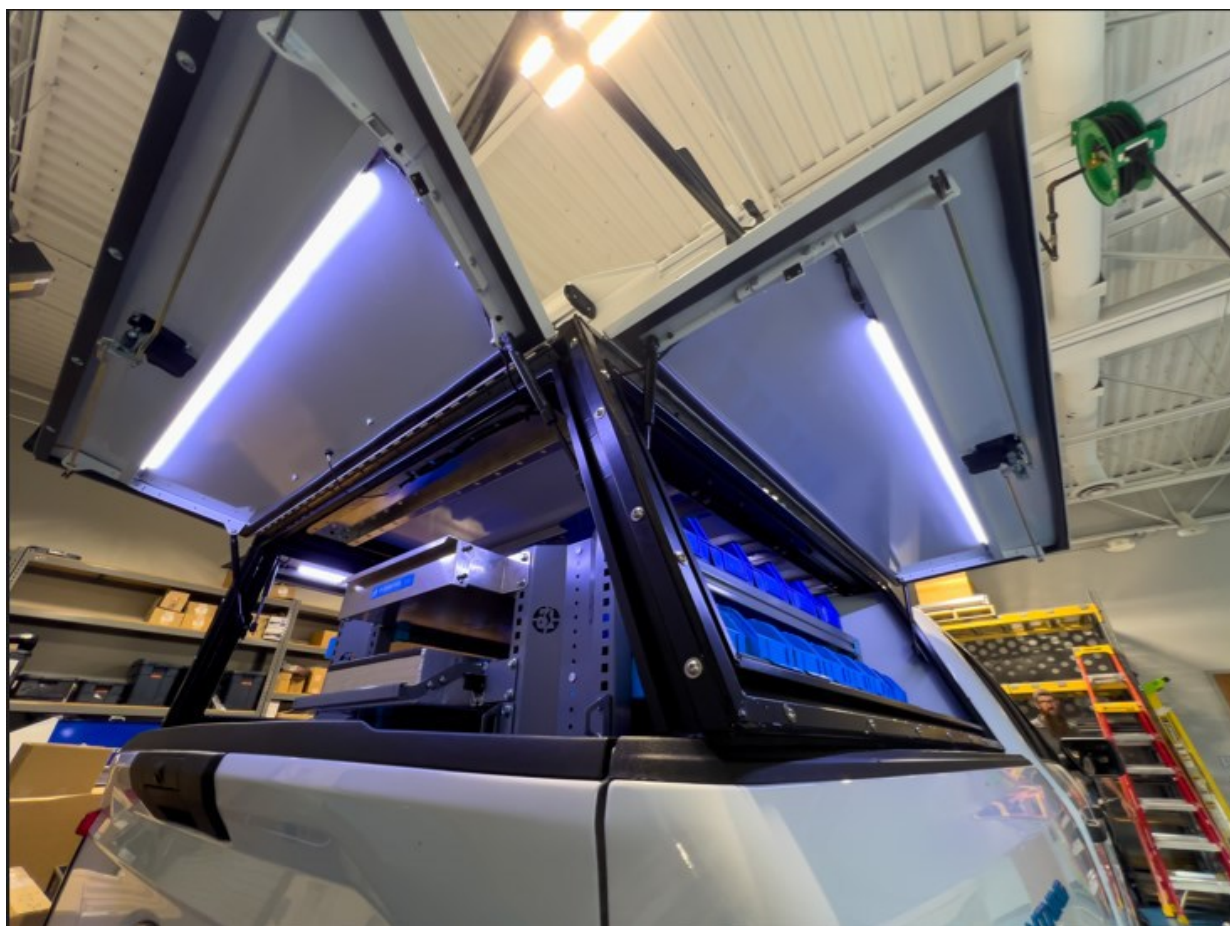


Introduction / Comments:

Install Instructions For Interior Lighting In Topper For Ford Lightning

Note:

Read all instructions prior to installation. Review the Adrian Steel **GENERAL PRECAUTIONS PAGES (56638)** before attempting installation. Only personnel familiar with using electrical best practices should perform this install. Reference **ELECTRICAL BEST PRACTICES MANUAL (54479)** before attempting installation.



Installation Instructions For Interior Lighting In Topper For Ford Lightning

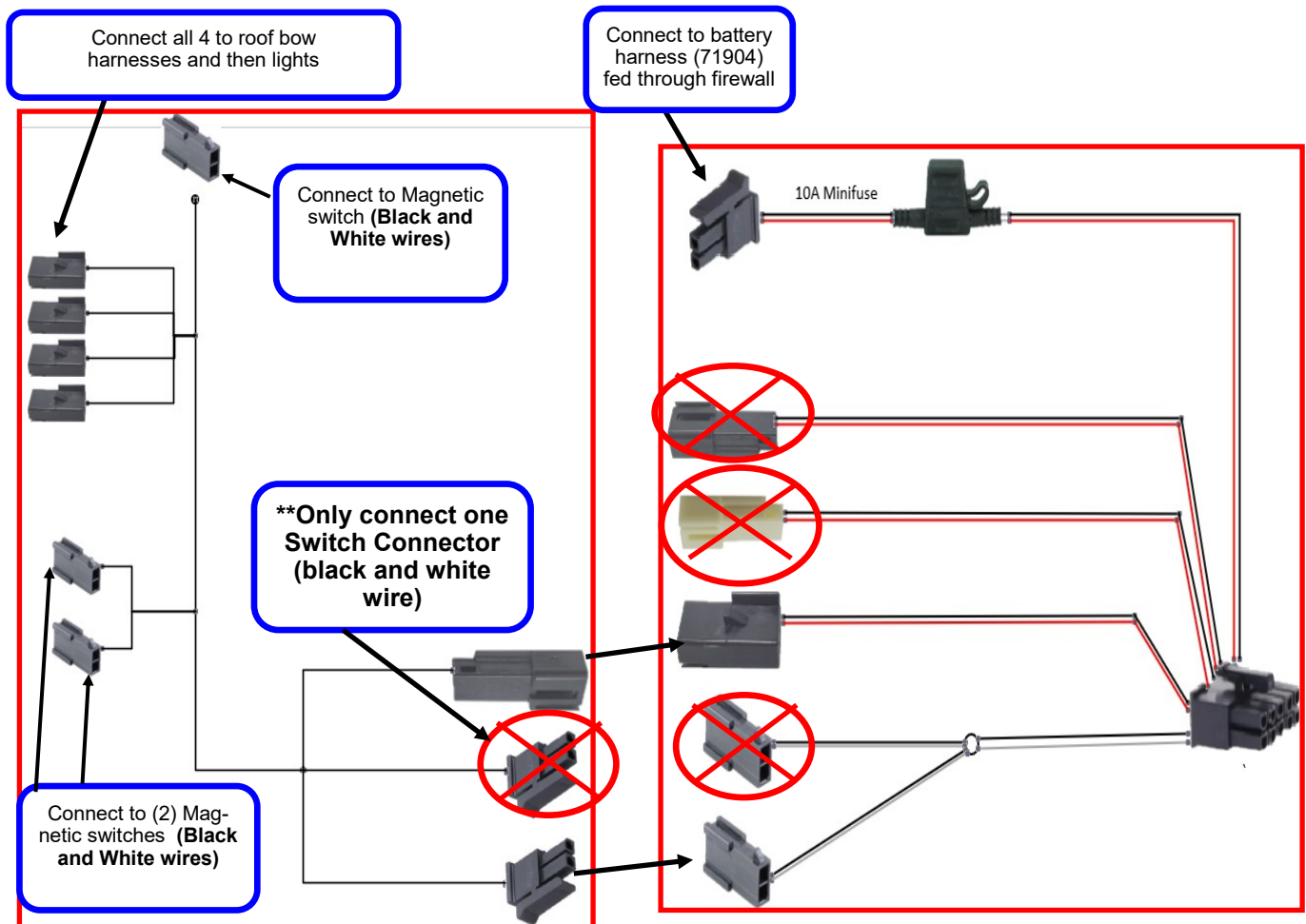
****Please read statement below before moving forward****

