device for flush box mounting is designed for standard wall jacks in dry interior.

### 2.2 Proper use

This product is a motor control device for 24V DC motors of the manufacturer. It is powered by an internal 24V power supply. It allows connection to on site switches (0 / Open / Close).

The manufacturer's instructions must be observed, in especially maximum and minimum dimensions and maximum weight of the driven wing.

Any other use of this product is considered inappropriate use.

It is not guaranteed, that this product works with motors or other electronic devices of other manufacturers.

### 2.3 Behavior in case of an error

In case of an error, the device must be shut down and the manufacturer must be informed.

#### Shut down

- Do not operate device
- Disconnect device from power supply
- Inform the manufacturer



### 3 Functional description

The motor control device is designed for operation with a 24V DC motor. The motor usually drives a sliding door or a sliding shutter, to which it is connected by a timing belt. The motor control device is controlled by potential free inputs (0 / Open / Close).

The control device is designed to fit in a standard flush box, according to DIN 49073. The control device disappears into the flush box, including its electrical connections. For operation a removable switch is provided, which fits into commercial available switch ranges with standard dimensions of 55mm.

The control device is powered by an integrated 24V power supply.

For electrical connections, screw clamps are provided:  
Motor (clamps 1 and 2) and Inputs (clamps 3,4 and 5).

The control device provides the possibility to set up different parameters via a potentiometer, a DIP-switch with 4 channels and a reset key. Two LEDs display the operation state and simplify the initial operation.

The control device can be operated in semiautomatic mode or as deadman's control:

- In semiautomatic mode, the drive operates as long as no obstruction is detected or the end is not reached, even if the control signal is no longer applied.
- In deadman's control mode, the drive operates as long as no obstruction is detected or the end is not reached, but it stops instantly, when the control signal is removed..

Furthermore the control device allows to set up whether it is used with a motor of generation Prometheus XS or Prometheus XS-2 and whether it is used with a motor for an 80kg wing or for with a motor for a 120kg wing.

When the control device is correctly installed and the initial operation is done, the control device drives the connected 24V DC motor. When the motor current raises above a limit, the control devices shuts down the motor. This is called power operated shutdown, because by limiting the motor current, the motor torque is also limited. In this way, the control device recognizes obstructions and switches off the motor.

The power operated shutdown is also used to recognize the end positions. Because the current consumption of the motor rises, when it reaches the end position, the control device shuts the motor down.

During initial operation, the control device measures the duration of a normal cycle. A short time before the wing reaches the end, the motor slows down. This reduces mechanical wear and increases safety.

The control device can also be operated generally in slow speed.

**Motor control device**

**Mounting and look**

**Power supply**

**Electrical connection**

**Display and settings**

**Operation modes**

**Power operated shutdown**

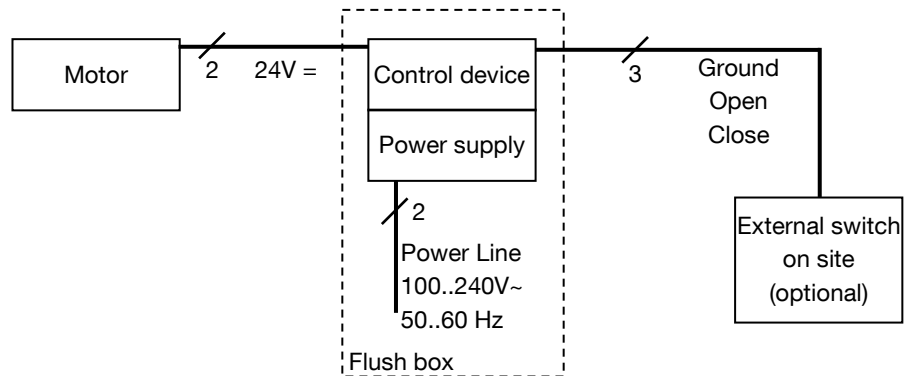
**Low Speed**



## 4 Wiring

### 4 Wiring

#### 4.1 Wiring diagram



#### 4.2 Wiring requirements

The following specifications are minimum requirements.

