

## ATTENTION

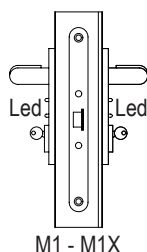
In case of power failure the door can be opened only by key with the MAC system, while the door can be opened at any time with the MAC FAILSAFE system.

The installation instructions and the wiring diagram are the same for both systems.

For a regular operation and in order to avoid efforts on the lock, the space between the door-leaf and the catch must be  $\geq 6\text{mm}$ .

**MAC2 and MAC2 FAILSAFE** - operating from both sides of the door by handle with led.

Both sides of the door are controlled (pull and push sides). With lock key-locked, the access consent is possible via electric impulse (button, badge reader, etc.), which gives power supply to the magnet in case of MAC2 or it turn off in case of MAC2 FAILSAFE. If the lock is not key-locked opening is always possible from both sides. Both systems can be combined with M1 and M1X double handles, see drawing below.



## GENERAL TECHNICAL DATA

- Lock **CE** marked in accordance with EN 12209: 2003/AC: 2005
- Certificate Nr. 0497/CPD/4265/11
- Notified body 0497
- Power supply 12 or 24 VAC/VDC  $\pm 10\%$
- Absorptions:
  - at 12 V the start-up current is of 500 mA for the firsts 5-6 sec., before changing to a fixed current absorption of a 250 mA;
  - at 24 V the start-up current is of 1 A for 300 millisecc., before changing to 500 mA for 4-5 sec. and sets then to a fixed current absorption of 250 mA for the remaining time
- Timer incorporated with fixed time of 30 sec.
- Possibility of continuous power supply ("day time" function)
- Ready for possible remote LED (not supplied) with max absorption of 20 mA, for remote signalling of the activation/deactivation of the lock
- Guaranteed access in case of power failure (only for FAILSAFE version)

## OPERATION MODE

### Door opening in case of power failure (LED off)

MAC2: from both sides by key only.

MAC2 FAILSAFE: from both sides by handle (or key).

### Timed function

The handle activation is controlled by a timed electric impulse to the lock, time duration fixed 30 sec., after of which the handle is disabled consequently. The electric consent is possible by: unlock button, "Access" code keypad, card-based control system and biometric fingerprint reader.

### Continuous "day time" function

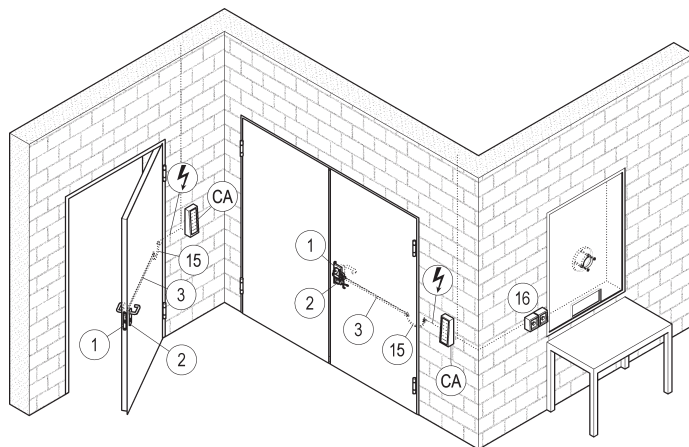
In this mode the handle is continuously enabled by an electric button (not supplied) for a longer period (for example during the day), which keeps the lock always enabled. While the handle is enabled the green LED is always ON.

## SIGNALLING ON THE DOOR

The system status is signalled by two LED placed on the installation plate. The green LED signals that the door is not locked, whereas the red indicates that the door is locked. Both LED are off when no power is being supplied.

## REMOTE SIGNALLING

A fourth wire can bring an optionally remote signal, to a control unit indicating the activation of the handle. In case of continuous "day time" function, the remote signalling is always active until the power supply is switched off. In case of timed function the remote signal is active for 30 sec.



Both the KIT systems MAC and MAC FAILSAFE can be installed onto one-leaved doors or on the main leaf of two-leaved doors in REVER, UNIVER or PROGET versions.