These plug and play kits are completely modular and can be configured in many different ways. Placement of lights will be determined by sales order drawings/customer ask. Therefore, these instructions are for the most standard configurations, and for reference only.

Overall Harness Diagram

71905 Harness

71902 TLM Harness



Tools Required:



Screwdriver

Power drill, 3/8" step drill bit



Components:

Please note all these components may not be used in every install.

Only install what you have. Refer to the order drawing.

Integrated Truck Solution Kit 72548 components are denoted with a red star.

Light Kit's Offered

Part Numbers/Kit Contents:

74486 Integrated Truck Solution: ★

Includes: (2) 24" strip lights on both sides of the side doors and 2 dome lights in the top, on the roof bows. Refer to all components denoted with a ★ and quantity in blue parenthesis on page 3.

74564 (1) 48" Rear strip light on the back door

Includes: (1) 48" strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74496 (1) 48" Strip light on the driver side only

Includes: (1) 48" strip light, (1) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74491 (1) 48" Strip light on the passenger side only

Includes: (1) 48" strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

74560 (3) 48" Strip lights—rear, driver, and passenger side

Includes: (3) 48" strip light, (1) roof bow harness #2, (2) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

Driver's Side Strip Lights



Rear Side



Passenger's Side Strip Lights



Walk In Light Kit's Offered

Part Numbers/Kit Contents:

77624 Integrated Solution Kit

Includes: (4) 24" strip lights on both sides of the side doors and 2 dome lights in the top, on the roof bows.

77625 (1) 48" LED Light Strip for Passenger Side Only

Includes: (1) 48" strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

77626 (1) 48" LED Light Strip for Passenger Side Only

Includes: (1) 48" strip light, (1) roof bow harness #2, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

77627 (2) 48" LED Light Strip for both Passenger & Driver Sides

Includes: (2) 48" strip light, (1) roof bow harness #2, (2) roof bow harness #1, (1) TLM Module, (1) TLM to Battery Harness, (1) TLM to Lights Harness, (1) Magnetic Switches Bag

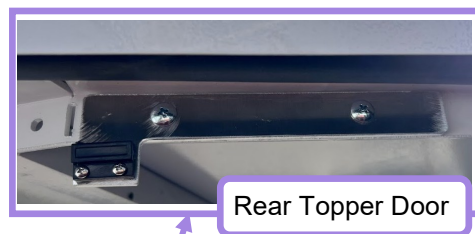
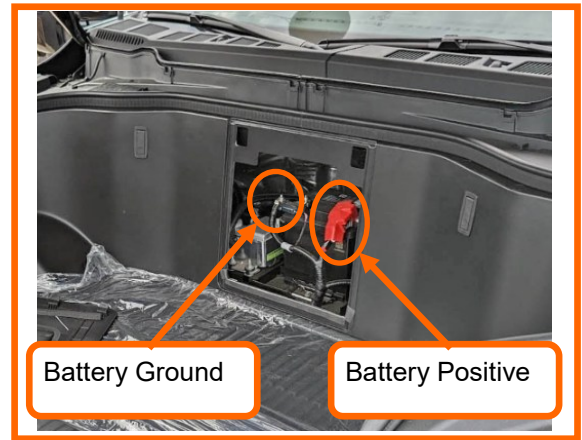
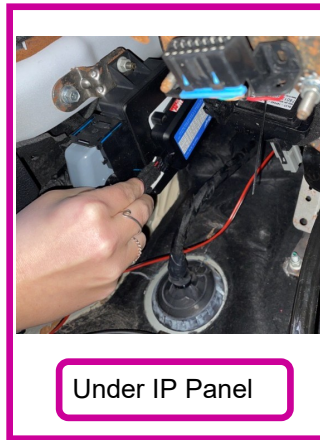
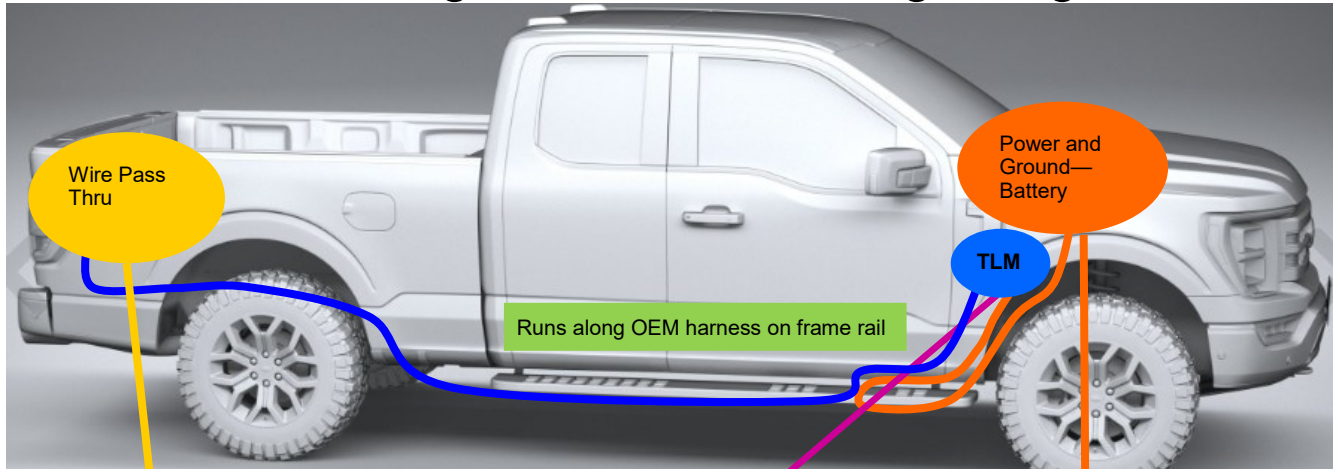
Driver Side



