CARDLOCK compact

945-803 CARDLOCK compact reader

Instructions for the following:

945-803 CARDLOCK compact reader
895-456 CARDLOCK compact kit

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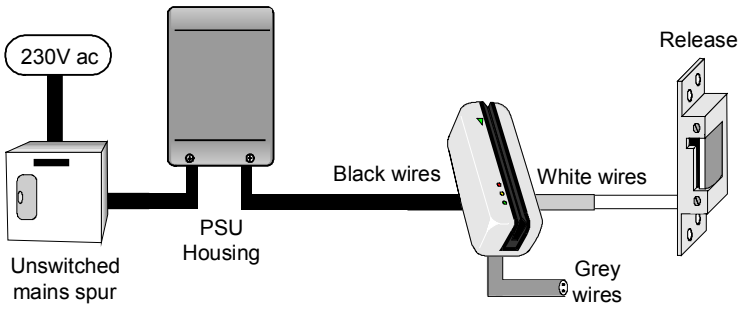
About this product:

CARDLOCK compact is a single door, single reader access control system operated by magnetic stripe cards. It is IPX7 rated and so is suitable for external use. The unit is self-contained with the control unit, or decision-making electronics, housed within the reader itself. The unit can be powered by both ac and dc 12V power supplies. ***The output to the electric release is 12Vdc solid state limited to 500mA continuous and 750mA intermittent (7 seconds).***



The input wires are provided for the connection of an exit button or time clock, see **Applications**.

CARDLOCK compact is available separately or in a kit containing a power supply and electric release.

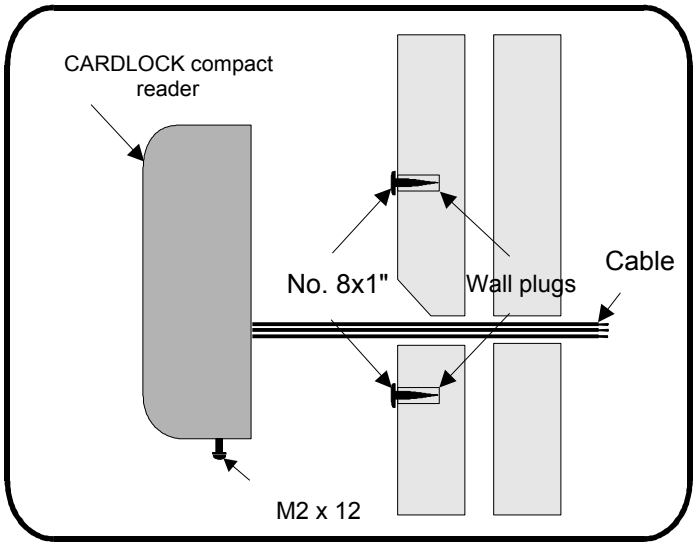
All system settings are programmed using function cards. No programming skills are required.

Any number of CARDLOCK systems using the same user cards may be installed on a site, see **Initialising the unit.**

CARDLOCK switch (Sales code 158-773) is an alternative product that has a separate reader and control unit. It has two reader capability for two way access control, voltage free relay contacts for the electric lock and increased functionality. For more information contact our technical helpline.

Fitting the reader:

- Using the template provided, mark and drill holes for the cable and the two screws.
- Enlarge the upper part of the cable hole, as shown in the diagram below.
- Tap the small wall plugs into the wall. Tighten the No.8 x 1" screws, turning back one revolution, once this is done.
- Before placing the CARDLOCK onto the wall, ensure that the M2 x 12 screw is not covering the bottom keyhole. Locate the screws in the keyhole on the back of the CARDLOCK and slide downwards to engage. Adjust screws as required to give a tight fit.
- Tighten down with the M2 x 12 screw provided.



Fitting the CARDLOCK compact reader

Which electric release?

