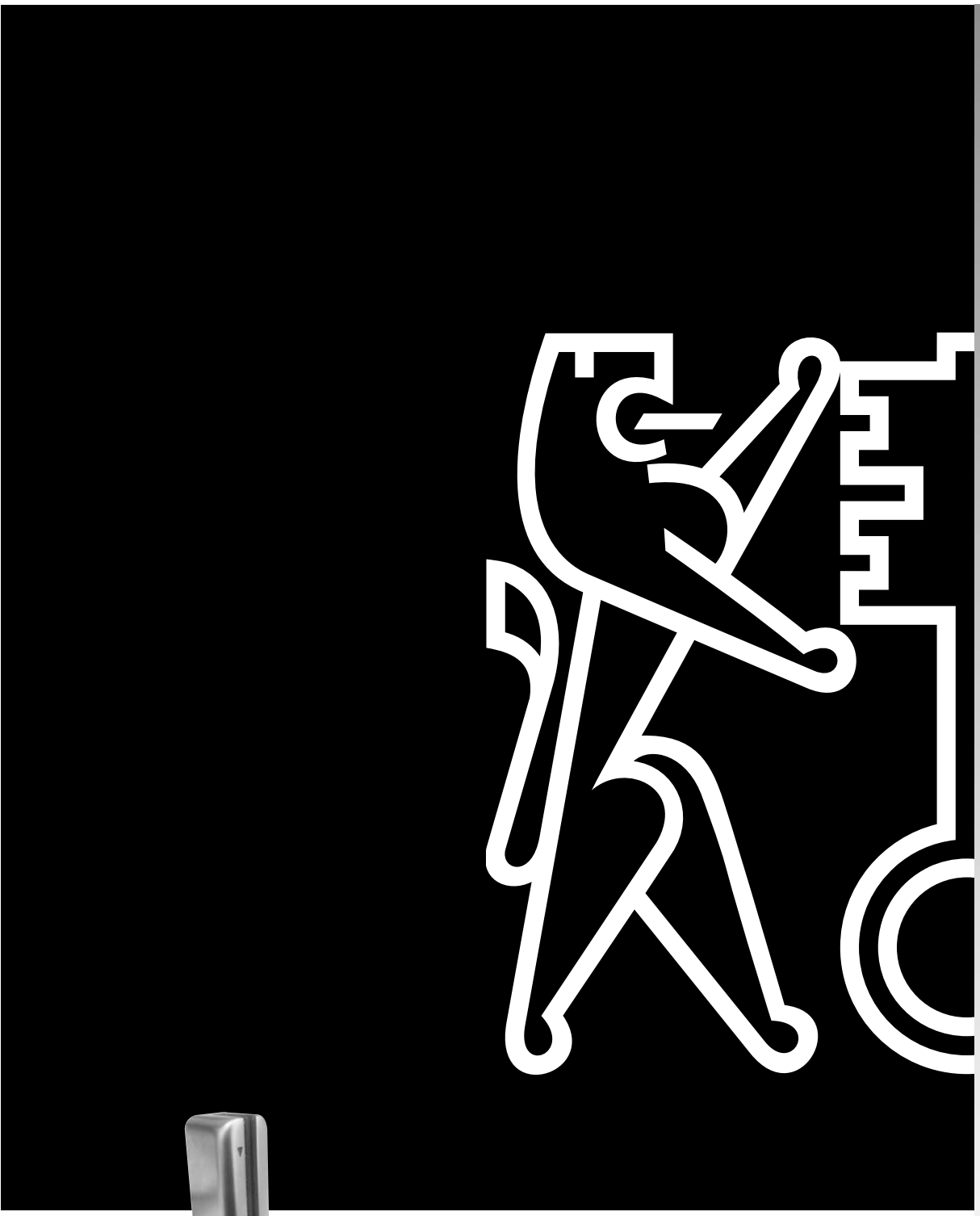

INSTALLATION GUIDE

Card Reader & Controller

with KIM Swipe Reader for

Solitaire 850 / 950 / 850L Learnlok

PK2930

KABA®

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Disclaimer

Please read and follow all directions carefully. These instructions are designed for use by maintenance professionals or lock installers who are familiar with common safety practices and competent to perform the steps described. Kaba Ilco is not responsible for damage or malfunction due to incorrect installation, however arising.

Carefully inspect windows, doorframe, door, etc. to ensure that the recommended procedures will not cause damage. Kaba Ilco's standard warranty does not cover damages caused by installation.

