

# ES 100 Power Supply

## 24 Volt D.C. Power Supply

### General:

The ES 100 Power Supply is a general purpose power supply providing 24 volt, full wave filtered DC power at a continuous current rating of 1.3 amps.

### Zones:

The ES 100 contains as a standard feature two (2) zone capability. Each zone has one (1) set of control input terminals and one (1) set of output terminals. The 1.3 amp output rating is applied to either zone as long as the continuous current draw does not exceed 1.3 amps (Example zone #1 may draw 1.0 amps however zone #2 may not exceed 0.3amps. If zone #2 is not used then zone #1 is rated at 1.3 amps continuously. The control input may be used as either a dry contact or voltage input.

### Operation:

Trigger input of the ES 100 Power supply will occur by a switch and/or relay. A Dry Contact input refers to a switch or relay contact that provides no external voltage to activate the Power Supply. Contacts can be either normally open contacts or normally closed contacts. These input contacts are connected to terminals #3 & #4 for zone #1 and terminals #7 & #8 for zone #2. Normally Open Contacts are use when the ES 8000 Series Exit Device is used in conjunction with this Power Supply. Normally Close Contacts are used when the DE9000 Delayed Egress Exit Device is used in conjunction with this Power Supply. A fire alarm system can be used as the normally open or normally closed contact to trigger the ES 8000 Series Exit Device or give constant power to the DE9000 Series Delayed Egress Exit Device. DORMA recommends using the normally closed contacts of the building's fire alarm system to control the power being supplied to the DE9000 Delayed Egress Exit Device from the ES100 Power Supply.

Voltage input refers to an external source of 24 VDC power required to activate the output terminals. To use zone #1 as a Voltage Input, connect the control voltage positive (+) wire to terminal #3 and the voltage negative (-) wire to terminal #2. The external source voltage must have a current rating of 0.045 amps per zone. Connect the output device such as ES8000 Series Exit Device with Electric Latch Retraction and DE9000 Series Delayed Egress Exit Device to terminals #1 and #2. When control voltage is present it will power the output terminals. To use zone #2 as a Voltage Input, connect the control voltage positive (+) wire to terminal #7 and the voltage negative (-) wire to terminal #6. The external source voltage must have a current rating of 0.045 amps per zone. Connect the output device such as ES8000 Series Exit Device with Electric Latch

Retraction and DE9000 Series Delayed Egress Exit Device to terminals #5 and #6. When control voltage is present it will power the output terminals.

### Circuit Protection:

The ES100 Power Supply is protected against short circuits and overloads by a 0.75 amp slow blowing, field replaceable, fuse in the 120 VAC power line. In addition a 3.0 amp circuit breaker is provided in the 24 VDC power supply section to protect both zone #1 and zone #2. Each zone can supply 6.0 amps for 0.5 seconds. This design provides the high inrush currents required for the circuits of the ES 8000 Electric Latch Retraction Exit Device.

### Mechanical and Size Specifications:

#### Enclosure:

8" Enclosure Height  
8" Enclosure Width  
4" Enclosure Depth

#### Electrical Knockouts:

Quantity (2) ½" Diameter (per side)  
Quantity (1) ¾" Diameter (per side)

#### Cover:

Hinged cover with finger pull and locking screw

#### Rating:

NEMA 1 Enclosure for inside use.

### Electrical Specification:

#### Input Voltage:

120 VAC, +10% -15%

#### Input Circuit Protection:

0.75 AMP slow blow

#### Input Current:

0.75 AMP Maximum

#### Output Voltage:

24 VDC

#### Output Circuit Protection:

3.0 Amp Push to reset  
Circuit Breaker

#### Continuous Output Current:

1.3 AMPS total (zone 1 and zone combined)

#### Surge Output Current:

6.0 AMPS per zone

#### Quantity of Zones:

Two (2)

### Installation:

1. **CAUTION:** DISCONNECT INPUT POWER BEFORE BEGINNING THE INSTALLATION PROCESS, TO PREVENT ELECTRICAL SHOCK AND EQUIPMENT DAMAGE
2. Installation must be performed by trained personell.
3. The ES 100 Power Supply is designed for surface mounting is a vertical position. Four holes are provided for mounting the enclosure. All four mounting holes are accessible by opening the front cover. Use caution when mounting the enclosure as not to damage the electrical subassembly.
4. There are two (2) ½” and one (1) ¾” knockouts per side to be used as required for electrical conduit connection.

