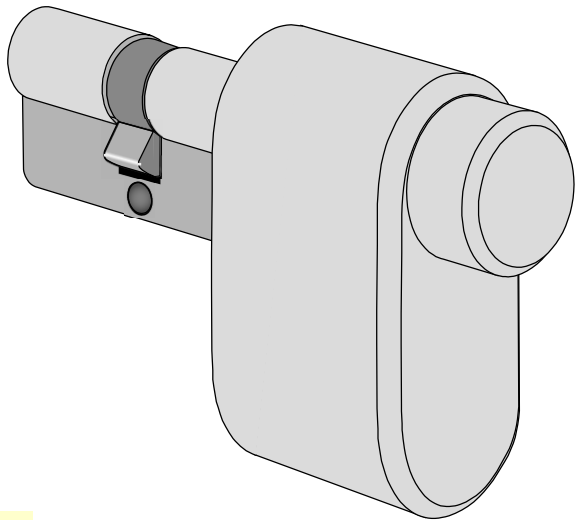


CEMO motor cylinder

Fitting and Operating Instructions



Notice:

In case of doors on escape or rescue routes, satisfy yourself that the lock and the motor cylinder are approved and suitable for use on the door.



**Translated fitting and
operating instructions
Version 0, 2017**

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2 Notes on the layout

In these Fitting and Operating Instructions, various elements are highlighted with defined layout features:



Additional information on the efficient use of the OMEGA FLEX cylind



Reference to additional information



Notes on the correct disposal

-
- Steps in a sequence of actions. Tips with this symbol require you to perform an action
-

3 Preface

These Fitting and Operating Instructions help you fit and use the CEMO motor cylinder (the "motor cylinder") as intended, safely, and cost-efficiently.

Any person who fits, operates or disposes of the motor cylinder must have read and understood the entire contents of these Fitting and Operating Instructions. These Fitting and Operating Instructions should be kept near the motor cylinder at all times.

These Fitting and Operating Instructions should be handed over to the end users.



Be sure to use the most recent version of these Fitting and Operating Instructions. Updated versions are available free of charge at www.ces.eu.

3.1 Versions

These Fitting and Operating Instructions are only valid for:

CEStronics CEMO motor cylinder (D970K and D970N)

3.2 Manufacturer and service

The manufacturer of the CEMO motor cylinder is:

C.Ed. Schulte GmbH
Zylinderschlossfabrik
42551 Velbert, Germany
Tel: +49 (0) 2051-204-0
Fax: +49 (0) 2051-204-229
www.ces.eu

For service support please contact your professional CES partner.

3.3 Target group

These Fitting and Operating Instructions are intended for trained fitting staff, maintenance staff and operators.

As regards the use of these Operating Instructions, it is assumed that the necessary technical knowledge on how to use the product as intended is available.

The necessary product training is provided by your professional CES partner. If this has not yet taken place, please contact your professional CES partner to obtain training on the product.



NOTICE

Unintended condition of your system possible!

If you are not fully familiar with the various possibilities of your system, it may perform unexpected functions.

- ▶ If you program the OMEGA FLEX system, you must be clearly aware of the consequences of your programming to prevent undesired results.
- ▶ If there are functions of the OMEGA FLEX system you do not understand, contact your professional CES partner to obtain further information.
- ▶ Always satisfy yourself that your programming produces the desired result.

4 For your safety

4.1 Explanation of the safety notes

These Fitting and Operating Instructions include safety notes of the following types:



NOTICE

These notes warn against possible property or environmental damage.



CAUTION

CAUTION notes warn against hazards that may result in slight or medium injuries.



WARNING

WARNING notes warn against hazards that may result in medium to fatal injuries.

4.2 Intended use

The motor cylinder serves to lock and unlock doors with locks for which knob systems are permitted. It is exclusively intended and may only be used for that purpose.

The motor cylinder must not be changed without our written consent.

Any other use is considered to be improper and may result in property damage or even personal injury.

C.Ed. Schulte GmbH Zylinderschlossfabrik does not accept any liability for any damage resulting from improper use.

4.3 Responsibility of the operator

The operator of the motor cylinder must ensure that any person handling the motor cylinder understands its intended use and is able to handle it appropriately.

Your professional CES partner organizes trainings on the product that address the following subjects:

- **Intended use (page 7)**
- **Basic safety instructions (page 9)**
- **Required skills of your personnel (page 9)**
- **General emergency instructions and measures**
- **Accident prevention regulations**
- **Fitting and operating the motor cylinder in compliance with these Fitting and Operating Instructions**

4.4 Required skills

To ensure that all training is understood, it must be performed in the language spoken by the personnel.

Personnel with the following qualifications is required:

Fitting, commissioning, instructions	Technically skilled personnel speaking the relevant language.
Trouble-shooting and maintenance as described in these Fitting and Operating Instructions.	Technically skilled personnel speaking the relevant language.

4.5 Declaration of Conformity

The Declaration of Conformity is available online via www.ces.eu

4.6 Basic safety instructions

Observe all warnings and notes in these Fitting and Operating Instructions when fitting, programming and using the motor cylinder. Always keep these Fitting and Operating Instructions near the motor cylinder.

- ▶ To prevent danger to life and limb, the following safety instructions must be observed:

4.6.1 Danger of explosion

Live parts of the motor cylinder may cause an explosion. Do not use the motor cylinder in potentially explosive atmospheres.

4.6.2 Danger of suffocation

Never allow children to play with the packaging material of the motor cylinder. Children may suffocate.

4.6.3 Danger of poisoning

Always keep the motor cylinder out of the reach of children. There is a risk that children swallow small parts such as batteries or screws.

Do not hold screws, bolts or small fastening parts with your lips. There is a risk that you inhale or swallow them.

4.6.4 Danger of property damage

To prevent property damage and personal injury, the following safety instructions should be observed:

- Check new motor cylinders for transport damage and inform your dealer promptly if any damage is found.
- Always disconnect the power supply before performing any work at or in the control unit.
- Observe the applicable fitting regulations.
- Special regulations apply to doors subject to official approval. Before drilling any holes into or through the door, satisfy yourself that the use of the motor cylinder is permitted for doors of that type.
- Ensure that all fitting work is performed by properly skilled personnel.
- Always have repairs performed by properly skilled personnel.
- Observe the grounding instructions.
- In case of doors on escape or rescue routes, satisfy yourself that the lock and the motor cylinder are approved and suitable for use on the door.
- Ensure that the programming of your timer is correct. An incorrectly programmed timer may jeopardize your safety.
- Only use accessories and spare parts recommended by CES.
- Only use the proper tool to open the motor cylinder.
- Do not use any damaged keys as the locking mechanism of the cylinder may be damaged otherwise.
- Only install the motor cylinder and the cables inside the secured area.
- Only connect control inputs with zero-potential contacts.
- Observe the notes on cable lengths and wire cross sections.
- Only use the original CES plug connectors.
- Do not use any drilling machines or cordless screwdrivers for fastening the motor cylinder.

- When fitting the motor cylinder, satisfy yourself that the lock and the door are in perfect condition. Malfunctions of the lock may impair the functioning of the motor cylinder.
- Make sure that the motor cylinder can be inserted through the profile cylinder hole of the fitting and into the lock without jamming and without using force. If that is not possible, align the lock and the motor cylinder so as to prevent jamming and bending of the motor cylinder while it is being fastened.
- Do not use any lubricants or oils for the motor cylinder.
- Do not drop the motor cylinder on the floor, on hard surfaces or on hard objects.
- Protect the electronic components of the motor cylinder against water and other liquids.
- The motor cylinder contains highly sensitive electronic parts that may be damaged or destroyed through static charges. Do not disassemble the motor cylinder in rooms with built up static charge.

4.6.5 Danger through environmental conditions

- Do not use the motor cylinder in corrosive atmospheres (chlorine, ammonia, lime water).
- Only use the motor cylinder in rooms in which the humidity is lower than 95 %.
- Do not use the motor cylinder outdoors.
- Do not use the motor cylinder in rooms with a high level of dust formation.
- Do not use the motor cylinder near sources of heat.
- The motor cylinder may only be exposed to temperatures between – 20 °C and +50 °C.
- Before fitting the motor cylinder, the doors should be checked for perfect closing and frictionless movement of the latch bolt and the dead bolt.
- When your door contacts are fitted on metallic surfaces, satisfy yourself of their perfect functioning. Metallic surfaces may change the switching behaviour of the door contacts.
- To avoid malfunctions, only use the supplied connecting cable for the installation inside the door.
- If the shielded connecting cable must be extended, use a wire with a larger cross-section.
- Always verify the perfect functioning after any maintenance and repair work on the device.

4.6.6 Danger of personal injury

- Only use the motor cylinder for door locks for which knob systems are permitted. Otherwise people may not be able to open the door in emergencies and may be injured or killed should the motor cylinder have a malfunction.
- Do not use the motor cylinder for doors with panic function, such as doors on escape routes, for which a knob cylinder is not permitted.

Otherwise people may not be able to open the door in emergencies and may be injured or killed.

- Only have work on the power supply of the motor cylinder or the 230V mains performed by skilled personnel.
- Never attempt to hold on to a rotating key. There is a danger of injury due to the high torque of the motor cylinder.
- In panic locks, the motor cylinder does not function to secure the escape route. In Nighttime mode, the motor cylinder checks the locking status of the door every 15 minutes. If the door is opened with the handle, it is relocked automatically.

4.6.7 Risk of loss of approval

- If the motor cylinder is installed in approved doors (e.g. smoke-stop doors), ensure that all approval conditions are satisfied.
- If the motor cylinder is installed in doors on escape and rescue routes, ensure that all applicable regulations are observed.
- If the motor cylinder is installed in locks with panic function, ensure that the specifications of the lock manufacturer are observed. The motor cylinder is basically a knob cylinder.
- Locking cylinders are not permitted on some panic locks (hence in principle also the CEMO motor cylinder). You need to check yourself and clarify whether the CEMO motor cylinder is permitted for your intended use. You must not use the CEMO motor cylinder if it is not permitted for your intended use.

5 Introduction

5.1 Description

The motor cylinder serves to automatically lock and unlock doors or other closing devices.

It is controlled by an electronic control unit that transmits individual or time-related enable signals to the motor cylinder.

From the outside, the motor cylinder can be operated with a mechanical key, by entering a code, or by using RFID media in combination with an access control system. From the inside, the cylinder is operated with a mechanical knob or via opening sensors.

The motor cylinder is fully compatible with all CES locking systems as from system S4000 and can be inserted in all locks prepared for profile cylinders. It supports the operation of locks with latch lever, dead-bolt only locks, multipoint locks and panic locks.

CEMO-NET is the online version of the motor cylinder and extends the range of possible applications. For the online connection, the control unit of the motor cylinder is equipped with a network module allowing it to be centrally operated over any IP network. A complete system will also comprise the optional CESTronics control terminal software and possibly required wiring.

The CESTronics control terminal software is a central component of an electronic security system. It allows the automatic control and indicates events at the connected doors. The user interface of the CESTronics control terminal permits the execution of a large number of programming functions.

The CEMO control terminal software manages all connected doors of the building in a structured screen matrix.

Quick and transparent configuration is ensured by different screen presentations for different management tasks.

Thanks to the permanent online connection, the current door status and the activities at the doors are displayed and stored immediately. All doors are shown with a readily apparent status indication in colour. Also alarms and error messages are displayed and can be acknowledged.

All connected doors can be opened, locked or blocked with a single mouse click.

The clear menu structure permits a fast and simple configuration of the connected motor cylinders. The current status of a specific door – or the status of all doors at once – can be interrogated and modified with a click of your mouse.

The configuration of each motor cylinder comprises time commands, door opening time, limitation of locking turns, alarm contact output, standard operation and a number of other parameters. The integrated virtual timer can be freely parameterized for the independent time control of each motor cylinder. The motor cylinders can also be grouped depending on the location and allocation of the doors in the building.

CEMO-NET can be delivered as an integrated solution and is also available as a retrofit kit for existing installations. Equipped with a network module, the motor cylinder thus can also be subsequently connected to any IP network already existing on the premises. The integrated module is connected directly with the network via a standard network cable. As an option, the power supply of CEMO-NET can also be implemented as PoE (Power over Ethernet).

CEMO-NET offers superior convenience and significant walking and time savings in case of rambling locations.