Technical Assistance

For technical assistance, call: **1-888-217-5654**

1. Features

The Model 3.5 Card Reader and Controller System is designed to activate electrical locking or control devices where a stand-alone electronic lock is not practical. This system can control any door or access point from up to 500 feet (150 m) away. The KIM Swipe Reader Assembly can be mounted directly on door frames as narrow as 2 inches (5.1 cm).

- Variable access delay
- ID reinitialization feature
- Power failure 3-day auto-recovery—real time clock (RTC)
- Simple serial programming & auditing
- Relay bypassing (passage function)
- Status LEDs feedback
- Ingress and egress access control with dual reader configuration

2. Control Panel Location

Place each control panel in the system as close as possible to the devices it will be powering. The temperature in the chosen location should be 32ºF to 120ºF (0ºC to 49ºC). The supply in the panel will need unswitched AC power from a junction box. The source of AC power should be protected against short-circuits or over-current by a circuit breaker capable of disconnecting power from the panel. Do not use a cord and wall outlets. The control panel should be securely screwed to the wall using the four mounting holes. If possible, the control panel should be mounted at a workable height with clearance to open the door completely.

Notes: ***• Access to control panel is restricted to service personnel only.***

• A certified electrician must connect the AC power to the Control Panel in accordance with applicable local standards. Kaba Ilco is not responsible for any damages caused by non-certified electricians.

3. System Installation

3.1 System Installation Overview

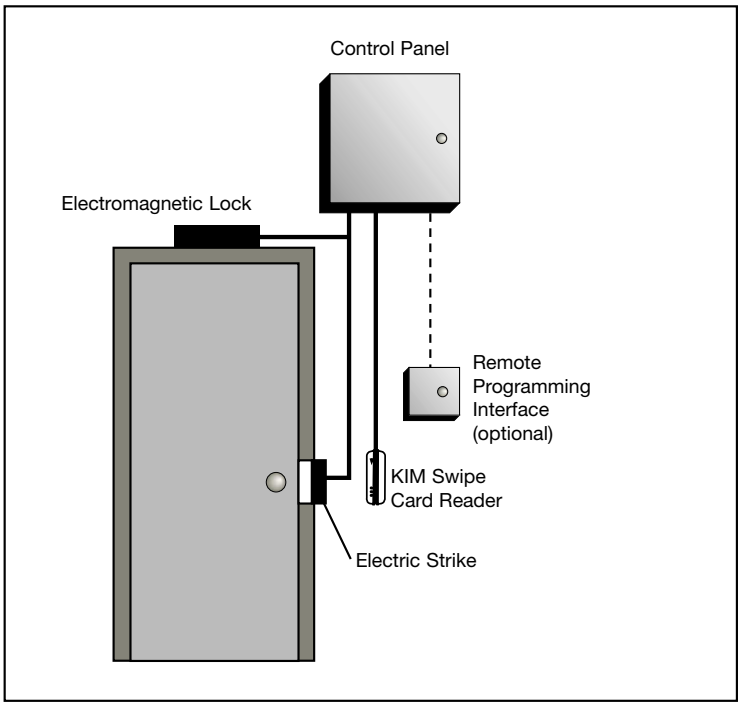
The configuration of the system may include an electric strike and/or magnetic lock as shown in the diagram at right. Perform the steps on page 2 to install the components you require, and observe carefully the following notes.

Notes: ***• Use 18 AWG stranded shielded cabling for connections to the electromagnetic lock or electric strike.***

• For SINGLE Reader Installation, refer to Figure 1 on page 4.

• For DUAL Reader Installation, refer to Figure 2 on page 5.

The Model 3.5 Dual Reader Card Reader and Controller provides egress/ ingress (exit/entry) access control. It includes two slim readers controlled by two separate PCBs, each of which can be programmed separately for the desired functions.



