

# EMZY

System manual

# Legal notice

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Original operating instructions

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This edition shall not longer be valid upon publication of a new system manual.

You can find the latest edition in the EVVA download area:



<https://www.evva.com/at-de/service/downloads/>

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# 1 Introduction

This system manual contains additional information on the EMZY product and the associated accessories.

The products/systems described in the system manual may only be operated by persons who are qualified for the respective tasks. Qualified personnel have the expertise to recognise risks when handling these products/systems and are thus able to avoid possible hazards.

## 1.1 General legal information

EVVA concludes the contract governing the use of EMZY and its software subject to the EVVA GTC (General Terms and Conditions) and EVVA ALB (General Licensing Conditions).

You can access the EVVA General Terms and Conditions and EVVA General Terms and Conditions at:



<https://www.evva.com/at-de/impressum>



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The above information must be observed and relates to the manufacturer's liability for its products as defined in the Product Liability Act and must be forwarded to the operators and users. Non-compliance releases EVVA from any liability.

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Keep the system components away from small children and pets. Risk of suffocation due to small parts that can be swallowed.

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EVVA provides **architects and consulting institutions** with all the product information they need to comply with their information and instruction obligations under the Product Liability Act.

Specialist retailers and installers must comply with the information in EVVA documentation and they must pass on such information to customers, where applicable.

## 1.2 EVVA Support

The EMZY is a sophisticated and proven product for automatic locking and release. If you require additional support, please contact your EVVA partner directly.

You can access the list of certified EVVA Partners here:



<https://www.evva.com/at-de/haendlersuche/>






General information on EMZY can be found here:



<https://www.evva.com/emzy/>

## 1.3 Explanation of Symbols

For greater clarity, the following symbols are used in the system manual:

Symbol	Meaning
	Caution, risk of property damage if the appropriate precautions are not taken
	Notes and additional information
	Tips and recommendations
	Warning or error messages
	Options



Links



Step-by-step instructions

## 2 Hardware and installation

### 2.1 Motorised thumbturn

The entire motorised thumbturn comprises of the motorised gear unit, control electronics and other mechanical components.

#### 1.1.1 Motorised thumbturn mechanism

The EMZY EBT motorised thumbturn is electrically driven. The motorised thumbturn mechanism includes all mechanical components necessary for electrical locking and release and for additional functions such as manual emergency opening.

#### The motorised thumbturn incorporates the following functions

- Automated locking and release of thumbturn cylinders
- Emergency opening from the outside is possible at all times with a mechanical key, even during a power failure.
- Emergency opening from the inside at any time by manually turning the motor thumbturn, even during a power failure
- It is possible to mechanically remove the twist grip (i.e. the body) to facilitate dismantling and servicing of the motorised thumbturn.

#### Mechanical compatibility with the following EVVA thumbturn cylinder products

- MCS
- 3KS
- 3KS+
- 4KS
- ICS:
- EPS
- Akura44 (in preparation)



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An EMZY cylinder as ordered, contains a thumbturn cylinder with different components made of other materials, which ensure the longevity of the product despite higher forces and torsional moments.

If a normal thumbturn cylinder is used, the service life of the cylinder is massively reduced and components may break.

In order to ensure a long service life of (>300,000 cycles), we only recommend the use of cylinders intended for the purpose or the conversion of existing cylinders with components intended for the purpose.

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## Mechanical properties

- Dimensions: Length  $\leq 73$  mm and diameter  $\leq 43$  mm
- Dimensions comply with the requirements for a manual emergency override.
- Backset:  $\geq 35$  mm for standard-compliant door installation in accordance with ÖNORM B3850, DIN 1810
- Supports cogwheel with 10 teeth and 18 teeth, as well as double locking cams
- Support of thumbturn cylinders with SOS function provides user safety in the event of manual key opening from the outside and simultaneous motorised opening
- Installation is possible in single and double-leaf doors, in solid or tubular frame doors, and in doors made of wood, plastic or metal
- Supports single and multi-turn locks
- Escutcheon-independent
- Compatible with Euro profile with PZ perforation (DIN 18252, EN 1303), profile RP22, Scandinavian oval profile and Australian oval profile.
- Protective metal body construction with injection-moulded LED / thumbturn button end cover
- Adjustment of the gap between thumbturn and escutcheon  $\leq 1$  mm if the cylinder protrudes  $\geq 5$  mm from the escutcheon
- Operating temperature range:  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  at 20–80% relative humidity, non-condensing
- Storage temperature range:  $-40^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$
- IP class: IP54
- Torque:  $\leq 2$  Nm at the cam, adaptive, adjustable
- Opening speed:  $< 1.5$  s/lock cycle
- Opening cycles:  $\geq 300,000$  (one cycle consists of 2 rotations – opening and closing)

### 1.1.2 Motorised thumbturn electronics

The motorised thumbturn contains all the electronic components that make electrical locking and release possible. In addition, the electronics facilitate the control of communication interfaces, power management, the integration of a thumbturn and a visual display of the door status.