The Kit MAC or MAC FAILSAFE comprises:

- 1) lock composed of the magnet and the 30 sec. timer;
- 2) double handle E with red/green LED which signal activation/deactivation of the handles;
- 3) four-wires power cord ready for eventual remote LED (16 - not supplied), for remote signalling of the activation of the lock;
- 14) splitter cable (not represented in the drawing above);
- 15) flexible cable sleeve for the electrical connection between power supply and door leaf;

Power supply/command accessories (CA - not supplied) must be ordered separately.

**IMPORTANT:** the power wires (⚡) to the four-wires power cable must be supplied by the customer. The power wires must have a section of 0,75-1,0mm<sup>2</sup> and must be flexible.

## KIT MAC2 or MAC2 FAILSAFE SYSTEM INSTALLATION INSTRUCTIONS

**A -** Check that the door opening direction corresponds with that of the lock in Kit included.

**B -** Remove first all the components of handles (if installed). Remove the installed lock by unscrewing the two frontal screws (18). Connect the (14.1) connector of the (14) splitter cable to the (1.1) socket of the (1) new lock included in MAC2 or MAC2 FAILSAFE Kit, making sure that the lever of male connector matches with the tooth of the female socket. Install the new lock (1) with the square spindle hole turned upward and taking out one of the (14.2) sockets from pull side bottom slot of the door and the other (14.2) socket from push side bottom slot of the door, reusing the two frontal screws (18) for fastening.

**C -** Insert the (2.1) connectors of E handle (2), from the upper to the bottom slot of the door (one for each side of the door), connecting them at the (14.2) sockets of the splitter cable (14) making sure that the lever of male connector matches with the tooth of female socket.

**D -** Connect the (3.2) socket of the power cable (3) to the (1.2) connector of the lock (1), as shown on page 4/4, making sure that the lever of male connector matches with the tooth of female socket. Install the handles (2) following apposite instruction, reverse the positions of the spacers Ø10,3 e Ø15mm that are indicated in the installation instructions, be careful not to tighten too much the screws that cross them and pass the power cable (3) to the hinged side of the door. Then insert the cylinder (19) and fasten with one screw (20) M5x85mm (not supplied). Warning: do not to use screws with different length. Insert the power cable (3) through the flexible cable sleeve (15) fastening it to the leaf.

**E -** WARNING: when the door is provided with FF rebate sealing, the catch groove for the lock must be filed (see drawing) just enough so the door opens without any effort.

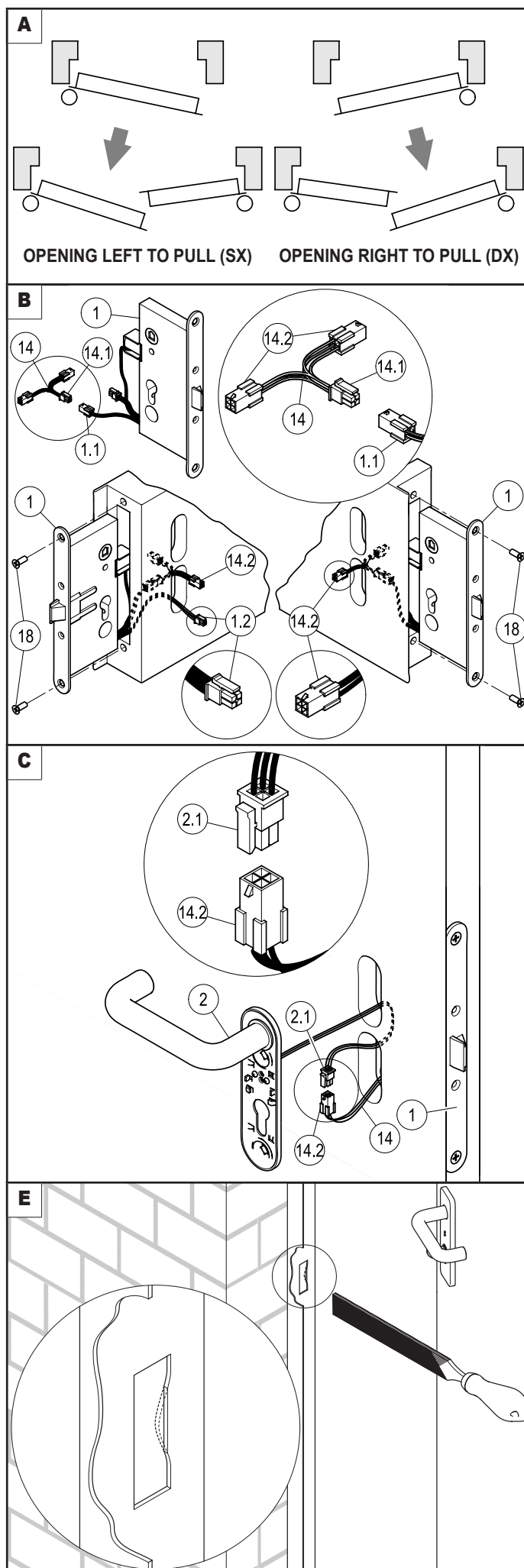
**F -** Carry out the electrical connections as shown on the next page.