5.1.1 Features of the motor cylinder

- Simple fitting, independent of the existing armature
- Short unlocking and locking times
(approx. 1.5 seconds for 2 dead bolt turns and latch bolt)
- Automatic identification of the lock function for:
 - Door opening direction (DIN left, DIN right),
 - Number of locking turns, panic function
 - Automatic Daytime / Nighttime mode switchover by integrated timer
- 5 zero-potential inputs for:
 - Permanent Open mode (daytime latch function)
 - Daytime/Nighttime mode switchover under time control of access control systems
 - Unlock door command
 - Lock door command
 - Door monitoring via door contact
- 2 zero-potential outputs for connecting display devices for door status and operating errors
- Automatic locking assistance for Unlock/Lock key operation
- Automatic locking assistance for Unlock/Lock knob operation

5.1.2 Available options for the motor cylinder

- Integrated timer
- Without inside knob
- Without outside locking function
- CESTronics wall terminals for access control via transponder media
- Opening sensor for the automatic unlocking of the door from the inside
- CEMO-Net online retrofit kit for controlling the motor cylinder over TCP/IP networks
- CEMO-Net online PoE retrofit kit for integration into networks in which the operating voltage is supplied through the network
- Configuration adapter
- CESTronics control terminal software for controlling and configuring motor cylinders via a network.

5.1.3 Other applications

- Automatic operation under opening sensor control
- Centralized control by the control terminal software
- Automatic control e.g. by building management systems
- Replacement for electric door openers at doors that must be locked after daytime operation.



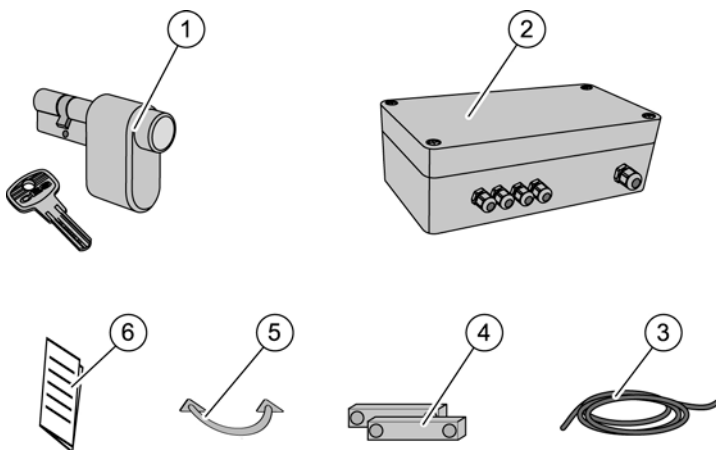
Please contact your professional CES partner for further details.

5.2 Scope of delivery

- ▶ Before proceeding with fitting and commissioning, please check the contents of the package and the scope of delivery.
- ▶ Check new devices for transport damage and inform your dealer promptly if any damage is found.



The scope of delivery may be tailored to your wishes. The following describes the complete CEMO package.

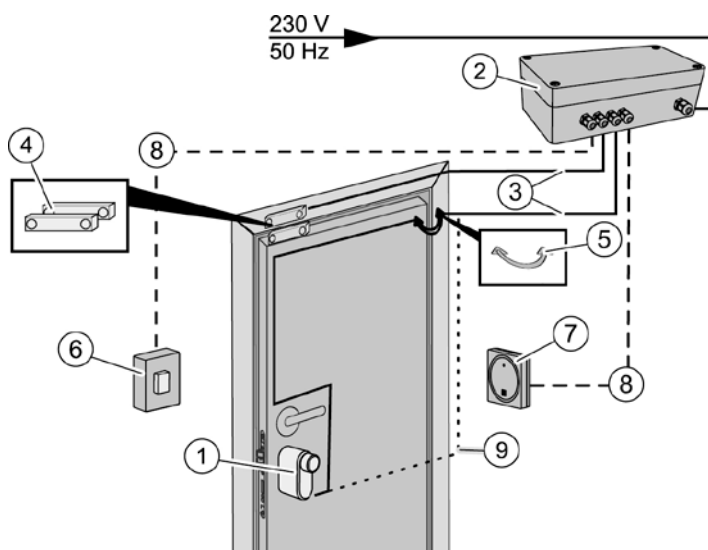


1	1 x locking cylinder with 1 x key and motor unit
2	1 x control unit with power supply in plastic housing
3	1 x connecting cable, 7 m
4	1 x door contact
5	1 x cable bridge
6	1 x Fitting and Operating Instructions

6 Fitting overview

The following shows all components and the related fitting work required for the full functionality and perfect functioning of the motor cylinder (items 6 – 9 are optional).

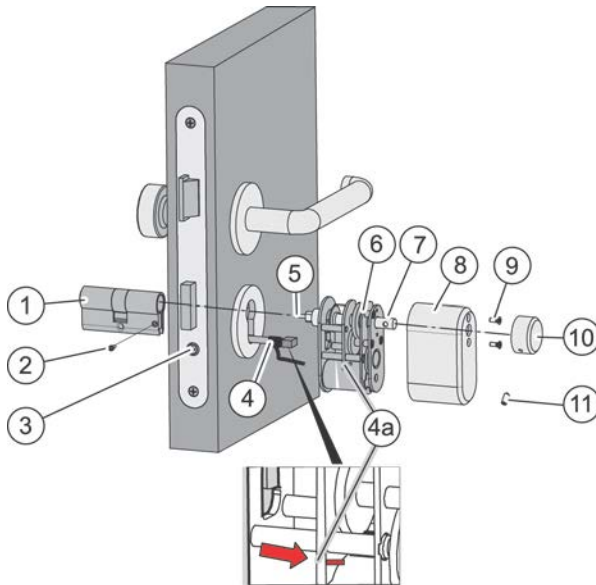
6.1 Overview of components and fitting



v

1	Locking cylinder with motor unit
2	Control unit with power supply in plastic housing
3	Connecting cable
4	Door contact
5	Cable bridge
6	Enable push button (optional)
7	Wall terminal from the OMEGA range (optional)
8	Wiring for optional devices
9	Alternative wiring of connecting cable

6.2 View of the motor cylinder at the door



1	Cylinder unit
2	M3 screw
3	Fixing screw
4	Control cable
4a	Grounding
5	Key-switch pin
6	Motor unit
7	Drive shaft
8	Motor housing
9	Housing screws (2 x)
10	Knob
11	Setscrew



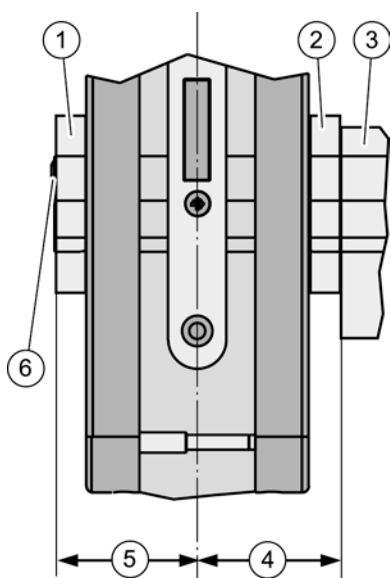
Before fitting, satisfy yourself that the locking cylinder has the correct length for the door lock by measuring the length of the locking cylinder with both armatures.

On the inside, the cylinder must not be recessed inside the armature.

- Use the drawing below to find the correct dimensions.

Example:

Outside length + inside length = minimum length of the locking cylinder



1	Outside armature
2	Inside armature
3	Motor unit
4	Inside length (motor side)
5	Outside length (locking side)
6	Cylinder unit

7 Fitting instructions

Observe the following notices to fit the motor cylinder and the related components without damage:



NOTICE

The motor cylinder and the related components may be damaged if not fitted properly.

- ▶ Only skilled personnel may fit the motor cylinder and the related components.
- ▶ Always disconnect the power supply before performing any work at or in the control unit.
- ▶ Only skilled personnel may perform work on the 230 V mains.



NOTICE

The control unit may be damaged if external voltage is supplied.

- ▶ Only connect the control inputs with zero-potential contacts.



NOTICE

Risk of loss of official door approval.

- ▶ Ensure that your fitting work does not void the official approval of your door.
- ▶ Ensure that all relevant regulations are observed when fitting the motor cylinder in doors on escape or rescue routes.

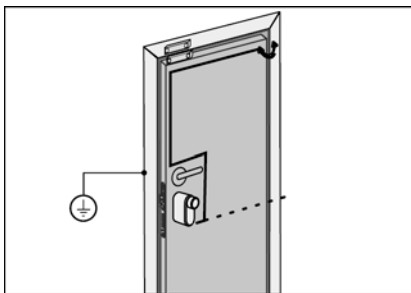
7.1 Fitting preparations

Prior to fitting, the following preparations have to be made:

7.1.1 Grounding connection at doors

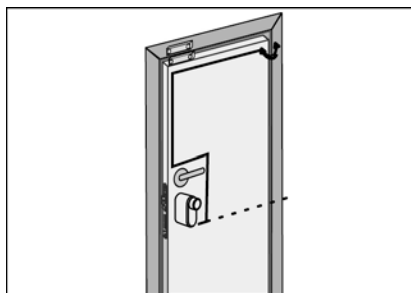
- Only use a suitable earth connection on your door:

Narrow-style door, steel door or similar (grounded)



- Do not connect the shielding with the motor unit housing.

Wooden door, glass door or similar (not grounded)



- Connect the shielding with the motor unit housing.

7.1.2 Preparatory work



Recommendation: Doors fitted with the motor cylinder should always be equipped with a perfectly working (overhead) door closer.

Perform the following steps before fitting the motor cylinder. Proceed in the sequence indicated:

- ▶ First check that the door closes perfectly.
- ▶ Use a locking cylinder to test that a frictionless travel of dead bolt and latch bolt is possible when the door is closed. In case of multipoint locks, test all dead bolts, tongues and shoot bolts.
- ▶ Rectify any defects found.
- ▶ Unless the door has already been prepared appropriately, install the control cable such that the plug comes out through the profile cylinder hole on the inside of the door.
- ▶ The cable must be movable inside the lock case so that you can push it back into the door when you install the motor unit.
- ▶ Leave at least 6.5 cm of the cable with the plug protruding from the armature.
- ▶ Install your door contacts and cable bridges at the proper locations.
- ▶ Always satisfy yourself that the door contact really closes when the door is closed and really opens when the door is opened.
- ▶ To test the function, use a measuring instrument with an ohmmeter.
- ▶ Observe the fitting instructions for the door contacts. The door contacts must be adjusted to minimum switching distance to prevent the dead bolt from moving out before the door is properly closed.

-
- ▶ Install the control unit and the power supply inside the secured area and guide all connecting cables to the place of installation.
 - ▶ If no grounded socket is available for the 230 V connection, have a skilled electrician lay a 230 V mains connection to the place of installation of the control unit.
 - ▶ Be sure that this 230 V connection is disconnected from the power supply during the fitting.
 - ▶ Only use the connecting cable supplied for the wiring inside the door.
 - ▶ If you have to extend the control cable, be sure to connect the cable shielding as well.
-



The connecting cable for the motor cylinder is a shielded cable. CES does not warrant proper functioning if other cables are used.

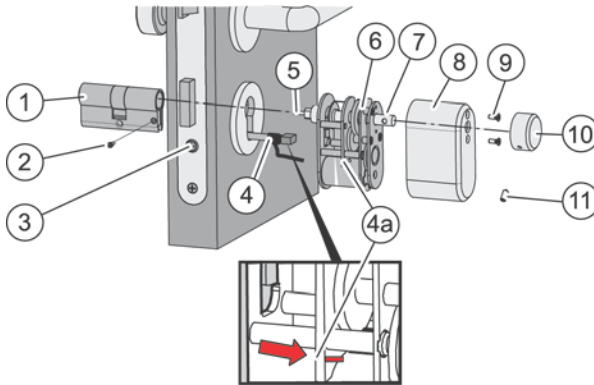
If the cable must be extended outside the door, a shielded cable with a larger cross-section must be used. In case of an extension, the connecting cable supplied should be kept as short as possible.

To extend the cable to a total length of max. 20 m, we recommend using a cable of the type J-Y(ST)-Y with a cross-section of 0.6 or 0.8 mm².

7.2 Fitting the motor cylinder at the door

After the fitting preparations have been completed, you can start fitting the motor cylinder.

For this purpose, you must first disassemble the motor cylinder:



7.2.1 Disassembly of the motor cylinder

- ▶ Release the knob (10) with the setscrew (11).
- ▶ Release the two housing screws (9) and remove the motor housing (8).
- ▶ Release the M3 screw (2) and separate the cylinder unit from the motor unit.

This completes the disassembly of the motor cylinder and you can now start fitting the motor cylinder at the door.

7.2.2 Fitting the motor cylinder at the door

- ▶ Guide the plug of the control cable (4) and the shielding through the opening in the mounting plate of the motor unit (6).
- ▶ Insert the plug into the corresponding socket on the sensor board of the motor unit (6). The plug and the socket are coded to ensure correct polarity.
- ▶ **For doors that are not grounded:** Insert the shielding of the control cable into the socket provided in the sheet steel of the motor unit (4a).
- ▶ **For doors that are grounded:** The shielding is not used and can be cut off.
- ▶ Make sure that the cables do not touch or block any moving parts. The shielding must be guided through between motor and stud bolt.
- ▶ Insert the cylinder unit (1) from the outside through the profile cylinder hole. Use the key to position the follower.
- ▶ Take care not to force when pushing the groove on the lower inner side of the cylinder unit over the connecting cable.
- ▶ Push the cylinder as far in as possible as this will give you more room when screwing the components together.
- ▶ Insert the key-switch pin (5) into the drive shaft bore (7).
- ▶ Now push the motor unit (6) into the opening of the cylinder unit (1). Slightly rotate the key to facilitate the engagement of the components.
- ▶ Fasten the motor unit (6) and the cylinder unit (1) with the M3 screw (2) and push the unit back until the fixing screw (3) can be inserted.
- ▶ Make sure that the control cable (4) is also guided back into the door.

