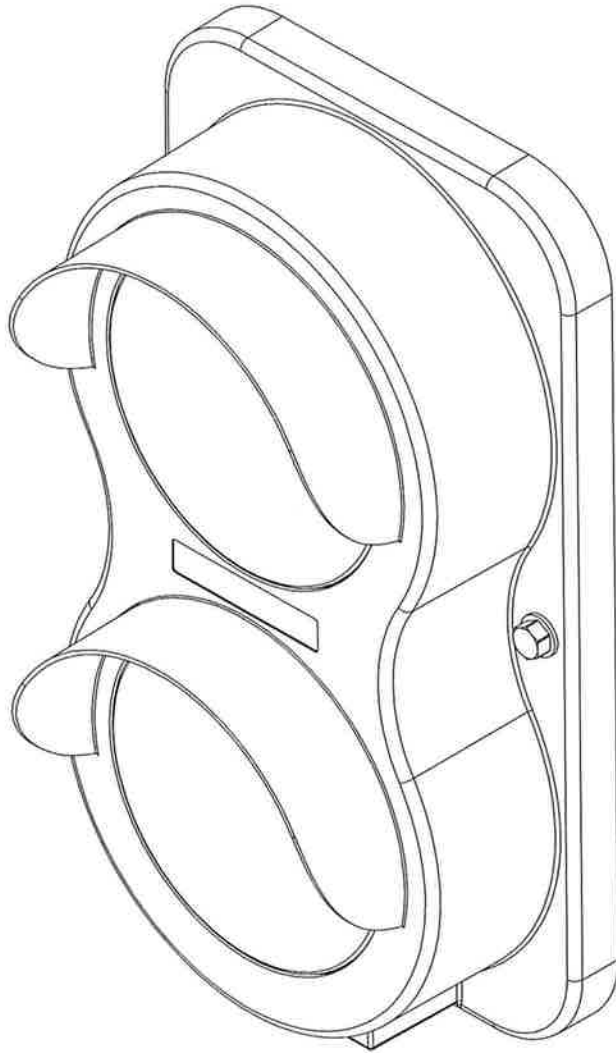


Manual and Automatic Light Communication Systems



This manual applies to MLS/ALS
units manufactured beginning
February 1, 2010.

⚠ WARNING

Do not install, operate or service this product unless you have read and understand the Safety Practices, Warnings, Installation and Operating Instructions contained in this User's Manual. Failure to do so could result in death or serious injury.