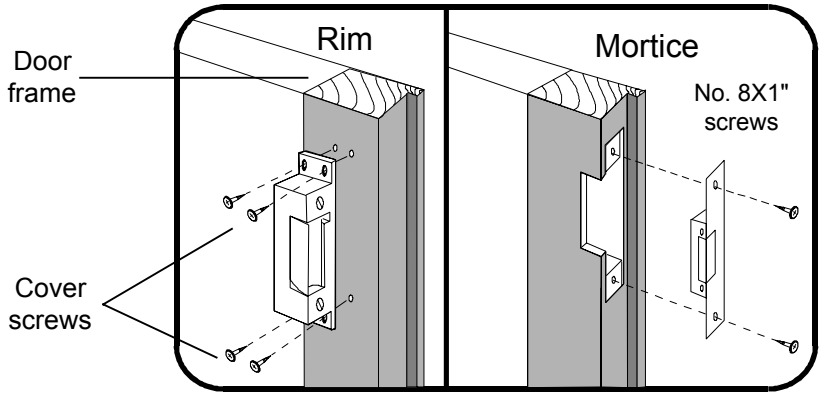
CARDLOCK compact is for use with 12Vdc fail open or fail closed electric releases. For a fail closed release, such as the one provided in the CARDLOCK compact kit, the current rating of the lock is limited to 750mA. For a fail open release, such as a maglock, the current rating of the lock is limited to 500mA. If the rating of the lock exceeds these limitations, then it cannot be used with the CARDLOCK compact.

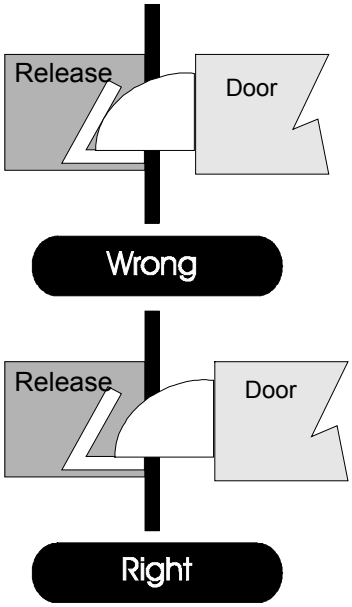
The CARDLOCK compact reader uses a small residual current to detect the presence of an electric release, used for the data reset procedure. ***For this reason CARDLOCK compact readers must not be connected directly to a relay coil.***

Fitting the electric release:

The following fitting instructions are for a standard format electric release such as the one provided in the CARDLOCK compact kit. For other forms of electric locks consult the manufacturer's fitting instructions.

- Decide on a suitable position for the electric release on the door frame.
- Remove the cover of the release.
- Using the 3.5mm cable clips provided, tack the white cable from the CARDLOCK to the release and connect the two wires to the terminals on the release. Polarity does not matter when using a standard 12V dc release.
- Replace the cover of the release.
- If using the rim fitting, do not refit the side plate, this is not used.
- Screw the release to the door frame using the No. 8 x 1" screws provided





Wiring the unit:

The black wires: Power input. The CARDLOCK can be powered with 12 - 15 V ac or dc. On dc systems the ribbed wire is positive. When using an ac power supply the polarity is not important.

The white wires: Release output. The output is 12V dc. For our standard 12V releases, polarity is not important, but for releases other than this, the ribbed wire is positive.

The grey wires: Output wires. If the function of these wires is left as standard the grey wires will open the door when connected together. A push to make button may be connected for an exit facility. When in time zone mode, see **Programming the CARDLOCK**, the grey wires when Shorted will toggle the CARDLOCK between two zone configurations. When in card plus PIN mode, see **Programming the CARDLOCK**, the grey wires must be shorted in conjunction with the swiping of a valid user card, to operate the release.

Backup power:

If the CARDLOCK is powered solely by a transformer, in the event of mains failure the unit will retain its memory but will not function for this time. A backup power supply uses a battery to power the unit in the event of mains power loss. The size of the battery is measured in Ah (Ampere Hours) and will determine how long the unit can operate using battery power alone. For example:

A CARDLOCK is operating in fail open mode, drawing around 50mA. The maglock that it is operating draws around 450mA. This gives us a total of 500mA or 0.5A. If the backup battery fitted is rated at 1Ah, then substituting these figures into the equation below gives us a backup power time of 1 hour and 36 minutes.

$$\text{Backup Power Time} = \frac{\text{Battery Capacity (Ah)}}{\text{(CARDLOCK current + lock current) (A)}} \times 0.8$$

The figure, 0.8, in the equation above is a safety factor and is included because the battery cannot supply full power for the last 20% of its life.
If the CARDLOCK is operating a fail closed release, then the backup power time is much longer.