Wire	Type of wire
Between motor and motor control device	Motor power supply (24V =) up to 20 m: 2 x 0,50 mm <sup>2</sup> 20 to 50 m: 2 x 0,75 mm <sup>2</sup> 50 to 100 m: 2 x 1,50 mm <sup>2</sup>
Between external switch and motor control device	optional up to 50 m: 3 x 0,25 mm <sup>2</sup>

Table 1 – Wire types





## 5 Mounting and electrical connection

### ⚠ WARNING



#### Wrong installation

- Install this control device only in flush boxes in dry interior.

### 5.1 Mounting in a flush box

Dimensions of this control device are designed to fit into flush boxes according to DIN 49073 or similar boxes. Pay attention to the maximum depth of the device according to chapter 5.3.



#### Hint

Mounting of the flush box, cable laying, installation of switch range, etc. is not explained in this document.

- Complete cable installation
- Disconnect main power supply
- Protect against power up
  - Safety instructions, refer to chapter 2
- Prepare cables to motor and power supply for connection
- Install control device in flush box
- Carry out electrical connections
  - Electrical connections, refer to chapter 5.4
- Fix control device with two screws
- Start initial operation
  - Initial operation, refer to chapter 6
- Place cover (not included) over control device
- Plug switch through cover into control device
- ✓ Control device and switch are mounted

**Mount the control device**

**Mount the switch**

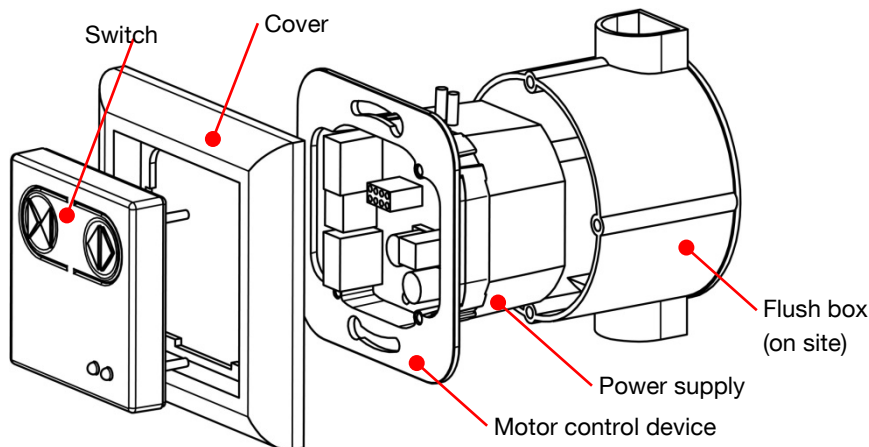


Figure 1 – Installation



## 5 Mounting and electrical connection

### 5.2 Dismounting

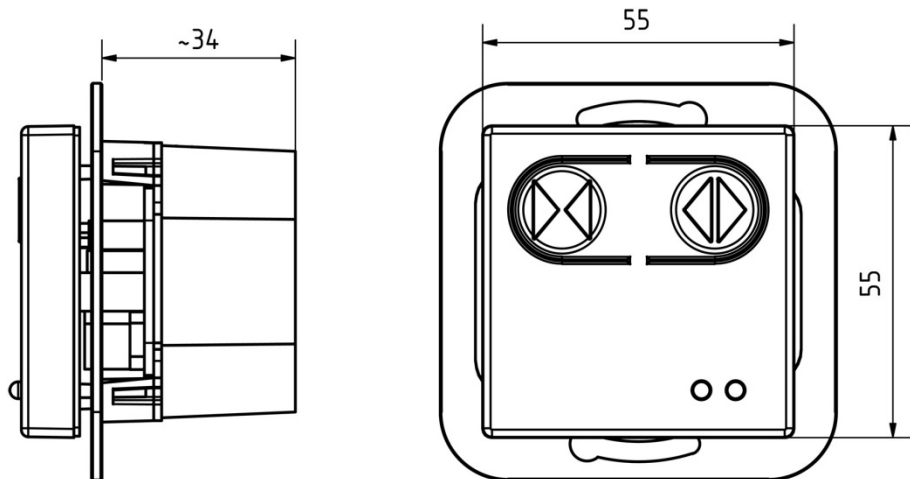
#### Dismount the control device

- Disconnect main power supply
- Protect against power up
  - Safety instructions, refer to chapter 2
- Unplug switch and remove cover
- Remove electrical connections
- Remove both screws
- Take control device out of the flush box
- ✓ Control device is dismantled

### 5.3 Dimensions

The control device including power supply unit needs 34mm in depth.