User's Manual Installation, Operations, Maintenance and Parts

Part No. 6005099B

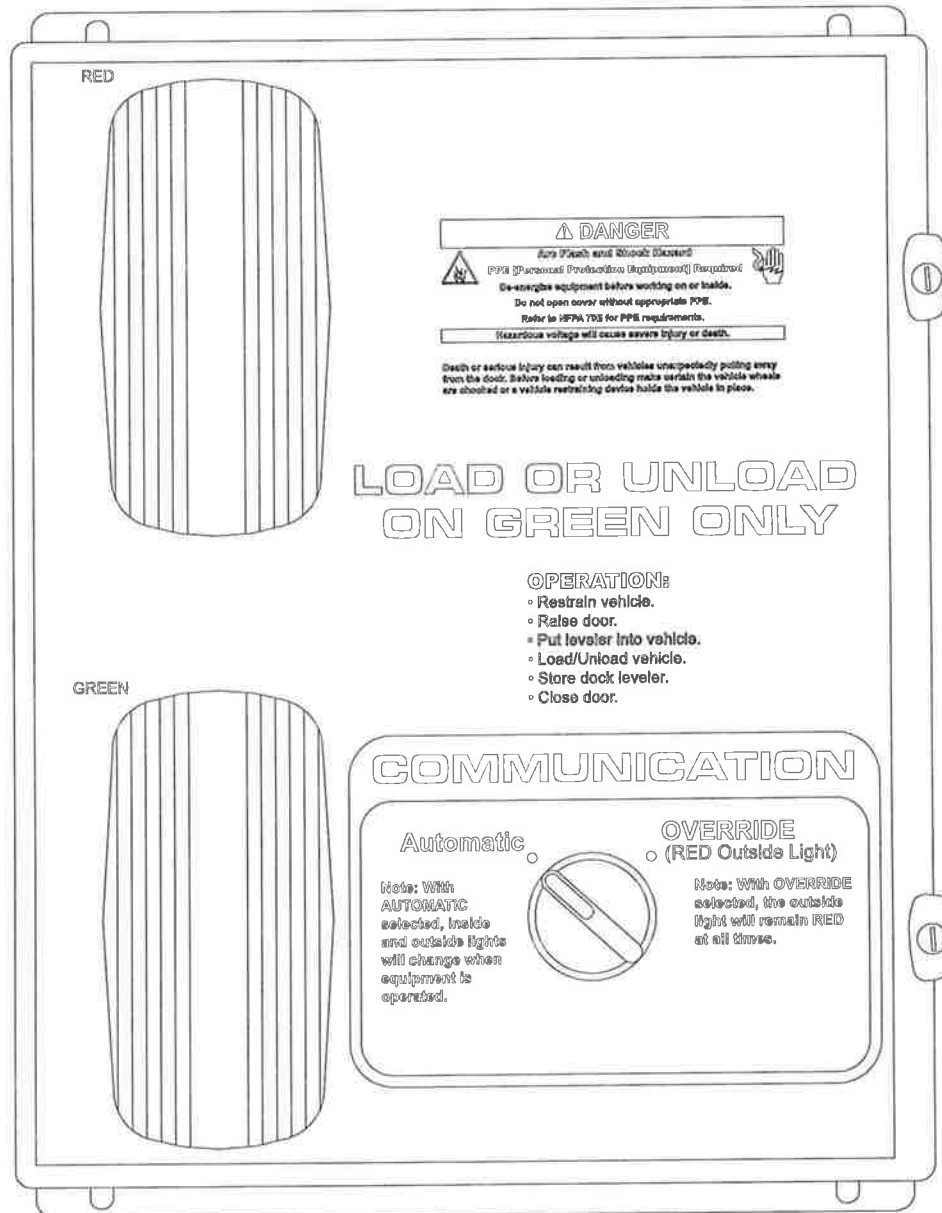
WIRING DIAGRAM — ALS1

ALS1 (SERCO P/N 629730; KELLEY P/N 6010114)

▲ DANGER

Before doing any electrical work, make certain the power is disconnected and properly tagged or locked off. All electrical work must be done by a qualified technician and meet all applicable codes. If it is necessary to make troubleshooting checks inside the control box with the power on, USE EXTREME CAUTION. Do not place your fingers or uninsulated tools inside the control box. Touching wires or other parts inside the control box could result in electrical shock, death or serious injury.

Fig. 10



WIRING DIAGRAM — ALS1, continued

ALS1 (SERCO P/N 629730; KELLEY P/N 6010114)

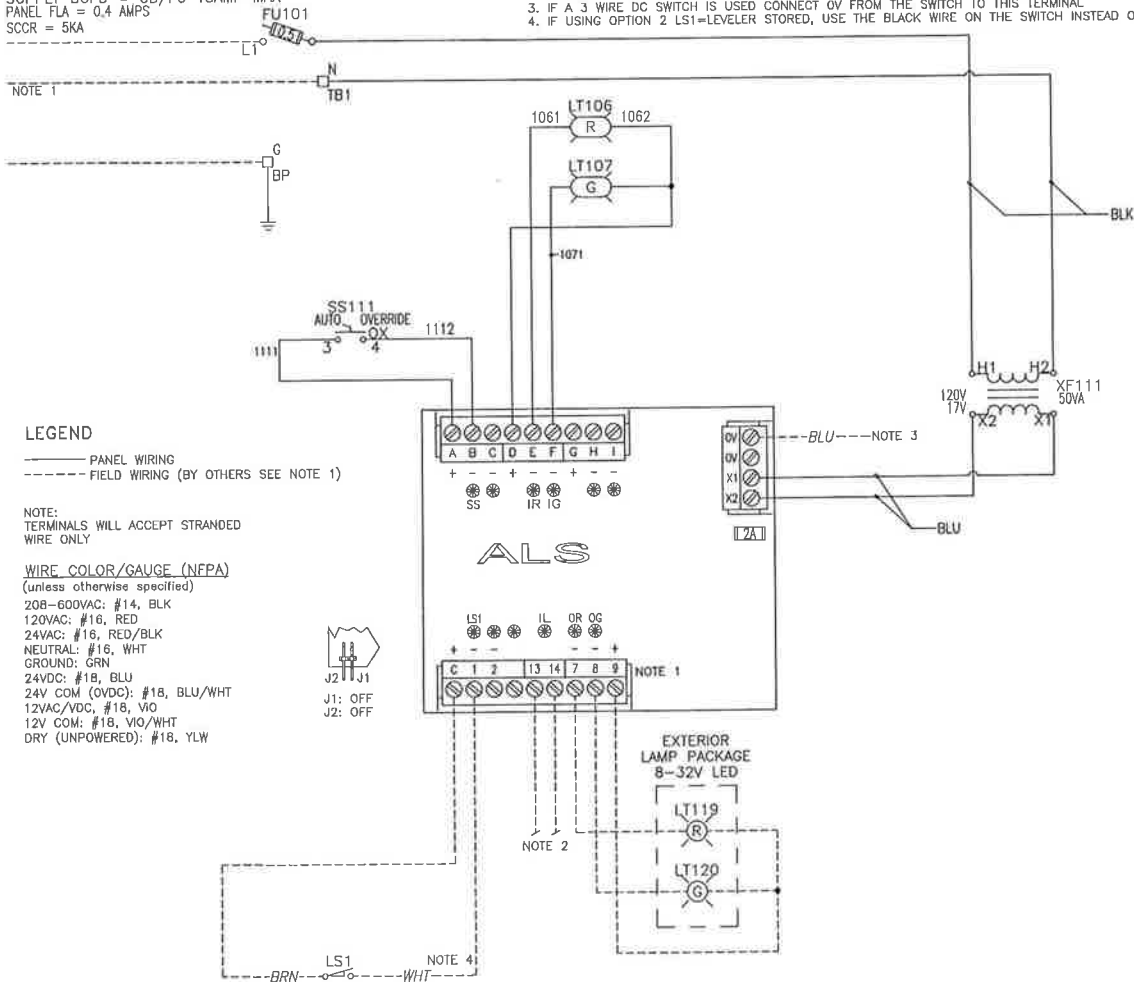
Fig. 11

120V/1PH/60HZ

INCOMING SERVICE TO BE TERMINATED AT DISCONNECT
 CB/FU TO BE SUPPLIED BY OTHERS
 SUPPLY BCPD = CB/FU 15AMP MAX
 PANEL FLA = 0.4 AMPS
 SCCR = 5KA

NOTES:

1. FIELD TERMINAL WIRING: 60 / 75 DEGREE WIRE, MIN 16AWG FOR SIGNAL WIRING, MIN 14AWG FOR INCOMING POWER, SEE CHART IN PANEL FOR TORQUE REQUIREMENTS
2. INTERLOCK 1: TERMINALS 13-14, DRY CONTACT RATED 1/2A @ 24VDC/120VAC MAX. EXTERNAL FUSE REQUIRED. CLOSURES WHEN LS1 CLOSURES OR SWITCHED TO OVERRIDE.
3. IF A 3 WIRE DC SWITCH IS USED CONNECT 0V FROM THE SWITCH TO THIS TERMINAL
4. IF USING OPTION 2 LS1=LEVELER STORED, USE THE BLACK WIRE ON THE SWITCH INSTEAD OF WHITE



LEGEND

- PANEL WIRING
- - - FIELD WIRING (BY OTHERS SEE NOTE 1)

NOTE:
 TERMINALS WILL ACCEPT STRANDED WIRE ONLY

WIRE COLOR/GAUGE (NFPA)

- (unless otherwise specified)
- 208-600VAC: #14, BLK
 - 120VAC: #16, RED
 - 24VAC: #16, RED/BLK
 - NEUTRAL: #16, WHT
 - GROUND: GRN
 - 24VDC: #18, BLU
 - 24V COM (OVDC): #18, BLU/WHT
 - 12VAC/VDC, #18, VIO
 - 12V COM: #18, VIO/WHT
 - DRY (UNPOWERED): #18, YLW

SWITCH OPTIONS

- 1) LS1 = DOOR OPEN SWITCH—WHEN THE DOCK DOOR IS OPENED THE INSIDE LIGHTS SWITCH TO DISPLAY SOLID GREEN, THE OUTSIDE LIGHTS SWITCH TO DISPLAY FLASHING RED AND INTERLOCK 13-14 CLOSURES. PART # 825208
- 2) LS1 = LEVELER STORED SWITCH—WHEN THE LEVELER IS REMOVED FROM THE STORED POSITION THE INSIDE LIGHTS SWITCH TO DISPLAY SOLID GREEN, THE OUTSIDE LIGHTS SWITCH TO DISPLAY FLASHING RED AND INTERLOCK 13-14 CLOSURES. PART # 8001225

NOTE:

For 24V incoming power consult factory.

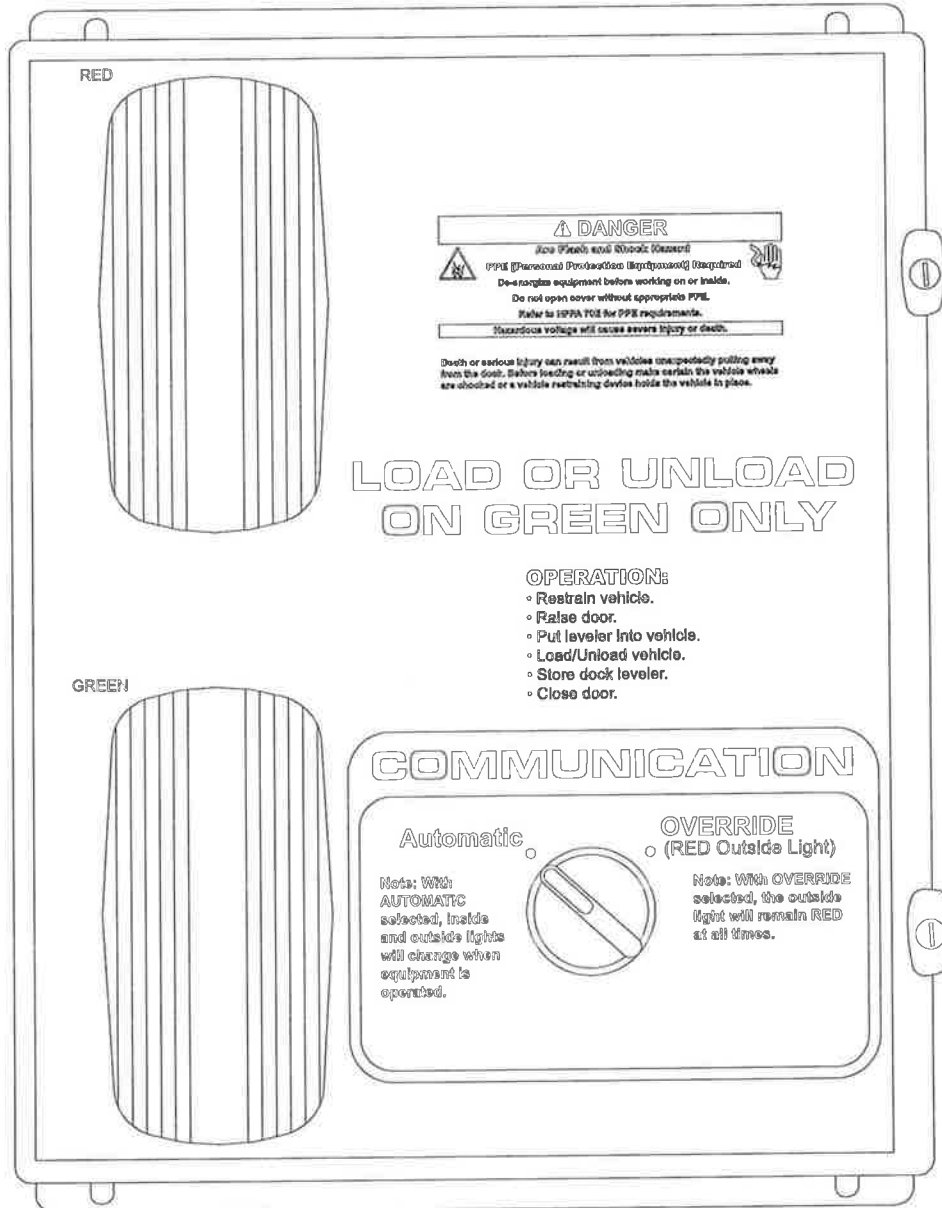
NOTE:

Power to control panel must be from fused disconnect supplied by others. All electrical work must meet all applicable codes. All devices shown in de-energized state.