### Maintenance:

In event that is necessary to replace the fuse or electrical subassembly follow the procedure below. Note: This work is to be done by a qualified personnel.

Fuse Replacement: 0.75 amp slow blow type fuse is mounted in a bayonet style fuse holder. To remove, press the cap down and turn counter clockwise, remove and replace the fuse, then replace the fuses and tighten the cap turning clockwise.

Chassis Replacement: **CAUTION:** Disconnect the 120 Volt A.C. power entering the ES 100 enclosure. Tag and remove all field installed wires. Remove the four (4) #8-32 chassis mounting screws and washers. Remove and replace the electrical circuits and mounting hardware. Connect all the field wire to the correct terminals. Secure the front door of the ES100 with the locking screw.

# SINGLE DOOR x DELAYED EGRESS EXIT DEVICE w/TRIM x ES100 POWER SUPPLY x DOOR POSITION SWITCH



**OPERATION:**

**Armed-Delay Egress Mode:** Release of latch bolt via the interior touchbar is prevented. If touchbar is depressed for longer than the Nuisance Delay Time (1 or 3 seconds, jumper selectable), an irreversible Alarm Sequence is initiated. After the Delay Time (15 or 30 seconds), the touchbar is enabled to retract the latch bolt. The audible alarm will sound continuously until door is closed (as indicated by the optional Door Position Switch) and Delayed Egress Exit Device is re-armed locally with touchbar key (See DE Installation Instructions for additional operational information).

**Authorized Egress:** When the touchbar keyswitch is rotated counter-clockwise the Delayed Egress Exit Device is disarmed for 10 or 20 seconds (jumper selectable) and the touchbar is enabled to activate the latch bolt without initiating the Alarm Sequence. Emergency Entrance is possible via the exterior key trim, however, the alarm will sound when the Door Position Switch is opened.

