

ATTENTION

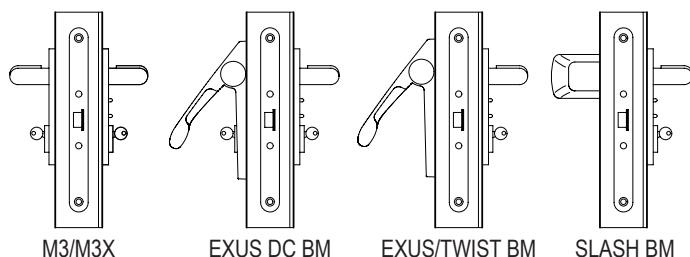
In case of power failure, from the side of the handle with LED the door can be opened only by key with the MAC system, while the door can be opened at any time with the MAC FAILSAFE system.

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 $\geq 6\text{mm}$.

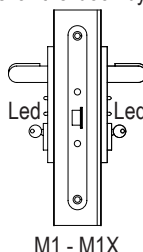
MAC1 and MAC1 FAILSAFE - operating from push side of the door by emergency handle or panic bar and from pull side by handle with led.

Only the pull side of the door is controlled (handle with LED). 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 MAC1 or it turn off in case of MAC1 FAILSAFE, while opening is always possible from the push side by means of the panic bar or emergency handle. If the lock is not key-locked, opening is always possible, even from the pull side. Both systems can be combined with the Exus, Twist, Slash models of panic bars, with external handle type BM, otherwise with the M3 or M3X emergency handle, see drawing below.



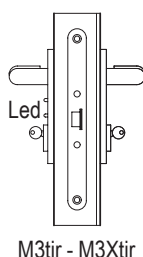
MAC2 and MAC2 FAILSAFE - operating from both sides of the door by handle with led.

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 on the side.



MAC3 and MAC3 FAILSAFE - operating by: emergency handle from pull side of the door and handle with led from push side.

Only the push side of the door is controlled (handle with LED). 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 MAC3 or it turn off in case of MAC3 FAILSAFE, while opening is always possible from the pull side by means of the emergency handle. If the lock is not key-locked, opening is always possible, even from the push side. The system can be combined with the M3tir or M3Xtir emergency handle, see drawing on the side.



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 millsec., 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. and automatic reset (zeroing of the timer) every time the door is opened
- 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)

MAC1: from pull side only by key; from push side by panic bar or emergency handle. MAC1 FAILSAFE: from pull side by handle (or key); from push side by panic bar or emergency handle. MAC2: from both sides by key only. MAC2 FAILSAFE: from both sides by handle (or key). MAC3: from push side only by key; from pull side by emergency handle. MAC3 FAILSAFE: from push side by handle (or key); from pull side by emergency handle.

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. If the door is opened within the 30 seconds, the timer is automatically reset to zero (automatic reset). The electric consent is possible by: unlock button, "Access" code keypad, card-based control system and biometric fingerprint reader.

Continuous "day time" function

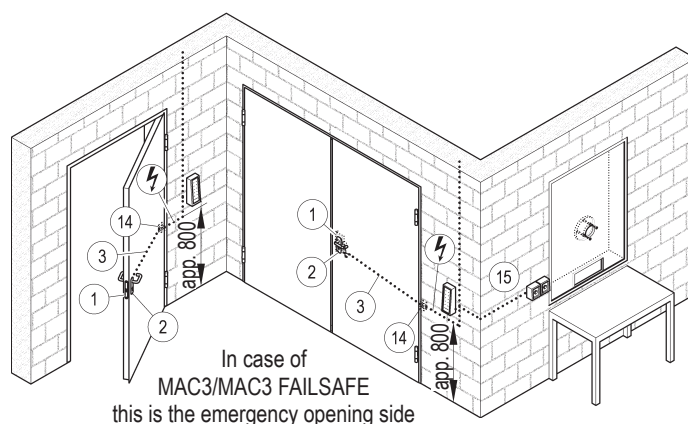
In this mode the handle is continuously enabled by an electric button (not supplied) for a longer period (for example during the day), which keeps the lock always enabled. While the handle is enabled the green LED is always ON. Only while the door is open it switches to OFF (red) state and then to ON (green) again once the doors is completely shut.

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. or less if opened before.



