

# Intelligent Building Solutions

## Installation Manual



## CAP 2010 DR ACCESS CONTROL UNIT

- iButton based
- DIN-rail mounting

**CIB-tech**

## Introduction

The CAP 2010 DR is an iButton based access control device, part of the CIB-tech automation system.

The unit can control bi-directional access through one door. It accepts up to 1024 users and provides entry via the use of iButtons.

### Additional Equipment Required

**1. Functional CIB-tech system**

A minimal number of essential CIB-tech components to make a functional CIB-tech system<sup>1</sup>

**2. iButton probe for entry request**

Any generic iButton probe, further referred to as "Probe A"<sup>2</sup>.

**3. Request to Exit (REX) button or iButton probe for exit request (optional)**

Either a generic iButton probe, further referred to as "Probe B", or a normally-open type (contact is closed when button is pressed) REX button can be used as a request-to-exit device<sup>2</sup>.

**4. Open door sensor (optional)**

Normally open or normally closed type with voltage free contacts<sup>3</sup>.

**5. Electric door lock**

Fail safe (power to lock) or fail secure (power to open) strike lock/door bolt/magnetic lock<sup>3</sup>.

**6. Power supply for electric door lock**

Refer to the electric door lock's characteristics to choose a suitable power supply. A power supply with battery backup is recommended.

## Technical Specifications

### Electrical characteristics

● **Power Supply**

The CAP 2010 DR functions as a node in a CIB-tech system, being powered from the CIB-tech system's power supply via the CIB-tech connectors.

- Operating voltage range: 20 to 28V DC (nominal 24V DC)
- Supply current
  - Standby current (without probes attached): 17mA
  - Maximum current (without probes attached): 40mA
  - Typical standby current (with two probes attached): 25mA
  - Absolute maximum current (with two probes attached): 50mA

● **Relay output (for electric door lock)**

If an electric door lock with a DC power supply is used, an external suppressor diode must be used<sup>4</sup>.

- Rated voltage: 24V AC/DC
- Rated current: 2A

1 See "CIB-tech installation manual" for details.

2 IBS product CZ-2 M12-L may be used, or see "Recommended equipment to be used with CIB-tech" for other type of generic iButton probes.

3 See "Recommended equipment to be used with CIB-tech" for details

4 IBS product PS 1213 D is a dedicated power supply for door locks: 12V AC and DC output, internal suppressor diode. Note that battery backup for door lock is not supported. Please verify whether it is suitable for your door lock!

- **Communication with iButton**
  - One wire bus implementation for single slave device on each canal:
    - one wire bus voltage levels: 0 - 5V
- **Signal Input**
  - Open door sensor: N.O. or N.C. with voltage free contacts
  - REX button: N.O. with voltage free contacts
- **Signal Output**
  - External LED control:
    - output voltage levels: 0 – 5V (0v : off / 5v : on)
    - output current: 15mA

## Mechanical characteristics

The CAP 2010 DR has a standard 2-module wide enclosure for M36 type DIN-Rail

- Dimensions: 96mm W x 35mm L x 60mm D
- Weight: 85g

## Environmental characteristics

- Operating temperature: 0°C to 65°C
- Storage temperature: -10°C to 70°C

## Key Features

- Programmable via the CIB-tech system with dedicated software
- Controls unidirectional or bi-directional access through one door
- Provides access for up to 1024 users
- Users may be members of one of up to 30 groups with different access rights, based on a weekly schedule. Groups have individual access right expiration dates
- Support for a REX button, iButton probe for exit request
- Support for an open-door sensor input for detecting actual door openings
- Internal battery powered real-time clock. Clock keeps running in case of power failure
- Internally stored 1024-entry access log with time stamps
- Internally stored 1024-entry open door event log with time stamps
- Configurable relay output; normal-open or normal-closed (in power-off state relay contacts are always open)
- Two functional modes: open door momentarily or toggle door state
- Configurable keep-door-open time for the momentary-open mode
- Relay output remotely controllable via the CIB-tech system
- Internal bi-color LED indicating the state of the door lock (green: closed / red: open)
- Support for two bi-color external LEDs (for probe A and probe B) indicating a valid/invalid iButton or the standby state of the probe

