

Safety Signal™ Installation Guide

Safety Signal™ Models SS0550 thru SS0554



340 Gateway Park Drive
North Syracuse, NY 13212
Phone: 315-463-7348
Toll Free: 866-235-7468
Fax: 315-463-8559
Email: sales@dlmanufacturing.com
www.dlmanufacturing.com

INTRODUCTION

This manual is used for all **Safety Signal™** model types. The control board is programmed for each model's function. The description explains the differenced between model types.

Model #	Part #	Description
550	SS0550	Standard Safety Signal™ <i>No options: No outlets or interlocks</i>
551	SS0551	Powers & controls one outlet for dock light <i>Dock light turns off when door is closed</i>
552	SS0552	Powers & controls two outlets <i>Dock light & fan turn off when door is closed</i>
552-02	SS0552-02	No Inside Red & Green Light Powers & controls two outlets <i>Dock light & fan turn off when door is closed</i>
553	SS0553	Powers & controls two outlets & interlocks Electric/Hydraulic leveler <i>Dock light and fan turn off when door is closed Leveler will not run when door is closed</i>
554	SS0554	Powers & controls two outlets & interlocks Pneumatic leveler <i>Dock light and fan turn off when door is closed Leveler will not run when door is closed Fan turns off when leveler runs</i>
554-02	SS0554-02	No Inside Red & Green Light Powers & controls two outlets & interlocks Pneumatic leveler <i>Dock light and fan turn off when door is closed Leveler will not run when door is closed Fan turns off when leveler runs</i>

ELECTRICAL RATINGS:

INPUT VOLTAGE	120 VAC
INPUT FREQUENCY	60 HZ
MAXIMUM INPUT CURRENT	12 A
INPUT CURRENT WITH NO OUTLET(S) OR LEVELER LOAD	<.5 A (MODEL 550)
MAXIMUM OUTLET(S) CURRENT	12 A
MAXIMUM LEVELER LOAD CURRENT (J7 OR J8)	12 A
OUTSIDE LIGHT BOX VOLTAGE	12 VDC
MAXIMUM OUTSIDE LIGHT BOX LOAD CURRENT	1.25 A (12 V POWER SUPPLY CURRENT LIMIT)
SENSOR VOLTAGE (J2, J3 & J4)	12 VDC
MAXIMUM SENSOR CURRENT (J2, J3 & J4)	.2 A (J2, J3 & J4 PROTECTED BY PTC THERMISTOR)

Safety Signal™ **---Sequence of Operations---** **Testing**

Door Opens

Outside light turns red
Inside light turns green
Interlock items now function

- Dock light
- Fan
- Leveler & OPT 1 Contacts close

Door Closes

Outside light turns green
Inside light turns red
Interlock items turn off

- Dock light
- Fan
- Leveler & OPT 1 Contacts open

Please Note: When dock door is closed, the light will switch to red inside and green outside after a 10 second delay.

WARNING!!!!

Do not use in hazardous or corrosive environments!

REQUIRED TOOLS

- Drill bits, masonry bit for tap-con / wood bits 3/16" for pilot hole in dock seal
- Tape measure
- Wire strippers
- Hammer
- Felt tip marker
- Hammer Drill
- Drill screw gun
- Precision flat blade screwdriver 1/8" wide
- Wire labels

INDEX

Description	Page
COVER	-
INTRODUCTION / ELECTRICAL RATINGS	1
SEQUENCE OF OPERATIONS	2
GENERAL INFO / INDEX / REQUIRED TOOLS	3
INSTALLER SUPPLIED HARDWARE & FASTENERS	4
INSIDE LIGHT BOX MOUNTING	5
INSIDE LIGHT BOX MOUNTING CONTINUED	6
PHOTO EYE INSTALL – TYPICAL & MxV DOOR	7
PHOTO EYE INSTALL – ROLLING STEEL DOOR	8
EXTERNAL BOX INSTALLATION	9
CONTROL BOARD WIRING OVERVIEW / INDEX	10
WIRING DIAGRAM J1 & J2	11
WIRING DIAGRAM J6, J7 & J8	12
INSIDE TO OUTSIDE BOX WIRING DIAGRAM J15	13
DOCK SEAL BRACKET (OPTIONAL)	14
BOLLARD MOUNTING BRACKET (OPTIONAL)	15
MODEL 550 SYSTEM WIRING DIAGRAM	16
MODEL 551 SYSTEM WIRING DIAGRAM	17
MODEL 552 SYSTEM WIRING DIAGRAM	18
MODEL 553 SYSTEM WIRING DIAGRAM	19
MODEL 554 SYSTEM WIRING DIAGRAM	20
DL MANUFACTURING TERMS/CONDITIONS/WARRANTY	21

YEARLY MAINTENANCE

1. Inspect inside connections for any damage
2. Inspect mounting bolts for tightness
3. Clean unit with compressed air
4. Clean Photo Sensor Lenses

Installer-supplied hardware & fasteners

Mounting Surface	Inside Light Box	Outside Light Box
Cement Block	(4) 1/4" x 1 1/4" Tapcon	(4) #10 x 1" Tapcon
Tip up concrete panel	(4) 1/4" x 1 1/4" Tapcon	(4) #10 x 1" Tapcon
Sheet Metal	Sheet metal walls are not thick enough to hold inside box	Sheet metal walls are not thick enough to hold outside box
Steel	(4) 1/4" x 3/4" self-drilling screws	(4) 1/4" x 3/4" self-drilling screws
Bollard	Use DL Manufacturing supplied fasteners	
Dock Seal		Use 1-1/4" x 1/4" lag screws to attach dock seal bracket to dock seal.

Also needed:

Wiring the inside and outside box together	3 conductor 18 gauge wire	1/2" flexible conduit with connector for 7/8 knockout
--	---------------------------	---

Field Notes:

FOR SERVICE ASSISTANCE CALL DL MANUFACTURING TOLL FREE 866-235-7468

Safety Signal Model #:

Safety Signal Serial #:

(LOCATED LOWER PORTION OF CONTROL BOARD)

Door Location:

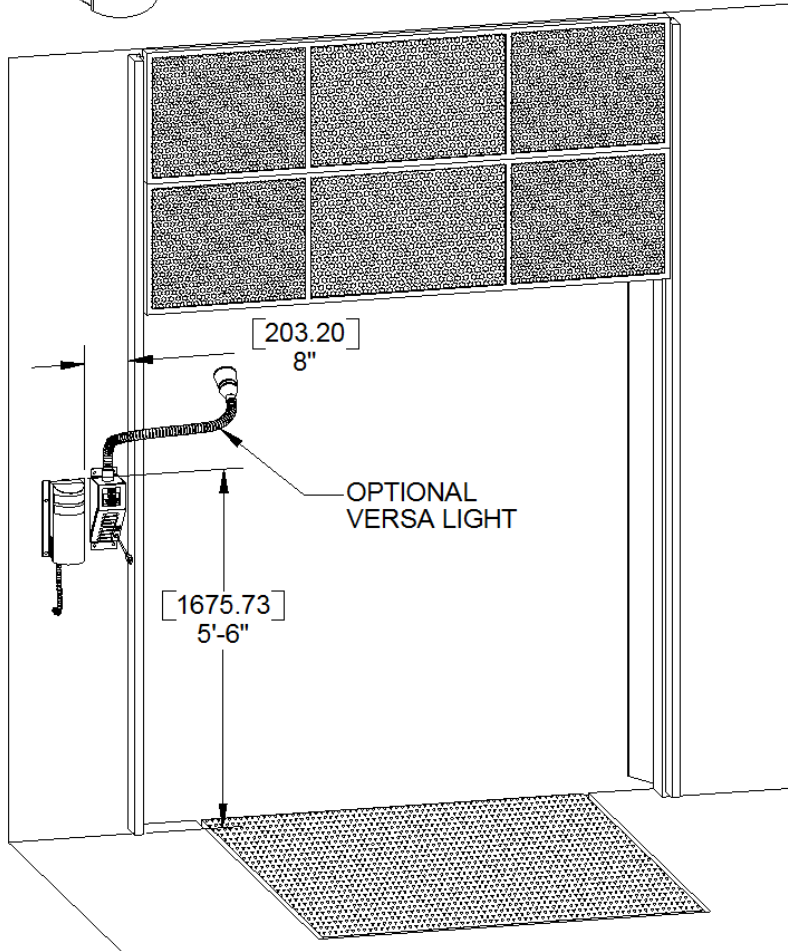
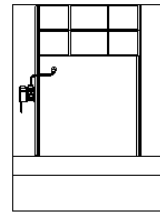
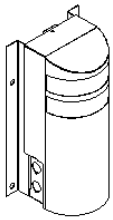
Customer:

SAFETY SIGNAL™ INSTALLATION

WALL MOUNTED STYLE

INTERNAL

(YELLOW BOX)

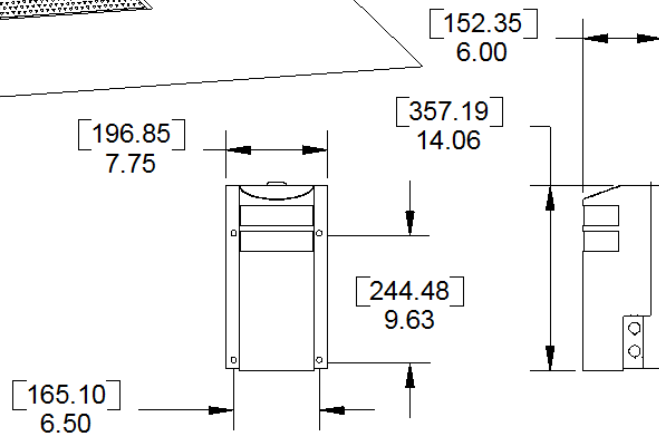


NOTE:

Install internal Safety Signal™ measuring 66" from the dock floor to the top of the yellow box.