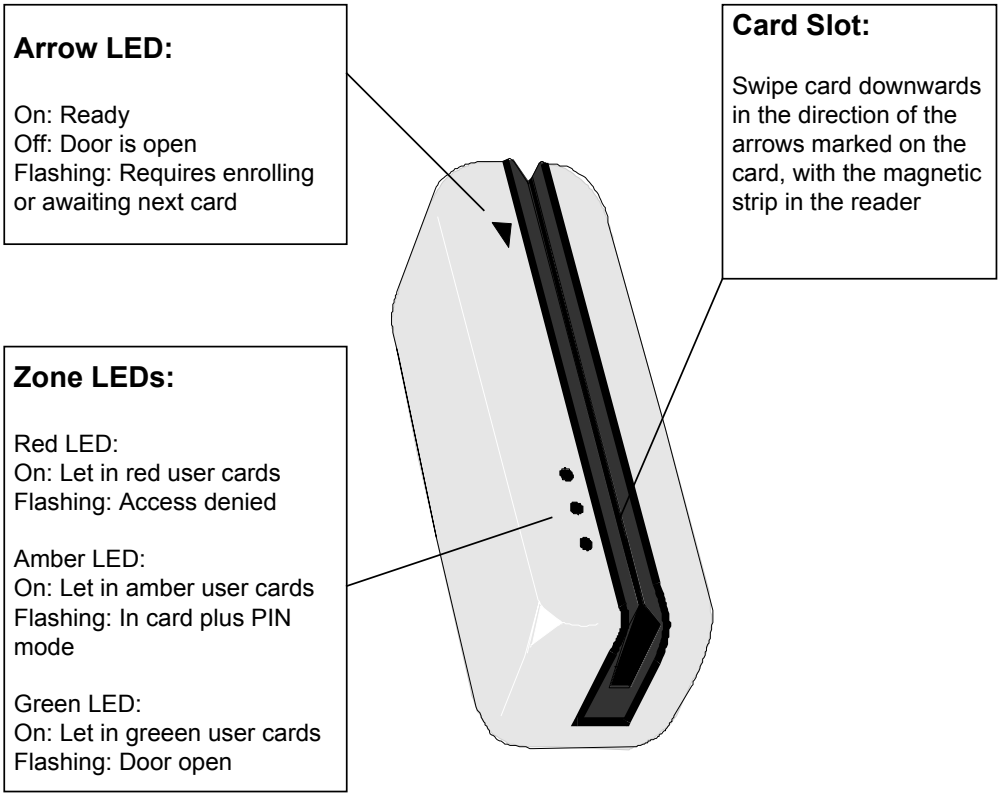
Initialising the unit:

- When the CARDLOCK is first powered up it will bleep twice.
- The green arrow LED will be flashing.
- The three zone LEDs will be on.
- The Enrolment card, found in the card starter pack, once swiped through the reader, will initialise the CARDLOCK to operate with the cards in this pack. Any further cards that may be required must be purchased using the order card, also found in the starter pack. This is so that additional cards are valid on the same system. ***If more than one CARDLOCK system is required to use the same user cards then the same enrolment card is used to initialise all systems.***
- The CARDLOCK is now initialised and set to the default factory settings.
- **Factory Settings:** Non-silent operation ..... CARDLOCK bleep
  Door open time = 7 seconds..... How long the door remains open
  Grey wires = remote release..... Opens the door for door open time
  All cards enrolled.....All 4,000 user cards are valid
  All zones are enabled..... Green, amber and red user cards all have access
  Fail closed lock mode..... Energises the release to open the door

Operation:

The CARDLOCK compact operates in certain ways depending on what it has been asked to do. Here is a list of its operations:

- When the CARDLOCK is switched on it will emit two bleeps, unless being data reset.
- If the CARDLOCK has not been initialised, see **Initialising the unit**, then the green arrow LED will be flashing and user cards will not work.
- When a function card is swiped, all the LED's will go out and the CARDLOCK will bleep if the card is valid. The CARDLOCK will then bleep twice after performing the function.
- When a valid user card is swiped the green zone LED will flash for door open time.
- If a user card is not valid then, once swiped through the reader, the red zone LED will flash.
- When a valid user card is swiped the CARDLOCK will operate the release.
- If a shadow card is swiped, the unit will invalidate the user card to which it is associated.



Reset instructions:

The CARDLOCK will remember its settings in the event of a power cut. To return the unit to the factory default settings, (see **Initialising the unit**), a data reset must be done. The procedure for doing this is as follows:

- Turn off the power to the CARDLOCK.
- Disconnect the lock (White) wires and make sure they are not Shorted together.
- Connect the output (Grey) wires together. If an exit button is fitted then press it.
- Whilst still connecting the grey wires, re-apply the power to the unit. The CARDLOCK should bleep twice; followed two seconds later by a further two bleeps. These four bleeps indicate that the CARDLOCK has successfully data reset.
- Turn off the power to the CARDLOCK and connect the wires to their original configuration.