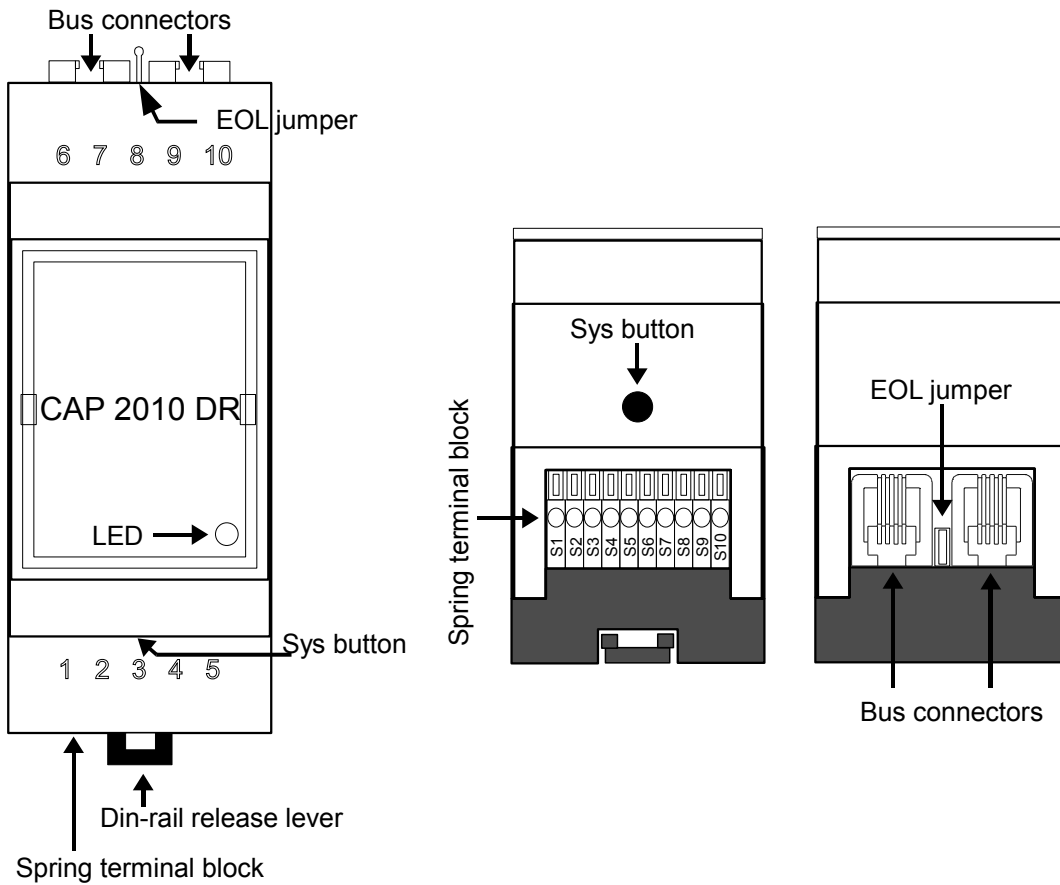
The CAP 2010 DR is meant to be installed on a standard M36 type DIN-Rail.

## Part description

- **Bus connectors:**
  - 4P4C modular jack connectors for CIB-tech connection<sup>1</sup>
- **Sys button:**
  - pushbutton for CIB-tech system configuration
- **EOL jumper:**
  - CIB-tech system's End Of Line jumper<sup>1</sup>
- **LED:** indicator LED for door lock state
  - green: closed
  - red: open
- **DIN-Rail release lever:**
  - lever for removing the device from the M36 DIN-Rail
- **Spring terminal block:** terminals for connecting external devices
  - S1. Probe B – Green LED control
  - S2. Probe B – Red LED control
  - S3. Probe B – Data / REX input
  - S4. Probe A – Green LED control
  - S5. Probe A – Red LED control
  - S6. Probe A – Data
  - S7. Common ground (GND)
  - S8. Open-door sensor input
  - S9. Relay contact 1
  - S10. Relay contact 2