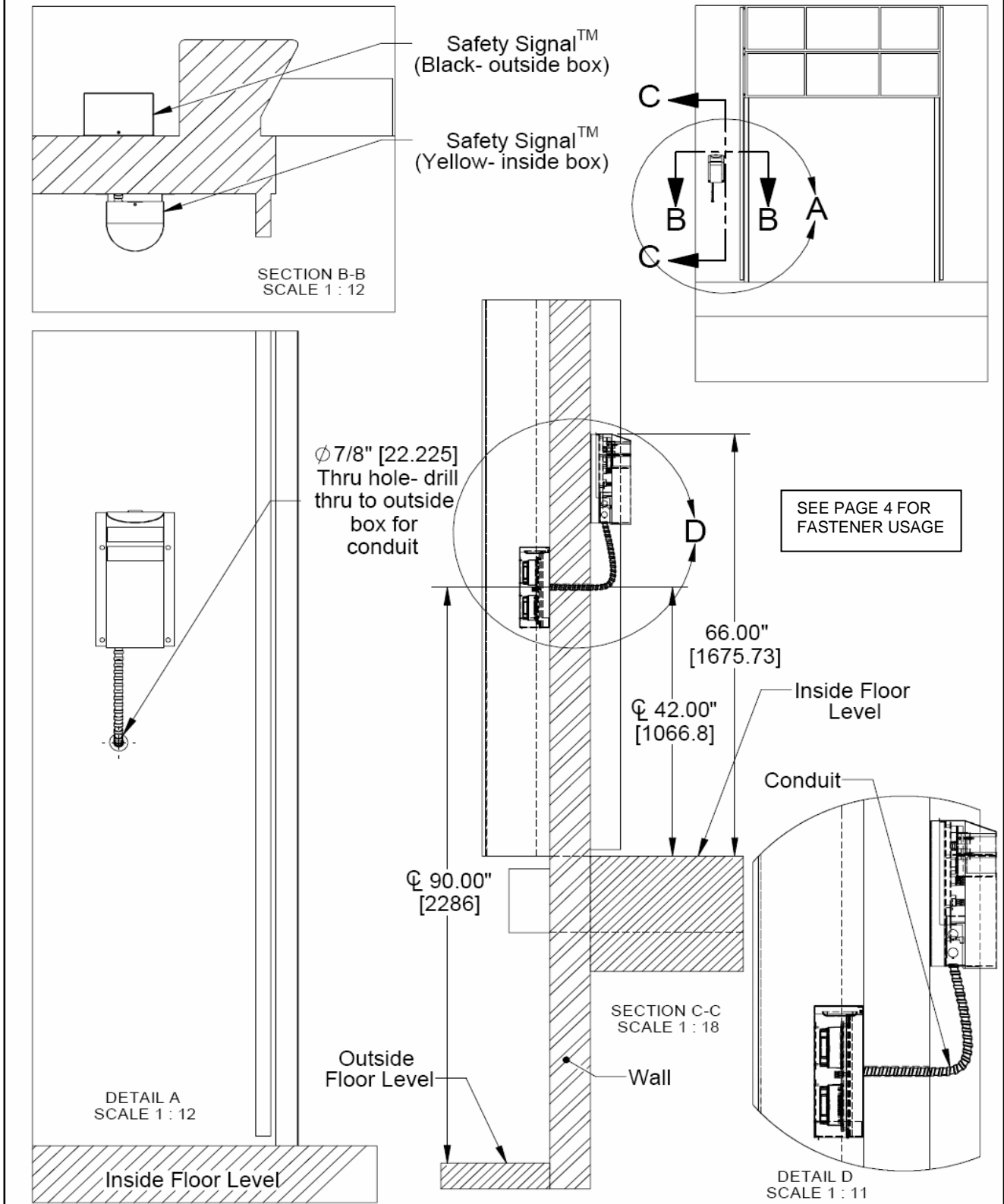
DETAIL A
SCALE 1 : 28

DOCK FLOOR



INSIDE LIGHT BOX MOUNTING

Safety Signal- Mounting (on concrete wall or block wall)

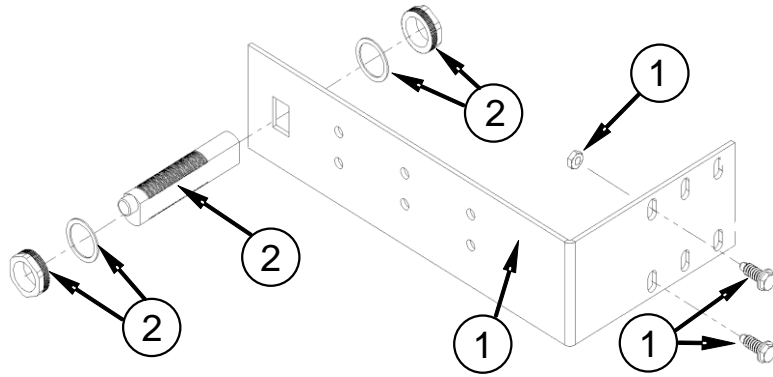


INSIDE LIGHT BOX MOUNTING CON'T.

PHOTO EYE MOUNTING KIT

(FOR TYPICAL LOCATIONS & MxV DOOR)

SEE PAGE 8 FOR MOUNTING BRACKET LOCATION ON A ROLLING STEEL DOOR



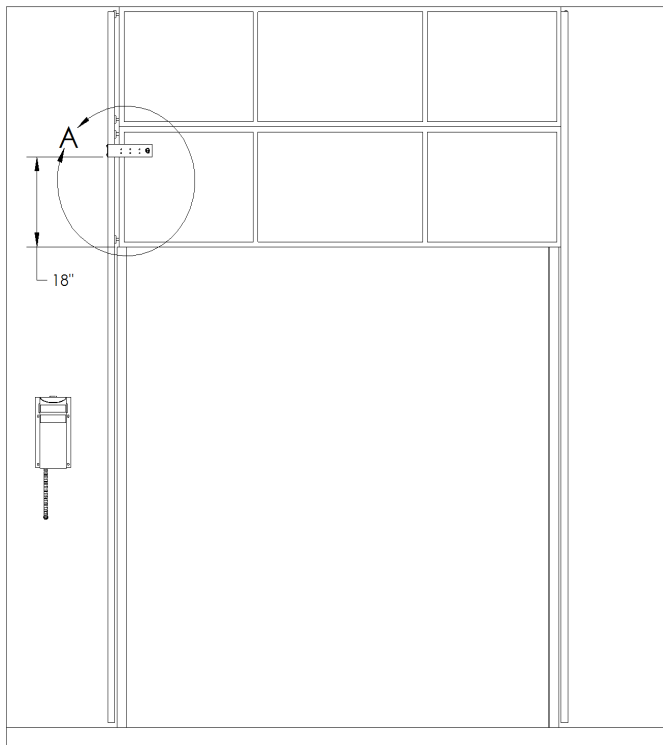
STEP 1

MEASURE 18" ABOVE THE DOOR (START AT THE TOP OF DOOR JAMB) TO INSTALL PHOTO SENSOR

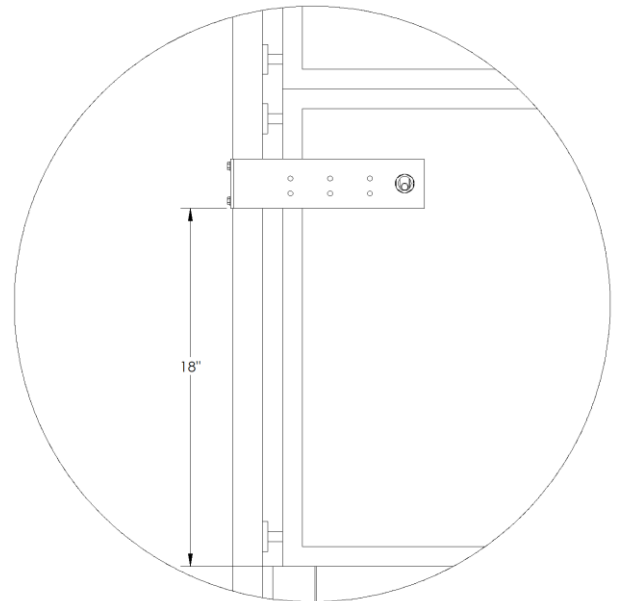
STEP 2

DRILL 2 HOLES IN ROLLER TRACK. USE 17/64" DRILL BIT

REFER TO PAGE 11 FOR WIRING INSTRUCTIONS



NOTE:
PHOTO SENSOR HAS A RANGE OF 1/2" TO 3-1/2".
2" TO 3" IS RECOMMENDED.



