# MECHATRONIC SECURITY

TOKOZ ePRO

TOKOZ® SINCE 1920

# A UNIQUE SYSTEM COMBINING THE ADVANTAGES OF MECHANICAL AND ELECTRONIC SECURITY

Who has access? When and where? You control that in your building. You may control the access rights mechanically and electronically through safe encrypted communication.

The top level **ePRO** security is ensured by the patented **TOKOZ PRO** mechanical system and the electronic access rights verification.

An exceptionally variable and modular system, ideal even for sites without access to electricity.

☑ PATENTED LOCKING SYSTEM

☑ ACCESS RIGHTS LIMITED BY TIME

☑ ACCESS CONTROL

☑ **INSTALATION WITHOUT WIRES**

☑ EVENT LOG

☑ **WIRELESS COMMUNICATION**

☑ STANDARD BATTERY

# DUAL AUTHORISATION SECURITY

The user may only access the building if their key:

- has the proper mechanical code
- is electronically authorised to enter the cylinder
- fits into the defined time/date parameters
- the key is updated by the server application

# SECURING INDUSTRIAL BUILDINGS, STRATEGIC ONES IN PARTICULAR, REQUIRES PRECISE HIERARCHICAL SECURITY

You control who may access and when. We use electronically set access rights to protect your premises from unauthorised access.

Secure your building by the **TOKOZ ePRO** and **TOKOZ PRO** locks which have not been broken without using destructive methods. Even your insurance company and security agency will appreciate the highest level of security.

From entrance doors to warehouses, gates, containers, vans. We produce the widest range of locking solutions on the market.

All of our products are thoroughly tested in a government testing laboratory. You are buying a certified product of adequate resistance class.

The hierarchical systems may contain a combination of the **ePRO** mechatronics with the **TOKOZ PRO** mechanical locks.