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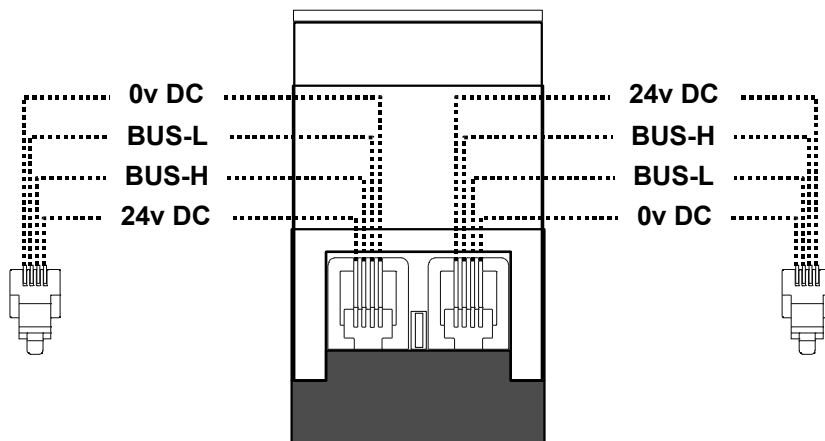
<sup>1</sup> See “CIB-tech installation manual” for details.



## Wiring diagrams

### Connection to CIB-tech system

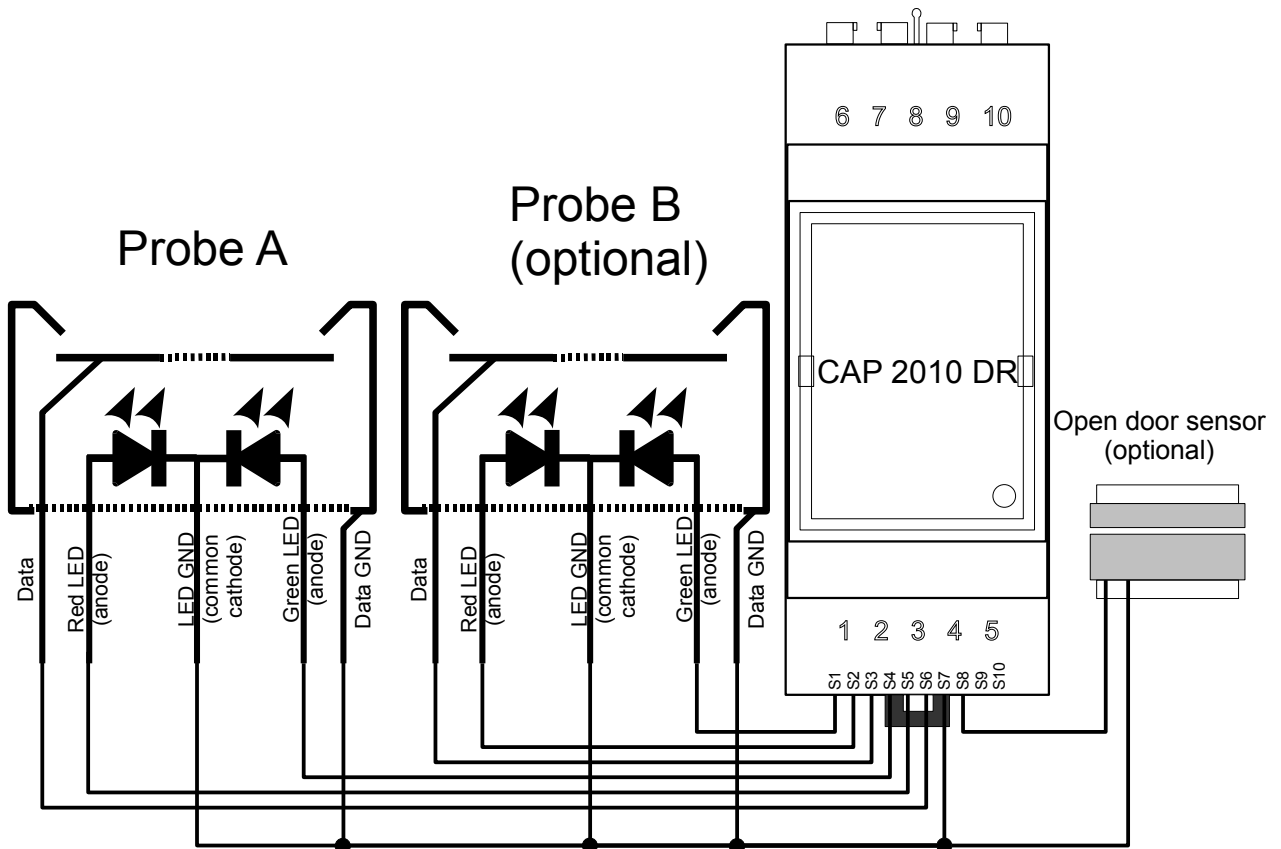
Use the CAP 2010 DR device's two 4P4C modular jack connectors to connect it to the CIB-tech systems (chain like) bus. Do not forget to remove the EOL jumper if the device is not the last element of the chain<sup>1</sup>