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

The doors equipped with the MAC or MAC FAILSAFE system are series supplied with:

- 1) lock composed of the magnet and the 30 sec. timer;
- 2) (MAC1, MAC1 FAILSAFE, MAC3 or MAC3 FAILSAFE) single- or (MAC2 or MAC2 FAILSAFE) double-handled with red/green LED that signal the activation of the handle(s);
- 3) leaf with inside wiring for lock's power supply;
- 14) electrical contacts between leaf and frame;
- 15) ready for eventual remote LED (not supplied) connected to a control unit signalling the activation of the handle;
- splitter cable for MAC2 or MAC2 FAILSAFE (not represented).

IMPORTANT: any command and supply accessories must be ordered separately; the power wires (⚡) to the contacts of the door must be supplied by the customer. The power wires must have a maximal section of 0,75-1,0mm² and must be flexible.

MAC or MAC FAILSAFE SYSTEM INSTALLATION INSTRUCTIONS

A - Verify the door's opening direction. Check the correct position of the cable sheath. The drawing represents a door swinging to the right.

B - Open the connection box which is located on the back hinge side of the doorframe. Place the doorframe according to the specific installation instructions. Insert the cable sheath for the wire into the connection box. Assemble the door, including the accessories, except the cylinder, according to the specific installation instructions.

C - Insert the (2.1) connector of the handle from the door's top slot, to the bottom slot and connect it with the (1.1) connector from the lock. In MAC2 or MAC 2 FAILSAFE case, link both connectors of the splitter cable to those of the two handles. During connection be careful that the lever of the male connector matches with the socket of the female connector. For the installation of emergency handle and/or panic bar, change the position of spacers (10 and 11), indicated in the installation instructions, be careful not to tighten too much the screws that cross them. Then insert the cylinder (12) and fasten it with the screw (13) of 85 mm length supplied. Warning: do not use screws with different length.

D - Unscrew the contact placed on the doorframe and carry out the electrical connection, as shown on the next page.

ATTENTION: with direct current power supply (DC) the polarities must be respected. The power wires must have a maximal section of 0,75-1,0mm² and must be flexible.

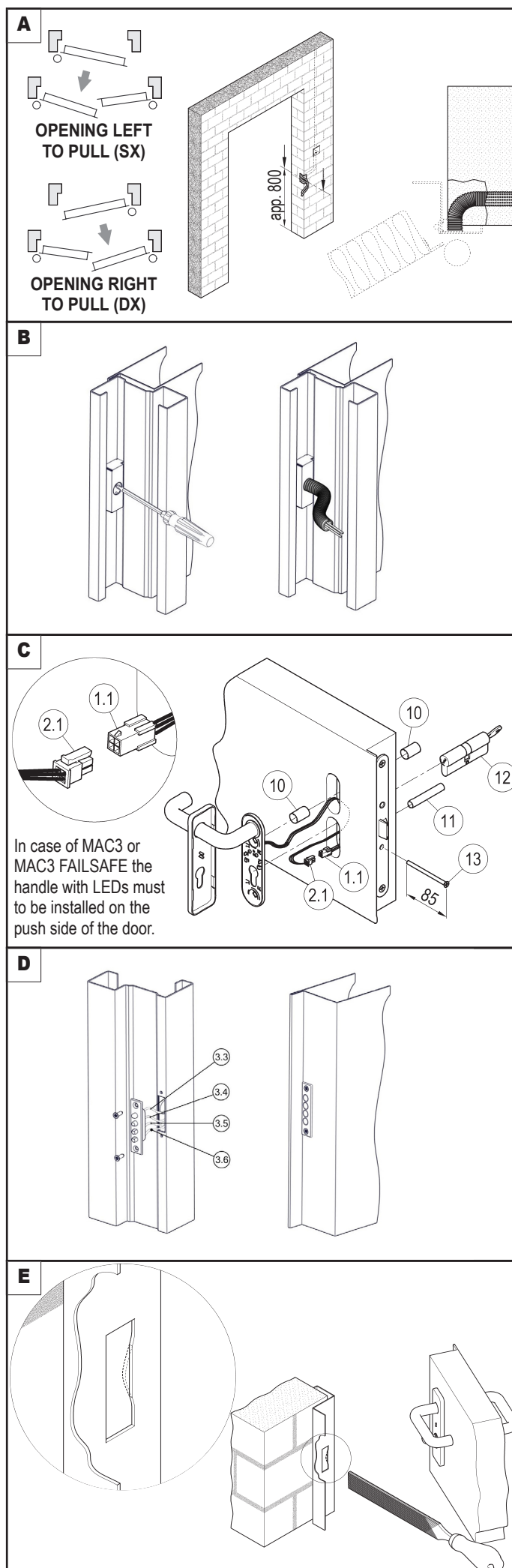
Refasten the contact and check the correspondence of that on the doorframe with that on the door. Close the door by key and verify that the operation corresponds to the MAC or MAC FAILSAFE systems indications. Check the timed or continuous "day time" functions. Then definitively fasten the door.

