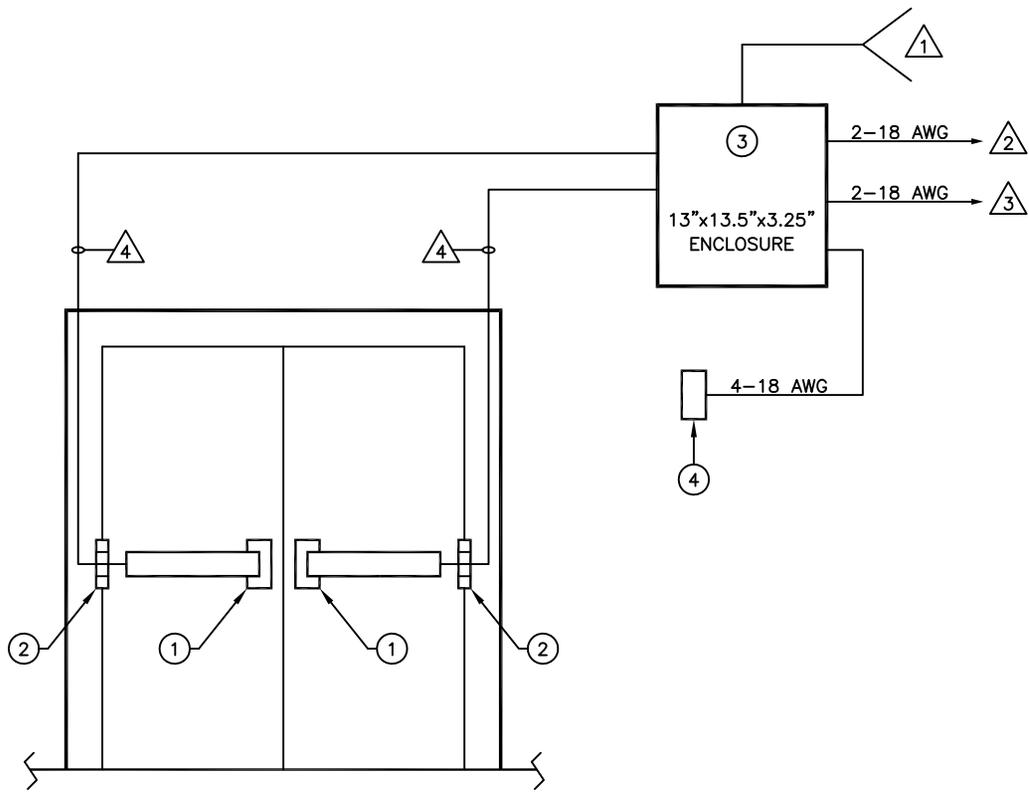




## **ACSI Series 1550K-MD and 1550-MD Motor Drive Electric Latch Retraction**

**Riser and Point-to-Point Drawings for  
Standard Access Control Applications  
Using Maintained Latch Retraction Control or  
Momentary Latch Retraction Control with  
Field-Adjustable Time Delay  
For Use with ACSI Part Numbers  
1452 and 1452-TD**

**Riser and Point-to-Point Drawings for  
Standard Access Control and  
Day/Night Applications for Openings  
Using Automatic Door Operators  
For Use with ACSI Part Numbers  
1452-AO and 1452-DN**



**NOTES:**

- ① TO 115V., 60HZ., 15A SERVICE.
- ② TO N.C. FIRE ALARM, IF REQUIRED.
- ③ TO A CONTROL DEVICE USING MAINTAINED SWITCH CONTACTS (PUSHBUTTON SWITCH, KEY SWITCH) OR A CONTROL DEVICE RELAY OUTPUT EQUIPPED WITH BUILT-IN TIME DELAY (CARD READER, KEYPAD, MOTION SENSOR).

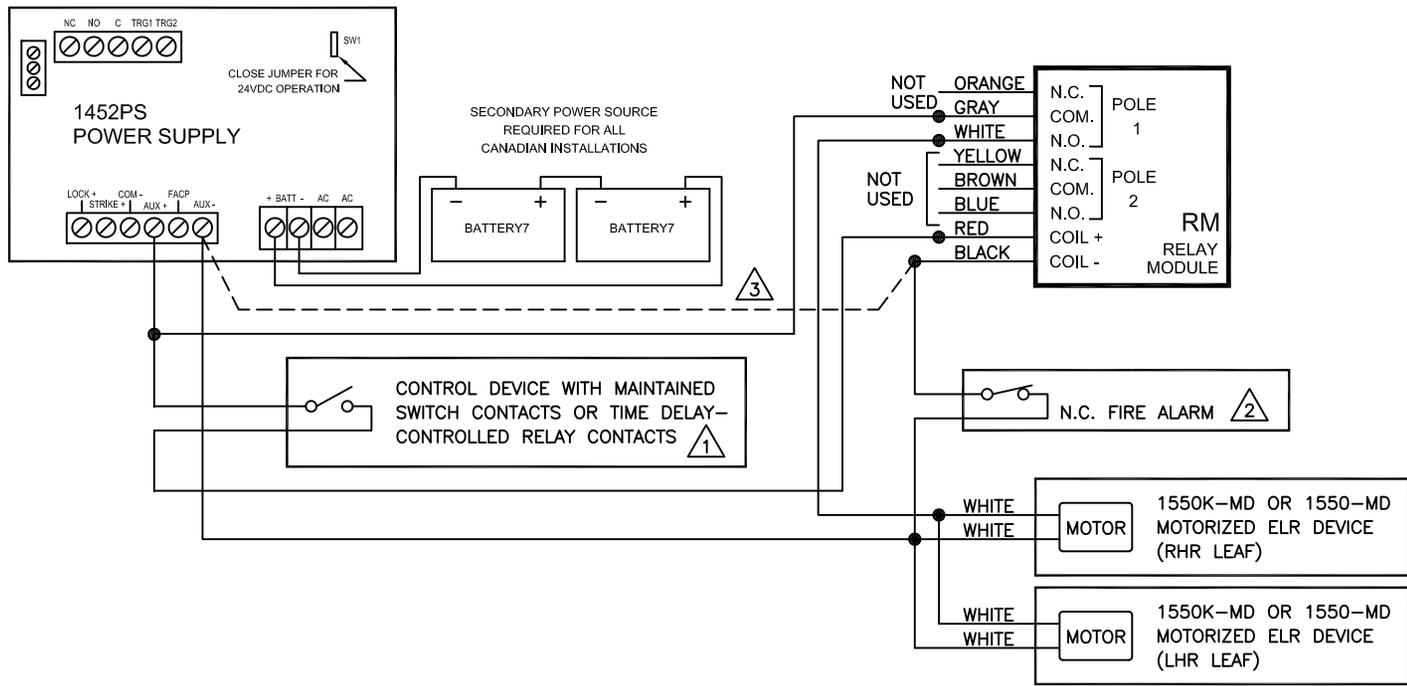
④ WIRE GAUGE	MAX. LENGTH 2-COND. CABLE
22 AWG	70 FEET
20 AWG	110 FEET
18 AWG	180 FEET
16 AWG	280 FEET
14 AWG	450 FEET
12 AWG	720 FEET

RISER DIAGRAM FOR STANDARD ACCESS CONTROL WITH MAINTAINED ELECTRIC LATCH RETRACTION, OR MOMENTARY RETRACTION BY CONTROL DEVICES WITH BUILT-IN TIME DELAY, USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

**ACSI SUPPLIED EQUIPMENT:**

- ① SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELECTRIC LATCH RETRACTION
- ② SERIES 1100 POWER TRANSFER HINGE
- ③ 1452PS POWER SUPPLY
- ④ RM RELAY MODULE  
NOTE: DO NOT LOCATE MORE THAN 10 FT. FROM POWER SUPPLY

 <b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°	DRILL +.007 -.001 +.001 REAM -.000 +.004 PUNCH -.001	8/23/16	A	CRH
			2/12/15	RELEASED	CRH
DESCRIPTION			DATE	REV.	APPRV.
ACSI P/N 1452 ELR ACCESS CONTROL			SCALE <i>TL</i>	DRAWN BY CRH	DATE 2/12/15
DRAWING NO.			SHEET 1 OF 1	APPRV. BY CRH	DATE 2/12/15
REF 6040-R1			<b>DO NOT SCALE THIS DRAWING</b>		

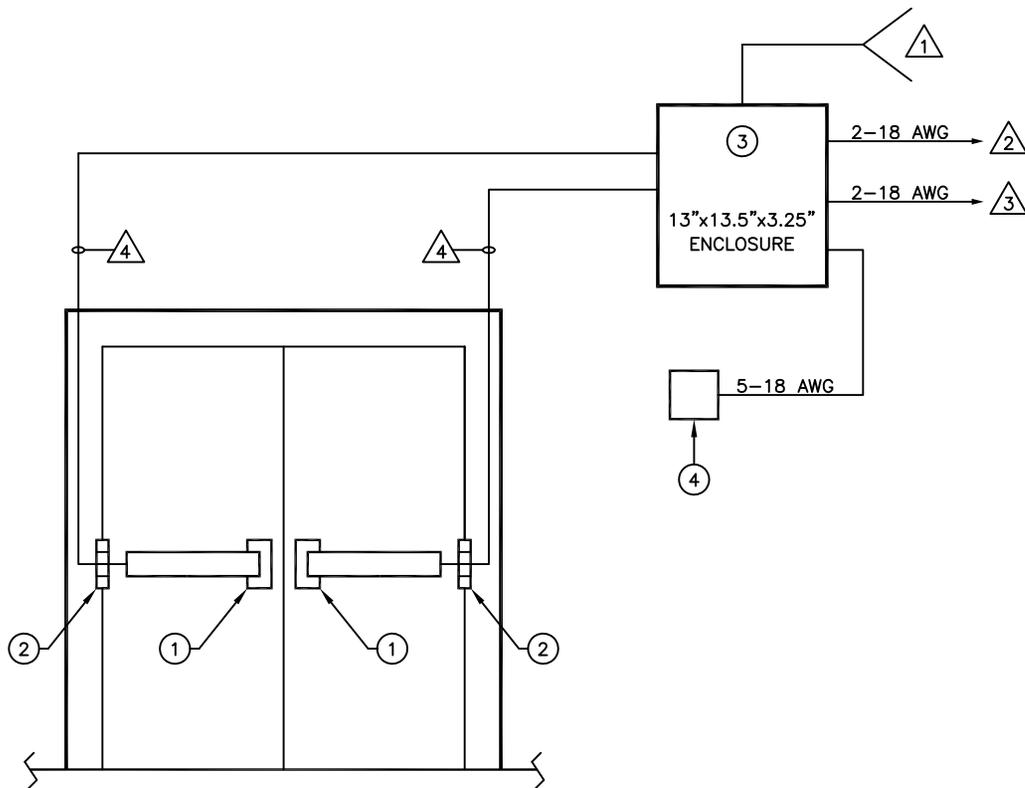


POINT-TO-POINT WIRING DIAGRAM  
 STANDARD ACCESS CONTROL WITH MAINTAINED ELECTRIC  
 LATCH RETRACTION, OR MOMENTARY RETRACTION BY  
 CONTROL DEVICES WITH BUILT-IN TIME DELAY, USING  
 SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