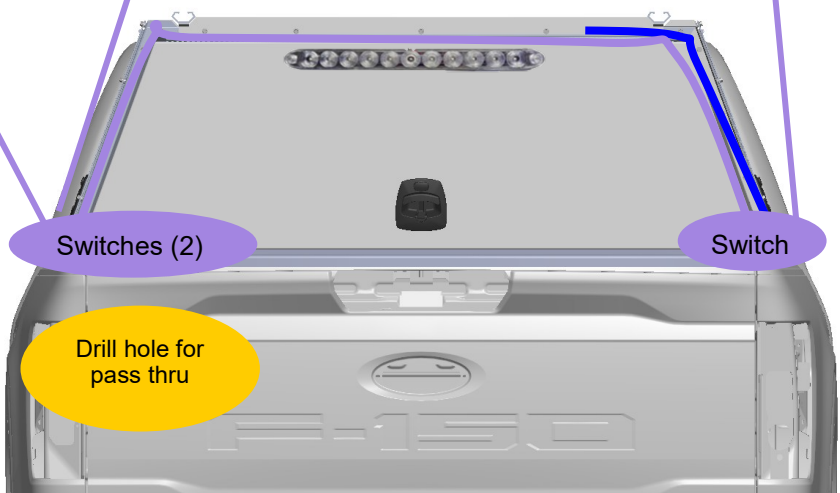
Passenger Side



Routing Overview: Ford Lightning



Color	Key - Items
Orange	Power and Ground Location
Blue	Harness Routing From TLM To Topper
Purple	Switches And Switch Harness
Yellow	Bed Wire Pass Thru



Light Placements:

Please refer to the order drawing—not all lights will be used every install. These are modular and created to work depending on customer needs.

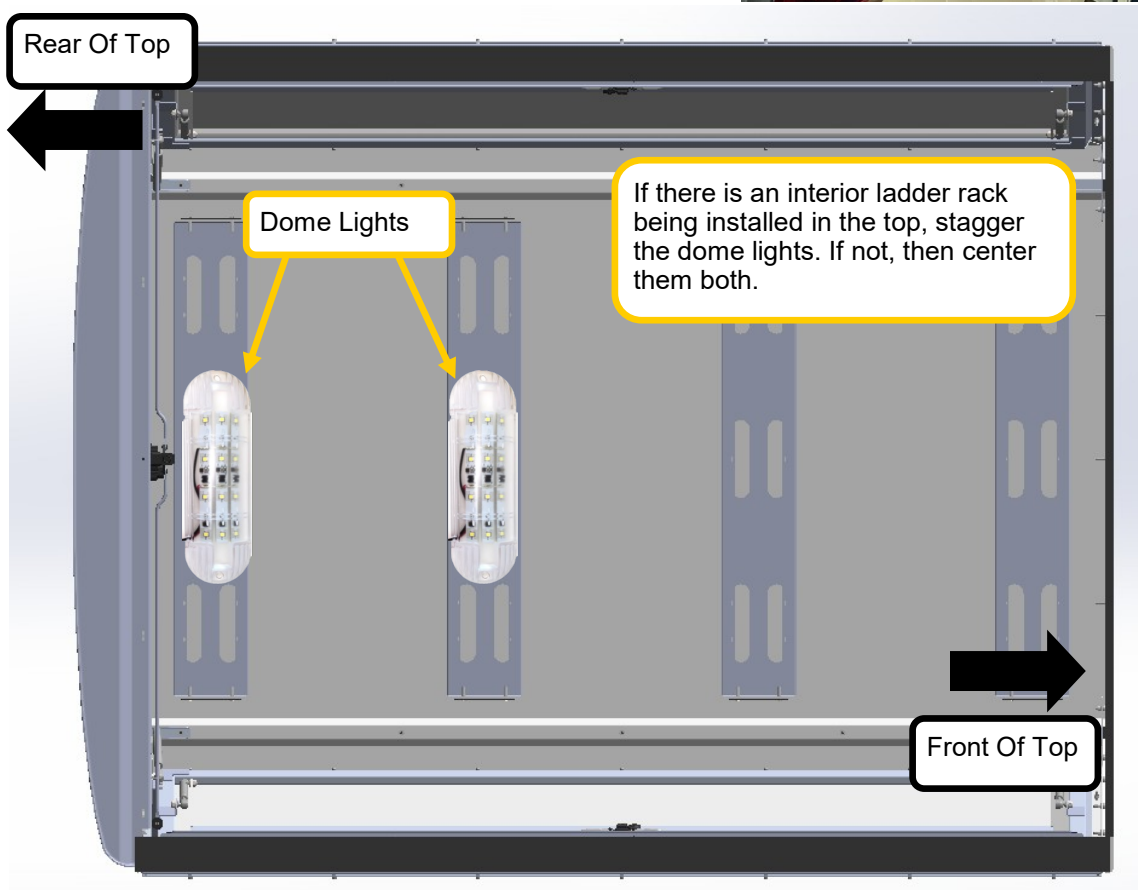
Driver's Side



Passenger's Side



Rear Of Top



FORD LIGHTNING

Step 1:

Battery -

Open the hood and locate the battery behind a panel in back of the frunk.