The green arrow LED on the CARDLOCK will now be flashing indicating that the unit requires enrolling, (see **Initialising the unit**).

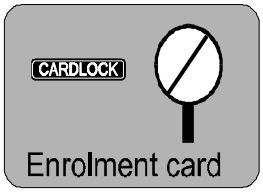
Programming the CARDLOCK:

Starter pack:

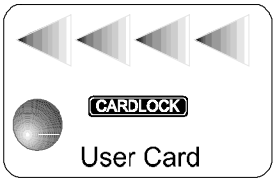
Your starter pack contains 10, 50 or 100 user cards, each having a corresponding shadow card. Also contained within this pack are five function cards. These function cards are used to initialise the unit and configure the system to your requirements.

The enrolment card:

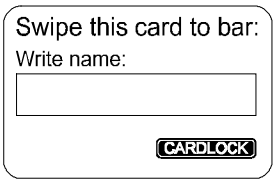
On powering the unit for the first time, the green arrow LED will be flashing. This indicates that the CARDLOCK requires enrolling. This is done by swiping the enrolment card. This action programs the unit to accept only the cards associated with it, i.e. the user cards in the pack, and any additional cards that may be ordered using the order card. If more than one CARDLOCK reader is to be used on the same site, using the same user cards, then the same enrolment card is swiped through all of these units.



User/shadow cards:



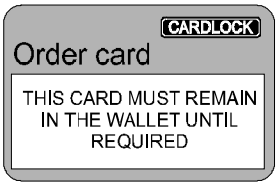
When the enrolment card is swiped through the reader it validates all of the user cards in the starter pack, as well as any additional cards that may have been purchased with the system. When issuing the user cards, the paper shadow card is retained, and the name of the user is written on the front of this paper card. The user card will operate the doors automatically.



If at any stage due to the loss of a user card or the dismissal of a member of staff etc, a user card is to be invalidated from the system, the shadow card that corresponds to that user card is swiped through the CARDLOCK. This removes that user card from the system.

If at some point in the future the card is to be re-instated, the enrolment card followed by the user card should be swiped through the reader. The user card will then open the door.

Order card:

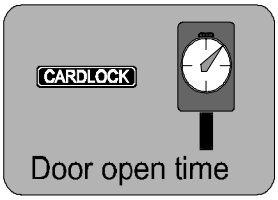


If additional cards are required on the system, (Maximum of 4,000), then in order that they are configured to the required system, the order card must be sent off with the order form. Red, amber or green cards may be ordered.

Fail open release card:

If the CARDLOCK is to operate a fail open release such as a maglock, then this card is swiped to configure it to this setting i.e. the CARDLOCK will supply power to the release when its status is locked. This function card works on a toggle basis i.e. swiping it once configures the unit to a fail open release; if the card is swiped again the unit will revert to fail closed release mode.

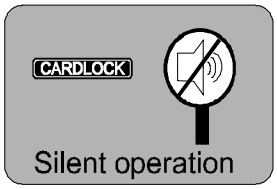
Door open time card:



The door open time is the time period that the lock is opened for on the swiping of a valid user card. The factory default setting is 7 seconds. Using this function card, the default setting can be changed. On swiping the card through the reader the CARDLOCK will emit a bleep every second. Once the desired door open time has elapsed the card is

swiped again. The CARDLOCK will bleep twice to indicate that the door open time has been successfully changed.

Silent operation card:

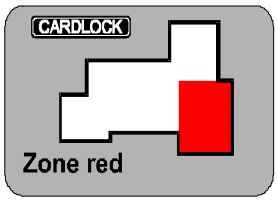


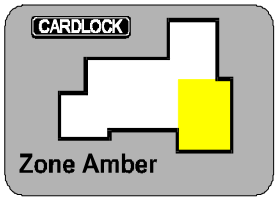
The CARDLOCK compact contains a bleep. On first initialising the unit this bleep is enabled. This card can be swiped for silent operation. This function card works on a toggle basis i.e. if the card is swiped once the bleep will be disabled, if the card is swiped again then the bleep will be re-enabled.