NOTES:

- 1 LATCHBOLTS ARE PROJECTED WITH SWITCH IN OPEN POSITION, AS SHOWN. CLOSING SWITCH CONTACTS WILL RETRACT LATCHBOLTS.
- 2 A FIRE ALARM CONDITION WILL IMMEDIATELY PROJECT THE LATCHBOLTS WHEN CURRENTLY RETRACTED.
- 3 IF FIRE ALARM IS NOT REQUIRED, CONNECT A WIRE BETWEEN THE COIL NEGATIVE (-) OF RELAY RM AND THE AUXILIARY OUTPUT NEGATIVE (-) TERMINAL (SHOWN AS DOTTED LINE).

 <b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°		+.007 DRILL -.001 +.001 REAM -.000 +.004 PUNCH -.001		
	DESCRIPTION ACSI P/N 1452 ELR ACCESS CONTROL	DRAWING NO. REF 6040-P1	MATERIAL (Crossed out)	DATE 2/12/15	REV. RELEASED
			SCALE <i>TL</i>	DRAWN BY CRH	DATE 2/12/15
			SHEET 1 OF 1	APPRV. BY CRH	DATE 2/12/15
<b>DO NOT SCALE THIS DRAWING</b>					



**NOTES:**

- ① TO 115V., 60HZ., 15A SERVICE.
- ② TO N.C. FIRE ALARM, IF REQUIRED.
- ③ TO A MOMENTARY PUSHBUTTON OR KEY SWITCH FOR TIMED MOMENTARY DOOR CONTROL USING THE TM TIMER MODULE'S FIELD-ADJUSTABLE TIME DELAY.
- ④ 

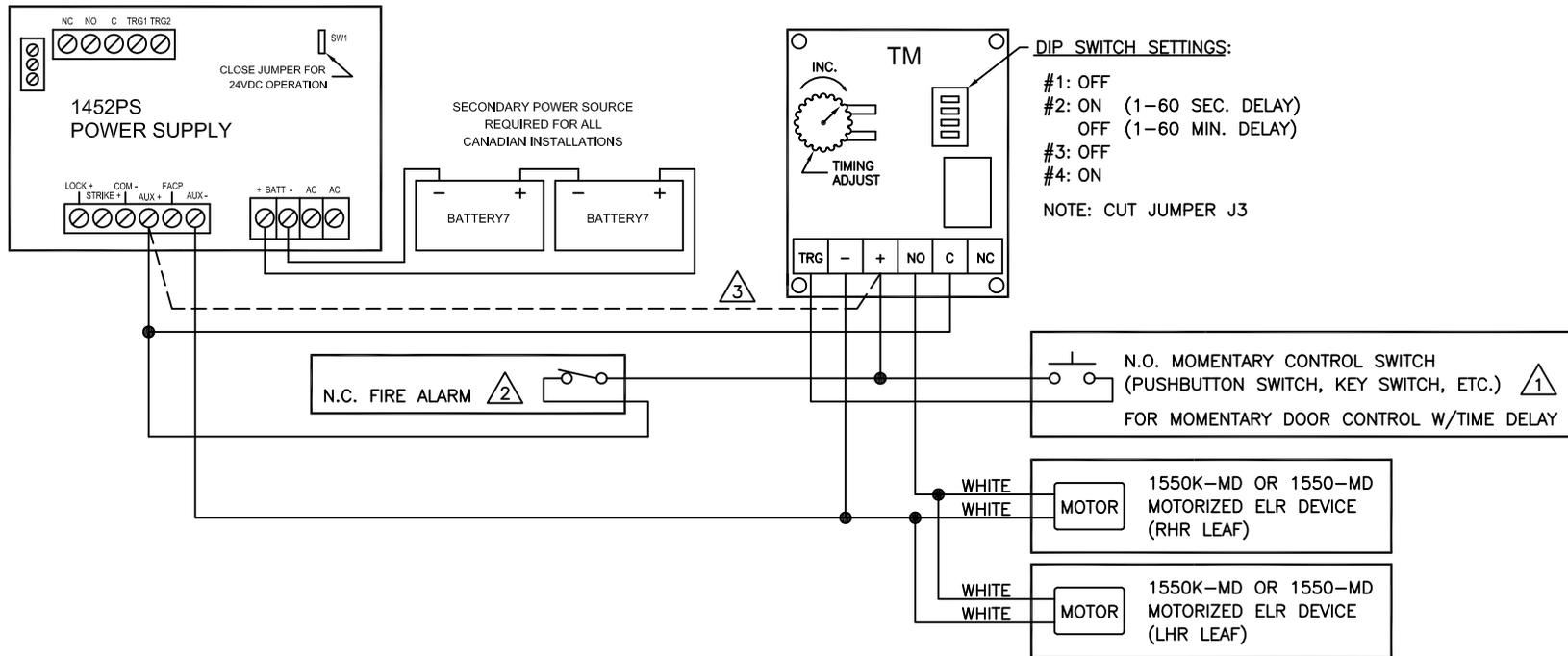
WIRE GAUGE	MAX. LENGTH 2-COND. CABLE
22 AWG	70 FEET
20 AWG	110 FEET
18 AWG	180 FEET
16 AWG	280 FEET
14 AWG	450 FEET
12 AWG	720 FEET

RISER DIAGRAM FOR STANDARD ACCESS CONTROL WITH FIELD-ADJUSTBLE TIME DELAY USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

**ACSI SUPPLIED EQUIPMENT:**

- ① SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELECTRIC LATCH RETRACTION
- ② SERIES 1100 POWER TRANSFER HINGE
- ③ 1452PS POWER SUPPLY
- ④ TM TIMER MODULE  
NOTE: DO NOT LOCATE MORE THAN 10 FT. FROM POWER SUPPLY

 <b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°	DRILL +.007 -.001 REAM +.001 -.000 PUNCH +.004 -.001	8/23/16	A	CRH
			2/12/15	RELEASED	CRH
DESCRIPTION			DATE	REV.	APPRV.
ACSI P/N 1452-TD ELR ACCESS CONTROL			SCALE <i>TL</i>	DRAWN BY CRH	DATE 2/12/15
DRAWING NO.			SHEET 1 OF 1	APPRV. BY CRH	DATE 2/12/15
REF 6040-R2			<b>DO NOT SCALE THIS DRAWING</b>		

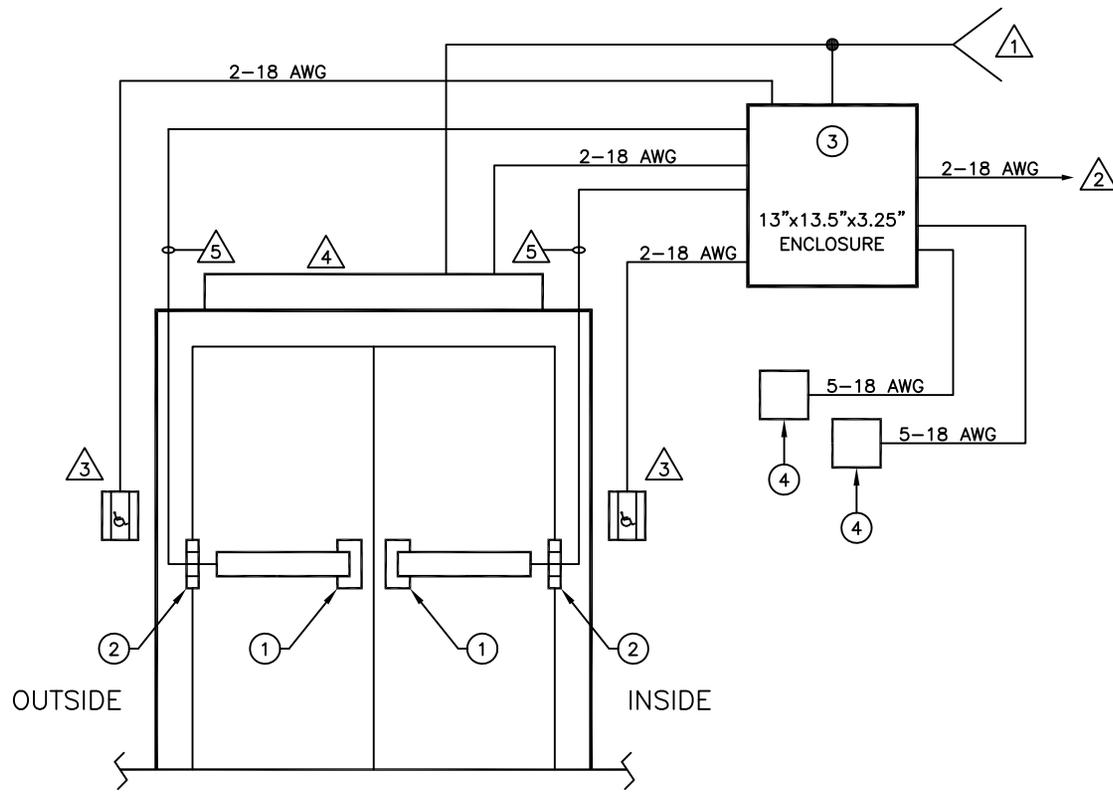


POINT-TO-POINT WIRING DIAGRAM  
STANDARD ACCESS CONTROL WITH  
FIELD-ADJUSTABLE TIME DELAY USING SERIES  
1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

NOTES:

- 1 LATCHBOLTS ARE NORMALLY PROJECTED. A MOMENTARY CLOSURE OF SWITCH CONTACTS WILL RETRACT LATCHBOLTS. DEVICES' LATCHBOLT WILL REMAIN RETRACTED FOR PERIOD OF TIME AS DETERMINED BY SETTING OF ADJUSTMENT WHEEL ON TM TIMER MODULE AND TIME RANGE DIP SWITCH SETTING (SECONDS OR MINUTES). LATCHBOLTS PROJECT AFTER DELAY PERIOD TIMES OUT.
- 2 A FIRE ALARM CONDITION WILL IMMEDIATELY PROJECT LATCHBOLTS (WHEN CURRENTLY RETRACTED) AND RESET TIMER MODULE.
- 3 IF FIRE ALARM IS NOT REQUIRED, CONNECT A WIRE BETWEEN THE POSITIVE (+) TERMINAL OF TIMER TM AND THE AUXILIARY OUTPUT POSITIVE (+) TERMINAL (SHOWN AS DOTTED LINE).