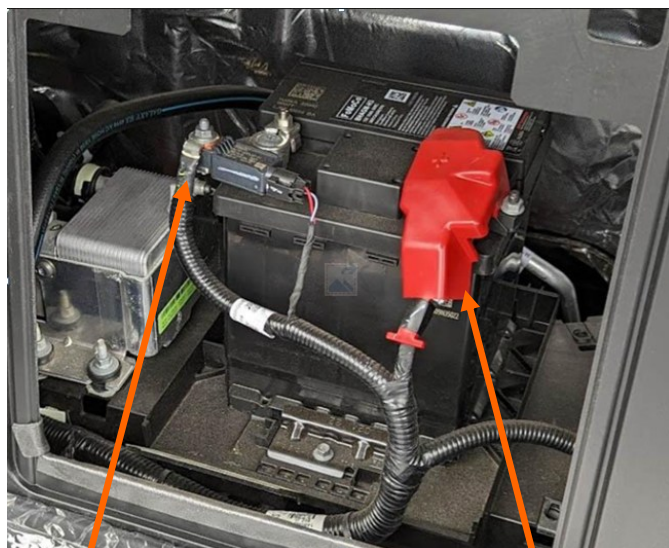
Locate the power harness 71904.

Remove the inline fuse in the fuse holder. Do not place fuse back into holder until after the install is complete.

Connect the **RED** wire ring terminal to the positive battery post shown in the picture to the left. Torque the nut to 55 lb.in (6.2 Nm). Do not over tighten,

Connect the **BLACK** wire ring terminal to the negative battery post shown in the picture to the left. Torque the nut to 97 lb.in (11 Nm). Do not over tighten.

Do not un-bolt the battery terminal clamps from the battery.



Negative battery post - attach ring terminal

Positive battery post - attach ring terminal

Re-torque the ground nut to 97lb.in (11Nm). DO NOT OVER

Re-torque the positive nut to 55 lb.in (6.2Nm). DO NOT OVER TIGHTEN



Remove left side panel next to frunk (circled to the left)

You will be routing harness down through this area to get to the wheel well under the vehicle



Step 2:

Feed harness completely to underside of vehicle to then be routed to the grommet under the passenger's side of the vehicle.



Step 3: Locate the passenger's side grommet. (Image to the left). Cut an "X" in the grommet to create opening for wiring. Feed harness completely through grommet up into the cab.



Route excess wire to be coiled underneath trim towards the middle of the cab as shown in the image to the left. Make sure you leave enough harness to get to the Timer Location Module under the passenger's side step well.

For Rev A follow steps below:

Step 4: Locate the Timer Low-Voltage Module (TLM) and harness — Part number: 71902

First, plug the harness into the module.

Note:

You will NOT use the cream colored connector or the matching black connector. You will be using the smaller black module output connector, one(1) switch harness connectors (black and white wires), and the black power supply connector.

*** Ensure that the fuse from the inline fuse holder has been removed until the end of the install.

Bring TLM to driver side, where power harness is fed through.



71904 fed through passenger seat grommet, connected to TLM

Please reference page 2 for the following connection information.

Locate the TLM to battery harness (71904) that has been routed through the firewall grommet and TLM power to light harness (71905).

On the 71904 harness, connect the black connector to the blunt red wire on the TLM. (Circled in red in first image, on top).

Plug the red and black connector on the 71905 to the mating connector on the 71902 (TLM), shown in the blue circle. Next, connect one of the switch connections (black and white wires) to one of the mating connections on TLM. Circled in yellow. The rest of the connectors will not be used.

*** You do NOT need to connect both switch connections.

To set the dip switch to 90 minutes (default) follow the chart below:

If customer would like a time different that 90 minutes, use the dip switches to set the time. Chart is as follows:

1	2	3	4	5	6
Down	Down	Down	Up	Up	Down

71905 and 71902 Connections

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	Minutes	DIP 6
Voltage Sense ON (Down) OFF (Up)	Timer ON (Down) OFF (Up)	Up	Up	Down	30	ON (Down) Steady Ground Input
		Up	Down	Up	45	
		Up	Down	Down	60	
		Down	Up	Up	90	OFF (Up) Momentary Ground Input
		Down	Up	Down	120	
		Down	Down	Up	150	

TLM Rev B:



Part #: TLM Rev B

DIP 1	DIP 2	V-Sense	DIP 3	DIP 4	DIP 5	Minutes	DIP 6
Up	Up	OFF	Timer ON (Down) OFF (Up)	Up	Up	30	ON (Down) Steady Ground Input OFF (Up) Momentary Ground Input
Up	Down	11.2V		Up	Down	60	
Down	Up	11.5V		Down	Up	90	
Down	Down	11.8V		Down	Down	120	

Dip Switches 1 & 2 determine Voltage Sense Threshold
 Dip Switch 3 sets option to ON or OFF
 Dip Switches 4 & 5 set Timer Duration

If topper lighting consists of only **1 Light Strip**, place dip switches in the following order:
(This is set for 90 minutes, if customer would like 30,60, or 120 minutes please refer to the chart above to set dip switches accordingly)

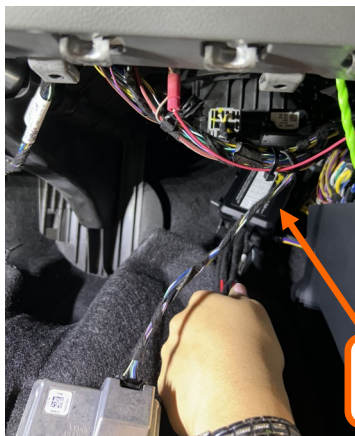
1	2	V-Sense	3	4	5	6
Down	Down	11.8	Down	Down	Up	Down

If topper lighting consists of only **more than 1 Light Strip (all other light kits)**, place dip switches in the following order:
(This is set for 90 minutes, if customer would like 30,60, or 120 minutes please refer to the chart above to set dip switches accordingly)

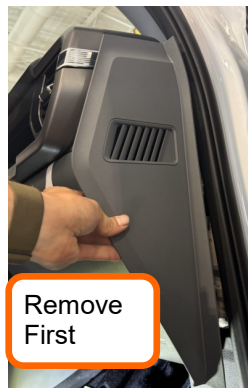
1	2	V-Sense	3	4	5	6
Up	Down	11.2	Down	Down	Up	Down

Step 5: Locate the **passenger's side door sill area**.

Use a trim tool to remove the trim panels in the passenger's step well and dash/kick panel.