The dimension of the switch is 55mm each side.





### 5.4 Electrical connection

#### **CAUTION**



#### **Wrong installation**

Damage of control device through wrong installation.

- Watch polarity of connections
- Use potential free input signals (only clamp 1 to 3)

- Disconnect main power supply
- Protect against power up  
→ Safety instructions, refer to chapter 2
- Connect integrated power supply to AC line
- Connect motor: clamps 4 and 5  
Polarity determines direction of operation
- Connect on site switches (optional):  
Clamps 1, 2 and 3
- ✓ Control device is connected

#### **Prepare electrical connections**

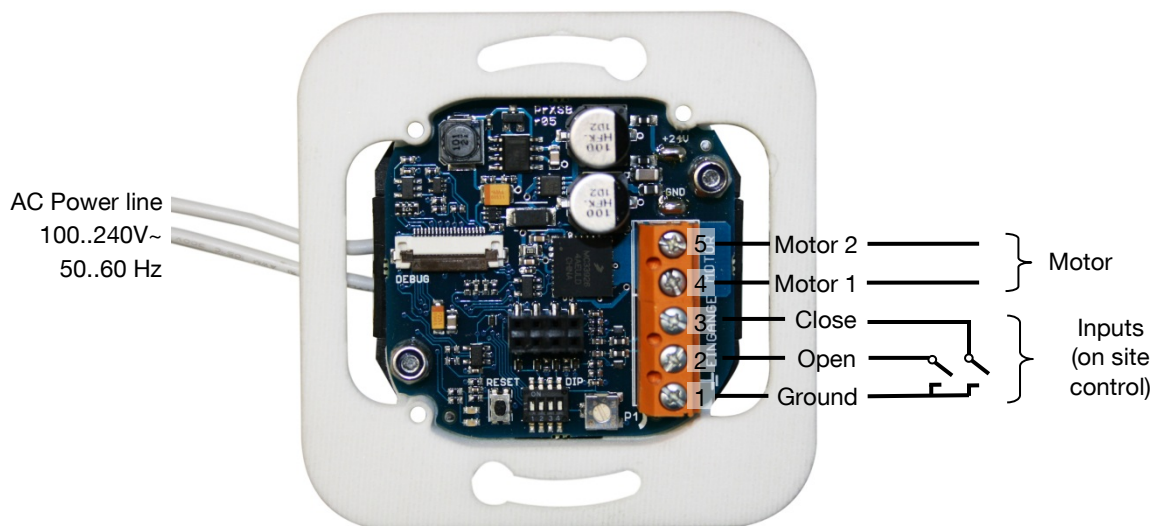


Figure 2 – Control device connections, top view

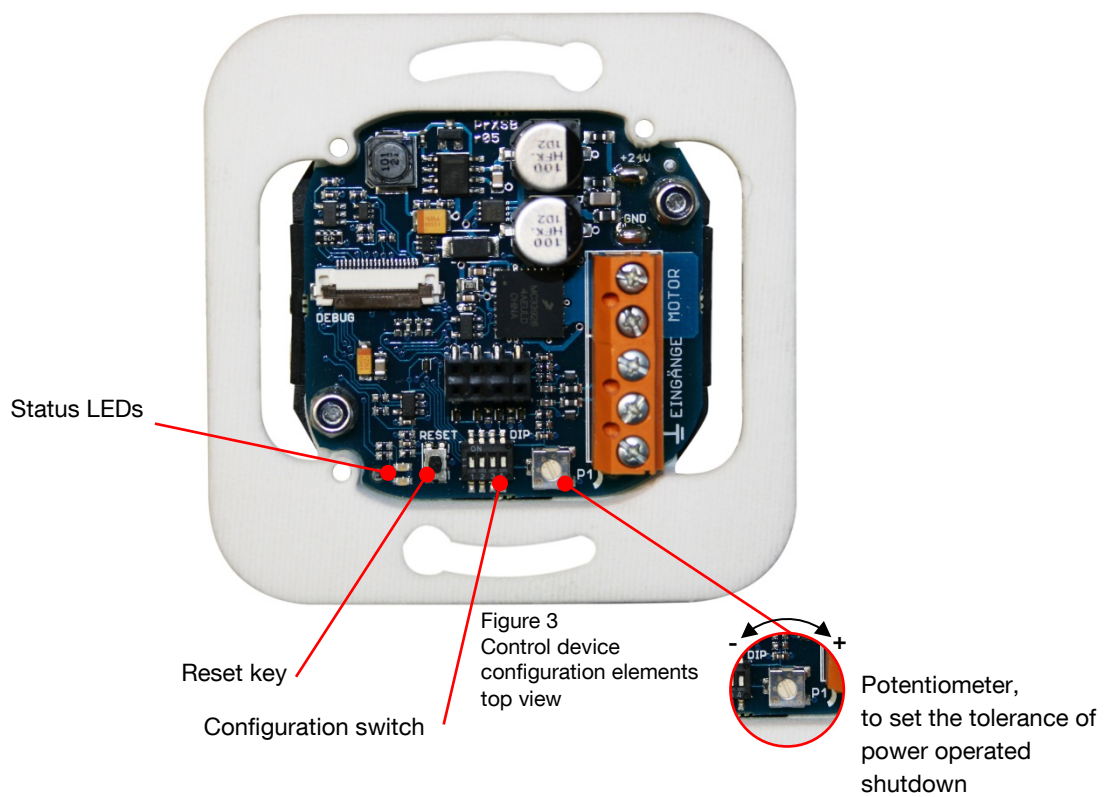


## 6 Initial operation

### 6 Initial operation

When the control device is mounted and electrically connected, the initial operation must be performed.

The following sections describe the parts of the control device, which are relevant for the initial operation. The following chapters describe step by step, which functions must be set up and how the initial operation is done.





## 6.1 Configuration

---

### NOTICE

#### Overtightened potentiometer

Damage of control device may result in malfunction.

Potentiometers have a right and a left stop, which must not be overtightened.

- Adjust potentiometer only with low force and with an appropriate screw driver.



#### Hint

Changes in configuration when the initial operation is done, will force the control device to perform a new initial operation.

→ Perform initial operation, refer to chapter 6.2

### 6.1.1 Tolerance of power operated shutdown

In some cases the drive will not shut down correctly during or after initial operation. Or the drive stops, before it has reached the end position. This particularly happens, when a very heavy or a very lightweight wing is used.