<b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°		+.007 DRILL -.001 +.001 REAM -.000 +.004 PUNCH -.001			
	DESCRIPTION ACSI P/N 1452-TD ELR ACCESS CONTROL	DRAWING NO. REF 6040-P2	MATERIAL			
			DATE 2/12/15	REV. RELEASED	APPRV. CRH	
			SCALE N	DRAWN BY CRH	DATE 2/12/15	
			SHEET 1 OF 1	APPRV. BY CRH	DATE 2/12/15	
DO NOT SCALE THIS DRAWING						



**NOTES:**

- ① TO 115V., 60HZ., 15A SERVICE.
- ② TO N.C. FIRE ALARM, IF REQUIRED.
- ③ WALL SWITCH
- ④ AUTOMATIC DOOR OPERATOR
- ⑤ 

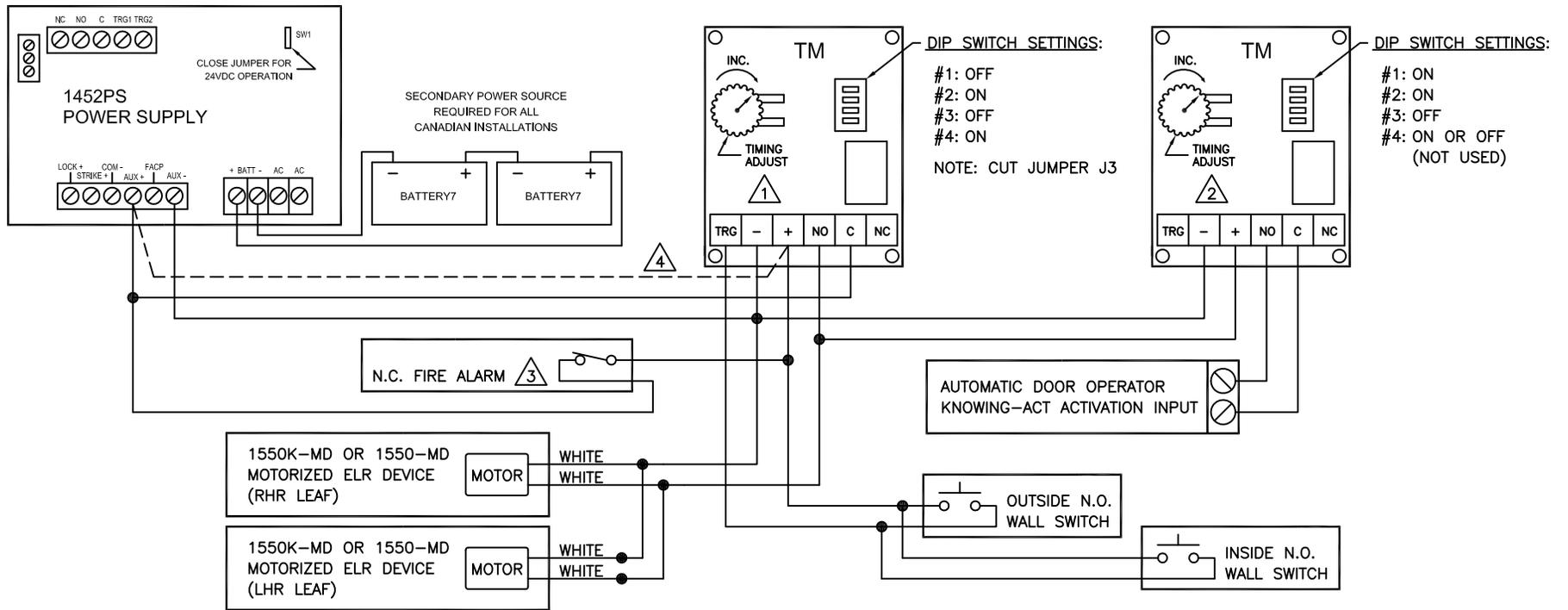
WIRE GAUGE	MAX. LENGTH 2-COND. CABLE
22 AWG	70 FEET
20 AWG	110 FEET
18 AWG	180 FEET
16 AWG	280 FEET
14 AWG	450 FEET
12 AWG	720 FEET

**RISER DIAGRAM FOR STANDARD AUTOMATED  
DOOR OPENING SYSTEM APPLICATION USING SERIES  
1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES**

**ACSI SUPPLIED EQUIPMENT:**

- ① SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELECTRIC LATCH RETRACTION
- ② SERIES 1100 POWER TRANSFER HINGE
- ③ 1452PS POWER SUPPLY
- ④ TM TIMER MODULE  
NOTE: DO NOT LOCATE MORE THAN 10 FT. FROM POWER SUPPLY

 <b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°	DRILL +.007 -.001 REAM +.001 -.000 PUNCH +.004 -.001	8/23/16	A	CRH
			2/12/15	RELEASED	CRH
DESCRIPTION			DATE	REV.	APPRV.
ACSI P/N 1452-AO ELR ACCESS CONTROL			SCALE <i>TL</i>	DRAWN BY CRH	DATE 2/12/15
DRAWING NO.			SHEET 1 OF 1	APPRV. BY CRH	DATE 2/12/15
REF 6040-R3			<b>DO NOT SCALE THIS DRAWING</b>		



**SYSTEM OPERATION:**

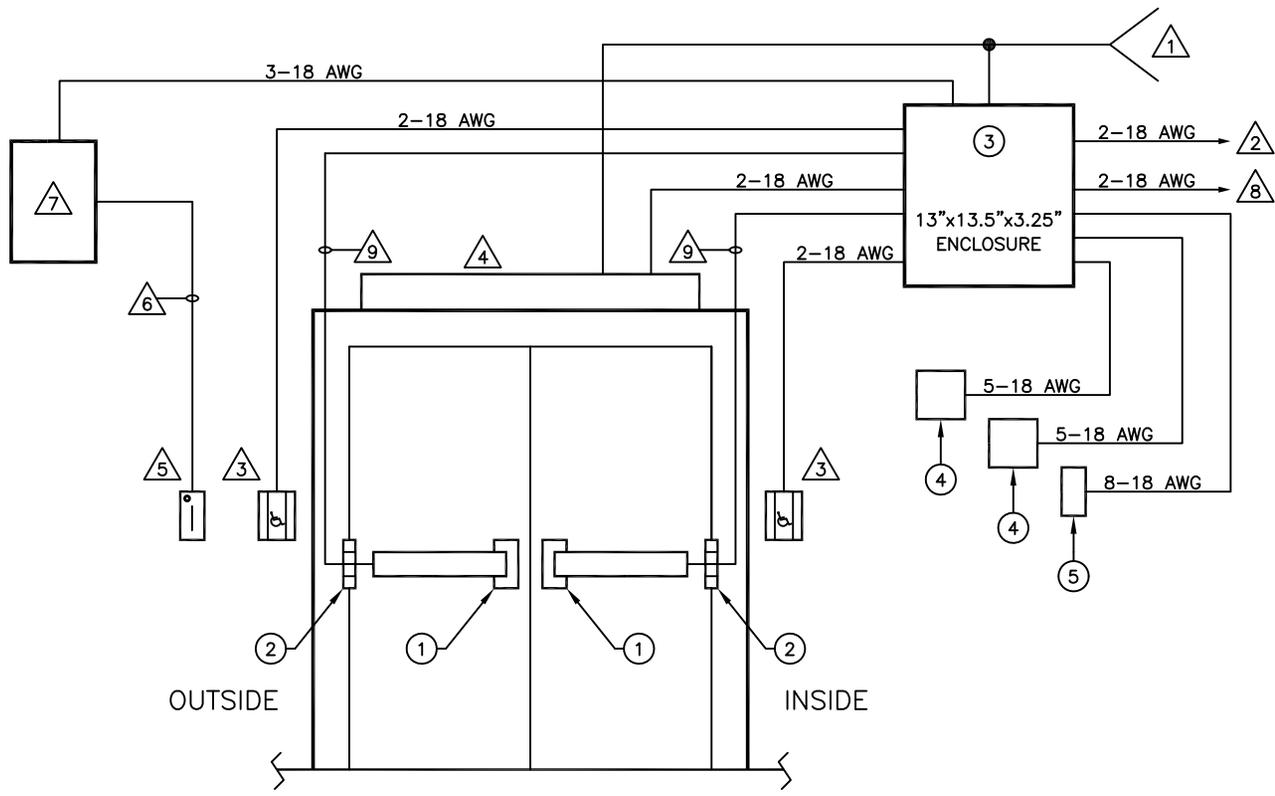
OUTSIDE OR INSIDE WALL SWITCH SEQUENTIALLY RETRACTS LATCHBOLTS AND ACTIVATES AUTOMATIC DOOR OPERATOR.

