Door Control Relay Modules

Door Control Relay Modules ensure compatibility of access hardware components and simplify system installation and troubleshooting. Different modules may be specified for one power supply. The isolated relay design allows small gauge cable runs of 22 gauge wire up to 500 feet from the trigger device to the module.
UR Series Universal Door Controllers provide a choice of individual dip switch selectable relay operating modes or system modes for lock control, monitoring, communicating door or lock system logic. Relay output modes may be individually configured as a Dry Contact or Voltage (Wet) Output. Relays may be configured to work independently or in tandem with adjacent relay.

**FEATURES**

- Use the Same Controller for Multiple Applications
- **Microprocessor Based System Logic** Reduces Need for Communicating Door and Lock Contacts and Standalone Relays
- **Centralized Wiring** for Locks, Access Controls, Monitoring Contacts and Peripheral Equipment Provide Easy Troubleshooting and Enable Uniformity for Multiple Installation Applications
- **Multiple Selectable Relay & System Logic Modes:**
  1. Conventional Relays
  2. 2 Time Delay Relays, adj. 1-60 sec
  3. 1 Time Delay Relays x Anti-Tailgate input
  4. 2 Independent Latching Relays (1 N.O. trigger per relay (pulse on, pulse off)
  5. Tandem Latching Relays 2-SPDT (DPDT) output (Input (A) latch ON, Input (B) latch OFF)
  6. 1 Time Delay Relay, 1 Latching Relay
  7. 1 Time Delay Relay, 1 Control Relay
  8. 2 Door Airlock/Cleanroom System
  9. Communicating Bathroom System: Shared by 2 hospital or Dorm rooms. Exiting unlocks both doors, ensuring access for both rooms
  10. Manual Door Sequencer: For 1 or 2 single or double door openings with high inrush* locks or exit devices (not to exceed Power Supply Rating up to 7A)
  11. Automatic Door Sequencer: For 1 single or 1 double door opening with locks or exit devices

- **Relay Modes:** Selectable Contact Configuration Permit Installer Configuration per Application Requirements
  1. SPDT outputs jumper selectable Wet and/or Dry
  2. Selectable Independent or Tandem (Simultaneous, DPDT) Activation
  3. Each Tandem SPDT output may be Wet and/or Dry

**SPECIFICATIONS**

| Input Voltage | Automatic Voltage Sensing  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12VDC @ 120mA, 24VDC @ 175mA</td>
<td></td>
</tr>
</tbody>
</table>
| Inputs | Two Form “A” SPST, N.O. Inputs  
| a) Two (2) N.O. Dry Inputs for Individual Relay  
| b) Tandem: Either N.O. Dry Input Triggers Both Relays |
| Outputs | 2 Form “C” SPDT Outputs (N.C. Failsafe, N.O. Failsecure)  
| 10 Amps (resistive), 7 Amp (inductive) @ 30VDC  
| Wet (voltage) and/or Dry Output  
| Wet Output Voltage is Same as Module Input Voltage  
| Two (2) LED Relay Active Indicators |

**Relay Mode Output Configuration**

| a) Two (2) Wet (Power) and/or Dry Outputs  
| b) Tandem: Simultaneously Activates both SPDT Outputs |

| Dimensions | 3.2" W x 2" L x 1" H |
| Weight | 0.8 lbs |

**MODELS**

UR-1 Universal Controller
APPLICATION

AC Mains

(3) COND

602RF
Power Supply w/ Enclosure x UR1 Controller

(6) COND / 22 AWG

(2) COND / 18 AWG

PTH-4Q
Power Transfer Hinge

S6000 Series
Latch Retraction Exit Device

LR100 Series
Latch Retraction Kit (installed in other manufacturer's panic device)

920
Access Control Keypad

see page 155

920
Access Control Keypad

see page 155

602RF
1 Amp, 12/24 VDC
Class 2 Output
Power Supply

see page 239

S6000
Latch Retraction Exit Device

see page 111

PTH-4Q
Power Transfer Hinge

see page 229

LR100
Latch Retraction Retrofit Kit

see page 113
UR2-4 and UR4-8 Universal Door Control Modules

Field Programmable Access Hardware Controller. 14 Field Selectable Station Modes & Systems. 7 Individually Selected Relay Output Modes: Control Relay, Timed Relay, or Latching Relay Output. Dual Modes Control Relay & Timer. Latching & Timed. Control Latching. Controlled Relay/Controlled Relay. 7 Selectable System Modes: 5 Mantrap and Interlock Modes. 2 Communicating Bathroom Modes.