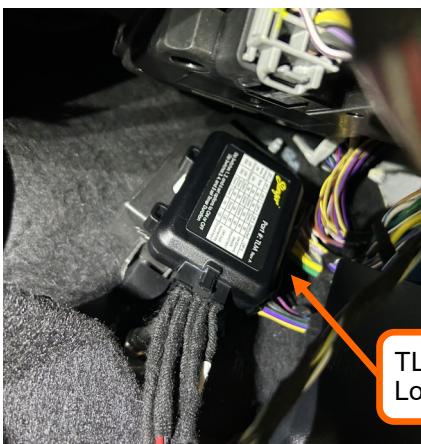
TLM
Location



Remove
First



Remove
Second



TLM
Location

Use the adhesive tape supplied in the kit to stick the TLM to the bottom of the step well as far back and up as you can. Refer to the picture to the left for the TLM placement.

Secure the TLM and wires with zip ties.

Be sure the TLM is secured.

*** Picture is for location reference only.



Step 6: Once TLM is secured into its position continue routing harness 71905 through trim along the passenger side doors as shown.

Ensure harnesses are completely tucked and secured under trim supports so that wires are not pinched once trim pieces are reinstalled



Step 7: Once Harness 71905 has been routed to the backseat remove the trim piece shown to the left to access the gray plastic cover under the seat that we will be routing our Harness through. Plastic cover circled in red.

Use a step drill bit to drill a 11/16" sized hole to allow the harness to be routed through it to the underside of the vehicle. Once harness has been completely routed through plastic cover silicone the hole for water sealing.



Step 8: Begin routing harness to the back of the vehicle on the passenger's side while staying away from the rear passenger's side wheel. Find mounting points on the vehicle's frame or thicker OEM harnesses to secure harness with zip ties.

Once harness has been routed and secured to the back of the vehicle, move to the bed of the truck.



Step 9: Locate the rear passenger's side bed area. There is an oval shaped grommet for a pass thru. Using a 3/8" step drill bit, drill a hole into the plastic grommet and route the harnesses through the hole. Insert the bigger grommet supplied in the Brake Light kit into the bed frame pass through, this will be used for the interior light harness and Brake Light harness together. Tuck any excess wiring into the empty cavity underneath the bed frame. Use the supplied Tek screw and P-clip to secure the wire harness to the frame.

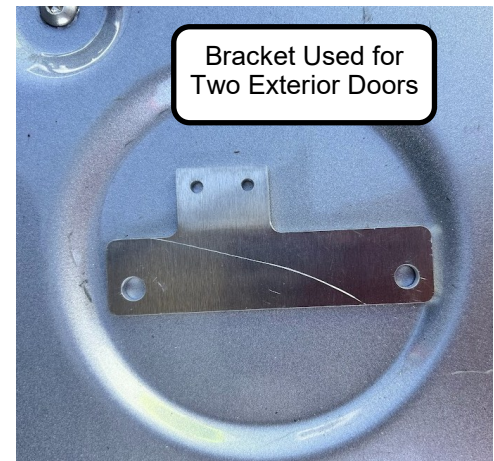
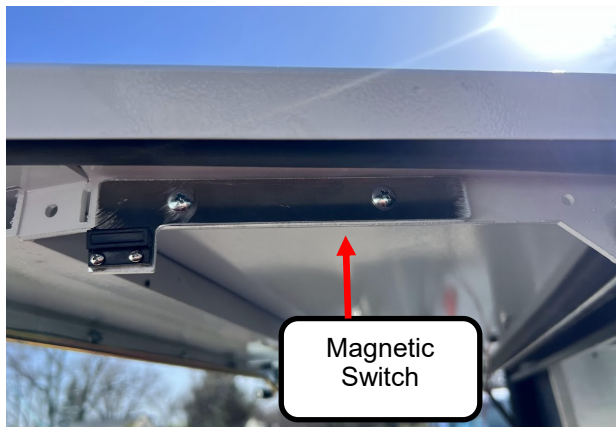
Excess wiring tucked under the bed frame



Step 10:

Locate BAG71907, magnetic switches PN 71907 and magnetic switch brackets PN: 73414-W, 73415-W, 73416-W.

Two small mounting brackets with two switch mounting points, will be used for exterior doors.



Step 11:

Obtain two magnetic switches. Using a magnet without wires, remove plastic covering from the back side. Clean the surface of mount using an alcohol pad. Once the surface is clean, position the magnetic switch on the bracket, aligning it with the pre-drilled holes.

Secure the magnetic switch to bracket using the two 4-40x.50 Round Head Phillips screw and two 4-40 hex nuts. Ensure proper orientation by referring to the provided image.

Repeat this process to other brackets. Be sure to install a magnet without wires to all 3 brackets.





Step 12:

Identify the door shocks on the topper doors. Both the driver and passenger sides should have pre-existing holes on the shock mounts for placing the magnetic switch.

Start by cleaning the shock mount using an alcohol pad and remove any plastic film covering the back of switch.



Step 13:

Locate driver's side door shock mounts. There will be two magnetic switches mounted to each side of the driver's side door shock mount.

Position the magnetic switch along with its wires and connector. Secure two switches to the door shock, one magnetic switch with wires facing upward, and the other with wires facing downward.

Using a screw driver secure the magnetic switches are in proper position.

Use the provided image as reference.



Step 14:

Locate side door magnetic switch mounts, PN 73416. Begin to position magnetic switch on exterior door, aligning with opposite magnetic switch connected to door shock mount. Make sure magnetic switches are face to face with one another, approximately 1/4" apart or closer.





Note: Install will be on driver's side. Image is for reference only.

Step 15:

Locate magnetic switch mount for the rear door. PN 73415 Repeat **Step 12**. Aline mount with magnetic switch on door shock mount. Secure mount with 10-24x.75 button head cap screws and 10-24 hex nuts.



Step 16:

Moving to the passenger side, secure magnetic switch on PN 73416. Mount magnetic switch to door shock mount, facing the side door, not the rear door. Mount PN 73416 to the driver side door, aligning the two magnetic switches, same as before. Use the images as reference.