Management

Administration

Production

Cleaning
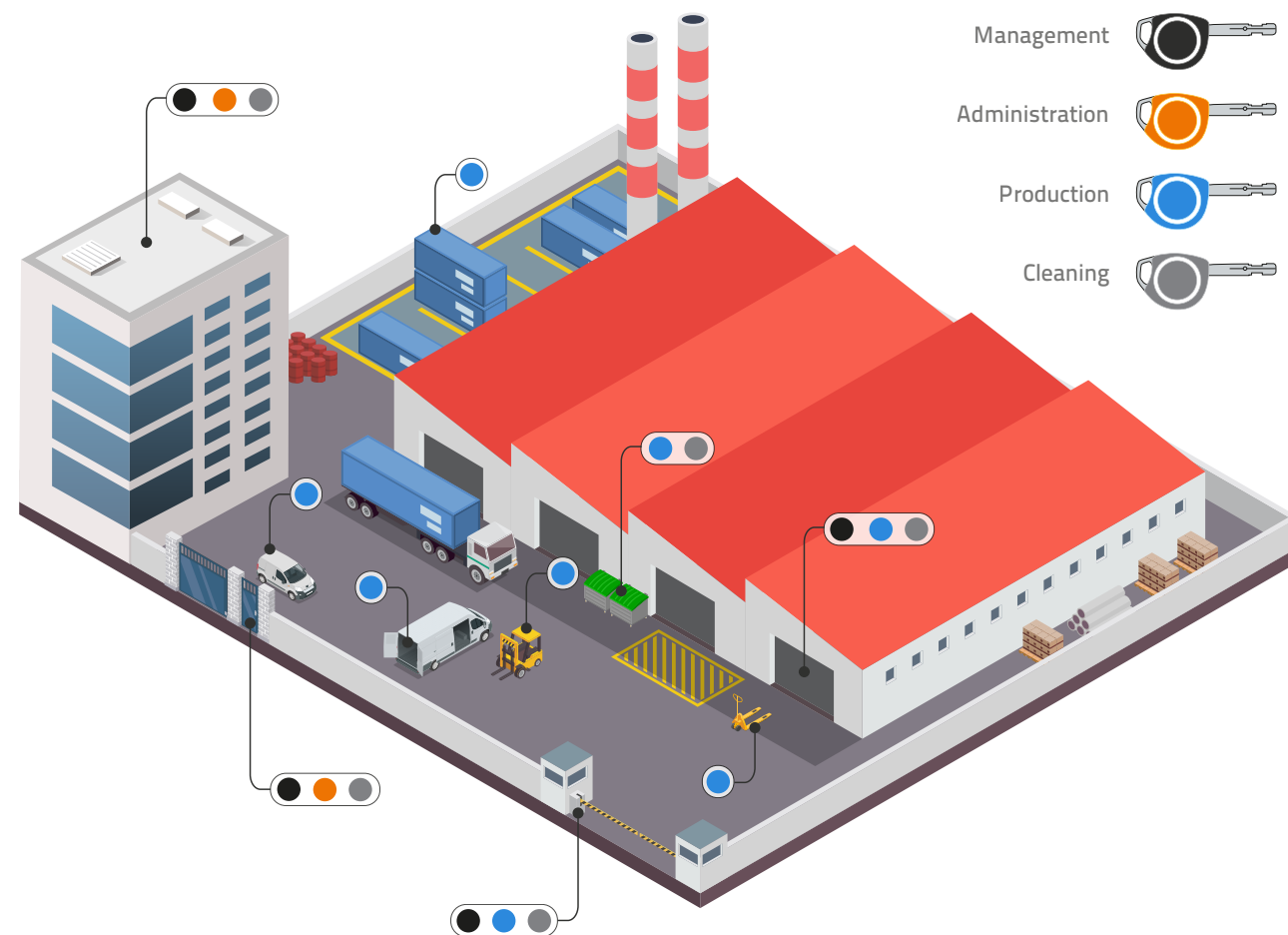
# THE **ePRO** SYSTEM DUAL AUTHORISATION PROVIDES MAXIMUM LEVEL OF SECURITY

The patented revolving disc technology combined with the AES 128 symmetrical encryption defend unauthorised key duplication. The spaces requested the highest security level are only accessible by authorised key holders.

Remote site buildings are usually secured by quality safety doors and fencing. Power supply is often not possible. The **ePRO** is a solution. The power supply provides the key. The **ePRO** mechatronic cylinders need no supply of electricity. They are reliable in any weather. All information is held encrypted within a stable memory.

The **ePRO** system allows access rights changes and records all events - who, where and when. The memory stores unsuccessful attempts to open as well.