FEATURES
- Use the same controller for all virtually multi-door applications.
- Centralized wiring for all locks, access controls, monitoring contacts and peripheral equipment.
- On board logic reduces need for communicating door and lock contacts and standalone relays.
- Reduced wiring, easy troubleshooting.

PROGRAMMABLE SYSTEM MODES
System selection provides appropriate mode of operation for each input and output
- **Airlock/Interlock Mode A**: All doors normally unlocked, opening any door causes all other doors to lock.
- **Mantrap Mode B**: All doors normally locked. When any door is unlocked all other doors are incapable of unlocking.
- **3 Mantrap Mode C**: Select doors locked or unlocked. When unlocked door is opened, locked doors are incapable of unlocking. When a locked door is unlocked, normally unlocked doors lock and all other locked doors are incapable of unlocking.
- **Shared Hospital/Dorm Bathroom A**: Doors equipped with magnetic locks.
- **Shared Hospital/Dorm Bathroom B**: Doors equipped with electrified locksets.

PROGRAMMABLE STATION MODES
Each output may be individually programmed with its own mode of operation
- Conventional Relay
- Latching Relay, on/off
- Latch multi-station zones on/off or all stations on/off
- Time Delay Relay 1-60 seconds
- Dual function Latching on/off, plus 1-60 second Timed output when on.

MODELS

**UR2-4**
- Universal Controller with 2 Fused SPDT Outputs
- Universal Controller with 2 Non-fused SPDT Outputs

**UR4-8**
- Universal Controller with 4 Fused SPDT Outputs
- Universal Controller with 4 Non-fused SPDT Outputs

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
<td>12 or 24VDC +/- 10%</td>
</tr>
<tr>
<td>Input Current</td>
<td>130mA Max.</td>
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</table>

**Relay Inputs**

<table>
<thead>
<tr>
<th>Relay</th>
<th>DESCRPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR2-4</td>
<td>4-SPST, Dry, Optically Isolated (Relay)&lt;br&gt;4-SPST, NO Dry, Optically Isolated (Auxiliary)</td>
</tr>
<tr>
<td>UR4-8</td>
<td>8-SPST, Dry, Optically Isolated (Relay)&lt;br&gt;4-SPST, NO Dry, Optically Isolated (Auxiliary)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR2-4</td>
<td>0.8 lbs&lt;br&gt;UR4-8: 1.0 lbs</td>
</tr>
</tbody>
</table>

**Outputs**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR2-4</td>
<td>2 fused SPDT relays, 7 Amps @ 30VDC&lt;br&gt;2 non-fused SPDT relays, 7 Amps @ 30VDC</td>
</tr>
<tr>
<td>UR4-8</td>
<td>4 fused SPDT relays, 7 Amps @ 30VDC&lt;br&gt;4 non-fused SPDT relays, 7 Amps @ 30VDC</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR2-4</td>
<td>4.5” W x 5” H x 7/8” D&lt;br&gt;UR4-8: 7” W x 5” H x 7/8” D</td>
</tr>
</tbody>
</table>

WARRANTY

5 YEAR WARRANTY
Door Control Relays Modules

Door Control Relays Modules ensure compatibility of access hardware components and simplify system installation and troubleshooting. Different modules may be specified for one power supply. The isolated relay design allows small gauge cable runs of 22 gauge wire up to 500 feet from the trigger device to the module.

MULTIPLE FUSED OUTPUT

FB-4

Four 2 Amp fuse protected outputs allow for precisely calculated circuit protection. Four modules provide 16 outputs.