1. Shut off the electrical power to the AC line to be connected to the control panel.
2. Set AC input switch S1 on the Power Supply (C) for the electrical voltage used in your country. North American applications require 115VAC, 60Hz; European applications require 230VAC, 50Hz. Insert appropriate fuse in F1 fuse clips:for North America, use 600mA, 5mm fuse, fast blow. For Europe, use 315mA, 5mm fuse, fast blow.
3. Install the control panel in the desired location, using the Installation Kit.
4. Install the KIM Swipe Reader Assembly (B) in the desired location. **Refer to appropriate fitting instructions for chrome reader or black reader, in Section 3.3 on page 3.** A Dual Reader installation has one Egress (exit) reader (B1) and one Ingress (entry) reader (B2).
5. Connect the AC line to terminal TB1 on the Power Supply (C) (see Table 5 on page 6).
6. Connect the shielded cable from the KIM Swipe Reader Assembly (B) to terminal block JP3 on the Controller (A). For connections, see Table 1. **For Dual Reader installations, connect the Egress reader (B1) to Controller #1 (A1) and the Ingress reader (B2) to Controller #2 (A2).**
7. If the Control Panel is not being interfaced to a fire alarm panel, go to step 8. Remove the jumper from terminal TB5 on the Power Supply (C) and complete the fire panel installation.
8. If an additional Remote Programming Interface (D) is not being installed, go to step 9. Run a twisted 2 pair stranded conductor, 22 AWG shielded cable from the Remote Programming Interface (D) to terminal block J4 on the Controller (A). For connections, see Table 2. **For Dual Reader installations, connect the Remote Programming Interface (RPI) (D) to Controller #1 (A1).**
9. Install the 2 conductor 18 AWG shielded cable from the control panel to the location of the electric strike (G) or electromagnetic lock (E).
10. Connect the cable shield to the chassis ground connection at terminal TB6 on the Power Supply (C).
11. Install the diode across the terminals of the electromagnetic lock (E) or, using the butt connectors provided in the Installation Kit, install the diode across the two wires of the electric strike (G). **Do not reverse diode polarity.**

    Note: This step is not necessary if installing an HES 7000 Series electric strike or Rutherford Controls 83xx series electromagnetic lock

12. Mount the electric strike (G) or electromagnetic lock (E) in the desired location and connect as per manufacturers' instructions.
13. Run a 2 conductor, 22 AWG, stranded cable from the tamper switch to premises alarm system. Using quick disconnects on tamper switch terminals, connect tamper in series with instant (24hr) zone to create an audible alarm or trouble signal upon opening the access control panel.
14. Double-check all connections, including the cable shields.

    Note: The AC failure contacts, TB3 on the Power Supply (C), are dry relay outputs that will change state when the AC power is shut off. If required, this can be connected to a separate alarm panel. Terminals available are Common, Normally Open, and Normally Closed (30VDC @ 1Amp max).

15. Configure DIP switches S2 on the Controller (A) to the desired relay activation time. See Table 6 and Figure 3. **Do not use CFG #16 because this setting is used only for reinstalling the controller. For Dual Reader Installations, set the DIP switches on Controller #1 (A1) and Controller #2 (A2).**
16. Turn on the AC power. The green LED on the front of the control panel will light. LEDs D26 and D27 will start flashing alternately. See Table 3 for LED descriptions.
17. Position bypass switch S3 on the Controller (A) down for normal mode. When power is supplied to the unit, the indicator light beside the switch should be OFF for normal mode and ON for bypass mode.

    Note: On the 8-relay configuration, there is one bypass switch per relay on the expansion board. Set each switch according to whether you wish to bypass the associated relay.

18. If a battery is being installed, mount the battery bracket in the control panel using 2 screws provided in the battery kit. The battery should be installed with the terminals facing the controller board and positioned closer to the power supply (see Figure 1). Connect the red wire from the TB4 terminal on the Power Supply (C) to the + red terminal on the Battery (F). Connect the black wire from the TB4 terminal on the Power Supply (C) to the - black terminal on the Battery (F). The battery will take 24 hours to fully charge.
19. To test the battery status indicator on the front of the control panel, shut off the AC power to the panel. The red LED will light.

3.2 If a wiring extension is required:

1. Connect the KIM Swipe Reader Assembly (B) to a junction box and run 4 20 AWG twisted pairs (8-conductor cable) of wire from the junction box to the control panel. The gauge used will determine the maximum distance between the Controller (A) and the Swipe Reader Assembly (B) (e.g. 20 AWG will allow 500 feet).
2. Connect the cable as shown in Table 1.

3.3 Fitting the KIM Swipe Reader:

Satin Chrome reader

1. Using the template for the Satin Chrome KIM Swipe Reader located at the end of this booklet, mark the holes for the cable and screws.
2. Wearing safety glasses, drill the holes in the wall. Enlarge the upper part of the cable hole.
3. Tap the plugs into the wall, then tighten the screws fully. Undo the screws one turn, leaving a small gap between the screw head and the wall.
4. Fish the cable to the control panel and make connections to the reader according to the instructions in section 3.1. Before placing the reader on the wall, ensure that the screw is not covering the bottom keyhole. Locate the screws in the keyholes on the back of the reader and slide downwards to engage.
5. Remove the reader and adjust screws as necessary.
6. Tighten down with the M2 x 12 screw provided on the bottom of the reader.