WIRING DIAGRAM — ALS2

ALS2 (SERCO P/N 629731; KELLEY P/N 6010115)

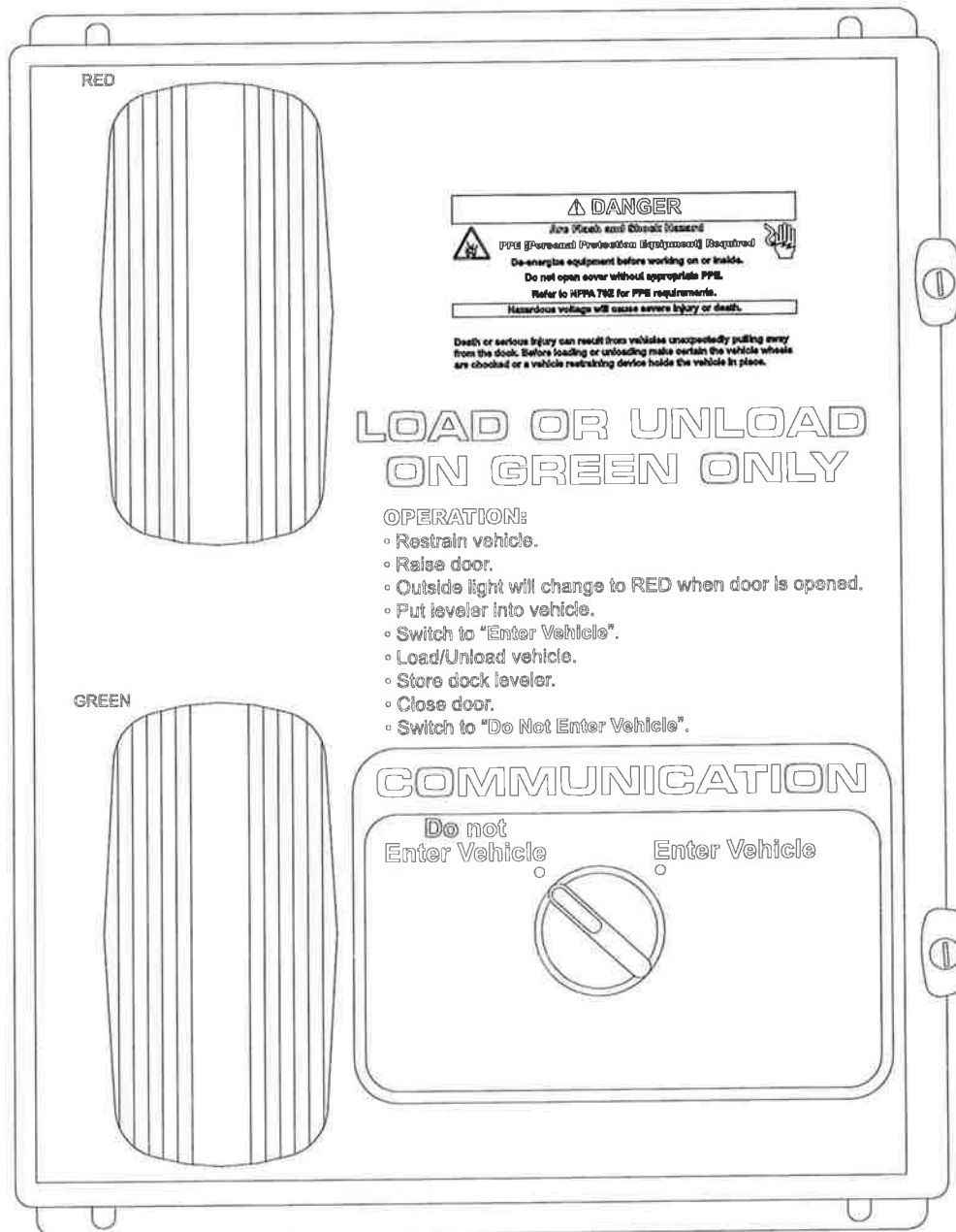
Fig. 16



WIRING DIAGRAM — AMLS

AMLS (SERCO P/N 629732; KELLEY P/N 6010116)

Fig. 21



WIRING DIAGRAM — AMLS, continued

AMLS (SERCO P/N 629732; KELLEY P/N 6010116)