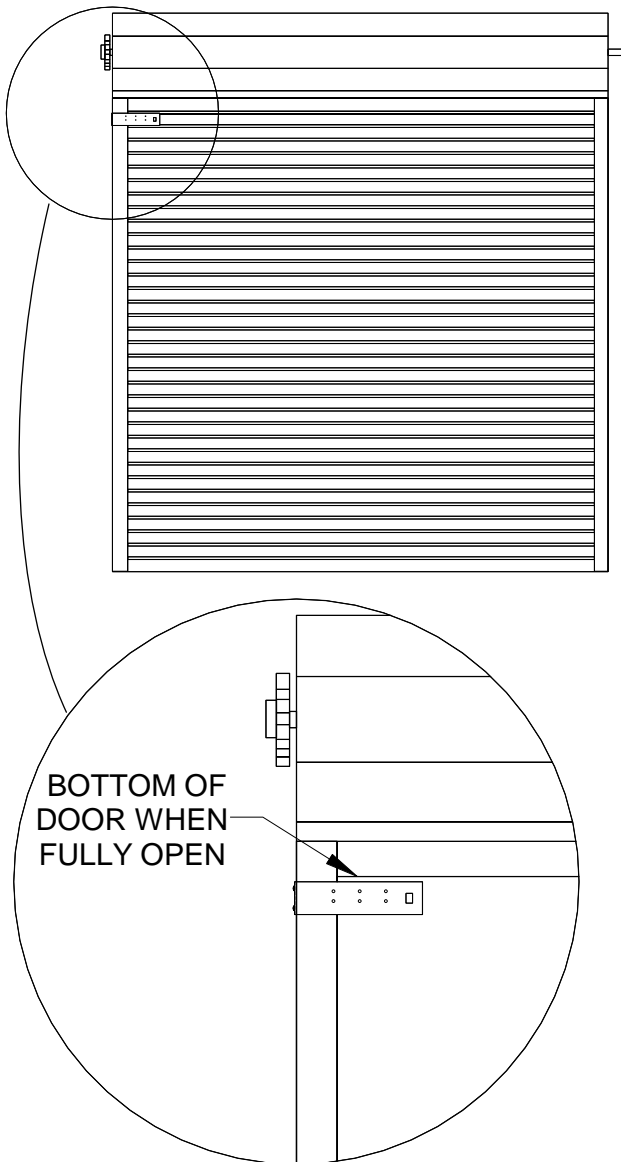
DETAIL A
SCALE 1 : 20

ITEM #	QTY.	PART#	DESCRIPTION
1	1	CP5016	MOUNTING BRACKET KIT
2	1	CP3268	PHOTO SENSOR NUT KIT

PHOTO EYE INSTALL – TYPICAL & MxV DOORS

PHOTO EYE MOUNTING KIT (FOR ROLLING STEEL DOOR)

SEE PAGE 7 FOR MOUNTING BRACKET LOCATION ON A SECTIONAL DOOR



STEP 1

TO LOCATE THE MOUNTING BRACKET POSITION, OPEN THE DOOR ALL THE WAY.

STEP 2

POSITION THE TOP OF THE BRACKET SO THAT IT LINES UP JUST BELOW THE BOTTOM SECTION OF THE DOOR AND MARK HOLES.

STEP 3

DRILL 2 HOLES IN ROLLER TRACK. USE 17/64" DRILL BIT.

STEP 4

LOCATE THE PHOTO SENSOR OPERATING ADJUSTMENT (SEE FIGURE BELOW). SET THE PHOTO SENSOR FOR LIGHT OPERATE.

STEP 5

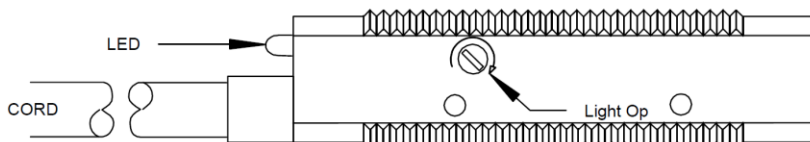
ATTACH THE PHOTO SENSOR TO THE MOUNTING BRACKET USING THE NUTS AND WASHERS SUPPLIED WITH SENSOR.

STEP 6

ATTACH THE MOUNTING BRACKET TO THE TRACK RAIL USING HARDWARE SUPPLIED WITH MOUNTING KIT.

REFER TO PAGE 11 FOR WIRING INSTRUCTIONS

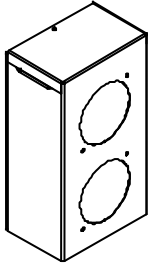
Setting the Photo Sensor Operating Mode



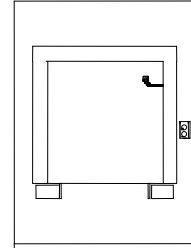
Lightly turn Adjustment 3/4 of a turn CW for Light Operate

PHOTO EYE INSTALL – ROLLING STEEL DOORS

SAFETY SIGNAL™ INSTALLATION WALL MOUNTED STYLE



EXTERIOR (BLACK BOX)

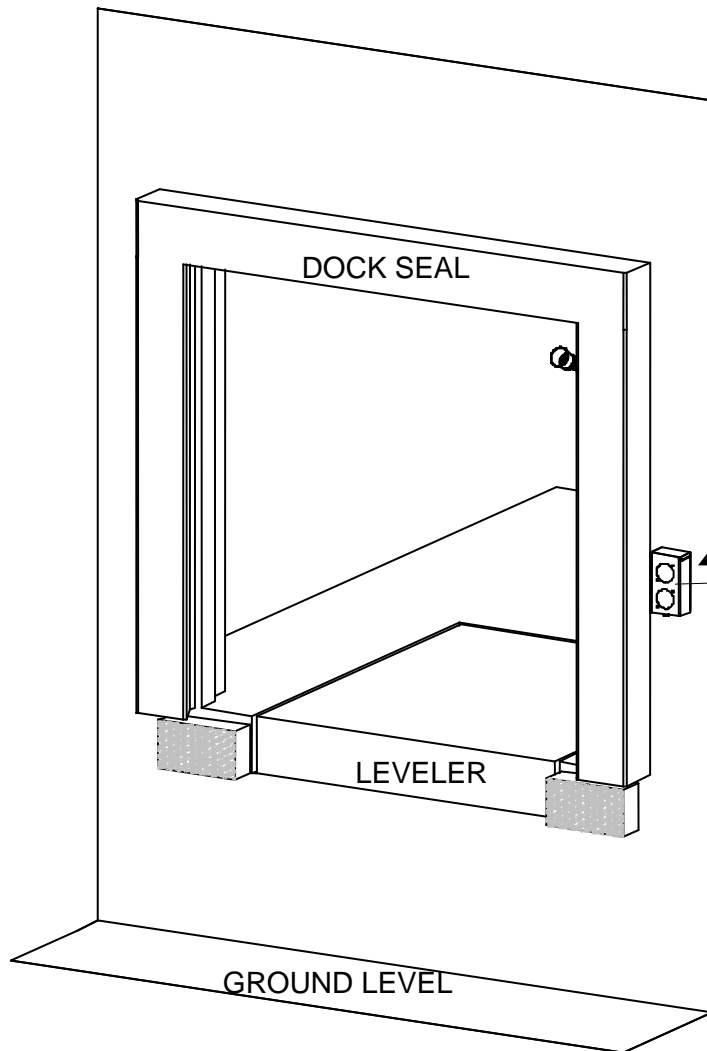


STEP 1

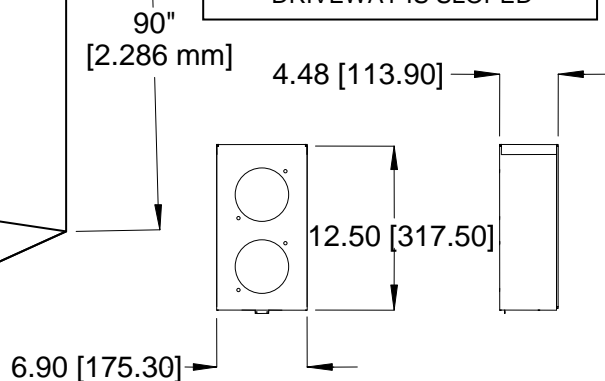
INSTALL EXTERNAL SAFETY SIGNAL MEASURING 90" [2,286mm] FROM THE GROUND TO THE CENTER OF THE BLACK BOX AND 3" FROM THE DOCK SEAL OR SHELTER, OR 18" FROM INSIDE WALL EDGE. SEE PAGE 4 FOR MOUNTING HARDWARE. **SEE PAGE 14 WHEN USING DOCK SEAL BRACKET.**

STEP 2

REFER TO PAGE 13 FOR WIRING INSTRUCTIONS. USE KNOCKOUT LOCATED ON THE BACK OR BOTTOM.