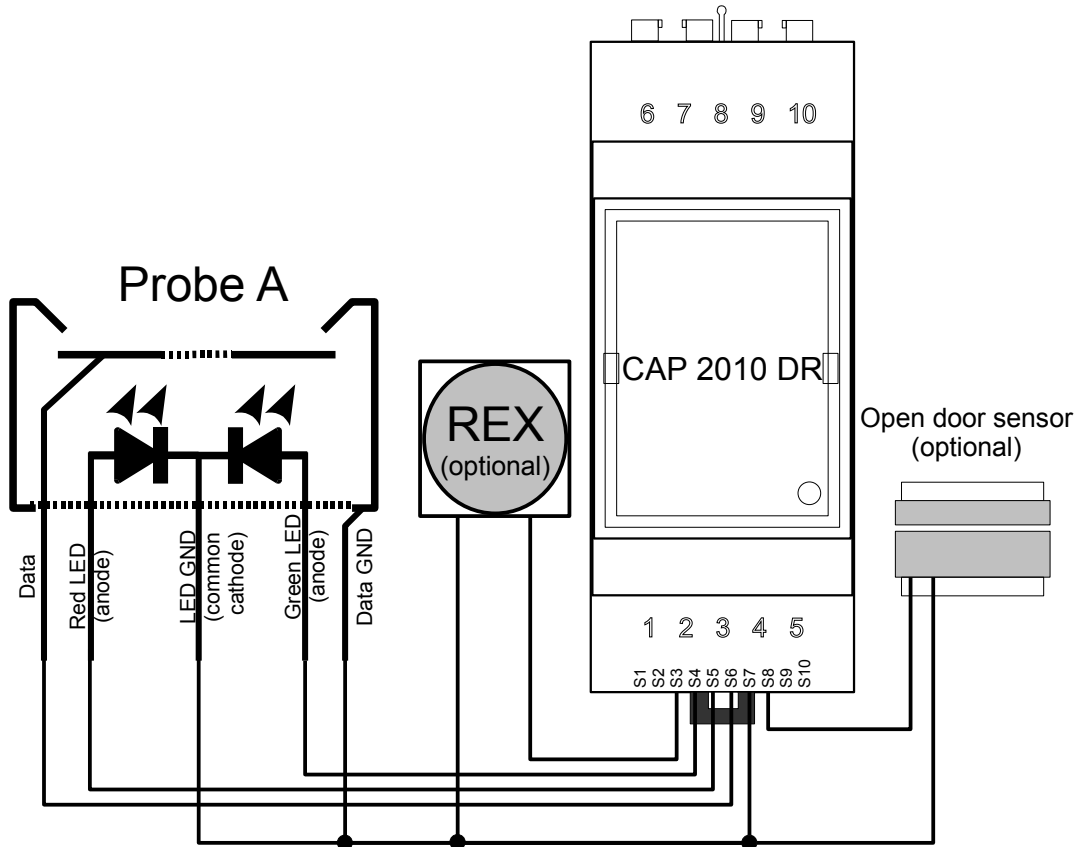
<sup>1</sup> See "CIB-tech installation manual" for details.