- Distributes the primary DC output of any 600 series power supply into four, individually fused class 2 outputs
- Four separate outputs allow for termination multiple DC devices, providing ease of maintenance

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Outputs</th>
<th>4 Individually Fused @ 2 Amp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>0.2 lbs</td>
</tr>
</tbody>
</table>

FOUR STATION RELAY MODULE

CR4

- Allows for independent control of up to four separate electrified locking devices
- Distributes the primary DC output of any 600 series power supply into four, individually controlled relay DPDT outputs
- Each output is individually fused, and selectable as wet or dry
- LED’s provide relay activation status

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Voltage Input</th>
<th>120 mA @ 12/24VDC</th>
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</thead>
<tbody>
<tr>
<td>Inputs &amp; Outputs</td>
<td>(4) Fused, 2A SPDT dry outputs or voltage outputs</td>
</tr>
<tr>
<td></td>
<td>(4) 2A SPDT dry outputs or voltage outputs</td>
</tr>
<tr>
<td></td>
<td>(4) N.O. dry trigger inputs</td>
</tr>
<tr>
<td>Dimensions</td>
<td>4.25&quot; L x 3.375&quot; W</td>
</tr>
<tr>
<td>Weight</td>
<td>0.4 lbs</td>
</tr>
</tbody>
</table>

Modules may be ordered with or without power supplies. Different function modules may be used in the same power supply or cabinet. Contacts: 2.5 Amps inductive, 5 Amps resistive @ 30 VDC unless specified otherwise.
ACCESS CONTROL MODULE
ACM-1

- Allows for control of a single electrified locking device from multiple activation devices (up to 6)
- LED provide relay activation status

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Voltage Input</th>
<th>45mA @ 12/24VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs &amp; Outputs</td>
<td>(1) SPDT voltage output (1) SPDT dry contact. 5A @30VDC resistive (6) trigger inputs (3-NC,3-NO) (1) LED status indicator</td>
</tr>
<tr>
<td>Dimensions</td>
<td>3.25&quot; L x 2&quot; W</td>
</tr>
<tr>
<td>Weight</td>
<td>0.25 lbs</td>
</tr>
</tbody>
</table>

POWER BOOSTER

PB-16  16 Amp Power Booster
PB-8   8 Amp Power Booster

- Designed to control 1 or 2 high inrush current electrified locking devices
- Provides a total of 8A (PB-8) or 16A (PB-16) for 300ms, 1A continuous

SPECIFICATIONS

| Inputs & Outputs | 24VDC input (1) N.O. Dry trigger Input (1) Fused SPDT voltage output 1 Amp Continuous, 8 Amp or 16 Amp Surge |
| Dimensions | 3.25" W x 2" H |
| Weight | 0.3 lbs |

Modules may be ordered with or without power supplies. Different function modules may be used in the same power supply or cabinet. Contacts: 2.5 Amps inductive, 5 Amps resistive @ 30 VDC unless specified otherwise.
Door Control
Monitoring and Sequencing

POWER SUPPLY REMOTE MONITORING MODULE

PSM

The PSM Power Supply Monitoring Module provides 2-SPDT, 1 Amp contacts to remotely monitor power supply and battery status.

FEATURES
- Monitors Power Supply Input and Battery Backup
- On/Off Status
- Remote Annunciation Includes: System OK | AC Fail – No DC Output | Battery Powered | System Off – No Battery

SPECIFICATIONS
- Outputs: 2-SPDT Relay Outputs
- Relay Rating: 1 Amp @ 12/24VDC
- Dimensions: 3.25” W x 2” H
- Weight: 0.2 lbs

EXIT DEVICE SEQUENCER

EMC

The EMC Dual Channel Sequencer Module may be used with the S6000FE, S6000PE, or LR100 series Electric Latch Retraction (ELR) device to provide a delayed signal to operate an automatic door operator or when powering a pair of ELR devices from a single SDC 600 series power supply.

FEATURES
- The two sequencer channels may be operated as two independent doors or in tandem mode for pairs of doors.
- Each sequencer channel provides an output to power the ELR device and a “delayed” dry auxiliary output for activation of an automatic door operator. All outputs are field selectable as Normally Open or Normally Closed.
- When the EMC is used in the tandem mode, power supply requirements for a pair of doors are minimized.
- Since the attached electric latch retraction devices are powered in a sequential manner, the inrush current of each device is staggered. This creates a lower current requirement upon activation. A smaller power supply can now be used to operate the pair of devices.

