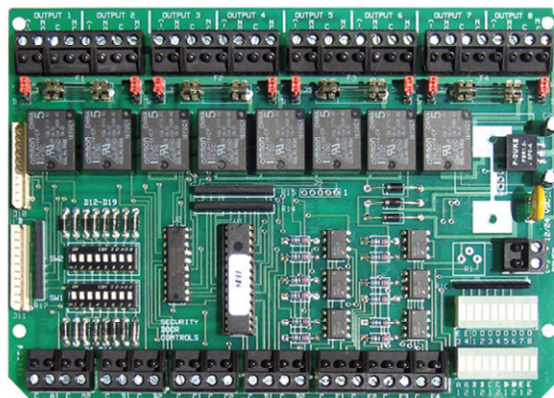# SDC Security Door Controls

801 Avenida Acaso, Camarillo, Ca. 93012 • (805) 494-0622 •
www.sdcsecurity.com • E-mail: service@sdcsecurity.com

INSTALLATION INSTRUCTIONS
## MODEL UR4-8
UNIVERSAL DOOR CONTROLLER

I. Features & Benefits

- Microprocessor based relay controller that provides 7 different, field selectable application modes for two, three or four door stations

- 3 field selectable Interlock (airlock) modes

- Field selectable Communicating (shared) bathroom mode

- Field selectable relay modes include:
    - Conventional Relay (CR)
    - Latching Relay (LR) – Pulse on, pulse off
    - Time Delay Relay (TD) – 1-65 seconds
    - Dual Function Relay (CR/LR, TD/LR, TD/CR, CR/CR)

- Each output relay is field selectable as a dry contact or a voltage output

- Centralized wiring for all locks, access controls, monitoring contacts, and peripheral equipment

- Onboard input/output status lights for easy troubleshooting

- 3 system control inputs: Lock All, Unlock All, System Lockout

- Emergency release input for fire panel interface

- Removable terminal blocks simplify installation

- 1 or 2 controllers may be installed in SDC 600 series power supplies

II. Technical Specifications

Input Voltage:	12 or 24VDC +/- 10%
Input Current:	250/130 mA max. @ 12/24 VDC
Relay Inputs:	8-SPST, Dry, Optically Isolated All Normally Open or Normally Closed (field selectable)
Auxiliary Inputs:	4-SPST, Dry, Normally Open, Optically Isolated
Relay Outputs:	4 fused SPDT relays, 7A @ 30VDC 4 non-fused SPDT relays, 7A @ 30VDC Individually configurable as a dry contact or voltage output (field selectable)
Dimensions:	7" W x 5" H x 2" D (177.8 x 127 x 50.8 mm)

III. UR4-8 Board Layout
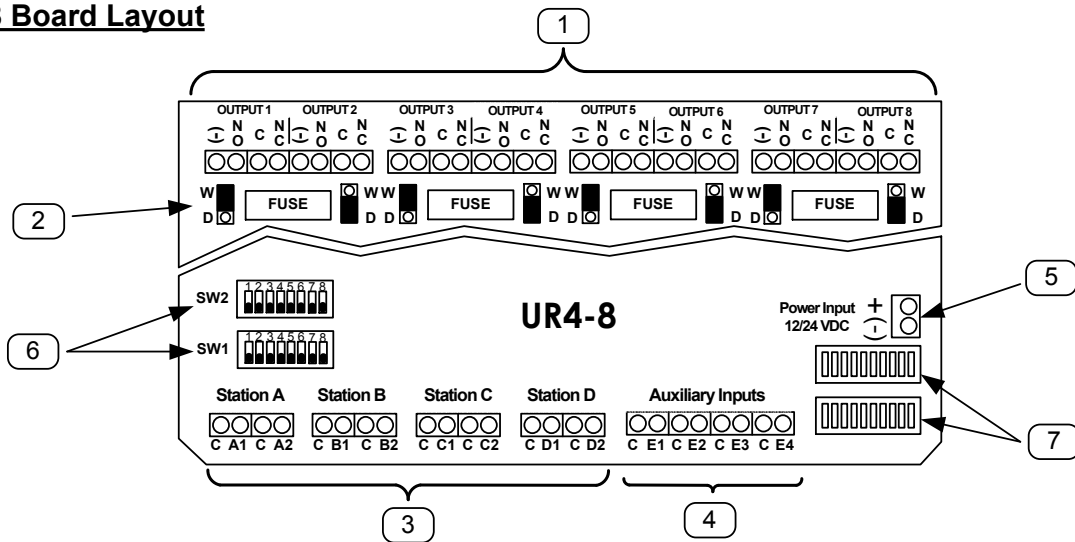
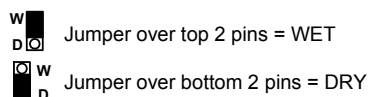**① RELAY OUTPUTS** – The UR4-8 provides eight (8) individual SPDT relay outputs.
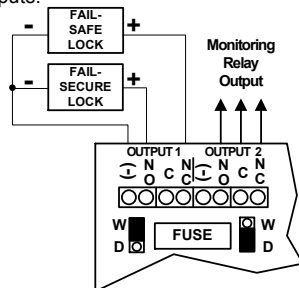

- Outputs 1, 3, 5, & 7 are fused. These outputs are typically used to power the door locking hardware.

- Outputs 2, 4, 6, & 8 are non-fused. These outputs are typically used as auxiliary (monitoring) relays. They may be used to power a remote status annunciator, or send a signal to a security panel.

② WET/DRY SELECTION JUMPER – Each relay output may be configured as a wet (voltage) or dry output. Use the supplied jumpers to configure each relay individually.

Jumper over top 2 pins = WET

Jumper over bottom 2 pins = DRY

The relay output voltage will be the same as the UR4-8 input voltage (12 or 24 VDC).

③ MAIN INPUTS – The UR4-8 provides eight (8) individual optically isolated inputs. The inputs must be connected to a dry switch.
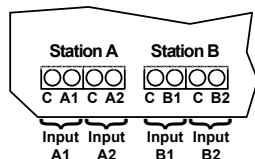

These inputs may be collectively configured as Normally Open or Normally Closed inputs.

NOTE: If Normally Closed inputs are selected, all unused inputs will need to be shorted.

④ AUXILIARY INPUTS – The UR4-8 provides four (4) individual dry, optically isolated auxiliary inputs.

NOTE: These input connections are optional and must be wired as Normally Open connections. The input will only be active when closed (shorted).
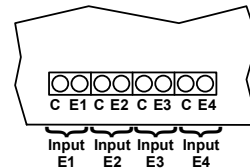
- Input E1 – LOCK ALL – When activated, this input will lock all the doors, until the input is deactivated. Door Monitoring Inputs will be ignored.
- Input E2 – UNLOCK ALL – When activated, this input will unlock all the doors, until the input is deactivated. Door Monitoring Inputs will be ignored.
- Input E3– LOCKOUT – When activated, this input will cause all the lock outputs to remain in their current state, and ignore changes to the Door Monitoring Inputs. Lock/Unlock All inputs will also ignored.
- Input E4 – EMERGENCY RELEASE (FIRE ALARM) – When activated, this input will simultaneously release all fail-safe locks. Door Monitoring Inputs, Lock/Unlock All inputs, and the Lockout input will be ignored.

⑤ INPUT POWER CONNECTION – The UR4-8 must be powered by a filtered and regulated 12 or 24VDC Power Supply. SDC 600 Series Power Supplies are designed to accommodate and interface with up to two (2) UR4-8 controllers.

⑥ MODE CONFIGURATION DIP SWITCHES – The UR4-8 utilizes two (2) 8-position dip switch modules for configuring the system operational modes. They are SW1 and SW2.

⑦ STATUS LIGHTS – The UR4-8 provides diagnostic lights to show the status of each individual input and output on the board.

If an input is closed, its corresponding light will be ON.

If an output is active, its corresponding light will be ON.

IV. Applications

For detailed wiring instructions and setup, select your specific application from the following available modes, and continue to the page number indicated next to the section title.