Black Reader

1. Remove the black back plate from the reader, and use it as a template to mark the holes for the cable and screws. You can also use the paper template at the end of this booklet.
2. Wearing safety glasses, drill the holes in the wall. Enlarge the upper part of the cable hole.
3. Tap the plugs into the wall.
4. Install the back plate onto the wall with the screws provided in the installation bag.
5. Snap the front of the Reader onto the back plate.
6. Tighten down with the M2 x 2 screw provided on the bottom of the reader.

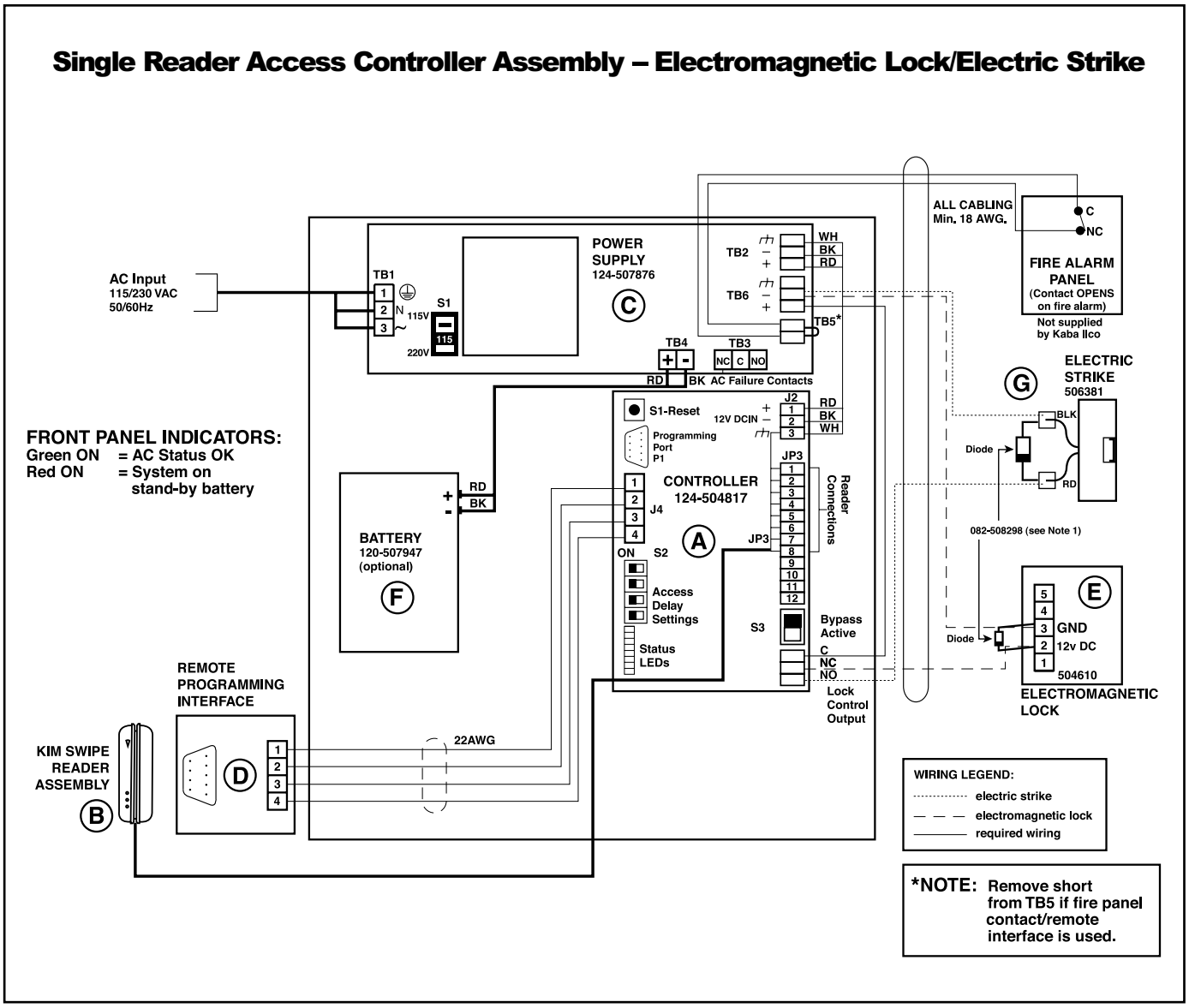


Figure 1

Note 1: Due to Hanchett Entry Systems (HES) modifying their 7000 series electric strikes and Rutherford Controls modifying their 83xx series electromagnetic locks to include an on-board diode, it is no longer necessary to install the diode from the installation kit.