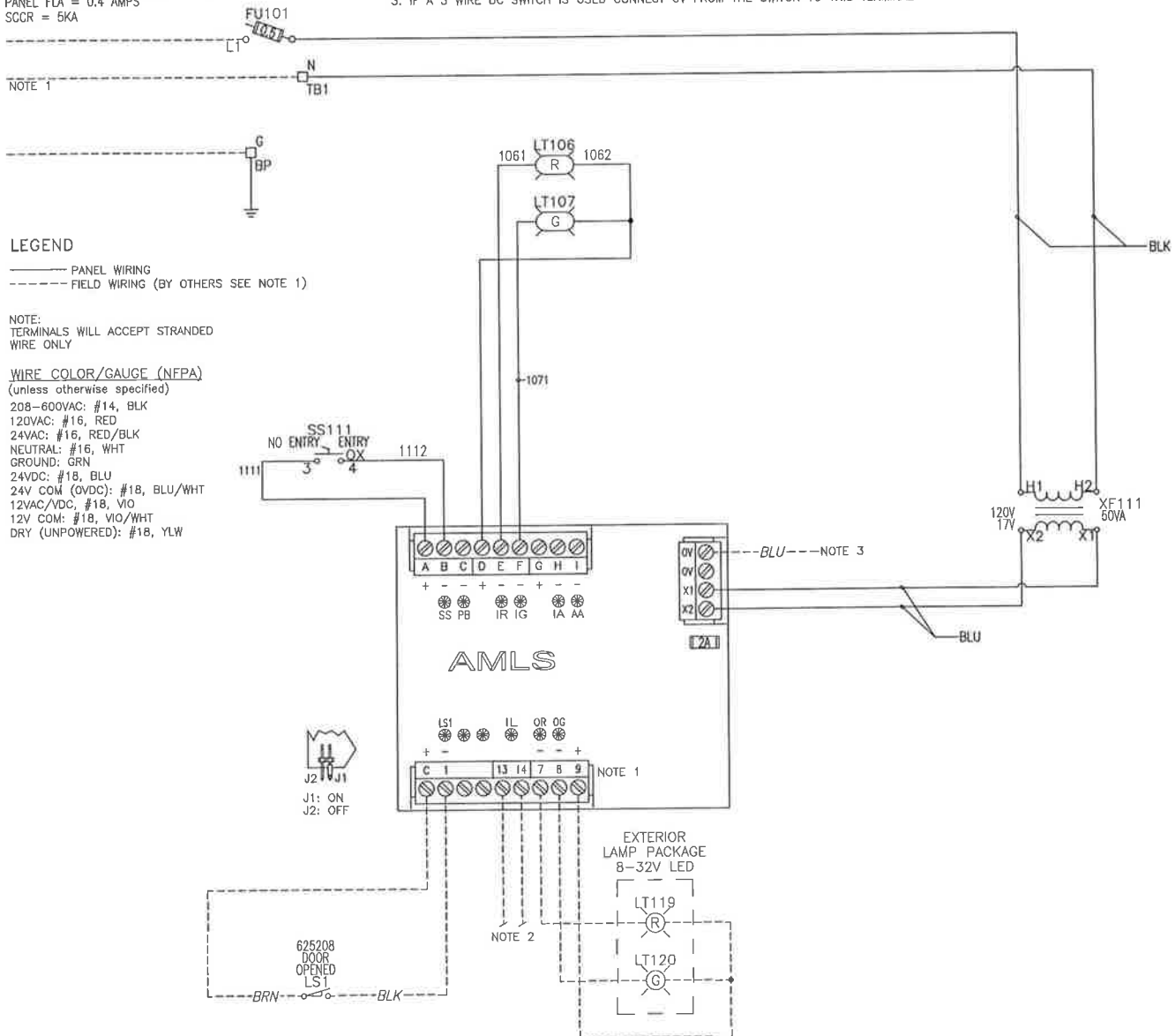
Fig. 22

120V/1PH/60HZ

INCOMING SERVICE TO BE TERMINATED AT DISCONNECT
 CB/FU TO BE SUPPLIED BY OTHERS
 SUPPLY BCPD = CB/FU 15AMP MAX
 PANEL FLA = 0.4 AMPS
 SCCR = 5KA

NOTES:

1. FIELD TERMINAL WIRING: 60 / 75 DEGREE WIRE, MIN 16AWG FOR SIGNAL WIRING, MIN 14AWG FOR INCOMING POWER, SEC CHART IN PANEL FOR TORQUE REQUIREMENTS
2. INTERLOCK 1: TERMINALS 13-14, DRY CONTACT RATED 1/2A @ 24VDC/120VAC MAX. EXTERNAL FUSE REQUIRED. CLOSSES WHEN LS1 OPENS
3. IF A 3 WIRE DC SWITCH IS USED CONNECT OV FROM THE SWITCH TO THIS TERMINAL