Section V – 2, 3, or 4-Door Interlock "A" Setup - Go To Pages 5 & 6
All doors are normally closed and unlocked. Opening any door causes the other doors to lock until the opened door returns to its normal state.

Section VI – 2, 3, or 4-Door Mantrap "B" Setup – Go To Pages 7 & 8
All doors are normally closed and locked. Each door may be individually unlocked using the Access Control System or a remote release. Unlocking any door causes the other doors to be incapable of being unlocked until the unlocked door returns to its normal state.

Section VII – 2, 3, or 4-Door Interlock "C" Setup – Go To Pages 9 & 10
All doors are normally closed. Up to three (3) doors may be normally locked, and the remaining door(s) will be normally unlocked. The possible configurations are:

- 2 Doors: Door 1 – Locked, Door 2 – Unlocked
- 3 Doors: Door 1 – Locked, Doors 2 & 3 – Unlocked
             Doors 1 & 2 – Locked, Door 3 – Unlocked
- 4 Doors: Door 1 – Locked, Doors 2, 3, & 4 – Unlocked
             Doors 1 & 2 – Locked, Doors 3 & 4 – Unlocked
             Doors 1, 2, & 3 – Locked, Door 4 – Unlocked

Normally Locked doors may be unlocked using the Access Control System. Unlocking or opening any door will lock the unlocked doors, and make the locked doors incapable of being unlocked, until the unlocked/opened door returns to its normal state.

Section VIII – Dual Relay Control Mode – Go To Pages 11 & 12
In Dual Relay Control Mode, the UR4-8 operates as four (4) individually controlled relay stations. Each station provides:
    (1) Fused, SPDT lock output, wet or dry,
    (1) Non-fused, SPDT auxiliary (monitoring) output, wet or dry, and
    (2) Dry trigger inputs

Station A Inputs activate Outputs 1 & 2
Station B Inputs activate Outputs 3 & 4
Station C Inputs activate Outputs 5 & 6
Station D Inputs activate Outputs 7 & 8
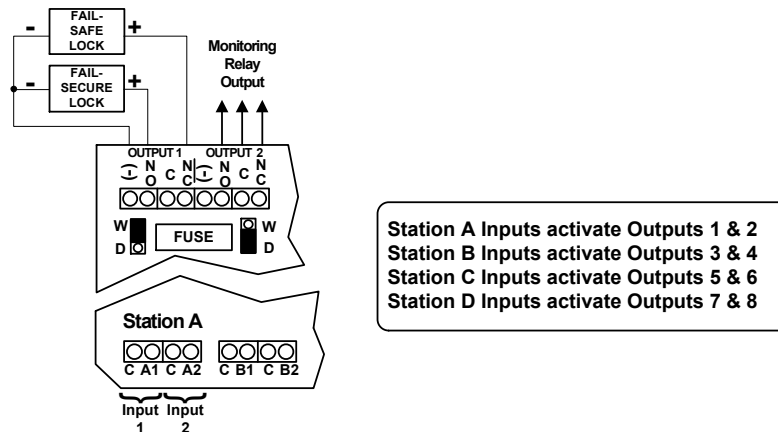
Activating each station's Input 1 OR Input 2 will trigger the corresponding lock output AND the monitoring output simultaneously.

Each Output Station may be configured as one of the following (Input 1 = CR/Input 2 = CR, Input 1 = TD/ Input 2 = CR (TD reset), Input 1 = CR (LR reset)/Input 2 = LR, or Input 1 = TD/Input 2 = LR)

As a conventional relay (CR), the lock output relay is only activated while the trigger input is activated. Once the trigger input is released, the output relay returns to its resting state. The monitoring relay output follows the lock output relay.

As a time delayed relay (TD), the lock output relay is activated by the trigger input. Once the trigger input is released, the output remains activated for a specified period of time, as configured by the dip switches. The monitoring relay output follows the lock output relay.

As a latching relay (LR), the lock output relay is activated by trigger Input 2. A single activation and release of trigger Input 2 latches the lock output relay. The lock output relay remains latched until trigger Input 2 is reactivated or until the Input 1 is momentarily activated. The monitoring relay output relay follows the lock output relay.

IV. Applications (Continued)

Section IX – Single Relay Control Mode – Go To Pages 13 & 14

In Single Relay Control Mode, the UR4-8 operates as eight (8) individually controlled relay stations.

Stations A1, B1, C1, & D1 each provide:
> (1) Fused, SPDT lock output, wet or dry and
> (1) Dry trigger input

Stations A2, B2, C2, & D2 each provide:
> (1) Non-fused, SPDT lock output, wet or dry and
> (1) Dry trigger input

> **Station A, Input 1 activates Output 1**
> **Station A, Input 2 activates Output 2**
> **Station B, Input 1 activates Output 3**
> **Station B, Input 2 activates Output 4**
> **Station C, Input 1 activates Output 5**
> **Station C, Input 2 activates Output 6**
> **Station D, Input 1 activates Output 7**
> **Station D, Input 2 activates Output 8**
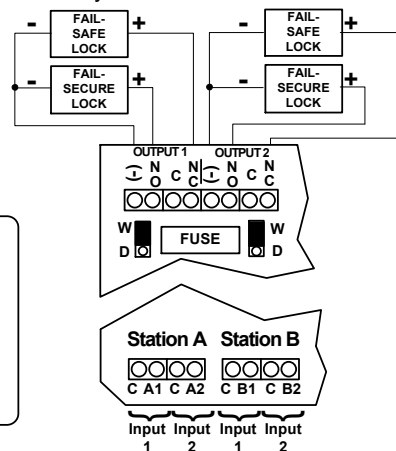
Each input may be individually configured to operate as a conventional relay or a time delayed relay.
Alternatively, each input may be individually configured to operate as a latching relay or a time delayed relay.

As a conventional relay (CR), the lock output relay is only activated while the trigger input is activated. Once the trigger input is released, the output relay returns to its resting state.

As a time delayed relay (TD), the lock output relay is activated by the trigger input. Once the trigger input is released, the output remains activated for a specified period of time, as configured by the dip switches.

As a latching relay (LR), the lock output relay is activated by the trigger Input. A single activation and release of the latching trigger input latches the lock output relay. The lock output relay remains latched until the latching trigger input is reactivated.

Section X – 2-Door Communicating (Shared) Bath System (Single or Dual) – Go to Page 15 & 16

Both doors are normally closed and unlocked.

System Activation:
Upon entering the bathroom and closing both doors, pressing an Activation button will lock both doors and turn on the indicator lamps on the Activation button and Emergency Unlock buttons, indicating the bathroom is occupied.

System Deactivation:
When using EMLocks®, pressing the Activation button a second time will unlock both doors and turn off all indicator lamps.

When using fail-safe electric strikes or electrified locksets, operating the inside lever to retract the latch on either door will unlock both doors and turn off all indicator lamps. Using a key override from the outside to enter either door will also reset the system and unlock both doors.

Emergency Override:
Emergency Unlock buttons located outside each bathroom door will immediately unlock its specified door and indicate its activation by causing the button's indicator lamp to flash. Pressing the Emergency Unlock button a second time will return the door to the locked state and the indicator lamp will return to a steady lighted state. Pressing the Activation button during an emergency override, will reset the system and unlock both doors

V. 2, 3, or 4-Door Interlock "A" Setup

Follow the installation steps below before applying power to the UR4-8. Refer to the *INTERLOCK "A" MODE* wiring diagram on **Page 6**.

NOTE: It is assumed that the UR4-8 and locking hardware share the same power supply.

Interlock "A" Standard Operation:
All doors are normally closed and unlocked. Opening any door causes the other doors to lock until the opened door returns to its normal state.

Step 1 – Set Dip Switches

The dip switch settings below are an example of the typical **Interlock A** setup shown on Page 6. Adjust dip switches SW2-5 & SW2-7 as needed. All other dip switches should remain as shown below.