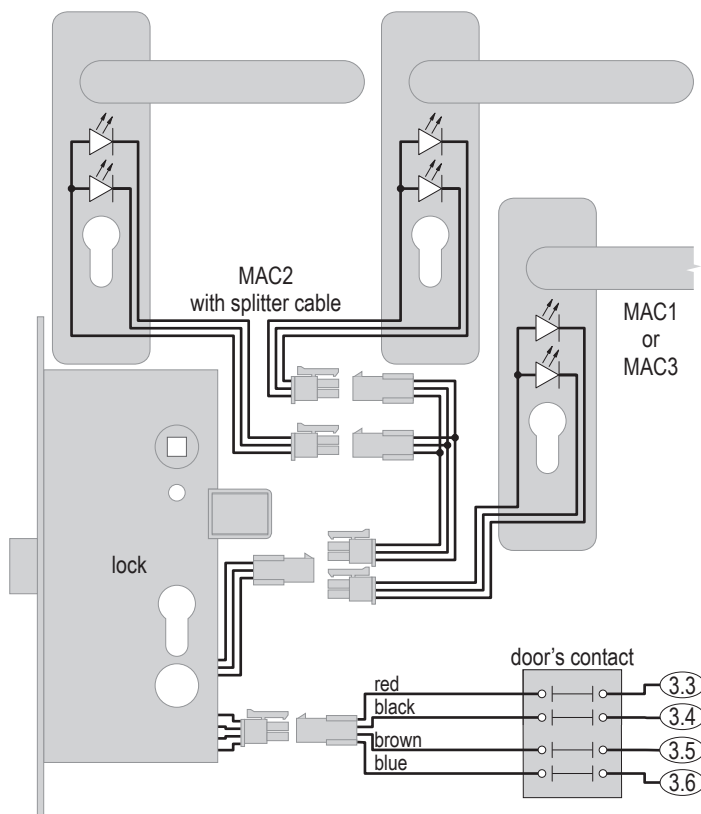
E - WARNING: when the door is provided with FF rebate sealing, the catch groove for the lock must be filed (see drawing) just enough so the door opens without any effort.

USE AND MAINTENANCE

It is advised to periodically verify the correct operation of the control system and that the lock is always closed by key. The MAC and 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. Periodically clean the electrical contacts between the door and the doorframe.

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 millise., 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	3.5 + 9d
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' + 30 sec.	

wirings with (8)		
3.3 + 8c + 8d	3.4 + 8e	3.5 + 8b
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' + 30 sec.	

wirings with (7)+(5)		
3.3 + 5f + 7a	3.4 + 5g	3.5 + 7b
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	3.5 + 6c
optional	4a + 5e	4b + 5d
	3.6 + 4d	4c + 5f
⚠	5a → L 230 V ~ - 5b → N 230 V ~ - 5c → ⚡	
⌚	30 sec.	