SPECIFICATIONS
- Input Voltage: 12VDC or 24VDC
- Input Current: 140mA max
- Output Voltage: 12VDC or 24VDC (Same as Input Voltage)
- Operator & ELR Contacts: 10 AMP @ 30VDC (Resistive) (4 Relays)
- Access Control Inputs: N/O Dry Contact (2 Inputs)
- Dimensions: 3.20”W x 4.30”H
- Weight: 0.2 lbs

Modules may be ordered with or without power supplies. Different function modules may be used in the same power supply or cabinet. Contacts: 2.5 Amps inductive, 5 Amps resistive @ 30 VDC unless specified otherwise.
The addition of the 12VR Module enables dual 12VDC and 24VDC output capability.

With the SDC 600 Series power supply output set at 24VDC for locking devices and components, the addition of the 12VR provides a separate 12VDC, 500 mA output for 12VDC Access Controllers and readers or other devices. The need for separate power supplies for 12VDC and 24VDC requirements within the same system is eliminated.

**FEATURES**

- The addition of the 12VR provides a separate 12VDC, 500 mA output for 12VDC access controls and components. The total combined 12V/24V load may not exceed the maximum power supply output rating.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>24VDC</td>
</tr>
<tr>
<td>Output</td>
<td>500 mA @ 12VDC</td>
</tr>
<tr>
<td>Capacity</td>
<td>602RF One Maximum 631RF One Maximum 632RF Two Maximum 634RF Four Maximum 636RF Six Maximum</td>
</tr>
<tr>
<td>Dimensions</td>
<td>3.25&quot; H x 2&quot; W</td>
</tr>
</tbody>
</table>
**DOOR CONTROL ACCESSORIES**

### 14-2 (24V) & 14-2-12 (12V)
Seven Day, Skip-A-Day Timer

The SDC 14-2 is a compact, field programmable, 7 day skip-a-day timer module recommended for automatic timed locking and unlocking of one door or all doors on the same circuit. The timer may be programmed to skip unlocking on selected days or weekends. The timer may also be installed in a power supply.

**FEATURES**
- Field Programmable
- 7 Day timer module recommended for automatic timed locking and unlocking of one door or all doors on the same circuit
- Schedule up 6 Events Maximum on Single or Multiple Days, Manual on-off Override
- Replaceable Lithium Battery Maintains Time and Schedule During Power Outage

#### MODELS
- **14-2** Seven Day Timer 24VDC
- **14-2-12** Seven Day Timer 12VDC

#### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>12V AC/DC or 24V AC/DC (Specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact</td>
<td>SPDT Dry, 16 Amps @ 30VDC</td>
</tr>
<tr>
<td>Dimensions</td>
<td>2.375”H x 2.375”W x 1.25”D</td>
</tr>
<tr>
<td>Weight</td>
<td>0.25 lbs</td>
</tr>
</tbody>
</table>

**RB12V4 & RB12V7**
Backup Batteries

SDC power supplies equipped with batteries provide continuous operation of access controls, locking devices and peripheral components during a power failure.

#### MODELS
- **RB12V4** 12V/5Ah Battery,
- **RB12V7** 12V/8Ah Battery
Access Control System  WIRE GAUGE SIZE & DISTANCE CHART

For 12V and 24V AC/DC

To determine the correct wire gauge to use on “one circuit” the following information is required:
- The quantity, voltage and current draw of all lock(s) and other powered devices on one circuit.
- The distance in feet from the power supply to the furthest lock.

Add together the current draw (amps) of all locks on the same circuit. Cross reference the total amps with the distance between the power supply and the farthest lock to determine the wire gauge required.

“One circuit” implies that two wires are being run from the power supply to one or more locks in parallel. The last lock on the pair of wires should not exceed the maximum distance number shown on the chart for that gauge of wire and total current draw in Amps.

All wiring must be installed in accordance with all state and local codes.