SW2-1 = OFF	
SW2-2 = OFF	
SW2-3 = OFF	
SW2-4 = OFF	
SW2-5 = OFF	Sets the polarity of the Door Monitoring Inputs when the door is in the CLOSED position. {OFF = N/O; ON = N/C}
SW2-6 = OFF	
SW2-7 = OFF	Sets the operation of all the Monitoring Relay Outputs. {OFF = Relay will follow the Door Monitoring Input; ON = Relay will follow the Lock Output Relay}
SW2-8 = ON	
SW1 -1 = OFF	
SW1 -2 = OFF	
SW1 -3 = OFF	
SW1 -4 = OFF	
SW1 -5 = OFF	
SW1 -6 = OFF	
SW1 -7 = OFF	
SW1 -8 = OFF	

Step 2 – Configure the Relay Outputs to be Wet (Voltage) or Dry.

W/D = WET   W/D = DRY

Use the red WET/DRY Selection Jumpers to configure each output. Refer to Page 2 of this instruction for selection procedure.

On the typical Interlock A wiring diagram, the Lock Relays (Outputs 1, 3, 5, & 7) are configured to be wet outputs.

The Monitoring Relays (Outputs 2, 4, 6, & 8) are dry.

NOTE: It is recommended that any unused relays be configured as dry outputs.

Step 3 – Terminate the Lock Power Wiring

Follow the typical Interlock A wiring diagram for fail-safe or fail-secure locks. Be careful to observe lock voltage polarity.

*<u>**WARNING**</u>!: The UR board Relay Outputs must be protected against inductive kickback generated when power is removed from an inductive load (e.g., electric strikes). Refer to the lock manufacturer's installation manual or contact the manufacturer for kickback protection recommendations.

NOTE: All low voltage wiring shall be 18-gauge minimum. The minimum lock power wire gauge shall be determined by the SDC wire gauge chart. Signal wire shall be 22-guage minimum.

Step 4. Terminate the Door Monitoring Inputs

Connect the Door Monitoring Switches to Input terminals A1, B1, C1, & D1. This is a required connection for all door stations being used.

Door Monitoring inputs (typically Door Position Switches), should be dry, Normally Open or Normally Closed switches, depending on the configuration of Dip Switch 2-5 (Step 1).

NOTE: Dip Switch 2-5 configures the normal state of the Door Monitoring input when the door is in a CLOSED position. If Normally Closed inputs are selected, all unused inputs will need to be shorted.

Step 5. Terminate Auxiliary Inputs and Outputs (Optional)

Auxiliary Inputs – These inputs must be wired as dry, Normally Open switches. The input will only be active when closed (shorted). Refer to Page 2 for input descriptions.

Monitoring Relay Outputs – Each door station provides a non-fused, SPDT monitoring relay. This output may be used to signal a Security Panel or to activate a Remote Annunciator. The relay is configurable as a Wet or Dry output (Step 2). The relay activation will follow the Lock Relay or follow the Door Monitoring Input, depending on the configuration of Dip Switch 2-7 (Step 1).

Step 6. Connect a 12 or 24VDC Power Source to the UR4-8 Controller.

Before applying power, verify that all the connections are securely terminated by gently pulling on each wire.

Terminate the voltage wiring to the Controller Power Input, as shown on Page 6. Be careful to observe polarity.

Verify that all the doors are closed & apply power to the controller.

Step 7. UR4-8 Controller Startup and Operation Verification.

Verify the polarity of the Door Monitoring Inputs by observing the Status Lights located on the lower right of the UR4-8 controller.

Status Lights A1, B1, C1, & D1 will be OFF if Dip Switch 2-5 = OFF, or will be ON if Dip Switch 2-5 = ON.

Test the standard operation of the interlock by opening any door. All other doors will lock until the unlocked door returns to its normal state (closed).

DOOR #3 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

DOOR #4 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

*MOV for Inductive Kickback protection. See Step 3 on Pg. 5

SDC 600 Series

12/24 VDC POWER SUPPLY

EMERGENCY RELEASE (Optional)

LOCKOUT (Optional)

UNLOCK ALL (Optional)

LOCK ALL (Optional)

Monitoring Relay Output (Optional)

OUTPUT 8

OUTPUT 7

FUSE

W D

Power Input 12/24 VDC

+ (−)

C E4

C E3

C E2

C E1

DOOR MONITORING (DPS)

DOOR #4

Monitoring Relay Output (Optional)

OUTPUT 6

OUTPUT 5

FUSE

W W D D

C C D2

C D1

DOOR MONITORING (DPS)

DOOR #3

INTERLOCK "A" MODE

Monitoring Relay Output (Optional)

OUTPUT 4

OUTPUT 3

FUSE

W W D D

C C C2

C C1

Monitoring Relay Output (Optional)

OUTPUT 2

OUTPUT 1

FUSE

W W D D

DIP SWITCHES Set as shown on Page 5, Step 1

ON

ON

SW2

SW1

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

C C B2

C B1

DOOR MONITORING (DPS)

DOOR #2

C C A2

C A1

DOOR MONITORING (DPS)

DOOR #1

DOOR #2 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

DOOR #1 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

INSTALLATION NOTES:

1. Door Monitoring circuits are shown open when the door is in the closed position. Use dip switch SW2-5 to configure the door switch polarity.

2. All Lock Relay Outputs (1, 3, 5, & 7) have been configured to have wet (voltage) outputs. Lock output voltage will be the same as the UR4-8 input voltage.

3. Monitoring Relay Outputs have been configured to follow the Door Monitoring Input.

VI. 2, 3, or 4-Door Mantrap "B" Setup

Follow the installation steps below before applying power to the UR4-8. Refer to the *MANTRAP "B" MODE* wiring diagram on **Page 8**.

NOTE: It is assumed that the UR4-8 and locking hardware share the same power supply.

Mantrap "B" Standard Operation:
All doors are normally closed and locked. Each door may be individually unlocked using the Access Control System or a remote release. Unlocking any door causes the other doors to be incapable of being unlocked until the unlocked door returns to its normal state.

The door unlock time will be determined by the Access Control System and by Dip Switches 2-1 through 2-4 (See Step 1).

Step 1 – Set Dip Switches

The dip switch settings below are an example of the typical **Mantrap B** setup shown on Page 8. Adjust dip switches SW2-1 thru SW2-7 as needed. All other dip switches should remain as shown below.

SW2-1 = ON	SW2-1 through 2-4 set the unlock time of the Lock Relay. **NOTE**: This is in addition to your Access Control System unlock time.
SW2-2 = OFF	SW2-1 ON = 5 sec., OFF = 0 sec.; SW2-2 ON = 10 sec., OFF = 0 sec.;
SW2-3 = OFF	SW2-3 ON = 20 sec., OFF = 0 sec.; SW2-4 ON = 30 sec., OFF = 0 sec.;
SW2-4 = OFF	Switch times are additive. {All OFF = 1 sec.; All ON = 65 sec.}
SW2-5 = OFF	Sets the polarity of the Door Monitoring Inputs when the door is in the CLOSED and/or LOCKED position. {OFF = N/O; ON = N/C}
SW2-6 = OFF	Sets the polarity of Access Control Inputs when the switch is in a normal (resting) state. {OFF = N/O; ON = N/C}
SW2-7 = OFF	Sets the operation of all the Monitoring Relay Outputs. {OFF = Relay will follow the Door Monitoring Input; ON = Relay will follow the Lock Output Relay}
SW2-8 = ON	
SW1-1 = ON	
SW1-2 = ON	
SW1-3 = ON	
SW1-4 = ON	
SW1-5 = OFF	
SW1-6 = OFF	
SW1-7 = OFF	
SW1-8 = OFF	

Step 2 – Configure the Relay Outputs to be Wet (Voltage) or Dry.

W = WET   W = DRY

Use the red WET/DRY Selection Jumpers to configure each output. Refer to Page 2 of this instruction for selection procedure.

On the typical Mantrap B wiring diagram, the Lock Relays (Outputs 1, 3, 5, & 7) are configured to be wet outputs.