# SENSITIVE DATA? HEALTH PROTECTION? FINANCE? WE PROTECT INSTITUTIONS AND PUBLIC BUILDINGS FROM UNAUTHORISED ACCESS
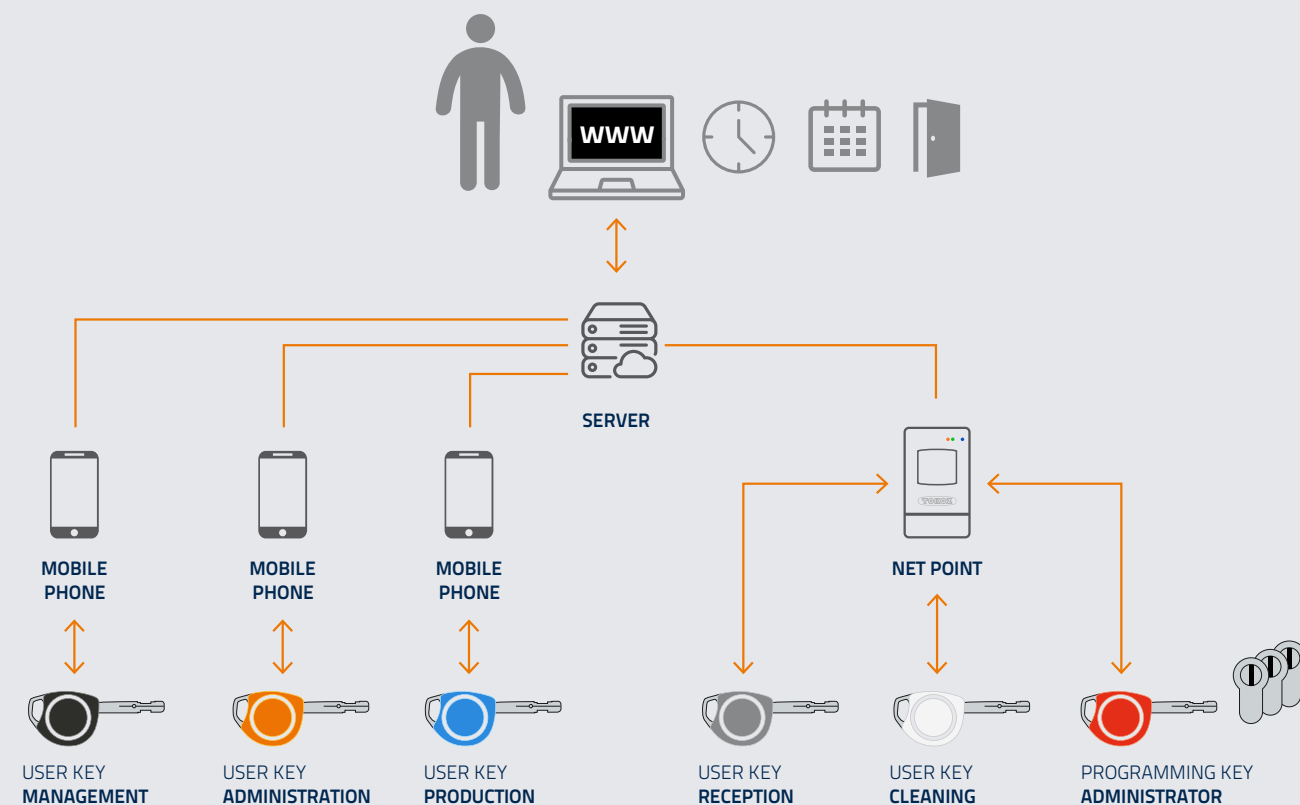
**Use them as a standard cylinder.**

The **ePRO** mechatronic cylinders can be used like any conventional euro profile cylinders.

They can also be installed into padlocks and other mechanical locking solutions with euro profile.

The **ePRO** system has all the benefits of a common masterkeyed cylinder:

- Increased level of defense due to the combination mechanical/electronic security elements.
- Lost key's access rights can be easily deleted without having to change cylinders and replace other keys in the system.
- Authorisations can be easily altered without changing the cylinder or having access to the keys.
- Usage history of cylinders and keys can be checked.

**SERVER**

**NET POINT**

| MOBILE PHONE | MOBILE PHONE | MOBILE PHONE | | NET POINT | |
|---|---|---|---|---|---|

USER KEY **MANAGEMENT**

USER KEY **ADMINISTRATION**

USER KEY **PRODUCTION**

USER KEY **RECEPTION**

USER KEY **CLEANING**

PROGRAMMING KEY **ADMINISTRATOR**

# A FLEXIBLE SYSTEM WHICH ADAPTS TO INDIVIDUAL REQUIREMENTS

Access requirements often change during the life, and the **ePRO** system can reflect this quickly and at any time through an intuitive web application that can be controlled from any internet browser. Comparing to mechanical locking systems, the **ePRO** mechatronic allows flexible change of access rights.

- Time/date control can be added to existing access rights.
- Electronic access rights can be changed or extended regardless of the mechanical combination limits.
- Lost or stolen keys are not a problem for the **ePRO** system as they can simply be deleted from the system. Avoid the expenses of cylinder or system replacement.
- Access rights are distributed to the keys from a web application, by updating the keys via NET Point or by using a mobile phone.