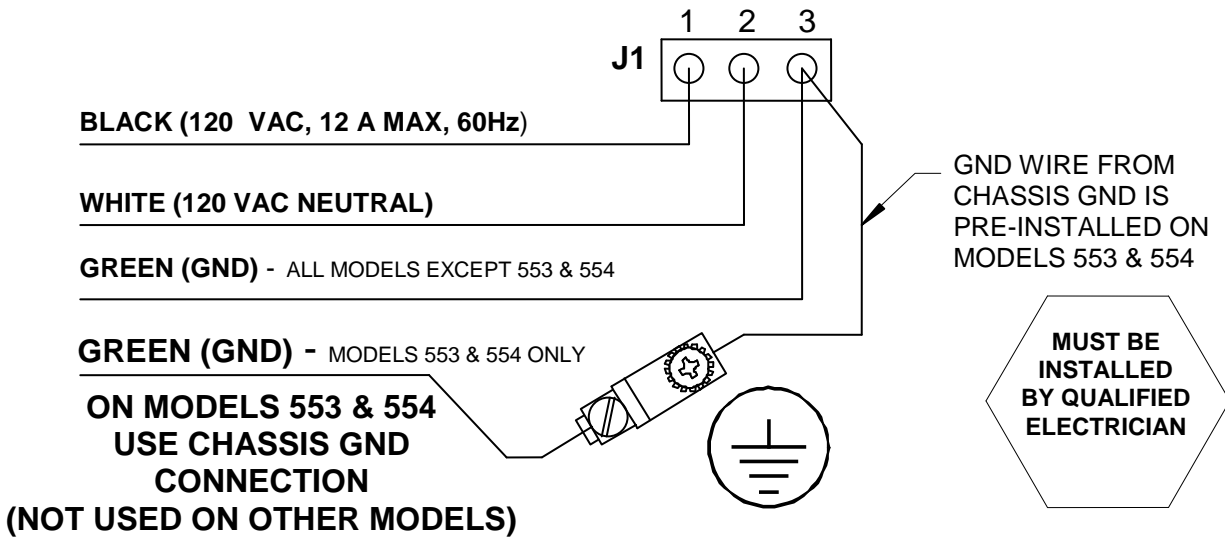


- NOTE:**
1. RED LIGHT MUST BE ON TOP
 2. SEE PAGE 14 FOR ALTERNATE MOUNTING WHEN BOX CAN'T BE MOUNTED TO WALL
 3. MOUNT BOX PARALLEL TO WALL
 4. CONSULT DL MANUFACTURING IF DRIVEWAY IS SLOPED



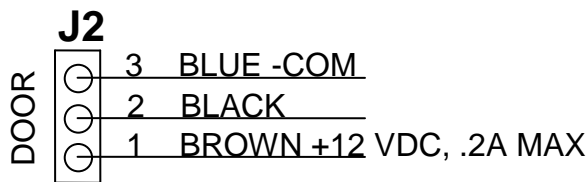
DETAIL A
SCALE 1 : 32

SAFETY SIGNAL™ FIELD WIRING DIAGRAM INCOMING POWER INTERNAL (YELLOW BOX)



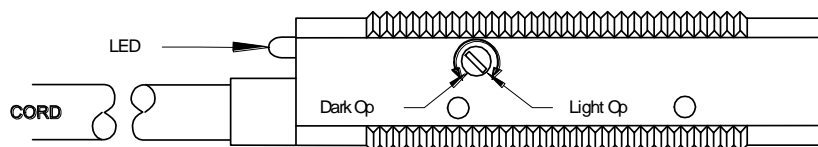
DOOR PHOTO SENSOR

PHOTO SENSOR IS 12 VDC. DO NOT RUN IN SAME CONDUIT WITH 120 AND HIGHER VOLTAGE. TRANSIENTS CAN DAMAGE CONTROL BOARD



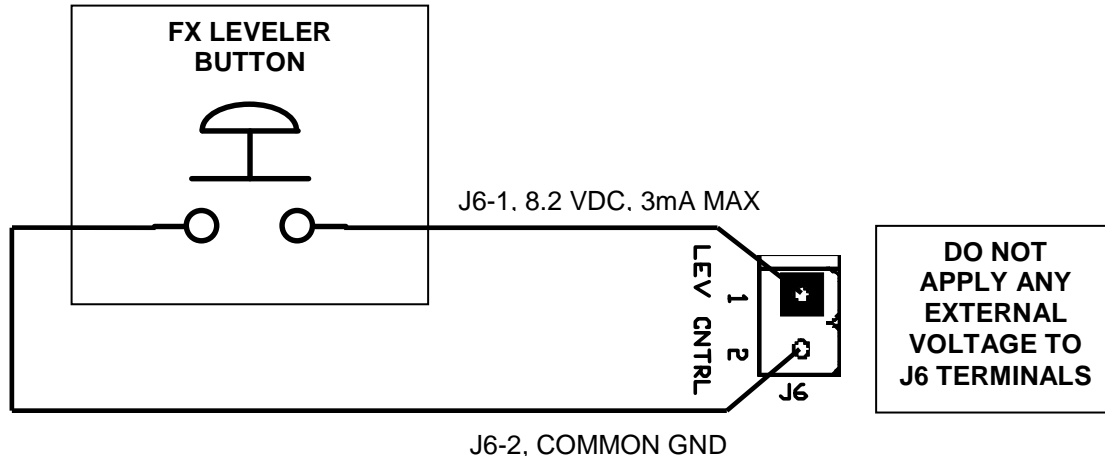
SENSING REVERSAL

ROTATE ADJUSTMENT 3/4 TURN TO CHANGE OPERATION FROM (N/O TO N/C OR N/C TO N/O)
NORMALLY SET FOR DARK OPERATE OR N/C
WHEN LOCATED ABOVE PANELED DOOR OPENING



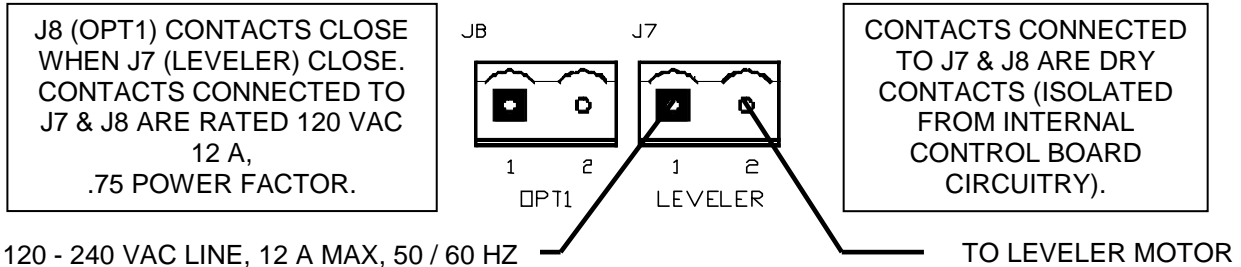
WIRING DIAGRAM J1 & J2

SAFETY SIGNAL™ FIELD WIRING DIAGRAM MODEL 554 LEVELER CONTROL SIGNAL

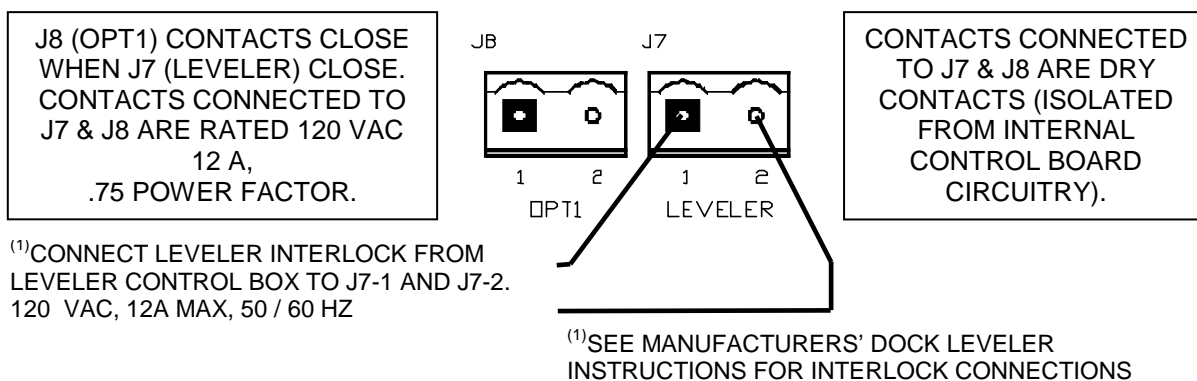


NOTE:
WHEN LEVELER SWITCH IS ACTIVATED, THE CONTROL SIGNAL WILL LET THE MICRO PROCESSOR KNOW TO SHUT THE FAN OFF. IT WILL THEN TURN ON THE LEVELER (J7) AND OPT1 (J8) AFTER A 2 SECOND DELAY. FAN WILL TURN ON WHEN LEVELER STOPS.