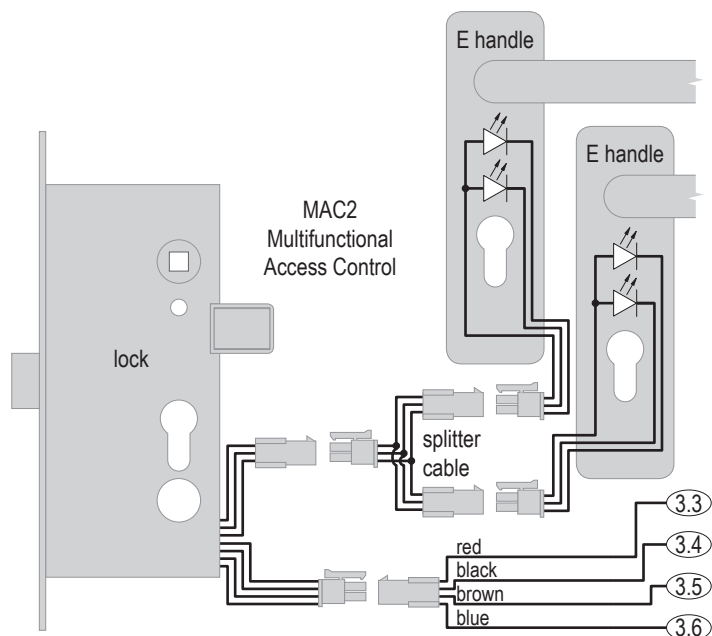
ATTENTION: with direct current power supply (DC) the polarities must be respected. Finish fastening of the flexible cable sleeve (15). Close the door by key and verify that the operation on both sides of the door correspond to the MAC2 or MAC2 FAILSAFE system indications. Check the timed or continuous "day time" functions.

## USE AND MAINTENANCE

It is advised to periodically verify the correct operation of the control system with the lock closed by key. Both the MAC or MAC FAILSAFE systems require no special maintenance. The internal mechanisms of the lock must be regularly lubricated with non fluid greases. In order to avoid dirtying of the electrical parts, it is not advisable to use spray products.

WARNING: a difficult opening of the door or repeated activation of the handle with the red LED turned on, can damage the lock.





### Absorptions:

- 12 V, start-up of 500 mA for 5-6 sec., then 250 mA;
- 24 V, start-up of 1 A for 300 millsec., then 500 mA per 4-5 sec., at last 250 mA;
- remote LED max. 20 mA.

### Wirings:

- ③.③ + 12/24 VAC/VDC, COM
- ③.④ - 12/24 VAC/VDC (respect polarity with DC)
- ③.⑤ NO (normally open)
- ③.⑥ - remote LED (optionally)

wirings with ⑨+⑤		
	3.3 + 5f + 9c + 9f	3.4 + 5g + 9g
optional	4a + 5e	4b + 5d
	3.6 + 4d	4c + 5f
	6b + 9b	6c + 9a
⚠	5a → L 230 V ~ - 5b → N 230 V ~ - 5c → ⊥	
	T → keypad	
⌚	0,5 <sup>1</sup> + 30 sec.	