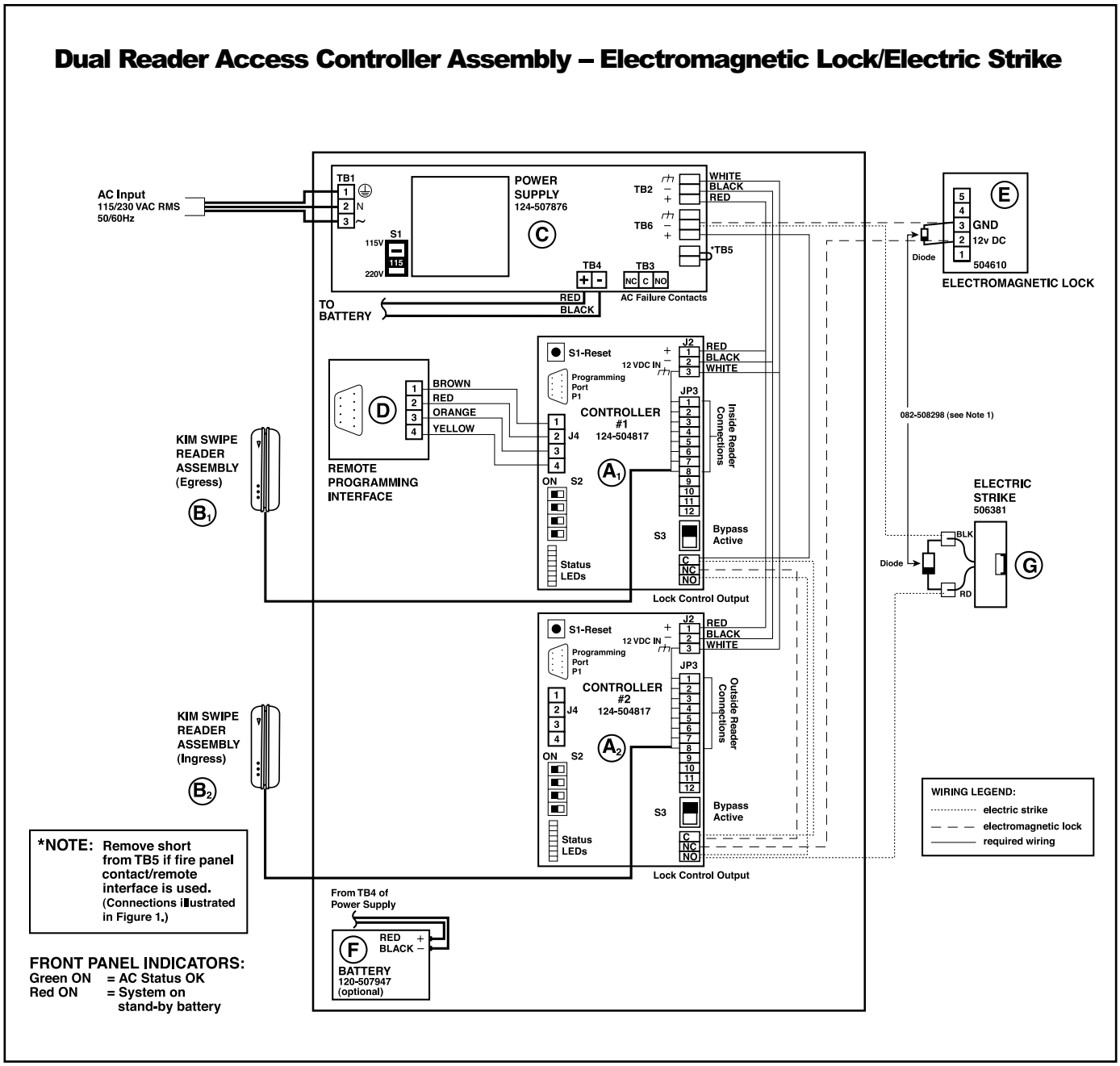


Figure 2

Note 1: Due to Hanchett Entry Systems (HES) modifying their 7000 series electric strikes and Rutherford Controls modifying their 83xx series electromagnetic locks to include an on-board diode, it is no longer necessary to install the diode from the installation kit.