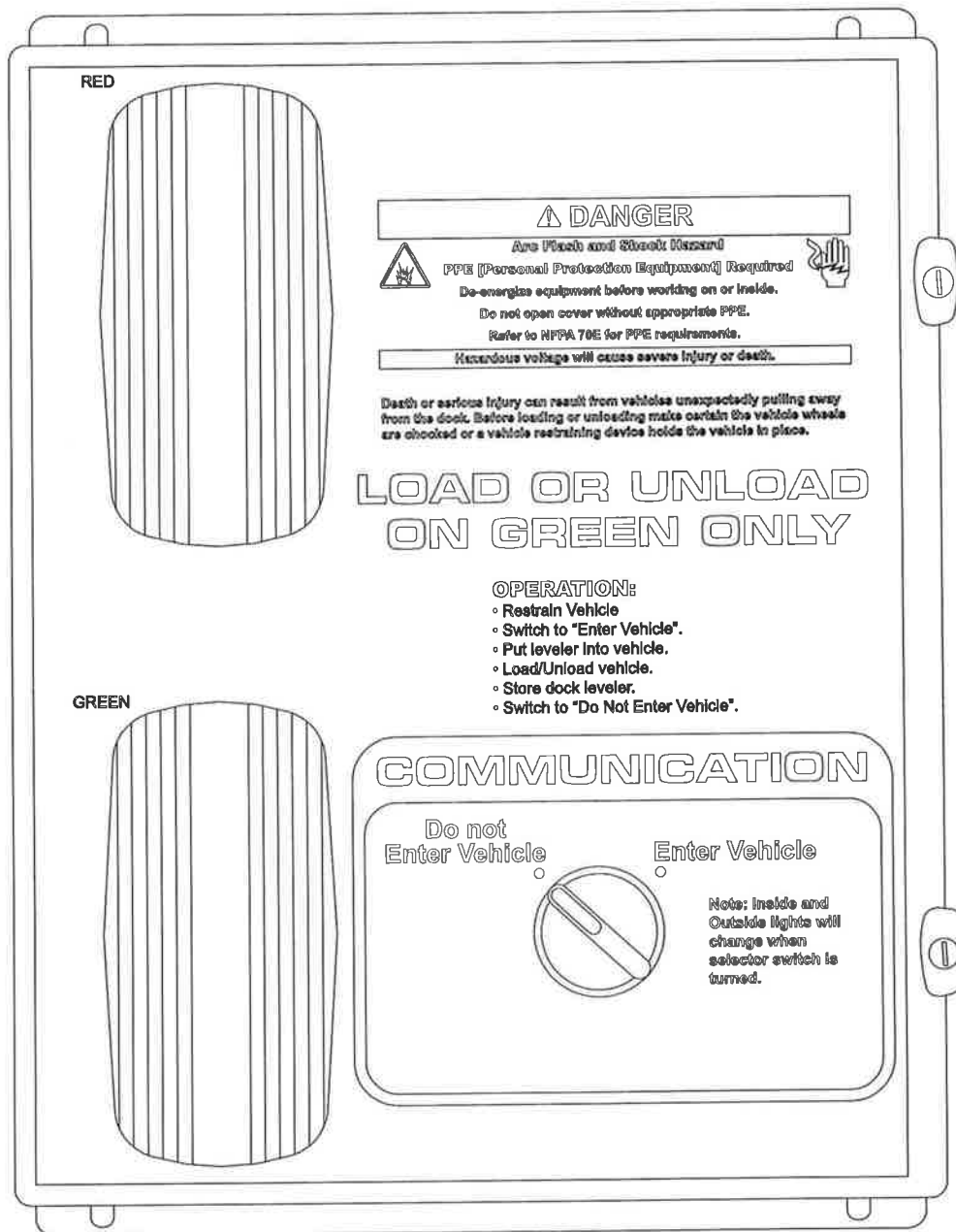
NOTE:
 For 24V incoming power consult factory.

NOTE:
 Power to control panel must be from fused disconnect supplied by others. All electrical work must meet all applicable codes. All devices shown in de-energized state.

WIRING DIAGRAM — MLS

MLS (SERCO P/N 6006577; KELLEY P/N 6010117)

Fig. 25



WIRING DIAGRAM — MLS, continued

MLS (SERCO P/N 6006577; KELLEY P/N 6010117)