wirings with ⑧		
	3.3 + 8c + 8d	3.4 + 8e
optional	4a + 8i	4b + 8h
	3.6 + 4d	4c + 8d
	6b + 8c	6c + 8b
⚠	8k → N 230 V ~ - 8n → L 230 V ~ - 8o → ⊥	
	L.I. → internal badge reader - L.E. → external badge reader	
⌚	1,0 <sup>1</sup> + 30 sec.	

wirings with ⑦+⑤		
	3.3 + 5f + 7a	3.4 + 5g
optional	4a + 5e	4b + 5d
	3.6 + 4d	4c + 5f
	6b + 7a	6c + 7b
⚠	5a → L 230 V ~ - 5b → N 230 V ~ - 5c → ⊥	
	Tr. → 230 V ~ → 9 V ⎓ adapter	
⌚	30 sec.	

wirings with ⑥+⑤		
	3.3 + 5f + 6b	3.4 + 5g
optional	4a + 5e	4b + 5d
	3.6 + 4d	4c + 5f
	6b + 7a	6c + 7b
⚠	5a → L 230 V ~ - 5b → N 230 V ~ - 5c → ⊥	
⌚	30 sec.	

Notes: <sup>1</sup> = adjust to minimum timing of ⑨ or ⑧.

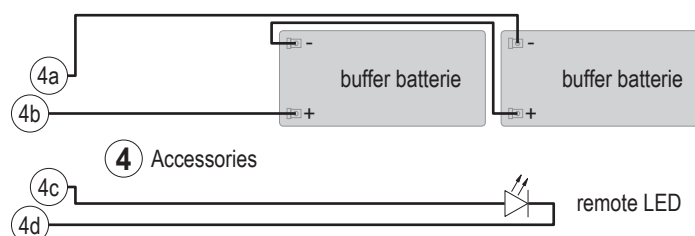
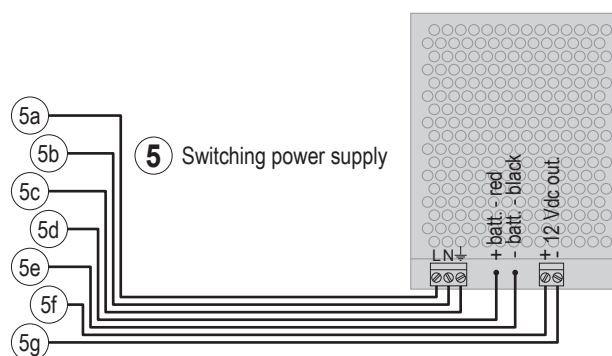
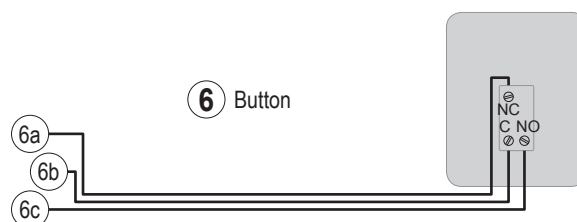
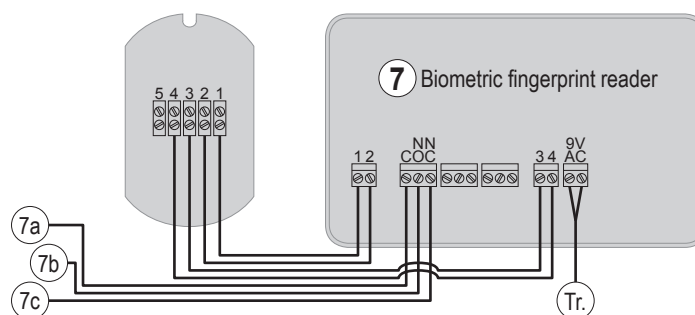
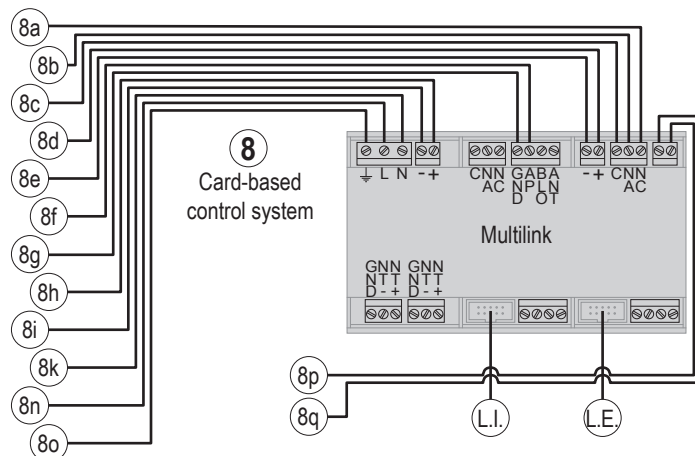
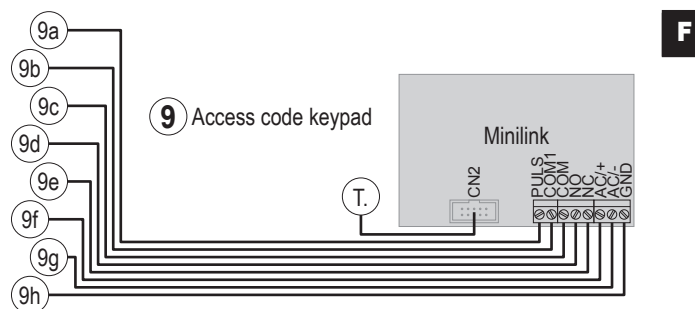
Icons:

- ⚠ = attention: danger. Operation to be carried out by qualified personnel;
- ~ = alternating current (a.c.); ⎓ = direct current (d.c.); ⊥ = ground;
- ⌚ = timings.

### ATTENTION: the lock must be always powered!

The access consent is possible via electric impulse of + 12/24 Vac/cc on 3.5 wire (brown)

With direct current power supply (DC) the polarities must be respected. The power wires must have a maximal section of 0,75-1,0mm<sup>2</sup> and must be flexible.





PROBLEMS	SOLVING
The red LED of both the handles is off	<ol style="list-style-type: none"> <li>1) Check that are correctly connected: the connector 1.1 with the 14.1, both the connectors 2.1 with the 14.2, as depicted in the drawings B and C of page 2 and the connector 3.2 with the 1.2 as depicted in the respective drawings D of page 4;</li> <li>2) Check that the lock is properly supplied, as at page 3 depicted (+ 12/24 Vac/dc to the wire 3.3; - 12/24 Vac/dc to the wire 3.4).</li> </ol>
The green LED of both the handles not switch to on providing the access impulse (consent)	<ol style="list-style-type: none"> <li>1) Check that are correctly connected: the connector 1.1 with the 14.1, both the connectors 2.1 with the 14.2, as depicted in the drawings B and C of page 2 and the connector 3.2 with the 1.2 as depicted in the respective drawings D of page 4;</li> <li>2) Check the electric impulse for access consent of +12/24 Vac/dc on the wire 3.5 (see page 3).</li> </ol>
Both LEDs of both the handles are on, but the lock does not work	Verify that are guaranteed the start-up current and the absorption current indicated on page 1 (GENERAL TECHNICAL DATA) and 3 (Absorptions).
The system properly connected and power supplied, does not control the access	Check that the lock is locked by key.
The FAILSAFE lock, while being locked by key, always allows the opening	Check that the lock is properly supplied, as at page 3 depicted (+ 12/24 Vac/dc to the wire 3.3; - 12/24 Vac/dc to the wire 3.4).
The electrical system was executed with 2 wires only (power supply); see the A169-GB instruction in case of replacement of SCA system	<ol style="list-style-type: none"> <li>1) Connect both the 3.3 (red) and the 3.5 (brown) wires to one wire of electrical power supply (12/24 Vac) or at the positive in case of direct current (+12/24 Vdc);</li> <li>2) Connect the 3.4 wire (black) with the other power supply wire (12/24 Vac) or at the negative in case of direct current (- 12/24 Vdc).</li> </ol> <p><b>ATTENTION:</b> this connection is possible with MAC locks only (not with MAC FAILSAFE), furthermore the installation of a timer is required. The green LED of the handle (or of both handles) become switch to on only by the electric impulse for the access consent.</p>