The **ePRO** mechatronic system is not only suitable for industrial or administrative buildings, but even for residential properties.

# NEW IN THE EPRO MECHATRONIC LOCKING SYSTEM: RFID TECHNOLOGY INTEGRATION INTO THE KEY

We are pleased to introduce the new version of our ePRO mechatronic locking system, version 1.4, which now allows the integration of RFID tags directly into the key. This innovation brings a higher level of security and versatile application possibilities in access control systems. With RFID technology, you can easily and securely manage access to offices, apartment buildings, printers, meal dispensers, and many other devices. Discover more about the options our three RFID tag variants can offer you.

**RFID Tag Variants:**

**LF (Low Frequency), 125 kHz technology**
- The most commonly used access systems – cards, key fobs. This technology is widely used, although its security level is lower. Ideal for access to offices, apartment buildings, logging into printers, or meal dispensers.

**HF (High Frequency), 13.56 MHz technology, NFC Mifare 1k**
- Access systems with better security. Increasingly used technology that, in addition to access functions, allows for data storage with a capacity of 1kByte. Suitable for the same applications as the LF version but with a higher level of security.

**HF (High Frequency), 13.56 MHz technology, NFC Desfire 4k**
- Highly secure access systems, representing the third evolutionary step of this technology. It offers the highest level of security and the possibility of storing data with a capacity of 4kByte. Ideal for applications requiring the highest level of security and flexibility.

Discover the new possibilities our RFID technology can offer you, and use it for more efficient and secure access management in your environment.
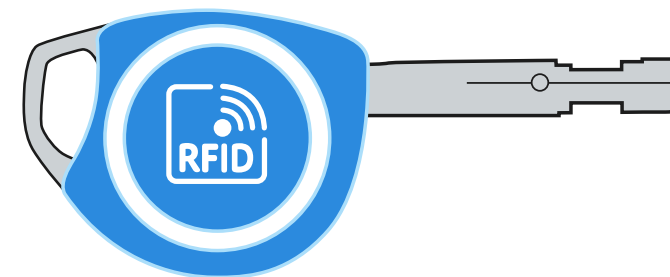
# PROGRAMME WHO GOES WHERE, WHEN AND FOR HOW LONG

## System programming

The system is controlled by a web application, accessible from any browser. The **web application** allows the user to define his project, including the definition of the number of cylinders and keys and access rights between them.

Through the web application can the user activate the project and control user rights settings and system status reporting. Furthermore, the customer can use the web application to expand his project by adding new keys and cylinders.

## Operation of the locking system

Cylinders are putt into operation when a programming key is inserted into each of them.

The user can verify the key using a mobile application or the NET Point.