#### The following functions are provided by EMZY

- Operation using the building's emergency power supply.
- Configuration, status display and firmware update via BLE interface and app, opening using the integrated thumbturn or external door push-button or other signal transmitter. The door status is visually signalled on the thumbturn and can be recognised at a distance of several metres thanks to RGB LEDs.
- Option of deactivating the door status visual display.

#### Features not related to functionality

- In the event of a power failure, time settings are retained for a maximum of 2 minutes.



- Other storage information is retained for a maximum of 10 years in the event of a power failure.
- Operating temperature range: -20°C to +70°C at 20–80% relative humidity, non-condensing.
- Storage temperature range: -40°C to +90°C.

## Interfaces

Power supply input via a connection cable coming from the power supply unit (either directly or via the optional I/O box).

- inputs switchable to earth for optional connection of bolt contact, door contact and door push-button.
- RS485 wired interface protocol for connecting an optional I/O box via two connecting cables. Two of the inputs described above are used for RS485. These are determined during implementation.
- BLE interface for configuration via mobile device, as preparation for future wireless connection of an optional I/O box.
- Thumbturn button with mechanical detection of manual actuation.
- Output of the visual door status display.
- The motorised thumbturn electronics are fixed inside the motorised thumbturn body

### 1.1.3 Motor thumbturn firmware

The motorised thumbturn firmware includes all firmware-based components that enable electrical locking and release as well as additional functionality such as configuration, self-learning or mode switching.

#### Firmware functions

- Configuration, status queries and FW updates are carried out via a BLE interface.
- Optional I/O boxes are also configured and updated by the motorised thumbturn. Transfer of configuration files and firmware images via the RS485 bus.
- After starting the commissioning via BLE interface, the motor thumbturn firmware adjusts autonomously to the installation situation.
- Operating mode changeover can be triggered by pressing the thumbturn button (> 5 s); the most recent changeover always applies, regardless of the source.
- Possibility of deactivating the thumbturn button to prevent manual opening from the inside if required.
- Automatic detection of whether a wired RS485 connection is active or whether door push-button and/or door contact or bolt contact are directly connected to the motor thumbturn via an input connected to earth.



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Instructions for use and maintenance can be found in the operating manual. You can find these either in the product packaging or in the download area of the EMZY website:

<https://www.evva.com/emzy/>

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## 2.2 I/O box

### 2.2.1 I/O box mechanics

The I/O box housing accommodates the I/O box electronics and protects them from environmental influences. 6 cable inlets with cable strain relief and PG screw glands are provided. The unit is mounted on a DIN rail.

- The I/O box electronics are fixed inside the I/O box housing.
- Connecting cables required for power supply and communication with other system components are routed into the interior of the I/O box via strain-relieved cable glands and then connected to the I/O box electronics.
- The I/O box is stably mounted on the wall, usually using screws.

#### Features not related to functionality

- Operating temperature range: -20°C to +70°C at 20–80% relative humidity, non-condensing
- Storage temperature range: -40°C to +90°C
- IP class: none

### 2.2.2 I/O box electronics and firmware

It facilitates the connection of various control elements such as door push-button, door contacts, bolt contacts and external control and signalling interfaces. In addition, it supplies the motor thumbturn with power via a power supply unit connected by means of a connecting cable.

#### Functions

- Actuation of the EMZY by access systems with identification capabilities via input connected to ground, e.g.:
  - Xesar wall reader (connection to Xesar control unit [online/offline])
  - AirKey wall reader (connection to AirKey control unit)
  - Other RFID wall reader units
  - PIN code keypad unit
  - Biometric reader units including fingerprint, hand vein scan, eye scan, other
- The EMZY can be activated electronically by commercially available electric strikes.
- Connection to third-party systems via potential-free outputs that signal the door status (open, closed, locked, alarm).
- Output of the door status (locked, unlocked) to an integrated building control centre via potential-free output.
- Operating mode input: determines day/locked mode.