Function card pack (Sales code 877-012):

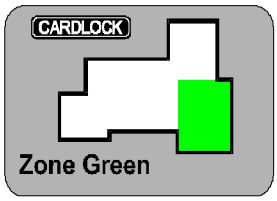
The function card pack is optional and must be purchased separately. It contains cards to enable the more advanced features of CARDLOCK. The following cards work with the CARDLOCK compact and perform the functions described. The cards in the function pack that are not included below are not suitable for use with the CARDLOCK compact.

Zone cards:



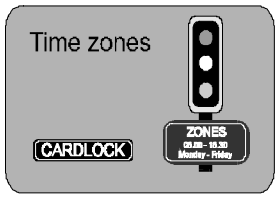


These three cards correspond to red, amber and green user cards. If the green zone card is swiped, the green zone LED on the CARDLOCK will go out. The CARDLOCK will now not accept any green user cards. If a green user card holder approaches the CARDLOCK they will see that the green zone LED is off and so will know that, at that time, their user card is invalid. If the green zone card is swiped again through the CARDLOCK, the green zone LED will come on and green user cards will be re-enabled.
The same principle applies to the amber and red zone cards.



By using these cards, large groups of users can be barred between certain times. Also in systems of more than one CARDLOCK, different levels of access can be programmed based on the colour of the user card.

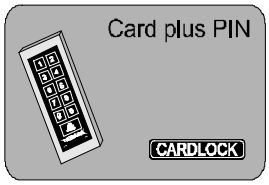
Time zones:



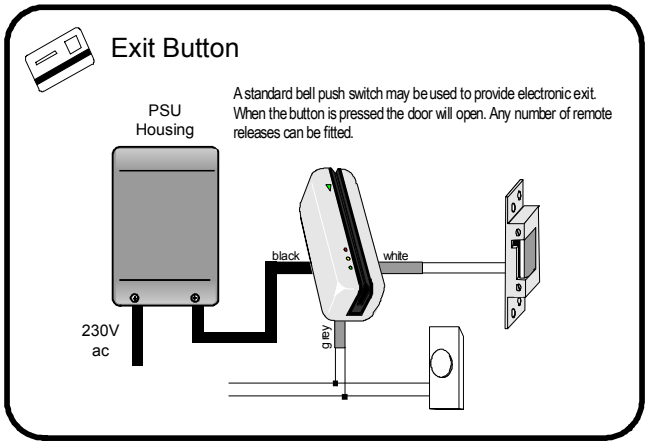
Swiping this card changes the function of the grey wires, usually used for an exit button facility. If this card is swiped, connecting the grey wires will switch the CARDLOCK between two zone configurations. The zone configurations are set by the use of the zone cards, whilst in each of the two states. If the grey wires are connected across a relay on a time clock, (a conventional central heating timer will suffice), then the two time zones can be switched between at set times of the day, barring and validating users as required.

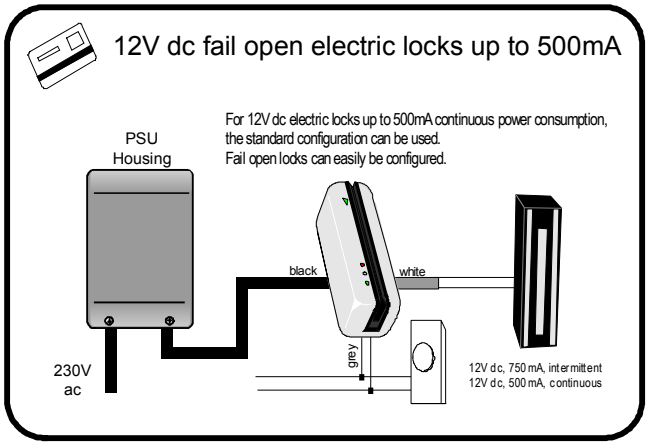
Card plus code:

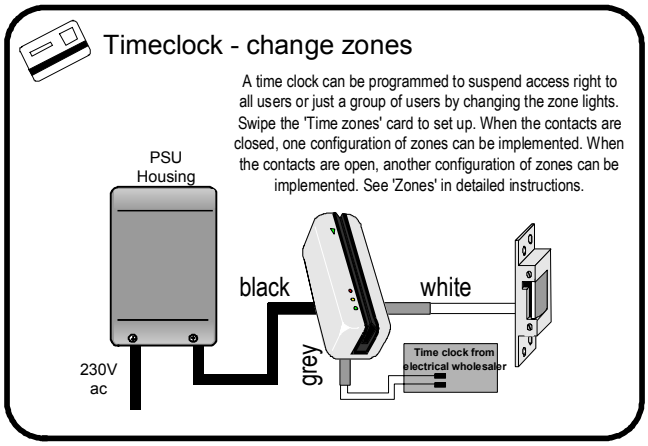
Swiping this card changes the function of the grey wires. If this card is swiped the grey wires can be connected across a TOUCHLOCK switch, (sales code 117-226), setting the system to operate only when a valid card plus a valid code are provided.