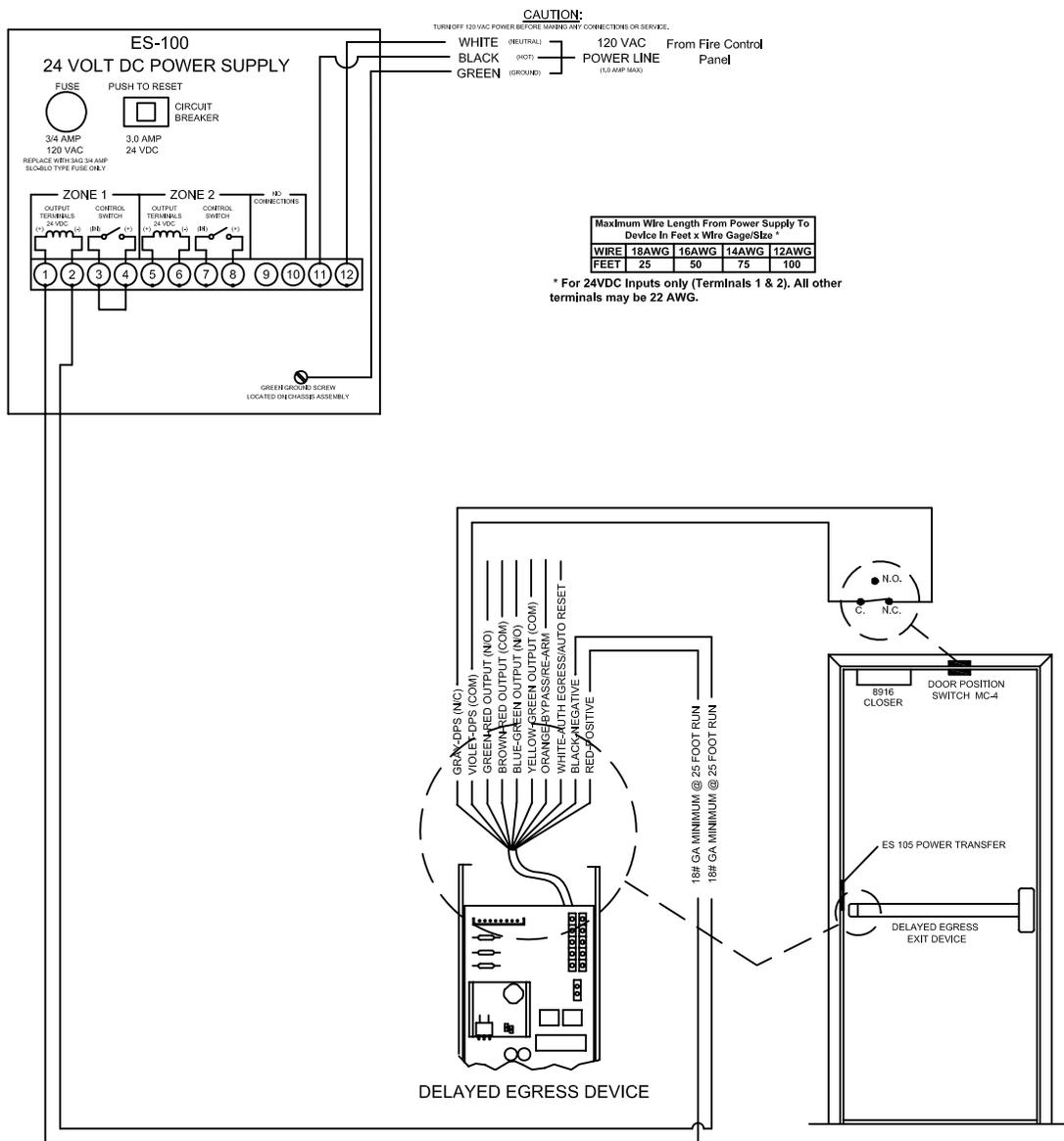
**Note 1:** The ES100 Power Supply 120VAC input must be controlled by the appropriate UL listed Alarm System contacts.

**Note 2:** The Building's fire alarm N.C. contact can be used as the triggering input in terminals 3&4 and/or in case two DE9000 units are connected to the ES100 inputs 7&8 to serve as the jumper wires.

**PARTS LIST:**

- 1 EA. - ES100 Power Supply, 24VDC, 6AMP Surge (.5 sec), 1.3AMP Continuous (DORMA)
- 1 EA. - Delayed Egress Exit Device w/Trim, 24VDC, 5AMP Surge, .5AMP Continuous (DORMA)
- 1 EA. - ES105 Power Transfer Conduit (DORMA)
- 1 EA. - 8900-Series Surface Mount Door Closer (DORMA)
- 1 EA. - MC-4 Door Position Switch, SPDT 30VDC, .25AMP (DORMA)

NOTE: This wiring diagram is provided to assist in interfacing DORMA Architectural Hardware products into a system as described by the customer. Compatibility of components not supplied by DORMA Architectural Hardware are not guaranteed. However, every effort has been made to provide the system function requested. Component failure resulting from improper wiring is not covered by warranty. Refer to individual device product information sheets and installation instructions for wire gauge sizes and additional information.