#### Features and specifications of the I/O box electronics

- Interface for connection of the motor thumbturn via 4 connections (+/-/RS485)
- The specified 5-pole cable (E.ZU.EMZY.EVKA4) can be used, whereby only 4 wires (+/-/RS485) are used in this case.
- Alternatively, especially if longer cable lengths are required (over 4 m), the connection between the I/O box and the RS485 terminal board can be made via a twisted pair or a Cat5e cable or via a 2 x 1.5 mm<sup>2</sup> power supply cable
- 5 inputs switchable to earth for control via external identification options, via door push-button or by remote control or for connection of bolt contact or operating mode switch.
- Potential-free outputs for controlling external devices such as those integrated in building control centres or electric strikes.
- Relay with 30 V / 1 A
- 1 relay with 240 V / 6 A
- Power supply input via a connection cable coming from the power supply unit.
- The I/O box electronics are fixed inside the I/O box housing.

## Features which are not related to functionality

- Can be fitted in a standard surface-mounted box 10 × 10 cm, w/o communication module.
- Fitted with pluggable and reverse polarity proof screw terminals, Phoenix screwless terminals as in the AirKey control unit.
- Cables ≤ 1.5 mm<sup>2</sup> cross-section can be connected.
- Preparation: define interfaces (communication and electronics) for subsequent access system integration via communication modules.
- Operating temperature range: -20°C to +70°C at 20–80% relative humidity, non-condensing.
- Storage temperature range: -40°C to +90°C.

## 2.3 Accesories

The complete list of recommended EMZY accessories and their specifications can be found via an EVVA data sheet search or in the price list:



<https://www.evva.com/emzy/>

## 2.4 Connection diagrams

All the various connection diagrams featuring different cable lengths and showing the connection to Xesar and AirKey can be found on the EMZY website in the download area:



<https://www.evva.com/emzy/>

## 3 EMZY app

The EMZY app is only for configuring and maintaining the motorised thumbturn and the I/O box. The app can be downloaded from the Google Playstore for Android smartphones or from the Apple Appstore for iPhones.

Configurations and firmware updates also run without an active internet connection.



[Apple App Store](#)



[Google Play Store](#)

### 3.1 App structure

The EMZY app has 3 main menu headings:

- Search
- Settings
- Info

### 3.2 Search

All EMZYs within range are automatically displayed here. The search can also be updated under "New search".

Clicking on EMZY opens the password entry screen. The password and QR code are on the provided EMZY password card.

### 3.3 Settings

Settings includes commissioning, manual settings, status display, security settings and firmware update.

#### Commissioning

The EMZY and its components are ready for operation as soon as commissioning is completed. The process is guided step-by-step.

The door parameters must be set before beginning the commissioning process. Including latch retraction, the bolt switch contact and the settings for the inputs, for opening push-buttons or operating mode switches.

Up to 5 different opening buttons or operating mode switches can be set at the I/O box.

The inputs can also be tested in advance.

Step-by-step instructions with screenshots can be found on the EMZY website in the download area:



<https://www.evva.com/emzy/>

## **Manual Settings**

Various settings can be entered here and the configurations of the EMZY thumbturn can also be saved and loaded into other EMZY thumbturns.

### **Motor thumbturn parameters**

The signalling intensity can be set and switched on or off under this menu item.

Furthermore, permanent latch retraction can be set in office mode.

### **Motor thumbturn inputs**

As during commissioning, inputs can be configured retrospectively here. The integrated thumbturn button can be deactivated or operated as an intelligent thumbturn button. The intelligent thumbturn button acts as an operating mode switch and switches after the preset time to the other mode.

### **I/O box inputs**

Various I/O box inputs can be set and updated here for simple commissioning.

### **I/O box outputs**

Various alarms can be sent to third-party systems via up to 3 outputs.

### **Office mode alarm statuses**

Different alarm states can be selected, e.g. relating to tampering or if the door is not properly closed.

## **Locked Mode Alarm Conditions (Default)**

Different alarm states can be selected, e.g. relating to tampering or if the door is not properly closed.

## **Time parameters**

Various time settings can be made here.

## **Status**

The commissioning values, EMZY values, statistics and alarm statuses are displayed under Status.

## **Security**

The EMZY name and password can be changed under Security. The EMZY factory settings can also be reset here.

## **Software Update**

The EMZY thumbturn and I/O box firmware are updated using the software update function.

## **3.4 Info**

The following items can be found under Info:

### **Documents**

Direct access to this manual, first steps, various connection diagrams and installation instructions.

### **Diagnosis**

Read out and sending events, errors and warnings. The diagnosis also offers an additional download option for sending data to EVVA Support.

### **Data protection provisions**

Direct access to the data protection provisions.

### **Licences**

A list of all licence agreements and licences used.

### **GENERAL TERMS AND CONDITIONS OF BUSINESS**

Direct access to legal information and general terms and conditions.

### **Program libraries**

Displays the list of all program libraries used.

### **App version**

This item shows the version of the app used.