The Monitoring Relays (Outputs 2, 4, 6, & 8) are dry.

NOTE: It is recommended that any unused relays be configured as dry outputs.

Step 3. Terminate the Lock Power Wiring

Follow the typical Mantrap B wiring diagram for fail-safe or fail-secure locks. Be careful to observe lock voltage polarity.

*<u>**WARNING**</u>!: The UR board Relay Outputs must be protected against inductive kickback generated when power is removed from an inductive load (e.g., electric strikes). Refer to the lock manufacturer's installation manual or contact the manufacturer for kickback protection recommendations.

NOTE: All low voltage wiring shall be 18-gauge minimum. The minimum lock power wire gauge shall be determined by the SDC wire gauge chart. Signal wire shall be 22-guage minimum.

Step 4. Terminate the Access Control and Door Monitoring Inputs

Connect the Door Monitoring Switches to input terminals A1, B1, C1, & D1. This is a required connection for all door stations being used.

Connect Access Control or remote releases to input terminals A2, B2, C2, & D2. This is a required connection for all door stations being used.

Door Monitoring and Access Control inputs should be dry, Normally Open or Normally Closed switches, depending on the configuration of Dip Switches 2-5 and 2-6, respectively.

NOTE: Dip Switch 2-5 configures the normal state of the Door Monitoring input when the door is in a CLOSED and/or LOCKED position. If Normally Closed inputs are used, all unused inputs will need to be shorted.

Step 5. Terminate Optional Inputs and Outputs

<u>Auxiliary Inputs</u> – These inputs must be wired as dry, Normally Open switches. The input will only be active when closed (shorted). Refer to Page 2 for input descriptions.

<u>Monitoring Relay Outputs</u> – Each door station provides a non-fused, SPDT monitoring relay. This output may be used to signal a Security Panel or to activate a Remote Annunciator. The relay is configurable as a Wet or Dry output (Step 2). The relay activation will follow the Lock Relay or follow the Door Monitoring Input, depending on the configuration of Dip Switch 2-7 (Step 1).

Step 6. Connect a 12 or 24VDC Power Source to the UR4-8 Controller.

Before applying power, verify that all the connections are securely terminated by gently pulling on each wire.

Terminate the voltage wiring to the Controller Power Input. Be careful to observe polarity.

Verify that all the doors are closed & apply power to the controller.

Step 7. UR4-8 Controller Startup and Operation Verification.

Verify the polarity of the Access Control & Door Monitoring Inputs by observing the Status Lights located on the lower right of the UR4-8 controller.

Status Lights A1, B1, C1, & D1 will be OFF if Dip Switch 2-5 = OFF, or will be ON if Dip Switch 2-5 = ON.

Status Lights A2, B2, C2, & D2 will be OFF if Dip Switch 2-6 = OFF, or will be ON if Dip Switch 2-6 = ON.

Test the standard operation of the mantrap by unlocking any door using the Access Control System or remote release. All other doors will be incapable of being unlocked until the unlocked door returns to its normal state (closed & locked).

MANTRAP "B" MODE

DOOR #3 LOCK
- FAIL-SAFE LOCK (12 OR 24 VDC)
- FAIL-SECURE LOCK (12 OR 24 VDC)
- MOV*

DOOR #4 LOCK
- FAIL-SAFE LOCK (12 OR 24 VDC)
- FAIL-SECURE LOCK (12 OR 24 VDC)
- MOV*

DOOR #2 LOCK
- FAIL-SAFE LOCK (12 OR 24 VDC)
- FAIL-SECURE LOCK (12 OR 24 VDC)
- MOV*

DOOR #1 LOCK
- FAIL-SAFE LOCK (12 OR 24 VDC)
- FAIL-SECURE LOCK (12 OR 24 VDC)
- MOV*

*MOV for Inductive Kickback protection. See Step 3 on Pg. 7

12/24 VDC POWER SUPPLY

SDC 600 Series

EMERGENCY RELEASE (Optional)
LOCKOUT (Optional)
UNLOCK ALL (Optional)
LOCK ALL (Optional)

Monitoring Relay Output (Optional) — OUTPUT 8, OUTPUT 7, OUTPUT 6, OUTPUT 5, OUTPUT 4, OUTPUT 3, OUTPUT 2, OUTPUT 1

FUSE

Power Input 12/24 VDC

DIP SWITCHES Set as shown on Page 7, Step 1

SW1 SW2 ON 1 2 3 4 5 6 7 8

C E4 C E3 C E2 C E1 C D2 C D1 C C2 C C1 C B2 C B1 C A2 C A1

DOOR #4 — ACCESS CONTROL OR REMOTE RELEASE / DOOR MONITORING (DPS or BAS)
DOOR #3 — ACCESS CONTROL OR REMOTE RELEASE / DOOR MONITORING (DPS or BAS)
DOOR #2 — ACCESS CONTROL OR REMOTE RELEASE / DOOR MONITORING (DPS or BAS)
DOOR #1 — ACCESS CONTROL OR REMOTE RELEASE / DOOR MONITORING (DPS or BAS)

INSTALLATION NOTES:

1. Access Control inputs are shown Normally Open. Door Monitoring circuits are shown open when the door is in the closed position. Use dip switches SW2-6 & SW2-5, respectively, to configure the polarity.

2. All Lock Relay Outputs (1, 3, 5, & 7) have been configured to have wet (voltage) outputs. Lock output voltage will be the same as the UR4-8 input voltage.

3. Monitoring Relay Outputs have been configured to follow the Door Monitoring Input.

VII. 2, 3, or 4-Door Interlock "C" Setup

Follow the installation steps below before applying power to the UR4-8. Refer to the *INTERLOCK "C" MODE* wiring diagram on **Page 10**.

NOTE: It is assumed that the UR4-8 and locking hardware share the same power supply.

Interlock "C" Standard Operation:
Refer to **Page 3 – Section VII** for method of operation.

Step 1 – Set Dip Switches
The dip switch settings below are an example of a typical **Interlock "C"** setup as shown on Page 10.
A) Use dip switches SW1-1 thru SW1-4 to select the Interlock "C" mode
B) Adjust dip switches SW2-1 thru SW2-7 as needed. All other dip switches should remain as shown below.

SW2 1 2 3 4 5 6 7 8 ON ↑

SW1 1 2 3 4 5 6 7 8 ON ↑

SW2-1 = ON	SW2-1 through 2-4 set the unlock time of the Lock Relay for normally locked doors.
SW2-2 = OFF	**NOTE**: This is in addition to your Access Control System unlock time.
SW2-3 = OFF	SW2-1 ON = 5 sec., OFF = 0 sec.; SW2-2 ON = 10 sec., OFF = 0 sec.; SW2-3 ON = 20 sec., OFF = 0 sec.;
SW2-4 = OFF	SW2-4 ON = 30 sec., OFF = 0 sec.; Switch times are additive. {All OFF = 1 sec.; All ON = 65 sec.}
SW2-5 = OFF	Sets the polarity of the Door Monitoring Inputs when the door is in the CLOSED position. {OFF = N/O; ON = N/C}
SW2-6 = OFF	Sets the polarity of Access Control Inputs when the switch is in a normal (resting) state. {OFF = N/O; ON = N/C}
SW2-7 = OFF	Sets the operation of all the Monitoring Relay Outputs. {OFF = Relay will follow the Door Monitoring Input; ON = Relay will follow the Lock Output Relay}
SW2-8 = ON	
SW1-1 =	
SW1-2 =	Refer to the table below to set Dip Switches 1-1 through 1-4
SW1-3 =	
SW1-4 =	
SW1-5 = OFF	
SW1-6 = OFF	
SW1-7 = OFF	
SW1-8 = OFF	

	Interlock "C" Configurations	SW 1-1	SW 1-2	SW 1-3	SW 1-4
2-Door	Door 1 - Locked; Door 2 Unlocked	ON	OFF	OFF	OFF
3-Door	Door 1 - Locked; Door 2 & 3 - Unlocked	ON	OFF	OFF	OFF
	Door 1 & 2 - Locked; Door 3 - Unlocked	ON	ON	OFF	OFF
4-Door	Door 1 - Locked; Doors 2, 3 & 4 - Unlocked	ON	OFF	OFF	OFF
	Doors 1 & 2 - Locked; Doors 3 & 4 - Unlocked	ON	ON	OFF	OFF
	Doors 1, 2, & 3 - Locked; Door 4 - Unlocked	ON	ON	ON	OFF

Step 2 – Configure the Relay Outputs to be Wet (Voltage) or Dry.