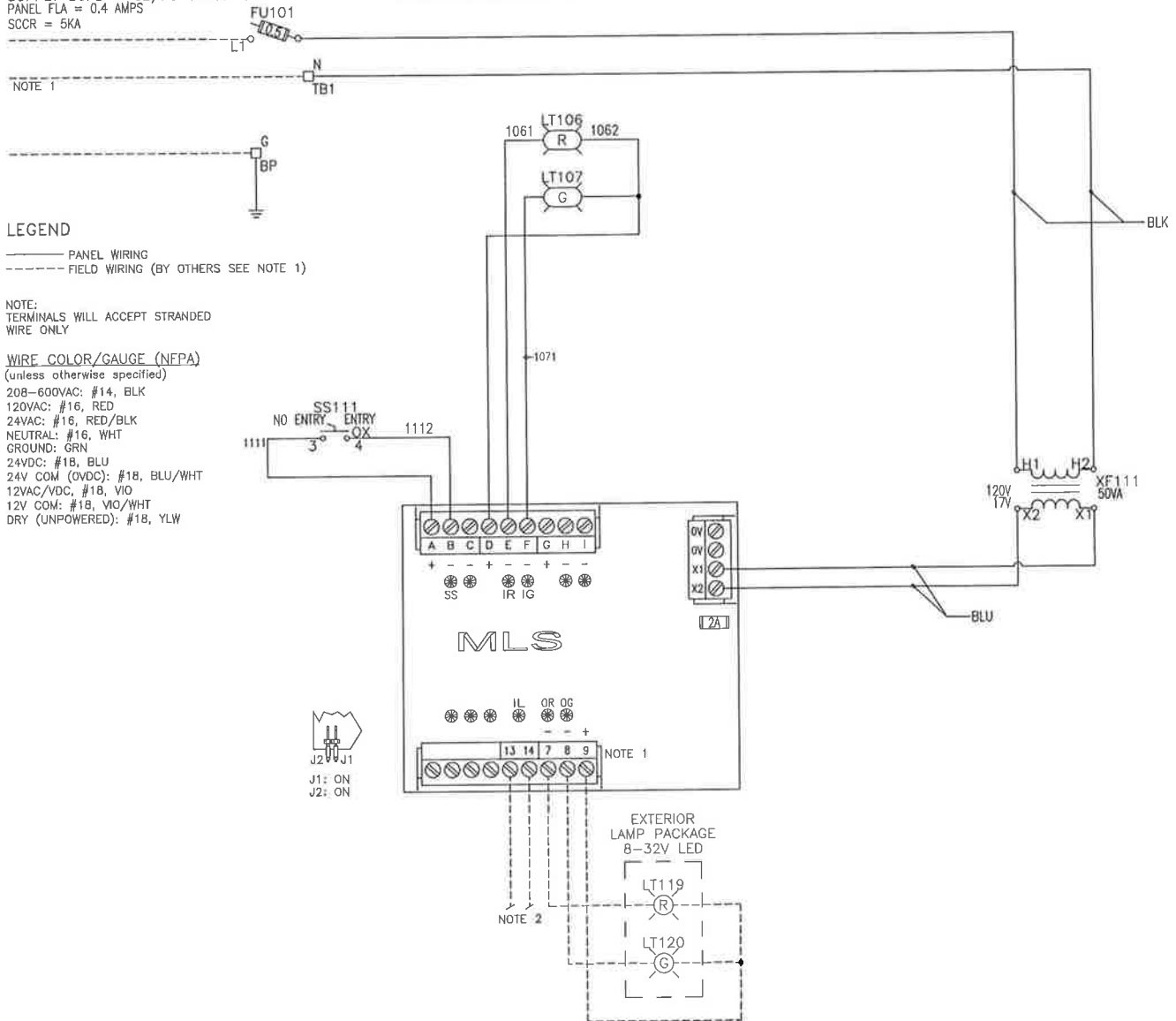
Fig. 26

120V/1PH/60HZ

INCOMING SERVICE TO BE TERMINATED AT DISCONNECT
 CB/FU TO BE SUPPLIED BY OTHERS
 SUPPLY BCPD = CB/FU 15AMP MAX
 PANEL FLA = 0.4 AMPS
 SCCR = 5KA

NOTES:

1. FIELD TERMINAL WIRING: 60 / 75 DEGREE WIRE, MIN 16AWG FOR SIGNAL WIRING, MIN 14AWG FOR INCOMING POWER, SEE CHART IN PANEL FOR TORQUE REQUIREMENTS
2. INTERLOCK 1: TERMINALS 13-14, DRY CONTACT RATED 1/2A @ 24VDC/120VAC MAX. EXTERNAL FUSE REQUIRED. CLOSED WHEN SWITCHED TO ENTRY POSITION



NOTE:
 For 24V incoming power consult factory.

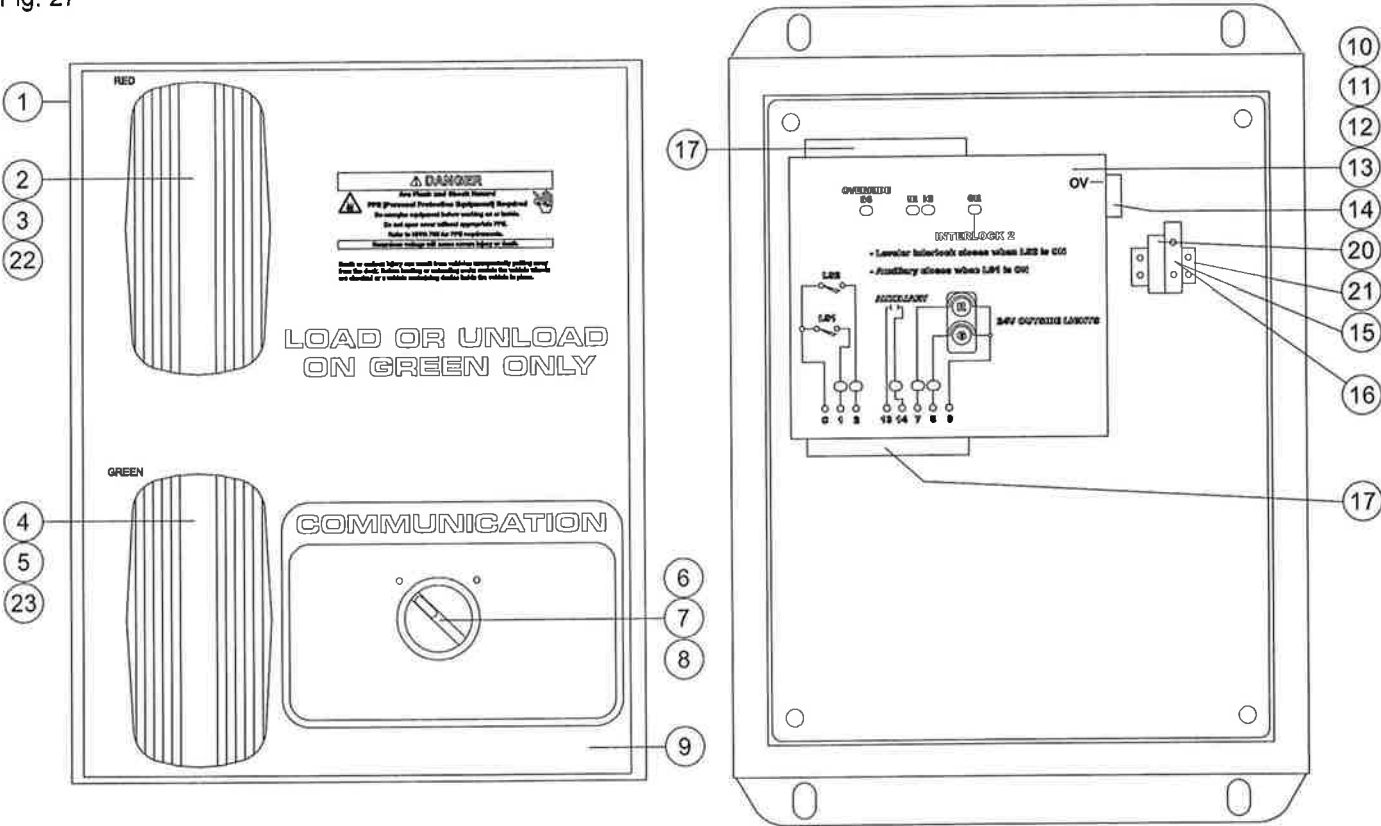
NOTE:
 Power to control panel must be from fused disconnect supplied by others. All electrical work must meet all applicable codes. All devices shown in de-energized state.