DORMA Architectural Hardware  
 REAMSTOWN, PENNSYLVANIA 17567  
 DIAGRAM No. EAC-WD40

**SINGLE DOOR x ES 8000 SERIES EXIT DEVICE w/ ELECTRIC LATCH RETRACTION  
RETRACTION x TRIGGERING DEVICE x ES 100 POWER SUPPLY**



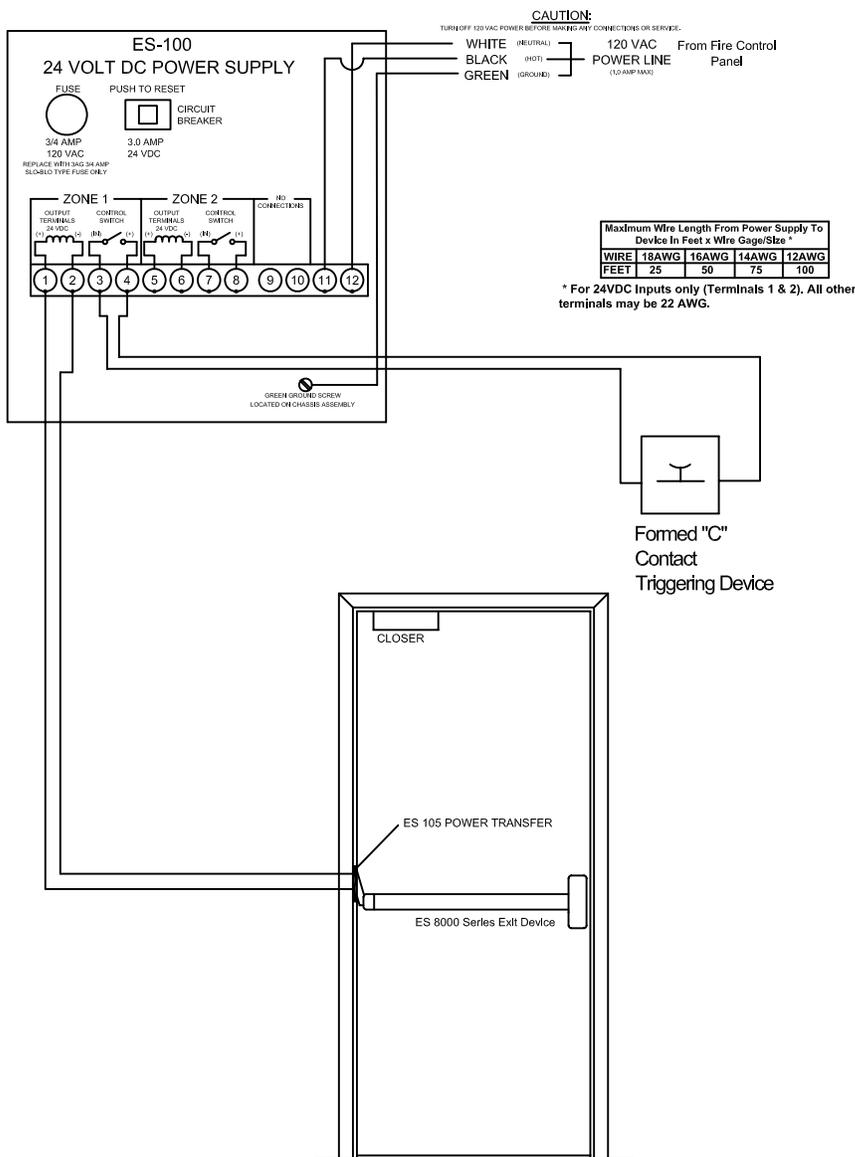
**OPERATION:**

Manual egress by depressing the touch bar of the exit device and pushing the door open. Manual entrance by unlocking the exterior trim of the exit device and pulling the door open. Electric latch retraction by closing a form "C" relay of various devices which triggers the ES 100 Power Supply to send voltage to the solenoid of the ES 8000 Series Exit. When powered the solenoid will retract the latch bolt of the Exit Device which will allow entrance when the exterior trim is locked.