Step 17:

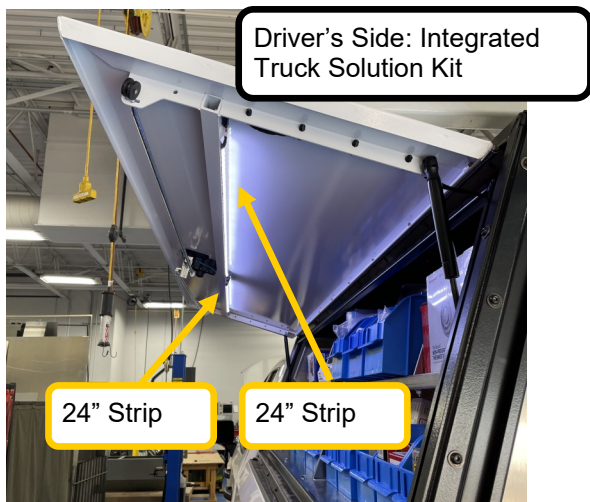
Pull the wiring upward to secure along the inside with zip ties. Continue routing the harnesses in the corner of the topper, to the top front of the first roof bow. (Shown in red)

The harness end with connectors should end up between the first roof bow and the door frame on the driver side. See picture below for reference. Use the holes in the roof bows to secure wiring with zip ties.

Rear Door

1st Roof Bow





Driver's, Passenger, or Rear Door:
Other Interior Light Kits



Step 18: Install the lights.

Locate the lights for the install. This will vary with customers so grab only what is called out on the sales order per vehicle.

***** Please note:** If there is an added door handle strap, the lights will need to be installed as high up on the channel as possible, to avoid the nut and bolt clamping on the light strip.

Open the topper doors that are requiring lights. Locate the square tube running horizontal across the door. The side facing the interior of the top will be the side you will secure the lights to.

Using the alcohol pads provided in the boxes, clean the entire inside wall of the square tube where the lights will stick to before installing. Be sure to let the tube dry.

Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

If installing the integrated Truck Solution (74486):

Connect (2) 24" strips together, and remove sticky tape on the back.

On the drivers side, install (2) 24" strip lights as center as possible between the front and rear sides of the door.

For the passenger side, install (2) 24" strips, following the same instructions as above.

Follow the same mounting location/procedure for any other strip lights being mounted (48"). Lights will mount on the interior side of the channel that runs along the door.

Only install the lights on the sides that are needed. Not every door will always have lights. These will vary on customer asks. Refer to page 4 for kit part numbers and components.

Be sure to have the larger connector end of the lights towards the rear for connecting into the roof bow harnesses.

Place a small sticky back square zip tie mount at each end of the strips to secure the connector to the topper.

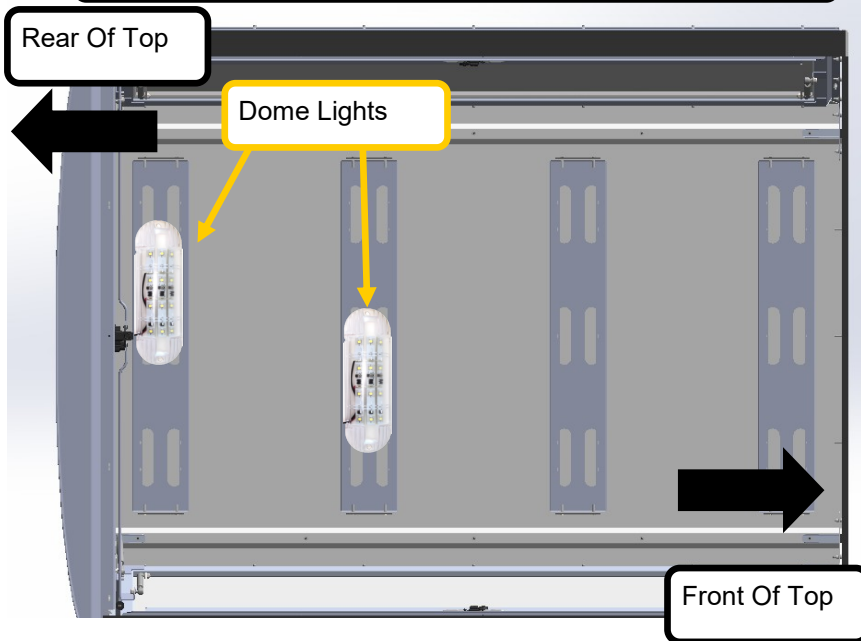
Step 19:
For the Integrated Truck Solution (74486)
Locate the (2) dome lights.

Be sure to clean the area that the lights will stick to carefully before installing. Use the alcohol pad provided in the boxes and let it dry before installing.

If there will be an interior ladder rack installed, stagger the dome lights on the roof bows like shown. If not then please center the lights.

Note: Don't use the self taper screws. Drill 2 holes and use nuts and bolts to secure Dome lights.

Integrated Truck Solution Kit With Interior Ladder Rack

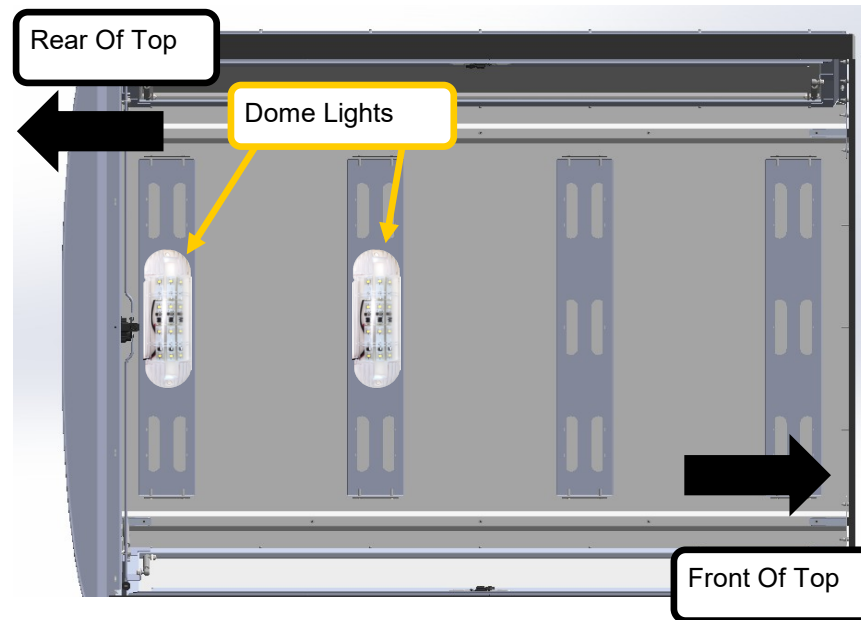


Place dome light on roof bow as shown in images below:



Please secure dome lights with (FAS-0022 10-24X0.75) screw, (FAS-0029 10-24) nut, and (FAS-0027) washer on roof bow.