**NOTES:**

- 1 ADJUST LATCH RETRACTION DELAY TIMER FOR 3-5 SEC. TO ENSURE LATCHBOLTS ARE FULLY RETRACTED BEFORE AUTO OPERATOR OPENS DOOR LEAVES, AND TO ENSURE THEY WILL LATCH WHEN THEY CLOSE.
- 2 ADJUST AUTO OPERATOR DELAY-BEFORE-ACTIVATE TIMER FOR 1-2 SEC. TO ALLOW ENOUGH TIME FOR LATCHBOLTS TO FULLY RETRACT BEFORE OPERATOR IS ACTIVATED. NOTE: THE "TRG" TERMINAL IS NOT USED WITH THIS TIMER.
- 3 A FIRE ALARM CONDITION WILL IMMEDIATELY PROJECT LATCHBOLTS (WHEN CURRENTLY RETRACTED), DISABLE USE OF WALL SWITCHES AND RESET TIMER MODULES.
- 4 IF FIRE ALARM IS NOT REQUIRED, CONNECT A WIRE BETWEEN THE POSITIVE (+) TERMINAL OF LATCH RETRACTION DELAY TIMER TM AND THE AUXILIARY OUTPUT POSITIVE (+) TERMINAL (SHOWN AS DOTTED LINE).

POINT-TO-POINT WIRING DIAGRAM  
 STANDARD ACCESS CONTROL WITH AUTOMATIC DOOR OPERATOR  
 USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

 <b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°		+.007 DRILL -.001 +.001 REAM -.000 +.004 PUNCH -.001		
	<b>DESCRIPTION</b> ACSI P/N 1452-AO ELR ACCESS CONTROL	<b>DRAWING NO.</b> REF 6040-P3	<b>MATERIAL</b>		
			2/12/15 DATE	RELEASED REV.	CRH APPRV.
			SCALE <i>N</i> SHEET 1 OF 1	DRAWN BY CRH APPRV. BY CRH	DATE 2/12/15 DATE 2/12/15
<b>DO NOT SCALE THIS DRAWING</b>					



**NOTES:**

- ① TO 115V., 60HZ., 15A SERVICE.
- ② TO N.C. FIRE ALARM, IF REQUIRED.
- ③ WALL SWITCH
- ④ AUTOMATIC DOOR OPERATOR
- ⑤ CARD READER UNIT
- ⑥ CARD READER POWER/DATA CABLE
- ⑦ CARD ACCESS CONTROL UNIT CONTAINING DOOR CONTROL RELAY RESPONDING TO CARD READER SWIPE FOR MOMENTARY AUTHORIZED ENTRY (NIGHT MODE)
- ⑧ ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT (TIME CLOCK, COMPUTER-CONTROLLED TIME SCHEDULE, ETC.)
- ⑨ 

WIRE GAUGE	MAX. LENGTH 2-COND. CABLE
22 AWG	70 FEET
20 AWG	110 FEET
18 AWG	180 FEET
16 AWG	280 FEET
14 AWG	450 FEET
12 AWG	720 FEET

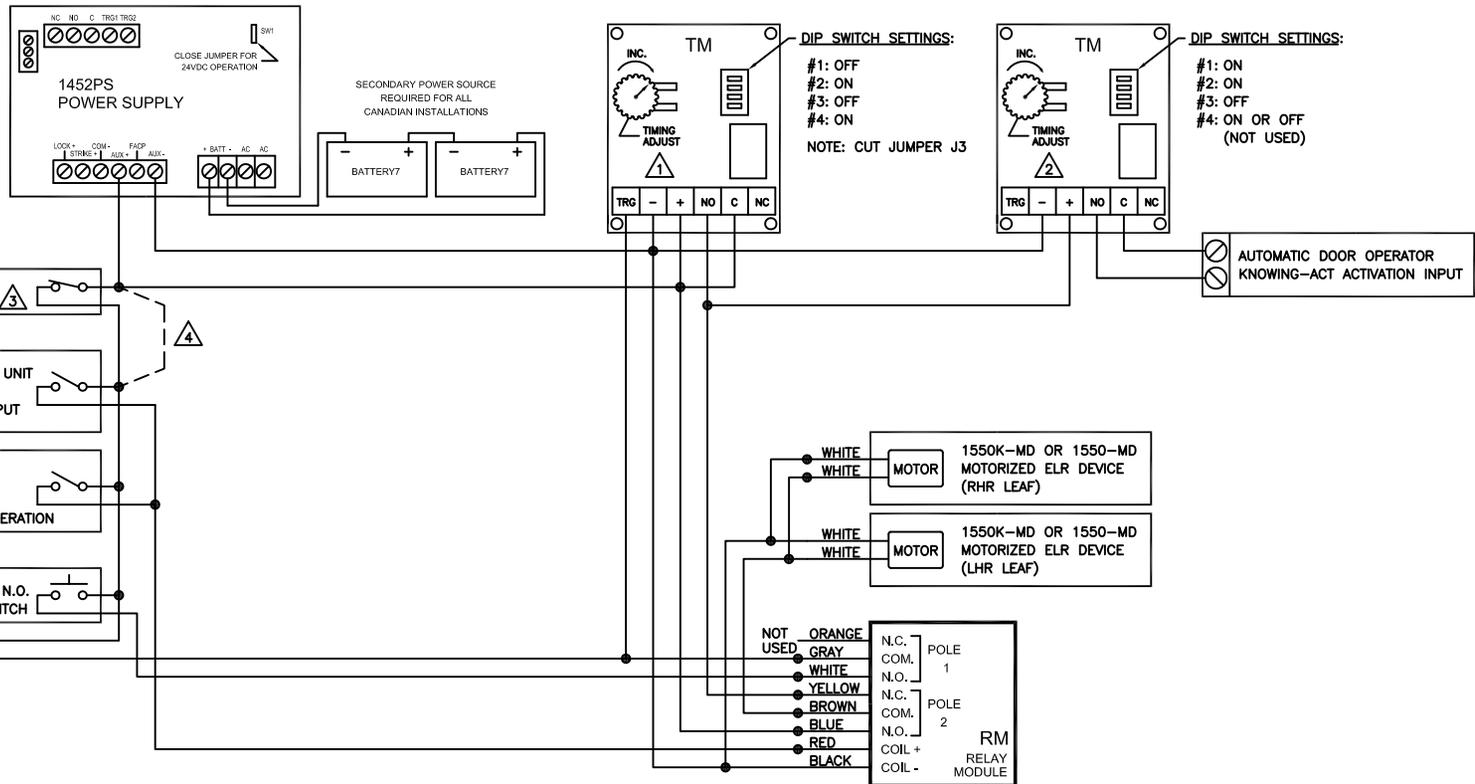
**RISER DIAGRAM FOR DAY/NIGHT AUTOMATED  
DOOR OPENING SYSTEM APPLICATION USING SERIES  
1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES**

ACSI SUPPLIED EQUIPMENT:

- ① SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELECTRIC LATCH RETRACTION
- ② SERIES 1100 POWER TRANSFER HINGE
- ③ 1452PS POWER SUPPLY
- ④ TM TIMER MODULE\*
- ⑤ RM RELAY MODULE\*

\*DO NOT LOCATE MORE THAN 10 FT. FROM POWER SUPPLY

 <b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION ±1/64 DECIMAL ±.005 ANGULAR ±1°	DRILL +.007 -.001 REAM +.001 -.000 PUNCH +.004 -.001	8/23/16	A	CRH
			2/12/15	RELEASED	CRH
DESCRIPTION			DATE	REV.	APPRV.
ACSI P/N 1452-DN ELR ACCESS CONTROL			SCALE <i>N</i>	DRAWN BY CRH	DATE 2/12/15
DRAWING NO.			SHEET 1 OF 1	APPRV. BY CRH	DATE 2/12/15
REF 6040-R4			<b>DO NOT SCALE THIS DRAWING</b>		



**SYSTEM OPERATION:**

WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR DAY OPERATION (DRY CONTACTS CLOSED), THE LATCHBOLTS WILL RETRACT. PUSHING THE OUTSIDE OR INSIDE WALL SWITCH WILL ACTIVATE THE AUTOMATIC DOOR OPERATOR.