## Connecting the input devices

Connection example for two iButton probes:



Connection example for one iButton probe and REX button:



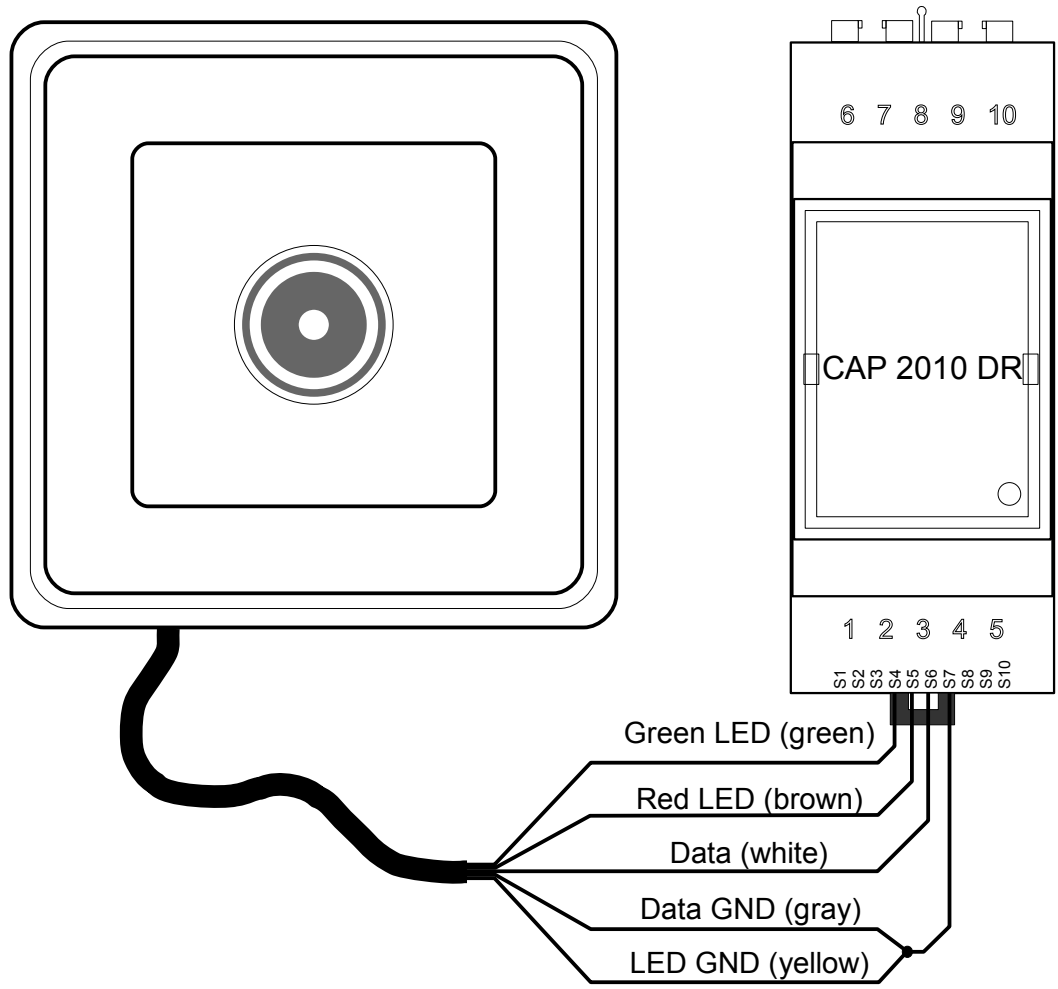
**NOTE:** Most iButton probes don't have built-in LEDs. For these readers the LED control output of the CAP 2010 DR is not connected.

We recommend the use of iButton probes with built in common cathode, bi-color LED. Some proximity card / PIN readers have auxiliary inputs and outputs (ex. tamper, auxiliary led). These auxiliary inputs and outputs can not be connected to the CAP 2010 DR<sup>1</sup>.

Due to the small size of the spring terminal block, it is recommended to connect all the GND signals in an external node and connect only one wire to the terminal block of the CAP 2010 DR.