W/D = WET   W/D = DRY

Use the red WET/DRY Selection Jumpers to configure each output. Refer to Page 2 of this instruction for selection procedure.

On the typical Interlock C wiring diagram, the Lock Relays (Outputs 1, 3, 5, & 7) are configured to be wet outputs. The Monitoring Relays (Outputs 2, 4, 6, & 8) are dry.

NOTE: It is recommended that any unused relays be configured as dry outputs.

Step 3. Terminate the Lock Power Wiring
Follow the typical Interlock "C" wiring diagram for fail-safe or fail-secure locks. Be careful to observe lock voltage polarity.

***WARNING**!: The UR board Relay Outputs must be protected against inductive kickback generated when power is removed from an inductive load (e.g., electric strikes). Refer to the lock manufacturer's installation manual or contact the manufacturer for kickback protection recommendations.

NOTE: All low voltage wiring shall be 18-gauge minimum. The minimum lock power wire gauge shall be determined by the SDC wire gauge chart. Signal wire shall be 22-guage minimum.

Step 4. Terminate the Access Control and Door Monitoring Inputs
NOTE: The Interlock "C" wiring diagram is shown configured for a 4-door system (3 normally locked doors, and 1 normally unlocked door).

Connect the Door Monitoring Switches to input terminals A1, B1, C1, & D1. This is a required connection for all door stations being used.

Connect Access Control or remote releases to input terminals A2, B2, C2, & D2. This connection is ONLY required for normally locked doors.

Door Monitoring and Access Control inputs should be dry, Normally Open or Normally Closed switches, depending on the configuration of Dip Switches 2-5 and 2-6, respectively.

NOTE: Dip Switch 2-5 configures the normal state of the Door Monitoring input when the door is in a CLOSED and/or LOCKED position. If Normally Closed inputs are used, all unused inputs will need to be shorted.

Step 5. Terminate Optional Inputs and Outputs
Auxiliary Inputs – These inputs must be wired as dry, Normally Open switches. The input will only be active when closed (shorted). Refer to Page 2 for input descriptions.

Monitoring Relay Outputs – Each door station provides a non-fused, SPDT monitoring relay. This output may be used to signal a Security Panel or to activate a Remote Annunciator. The relay is configurable as a Wet or Dry output (Step 2). The relay activation will follow the Lock Relay or follow the Door Monitoring Input, depending on the configuration of Dip Switch 2-7 (Step 1).

Step 6. Connect a 12 or 24VDC Power Source to the UR4-8 Controller.
Before applying power, verify that all the connections are securely terminated by gently pulling on each wire.

Terminate the voltage wiring to the Controller Power Input. Be careful to observe polarity.

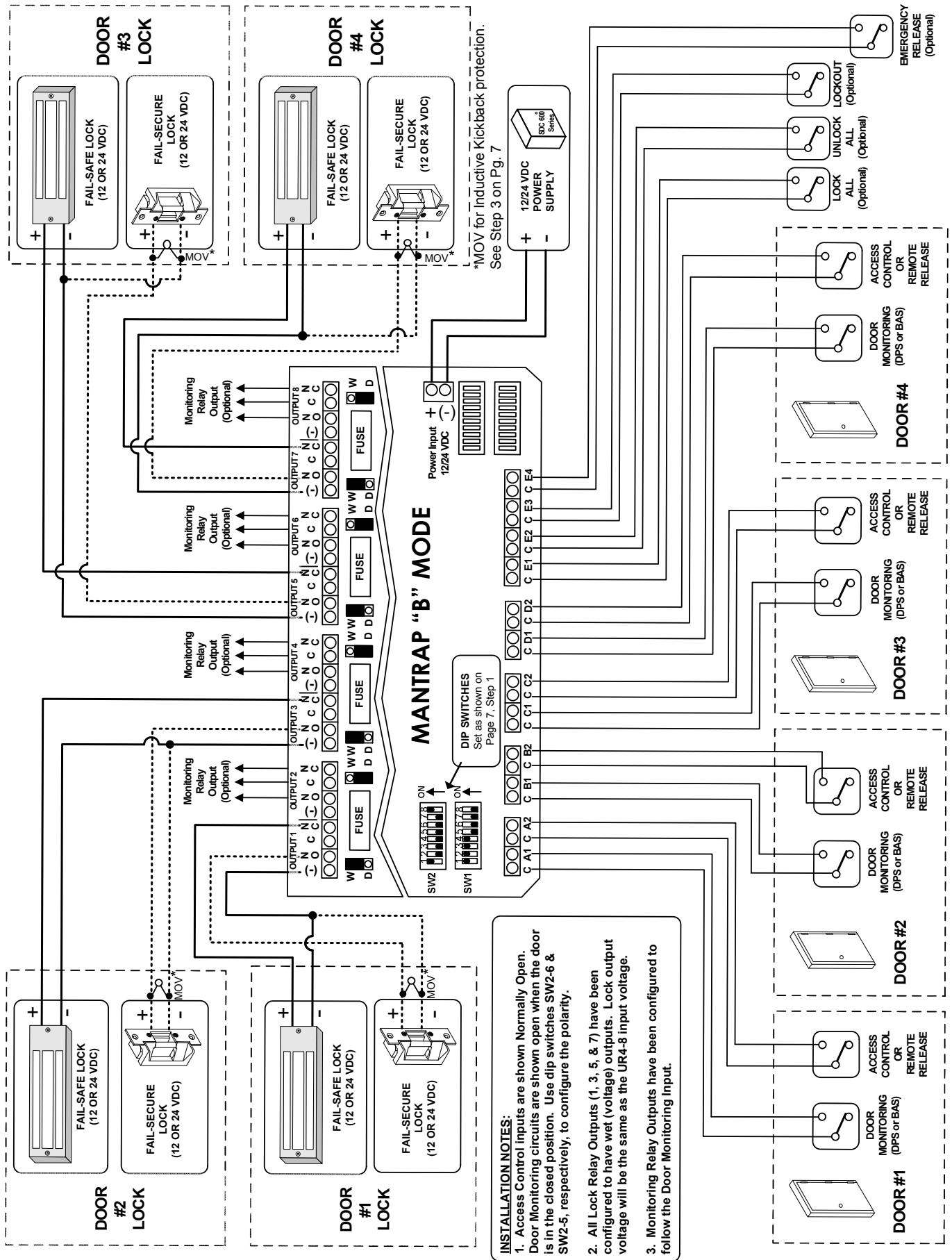Verify that all the doors are closed & apply power to the controller.

Step 7. UR4-8 Controller Startup and Operation Verification.
Verify the polarity of the Access Control & Door Monitoring Inputs by observing the Status Lights located on the lower right of the UR4-8 controller.

Status Lights A1, B1, C1, & D1 will be OFF if Dip Switch 2-5 = OFF, or will be ON if Dip Switch 2-5 = ON.

Status Lights A2, B2, & C2 will be OFF if Dip Switch 2-6 = OFF, or will be ON if Dip Switch 2-6 = ON.

Test the standard operation of the interlock by unlocking any door or by opening the unlocked door(s). All other doors will be incapable of being opened/unlocked until the opened door returns to its normal state.