**PARTS LIST:**

- 1 EA. - ES100 Power Supply, 24VDC, 6AMP Surge (.5 sec), 1.3AMP Continuous (DORMA)
- 1 EA. - ES 8000 Series Exit Device with Electric Latch Retraction (DORMA)
- 1 EA. - ES105 Power Transfer Conduit (DORMA)
- 1 EA. - Surface Mount Door Closer (DORMA)
- 1 EA. - Triggering Form "C" Relay to trigger

NOTE: This wiring diagram is provided to assist in interfacing DORMA Architectural Hardware products into a system as described by the customer. Compatibility of components not supplied by DORMA Architectural Hardware are not guaranteed. However, every effort has been made to provide the system function requested. Component failure resulting from improper wiring is not covered by warranty. Refer to individual device product information sheets and installation instructions for wire gauge sizes and additional information.



DORMA Architectural Hardware  
REAMSTOWN, PENNSYLVANIA 17567  
DIAGRAM No. EAC-WD350

**DOUBLE DOORS x (2) ES 8000 SERIES EXIT DEVICE w/ ELECTRIC LATCH RETRACTION x TRIGGERING DEVICE x ES 100 POWER SUPPLY x (2) ES105 POWER TRANSFER**



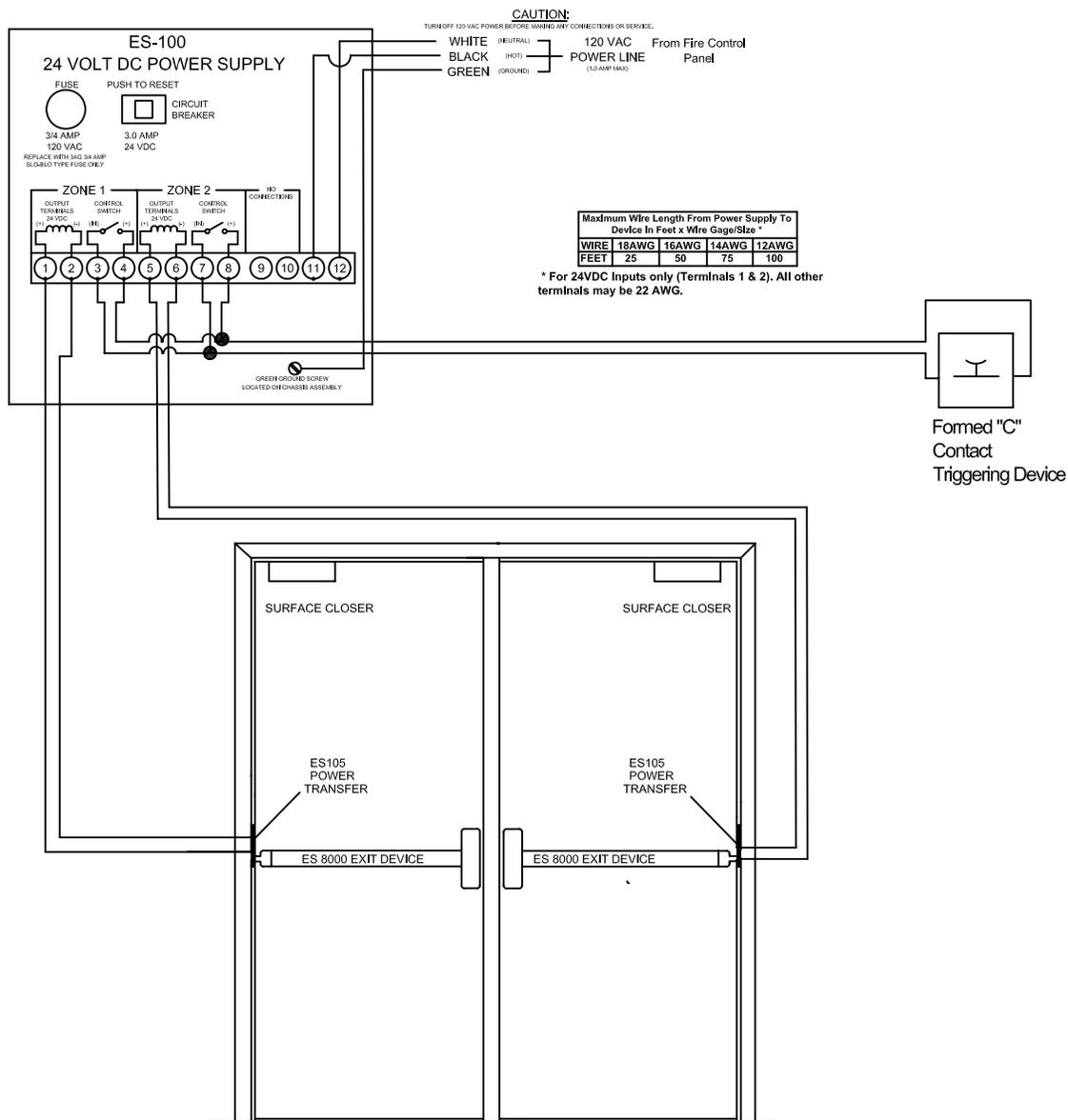