- ▶ Verify the perfect operation of the follower (cam) by rotating the key in both directions. If the follower moves perfectly, hand-tighten the fixing screw.
- ▶ Push the motor housing (8) over the motor unit (6) and screw in the two housing screws (9).
- ▶ Push the knob (10) over the drive shaft (7) and fix it with the setscrew (11).
- ▶ Note that the setscrew must be screwed into the hole in the drive shaft as otherwise no protection against unwanted rotation of the knob can be ensured.
- ▶ Finally satisfy yourself again of the frictionless operation of the motor cylinder in the lock.

This completes the fitting of the motor cylinder at the door.

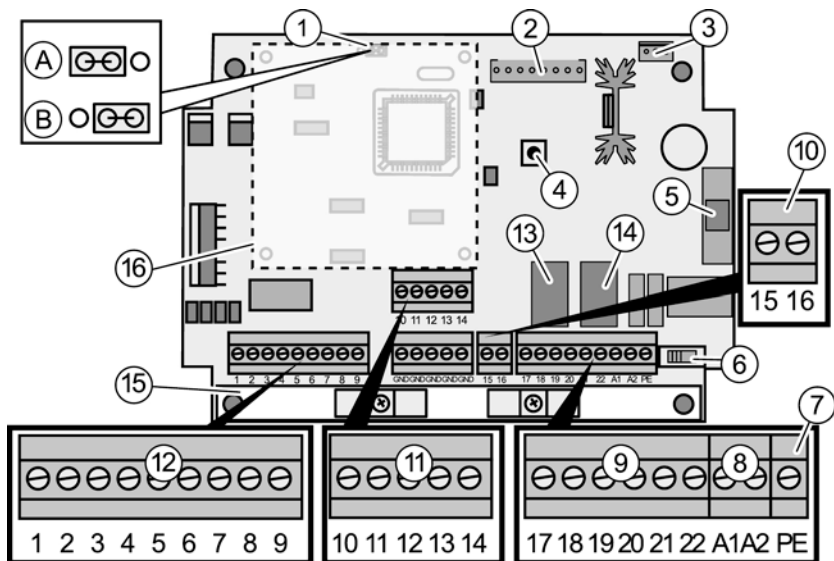
- ▶ Next establish the electrical connections as described on the following pages.

7.3 Electrical connections

7.3.1 Motor cylinder control



The control unit is delivered together with the power supply in a combination housing. The power supply has already been wired with the control system by the manufacturer.



1	Jumper, configuration (A)/normal operation (B)
2	Extension slot
3	Configuration connection
4	Learning mode push-button
5	Fuse F1 1 A MT
6	ON/OFF switch
7	PE connection (terminal strip 4 [K4], PE)
8	Operating voltage 24 V AC (terminal strip 4 [K4], A1 and A2), already wired to the power supply
9	Switch outputs (terminal strip 4 [K4], 17 - 22)
10	Timer (terminal strip 3 [K3], 15 – 16)
11	Control inputs (terminal strip 2 [K2], 10 - 14, lower strip all GND)
12	Motor unit (terminal strip 1 [K1], 1 - 9)
13	Relay 1, door status
14	Relay 2, error
15	Ground bus
16	Slot for extension boards

7.3.2 Wiring the control unit



Danger of injury through electric shock!

- ▶ Always make sure that power is off when you perform work on the control unit.
- ▶ Work on any components of the motor cylinder may only be performed with disconnected voltage.
- ▶ Lock out the power supply to the control unit to prevent accidental reconnection.

**Danger of injury through electric shock!**

- ▶ Ensure that PE is connected to the control unit.
 - ▶ Ensure that the shielding of the control cable is connected with PE through a ground bus.
 - ▶ Ensure that the ground bus of the motor cylinder control unit is connected with PE.
-

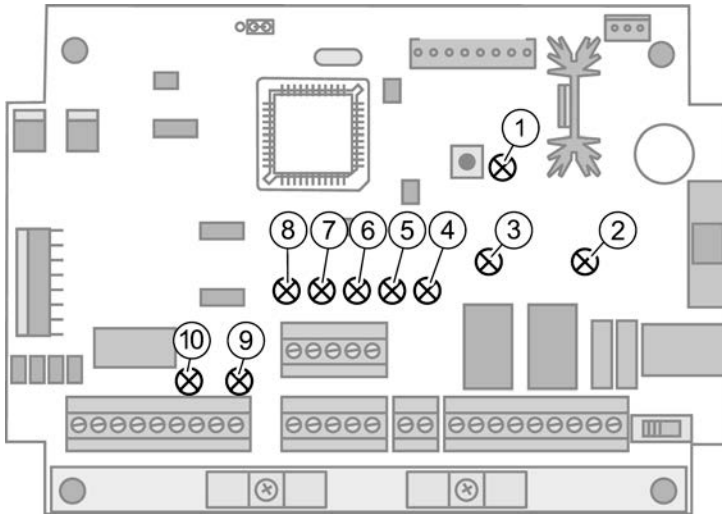


The motor cylinder control unit and the control cable are provided with pluggable terminal screw strips.

For easy wiring, the strips can be pulled out and be plugged in again after the related wires have been properly connected.

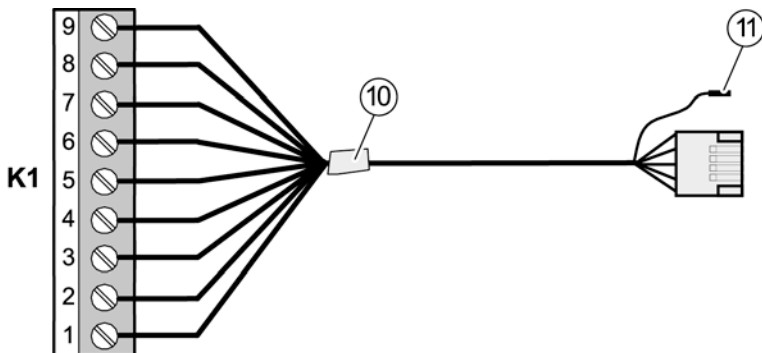
- ▶ Only wire the control unit after the following prerequisites have been satisfied:
 - All required components have been fitted at the door.
 - The motor cylinder control unit and power supply are installed in the secured area.
 - All required cables have been guided to the control unit.

7.3.3 Meaning of the LEDs on the control board



1	Operation
2	Error
3	Door open
4	Unlock Door (TA)
5	Door contact (TK)
6	Daytime/Nighttime mode (T/N)
7	Permanent Open mode (TDA)
8	Lock Door (TZ)
9	Signal transmitter
10	Key inserted

7.3.4 Motor unit control cable



1	Brown
2	Blue
3	Red
4	White
5	Grey
6	Pink
7	Yellow
8	Green
9	Violet
10	Braiding
11	Grounding connector

- Screw the braiding (10) of the shielding on the ground bus.



- Ensure that you screw the litz wire in the screw terminal and not the insulation.

7.4 Wiring the control inputs (terminal strip 2, K2)

The control inputs need only be wired if the related functions are actually needed.

The only exception is the Door Contact input: This input must always be wired to ensure the proper functioning of the motor cylinder.



Central doors in residential complexes and intercoms are often operated with a push-button and an electric door opener. These devices frequently operate with direct or alternating current.

- ▶ If the motor cylinder is used to unlock the door, the applied direct or alternating current must be uncoupled via a relay.
- ▶ Only connect the control inputs of the motor cylinder with zero-potential contacts.



NOTICE

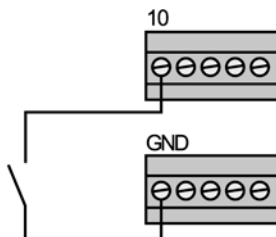
The control unit may be damaged if external voltage is applied.

- ▶ Only connect the control inputs with zero-potential contacts.
- ▶ Use suitable relays to uncouple the circuits.

The following shows the possible wiring of the control inputs on terminal strip 2 (K2):

Lock Door input (TZ)

K2



If this contact is closed, the door is locked, irrespective of the selected mode of operation (Daytime mode or Nighttime mode).

Notice:

The locking process always follows after the door is closed or the "Door Open" status is terminated.

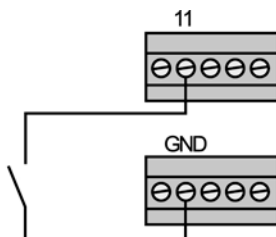
Any subsequent commands via the Unlock Door or Permanent Open mode inputs will not be executed unless the Lock Door input is opened again.

Contact used: switch, make-contact.

Recommended cable: JY(St)Y...x...x 0.6

Permanent Open mode input (TDA)

K2

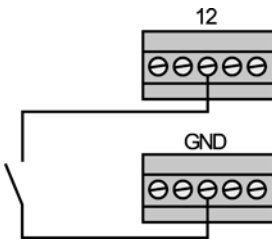


If this contact is closed, the door is permanently unlocked and the latch is pulled back. This status is independent of the selected mode of operation (Daytime mode or Nighttime mode).

Notice:

Contact used: switch, make-contact.

Recommended cable: JY(St)Y...x...x 0.6

Daytime/Nighttime mode input (T/N)**K2**

This function serves to switch over between Daytime mode and Nighttime mode.

If the contact is closed, Nighttime mode is enabled.

Notice:

The relay output of the timer for Daytime/Nighttime mode switch-over is connected to these contacts.

Daytime mode = opening / closing with the latch bolt only

Nighttime mode = opening / closing always with latch bolt and dead bolt

Contact used: switch, make-contact.

Recommended cable: JY(St)Y...x...x 0.6

**NOTICE****In case of failure of the TCP / IP network unauthorized access is possible.**

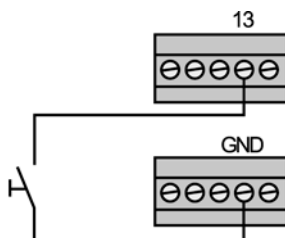
The wiring of the control inputs (K2) takes precedence over the settings in the control software in case of network failure.

To prevent an unintentional unlocking of the motor cylinder during network failure, follow this wiring of the control inputs:

- ▶ Keep contact no. 11 (TDA) open.
- ▶ Keep contact no. 12 (T / N) permanently, e.g. by a wire bridge, closed.
- ▶ If possible, keep contact no. 13 (TA) open.

Unlock Door input (TA)

K2



This function serves to unlock the door. If this contact is closed, the door is unlocked. This status is independent of the selected mode of operation (Daytime mode or Nighttime mode), with the exception of Permanent Open mode.

Notice:

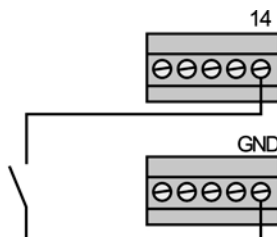
These contacts are normally used to connect the CESTronics wall terminal (WT).

Contact used: push-button, make-contact; time: min. 0.5 sec.

Recommended cable: JY(St)Y...x...x 0.6

Door Contact input (TK)

K2



This input must always be connected to a door contact as malfunctions of the motor cylinder may occur otherwise.

Satisfy yourself of the perfect functioning of the door contact at all times.

Notice:

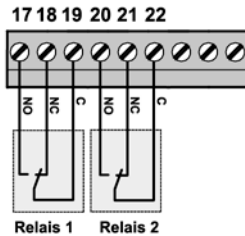
Contact used: switch, make-contact.

Recommended cable: supplied connecting cable or JY(St)Y...x...x 0.6 for extensions

7.5 Connecting the signal outputs

Connecting the signal outputs, terminal strip 4 (K4)

K4



Relay 1 (locking status) serves to indicate the door status "Open" or "Closed". This function is either triggered if the latch bolt was pulled in by the motor cylinder or if the door contact was closed.

Relay 2 (error) is switched when the motor cylinder cannot reach the learned position (jamming of latch bolt or dead bolt).

Notice:

Both switching contacts are free of potential.

See also "Technical Data" on page 103 on the wiring of the relay contacts.

The function of the second relay can be changed with the CEMO RS 232 configuration adapter. The standard error indication can be inverted so that, for instance, a loss of power is detected as a fault.

As from software version 3.0, this relay can be used to signal the "Locked" status of the lock. This may replace a dead bolt contact.