DOOR #3 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

DOOR #4 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

12/24 VDC POWER SUPPLY

SDC 600° Series

*MOV for Inductive Kickback protection. See Step 3 on Pg. 9

EMERGENCY RELEASE (Optional)

LOCKOUT (Optional)

UNLOCK ALL (Optional)

LOCK ALL (Optional)

DOOR MONITORING (DPS)

DOOR #4

Monitoring Relay Output (Optional)

OUTPUT 8
W D
N C N C C
(-)

OUTPUT 7
W W D D
N C N C C
FUSE

Monitoring Relay Output (Optional)

OUTPUT 6
N C N C C
W W D D
FUSE

OUTPUT 5
N C N C C
(-)

Monitoring Relay Output (Optional)

OUTPUT 4
N C N C C
W W D D
FUSE

OUTPUT 3
N C N C C
(-)

Monitoring Relay Output (Optional)

OUTPUT 2
N C N C C
W W D D
FUSE

OUTPUT 1
N C N C C
(-) W D

INTERLOCK "C" MODE

Power Input 12/24 VDC

C E4
C E3
C E2
E1 C

C D2
C D1

C C2
C C1 C

C B2
C B1

C A2
C A1

DIP SWITCHES
Set as shown on Page 9, Step 1

ON
SW2 1 2 3 4 5 6 7 8

ON
SW1 1 2 3 4 5 6 7 8

ACCESS CONTROL OR REMOTE RELEASE

DOOR MONITORING (DPS or BAS)

DOOR #3

ACCESS CONTROL OR REMOTE RELEASE

DOOR MONITORING (DPS or BAS)

DOOR #2

DOOR #2 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

DOOR #1 LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

ACCESS CONTROL OR REMOTE RELEASE

DOOR MONITORING (DPS or BAS)

DOOR #1

INSTALLATION NOTES:

1. Access Control input is shown Normally Open. Door Monitoring circuits are shown open when the door is in the closed position. Use dip switches SW2-6 & SW2-5, respectively, to configure the polarity.

2. All Lock Relay Outputs (1, 3, 5, & 7) have been configured to have wet (voltage) outputs. Lock output voltage will be the same as the UR4-8 input voltage.

3. All doors require Door Monitoring Inputs. Only Normally Locked doors require Access Control Inputs.

4. Monitoring Relay Outputs have been configured to follow the Door Monitoring Input.

VIII. Dual Relay Control Mode Setup

Follow the installation steps below before applying power to the UR4-8. Refer to the *DUAL RELAY CONTROL MODE* wiring diagram on **Page 12**.

NOTE: It is assumed that the UR4-8 and locks will share the same power supply.

<u>Standard Operation</u>:
Refer to **Page 3 – Section VIII** for method of operation.

Step 1 – Set Dip Switches

The dip switch settings below are an example of the typical **Dual Relay Control** Mode Setup as shown on Page 12.
A) Use dip switches SW1-1 through SW1-8 to select the operation of each trigger input: CR, TD, or LR.
B) Adjust dip switches SW2-1 thru SW2-5 as needed. All other dip switches shall remain as shown below.

SW2 1 2 3 4 5 6 7 8 ON ↑

SW1 1 2 3 4 5 6 7 8 ON ↑

SW2-1 = OFF	When using TD mode, SW 2-1 through 2-4 sets the unlock delay time of the relays.
SW2-2 = OFF	SW2-1 ON = 5 sec., OFF = 0 sec.; SW2-2 ON = 10 sec., OFF = 0 sec.;
SW2-3 = OFF	SW2-3 ON = 20 sec., OFF = 0 sec.; SW2-4 ON = 30 sec., OFF = 0 sec.;
SW2-4 = OFF	Switch times are additive. {All OFF = 1 sec.; All ON = 65 sec.}
SW2-5 = OFF	Sets the polarity of ALL the trigger inputs when the trigger is in a non-activated state. {OFF = N/O; ON = N/C}
SW2-6 = OFF	
SW2-7 = ON	
SW2-8 = OFF	
SW1-1 = OFF	Station A, Input 1 Mode Selection {OFF = CR; ON = TD}
SW1-2 = OFF	Station A, Input 2 Mode Selection {OFF = CR; ON = LR}
SW1-3 = OFF	Station B, Input 1 Mode Selection {OFF = CR; ON = TD}
SW1-4 = OFF	Station B, Input 2 Mode Selection {OFF = CR; ON = LR}
SW1-5 = OFF	Station C, Input 1 Mode Selection {OFF = CR; ON = TD}
SW1-6 = OFF	Station C, Input 2 Mode Selection {OFF = CR; ON = LR}
SW1-7 = OFF	Station D, Input 1 Mode Selection {OFF = CR; ON = TD}
SW1-8 = OFF	Station D, Input 2 Mode Selection {OFF = CR; ON = LR}

Step 2 – Configure the Relay Outputs to be Wet (Voltage) or Dry.

W = WET   W = DRY

Use the red WET/DRY Selection Jumpers to configure each output. Refer to Page 2 of this instruction for selection procedure.

On the typical Dual Relay Control Mode wiring diagram, the Lock Relays (Outputs 1, 3, 5, & 7) are configured to be wet outputs. The Monitoring Relays (Outputs 2, 4, 6, & 8) are dry.

The relay output voltage will be the same as the UR4-8 input voltage (12 or 24 VDC).

NOTE: It is recommended that any unused relays be configured as dry outputs.

Step 3. Terminate the Lock Power Wiring

Follow the typical Dual Relay Control Mode wiring diagram for fail-safe or fail-secure locks. Be careful to observe lock voltage polarity.

***<u>WARNING</u>!**: The UR board Relay Outputs must be protected against inductive kickback generated when power is removed from an inductive load (e.g., electric strikes). Refer to the lock manufacturer's installation manual or contact the manufacturer for kickback protection recommendations.

NOTE: All low voltage wiring shall be 18-gauge minimum. The minimum lock power wire gauge shall be determined by the SDC wire gauge chart. Signal wire shall be 22-guage minimum.

Step 4. Terminate the Station Trigger Inputs

Connect each station's trigger input 1 and input 2, as required.

All the trigger inputs should be dry, momentary, Normally Open or Normally Closed switches, depending on the configuration of Dip Switch 2-5 (Step 1).

NOTE: Dip Switch 2-5 configures the normal (resting) state of the trigger input. If Normally Closed inputs are used, all unused trigger inputs will need to be shorted.

Step 5. Terminate Optional Inputs and Outputs

<u>Auxiliary Inputs</u> – These inputs must be wired as dry, Normally Open switches. The input will only be active when closed (shorted). Refer to Page 2 for input descriptions.

<u>Monitoring Relay Outputs</u> – Each door station provides a non-fused, SPDT monitoring relay. This output may be used to signal a Security Panel or to activate a Remote Annunciator. The relay is configurable as a Wet or Dry output (Step 2). The relay activation will follow the Lock Relay.

Step 6. Connect a 12 or 24VDC Power Source to the UR4-8 Controller.

Before applying power, verify that all the connections are securely terminated by gently pulling on each wire.

Terminate the voltage wiring to the Controller Power Input. Be careful to observe polarity.

Verify that all the trigger inputs are in their normal (resting) state & apply power to the controller.

Step 7. UR4-8 Controller Startup and Operation Verification.

Verify the polarity of each Station trigger input by observing the Status Lights located on the lower right of the controller.

Status Lights A1, A2, B1, B2, C1, C2, D1 & D2 will be OFF if Dip Switch 2-5 = OFF, or will be ON if Dip Switch 2-5 = ON.

Test the standard operation of each station control relay by momentarily pressing the trigger input.

In CR mode, the respective door will unlock while the trigger input is activated, and relock when the trigger is released.

In TD mode, the respective door will unlock when the trigger input is activated. Releasing the trigger input will start the unlock timer and the door will remain unlocked. The door will relock after the set unlock time has expired.

In LR mode, the respective door will unlock when the trigger input is momentarily activated and released. The door will remained unlocked indefinitely until the trigger input is reactivated.