---

### NOTICE

#### Motor overload

Damage of components by motor overload.

- Check after any change of configuration, if the control device shuts down correctly.
- Do not set tolerance too high.

When the drive stops early

- Turn potentiometer 1 clockwise
- ✓ Drive switches off later

**Increase tolerance**

When the drive does not stop

- Turn potentiometer 1 counterclockwise
- ✓ Drive switches off sooner

**Decrease tolerance**



#### Hint

After a maximum time of 5 minutes, the drive switches off in each case.



## 6 Initial operation

### 6.1.2 Configuration switch

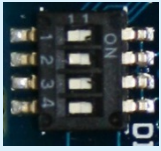
	Switch	Description	OFF	ON
	1	Deadman's control	Semi automatic	Deadman's control
	2	Motor type	Prometheus XS/80/MT	Prometheus XS/120/MT
	3	Maximum speed	normal	reduced
	4	Motor generation	XS-2	XS

Table 1 – DIP-switch

1. Semiautomatic function /Deadman's control  
When the semiautomatic function is active, the drive is active as long as no obstruction is detected or the end position is not reached, even if the control input is not active any more.  
When the deadman's control is active, the drive is active as long as no obstruction is detected or the end position is not reached, but it stops instantly, if the control input becomes inactive.
2. Motor type  
Set switch according to used motor.
3. Maximum speed  
Set this switch to ON, if the drive should run in reduced speed only.
4. Motor generation  
Set switch according to used motor.



## 6.2 Steps during initial operation

### WARNING



#### Moving wing

Danger of injury by squashing, shearing or collision, caused by moving wing.

- Wing moves independently during initial operation.
- Keep danger area clear during initial operation.