Please note that with panic locks, the status generated by the motor cylinder may deviate from the actual status of the dead bolt in the lock if the door is not opened in case of a panic actuation.

7.6 Integration into swing door drives

The motor cylinder can also be used to automatically unlock doors in combination with swing door drives.

For this application, the motor cylinder must be configured to maintain a defined closing sequence.

The door can be enabled with push-buttons, light sensors or access control systems.

For the integration into swing door drives, the following closing sequence is applicable:

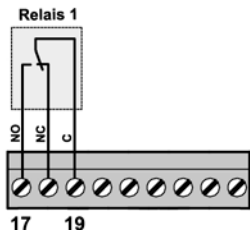
- ▼ The user obtains the door enable.
- ▼ The motor cylinder receives the command to unlock the lock of the door.
- ▼ The motor cylinder sends the "unlocked" signal to the controller of the swing door drive.
- ▼ The swing door drive opens the door.



The duration of the triggering pulse for the swing door drive must be set in the control unit of the motor cylinder (status "unlocked", see next page).

Electrical connection of the swing door drive

K4



- Connect the swing door drive with the screw terminals 17 and 19 on terminal strip 4.

You must set the duration of the triggering pulse for the swing door drive. This can be made either per Telnet (see page 80) or using the control terminal software (see page 75).

For further information on the configuration with the control terminal software, please refer to the software instructions.

To set the length of the triggering pulse for the swing door drive, you must change the parameter "WK".

Further information on this parameter can be found on page 95.

Parameter	Range	Default value
Wk[x]	[2, 255]	0

8 Commissioning the motor cylinder



Notice on the learning mode

The control unit of the motor cylinder can learn a large number of different lock types.

The travels learned in the learning mode must not change in the day-to-day operation, as these travels are permanently stored in the control unit.

However, some locks have this characteristic and e.g. change their internal paths significantly when the handle is actuated.

This is particularly true for locks designed for installation in fire doors (e.g. Nemef series 1730).

In this case, malfunctions may occur during operation which are signalled as an error.

For safety reasons, you should not use these locks.

Remedy:

- Use a lock of the same design with panic function.

8.1 Prerequisites for commissioning

Before the motor cylinder can be used, it must first learn the functions of the lock and the door.

The motor cylinder is capable of learning and storing these functions independently.

The learned functions and travels remain stored until a new learning process is performed.

To start a learning process, certain conditions must be satisfied.

- ▶ Ensure that all of the following prerequisites for the learning process have been created:
 - All required components have been installed.
 - Wiring is complete.
 - 230 V mains voltage is wired but not switched on.
 - All control inputs are open.
 - The timer (if available) is set to Daytime mode.
 - The door is open.

Once these prerequisites have been created, you can start with the learning process (see next page).

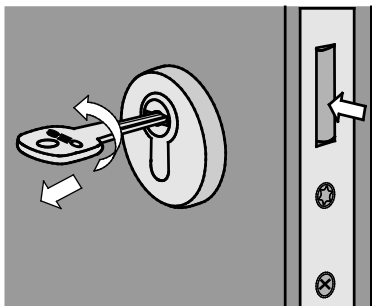


Danger of injury in case of malfunctioning!

- ▶ Satisfy yourself that the learning process has been performed without errors.

8.2 Learning mode 1 (standard)

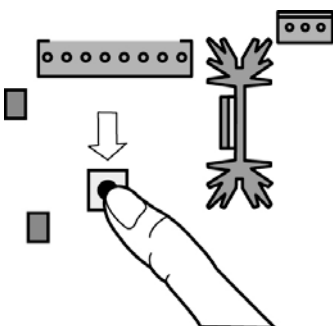
1.



Setting the starting position:

- ▶ Insert the key and turn the dead bolt and the latch bolt with the key into the "Open" position.
- ▶ Remove the key in the pull-out position.

2.



- ▶ Press and hold the "Learning Mode" push-button.
- ▶ Switch on the mains switch.
- ▶ Release the "Learning Mode" push-button.

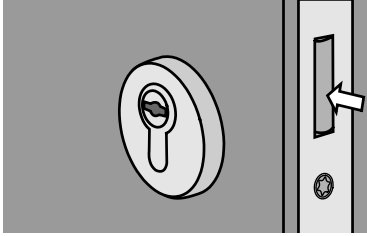
The dead bolt moves back and forth and stops in the final position.

3.



The motor cylinder waits for about 10 seconds.

4.



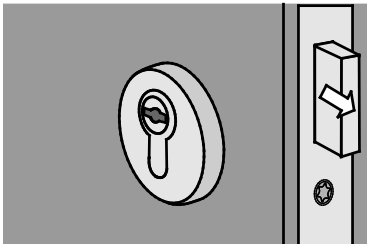
The dead bolt is retracted and the latch bolt is pulled in for a short period.

5.



The motor cylinder waits about 10 seconds for the door to close.

6.



► Close the door.

The dead bolt moves into the position defined by the wiring (Daytime/Nighttime mode). This ends the Learning mode.



The dead bolt now moves into the position defined by the wiring.

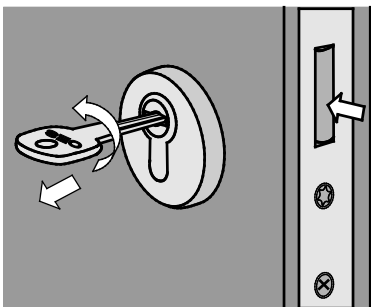
The motor cylinder is now operative.

8.3 Learning mode with panic function



Once the motor cylinder has learnt the panic function, it will attempt to lock the door every 15 minutes.

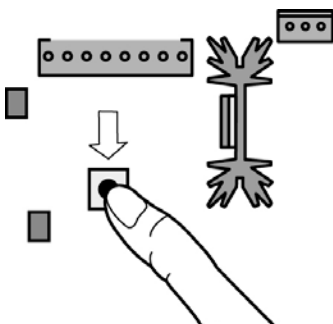
1.



Setting the starting position:

- ▶ Insert the key and turn the dead bolt and the latch bolt with the key into the "Open" position.
- ▶ Remove the key in the pull-out position.

2.

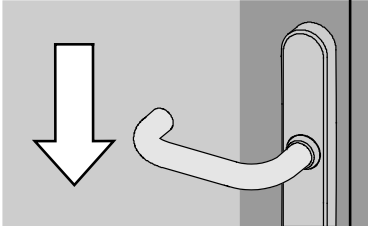


- ▶ Press and hold the "Learning Mode" push-button.
- ▶ Switch on the mains switch.
- ▶ Release the "Learning Mode" push-button.

The dead bolt moves out slowly and then moves in slowly.

Next the dead bolt first moves out fast into the final position and subsequently slowly into final position.

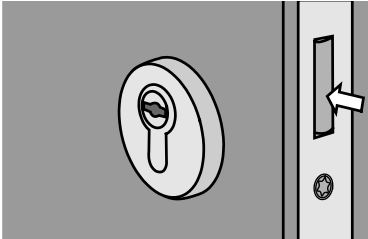
3.



► Actuate the door handle.

The motor cylinder waits for about 10 seconds.

4.



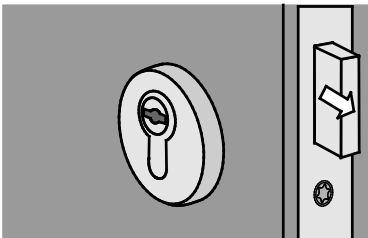
The dead bolt is retracted and the latch bolt is pulled in for a short period.

5.



The motor cylinder waits for about 10 seconds for the door to close.

6.



The dead bolt moves into the position defined by the wiring (Daytime/Nighttime mode). This ends the Learning mode.

**NOTICE****Risk of non-compliance with door approval regulations!**

- ▶ Clarify that the regulations are observed for doors in emergency exits and escape routes.
 - ▶ Clarify whether the CEMO motor cylinder is permitted for your intended use.
 - ▶ You must not use the CEMO motor cylinder if it is not permitted for your intended use.
-

8.4 Notices on panic locks



The follower of the motor cylinder is permanently connected with the knob and the motor unit. The procedure described under "Leaning mode with panic function" must not be carried out in case of locks that also actuate the follower of the cylinder when the panic function is enabled (Fliether, Fuhr).

These locks are not suitable for operation with a CEMO motor cylinder, as manually triggered, fast rotations of the motor can lead to destruction of the control unit.



NOTICE

It is possible to destruct the motor cylinder if you use unsuitable locks.

- ▶ Clarify that you only use the motor cylinder on suitable locks.
- ▶ Do not use the CEMO motor cylinder on door locks that also operate the cylinder locking lever when the anti-panic function is triggered.
- ▶ Please observe the appropriate chapter in the lock manufacturers' instructions.

9 Operating the motor cylinder

9.1 General use

The motor cylinder can also be operated with an authorized key inserted in the locking cylinder.

As soon as the key is inserted and engages the lock, the motor unit is disabled.

If the key is rotated in the desired direction, the door will be locked or unlocked (same function as with standard locking cylinders). This will require a slightly higher effort as the transmission will have to be rotated as well.

Depending on the position of the follower, idle rotation without locking function may occur. This is no malfunction but a normal behaviour resulting from the technical design.



Danger of injury through rotating key!

- Never attempt to hold on to a rotating key.
-

9.2 Special features of the motor cylinder

9.2.1 Locking in Daytime mode

In Daytime mode of a standard lock, the dead bolt is retracted and the door is only held by the latch bolt.

If the door is locked with a key, the Daytime mode is disabled.

The locking is maintained until the door is unlocked with a key, the inside knob or the Unlock Door command.

9.2.2 Locking assistance

For locks with multi-point interlocks, several turns of the key may be necessary for locking and/or unlocking.

- ▶ Insert the key and turn it by one turn in the desired direction.
- ▶ Remove the key again.

The motor cylinder will independently perform all remaining turns for you until full unlocking has been achieved.



This function is not available for panic locks.

9.2.3 **Operation with inside knob in Nighttime mode**

- ▶ Turn the inside knob a few millimetres in the desired direction (open/close).

The motor cylinder will independently perform the required turns until the desired status has been attained.

9.2.4 **Operation with inside knob in Daytime mode**

- ▶ To open the door, turn the knob a few millimetres in the desired direction.

The motor cylinder will open independently.

Locking with the knob is not possible. The command will be carried out but subsequently the dead bolt will be moved back again into its starting position.

No accidental locking via the knob is possible.

9.3Sequences



The following applies to all sequences:

If after an opening command the door (door contact) is not opened, the motor cylinder will wait for 15 seconds and then move back into the position set prior to the opening command.

If the door (door contact) is not closed again after opening, the motor cylinder remains in the unlocked position.

9.3.1Nighttime operation, opening with key

User action	Reaction by the motor cylinder
Insert key, turn the key until engagement occurs, make one dead bolt locking turn, remove key.	The motor cylinder independently executes any remaining turns and unlocks completely.
Open door (door contact opens).	The latch bolt is released again.
Close door (door contact closes).	The motor cylinder waits for 5 seconds and then locks.

9.3.2Daytime operation, opening with key

User action	Reaction by the motor cylinder
Insert key, turn the key until engagement occurs, pull back latch bolt and open the door (door contact opens).	The latch is released again.
Close door (door contact closes).	

9.3.3 Nighttime operation, opening with inside knob

User action	Reaction by the motor cylinder
Turn knob in "Open" direction.	The motor cylinder independently executes any remaining turns and unlocks completely.
Open door (door contact opens).	The latch is released again.
Close door (door contact closes).	The motor cylinder waits for 5 seconds and then locks.

9.3.4 Daytime operation, opening with inside knob

User action	Reaction by the motor cylinder
Turn knob in "Open" direction.	The latch is pulled in.
Open door (door contact opens).	The latch is released again.
Close door (door contact closes).	

9.3.5 Nighttime operation, opening via access control or switch

User action	Reaction by the motor cylinder
Enable the motor cylinder, actuate the switch.	The motor cylinder independently executes the required turns and unlocks completely.
Open door (door contact opens).	The latch is released again.
Close door (door contact closes).	The motor cylinder waits for 5 seconds and then locks.

9.3.6 Daytime operation, opening via access control or switch

User action	Reaction by the motor cylinder
Enable the motor cylinder, actuate the switch.	The latch is pulled in.
Open door (door contact opens).	The latch is released again.
Close door (door contact closes).	

10 Optical signals

10.1.1 "Error" control output

This control output can be used to signal locking problems.
Example of a locking problem: The door is closed but the dead bolt cannot move into the striking plate "as learnt".



The optional CEMO RS 232 configuration adapter allows you to adapt the behaviour of the control outputs. For more information please refer to the chapter "Using the CEMO RS 232 adapter" on page 81.

User action	Reaction by the motor cylinder
Close the door (door contact closes).	After 5 seconds, the dead bolt moves out and runs against the striking plate. The motor cylinder detects the blocking, moves back into starting position and waits for 10 seconds.