**OPERATION:**

Manual egress by depressing the touch bar of the exit device and pushing the door open. Manual entrance by unlocking the exterior trim of the exit device and pulling the door open. Electric latch retraction by closing a Form "C" relay of various devices which triggers the ES 100 Power Supply to send voltage to the solenoid of the ES 8000 Series Exit. When powered the solenoid will retract the latch bolt of the Exit Device which will allow entrance when the exterior trim is locked.

**PARTS LIST:**

- 1 EA. - ES100 Power Supply, 24VDC, 6AMP Surge (.5 sec), 1.3AMP Continuous (DORMA)
- 2EA. - ES 8000 Series Exit Device with Electric Latch Retraction (DORMA)
- 2EA. - ES105 Power Transfer Conduit (DORMA)
- 2EA. - Surface Mount Door Closer (DORMA)
- 1 EA. - Triggering Form "C" Relay to trigger

NOTE: This wiring diagram is provided to assist in interfacing DORMA Architectural Hardware products into a system as described by the customer. Compatibility of components not supplied by DORMA Architectural Hardware are not guaranteed. However, every effort has been made to provide the system function requested. Component failure resulting from improper wiring is not covered by warranty. Refer to individual device product information sheets and installation instructions for wire gauge sizes and additional information.



DORMA Architectural Hardware  
 REAMSTOWN, PENNSYLVANIA 17567  
 DIAGRAM No. EAC-WD351