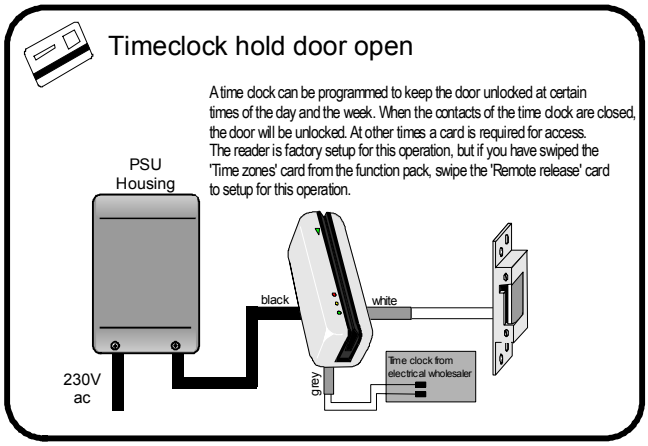


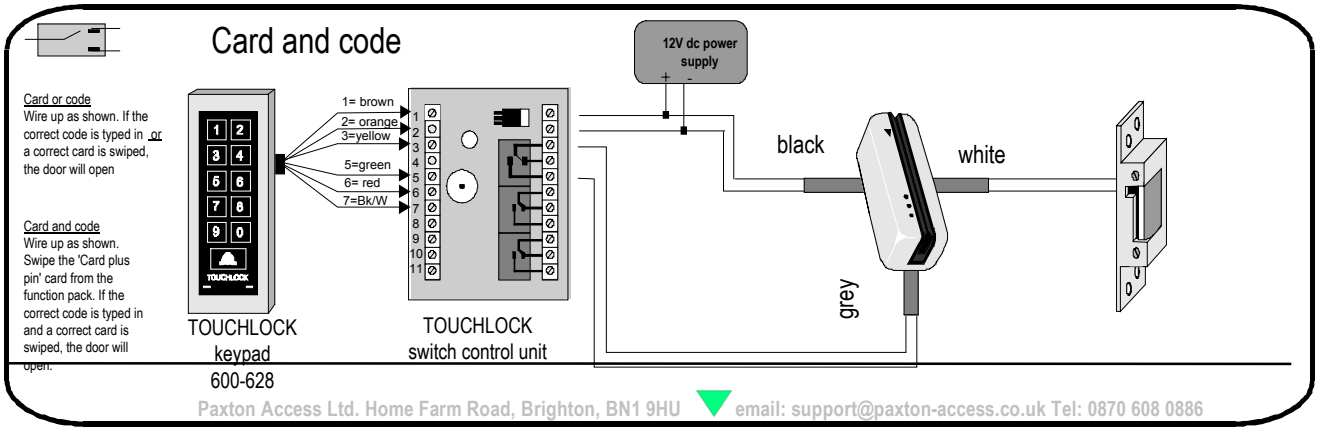
Applications:











Specifications:

Number of users	4,000
Colour access zones	up to 3 ƒ
Individual access rights	All users
No of time zones (Time clock required)	2 ƒ
Out reader can be added	No
Exit button	Yes #
Card plus code (With separate keypad)	Yes # ƒ
Time clock input	Yes # ƒ
Silent operation	Yes
Bar all users function	No
Door open time	0.5 to 5,000 seconds
Fail open (fail safe) locks	Yes
Operates a relay	No
Relay toggle mode	No
Multi zone mode	No
Water resistance	IPX7 (submersible)
Operating temperature	- 20°C to 70°C
Size of reader	34 x 34 x 89mm
Cable	twin flex (black, white, grey)
Cable length supplied	3m
Reader life	>1,000,000 swipes
Supply voltage	12 to 15V ac or dc
Continuous output current	500mA
Output current up to 7 seconds	750mA
Quiescent current	45 to 70mA

CARDLOCK switch must be used to combine more than one of these features on a single CARDLOCK.

ƒ Implementing these features requires a Function card pack.