Integrated Truck Solution Kit With No Interior Ladder





Dome light on roof bow



Dome light on roof bow



Strip light on doors—
use existing holes for zip ties

Watch for Sharp Edge



Leave extra wiring
for opening the door



Tuck excess wiring between door and roof bow. Secure with zip ties

Step 20: Roof Bow Harness Routing

Use roof bow harness #1 (63481) for routing the 2 dome lights and the strip lights on the driver's side door.

Use roof bow harness #2 (63482) for routing to the strip lights on the passenger side.

Utilize the existing holes in the doors and roof bows for securing the zip ties to. Clean topper surface in corner areas with alcohol pads. Begin to secure the harness using provided self adhesive tie mounts where necessary.

***IMPORTANT:

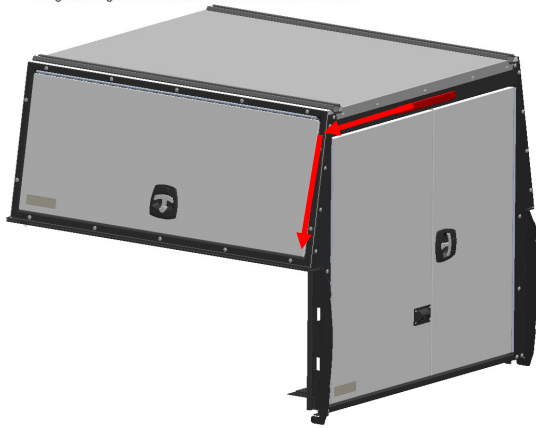
Ensure while securing wiring to avoid all sharp edges. (Shown in image 3, circled in red). When wiring from the light strips to the roof bow, avoid sharp edges at the ends.

When both side doors are open, allow very little slack on the wire, ensuring it is taut. However, while pulling wiring taut on the strip lights ensure the doors open and close without damaging the wires.

Route the harnesses to the TLM harness (71905) and plug them in.

Secure all the wires with zip ties and tuck neatly as possible between the first roof bow and the rear door edge.

Be sure all wiring is secured with zip ties.



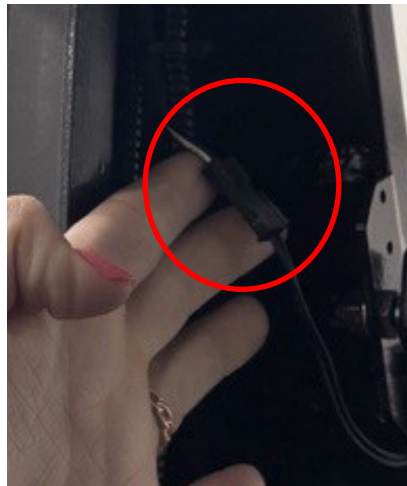
Step 21:

A) After routing 71905 underneath the vehicle, towards the rear, secure the bundle in the middle of the roof bows closest to the doors.

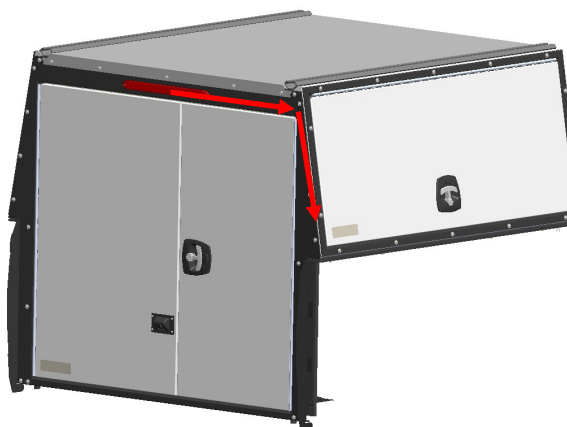
Route the longest lead of magnetic switch harness to the **driver side** switch mount. Image to the left.

When routing keep the harness tucked **up into the area with the harness**. Use stud mounts to secure harness, if there is no stud mounts to connect to, use sticky back mounting.

Connect end of magnetic switch to mating connector end on harness. (Shown in **Red**)



B) With the two short leads plug one end into the rear magnetic sensor, the other add 80371 extension harness to it to reach the passenger side magnetic sensor. (Shown in **Red**)



80371



Step 22: *** Testing of magnetic switches ***



Continue to route power to light harness PN 71905 to magnetic switches mounted on door shock mounts.

After plugging in the magnetic switches, be sure to secure the excess wiring using provided cable ties.

Once magnetic switches and all lights are plugged in, lights should be on.

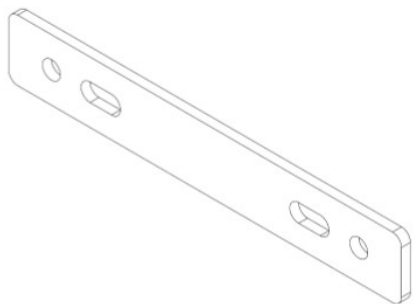
To test and see if the magnetic switches are close enough to one another, open the tailgate of the truck and shut all of the topper doors.

Once all of the topper doors are shut, all of the lights should be off. If one topper door is open, the lights will remain on. In order for the lights to turn off, all of the topper doors must be shut.

Magnetic switches should be no more than 1/4" of an inch away from one another.

*** If the lights do NOT turn off when all of the doors are shut, preform next step below.

Step 23: Locate magnetic switch bracket spacer PN 73414-W.



Place one **or two bracket(s)** behind the pre-existing bracket on the topper door. This can be placed behind one bracket and then tested again.

Utilizing hardware provided, secure bracket behind magnetic switch bracket. This is ensure the magnetic switches are close enough for connectivity.

A spacer may be placed behind all magnetic switch brackets on the rear door and two side doors if deemed necessary.

Magnetic switches mounted on topper door must be **NO MORE** than 0.3" apart from each when the door is shut.





Insert the fuses into the inline-fuse holders on the TLM harness (71905) and the power harness (71904).

The install is now complete.