Station C LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

Station D LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

*MOV for Inductive Kickback protection. See Step 3 on Pg. 11

12/24 VDC POWER SUPPLY

SDC 600° Series

+ −

EMERGENCY RELEASE (Optional)

LOCKOUT (Optional)

UNLOCK ALL (Optional)

LOCK ALL (Optional)

Monitoring Relay Output (Optional)

Monitoring Relay Output (Optional)

Monitoring Relay Output (Optional)

Monitoring Relay Output (Optional)

OUTPUT8 OUTPUT7 OUTPUT6 OUTPUT5 OUTPUT4 OUTPUT3 OUTPUT2 OUTPUT1

N C C N (−) N C C N (−) N C C N (−) N C C N (−)

W D

FUSE

WW D D

FUSE

WW D D

FUSE

WW D D

FUSE

W D

DUAL RELAY CONTROL MODE

Power Input 12/24 VDC

+ (−)

C E4 C E3 C E2 C E1 C C D2 C C D1 C C C2 C C1 C C B2 C C B1 C C A2 C C A1 C

DIP SWITCHES Set as shown on Page 11, Step 1

ON

ON

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

SW2

SW1

Station B LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

Station A LOCK

FAIL-SAFE LOCK (12 OR 24 VDC)

FAIL-SECURE LOCK (12 OR 24 VDC)

MOV*

INPUT 2

INPUT 1

Station D Triggers

INPUT 2

INPUT 1

Station C Triggers

INPUT 2

INPUT 1

Station B Triggers

INPUT 2

INPUT 1

Station A Triggers

INSTALLATION NOTES:

1. All inputs are shown configured as Normally Open switches.

2. All Lock Relay Outputs (1, 3, 5, & 7) have been configured to have wet (voltage) outputs. Lock output voltage will be the same as the UR4-8 input voltage.

3. The Monitoring Relay Output will always follow the lock relay.

P:\INSTALLATION INST\Power Supplies\INST-UR\INST-UR4-8.vsd   REV A1   11-14   Page 12

IX. Single Relay Control Mode Setup

Follow the installation steps below before applying power to the UR4-8. Refer to the *SINGLE RELAY CONTROL MODE* wiring diagram on **Page 14**.
NOTE: It is assumed that the UR4-8 and locks will share the same power supply.

Standard Operation:
Refer to **Page 4 – Section IX** for method of operation.

Step 1 – Set Dip Switches

The dip switch settings below are an example of the typical **Single Relay Control** Mode Setup as shown on Page 14.
A) Use dip switches SW1-1 through SW1-8 to select the operation of each trigger input: CR, TD, or LR.
If dip switch SW2-6 = OFF, each input is selectable as a CR or TD only.
If dip switch SW2-6 = ON, each input is selectable as a LR or TD only.
B) Adjust dip switches SW2-1 thru SW2-5 as required. All other dip switches should remain as shown below.

SW2-1= OFF	When using TD mode, SW2-1 through 2-4 set the unlock delay time of the Lock Relay.
SW2-2 = OFF	SW2-1 ON = 5 sec., OFF = 0 sec.; SW2-2 ON = 10 sec., OFF = 0 sec.;
SW2-3 = OFF	SW2-3 ON = 20 sec., OFF = 0 sec.; SW2-4 ON = 30 sec., OFF = 0 sec.;
SW2-4 = OFF	Switch times are additive. {All OFF = 1 sec.; All ON = 65 sec.}
SW2-5 = OFF	Sets the polarity of ALL the trigger inputs when the trigger is in a non-activated state. {OFF = N/O; ON = N/C}
SW2-6 = OFF	{OFF = Each trigger input is selectable as CR or TD only; ON = Each trigger input is selectable as LR or TD only}
SW2-7 = OFF	
SW2-8 = OFF	
SW1-1= OFF	Station 1 Mode Selection {OFF = CR or LR; ON = TD}
SW1-2 = OFF	Station 2 Mode Selection {OFF = CR or LR; ON = TD}
SW1-3 = OFF	Station 3 Mode Selection {OFF = CR or LR; ON = TD}
SW1-4 = OFF	Station 4 Mode Selection {OFF = CR or LR; ON = TD}
SW1-5 = OFF	Station 5 Mode Selection {OFF = CR or LR; ON = TD}
SW1-6 = OFF	Station 6 Mode Selection {OFF = CR or LR; ON = TD}
SW1-7 = OFF	Station 7 Mode Selection {OFF = CR or LR; ON = TD}
SW1-8 = OFF	Station 8 Mode Selection {OFF = CR or LR; ON = TD}

Step 2 – Configure the Relay Outputs to be Wet (Voltage) or Dry.

Use the red WET/DRY Selection Jumpers to configure each output. Refer to Page 2 of this instruction for selection procedure.

On the typical Single Relay Control Mode wiring diagram, all relay outputs are configured as wet outputs.

The relay output voltage will be the same as the UR4-8 input voltage (12 or 24 VDC).

NOTE: It is recommended that any unused relays be configured as dry outputs.

Step 3. Terminate the Lock Power Wiring

Follow the Single Relay Control Mode wiring diagram for fail-safe or fail-secure locks. Be careful to observe lock voltage polarity.

*__WARNING__!: The UR board Relay Outputs must be protected against inductive kickback generated when power is removed from an inductive load (e.g., electric strikes). Refer to the lock manufacturer's installation manual or contact the manufacturer for kickback protection recommendations.

NOTE: All low voltage wiring shall be 18-gauge minimum. The minimum lock power wire gauge shall be determined by the SDC wire gauge chart. Signal wire shall be 22-guage minimum.

Step 4. Terminate the Station Trigger Inputs
Connect each station's trigger input as required.

All the trigger inputs should be dry, momentary, Normally Open or Normally Closed switches, depending on the configuration of Dip Switch 2-5 (Step 1).

NOTE: Dip Switch 2-5 configures the normal (resting) state of the trigger input. If Normally Closed inputs are used, all unused trigger inputs will need to be shorted.

Step 5. Terminate Optional Inputs and Outputs
Auxiliary Inputs – These inputs must be wired as dry, Normally Open switches. The input will only be active when closed (shorted). Refer to Page 2 for input descriptions.

Step 6. Connect a 12 or 24VDC Power Source to the UR4-8 Controller.
Before applying power, verify that all the connections are securely terminated by gently pulling on each wire.

Terminate the voltage wiring to the Controller Power Input. Be careful to observe polarity.

Verify that all the trigger inputs are in their normal (resting) state & apply power to the controller.

Step 7. UR4-8 Controller Startup and Operation Verification.

Verify the polarity of each Station trigger input by observing the Status Lights located on the lower right of the controller.

Status Lights A1, A2, B1, B2, C1, C2, D1 & D2 will be OFF if Dip Switch 2-5 = OFF, or will be ON if Dip Switch 2-5 = ON.

Test the standard operation of each station control relay by momentarily pressing the trigger input.

In CR mode, the respective door will unlock while the trigger input is activated, and relock when the trigger is released.

In TD mode, the respective door will unlock when the trigger input is activated. Releasing the trigger input will start the unlock timer and the door will remain unlocked. The door will relock after the set unlock time has expired.

In LR mode, the respective door will unlock when the trigger input is momentarily activated and released. The door will remained unlocked indefinitely until the trigger input is reactivated.

SINGLE RELAY CONTROL MODE

Station C2 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

Station D1 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

Station D2 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

*MOV for Inductive Kickback protection. See Step 3 on Pg. 13

INSTALLATION NOTES:
1. All inputs are shown configured as Normally Open switches.
2. All relay outputs have been configured to have wet (voltage) outputs. Relay output voltage will be the same as the UR4-8 input voltage.
3. Outputs 2, 4, 6, & 8 are non-fused.