### Minimum Wire Gauge for 12 volts AC or DC

Maximum Distance Allowable For a 5% Voltage Drop From the Power Supply to the Furthest Load On One Circuit

<table>
<thead>
<tr>
<th>AMPS</th>
<th>25ft</th>
<th>50ft</th>
<th>75ft</th>
<th>100ft</th>
<th>150ft</th>
<th>200ft</th>
<th>250ft</th>
<th>300ft</th>
<th>350ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.12</td>
<td>20</td>
<td>20</td>
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<td>20</td>
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<td>0.25</td>
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<tr>
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<td>4 to 6</td>
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</tbody>
</table>

### Minimum Wire Gauge for 24 volts AC or DC

Maximum Distance Allowable For a 5% Voltage Drop From the Power Supply to the Furthest Load On One Circuit

<table>
<thead>
<tr>
<th>AMPS</th>
<th>25ft</th>
<th>50ft</th>
<th>75ft</th>
<th>100ft</th>
<th>150ft</th>
<th>200ft</th>
<th>250ft</th>
<th>300ft</th>
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<tbody>
<tr>
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</tr>
</tbody>
</table>

### OHMS LAW

**To Determine an Unknown Voltage:**

\[ E = I \times R \]

**To Determine an Unknown Current:**

\[ I = \frac{P}{E} \]

**To Determine an Unknown Current:**

\[ I = \frac{E}{R} \]

**To Determine an Unknown Wattage:**

\[ P = E \times I \]

**To Determine an Unknown Resistance:**

\[ R = \frac{E}{I} \]

- **E**=Volts
- **I**=Current, Amps
- **R**=Resistance, Ohms
- **P**=Power, Watts
Transformers and Plug-In DC Power Supplies

**TR12 Plug-In Power Supply**

The SDC TR12 1 Amp 12VDC regulated plug-in power supply.

**FEATURES**
- Thermal Overload Protection
- LED Power Status Indicator
- UL Listed, Class 2

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Primary Input</th>
<th>120VAC, Grounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Output</td>
<td>Regulated, 12VDC @ 1 Amp</td>
</tr>
<tr>
<td>Secondary Connection</td>
<td>Screw Terminals</td>
</tr>
<tr>
<td>Weight</td>
<td>1.1 lbs</td>
</tr>
</tbody>
</table>

**TR24 Plug-In Power Supply**

The SDC TR24 1 Amp 24VDC regulated plug-in power supply.

**FEATURES**
- Thermal Overload Protection
- 6 Foot Cord
- UL Listed, Class 2

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Primary Input</th>
<th>120VAC, Grounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Output</td>
<td>Regulated 24VDC @ 1 Amp</td>
</tr>
<tr>
<td>Connection</td>
<td>6 ft. Wire Leads</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 lbs</td>
</tr>
</tbody>
</table>
TP1220 Plug-In
Power Supply

The SDC TP1220 is a 1.6 Amp 12VAC plug-in power supply.

FEATURES
- Thermal Overload Protection
- UL Listed, Class 2

SPECIFICATIONS
<table>
<thead>
<tr>
<th>Primary Input</th>
<th>120VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Output</td>
<td>Fused. 12VAC @ 1.65 Amps</td>
</tr>
<tr>
<td>Secondary</td>
<td>Screw Terminals</td>
</tr>
</tbody>
</table>

TP2440 Plug-In
Power Supply

The SDC TP2440 is a 1.6 Amp 24VAC plug-in power supply.

FEATURES
- Thermal Overload Protection
- UL Listed, Class 2

SPECIFICATIONS
<table>
<thead>
<tr>
<th>Primary Input</th>
<th>120VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Output</td>
<td>Fused. 24VAC @ 1.65 Amps</td>
</tr>
<tr>
<td>Secondary</td>
<td>Screw Terminals</td>
</tr>
</tbody>
</table>
TRANSFORMER ACCESSORIES

BR64XL Full Wave
Bridge Rectifier

SDC BR64XL Rectifier

FEATURES
- 6” Wire Leads
- Converts AC Transformer to DC Output

SPECIFICATIONS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Input</strong></td>
<td>12 or 24VAC</td>
</tr>
<tr>
<td><strong>Secondary Output</strong></td>
<td>12 or 24VDC</td>
</tr>
<tr>
<td><strong>Secondary Connection</strong></td>
<td>4 Amps Maximum Load</td>
</tr>
</tbody>
</table>