Controller (A) to KIM Swipe Reader (B) Connections	
Controller	**KIM Swipe Reader**
JP3-1	Red
JP3-2	Black
JP3-3	Orange
JP3-4	Green
JP3-5	Purple
JP3-6	Brown
JP3-7	Blue
JP3-8	Yellow
JP3-9	N.C. (White)
JP3-10	N.C.
JP3-11	N.C.
JP3-12	N.C.
J2-3	Shield

Table 1

Controller to RPI*		
Controller	**RPI***	**Signal**
J4-1	J1-1	E
J4-2	J1-2	TX
J4-3	J1-3	RX
J4-4	J1-4	GND

Table 2

* RPI – Remote Programming Interface

Status LEDs	
LED	**Description**
D21	Relay 0
D20	Access
D19	Programming
D18	Initialization
D23	Unused
D24	Unused
D26	Functionality 1
D27	Functionality 2

Table 3

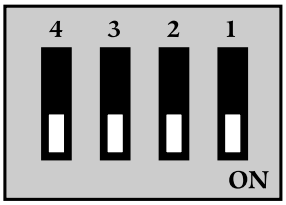


Figure 3. Access Delay Select DIP Switch Bank

Access Delay DIP Switch Settings (S2)					
CFG#	**4**	**3**	**2**	**1**	**SEC**
1	ON	ON	ON	ON	8
2	ON	ON	ON	OFF	1
3	ON	ON	OFF	ON	3
4	ON	ON	OFF	OFF	5
5	ON	OFF	ON	ON	10
6	ON	OFF	ON	OFF	15
7	ON	OFF	OFF	ON	20
8	ON	OFF	OFF	OFF	25
9	OFF	ON	ON	ON	30
10	OFF	ON	ON	OFF	35
11	OFF	ON	OFF	ON	40
12	OFF	ON	OFF	OFF	50
13	OFF	OFF	ON	ON	60
14	OFF	OFF	ON	OFF	90
15	OFF	OFF	OFF	ON	120
16	OFF	OFF	OFF	OFF	REINIT

Table 4

Example of S2 Settings

Delay times can vary from 1 second to 120 seconds. Choose the delay required from Table 6, then set the DIP switches accordingly. For example, with DIP switches 4, 3, 2, 1 in the ON, OFF, ON, OFF positions respectively, a delay of 15 seconds is set.

Do not use CFG #16 because this setting is only used for reinitializing the controller.

TB1 Power Connections		
Terminal	**Symbol**	**Description**
1	⏚	Earth Ground
2	N	Neutral
3	~	AC Live

Table 5

4. Settings and Operation

4.1. Programming and Auditing

The KIM Swipe Reader keeps an audit trail in memory, recording the identity and time of every valid and invalid keycard swiped through the reader. When the memory is full, records are retained on a FIFO (First-In-First-Out) basis.

The controller can be programmed directly on the PCB or via the remote programming interface box.

Steps to Program the Card Reader and Controller:

1. Link the programming computer to the DB9 connector (J1) in the remote programming interface box, or to the DB9 connector (programming port P1) on the controller PCB in the control panel. Refer to Figure 1 or Figure 2 for the positions of the J1 and P1 connectors. Refer to Figure 4 or Figure 5 below for an illustration.
2. For step by step programming instructions, refer to the Solitaire 850/950/850L LearnLok Installation and Programming Guide. Note: The 850L LearnLok is programmed by enrolling keycards using the Learn keycard. Please refer to the 850L user manual.