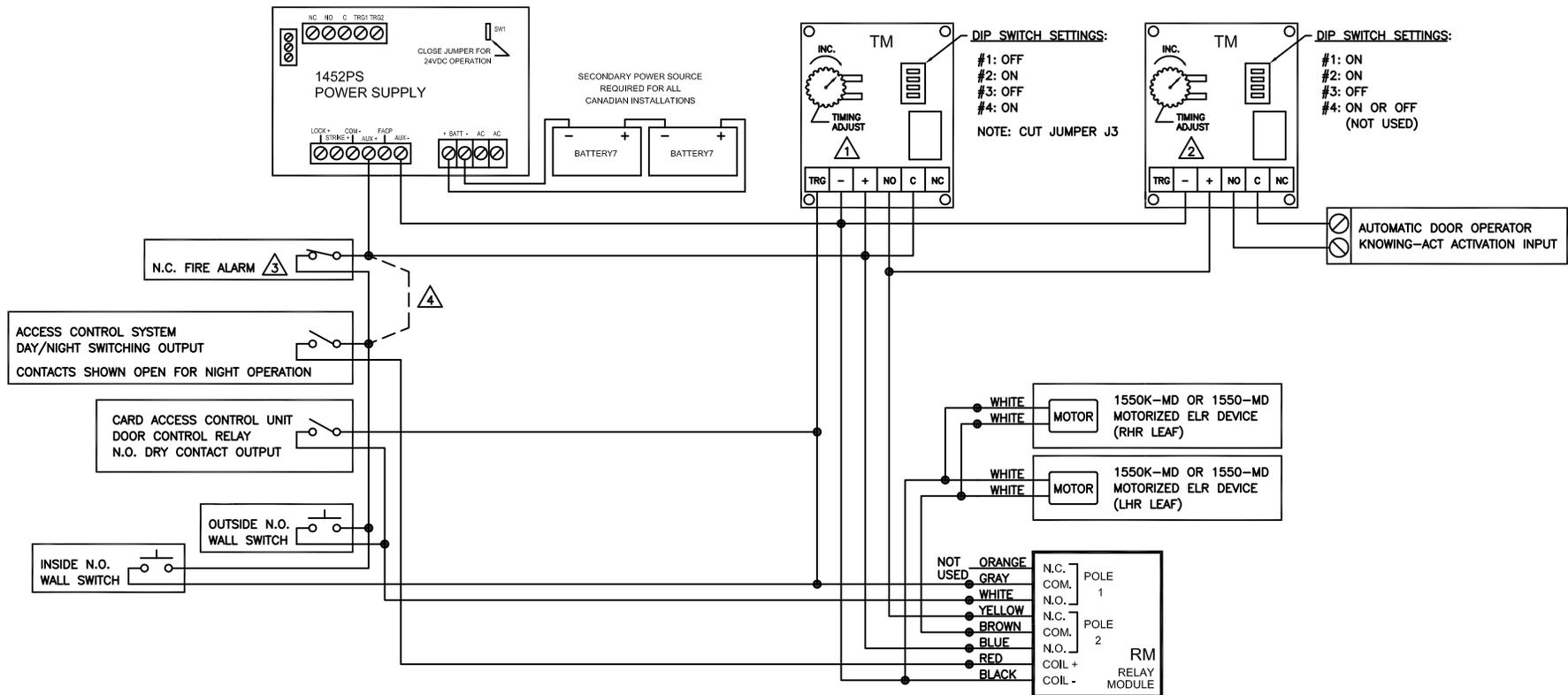
WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR NIGHT OPERATION (DRY CONTACTS OPEN), THE LATCHBOLTS WILL PROJECT AND THE OUTSIDE WALL SWITCH BECOMES DISABLED. A VALID SWIPE FROM THE CARD READER WILL TEMPORARILY RETRACT THE LATCHBOLTS. WHILE THE CARD READER IS IN ITS ACTIVATED STATE, THE OUTSIDE WALL SWITCH IS ENABLED FOR ACTIVATING THE AUTOMATIC DOOR OPERATOR. THE INSIDE WALL SWITCH IS ALWAYS ENABLED IN NIGHT MODE AND WILL SEQUENTIALLY RETRACT THE LATCHBOLTS AND ACTIVATE THE AUTOMATIC DOOR OPERATOR.

**NOTES:**

- 1. ADJUST LATCH RETRACTION DELAY TIMER FOR 3-5 SEC. TO ENSURE LATCHBOLTS ARE FULLY RETRACTED BEFORE AUTO OPERATOR OPENS DOOR LEAVES, AND TO ENSURE THEY WILL LATCH WHEN THEY CLOSE.
- 2. ADJUST AUTO OPERATOR DELAY-BEFORE-ACTIVATE TIMER FOR 1-2 SEC. TO ALLOW ENOUGH TIME FOR LATCHBOLTS TO FULLY RETRACT BEFORE OPERATOR IS ACTIVATED. NOTE: THE "TRG" TERMINAL IS NOT USED WITH THIS TIMER.
- 3. A FIRE ALARM CONDITION OCCURRING WHILE IN DAY MODE WILL IMMEDIATELY PROJECT LATCHBOLTS AND DISABLE USE OF OUTSIDE AND INSIDE WALL SWITCHES. WHEN A FIRE ALARM CONDITION OCCURS IN NIGHT MODE, LATCHBOLTS WILL REMAIN PROJECTED, AND BOTH OUTSIDE AND INSIDE WALL SWITCHES WILL BECOME DISABLED. NOTE: IF A FIRE ALARM OCCURS AT THE BEGINNING OF A DOOR OPEN CYCLE, THE SYSTEM APPLICATION WILL ALLOW THE OPENING CYCLE TO BE COMPLETED BEFORE DISABLING LATCH RETRACTION AND USE OF BOTH WALL SWITCHES.
- 4. IF FIRE ALARM IS NOT REQUIRED, CONNECT ONE SIDE OF THE CARD ACCESS RELAY OUTPUT, ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT, OUTSIDE WALL SWITCH AND INSIDE WALL SWITCH (ALL SHOWN BUSSED TOGETHER) TO THE AUXILIARY OUTPUT POSITIVE (+) TERMINAL (SHOWN AS DOTTED LINE).

POINT-TO-POINT WIRING DIAGRAM  
 DAY/NIGHT APPLICATION - VARIATION #1  
 USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

<b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION 1/64 DRILL ±.001 DECIMAL ±.008 REAM ±.001 ANGULAR ±1° PUNCH ±.004					
	DESCRIPTION	DRAWING NO.	MATERIAL	SCALE	DRAWN BY	DATE
	ACSI P/N 1452-DN ELR ACCESS CONTROL	REF 6040-P4-1		1/1	CRH	2/12/15
				SHEET 1 OF 1	APPR. BY	DATE
			DO NOT SCALE THIS DRAWING			



**SYSTEM OPERATION:**

WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR DAY OPERATION (DRY CONTACTS CLOSED), THE LATCHBOLTS WILL RETRACT. PUSHING THE OUTSIDE OR INSIDE WALL SWITCH WILL ACTIVATE THE AUTOMATIC DOOR OPERATOR.

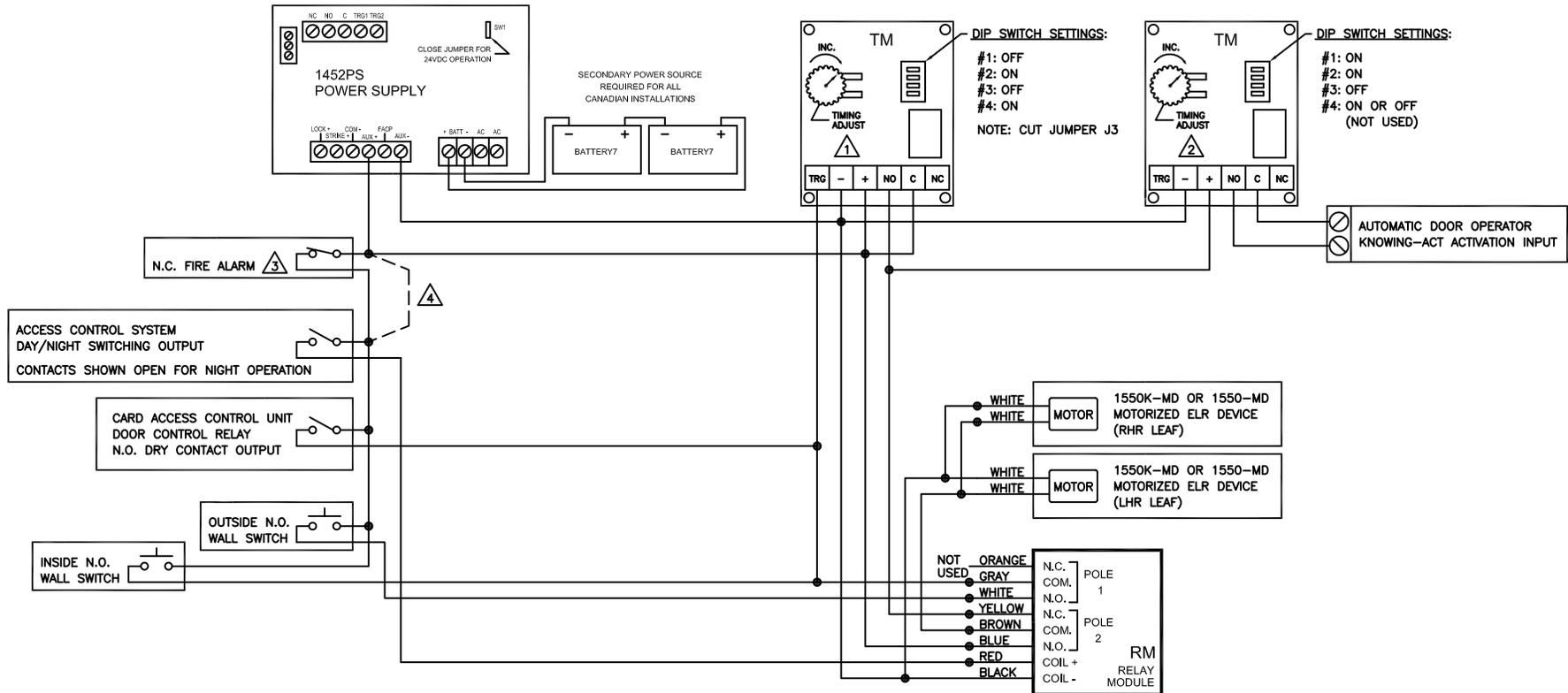
WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR NIGHT OPERATION (DRY CONTACTS OPEN), THE LATCHBOLTS WILL PROJECT AND THE OUTSIDE WALL SWITCH BECOMES DISABLED. A VALID SWIPE FROM THE CARD READER WILL TEMPORARILY ENABLE THE OUTSIDE WALL SWITCH TO SEQUENTIALLY RETRACT THE LATCHBOLTS AND ACTIVATE THE AUTOMATIC DOOR OPERATOR. THE INSIDE WALL SWITCH IS ALWAYS ENABLED IN NIGHT MODE AND WILL SEQUENTIALLY RETRACT THE LATCHBOLTS AND ACTIVATE THE AUTOMATIC DOOR OPERATOR.