- Prepare electrical connections
  - Refer to chapter 5.4
- Set configuration
  - Refer to chapter 6.1

#### Prepare control device

- Switch power supply on
- ✓ Control device in delivery status or after power cut:  
Red LED blinks continuously twice with a short break of 1.5 sec
- Press RESET for 2 seconds

#### Reset control device



- ✓ Red LED blinks continuously
- Check driving direction of motor  
When pressing OPEN, wing has to open and when pressing CLOSE, wing has to close
  - When driving direction is wrong:  
Swap motor cables (clamp 4 and 5), check driving direction again
- Press RESET again for 2 seconds



- ✓ Red LED lights up permanently,  
Green LED lights up, when motor is active
- ✓ Drive performs a few runs.
- ✓ LEDs go out



- ✓ Red LED starts blinking continuously
- In this state (about 30 seconds) additional complete cycles may be performed.  
These cycles have to be triggered by user and are optional.
- ✓ After 30 seconds without any function, the LED goes out



- Check desired function
- In case of malfunction, check electrical connections and configuration
  - Electrical connection, refer to chapter 5.4
  - Configuration, refer to chapter 6.1
  - Repeat initial operation, if necessary
- ✓ Initial operation is completed, when function is correct

#### Check function



## 7 Wireless receiver

### 7 Wireless receiver

For wireless operation of the control device, a wireless receiver is available in two different variants: Wireless receiver with additional manual keys or wireless receiver without keys. The receiver replaces the standard key cover of the control device. No additional connections are required.

#### 7.1 Mounting of wireless receiver

##### Mounting of receiver

The mounting of the wireless receiver is equal to the mounting of the standard key cover. (Refer to chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**)

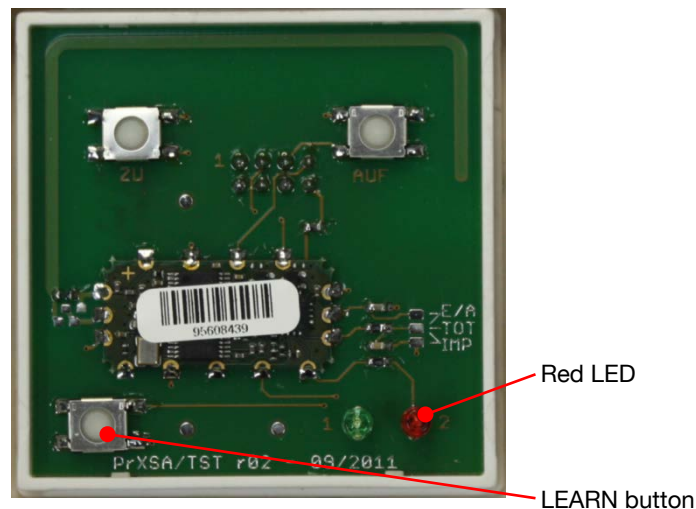
- Mount control device in flush box (Refer to chapter **Fehler! Verweisquelle konnte nicht gefunden werden.**).
- Place cover (not included) over control device.
- Plug wireless receiver through cover into control device.
- ✓ Wireless receiver is mounted.

#### 7.2 Programming of wireless receiver

To teach-in hand transmitters, access to the LEARN button is needed. Therefore the cover of the wireless receiver must be removed.

##### Preparation of receiver

- Remove front cover of receiver.
- Hold hand transmitter ready.
- Place cover over receiver, when programming is done.



Picture 4 – Wireless Receiver





### 7.2.1 Teach-in of a hand transmitter

- Press LEARN button for less than 1 second.
- ✓ Red LED blinks slowly.
- Press any key of hand transmitter.
- ✓ Red LED lights up for about 4 seconds and continues blinking then.
- ✓ Hand transmitter is teached.
  - If applicable, repeat procedure for further hand transmitters.
- Press LEARN button, when finished.
- ✓ Red LED goes out.

#### Teach-in of a hand transmitter

The teach-in of further hand transmitters goes analogue to the teach-in of the first hand transmitter. Teached-in transmitters stay teached, until they are deleted.

#### Teach-in of further hand transmitters

### 7.2.2 Delete teached hand transmitters

- Press LEARN button for more than 2 seconds.
- ✓ Red LED blinks fast.
- Press any key of the hand transmitter.
- ✓ Red LED lights up for about 4 seconds and continues blinking then.
- ✓ Hand transmitter is deleted.
  - If applicable, repeat procedure for further hand transmitters.
- Press LEARN button, when finished.
- ✓ Red LED goes out.

#### Deleting a teached hand transmitter

- Press LEARN button for more than 2 seconds.
- ✓ Red LED blinks fast.
- Press LEARN button for more than 2 seconds.
- ✓ Red LED lights up for about 4 seconds.
- ✓ Red LED goes out.
- ✓ All hand transmitters are deleted.

#### Deleting all teached hand transmitters



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7

Wireless receiver



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7

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