SDC-600 Series
12/24 VDC POWER SUPPLY + −

Power Input 12/24 VDC

OUTPUT8 N C N C C W D
OUTPUT7 N C N C C FUSE W W D D
OUTPUT6 N C N C C W W D D
OUTPUT5 N C N C C FUSE W W D D
OUTPUT4 N C N C C W W D D
OUTPUT3 N C N C C FUSE W W D D
OUTPUT2 N C N C C W W D D
OUTPUT1 N C N C C FUSE W D

EMERGENCY RELEASE (Optional)
LOCKOUT (Optional)
UNLOCK ALL (Optional)
LOCK ALL (Optional)

C E4 / C E3 / C E2 / C E1
C D2 / C D1
C C2 / C C1
C B2 / C B1
C A2 / C A

DIP SWITCHES
Set as shown on Page 13, Step 1

ON
SW2 1 2 3 4 5 6 7 8
SW1 1 2 3 4 5 6 7 8

Station D2 Trigger
Station D1 Trigger
Station C2 Trigger
Station C1 Trigger
Station B2 Trigger
Station B1 Trigger
Station A2 Trigger
Station A1 Trigger

Station C1 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

Station B2 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

Station B1 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

Station A2 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

Station A1 LOCK — FAIL-SAFE LOCK (12 OR 24 VDC) / FAIL-SECURE LOCK (12 OR 24 VDC) MOV*

X. 2-Door Communicating Bath System Setup (Single or Dual)

Follow the installation steps below before applying power to the UR4-8.

Standard Operation:
Refer to **Page 4 – Section IX** for method of operation.

Refer to the *2-Door Communicating Bath System* wiring diagram on **Page 16**.

It is assumed that the UR4-8 and locks will share the same power supply.

Step 1 – Set Dip Switches

The dip switch settings for a 2-Door Communicating Bath System must be set as shown below. Adjust SW1-7 as required.

SW1-1= OFF	
SW1-2 = OFF	
SW1-3 = OFF	
SW1-4 = OFF	
SW1-5 = OFF	
SW1-6 = OFF	
SW1-7 = OFF	{OFF = Single Comm Bath System; ON = Dual Comm Bath System}
SW1-8 = ON	
SW2-1= OFF	
SW2-2 = OFF	
SW2-3 = OFF	
SW2-4 = OFF	
SW2-5 = OFF	
SW2-6 = OFF	
SW2-7 = OFF	
SW2-8 = ON	

Step 2 – Configure the Relay Outputs to be Wet (Voltage) or Dry.

Use the red WET/DRY Selection Jumpers to configure each output. Refer to Page 2 of this instruction for selection procedure.

For a Single Communicating Bath System:
Outputs 1, 2, 3, & 4 are configured to be wet outputs.
Outputs 5, 6, 7, & 8 are configured as dry outputs.

For Dual Communicating Bath Systems:
All outputs are configured to be wet outputs.

The relay output voltage will be the same as the UR4-8 input voltage (12 or 24 VDC).

Step 3. Terminate the Activation and Emergency Unlock Buttons

For each system, connect the (2) Emergency Unlock buttons and (1) Activation button as shown on the Communicating Bath system wiring diagram.

All button switches are wired Normally Open.

Lamp voltage is not polarity sensitive.

NOTE: All low voltage wiring shall be 18-gauge minimum. The minimum lock power wire gauge shall be determined by the SDC wire gauge chart. Signal wire shall be 22-guage minimum.
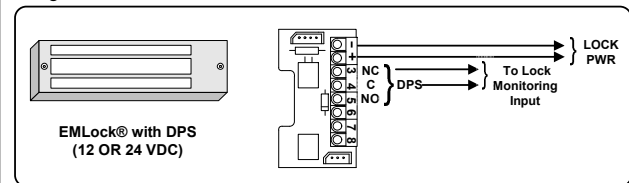
Step 4. Terminate the Lock Power and Lock Monitoring Options

Select your specific lock type below. Follow the typical Communicating Bath system wiring diagram. Be careful to observe lock voltage polarity.
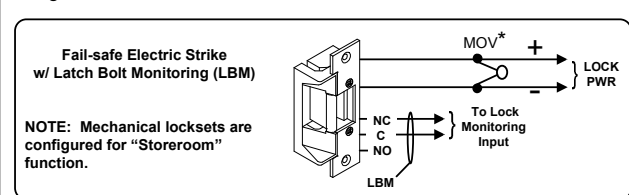
*****WARNING**!: The UR board Relay Outputs must be protected against inductive kickback generated when power is removed from an inductive load (e.g., electric strikes). Refer to the lock manufacturer's installation manual or contact the manufacturer for kickback protection recommendations.

NOTE: All lock monitoring options below (LBM, DPS, and/or REX) shown wired so that the circuit is OPEN when the doors are CLOSED and LATCHED.

Using EMLocks®:

EMLock® with DPS (12 OR 24 VDC)

Using Fail-safe Uni-FLEX™ Electric Strikes:

Fail-safe Electric Strike w/ Latch Bolt Monitoring (LBM)

NOTE: Mechanical locksets are configured for "Storeroom" function.

Using Fail-safe Selectric® Pro Locks:
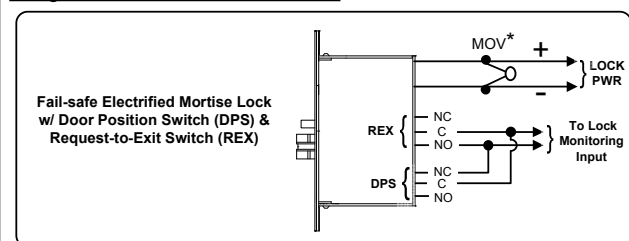
Fail-safe Electrified Mortise Lock w/ Door Position Switch (DPS) & Request-to-Exit Switch (REX)

Step 6. Connect a 12 or 24VDC Power Source to the UR4-8 Controller.

Before applying power, verify that all the connections are securely terminated by gently pulling on each wire.

Terminate the voltage wiring to the Controller Power Input. Be careful to observe polarity.

Verify that both doors are closed & apply power to the controller.

Step 7. UR4-8 Controller Startup and Operation Verification.

Verify the polarity of the inputs by observing the Status Lights located on the lower right of the controller.

With the system at rest, Status Lights A1, A2, B1, B2, & C1 should all be turned off.

Test the standard operation of the Communicating Bath System as described on Page 4.

2-Door Communicating Bath (Single or Dual System)

Fail-safe Lock (System B – Door #2)
LOCK POWER + (−)
FROM LOCK MONITORING OUTPUT

Fail-safe Lock (System B – Door #1)
LOCK POWER + (−)
FROM LOCK MONITORING OUTPUT

CB402B Emergency Button (System B – Door #2)
NO C NC

CB402B Emergency Button (System B – Door #1)
NO C NC

SDC 600 Series

12/24 VDC POWER SUPPLY
+ −

CB402A Activation Button (System B)
NO C NC

CB402A Activation Button (System A)
NO C NC

Power Input 12/24 VDC + (−)

OUTPUT 8 W D
OUTPUT 7 N C N C FUSE
OUTPUT 6 W W D D N C N C FUSE
OUTPUT 5 (−) N C N C FUSE
OUTPUT 4 W W D D N C N C FUSE
OUTPUT 3 (−) N C N C FUSE
OUTPUT 2 W W D D N C N C FUSE
OUTPUT 1 (−) N C N C W D FUSE

DIP SWITCHES Set as shown on Page 15, Step 1

SW2 1 2 3 4 5 6 7 8
SW1 1 2 3 4 5 6 7 8

C E1 C E2 C E3 C E4
C D1 C D2
C C1 C C2
C B1 C B2
C A1 C A2

Fail-safe Lock (System A – Door #1)
LOCK POWER + (−)
FROM LOCK MONITORING OUTPUT

Fail-safe Lock (System A – Door #2)
LOCK POWER + (−)
FROM LOCK MONITORING OUTPUT

CB402B Emergency Button (System A – Door #1)
NO C NC

CB402B Emergency Button (System A – Door #2)
NO C NC

INSTALLATION NOTES:

1. For a Single Comm. Bath System, terminate System "A" wiring only. For Dual Comm. Bath Systems, terminate System "A" & "B" wiring.

2. Refer to the lock's installation instructions for the lock wiring details.

3. For a single system, outputs 1-4 are configured as wet (voltage) outputs. For dual systems, all outputs are configured as wet (voltage) outputs. Output voltage will be the same as the UR4-8 input voltage.