**NOTES:**

- 1. ADJUST LATCH RETRACTION DELAY TIMER FOR 3-5 SEC. TO ENSURE LATCHBOLTS ARE FULLY RETRACTED BEFORE AUTO OPERATOR OPENS DOOR LEAVES, AND TO ENSURE THEY WILL LATCH WHEN THEY CLOSE.
- 2. ADJUST AUTO OPERATOR DELAY-BEFORE-ACTIVATE TIMER FOR 1-2 SEC. TO ALLOW ENOUGH TIME FOR LATCHBOLTS TO FULLY RETRACT BEFORE OPERATOR IS ACTIVATED. NOTE: THE "TRG" TERMINAL IS NOT USED WITH THIS TIMER.
- 3. A FIRE ALARM CONDITION OCCURRING WHILE IN DAY MODE WILL IMMEDIATELY PROJECT LATCHBOLTS AND DISABLE USE OF OUTSIDE AND INSIDE WALL SWITCHES. WHEN A FIRE ALARM CONDITION OCCURS IN NIGHT MODE, LATCHBOLTS WILL REMAIN PROJECTED, AND BOTH OUTSIDE AND INSIDE WALL SWITCHES WILL BECOME DISABLED. NOTE: IF A FIRE ALARM OCCURS AT THE BEGINNING OF A DOOR OPEN CYCLE, THE SYSTEM APPLICATION WILL ALLOW THE OPENING CYCLE TO BE COMPLETED BEFORE DISABLING LATCH RETRACTION AND USE OF BOTH WALL SWITCHES.
- 4. IF FIRE ALARM IS NOT REQUIRED, CONNECT ONE SIDE OF THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT, OUTSIDE WALL SWITCH AND INSIDE WALL SWITCH (ALL SHOWN BUSSED TOGETHER) TO THE AUXILIARY OUTPUT POSITIVE (+) TERMINAL (SHOWN AS DOTTED LINE).

POINT-TO-POINT WIRING DIAGRAM  
 DAY/NIGHT APPLICATION - VARIATION #2  
 USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

<b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION 1/64 DRILL -.001 DECIMAL & .008 REAM +.001 ANGULAR ±1° PUNCH -.001				
	DESCRIPTION AC SI P/N 1452-DN ELR ACCESS CONTROL	DRAWING NO. REF 6040-P4-2	MATERIAL	DATE 2/13/15	RELEASED CRH
SCALE 1/4" = 1" SHEET 1 OF 1			DRAWN BY CRH	DATE 2/13/15	DO NOT SCALE THIS DRAWING



**SYSTEM OPERATION:**

WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR DAY OPERATION (DRY CONTACTS CLOSED), THE LATCHBOLTS WILL RETRACT. PUSHING THE OUTSIDE OR INSIDE WALL SWITCH WILL ACTIVATE THE AUTOMATIC DOOR OPERATOR.

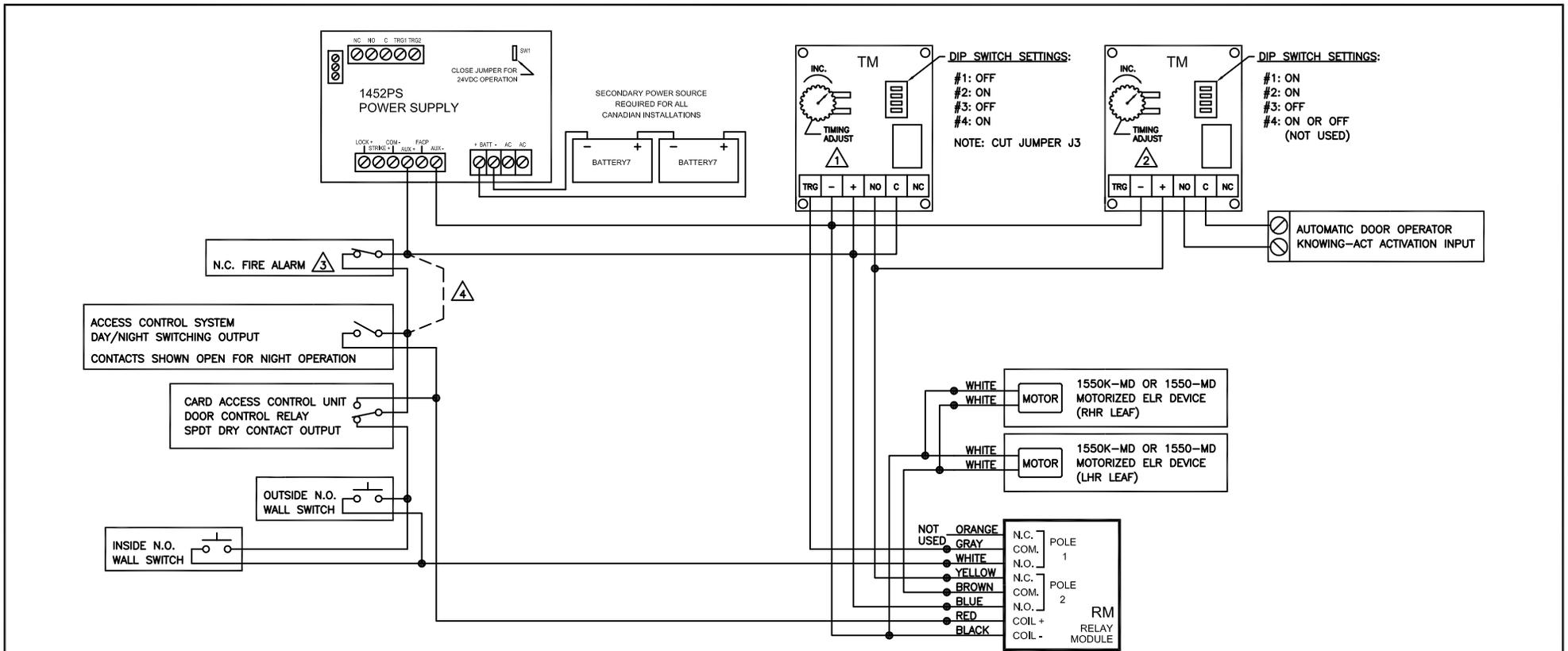
WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR NIGHT OPERATION (DRY CONTACTS OPEN), THE LATCHBOLTS WILL PROJECT AND THE OUTSIDE WALL SWITCH BECOMES DISABLED. A VALID SWIPE FROM THE CARD READER WILL SEQUENTIALLY RETRACT THE LATCHBOLTS AND ACTIVATE THE AUTOMATIC DOOR OPERATOR. THE INSIDE WALL SWITCH IS ALWAYS ENABLED IN NIGHT MODE AND WILL SEQUENTIALLY RETRACT THE LATCHBOLTS AND ACTIVATE THE AUTOMATIC DOOR OPERATOR.

**NOTES:**

- 1. ADJUST LATCH RETRACTION DELAY TIMER FOR 3-5 SEC. TO ENSURE LATCHBOLTS ARE FULLY RETRACTED BEFORE AUTO OPERATOR OPENS DOOR LEAVES, AND TO ENSURE THEY WILL LATCH WHEN THEY CLOSE.
- 2. ADJUST AUTO OPERATOR DELAY-BEFORE-ACTIVATE TIMER FOR 1-2 SEC. TO ALLOW ENOUGH TIME FOR LATCHBOLTS TO FULLY RETRACT BEFORE OPERATOR IS ACTIVATED. NOTE: THE "TRG" TERMINAL IS NOT USED WITH THIS TIMER.
- 3. A FIRE ALARM CONDITION OCCURRING WHILE IN DAY MODE WILL IMMEDIATELY PROJECT LATCHBOLTS AND DISABLE USE OF OUTSIDE AND INSIDE WALL SWITCHES. WHEN A FIRE ALARM CONDITION OCCURS IN NIGHT MODE, LATCHBOLTS WILL REMAIN PROJECTED, AND BOTH OUTSIDE AND INSIDE WALL SWITCHES WILL BECOME DISABLED. NOTE: IF A FIRE ALARM OCCURS AT THE BEGINNING OF A DOOR OPEN CYCLE, THE SYSTEM APPLICATION WILL ALLOW THE OPENING CYCLE TO BE COMPLETED BEFORE DISABLING LATCH RETRACTION AND USE OF BOTH WALL SWITCHES.
- 4. IF FIRE ALARM IS NOT REQUIRED, CONNECT ONE SIDE OF THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT, CARD ACCESS RELAY OUTPUT, OUTSIDE WALL SWITCH AND INSIDE WALL SWITCH (ALL SHOWN BUSSED TOGETHER) TO THE AUXILIARY OUTPUT POSITIVE (+) TERMINAL (SHOWN AS DOTTED LINE).

POINT-TO-POINT WIRING DIAGRAM  
 DAY/NIGHT APPLICATION - VARIATION #3  
 USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

<b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION 1/64 DECIMAL ± .008 ANGULAR ± °		DRILL +.007 REAM +.001 PUNCH -.004					
	DESCRIPTION ACSE P/N 1452-DN ELR ACCESS CONTROL	DRAWING NO. REF 6040-P4-3	MATERIAL	DATE 2/13/15	REV. RELEASED	APPRV. CRH	SCALE 1/1	DRAWN BY CRH
SHEET 1 OF 1			DO NOT SCALE THIS DRAWING					



**SYSTEM OPERATION:**

WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR DAY OPERATION (DRY CONTACTS CLOSED), THE LATCHBOLTS WILL RETRACT. PUSHING THE OUTSIDE OR INSIDE WALL SWITCH WILL ACTIVATE THE AUTOMATIC DOOR OPERATOR.

WHEN THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT IS SET FOR NIGHT OPERATION (DRY CONTACTS OPEN), THE LATCHBOLTS WILL PROJECT AND BOTH THE OUTSIDE AND INSIDE WALL SWITCHES BECOME DISABLED. A VALID SWIPE FROM THE CARD READER WILL ONLY RETRACT THE LATCHBOLTS. THE DOOR MUST BE PULLED OPEN MANUALLY FOR ENTRY OR PUSHED OPEN MANUALLY FOR EXITING.