<sup>1</sup> IBS product CZ-2 M12-L may be used, or see "Recommended equipment to be used with CIB-tech" for other type of generic iButton probes.

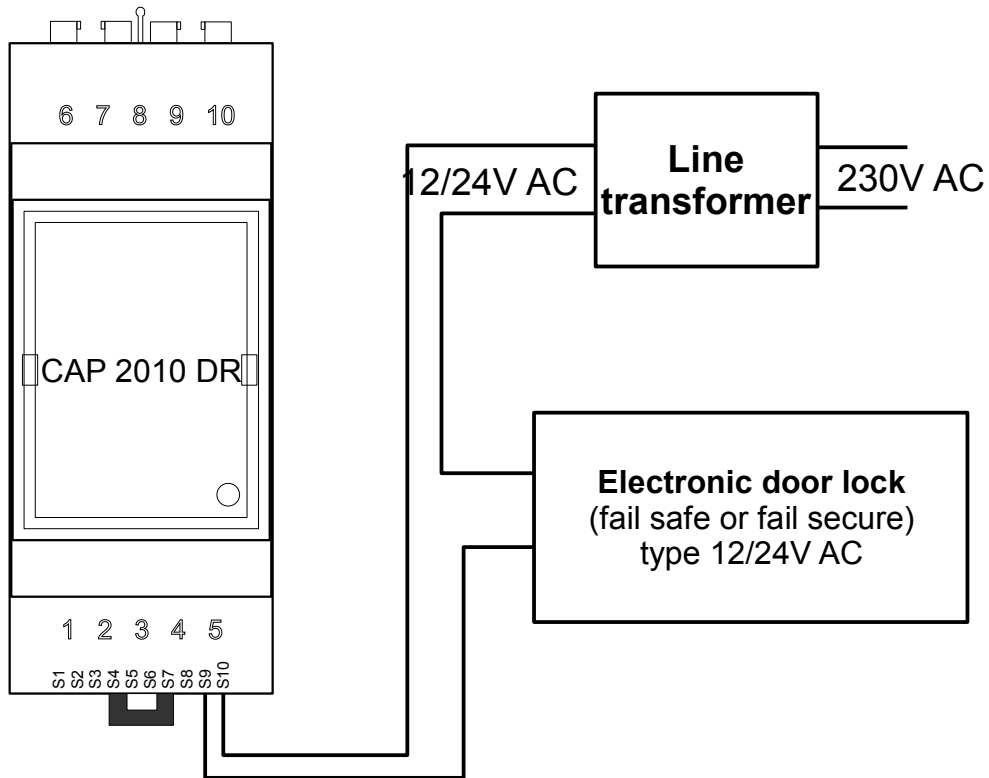
Connection example for one CZ-2 M12-L flush mounted iButton probe:



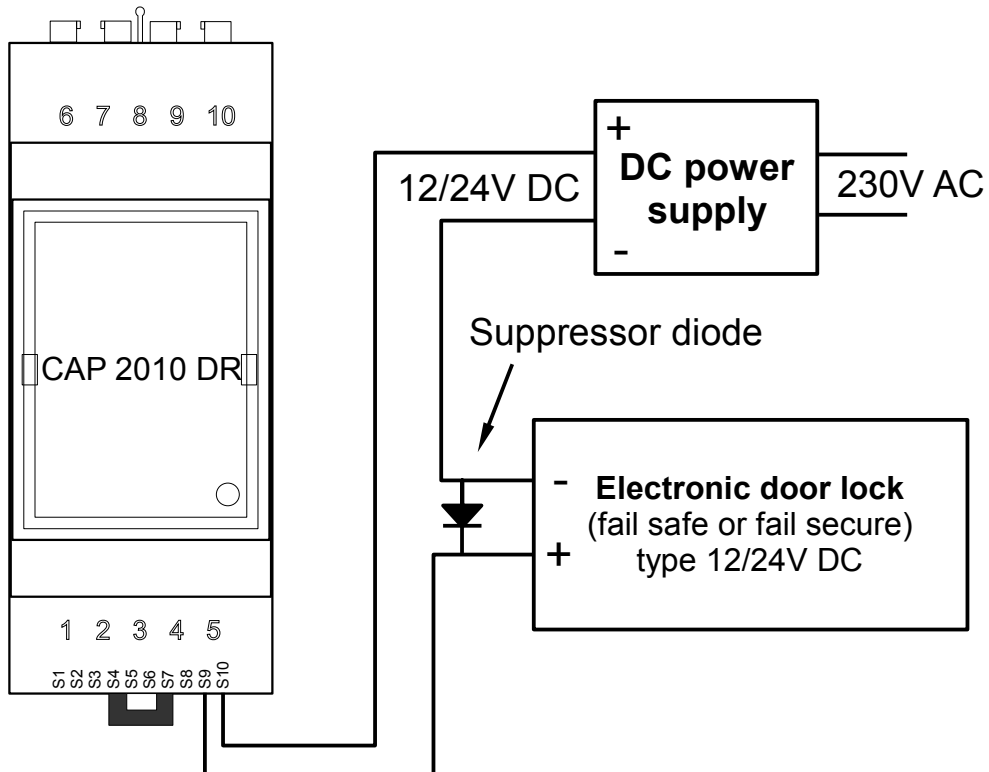


## Connecting the electronic door lock

Connection example for AC-type electronic door lock:

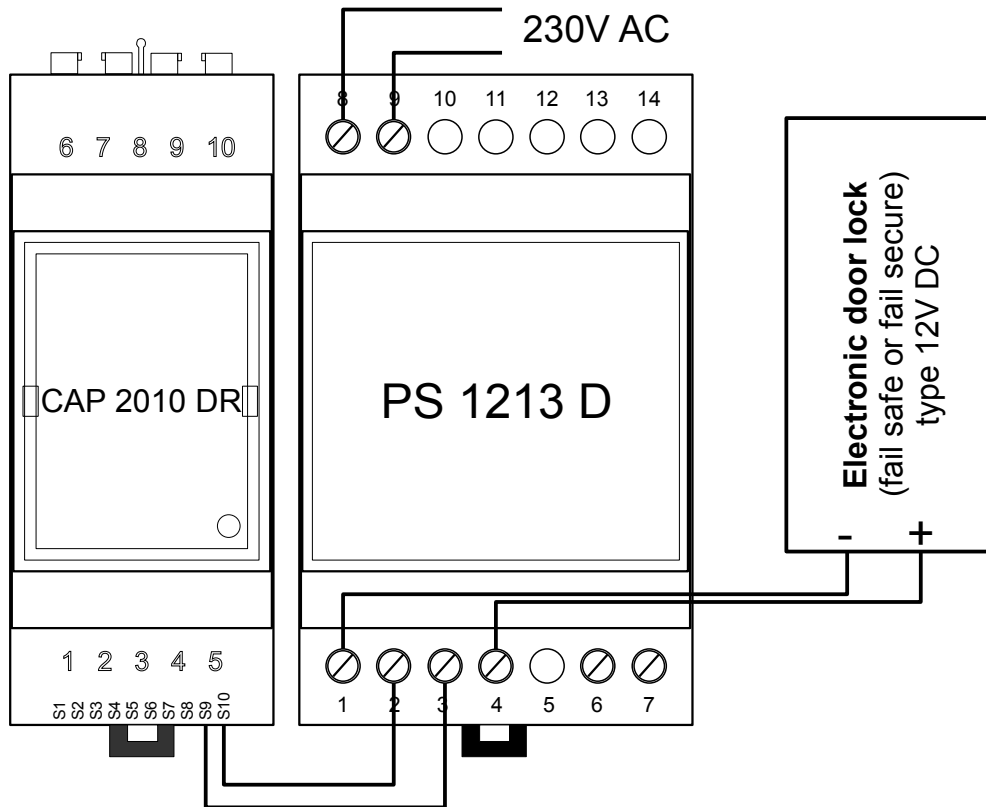


Connection example for DC-type electronic door lock:



**NOTE:** an external suppressor diode (ex. 1N4001) is required.

Connection example for DC-type electronic door lock and PS1213D, dedicated power supply:



Document Version 1.0

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