MODEL 554 LEVELER INTERLOCK / OPT1

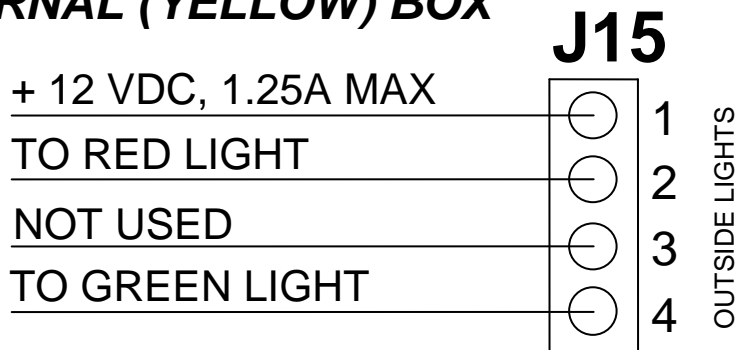


MODEL 553 LEVELER INTERLOCK / OPT1

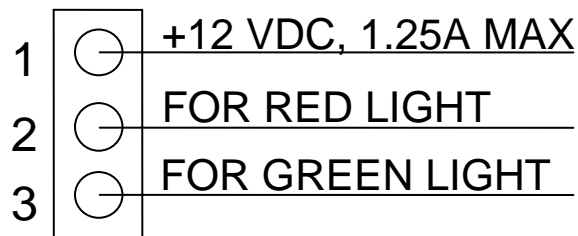


SAFETY SIGNAL™ FIELD WIRING DIAGRAM OUTSIDE LIGHTS EXTERNAL (BLACK) BOX

**FROM CONTROL BOARD
INTERNAL (YELLOW) BOX**



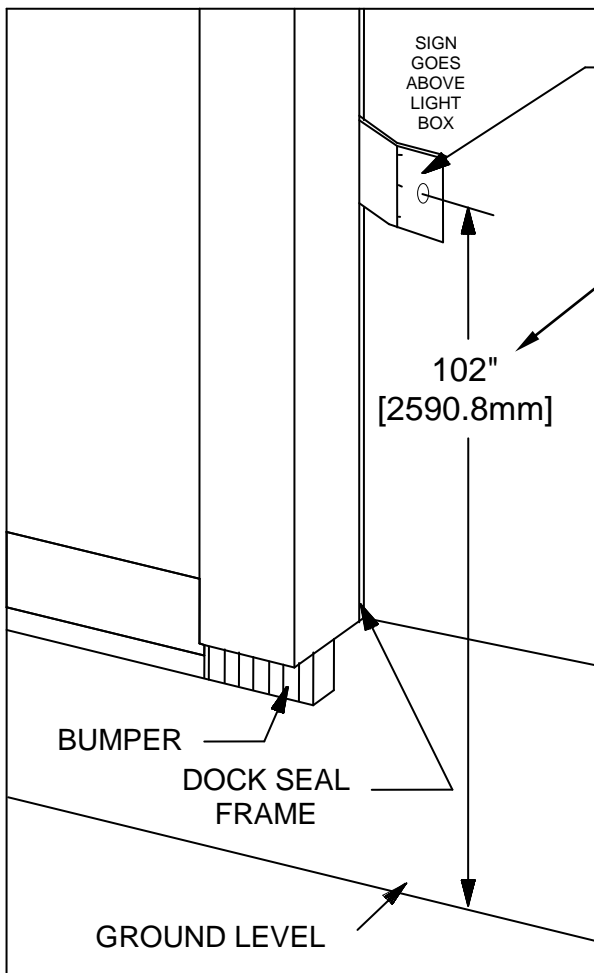
TO OUTSIDE R&G LED EXTERNAL (BLACK) BOX



J1

WIRING DIAGRAM – INSIDE TO OUTSIDE BOX

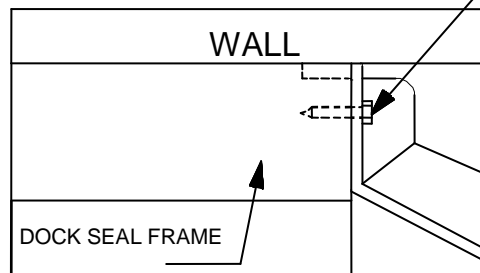
OPTIONAL DOCK SEAL BRACKET



SIGN & LIGHT BOX MOUNT ON BRACKET (SS5019).
(6) #10 SELF TAPPING SCREWS (INCLUDED)

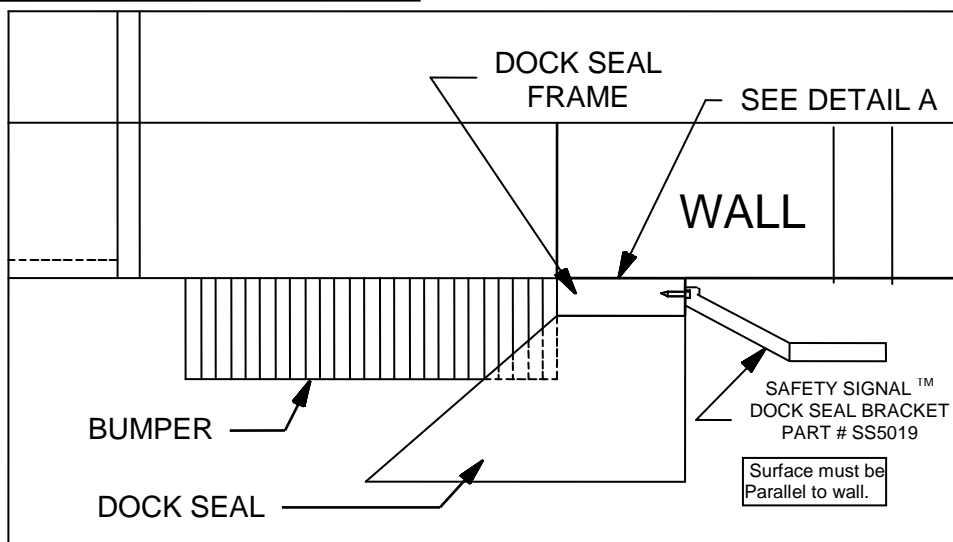
INSTALL DOCK SEAL BRACKET AT MOUNTING HEIGHT OF 102". IF BRACKET IS NOT USED, REFER TO PAGE 9 FOR CORRECT MOUNTING HEIGHT

(3CM) 1 1/4" LONG TECH SCREWS (4 PLACES)
(NOT INCLUDED)