When the user key is inserted in to the cylinder it reads cylinder's name and decides whether to unlock. Successful opening is indicated by flashing (green LED).
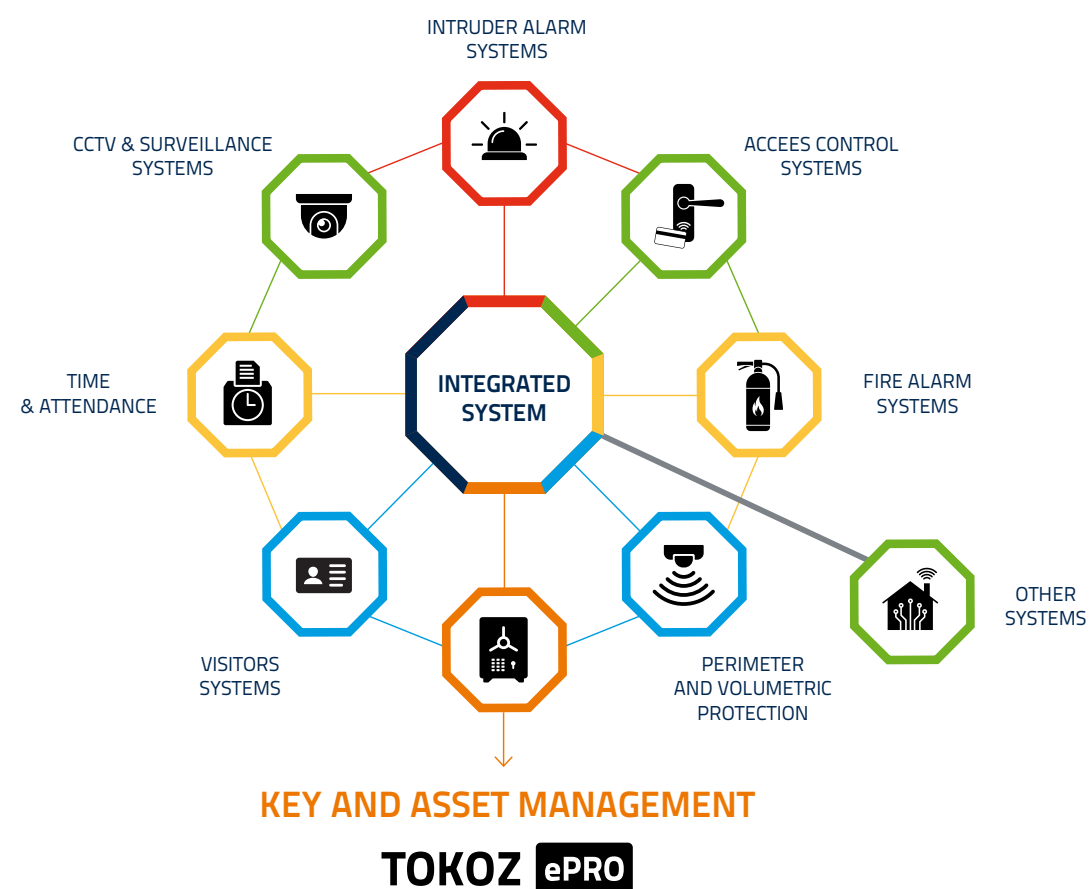