# SINGLE DOOR x 9000 LFSC / LFSF ELECTRIFIED TRIM x TRIGGERING DEVICE x ES 100 POWER SUPPLY



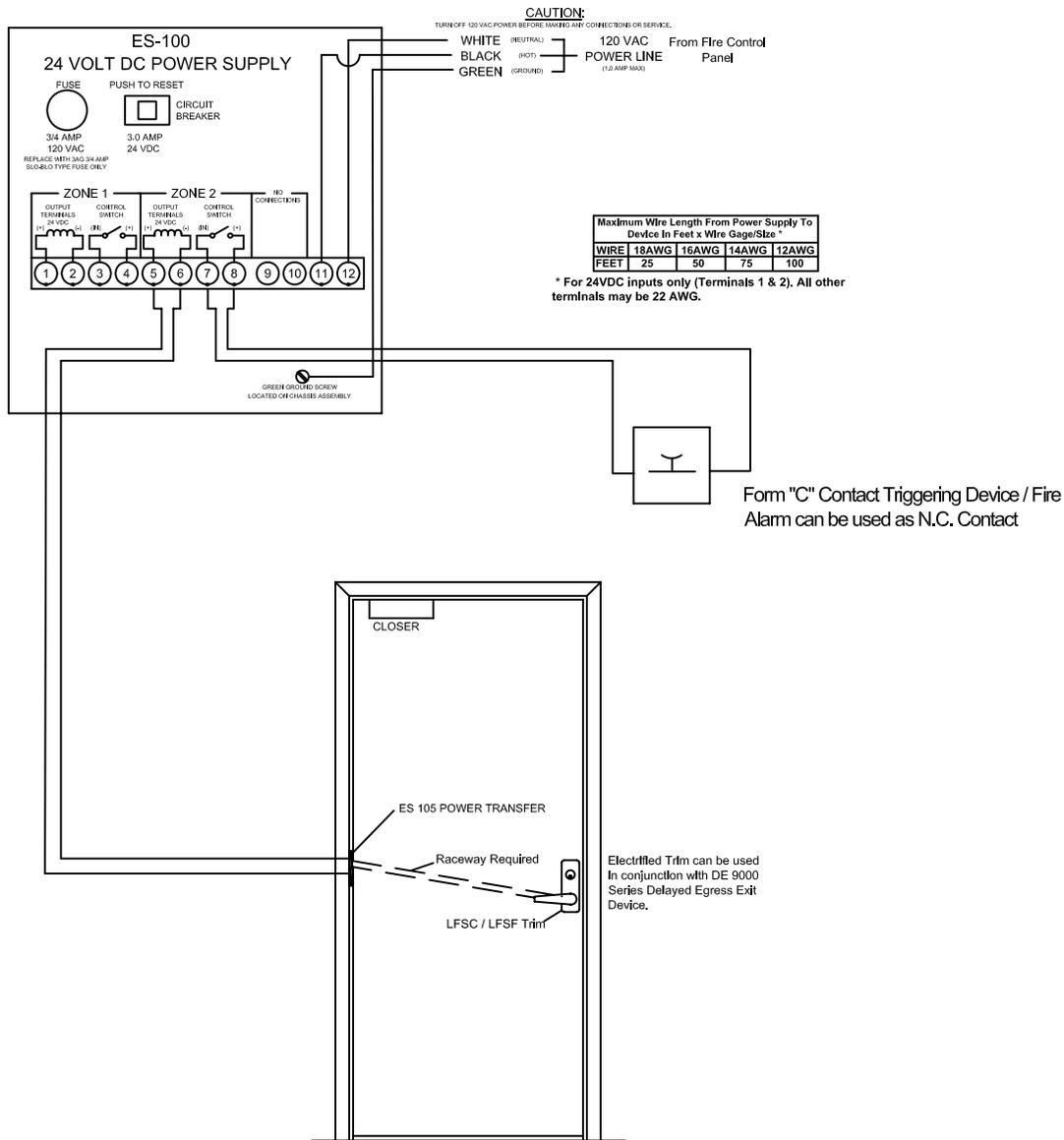
**OPERATION:**

Manual egress by depressing the touch bar of the exit device and pushing the door open. Manual entrance by unlocking with a key the exterior trim of the exit device and pulling the door open. When using Electric Trim the ES100 unlocks the outside LFSC trim when a form "C" relay is closed or when using a LFSF Trim the normally closed contact of the Form "C" Relay is opened by the use of various devices which triggers the ES 100 Power Supply to unlock the Trim by sending voltage to the solenoid of the Trim to either lock or unlock the Trim. The building's fire alarm system will serve as a closed contact when using the LFSF Trim.

**PARTS LIST:**

- 1 EA. - ES100 Power Supply, 24VDC, 6AMP Surge (.5 sec), 1.3AMP Continuous (DORMA)
- 1 EA. - 9000 Electrified Trim LFSC / LFSF (DORMA)
- 1 EA. - ES105 Power Transfer Conduit (DORMA)
- 1 EA. - Surface Mount Door Closer (DORMA)
- 1 EA. - Triggering Form "C" Relay to trigger

NOTE: This wiring diagram is provided to assist in interfacing DORMA Architectural Hardware products into a system as described by the customer. Compatibility of components not supplied by DORMA Architectural Hardware are not guaranteed. However, every effort has been made to provide the system function requested. Component failure resulting from improper wiring is not covered by warranty. Refer to individual device product information sheets and installation instructions for wire gauge sizes and additional information.



DORMA Architectural Hardware  
 REAMSTOWN, PENNSYLVANIA 17567  
 DIAGRAM No. EAC-WD352