This procedure is repeated three times. If the situation is remedied during one of these attempts, the motor cylinder continues to operate as normal. If the situation is not remedied by the third attempt, the motor cylinder will go into error mode:

- The motor cylinder moves the dead bolt into the "Unlocked" position, remains in the starting position and immediately enables the "Error" output.
- The contact 22-20 on terminal strip 4 is closed, the contact 22-21 is opened and remains switched until a Reset is performed. The "Error" LED (see page 34) goes on. Manual operation is still possible but automatic functions can only be performed after a Reset.

10.1.2 Reset after error:

The error condition is reset when the door contact is opened and closed again once.

Should after a reset the underlying fault have not been remedied, the motor cylinder will behave as described above.



Notices on trouble-shooting:

- ▶ Verify with a key or the inside knob that the lock operates perfectly.
 - ▶ Check for potential reasons of the fault (little stones between case and leaf, deformed striking plate, door contact out of adjustment, etc.).
 - ▶ Eliminate the trouble.
-

10.1.3 "Door open" control output

This control output can be used to signal the door status.

As soon as the latch bolt is pulled back and/or the final "Open" position of the lock has been attained **OR** the door contact is opened,

- contact 17-19 will be closed,
- contact 17-18 will be opened.

This condition is maintained until the door (door contact) is closed again.

11 Using the accessories

A wide range of optional accessories are available for the motor cylinder.

This chapter describes the following options and their proper use:

- Integrated timer, see page 60 ff.
- OMEGA ACTIVE wall terminal WT, see page 62 ff.
- CEMO-Net online, see page 63 ff.
- CEMO-Net online retrofit kit, see page 65 ff.
- CEMO-Net online PoE (Power over Ethernet), see page 70 ff.
- CEMO-Net online PoE retrofit kit, see page 70 ff.
- CESTronics control terminal, installation and configuration, see page 75 ff.
- Configuration adapter to adapt CEMO functions, see page 81 ff.

11.1 Installing the timer

An optional timer is available for the motor cylinder. It must be fitted and wired on the board of the motor cylinder control unit.

- ▶ Before starting with the installation, check the scope of delivery:
 - 1 x timer with 4 x board fasteners
 - 5 x cables with connectors
 - 1 x Timer Operating Instructions.



NOTICE

Risk of damage to the control unit!

- ▶ Always disconnect the power supply before performing any work at or in the control unit.

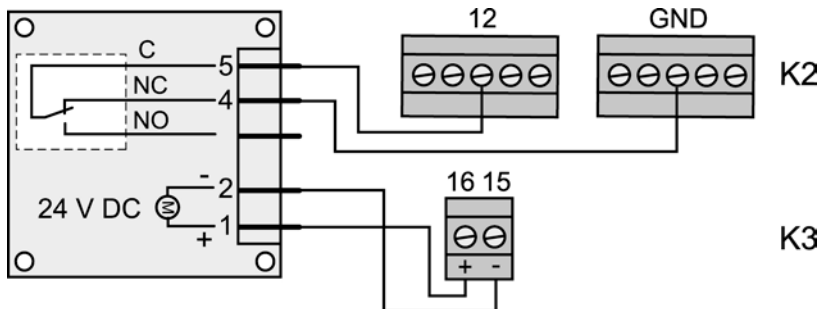
To install the timer, proceed as follows:

- ▶ Wire the timer in line with your requirements.
- ▶ Use the five supplied cables with connectors for the wiring.
- ▶ Use the three connection examples below as an illustration for your wiring.
- ▶ Plug the timer into the printed circuit board of the control unit of your motor cylinder (slot above the processor).
- ▶ Ensure that all four clips have engaged.
- ▶ Program your timer as required.
- ▶ Use the supplied Timer Operating Instructions for the programming.

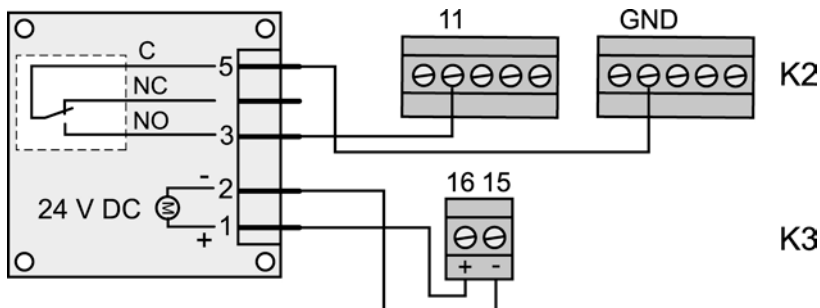
This completes the installation of the timer.

The following three connection examples illustrate the possible applications:

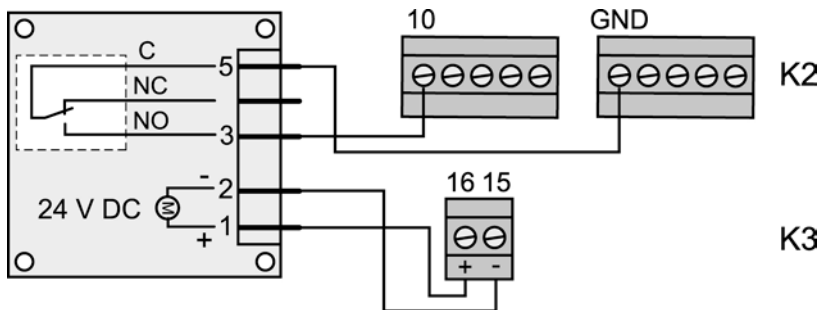
Daytime / Nighttime mode switch-over



Permanent Open mode / normal operation switch-over



Lock Door / normal operation switchover



11.2 Using the CESTronics wall terminals

With the CESTronics wall terminals available as an option you can make hands-free access possible.

The combination of CEMO motor cylinders with appropriate wall terminals permits the automation and optimized design of entrances for disabled persons.



For any further information please contact your professional CES partner.

11.3 Installing CEMO-Net online

The motor cylinder is also available in an online version. This allows managing and configuring the motor cylinder over a TCP/IP network.

The motor cylinder control unit is supplied ready for use.

- ▶ Before starting with the installation, check the scope of delivery:
 - 1 x CEMO-Net online control unit
 - 1 x single-application control software
 - 1 x Control Operating Instructions



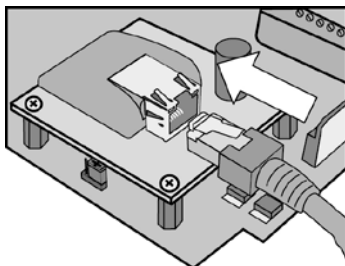
NOTICE

Risk of damage to the control unit!

- ▶ Always disconnect the power supply before performing any work at or in the control unit.

To install the online control, proceed as follows:

- ▶ If required, have a skilled electrician or IT expert lay the required network cables to the place of installation of the motor cylinder control unit.
- ▶ Install the control unit as described in the Chapter "Fitting instructions" on page 24 ff.



- ▶ Establish the network connection by plugging your RJ45 network cable into the RJ45 socket of the network board.
- ▶ Note the MAC address of the network board.
- ▶ Finally fit the cover of the

control unit.

This completes the fitting and you can now start configuring the system:

- ▶ Configure your system as described in the Chapter "CEStronics control terminal, configuration and installation" on page 75 ff.

For the configuration, you need to know the MAC address of the network board. This is a unique address used to activate your network board. You will find the address at the following places:

- inside the cover of the CEMO control unit,
- on the network board,
- in a separate document that is part of the scope of delivery of the motor cylinder.



Do not exchange the cover of the CEMO control unit! Otherwise you will no longer be able to allocate the MAC address correctly. Note the place of installation so that you can later allocate the MAC address.



The IP addresses of the control units required by you must already be stated with the order.



With the integrated network module, the use of the standard timer is no longer possible and thanks to the virtual timer in the CESTronics software no longer required.

11.4 CEMO-Net online retrofit kit

You can retrofit the motor cylinder control unit. The retrofit kit allows you to manage and configure the motor cylinder over a TCP/IP network.

The retrofit kit is recommended for already installed motor cylinders.

- ▶ Before starting with the installation, check the scope of delivery:
 - 1 x network board with 4 fasteners
 - 2 x connecting cable
 - 1 x new housing cover with the allocated MAC address
 - 1 x sticker with the allocated MAC address of the network board
 - 1 x single-application control software
 - 1 x software update with processor



NOTICE

Risk of damage to the control unit!

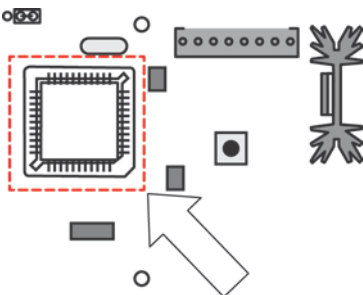
- ▶ Always disconnect the power supply before performing any work at or in the control unit.
- ▶ Satisfy yourself that you have performed a potential equalization to prevent electrostatic charges.

To install the retrofit kit, proceed as follows:

- ▶ If required, have a skilled electrician or IT expert lay the required network cables to the place of installation of the motor cylinder control unit.
- ▶ Install the control unit as described in the Chapter "Fitting instructions" on page 24 ff.

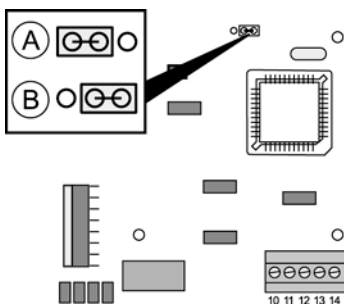
- ▶ Satisfy yourself that you have performed a potential equalization to prevent electrostatic charges.
- ▶ Disconnect the power supply to the control unit if you have not already done so.
- ▶ Remove the cover of the motor cylinder control unit.

1.



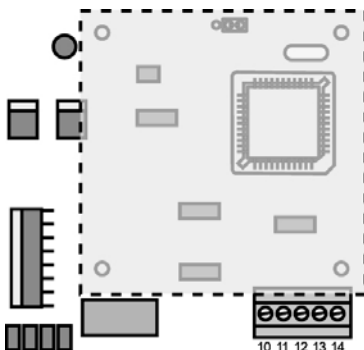
- ▶ Remove any existing timer.
- ▶ Carefully remove the existing processor using a suitable tool.
- ▶ Carefully insert the new processor into the socket of the motor cylinder control unit using a suitable tool.
- ▶ Be sure to avoid damaging the processor.

2.



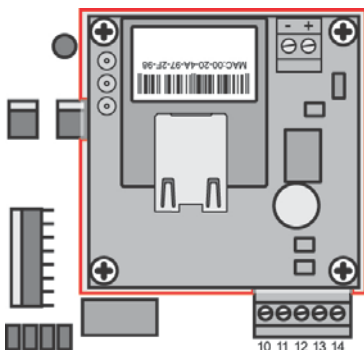
- ▶ Plug the jumper into "configuration" position (pos. A in the figure).

3.



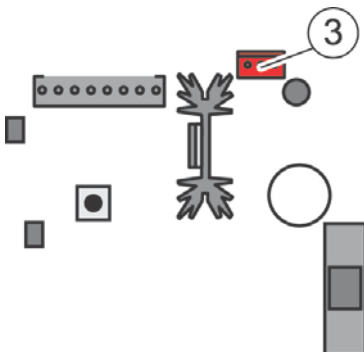
- ▶ Insert the network board into the board of the motor cylinder control unit.
- ▶ The network board is placed in the area above the processor.

4.



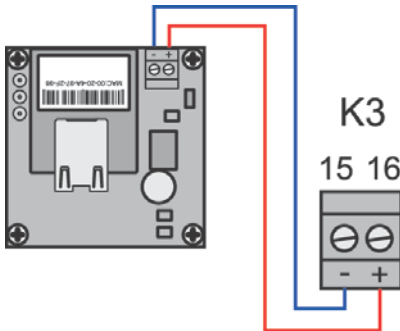
- ▶ Position the board as shown in the figure.
- ▶ Ensure that all four fasteners have engaged.

5.



- Now establish the required connections. Two different lines must be wired:
- **Motor cylinder control to network board**
 - ▶ Plug the 3-conductor cable of the network board into the socket on the motor cylinder control board (3).

6.



- **Power supply to network board**

- ▶ Connect the two terminals of the network board with the terminals 15 and 16 (terminal strip 3) of the motor cylinder control unit as shown in the figure.

- ▶ Verify the wiring.

This completes the fitting and you can now start configuring the control:

- ▶ Configure your system as described in the Chapter "CEStronics control terminal, configuration and installation" on page 75 ff.

For the configuration, you need to know the MAC address of the network board. This is a unique address used to activate your network board. You will find the address at the following places:

- inside the cover of the CEMO control unit,
- on the network board,
- in a separate document that is part of the scope of delivery of the retrofit kit.