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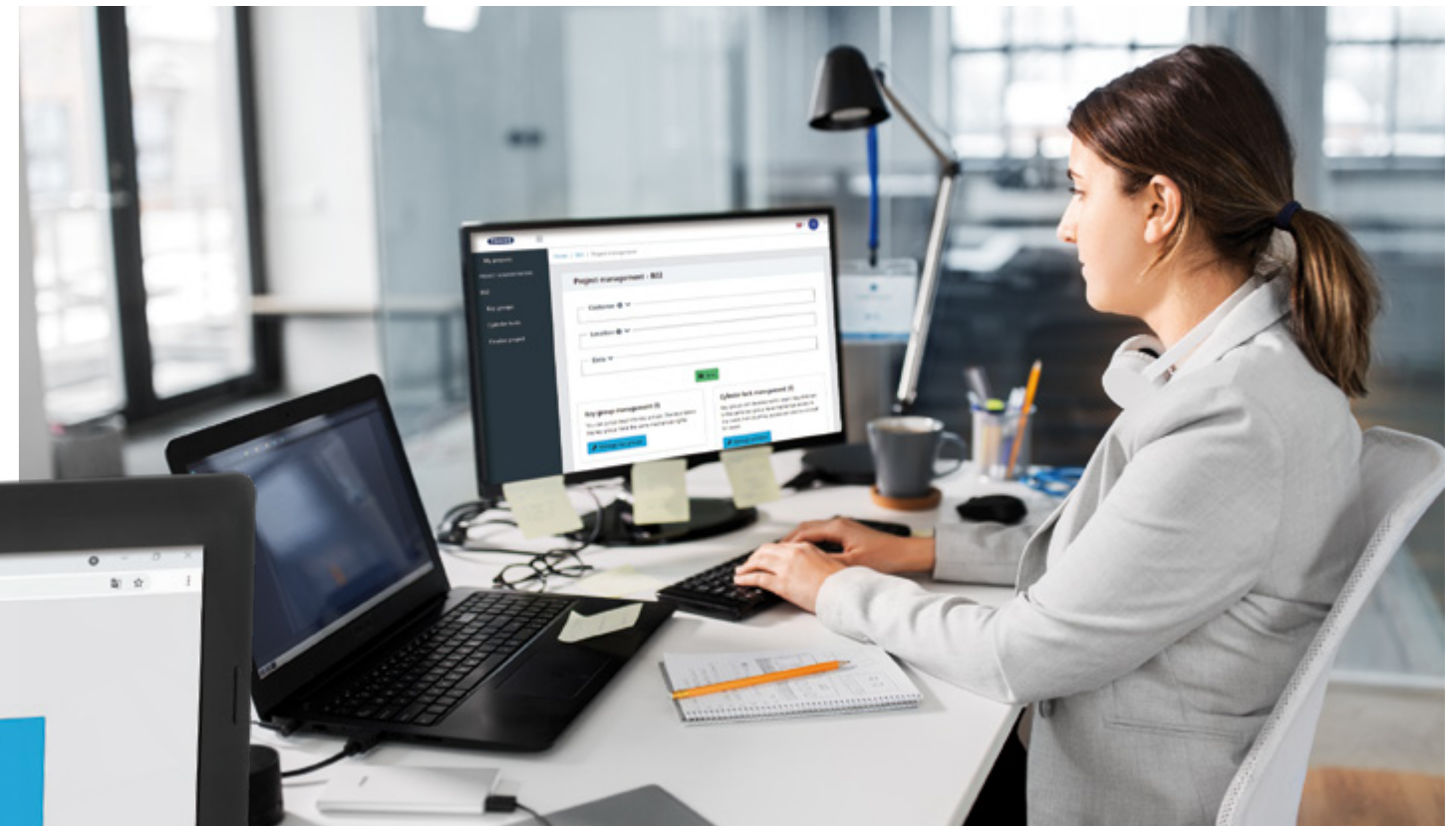
# PARTNERSHIPS WITH DEVELOPERS AND SUPPLIERS OF INTEGRATED SYSTEMS FOR COMPREHENSIVE SECURITY

