

ScrambleLock Installation Notes

Warning: Installation of other equipment or devices within the ScrambleLock, or powering of other equipment or devices from the ScrambleLock can cause system failure or damaged and will void the warranty.

System Power

The System Power Supply is set for 115V AC, 60 Hz power. It can be ordered set to 230V AC, 50 Hz.

Note A special 100V AC Power Supply is available on special order for installation in Japan.

If local code requires permanent conduit installed, remove the factory-installed power cable together with strain relief and install the required conduit.

Note Export systems are shipped less power cable.

System Battery

The system backup battery operates the system for a short period once AC power fails. The backup operating time depends on how many keypads are installed and how often the system is operated.

The battery is charged whenever AC power is ON. Larger backup batteries are available. Call Hirsch Electronics for details.

The system memory battery protects the setups and codes for up to 30 days with no AC or DC power available.

Auxiliary Battery Packs

The addition of a Hirsch 1.3 AH external battery pack operates an SL1 with one keypad for approximately 24 hours and fully recharges in approximately 34 hours. An SL1+ with two keypads operates for approximately 14 hours and fully recharges in approximately 52 hours.

The available auxiliary battery packs are:

Model	Keypads	Battery Pack	Operate	Charge
SL1	1	1.3 AH	24 hrs.	34 hrs.
SL1+	2	1.3 AH	14 hrs.	52 hrs.

Lock Battery (SL24+ Only)

The Lock Backup Battery operates DC locks for a short time once AC power has failed. The Lock Battery supplies high inrush current and must be installed to insure proper operation.

Warning: Do not use AC locks.

The backup operating time depends on what kind of lock is installed and how often the system is operated.

Reset Key

Use the reset key to reset actuated relays, reset system code, or reset and clear memory, depending on the amount of time the key is depressed as shown in the following table:

1 second	Resets any actuated relays
5 seconds	Resets system code to factory default of 123.
30 seconds	Resets system and clears all memory.

System Fuses

The following fuses are installed on the ScrambleLock motherboard:

No.	Name	Fuse Type	Blown by:
F1	Keypad Power	1/2A Slo-Bio	Keypad power short
F2	24V AC Power	2A Slo-Bio	Circuit board short
F3	System Battery	10A Slo-Bio	Battery short
F4	Battery Charger	1/2A Slo-Bio	Charger fault
F5	Lock Battery Charger	1/2A Slo-Bio	Charger fault
F6	Lock Battery	10A Slo-Bio	Charger fault

The preceding fuses apply to the SL24+ only.

There is also a transformer fuse:

No.	Name	Fuse Type	Blown by:
—	Primary AC Power	1A Slo-Bio	AC short, spikes, surges

Relays

Relays are heavy-duty DRY (no power output) contact relays. Contacts are rated for 10 amps at 24V DC. See the rating on the relay for further details.

Relays can be programmed to actuate for 1-8100 seconds on code or input actuation, or can toggle ON/OFF on subsequent code or input actuation.

Locks

Electric locks require separate power supplies properly rated to their individual power needs.

Suppress any harmful lock power surges or kickbacks by using MOVs installed at the lock.

Note *MOVs age. We recommend periodic replacement of MOVs as required. Use GE MOV PN V39ZA1 39Volt.*

Caution *Use shielded cable only. Do not run lock cable with keypad or exit cables.*

Lock Power (SL24+ Only)

The SL24+ provides lock power for 24 VDC locks only. Each relay provides 16A on inrush and 250mA on continuous duty.

Warning: **Do not use AC solenoid locks and do not exceed output rates.**

A second set of dry relay contacts are available for control applications. These outputs are timed using the same commands and procedures as the powered outputs.

Power Output Rating Chart (SL24+ Only)

The following table lists the power outputs for various operations:

Lock Voltage:	24V DC
Lock Current:	16 mA inrush per lock 250 mA holding per lock
Keypad Power:	18-28V DC @ 150 mA during idle 18-28V DC @ 350 mA during code entry
Keypad Voltage:	24V DC
Keypad Current:	500 mA continuous

For example:

The total power output of 2 Mag locks and 2 keypads can be calculated as:

$$\begin{aligned} 2 \text{ mag locks @ } 250 \text{ mA each} &= 500 \text{ mA} \\ 2 \text{ keypads @ } 250 \text{ mA each} &= 500 \text{ mA} \\ \textbf{TOTAL} &= 1 \text{ A continuous} \end{aligned}$$

Since 1 amp is the maximum ScrambleLock current, this configuration is allowed.

In the second example, 2 strikes are supported:

$$\begin{aligned} 2 \text{ strikes @ } 500 \text{ mA each} &= 1 \text{ A} \\ 0 \text{ keypads @ } 250 \text{ mA each} &= 0 \text{ A} \\ \textbf{TOTAL} &= 1 \text{ A continuous} \end{aligned}$$

This is also allowed.

However, if 2 strikes and 2 keypads are planned, this calculation results:

$$\begin{aligned} 2 \text{ strikes @ } 500 \text{ mA each} &= 1 \text{ A} \\ 2 \text{ keypads @ } 250 \text{ mA each} &= 500 \text{ mA} \\ \textbf{TOTAL} &= 1.5 \text{ A continuous} \end{aligned}$$

This exceeds the allowed maximum current and is not supported.

ScramblePads

Install the ScramblePad no more than forty feet from the ScrambleLock. Follow the instructions in the ScramblePad Installation Guide for details.

Note *Use Shielded Cable only. Do not run keypad cable with lock cable.*

Exit/Entry Inputs

Install any Normally Open exit or entry control device such as a Request to Exit (RQE) or motion sensor to the required input.

Note *Use Shielded Cable only. Do not run keypad cable with lock cable.*