Do not exchange the cover of the CEMO control unit! Otherwise you will no longer be able to allocate the MAC address correctly. Note the place of installation so that you can later allocate the MAC address.



The IP addresses of the control units required by you must already be stated with the order.



With the integrated network module, the use of the standard timer is no longer possible and thanks to the virtual timer in the CESTronics software no longer required.

11.5 CEMO-Net PoE (Power over Ethernet)

The motor cylinder is also available in a PoE version. It allows managing and configuring the motor cylinder over a TCP/IP network without separate power supply for the motor cylinder control. Power is supplied via a PoE adapter which must be purchased separately from your specialized dealer.

The PoE version is delivered ready for use. Also available is an optional retrofit kit allowing you to retrofit the control system of our motor cylinder yourself. This chapter also describes the retrofitting process.

- ▶ Before starting with the installation, check the scope of delivery:
 - 1 x PoE board with four fasteners
 - 1 x single-application control software
 - 2 x connecting cable for wiring on the board



NOTICE

Risk of damage to the control unit!

- ▶ Always disconnect the power supply before performing any work at or in the control unit.

To install the PoE adapter, proceed as follows:

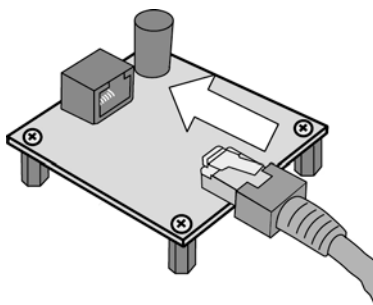
- ▶ If required, have a skilled electrician lay the 230 V mains cables to the place of installation of the motor cylinder.
- ▶ If required, have an IT expert lay the network cables for connecting the PoE switch with the PoE board of the motor cylinder control unit to the place of installation of the motor cylinder control unit.

- ▶ Install the control unit as described in the Chapter "Fitting instructions" on page 24 ff.



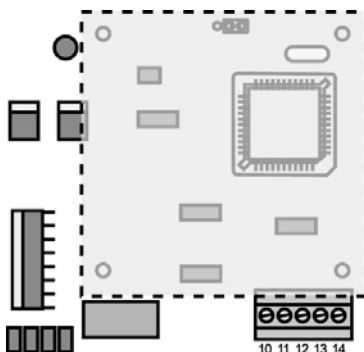
If you have bought the ready-to-use PoE version, skip steps 1 to 5. You can directly proceed with the configuration (step 6).

1.



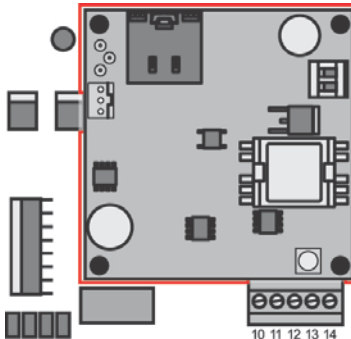
- ▶ Remove the cover of the housing.
- ▶ Remove any existing timer.
- ▶ Plug the RJ-45-plug of your PoE adapter cable into the socket on the top of the PoE board.

2.



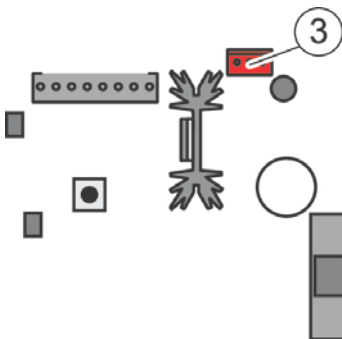
- ▶ Insert the PoE board into the motor cylinder control board.
- ▶ The PoE board is placed in the area above the processor.

3.



- ▶ Position the board as shown in the figure.
- ▶ Ensure that all four fasteners have engaged.

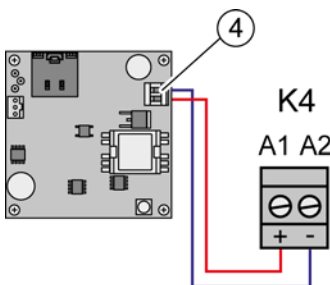
4.



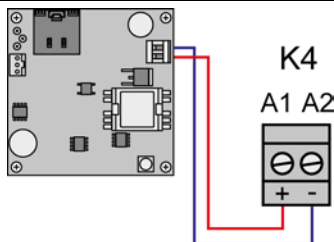
Now establish the required connections. Two different lines must be wired:

- **Motor cylinder control to PoE board**
- ▶ Plug the 3-conductor cable of the PoE board into the socket on the motor cylinder control board (3).

5.



- **Power supply to PoE board**
- ▶ Connect the two terminals of the PoE board (4) with the terminals A1 and A2 (terminal strip 4) of the motor cylinder control unit as shown in the figure.



► Verify your wiring.

6.
 - Plug in the network cable.
 - Select your PoE supplied network connection.
 - Verify your installation.

This completes the fitting and you can now start configuring the control:

- Configure your system as described in the Chapter "CEStronics control terminal, configuration and installation" on page 75 ff.

For the configuration, you need to know the MAC address of the PoE board. This is a unique address used to activate your PoE board. You will find the address at the following places:

- inside the cover of the CEMO control unit,
- on the bottom of the PoE board,
- in a separate document that is part of the scope of delivery of the motor cylinder or the retrofit kit.



Do not exchange the cover of the CEMO control unit! Otherwise you will no longer be able to allocate the MAC address correctly. Note the place of installation so that you can later allocate the MAC address.



The IP addresses of the control units required by you must already be stated with the order.



With the integrated network module, the use of the standard timer is no longer possible and thanks to the virtual timer in the CESTronics software no longer required.

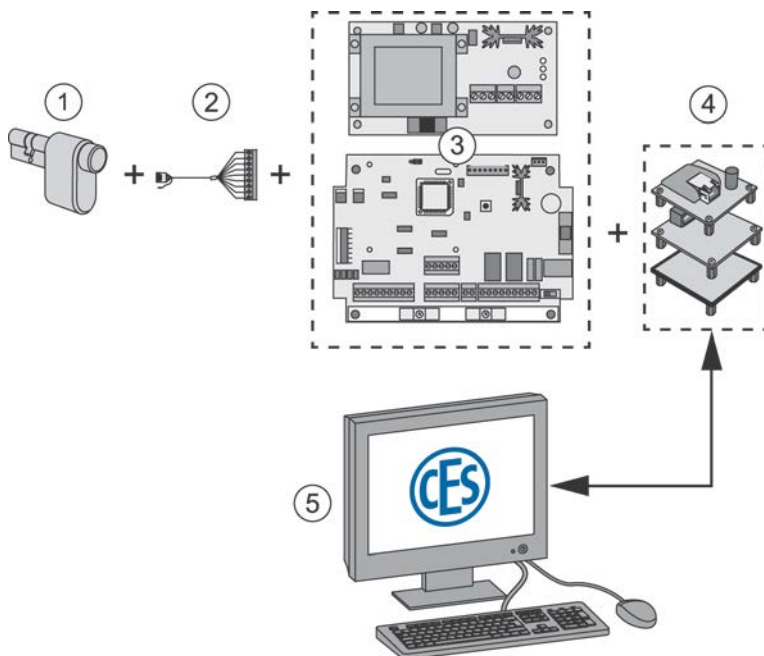
11.6 CESTronics control terminal, installation and configuration

11.6.1 Description

This chapter describes the installation and use of the remote control function of the motor cylinder over your network.

It shows all the steps required to operate your motor cylinder in the network.

11.6.2 Block diagram (see also page 77)



Your CEMO-Net online retrofit kit (see page 65 ff.) permits the remote control of the functions of your motor cylinder.

The remote control is not encrypted and thus only suitable for your secured intranet.

**NOTICE****Risk of unauthorized access to the control!**

- ▶ Only use the remote control in the Intranet range.

You can also send commands to the motor cylinder to control its general behaviour with configuration parameters. These settings will also be maintained after the control system has been switched off.

Moreover, you can read out operating values of the control. These operating values permit conclusions as to potential problems.

Use these configurations with caution and verify them after setting. The settings are maintained until they are changed with a new configuration.

**NOTICE****Risk of injury in case of malfunctioning!**

- ▶ Always check your settings to satisfy yourself of the perfect execution of the desired functions.



The IP addresses of the control units required by you must already be stated with the order.



With the integrated network module, the use of the standard timer is no longer possible and thanks to the virtual timer in the CESTronics software no longer required.

11.7 Fitting and installation

11.7.1 Fitting conditions

To be able to use the configuration options, you at least require the following:

- the motor cylinder (1) with the control cable (2)
- the motor cylinder control unit with power supply (3)
- CEMO extensions: NET, PoE (4)
- a PC with a network connection (5)
- a CEMO firmware, version 3.09 or higher

For the remote control of the motor cylinder, the remote control function in the motor cylinder must be enabled. If the remote control function is enabled, this is indicated by a "+" behind the version number, when the system information is retrieved (e.g. "3.09 Rel.+", see also page 86 ff.).



The motor cylinder must be specifically ordered with the "Remote Control" option. In its standard version, the motor cylinder cannot be remote controlled.

11.7.2 Installation of the CEMO-Net online board

To install the CEMO-Net online board, proceed as follows:

- ▶ Fit the CEMO-Net online board as described on page 65 ff.
- ▶ Establish the required connections as described on page 31 ff.
- ▶ Verify your fitting.

This completes the fitting and you can now configure the motor cylinder.

For the configuration, you need to know the MAC address of the network board. This is a unique address used to activate your network board. You will find the address at the following places:

- inside the cover of the CEMO control unit,
- on the bottom of the network board,
- in a separate document that is part of the scope of delivery of the retrofit kit.



Do not exchange the cover of the CEMO control unit! Otherwise you will no longer be able to allocate the MAC address correctly. Note the place of installation so that you can later allocate the MAC address.

11.7.3 Identifying the IP address of your motor cylinder

You must identify the IP address of the motor cylinder which is required for establishing the network connection. This can be done using the Lantronix application "DeviceInstaller":

This application searches all existing network devices and shows them in a list. The application can be downloaded free of charge at the following address (errors and omissions reserved):

<http://www.lantronix.com/device-networking/utilities-tools/device-installer.html>.

To identify the IP address of your motor cylinder with the Lantronix application, proceed as follows:

- ▶ Install the DeviceInstaller application following the Lantronix instructions.
- ▶ Start the application.
- ▶ Click on "Search".

All existing network devices are shown.



If no network devices are shown:

- ▶ Follow the trouble-shooting instructions of the Lantronix application.
 - ▶ Check your network and correct any defects found.
 - ▶ Ask an IT expert to correct the defects.
 - ▶ Contact your professional CES partner to have the defects in your network corrected (optional, subject to a charge).
-

11.7.4 Changing the IP address of the motor cylinder

You can change the IP address of the motor cylinder.

- ▶ For this purpose, you can use the Telnet application which is supplied with every Windows™ operating system.
- ▶ Click on "Start" and then on "Execute".
- ▶ Enter the command "Telnet".

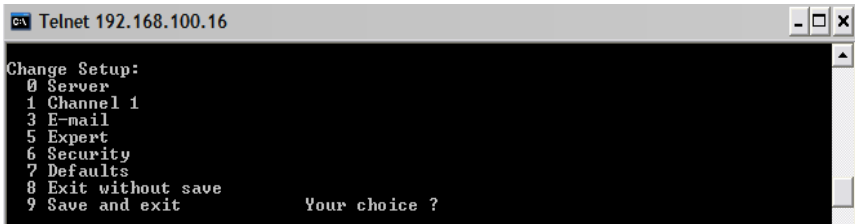
A window with the Telnet application appears.

- ▶ Enter the command "Telnet CEMO-IP 9999".



"CEMO-IP" here designates the currently allocated IP address of the motor cylinder and the following four-digit figure indicates the related port (fixed value). After the above command has been executed, a main menu appears, in which motor cylinder settings can be made.

The main menu appears:



```
Telnet 192.168.100.16
Change Setup:
0 Server
1 Channel 1
3 E-mail
5 Expert
6 Security
7 Defaults
8 Exit without save
9 Save and exit
Your choice ?
```

- ▶ Select item "0 Server" and confirm with "Enter".
- ▶ Change the IP address step by step.

Do not change any other settings!

- ▶ Actuate the "Enter" key until you return to the main menu and save your settings (item "9 Save and Exit").

11.8 Using the CEMO RS 232 adapter

You can also configure the motor cylinder using the optional CEMO RS 232 adapter. This way, the motor cylinder can be adapted to specific fitting situations and special customer wishes.



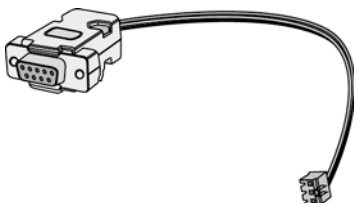
NOTICE

Risk of injury through incorrect configuration!

- ▶ Always check your settings to satisfy yourself of the perfect execution of the desired function.