PARTS LIST

⚠ WARNING

To ensure proper function, durability and safety of the product, only replacement parts that do not interfere with the safe, normal operation of the product must be used. Incorporation of replacement parts or modifications that weaken the structural integrity of the product, or in any way alter the product from its normal working condition at the time of purchase from 4Front Engineered Solutions, Inc. may result in product malfunction, breakdown, premature wear, death or serious injury.

Fig. 27

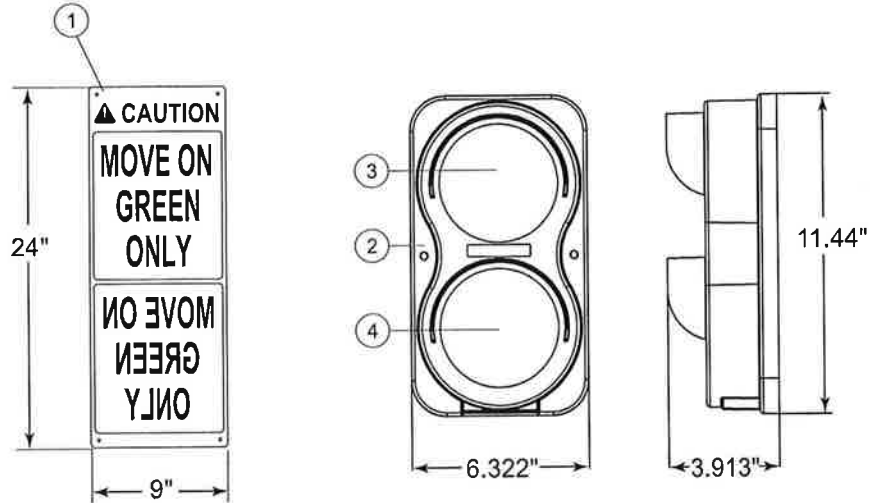


PARTS LIST, continued

Item	Quantity	Description	Part Number
1	1	ENCLOSURE	6009171
2	1	RECTANGLE BASE - RED	823107
3	1	LRU REGULATED CURRENT- RED (10 TO 28V AC/DC)	6006375
4	1	OVAL BASE - GREEN	823111
5	1	LRU REGULATED CURRENT- GREEN (10 TO 28V AC/DC)	6006377
6	1	2 POS. SEL. SWITCH - MAIN.	632217
7	1	SELECTOR SWITCH BASE	6000515
8	1	1 N/O CONTACT	632228
9	1	PANEL FACE LABEL - FOR 629730 PANEL ONLY — SERCO PANEL FACE LABEL - FOR 629731 PANEL ONLY — SERCO PANEL FACE LABEL - FOR 629732 PANEL ONLY — SERCO PANEL FACE LABEL - FOR 6006577 PANEL ONLY — SERCO PANEL FACE LABEL - FOR 6010114 PANEL ONLY — KELLEY PANEL FACE LABEL - FOR 6010115 PANEL ONLY — KELLEY PANEL FACE LABEL - FOR 6010116 PANEL ONLY — KELLEY PANEL FACE LABEL - FOR 6010117 PANEL ONLY — KELLEY	6006619 6006619 6006627 6006629 6009497 6009497 6009499 6009500
10	1	BOARD COVER PLATE - 629730 AND 6010114 BOARD COVER PLATE - 629731 AND 6010115 BOARD COVER PLATE - 629732 AND 6010116 BOARD COVER PLATE - 6006577 AND 6010117	6010443 6010444 6010456 6010442
11	1	PRINTED CIRCUIT BOARD (SEE SCHEMATIC FOR JUMPER SETTINGS)	6010512
12	1	FUSE 2A - TYPE MDL2A (ON CIRCUIT BOARD)	MDL2A
13	1	TRANSFORMER 120/17V 56VA	6008636
14	1	4 PIN CONNECTOR	6008822
15	1	TERMINAL FUSED	6000538
16	1	FUSE 0.5A - TYPE MDL0.5A (FUSE TERMINAL BLOCK)	MDL0.5A
17	1	9 PIN CONNECTOR	6008823
18	1	CONTROL RELAY BASE - 629731 AND 6010115 ONLY (not shown)	6000522
19	1	CONTROL RELAY 24VDC COIL - 629731 AND 6010115 ONLY (not shown)	6000520
20	1	TERMINAL, 2 CONDUCTOR	6000542
21	2	ENDSTOP, SCREWLESS	6000549
22	1	RED LENS	823100
23	1	GREEN LENS	AP0027

PARTS LIST — EXTERIOR SIGN AND LIGHTS

Fig. 28



Item	Quantity	Part Description	Part Number
1	1	Outside Sign – Normal and Reverse Lettering	709-832
2	1	Light Assembly - Complete (LEDs)	6007798
3*	1	Red LED Light Assy.	6007800
4*	1	Green LED Light Assy.	6007801

* Part of Item 2 (Light Assembly – Complete).