TOKOZ a.s. establishes partnerships with companies that develop and supply top-tier integrated security systems. Through this collaborations, we can connect our ePRO systems with their technologies and offering a comprehensive solution for access and security management from a single point.

**Integrated systems solutions include:**

- **Access Control Systems:** Secure and efficient access for employees and visitors.
- **CCTV Systems:** Monitoring and recording for enhanced security.
- **Attendance Systems:** Employee attendance management.
- **Perimeter Protection:** Protection of property boundaries.
- **Fire Alarms:** Fire detection and alert systems.
- **Communication Systems:** Effective communication within the facility.

Some companies provide integrated security solutions that enable centralized management and autonomous operation of individual systems, ensuring maximum security and efficiency.



INTRUDER ALARM SYSTEMS

CCTV & SURVEILLANCE SYSTEMS

ACCEES CONTROL SYSTEMS

TIME & ATTENDANCE

INTEGRATED SYSTEM

FIRE ALARM SYSTEMS

VISITORS SYSTEMS

PERIMETER AND VOLUMETRIC PROTECTION

OTHER SYSTEMS

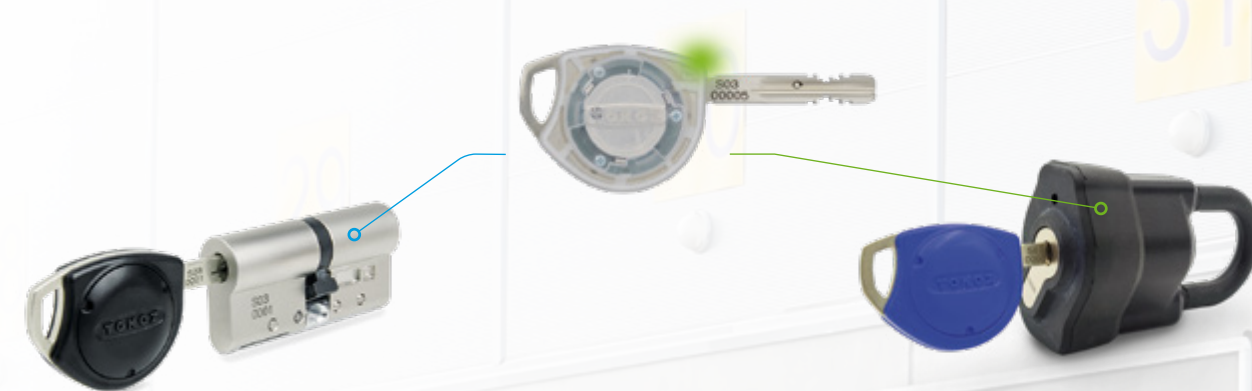**KEY AND ASSET MANAGEMENT**

**TOKOZ ePRO**

# AN EXCEPTIONALLY VARIABLE AND MODULAR SYSTEM

From entrance doors to warehouses, gates, containers, vans. We produce the widest range of locking solutions on the market.

You will only need one key for all the locks in your company.

All of the products are manufactured by skilled Czech hands in our plant in Žd'ár nad Sázavou.



The ePRO cylinder range can be used in all types of timber, metal or plastic internal and external doors fitted with mortice locks. We produce a range of locking solutions which can be used with the **ePRO** cylinders and combined within the same system.

Typical applications include:
- Entrance doors
- Gates and fences
- Garages, bike shelters and lock-ups
- Kiosks and cage enclosures
- Bins and construction equipment

The **OMEGA PADLOCK** is customisable and suitable for security usage.

# TECHNICAL SPECIFICATION

## The ePRO mechatronic cylinder

- Authorised key memory size - 2 048 items
- Operating voltage (powered by key, without source) - 2.6 to 3.3V
- Response time (key designation processing and access right assessment) - 150ms
- Operating temperature range -20 ℃ to +60 ℃
- Encrypted communication between insert and key
- Encryption key length - 16B
- Number of encryption keys - 2
- Encrypting - symetric AES128

## The ePRO user keys

- Memory size - 2 048 cylinders with access rights
- Memory size of events logs - 29 667 records
- Operating voltage (for DPS key and cylinder charging) - 2.6 to 3.3V
- Battery life for unlocking - 20 000 unlocking cycles or 1 year
- Timestamp
- Minimum necessary time correction in key - 1 x a year
- Time information retention without battery - 90 sec.
- Time information renewal - automatically upon succesfull connection to server
- System information retention (key designation, encryption key) without battery - unlimited
- Status indication - LED, various colours (green-red) and flashing
- Operating temperature range -15 ℃ to +60 ℃

## The ePRO programming key - admin

- Memory size - (1 Mb) 20 900 logs
- Operating voltage (for system information entries into cylinder) - 3.0 to 3.3V
- Number of system information entries per battery - 150 entries
- Operating voltage (for system information download from cylinder) - 2.6 to 3.3V
- Number of system information downloads per battery - 1 000 download cycles
- Minimum necessary time correction in key - 1 x a year
- Time information retention without battery - 60 sec.
- Time information renewal - automatically upon succesfull connection to server
- System information retention (key designation, encryption key) without battery - unlimited
- Status indication - LED, various colours (green-red) and flashing
- Operating temperature range -15 ℃ to +60 ℃
- Timestamp