The saved configuration will be maintained. It can only be changed or reset by overwriting it with a new configuration.



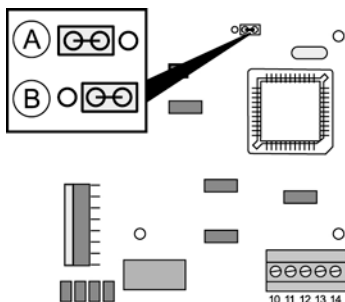
To use the optional CEMO RS 232 adapter, you require:

- a prepared CEMO board with interface (version 3.05 or higher, delivered as standard)
- a PC with a serial port
- the CEMO RS 232 adapter.

11.8.1 Using the CEMO RS 232 adapter

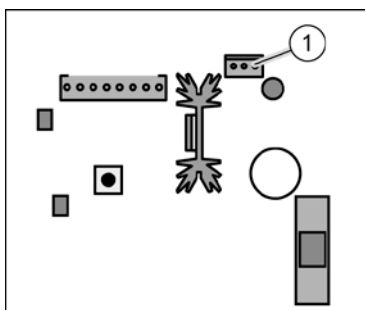
To use the CEMO RS 232 adapter, proceed as follows:

1.



- ▶ Switch off the power supply of the control unit.
- ▶ Open the housing of the control unit by releasing the four screws.
- ▶ Plug the jumper into the "configuration" position (position A).

2.



- ▶ Connect the CEMO RS 232 adapter with the three-pole interface on the control board (1) and a free serial port at your PC.
- ▶ Switch the control unit on again and make the configuration as desired.
- ▶ Configure your COM port.



Once the configuration has been completed, the jumper must be plugged into "normal operation" position again (pos. B in the figure).

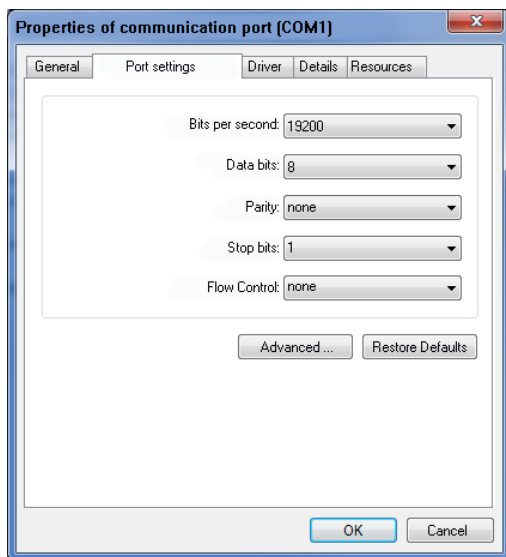
11.8.2 Establishing a connection with the CEMO RS 232 adapter

- ▶ Configure the CEMO RS 232 adapter accurately at your COM interface.
- ▶ Use the "HyperTerminal" application, which is standard with Windows™, for the configuration and the display of the data.

To open the HyperTerminal application, select
 "Start" ➤ "Programs" ➤ "Accessories" ➤ "Communication"
 ➤ "HyperTerminal".

- ▶ In the HyperTerminal menu, select "File" ➤ "Properties" to configure the connection.
- ▶ Enter the COM port you use.

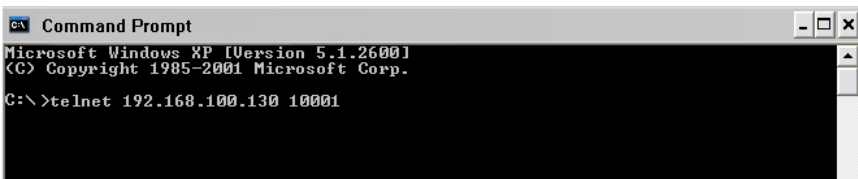
The additional communication parameters are as follows:
 Baud: 19200, Data bits: 8, Parity: none, Stop bits: 1, Flow control: none.



11.8.3 Establishing a connection with the motor cylinder over your network

To establish a connection with your motor cylinder over your network, you can use e.g. the Windows™ "HyperTerminal" application or the Telnet protocol on port 10001. For a network connection, your motor cylinder must be equipped with a suitable network interface (available as an option).

11.8.4 Connection via Telnet



After the command has been executed, you can enter the commands for the remote control of the motor cylinder.

11.8.5 Connection via HyperTerminal

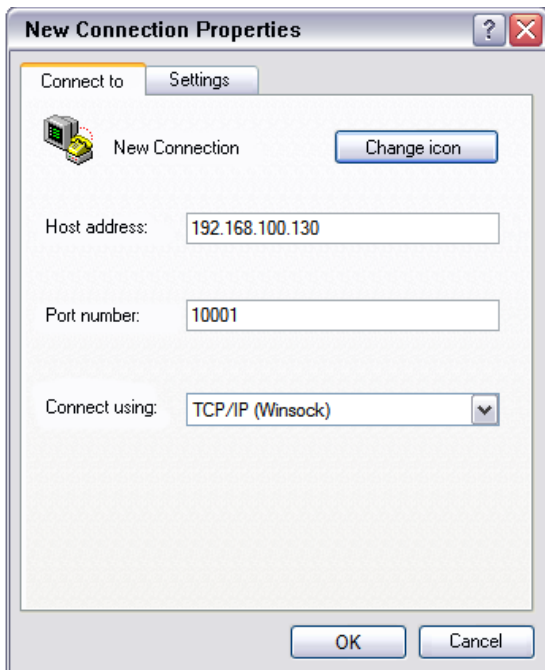
For the configuration and display of data, you can also use the standard Windows program "HyperTerminal".

To open the program, select:

"Start" ➤ "Programs" ➤ "Accessories" ➤ "Communication" ➤ "HyperTerminal".

In the HyperTerminal menu, select "File" ➤ "Properties" to configure the connection.

- ▶ Enter the CEMO-IP and the port 10001 as shown below:



- ▶ Click on "OK" and then on "Call" (telephone icon).
- ▶ Save the settings. You will now always be connected with the motor cylinder with the saved settings.

11.9 Configuration commands

The configuration commands serve to adapt the motor cylinder to particularities at the door.

As a consequence, these commands should only be changed in exceptional cases, e.g. during the initial commissioning. Continuously changing parameters with these commands is not supported and will result in malfunctions.

Variable values are indicated with the characters "[x]".

- Do not use the brackets when entering the values.

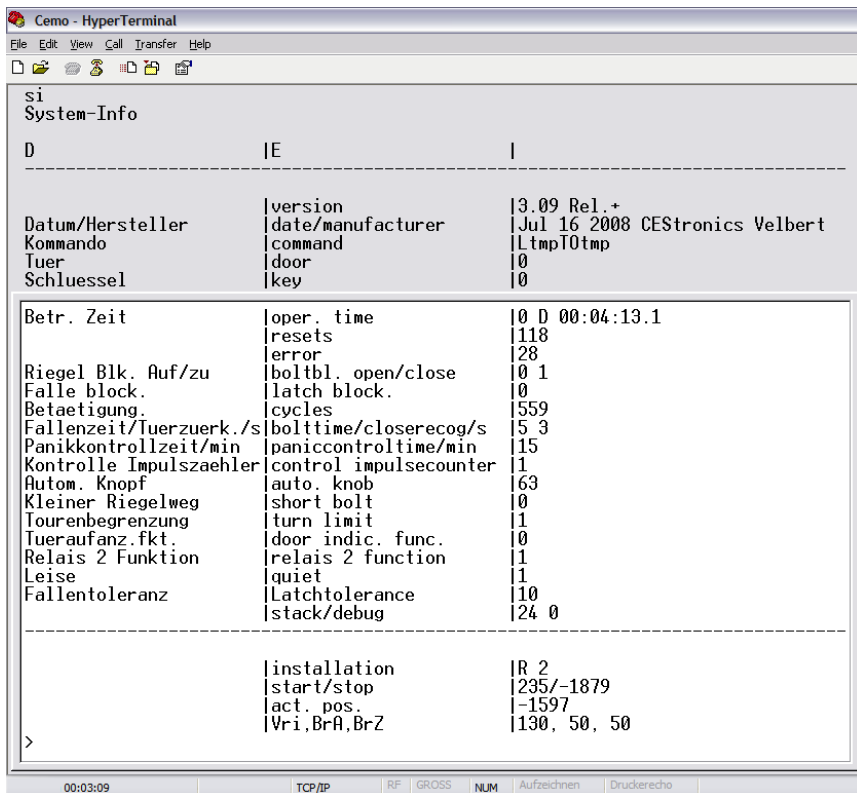
11.9.1 Clear counters

Command/input	Meaning
sc	This command serves to reset all counters of the system to "0". This may be useful, for example, when a lock was replaced.

11.9.2 System information

Command/input	Meaning
si	Display of the system information in German and English

The following figure shows the output after entering the "si" command in the HyperTerminal application:



```

si
System-Info

D                      IE                      I
-----
Datum/Hersteller      |version                      |3.09 Rel.+
Kommando              |date/manufacturer           |Jul 16 2008 CESTronics Velbert
Tuer                  |command                     |l tmpT0tmp
Schlüssel             |key                          |0

Betr. Zeit            |oper. time                   |0 0 00:04:13.1
                      |resets                       |118
                      |error                        |28
Riegel Blk. Auf/zu    |boltbl. open/close          |0 1
Falle block.          |latch block.                 |0
Betaetigung.          |cycles                       |559
Fallenzeit/Tuerzuerk./s|bolttime/closerecog/s       |5 3
Panikkontrollzeit/min |paniccontroltime/min        |15
Kontrolle Impulsaehler|control impulsecounter       |1
Autom. Knopf          |auto. knob                   |63
Kleiner Riegelweg     |short bolt                   |0
Tourenbegrenzung      |turn limit                   |1
Tueraufanz.fkt.       |door indic. func.           |0
Relais 2 Funktion     |relais 2 function            |1
Leise                  |quiet                        |1
Falltoleranz          |latchtolerance               |10
                      |stack/debug                  |24 0

                      |installation                 |R 2
                      |start/stop                   |235/-1879
                      |act. pos.                    |-1597
                      |Vri,BrA,BrZ                 |130, 50, 50
>
  
```

11.9.3 Explanation of the entries:

German	English	Explanation
Version	version	Current software version
Datum/ Hersteller	date/ manufacturer	Software date and manufacturer
Kommando	command	Command active at the operating unit: L: Locked TDO: Permanent Open U: Unlocked
Tür	door	Door status 0: closed 1: open
Schlüssel	key	Key status 0: not inserted 1: inserted
Betr. zeit	oper. time	Operating time since last switching on: days, hours, minutes, seconds
resets	resets	Number of resets performed by the device
error	error	Errors signalled to the user
Riegel Blk. Auf/zu	boltbl. open/close	Dead bolt blockages in "unlock" and "lock" direction identified by the device
Falle block.	latch block.	Latch bolt blockages identified by the device

Betaetigung	cycles	Number of operating cycles since installation of the device
Fallenzeit/ Tuerzuerk./s	bolttime/ closerecog/s	Currently set time for which the latch bolt remains retracted if the door is not opened / Door closed recognition time for which the device waits before locking after the door was closed.
Panik- kontrollzeit	Paniccontroltime	Currently set time for checking the locking of the door in panic mode.
Kontrolle Impulszaehler	count	Status of the special setting (1 = active, only in hardware versions as from Jan. 2007)
Autom. Knauf	auto. knob	Set threshold until a manual rotation of the knob is identified as such.
Kleiner Riegelweg	short bolt	Set type of lock 0: standard lock 1: atypical lock
Touren- Begrenzung	turn limit	1: Lock is operated with fixed number of turns 0: Lock is operated without fixed number of turns.
Tueranzfkt.	door indic. fct.	1: Door status is signalled instantaneously to the "Door open" indicator. 0: Door status is signalled with a delay when the door is closed. Possible inputs range from "2" to

		"255" and the relay is pulled up for the set time.
Relaisfunktion 2	Relais function 2	Active status of relay no. 2 0: Error inverted 1: Error normal 2: Relay behaves like a dead bolt contact
Fallentoleranz	latchtolerance	Tolerance of the latch bolt target position. By increasing this value, locks with slightly varying latch bolt travels can be operated.
Leise	quiet	Latch bolt is pulled in more slowly to ensure a quieter operation.
stack/debug	stack/debug	Internal data
installation	installation	Lock geometry: L/R left/right installation, number of turns, panic operation and related travel
start/stop	start/stop	Latch bolt and stop position
act. pos.	act. pos.	Current position of the drive
Vri,BrA,BrZ	Vri,BrA,BrZ	Internal values

11.9.4 System reset

Command/input	Meaning
sr	With this command, a reset of the system can be executed without disconnecting the voltage.

11.9.5 Limitation of locking turns

Command/input	Meaning
Wb[x]	This parameter indicates if the lock has integer turns. This parameter is set automatically in the learning mode and normally does not have to be changed. The value indicated for "turn limit" in the system information is set accordingly.