**NOTES:**

- 1. ADJUST LATCH RETRACTION DELAY TIMER FOR 3-5 SEC. TO ENSURE LATCHBOLTS ARE FULLY RETRACTED BEFORE AUTO OPERATOR OPENS DOOR LEAVES, AND TO ENSURE THEY WILL LATCH WHEN THEY CLOSE.
- 2. ADJUST AUTO OPERATOR DELAY-BEFORE-ACTIVATE TIMER FOR 1-2 SEC. TO ALLOW ENOUGH TIME FOR LATCHBOLTS TO FULLY RETRACT BEFORE OPERATOR IS ACTIVATED. NOTE: THE "TRG" TERMINAL IS NOT USED WITH THIS TIMER.
- 3. A FIRE ALARM CONDITION OCCURRING WHILE IN DAY MODE WILL IMMEDIATELY PROJECT LATCHBOLTS AND DISABLE USE OF OUTSIDE AND INSIDE WALL SWITCHES. WHEN A FIRE ALARM CONDITION OCCURS IN NIGHT MODE, LATCHBOLTS WILL REMAIN PROJECTED, AND BOTH OUTSIDE AND INSIDE WALL SWITCHES WILL BECOME DISABLED. NOTE: IF A FIRE ALARM OCCURS AT THE BEGINNING OF A DOOR OPEN CYCLE, THE SYSTEM APPLICATION WILL ALLOW THE OPENING CYCLE TO BE COMPLETED BEFORE DISABLING LATCH RETRACTION AND USE OF BOTH WALL SWITCHES.
- 4. IF FIRE ALARM IS NOT REQUIRED, CONNECT ONE SIDE OF THE ACCESS CONTROL SYSTEM DAY/NIGHT SWITCHING OUTPUT AND CARD ACCESS RELAY OUTPUT (BOTH SHOWN BUSSED TOGETHER) TO THE AUXILIARY OUTPUT POSITIVE (+) TERMINAL (SHOWN AS DOTTED LINE).

POINT-TO-POINT WIRING DIAGRAM  
 DAY/NIGHT APPLICATION - VARIATION #4  
 USING SERIES 1550K-MD OR 1550-MD MOTOR DRIVE ELR DEVICES

<b>ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED</b> ST. LOUIS, MISSOURI 1-800-753-5558	TOLERANCES UNLESS NOTED FRACTION 1/64 DRILL ±.001 DECIMAL ±.008 REAM ±.001 ANGULAR ±1° PUNCH ±.004				
	DESCRIPTION ACSI P/N 1452-DN ELR ACCESS CONTROL	DRAWING NO. REF 6040-P4-4	MATERIAL	DATE 2/13/15	RELEASED CRH
SCALE 1/4" = 1" SHEET 1 OF 1			DRAWN BY CRH	DATE 2/13/15	DO NOT SCALE THIS DRAWING



# AL175ULX Access Control Power Supply/Charger

## Overview:

The AL175ULX is a power-limited power supply/charger that will convert 115VAC / 60Hz input into two individually PTC protected auto-resettable 12VDC or 24VDC outputs (see specifications). It is intended for use in applications requiring UL Listing for Access Control System Units (UL 294) and applications requiring an interface with the Fire Alarm Control Panels.

## Specifications:

### Agency Listings:

- UL Listed for Access Control Systems (UL294).  
CUL Listed - CSA Standard C22.2  
No.205-M1983, Signal Equipment.
- MEA - NYC Dept. of Buildings Approved.
- CSFM - California State Fire Marshal Approved.
- Conforms to NFPA 101 life safety codes.



MEA  
Approved



### Battery Backup:

- Maximum charge current: 400mA.
- Automatic switch over to stand-by battery when AC fails.

### Supervision:

- AC fail supervision (form “C” contacts).
- Dry trigger output (form “C” contacts).

### Fire Alarm Interface:

- Dry trigger input.

### Visual Indicators:

- AC input and DC output LED indicators.

### Added Features:

- Includes power supply, transformer, and enclosure.

### Enclosure Dimensions:

13.5” x 13” x 3.25” (342.9mm x 330.2mm x 82.55mm).

### Input:

- Input 115VAC / 60 Hz, 0.6A.

### Output:

- Selectable 12VDC or 24VDC power-limited outputs.
- Class 2 Rated power-limited outputs.
- 1.75A continuous supply current @ 12VDC or 24VDC.
- Filtered and electronically regulated output.
- Short circuit and thermal overload protection.

## Power Supply Output Specifications:

Output VDC	Switch Position	Max. Stand-by Load DC	Max. Alarm Load DC	Battery (optional)
12VDC	SW1 OFF	1.75A	1.75A	12VDC
24VDC	SW1 ON	1.75A	1.75A	24VDC

## Stand-by Specifications:

Output	4 hr. of Stand-by and 5 Minutes of Alarm
12VDC / 7 AH Battery	Stand-by = 1.25A
24VDC / 7 AH Battery	Alarm = 1.25A

## Installation Instructions:

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, and with all local codes and authorities having jurisdiction. Product is intended for indoor use only.

See **Terminal Identification Chart** on Pg. 3 for a description of each terminal function.

1. Mount unit in the desired location. Mark and predrill holes in the wall to line up with the top two keyholes in the enclosure. Install two upper fasteners and screws in the wall with the screw heads protruding. Place the enclosure’s upper keyholes over the two upper screws; level and secure. Mark the position of the lower two holes. Remove the enclosure. Drill the lower holes and install two fasteners. Place the enclosure’s upper keyholes over the two upper screws. Install the two lower screws and make sure to tighten all screws (*Enclosure Dimensions, pg. 3*). Secure enclosure to earth ground.

2. Connect AC power to the black and white flying leads of the transformer. Secure green wire lead to earth ground. Use 18 AWG or larger for all power connections (Battery, DC output). Use 22 AWG to 18 AWG for power-limited circuits (trigger inputs, dry outputs).

**Keep power-limited wiring separate from non power-limited wiring (115VAC / 60Hz Input, Battery Wires). Minimum 0.25” spacing must be provided.**

**CAUTION: Do not touch exposed metal parts. Shut branch circuit power before installing or servicing equipment. There are no user serviceable parts inside. Refer installation and servicing to qualified service personnel.**

3. Set the AL175ULX to the desired DC output voltage by setting switch SW1 to the appropriate position (refer to **Power Supply Output Specification Table**).
4. Measure output voltage before connecting devices. This helps avoiding potential damage.

5. Connect one (1) 12VDC battery to the terminals marked [+ BAT -] (*Fig. 1, pg. 2*) for 12VDC operation. Use two (2) 12VDC batteries connected in series for 24VDC operation (Battery leads included).  
**Note:** For Access Control applications batteries are optional. When batteries are not used, a loss of AC will result in the loss of output voltage. When the use of stand-by batteries is desired, they must be lead acid or gel type. Use two (2) 12VDC batteries connected in series for 24VDC operation.
6. Connect appropriate signaling notification devices to AC Fail supervisory relay outputs.  
**Note:** To meet UL requirements, AC Supervisory outputs must be connected to the zone of Alarm Control Panel or to visual AC trouble indicator.
7. For Access Control Device & Fire Alarm Interface connections refer to desired *Application Diagrams (pg. 4)* and *Terminal Identification Chart (pg. 3)*.

**Maintenance:**

Unit should be tested at least once a year for the proper operation as follows:

**Output Voltage Test:** Under normal load conditions, the DC output voltage should be checked for proper voltage level (refer to *Power Supply Output Specifications Chart*).

**Battery Test:** Under normal load conditions check that the battery is fully charged, check specified voltage both at battery terminal and at the board terminals marked [- BAT +] to ensure that there is no break in the battery connection wires.

**Note:** Maximum charging current under discharges is 0.40A.

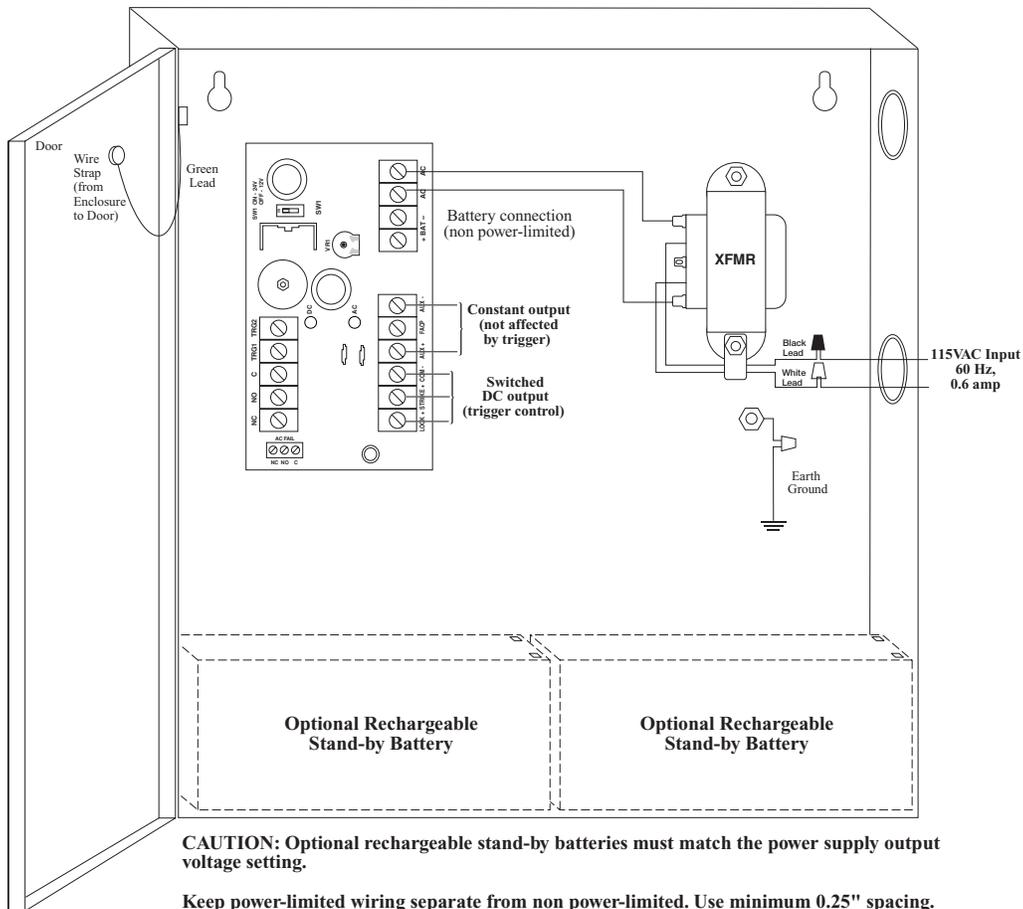
**Note:** Expected battery life is 5 years; however, it is recommended changing batteries in 4 years or less if needed.

