

Installation Instructions Model 2310-KEY Keyswitch Module

C&K's 2310-KEY keyswitch module acts like a keypad and can be used in addition to or in place of keypads. The module allows you to arm or disarm using a simple switch. When the switch is activated, the module sends the User Combination to the control panel. You can allow full arm and disarm capability, limit the switch to arm or disarm only or connect multiple keyswitch modules to a single control panel. The 2310-KEY operates with all of C&K's 2300 family of control panels (236, 236i, 238, 238i, 2316, and 2316i).

The 2310-KEY operates with momentary or maintained contacts, either Normally Open or Normally Closed. If you use Normally Open momentary contacts, you can connect multiple switches to the same module.

APPLICATIONS

- Keyswitch arming/disarming
- Arming/disarming via external timer
- Interfacing with Access Control Systems
- Remote status display
- Exterior Arming Stations

INSTALLATION

Mount the module inside the control panel using the universal accessory cage (provided). After setting the hook switches, slide the 2310-Key printed circuit board into the bracket and connect the wiring as shown in Figures 1 and 2.

HOOK SWITCH SETTINGS - S1 and S2

The hook switches (S1 - S3) should be set prior to installing the module inside the control panel. Switches S1 and S2 are used to set the User Combination. An open hook switch enables that position, while a closed hook switch disables it. The User Combination is set using the binary-coded-decimal system (each digit is separately encoded via a group of 4 switches; refer to the table below).

Combo Digit Value	Switch S1				Switch S2			
	User Combo Digit # 1		User Combo Digit # 2		User Combo Digit # 3		User Combo Digit # 4	
	Sw. Position	Sw. Position	Sw. Position	Sw. Position	Sw. Position	Sw. Position	Sw. Position	Sw. Position
0	1 2 3 4	5 6 7 8	1 2 3 4	5 6 7 8	1 2 3 4	5 6 7 8	1 2 3 4	5 6 7 8
1	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
2	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
3	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
4	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
5	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
6	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
7	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
8	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x
9	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x

x = closed hook switch

o = open hook switch

For example, the User Combination 8-5-1-0 would be set as follows:

- 8 = S1 Positions 1-3 closed, Position 4 open
- 5 = S1 Positions 6 & 8 closed, Positions 5 & 7 open
- 1 = S2 Positions 2-4 closed, Position 1 open
- 0 = S2 Positions 5-8 closed

The same user code set by switches S1 and S2 must be programmed into the panel. You also program the authority level (arming and disarming capabilities) into the panel. Refer to the panel installation manual for additional information.

S3

Switch S3 sets the Keyswitch Type and Keyswitch Address.

Position 1 is not used.

Position 2 indicates the Keyswitch Type -

Open for Momentary, Closed for Maintained

Positions 3 through 5 indicate the Keyswitch Address

Like other keypads, the keyswitch module must have an address. Valid addresses are 0 thru 7. See the chart below for proper switch settings.

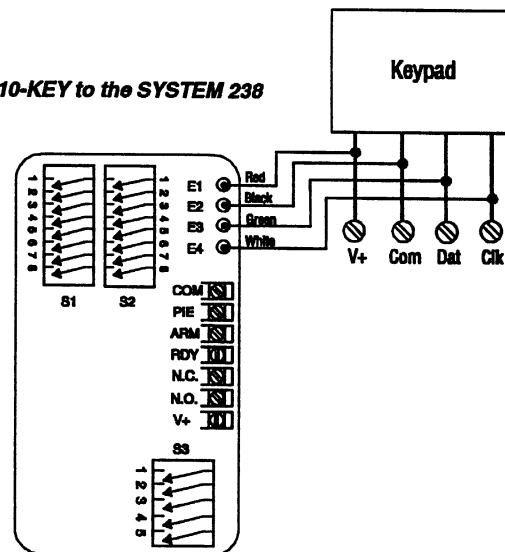
Keyswitch Address	Switch S3 Sw. Position
0	3 4 5
1	x x x
2	x x o
3	x o x
4	x o o
5	o x x
6	o x o
7	o o x

x = closed hook switch
o = open hook switch

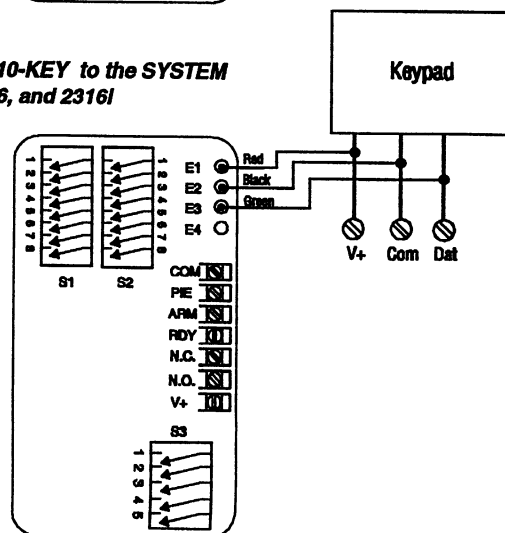
CAUTION:

Every keypad and keyswitch module in the system must have a different address.