DETAIL A

ALTERNATE OUTSIDE LIGHT BOX MOUNTING

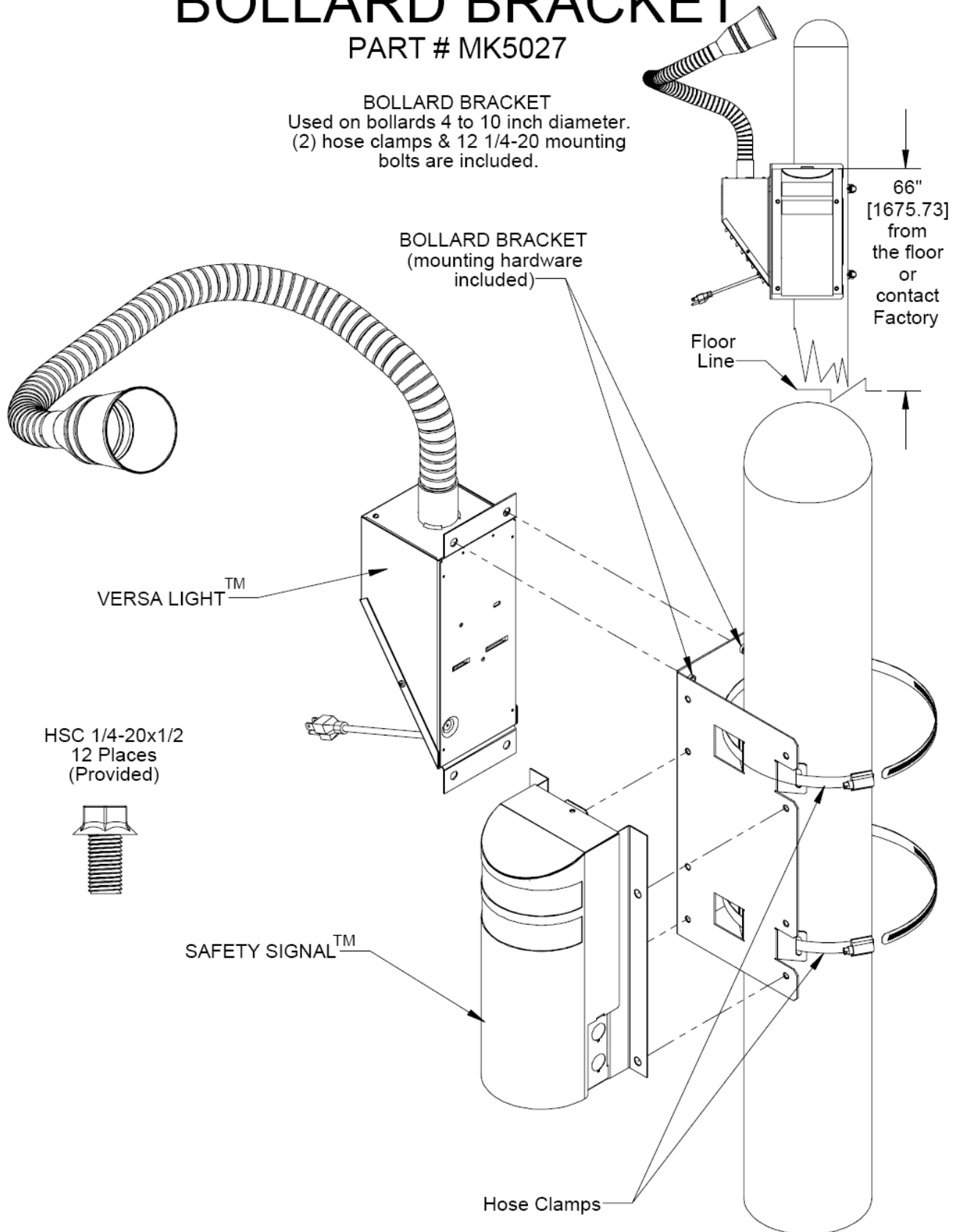


OPTIONAL DOCK SEAL BRACKET

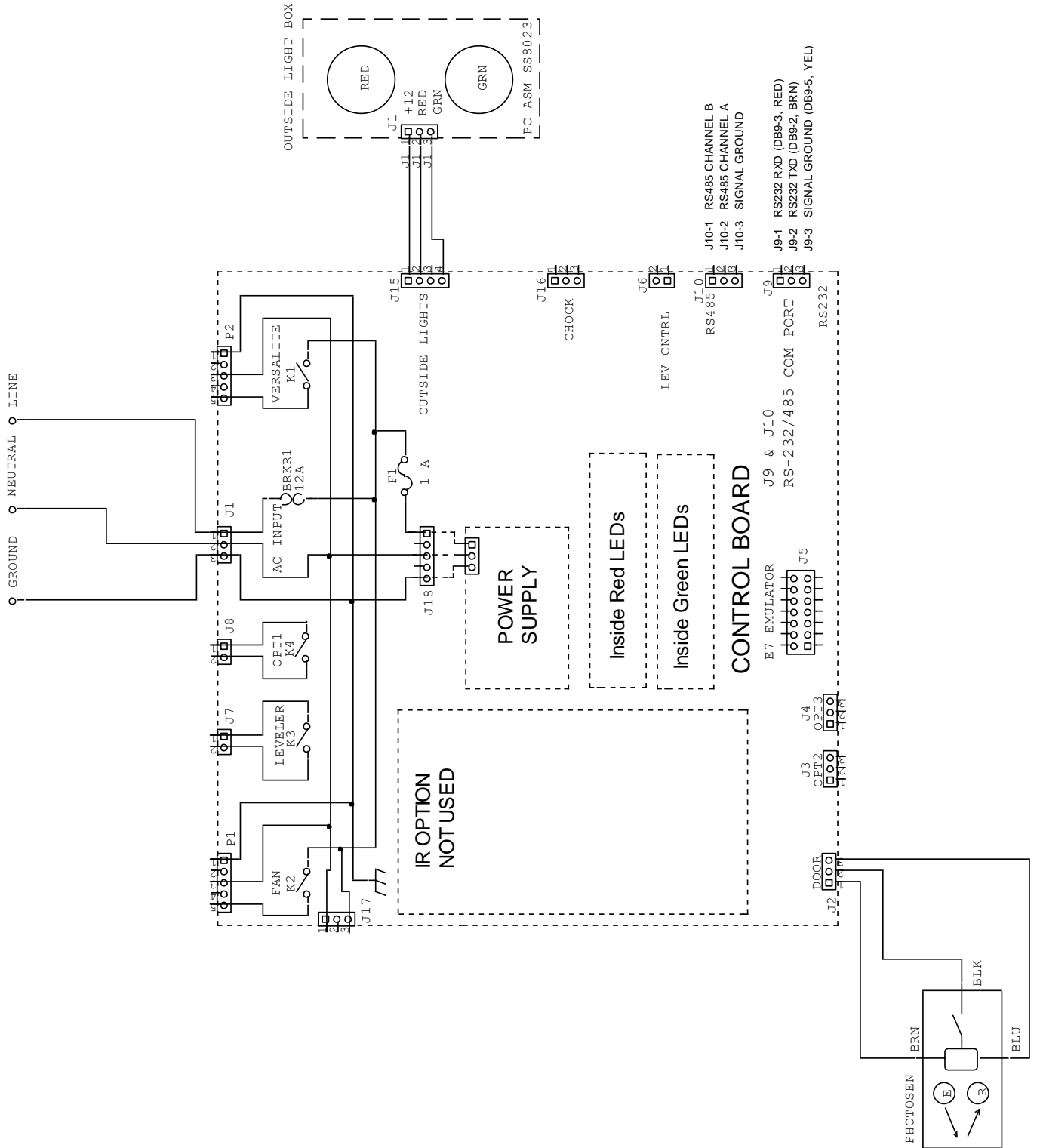
BOLLARD BRACKET

PART # MK5027

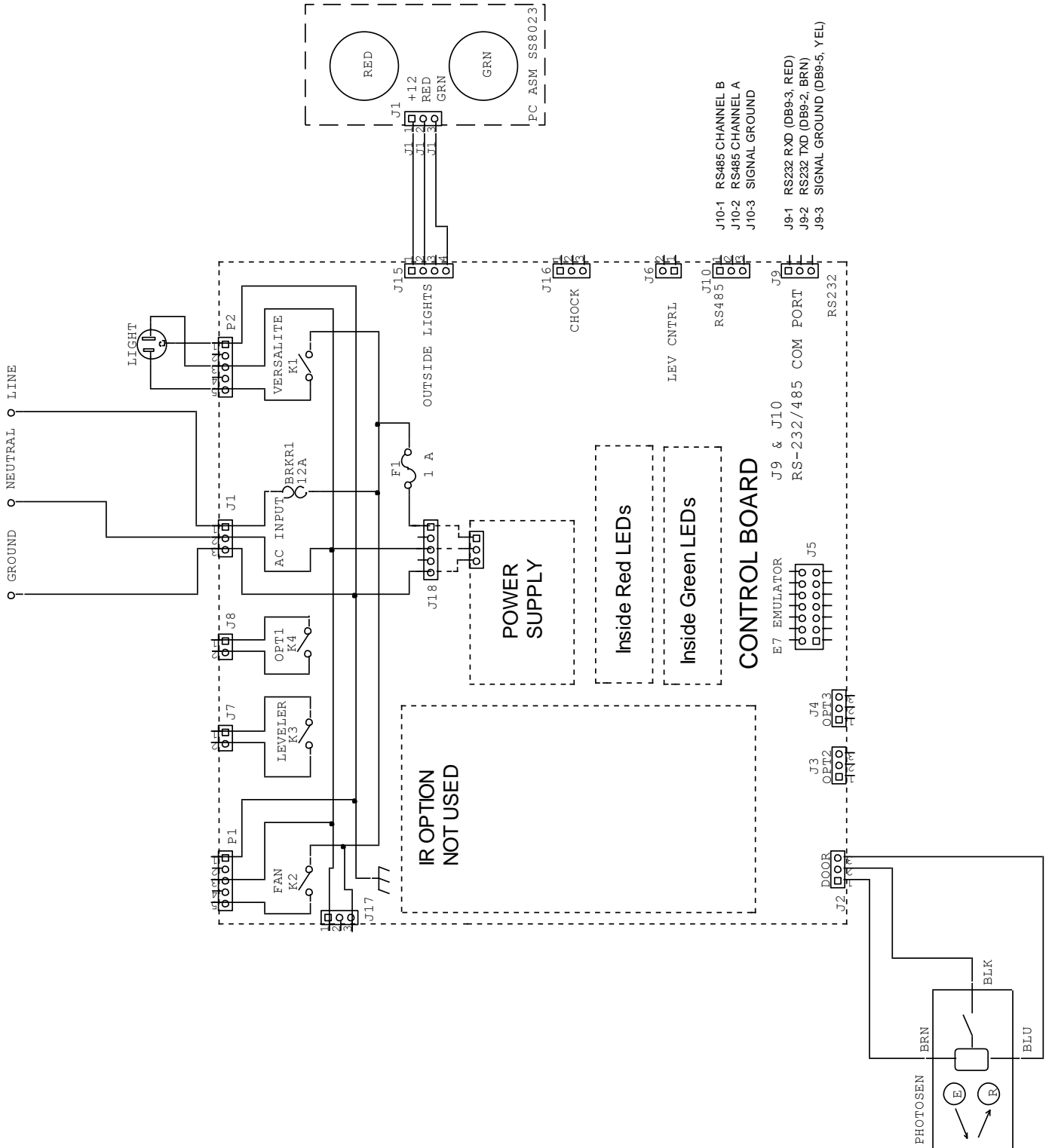
BOLLARD BRACKET
Used on bollards 4 to 10 inch diameter.
(2) hose clamps & 12 1/4-20 mounting
bolts are included.