**LED Diagnostics:**

Red (DC)	Green (AC)	Power Supply Status
ON	ON	Normal function.
ON	OFF	Loss of AC. Battery backup is powering output.
OFF	ON	No DC output.
OFF	OFF	Loss of AC. Discharged or missing stand-by battery. No DC output.

**CAUTION: De-energize unit prior to servicing. For continued protection against fire hazard replace fuses with the same type and rating. Do not expose to rain or moisture.**

*Fig. 1*

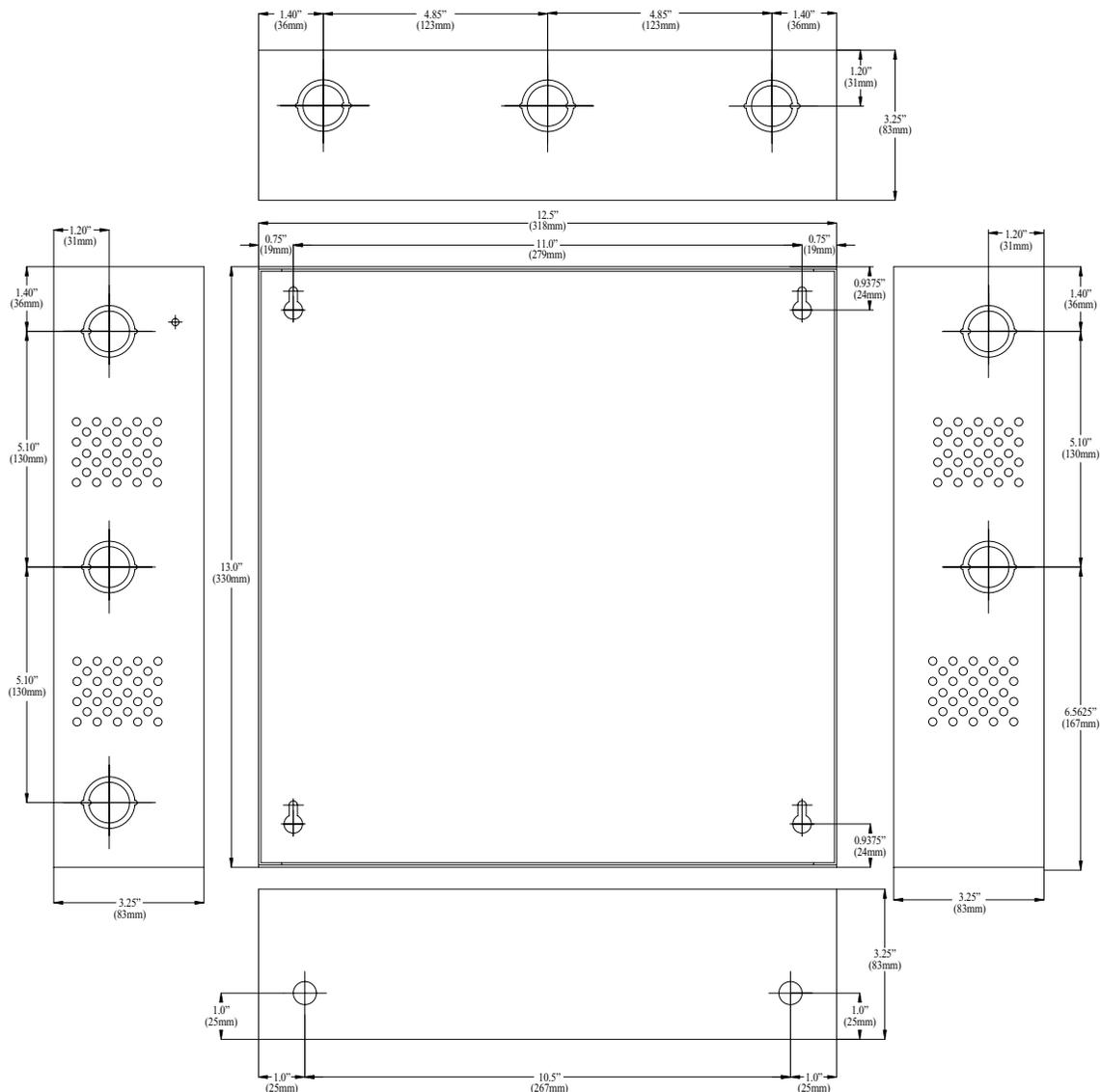


### Terminal Identification:

Terminal Legend	Function/Description
TRG1 and TRG2	These input terminals are designed to connect to the normally closed outputs of an access control or fire alarm relay. These terminals control [LOCK+], and [STRIKE+], as well as AL175ULX output relay contacts [NC, NO, C]
LOCK+	This terminal provides DC output voltage when [TRG1] and [TRG2] are shorted together and are typically used to power Mag Locks.
STRIKE+	This terminal provides DC output voltage when [TRG1] and [TRG2] are unshorted and are typically used to power Electric Strikes.
NC, NO, C	Isolated dry Form "C" contacts. Shorting [TRG1] and [TRG2] together causes these contacts to switch. They are typically used for controlling multiple AL175ULXs with fire alarm tie-in ( <i>Fig. 5 and Fig. 6, pg. 4</i> )
AUX +	Continuous positive (+) DC power output voltage. It is not affected by TRG1, TRG2 operation.
COM -	Common negative (-) output (ground).
FACP	Spare wiring terminal used for fire alarm tie-in application ( <i>Fig. 4, pg. 4</i> ).
+ BAT -	Stand-by battery connections.
AC FAIL NC, C, NO	Indicates loss of AC e.g connect audible device or alarm panel relay normally energized When AC power is present. Contact rating 1A @ 28VDC.

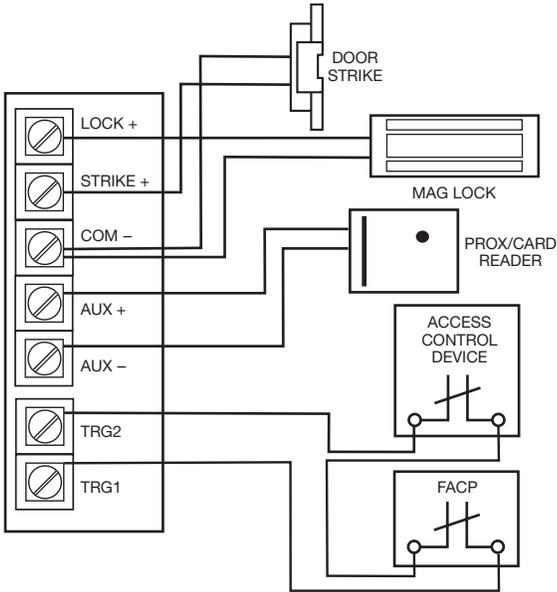
### Enclosure Dimensions:

13.5" x 13" x 3.25" (342.9mm x 330.2mm x 82.55mm)

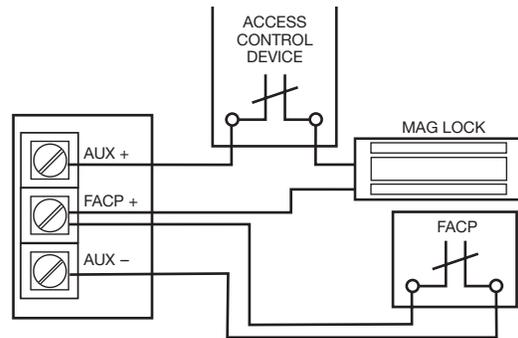


## Typical Application Diagrams:

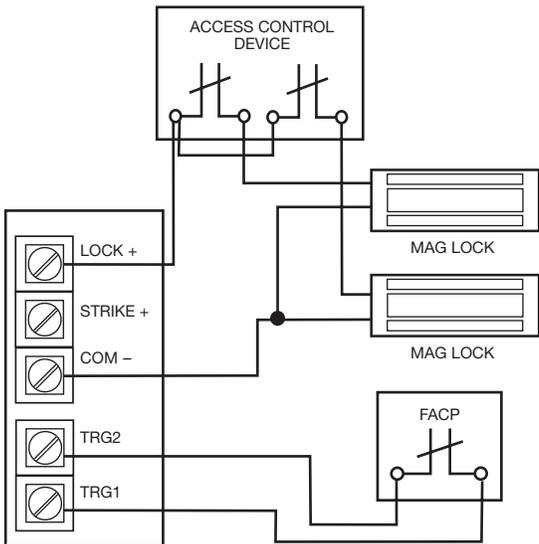
**Fig. 2** Typical single mag lock or door strike installation with fire alarm tie-in using trigger controlled output:



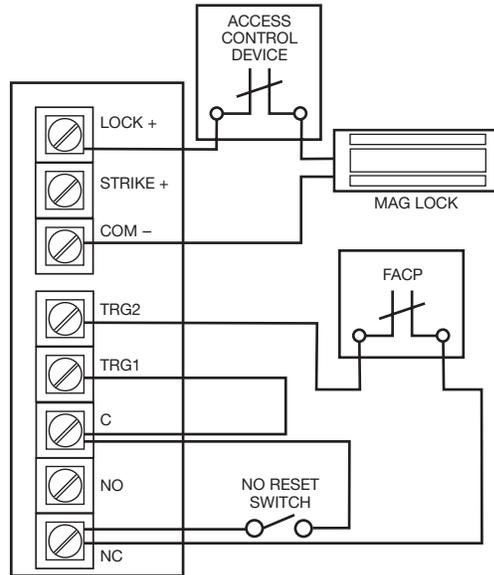
**Fig. 4** Typical mag lock with fire alarm tie-in using aux output installation:



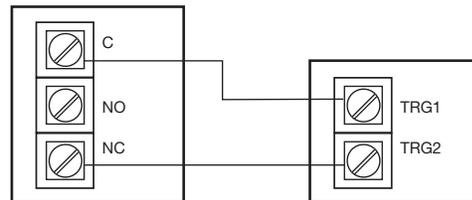
**Fig. 3** Typical dual mag lock installation with fire alarm tie-in using trigger controlled outputs:



**Fig. 5** Latching fire alarm tie-in with manual reset:



**Fig. 6** Multiple AL175ULX power supply connections:



Altronix is not responsible for any typographical errors. Product specifications are subject to change without notice.

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