11.9.6 Latch bolt tolerance

Command/input		Meaning	
We[xxx]		<p>The motor cylinder compares setpoints and actual values. As a consequence of the large lever effect in some locks, especially the latch tolerances within which a perfect operation of the lock is possible can be very narrow. Other locks may slightly vary their travels in the course of their service life. The motor cylinder may identify this as an error which would be indicated by the dead bolt moving out and in several times while the door is open. The tolerance is still set to the very low value of 10. If difficulties are experienced, this value may be increased with caution. A maximum value of 50 should be sufficient.</p> <p>Attention: The value may never be larger than the starting value of the lock (see lock characteristics).</p>	
Parameter		Value range	Default setting
[xxx]		<= 50 <= Starting value of the lock	10

11.9.7 Setting the door opening time

Command/input	Meaning	
Wf[xxx]	The time for which the latch bolt will be held in pulled-in position can be set in seconds. Enter the desired value instead of [xxx]. The possible value range is "1" to "255". The default setting is "10". The value indicated for "bolttime" (i.e. latch bolt time) in the system information is set accordingly.	
Parameter	Value range	Default setting
[xxx]	[1, 255]	10

11.9.8 Setting the threshold for the knob operation

Command/input	Meaning	
Wm[xxx]	This command permits setting a sensitivity threshold for the manual knob operation. Enter the desired value instead of [xxx]. The possible value range is "32" to "255" and "0". The default setting is "32". The higher the figure, the less sensitive the detection will be. If "0" is entered, the detection is disabled. The value indicated for "auto.knob" in the system information is set accordingly.	
Parameter	Value range	Default setting
[xxx]	[32, 255] und 0	32

11.9.9 Setting the time for the Door Closed recognition

Command/input	Meaning	
Wt[xxx]	The waiting period between the time when the door is closed and the time of locking can be entered in seconds. Enter the desired value instead of [xxx]. The possible values range from "1" to "255". The value indicated for "closerecog" in the system information is set accordingly.	
Parameter	Value range	Default setting
[xxx]	[1, 255]	6

11.9.10 Setting the panic control time

Command/input	Meaning	
Wp[xxx]	The time for checking the locking in panic operation can be set in minutes. Enter the desired value instead of [xxx]. The possible values range from "1" to "255". The default setting is "15". To disable the control, set "0". Please note that with shorter times, the wear on the lock will increase. The value indicated for "paniccontroltime/min" in the system information is set accordingly.	
Parameter	Value range	Default setting
[xxx]	[1, 255]	15

11.9.11 Setting prompt signalling for the door contact and direct control of an electric door drive

Command/input		Meaning	
Wk[x]		Normally the door contact status is signalled at the relay with a delay. Use this command with "1" to disable the delay. To enable the delay again, use this command with "0". The default setting is "0" (x = 0). The value indicated for "door indic. fct." in the system information is set accordingly. As from software version 3.07, it is also possible to control an electric door drive directly. For this purpose, the time desired for the door drive in seconds (2-255) is entered with the "Wk" command. The door open relay will now pull up when the latch is pulled in. After the set time has expired, the relay will drop again and the door drive can close. For security reasons, this function is not enabled in case of key or knob operation.	
Parameter		Value range	Default setting
[xxx]		[2, 255]	0

11.9.12 Setting the atypical lock detection

Command/input		Meaning
Wr[x]		Nearly all locks have a dead bolt travel which is longer than their latch travel. This is the assumption made by the motor cylinder in the learning mode. There are a very few locks that do not meet this requirement and have in fact a latch travel that is longer than their dead bolt travel. Also these locks can be learned, provided the lock detection is set to "1" (x = 1) before the learning mode is started. The default setting is "0". The value indicated for "short bolt" in the system information is set accordingly.
Parameter	Value range	Default setting
[xxx]	[0, 1]	0

11.9.13 **Setting an active value for the second relay**

Command/input	Meaning	
Ws[x]	<p>This command can be used to change the function of the second relay. The standard error indication can be inverted. This makes it possible, for example, to detect a power failure as an error.</p> <p>If "0" is entered (x = 0), the relay is normally pulled up and only drops when a fault occurs. The default setting is "1". The value indicated for "error relais activ" in the system information is set accordingly. As from software version 3.07, this relay may be used to indicate the "locked" condition of the lock. This function is enabled by entering the value "2". This setting replaces a dead bolt contact. Please note that for panic locks, the dead bolt status generated by the motor cylinder may differ from the dead bolt status of the lock if the door is not opened in case of a panic actuation.</p>	
Parameter	Value range	Default setting
[xxx]	[0, 2]	1

11.9.14 Silent mode

Command/input	Meaning	
WI[x]	In case of very effortless locks, the noise generated by pulling in the latch bolt may be louder. This noise may be reduced by selecting the silent mode (x = 1).	
Parameter	Value range	Default setting
[xxx]	[0, 1]	1

11.9.15 The Help function

The motor cylinder comprises a small Help system. If you enter "?", all possible commands will be displayed with a short explanation.

If an invalid command is entered, the motor cylinder always refers the user to the Help function by responding with "CmdErr? „?“=Hilfe!".

12 Care

The outer accessible parts of your motor cylinder such as knobs, knob sleeves, covers, fittings, etc. can be cleaned with a soft, slightly moist wipe.



NOTICE

Risk of damage to surfaces of the motor cylinder!

- ▶ Never use solvent-containing cleaning agents to avoid damage to your motor cylinder.

13 Maintenance

- ▶ Have the motor cylinder and the related components serviced and their perfect functioning verified every six months by CES or by a CES partner only.

The motor cylinder and its components do not require any servicing by the user.

14 Spare parts

The motor cylinder does not require any spare parts to be replaced by you.

- ▶ If you need service, please contact your professional CES partner.

15 Trouble-shooting

Symptom	Possible cause and remedy
The motor cylinder does not work.	<p><i>The installation was not performed correctly.</i></p> <ul style="list-style-type: none"> ▶ Check the installation of the motor cylinder (see page 24 ff) and correct any defects found. ▶ The learning of the motor cylinder was not performed correctly. ▶ Panic locks have a special learning mode. Repeat the learning. ▶ The lock requires excessive effort. ▶ Check the lock with a key while the control unit is switched off. ▶ The door contact is not set correctly and signals a closed door either too early or not at all.
	<p><i>The power supply is disconnected.</i></p> <ul style="list-style-type: none"> ▶ Switch the power supply on. ▶ Ensure that your power supply is available.

The remote control over the network does not work.

There is a defect in your network.

- ▶ Check your network and correct any defects found.
- ▶ Check the installation of the network components (see page 65 ff. and page 75 ff.) and correct any defects found.
- ▶ Check the configuration of your motor cylinder and your network and correct any defects found.

- ▶ If the problem can still not be solved, please contact your professional CES partner.

16 Disposal



Neither the motor cylinder, nor the batteries nor parts of the motor cylinder may be discarded with the normal household waste.

- ▶ Always observe the applicable national and regional regulations.

Our packaging is made of environmentally friendly, reusable materials. It comprises external packaging and inserts made of cardboard, inserts and protective film made of polypropylene (PE).

- ▶ Please dispose of the packaging in an environmentally responsible manner through separate waste streams.
- ▶ Ask your local authorities about recycling and/or the proper disposal of the device in line with environmental regulations.



NOTICE

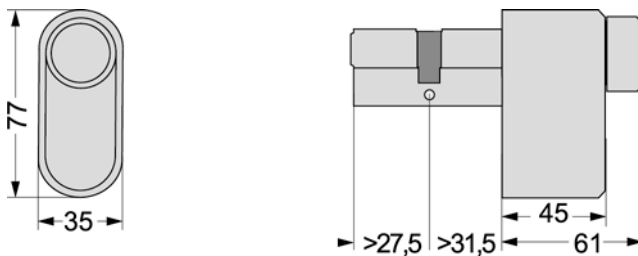
Risk of environmental pollution by improper disposal!

If you violate the disposal regulations, environmental pollution is possible.

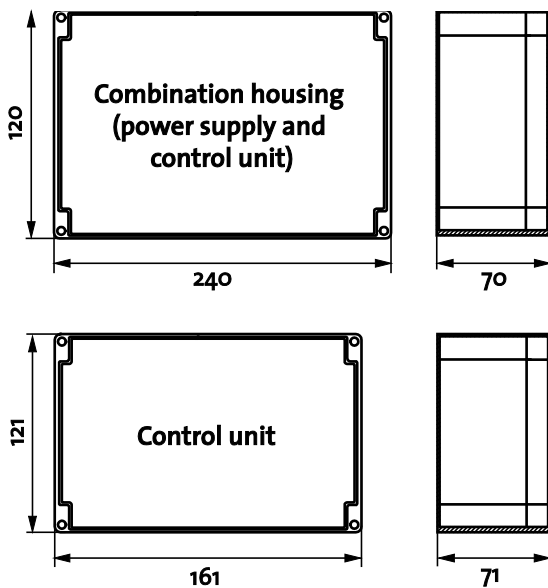
- ▶ Always recycle empty batteries.
- ▶ Adhere to the local disposal regulations.

17 Technical data

17.1.1 Dimensions of the motor cylinder (in mm)



17.1.2 Dimensions of the motor cylinder control units (in mm)



Maximum torque:	2 Nm
Opening time (2 turns dead bolt and latch bolt):	approx. 1.5 seconds
Connecting cable diameter (10×0.14 mm ² ; 7 m):	6.5 mm Extension to max. 20 m possible with JY(St)Y 6×2×0.6 mm ² or 0.8 mm ² cable.
Operating voltage, power supply:	230 V AC/50Hz, 115 V AC optional
Operating voltage, control unit:	24 V AC/DC, Current consumption: 500 mA
Temperature range, motor cylinder:	0 °C to +50 °C
Temperature range, control unit:	-20 °C to +60 °C
Control unit enclosure:	IP 65, EN 60529
Prohibited atmospheres:	Not suitable for use in corrosive atmosphere (chlorine, ammonia, lime water); maximum permitted air humidity: 95 %
Cable screwed joints:	M16 × 1.5
Load of zero-potential signal outputs:	250 V/5A
Current consumption at 230V/50Hz in standby (no motor function, no external consumers connected):	< 35 mA
Current consumption at 230V/50Hz and max. load:	< 150 mA
Fine-wire fuses Control unit: Power supply:	Type 5×20, F1 = 1 A MT Type 5×20, F1 = 1.6 A T

Relay contacts:

 C = Switch contact
 NC = normally closed
 NO = normally open

17.1.3 Timer

Power supply:	24 V AC/DC
Switching power:	$\mu 16$ (4) A/250 V
Contact material:	AgSnO ₂ , 1 × UM
Own consumption:	6 VA 1 channel (approx. 1 W)
Memory locations:	50
Kinds of switching:	ON/OFF - Pulses from 1 to 59 seconds - Cycles from 1 minute to 23 h / 59 min., as switching-off or switching-on times
Switching precision:	Accurate to the second
Time precision:	$\leq \pm 1s/day$ at 23 °C
Power reserve:	5 years (Lithium battery)
Operating temperature	- 10 °C to + 45 °C
Enclosure:	IP 20

17.1.4 CEMO-NET online

Interface:	Interface: Ethernet 10Base-T/ 100Base-TX (Auto-Sensing)
Connection:	RJ45

17.1.5 PoE (Power over Ethernet)

Interface:	Interface: Ethernet 10Base-T/ 100Base-TX (Auto-Sensing)
Connection:	RJ45
Power consumption:	13 W; supply device (PSE) min. 15.4 W
Device class:	0 PD (IEEE 802.3af)

All technical data and features are subject to change without prior notice.

18 Glossary

Knob cylinder	<p>Knob cylinders can be opened from the outside with a matching key and from the inside with a rotating knob. They are used e.g. at doors which are intended to be opened from the inside without a key at any time. Knob cylinders are not permitted in dedicated doors on escape routes; for these doors, European standards EN179 (emergency exit) and EN1125 (escape route) require special escape door fittings and panic locks. However, special panic locks that may be combined with a knob cylinder are available for installation in doors on escape routes. For these, the mechanism of the lock must be capable of ensuring the panic function at any position of the cylinder's follower.</p>
CEStronics wall terminal WT	<p>The wall terminal allows you to grant access authorizations with "electronic" keys. Mechanical keys are no longer required for the authorized access.</p>

19 Notes on the manufacturer's warranty

As stated in our Standard Terms and Conditions, the manufacturer's warranty does not extend to the following types of damage:

- damage to outer mechanical parts and damage resulting from normal wear and tear
- damage as a consequence of external events or influence
- damage as a consequence of improper installation
- damage as a consequence of improper maintenance
- damage as a consequence of improper operation and programming
- damage as a consequence of excess voltage
- damage as a consequence of fire, water or smoke.

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