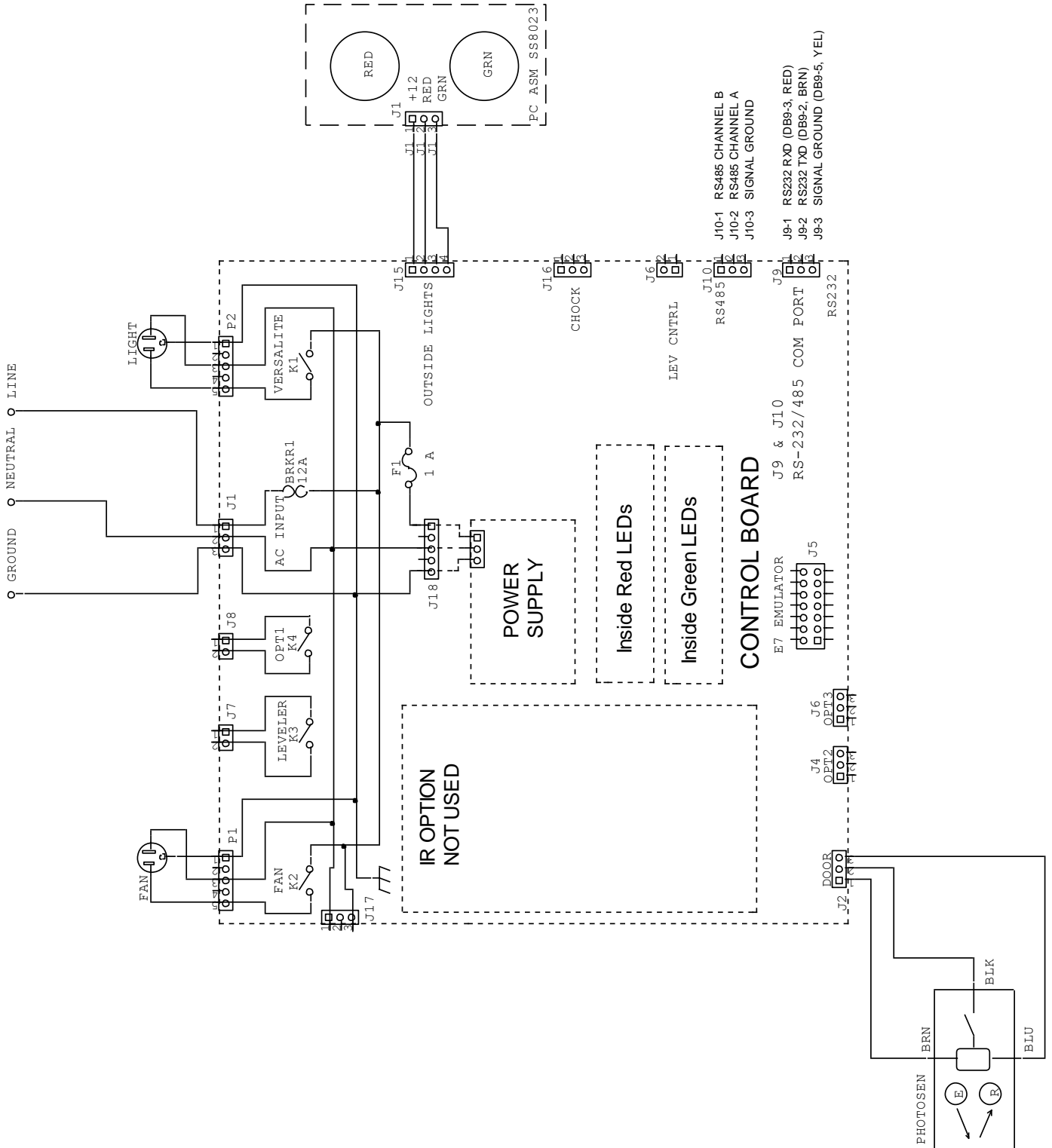
OPTIONAL BOLLARD BRACKET

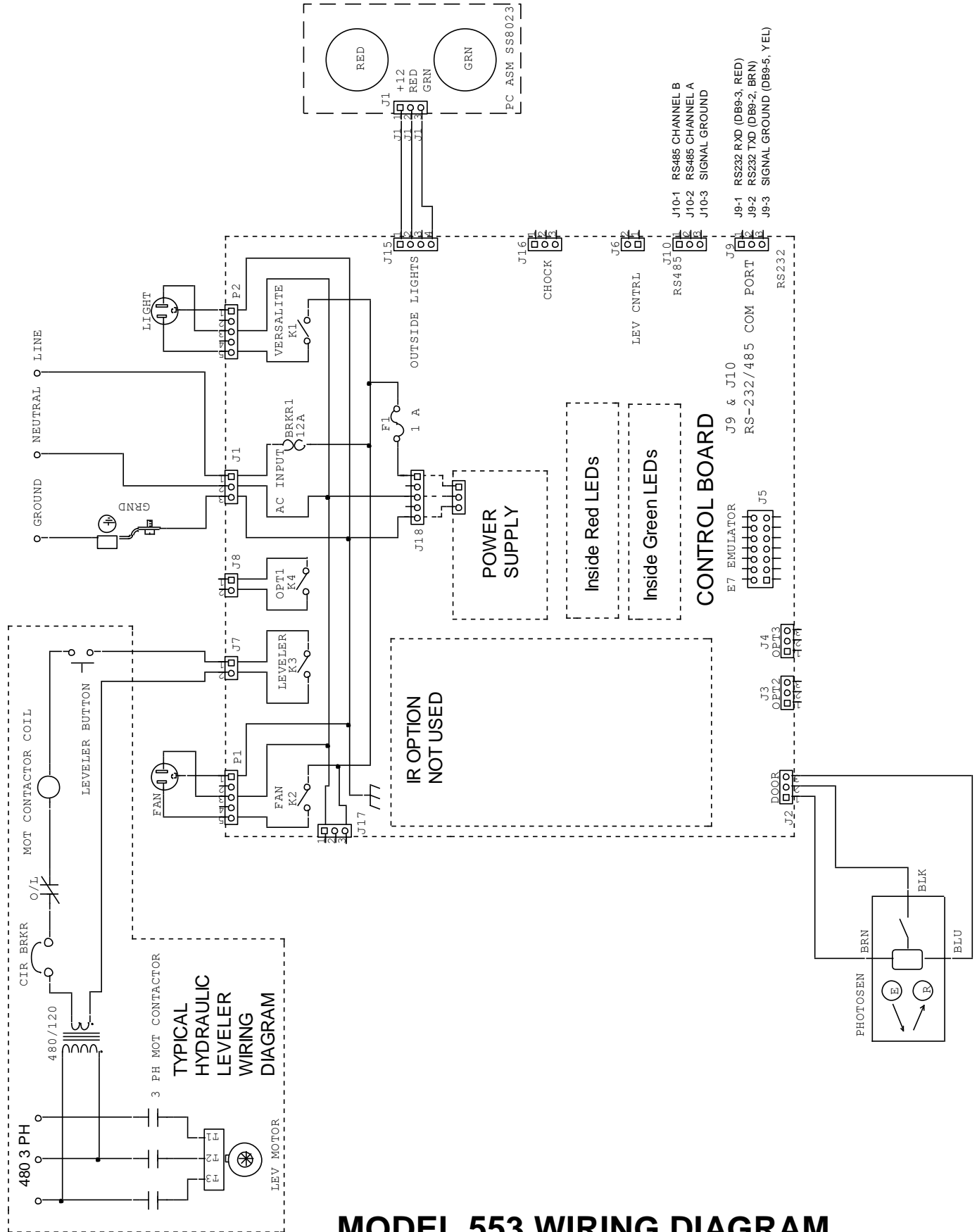


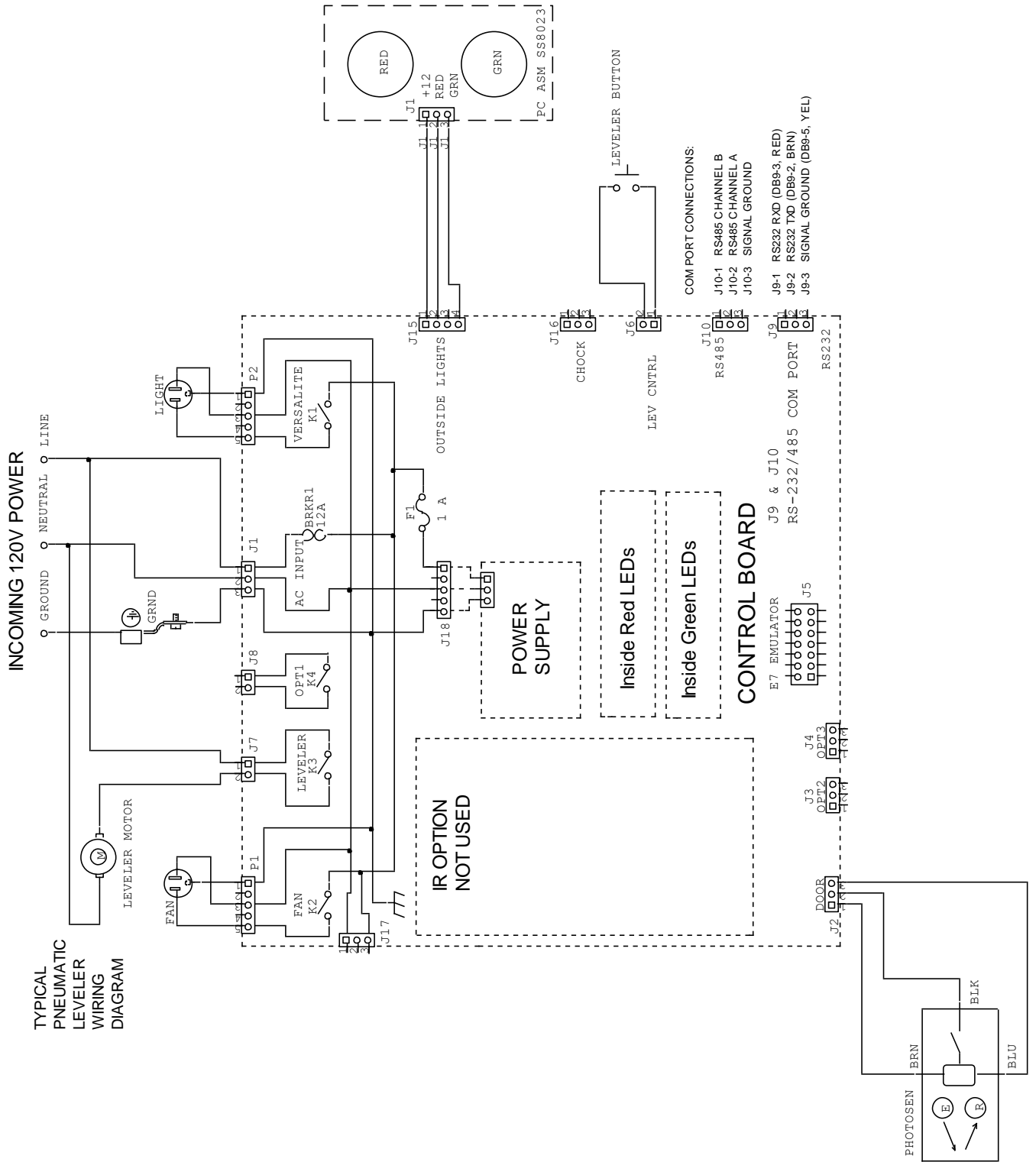
MODEL 550 WIRING DIAGRAM



MODEL 551 WIRING DIAGRAM







MODEL 554 WIRING DIAGRAM

DL Manufacturing

Terms / Conditions/ Warranty

Shipping Times

~ Orders for stock items received by 3:00pm EST will be processed for shipment the next day. Orders requesting 2nd Day Air or Overnight Air received by 1:00pm will be processed for same day shipment.

Shipments / Freight

~ All DL Manufacturing orders will ship directly from our facility in North Syracuse, NY.

~ All parts will be shipped via UPS Ground unless you authorize a different service. UPS shipments are prepaid and the charges are added to your invoices.

~ For orders shipping by common carrier, the freight will be FOB, North Syracuse, NY. When "best way" is the preferred shipping method on your order, DL Manufacturing will choose the carrier, unless otherwise stated, for the orders shipping from this facility. No adjustments will be made after the order has shipped.

Returns

~ DL Manufacturing will issue a Returned Material Authorization (RMA) number for any product, parts and accessories. Products should not be returned without an RMA number.

~ Replacement parts will be invoiced at the time of shipping. Invoices will be credited upon receipt and inspection of Returned Material Authorization (RMA).

~ Freight for returns is paid for by the shipper unless otherwise specified by DL Manufacturing.

~ A restocking fee of 25% of net price or a minimum \$20.00 is charged for returns.

~ All replacement parts are warranted for a period of 90 days from shipment.

Cancellation Fees

~ Cancellation charges may be incurred on orders cancelled with DL Manufacturing. Please contact DL Manufacturing to discuss each situation.

Warranty Policy

~ All Products (excluding bulbs) manufactured by DL Manufacturing are warranted to be free from defects for a period of 12 months from the date of shipment, excluding doors, which have a warranty period of 12 months from date of installation or 18 months from shipment, whenever occurs first.

This warranty does not cover unreasonable/improper use or use beyond rated conditions, improper storage, negligence or accident; damage because of incorporated use of equipment with Goods, after Customer has or reasonably should have, knowledge of any defect; or improperly installed by any other Person that is unauthorized by DL Manufacturing.