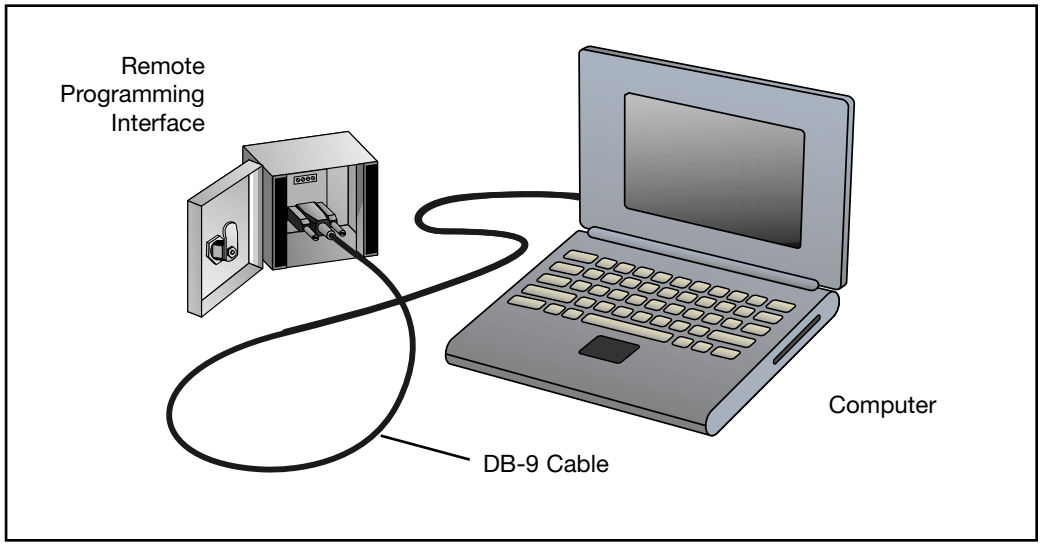


Figure 5. Programming the Card Reader using the Remote Programming Interface

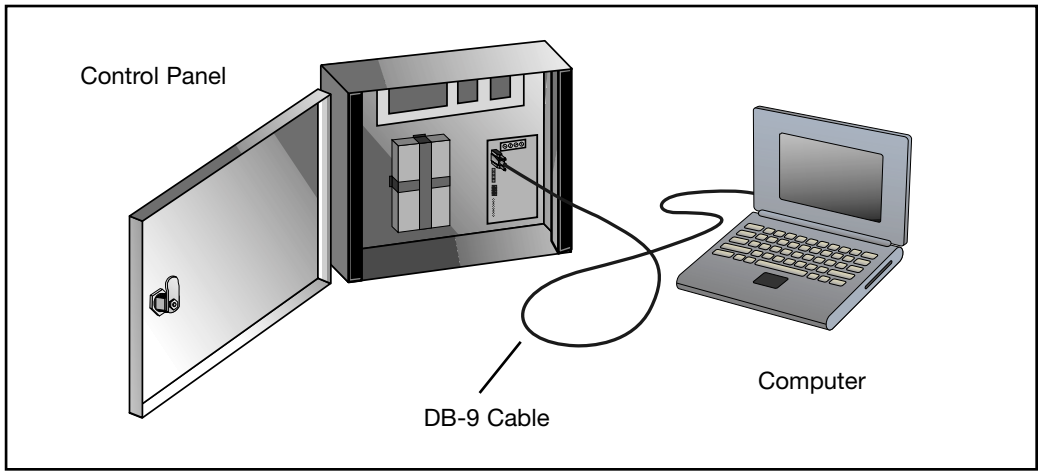


Figure 6. Programming the Card Reader using the Control Panel

4.2 ID Reinitialization

To reinitialize the ID code:

1. Set the switches in switch bank S2 to CFG #16.
2. Swipe a new initialization keycard through the swipe reader. The red and green LEDs on the KIM Swipe Reader will flash in sequence –red once, green twice.
3. Wait for the LEDs to flash as described, then set the DIP switch positions back to the chosen access delay setting.

4.3 Battery Replacement (KABA ILCO Part #120-507947)

Warning: The power supply uses high voltage; only a qualified person should replace the battery.

1. Prior to replacing the battery, write down the color and location of each wire and the orientation of the batteries.
2. Disconnect all wires.
3. While holding the battery in place, remove both screws holding the retaining bracket.
4. Replace battery with the same type gelled lead acid cell 12 V, 7.0 AH (Ampere-hours). Put the new battery in the same position, install the retaining bracket and reconnect all the wires. Dispose of the old battery according to local regulations.

Note: For preventative maintenance, back-up batteries should be replaced every 2 to 3 years, and tested every 6 months by removing main AC power.

4.4 Power Failure

In the event of an electrical failure, the system will revert to standby status for a period of 4 hours **(if the optional battery is installed)**. If the electrical power is restored within three days, the system will recover automatically and should require no additional programming. Verify the status of the LED D18 on the controller PCB in question. If the LED is OFF, swipe an initialization or start-up card through the reader and reset the lock time to ensure that the controller will function properly. See Table 3 on page 5 for Status LED definitions.

4.5 Loading Recommendations

Caution: Do not exceed the load limitations of the control panel.