## NET Point

- Power supply - USB/POE
- Status indication - LED, two colours and flashing
- Wire connection - LAN/WiFi
- Communication transmission (key - server) - 5 sec.
- Operating temperature range -20 ℃ to +60 ℃

## Standards

The TOKOZ PRO security cylinder locking system is protected under several Czech patents CZ303062, CZ302949, CZ303063, CZ304066 and European patents EP 2 453 084 and EP 2 458 115. The cylinder is certified to EN 1303 and EN 1627. The TOKOZ ePRO cylinder is based on the TOKOZ PRO cylinder and is protected under another Czech patent CZ 306 921 and European patent EP 3 299 554. The cylinder has also been thoroughly tested to EN 15 684.

## According to EN 15684

### Classification of mechatronic cylinder

| Category of use | Durability | Fire resistance | Environmental resistance |
|---|---|---|---|
| 1 | 6 | B | 1 |
| Mechanical key –related security | Electronic key –related security | Management system | Attack resistance |
| 6 | D | 3 | D |

### Classification of mechatronic key

| Category of use | Durability | Fire resistance | Environmental resistance |
|---|---|---|---|
| 1 | 6 | 0 | 1 |
| Mechanical key –related security | Electronic key –related security | Management system | Attack resistance |
| 6 | D | 3 | D |


CERTIFICATE OF CONFORMITY

## Dimensions and lengths

The ePRO mechatronic cylinders are available in various configurations and size options to suit majority of applications. Double cylinders are available with thumbturn operation on the inside, mechanical key operation on the inside or with mechatronic key from both sides. The ePRO mechatronic cylinders are also available in half-cylinder versions.
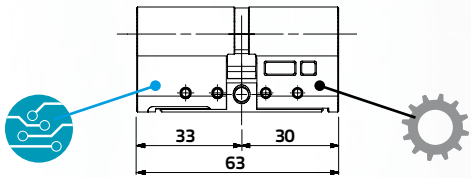

side A mechatronic    side B mechanical
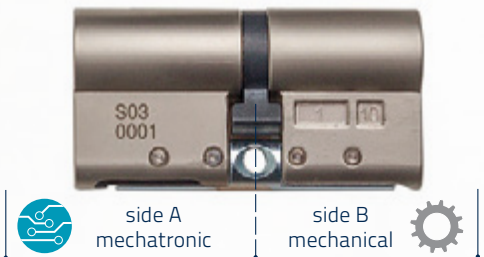
### Standard version of mechatronic cylinder lock

basic dimension:
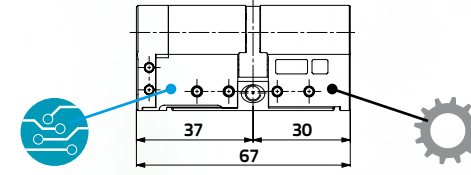33 mm / 10 mm
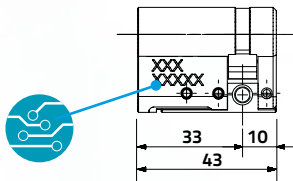

33    10
43

### Version of mechatronic cylinder lock with dust and rain cover
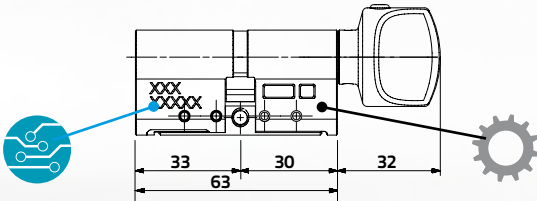
basic dimension:
33 mm / 30 mm


33    30
63

### Version of mechatronic cylinder lock with dust and rain cover

basic dimension:
37 mm / 30 mm


37    30
67

### Version of mechatronic cylinder lock with dust and rain cover

basic dimension:
33 mm / 30 mm


33    30    32
63

We will provide specific dimensions on request.

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