This warranty is subject to customer covenants to inform all subsequent buyers of the Goods of the limitation on and exclusive of warranties provided for herein. Customer hereby indemnifies and agrees to hold DL Manufacturing harmless from and against all losses, costs and expenses, including reasonable attorney's fees incurred by DL Manufacturing as a result of any third party claim relating to the purchase, sale or use of, or otherwise relating to, the Goods covered by this Agreement.

In no event shall DL Manufacturing be required to repair, replace or reimburse Customer for more than the part or material that is found to be defective and DL Manufacturing's liability shall in such event be no greater than the invoiced price of the item and shall not include labor, shipping or other costs incurred in connection with the reshipment of defective Goods to DL Manufacturing or the reinstallation of such Goods after any repair or replacement. The remedy set forth in this paragraph is expressly agreed to be the sole and exclusive remedy for any breach of warranty. This warranty is exclusive and in lieu of all other warranties expressed or implied, including but not limited to any warranty of merchantability or of fitness for a particular purpose.

Limitation of Liability - In no event as a result of breach of contract, warranty or negligence shall DL Manufacturing be liable for special, or consequential damages including but not limited to loss of profits or revenues, loss of any equipment, cost of capital, cost of substitute equipment, facilities or services, downtime costs or claims of purchasers of the Customer for such damages. Additionally, DL Manufacturing will not be liable for any delay in the performance of contracts and orders, or in the shipment and delivery of goods, or for any damage suffered by the Customer by reason of delay, when such delay is, directly or indirectly, caused by force majeure, including war, Government interference, strikes, embargoes, shortage of labor, fuel, fires, floods, or any other cause or cause whether or not similar in nature to any of those herein before specified beyond DL Manufacturing's control.