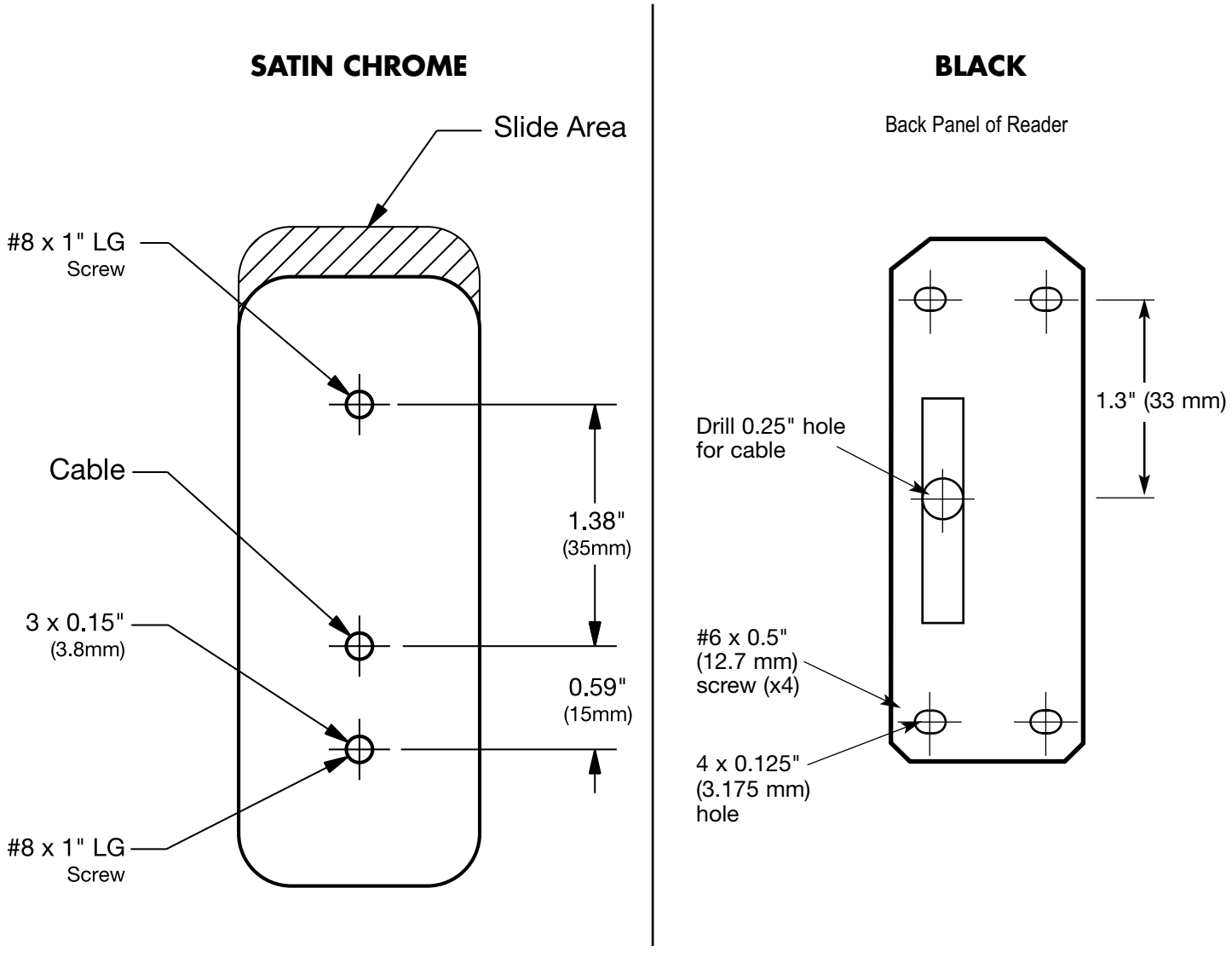
The maximum recommended load for all output relays in the card reader control panel is 1 Amp at 30 VDC. The tamper switch rating is 1 Amp for 115VAC and 0.5 Amp for 230VAC applications.

4.6 System Deactivation

In order to deactivate the card reader control panel, disconnect both terminals from the standby battery, then disconnect the AC power either by removing the quick disconnect terminal located at TB1 of the power supply or by shutting off the main breaker switch for the control panel.

Notes:

Drilling Templates for KIM Swipe Readers:



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Printed in Canada PK2930/11/02