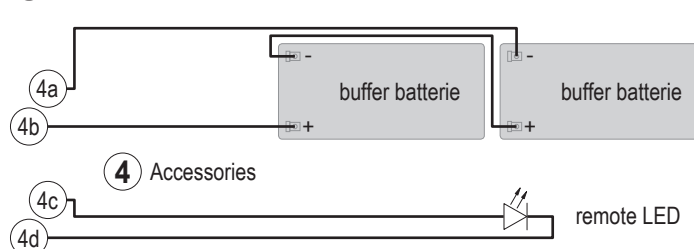
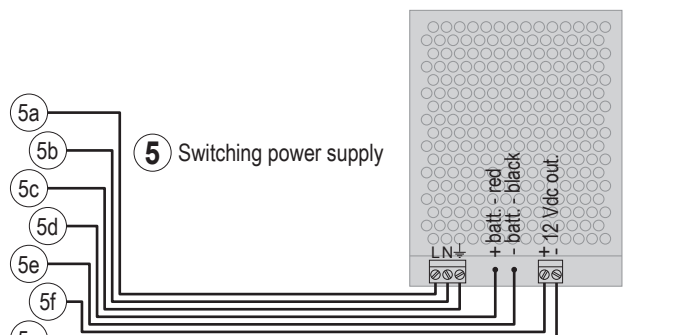
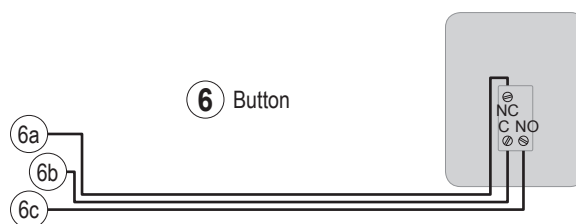
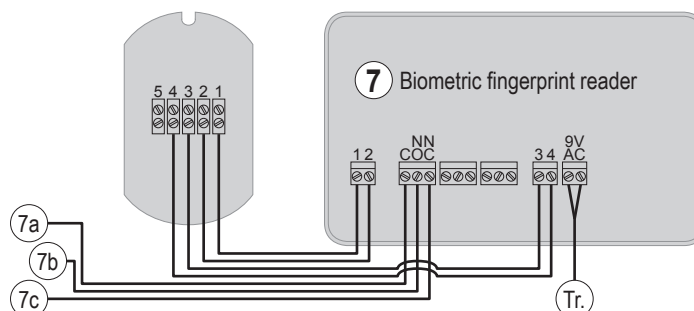
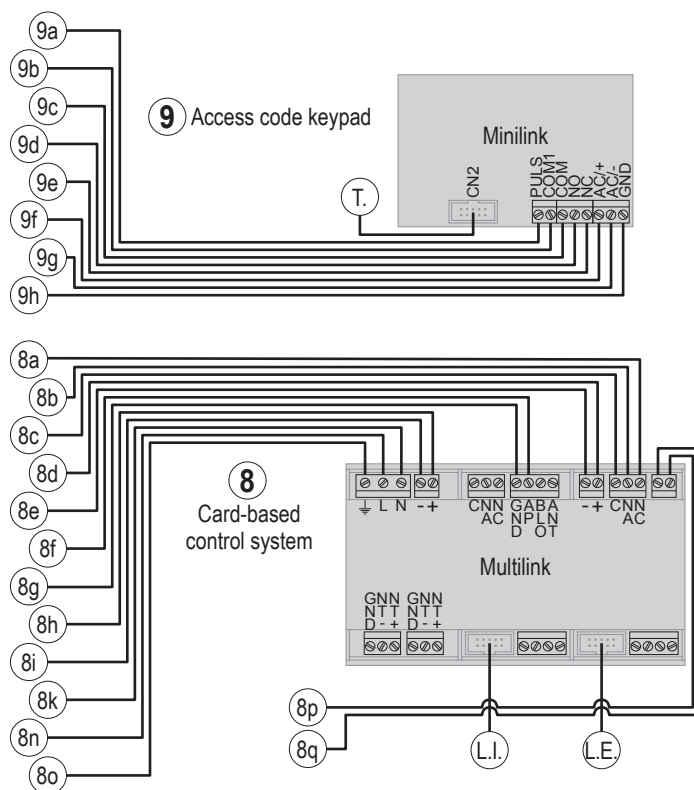
Notes: ' = adjust to minimum timing of (9) or (8).

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)



TROUBLESHOOTING - PROBLEMS	SOLVING
The red LED of the handle (or of both handles) is off	<ol style="list-style-type: none"> 1) Check that the connectors 1.1 and 2.1 are correctly connected as depicted in the drawing C of page 2; 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).
The green LED of the handle (or of both handles) not switch to on providing the access impulse (consent)	<ol style="list-style-type: none"> 1) Check that the connectors 1.1 and 2.1 are correctly connected as depicted in the drawing C of page 2; 2) Check the electric impulse for access consent of +12/24 Vac/dc on the wire 3.5 (see page 3).
Both LEDs of the handle (or of both 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"> 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); 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). <p>ATTENTION: 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>