Figure 1
Wiring the 2310-KEY to the SYSTEM 236 and 238i



Wiring the 2310-KEY to the SYSTEM 236, 236i, 2316, and 2316i



WIRING TO THE CONTROL PANEL

Most C&K 2300 series controls only require three wires to connect the keyswitch module to the control panel. The SYSTEM 238 and 238i require four wires. (See Figure 1.)

Connect the wires from Terminals E1 through E4 as follows:

E1 - Red	V+ (Keypad Power)
E2 - Black	Common
E3 - Green	Data In
E4 - White	Clock (System 238/238i Only)

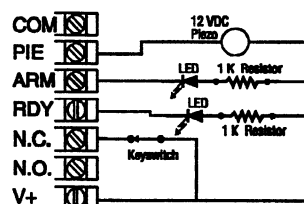
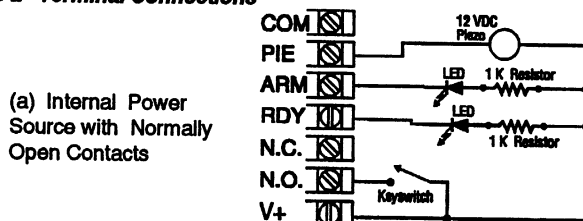
TERMINAL CONNECTIONS

The terminal connections of the 2310-KEY (See Figure 2) connect to the electrical common of the device being used. The module is capable of sinking up to 50 mA per output. To handle higher loads, an external power source must be used. The maximum current the module can handle with an external power source is 200 mA per output.

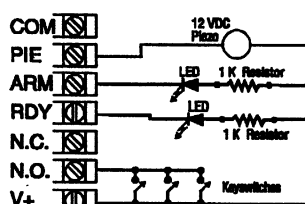
Terminal	Use/Comment
COM	Common connection for use with external power supplies only
PIE	Provides electrical common for Piezo, when active. The piezo responds exactly like a keypad piezo.
ARM	Provides electrical common for ARM LED. If delay zones have been converted to instant zones, the LED will flash. When the system is disarmed, the LED will be off. This is the same as the RED LED on the keypad.
RDY	Provides electrical common for RDY LED when the system is ready to arm with no faulted zones. In this state, the RDY LED will be on steady. The LED will flash, if a zone is bypassed or in alarm memory. Once the system is armed, the LED will extinguish. This LED is the same as the GREEN LED on the keypad.
N.C.	Use this terminal when operating with a Normally Closed contact.
N.O.	Use this terminal when operating with a Normally Open contact.
V+	Positive voltage provided by the panel. Do not use this connection when using an external power source.

When connecting external devices to the 2310-KEY module, cable length should not exceed 500 ft. without using an external power source. If an external power source is used, the external devices may be located up to 1000 ft. away from the module. All connections should be made using 22 AWG (0.643 mm) wire.

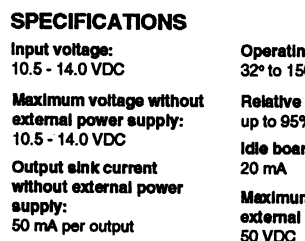
Figure 2 Terminal Connections



(b) Internal Power Source with Normally Closed Contacts



(c)



(d) Internal Power Source with Multiple Normally Open Contacts

SPECIFICATIONS

Input voltage: 10.5 - 14.0 VDC	Operating temperature: 32° to 150° F (0° to 70° C)	Output sink current with external power supply: 200 mA per output
Maximum voltage without external power supply: 10.5 - 14.0 VDC	Relative humidity: up to 95% non-condensing	Approvals: FCC Part 15 approved
Output sink current without external power supply: 50 mA per output	Idle board current: 20 mA	
	Maximum voltage from external power supply: 50 VDC	

FCC REQUIREMENTS

The user is cautioned that changes or modifications not expressly approved by C&K SYSTEMS could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment on and off), the user is encouraged to try to correct the interference by one or more of the following measures: [1] Reorient or relocate the receiving antenna; [2] increase the separation between the equipment and receiver; [3] connect the equipment into an outlet on a circuit different from that to which the receiver is connected; [4] consult the dealer or an experienced radio/TV technician for help.

LIMITED WARRANTY

Seller warrants its products to be in conformance with its own plans and specifications and to be free from defects in materials and workmanship under normal use and service for 18 months from the date stamp control on the product or for products not having a C&K Systems date stamp, for 12 months from the date of original purchase, unless the installation instructions or catalogue sets forth a shorter period, in which case the shorter period shall apply. Seller's obligation shall be limited to repairing or replacing, at its option, free of charge for materials or labor, any part which is proved not in compliance with Seller's specifications or proves defective in materials or workmanship under normal use and service. This warranty is void if the product is altered or improperly repaired or serviced by anyone other than C&K Systems factory service. For warranty service, return the product transportation prepaid to C&K Systems factory service, 107 Woodmere Road, Folsom, California, 95630.

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This warranty replaces all previous warranties and is the only warranty made by C&K Systems on this product. No increase or alteration, written or verbal, of the obligation of this warranty is authorized.

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