Check that the lights come on when any of the 3 doors open.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	BAG0406-A	4" x 6" 3MIL AUTOBAG	1
2	FAS0942	SCREW,RHP 4-40X.50 SS	20
3	FAS0943	NUT,HEX NLK 4-40 SS	20
4	FAS0674	SCREW,BHCS 10-24X.75 SS	4
5	FAS0554	18-8 Stainless Steel	6
6	FAS0989	SCREW,RHP 4-40X.50 SS	4



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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED		
ALL BEND ANGLES ARE 90 DEGREES		
ALL DIMENSIONS ARE IN INCHES.		
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION		
FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	
Material Thickness: per ASTM Std. Weld Callouts per AWS		

RELEASE & REVISIONS

INITIAL ECN: 28219
CURRENT ECN: 28219
ECN DESCRIPTION: RELEASE FOR PRODUCTION
REVISED BY: LJK

FORMING, WELDING & ASSEMBLY
THIS PART IS NOT PAINTED, COATED OR FINISHED AT THIS PART LEVEL!
MECHANICAL FINISHING: N/A
SPECIAL FORM TOOL(S): N/A
WELDING JIG: N/A
ASSEMBLY JIG: N/A
MATERIAL TYPE: ASSM

PART / PRODUCT IDENTIFICATION			
	ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
			REVISION LEVEL B
MAT'L USED:	ASSM	DESIGNED BY: L. KALENIECKI	
DESCRIPTION: FAS BAG WALK IN TOPPER MAG SWITCH F-150			
WEIGHT (Lbs.): 0.725	SEGMENT CODE: BAG	PART NUMBER: BAG0989	

PRINTED DOCUMENT IS UNCONTROLLED

PART NUMBER

13905-0**ITEM DESCRIPTION: WIRE TIE, NYLON 40Lb, 8.5" BLACK**

MANUFACTURER: WAYTEK, INC. or equivalent
MANUFACTURERS PART NUMBER: 21093M or 21093C

SPECIFICATIONS: STANDARD CABLE TIE
 BLACK, NYLON
 8-1/2" LONG
 TENSILE STRENGTH: 40.0 LBS
 21093M = 1,000 quantity
 21093C = 100 quantity

SPECIAL NOTES: PART NUMBER IS BLACK.

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

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ADRIAN STEEL
VAN AND PICKUP EQUIPMENT

906 JAMES STREET
ADRIAN, MI 49221
517-265-6194
WWW.ADRIANSTEEL.COM



CAUTION
WHEN INSTALLING EQUIPMENT IN OR ON
VEHICLES CHECK FOR FUEL TANKS, FUEL
LINES, CONTROL LINES AND ELECTRICAL
WIRING BEFORE DRILLING! ALWAYS USE
DRILL BITS WITH INTEGRAL STOPS
WHENEVER POSSIBLE!

DRAWN BY
MDG

DATE DRAWN
10/26/2006

ECN NUMBER
18021

ECN DATE
11/13/2015

PART WEIGHT
0.01 LBS.

REV. LEVEL
D

PART NUMBER
13905-0

PART NUMBER

26618-0**ITEM DESCRIPTION: SILICONE, 1oz. TUBE**

SPECIFICATIONS: SU5005 RTV SILICONE
1oz. TUBE
CLEAR OR EQUIVILENT
SELF PIERCING CAP

SPECIAL NOTES:

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

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**906 JAMES STREET
ADRIAN, MI 49221
517-265-6194
WWW.ADRIANSTEEL.COM**



**WHEN INSTALLING EQUIPMENT IN OR ON
VEHICLES CHECK FOR FUEL TANKS, FUEL
LINES, CONTROL LINES AND ELECTRICAL
WIRING BEFORE DRILLING! ALWAYS USE
DRILL BITS WITH INTEGRAL STOPS
WHENEVER POSSIBLE!**

DRAWN BY
JLC

DATE DRAWN
7/21/2001

ECN NUMBER
16551

ECN DATE
7/22/2014

PART WEIGHT
0.02 LBS.

REV. LEVEL
C

PART NUMBER
26618-0

PART NUMBER

26618-0**ITEM DESCRIPTION: SILICONE, 1oz. TUBE**

SPECIFICATIONS: SU5005 RTV SILICONE
1oz. TUBE
CLEAR OR EQUIVILENT
SELF PIERCING CAP

SPECIAL NOTES:

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

PURCHASED PRODUCT DATA SHEET (PPDS)

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ADRIAN STEEL
VAN AND PICKUP EQUIPMENT

906 JAMES STREET
ADRIAN, MI 49221
517-265-6194
WWW.ADRIANSTEEL.COM



**WHEN INSTALLING EQUIPMENT IN OR ON
VEHICLES CHECK FOR FUEL TANKS, FUEL
LINES, CONTROL LINES AND ELECTRICAL
WIRING BEFORE DRILLING! ALWAYS USE
DRILL BITS WITH INTEGRAL STOPS
WHENEVER POSSIBLE!**

DRAWN BY
JLC

DATE DRAWN
7/21/2001

ECN NUMBER
16551

ECN DATE
7/22/2014

PART WEIGHT
0.02 LBS.

REV. LEVEL
C

PART NUMBER
26618-0

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

N/A

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

OTHER REQUIREMENTS

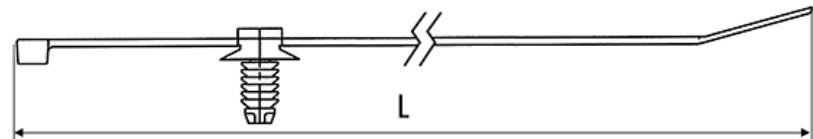
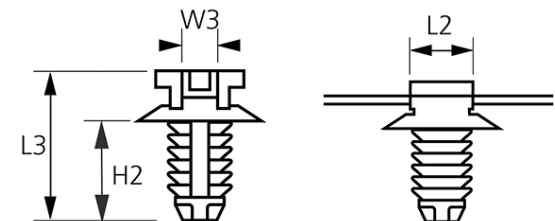
- **Roof Bow #1 (Cargo area, first Roof bow after partition)**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **1100mm Length**



P-HARRB1



(5x)



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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX)
DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 ± .125	0.0 ± .062	0° ± 2°
0.00 ± .062	0.00 ± .031	0.0° ± 1°
0.000 ± .031	0.000 ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 24359

CURRENT ECN: 24359

ECN DESCRIPTION:

QE8539 RELEASE MODULAR DOME
LIGHTING

REVISED BY: MJF

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

ECHOMASTER FLEET SOLUTIONS

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

P-HARRB1

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)

YES

PRINTED DOCUMENT IS UNCONTROLLED

Sheet 1 of 1

PART / PRODUCT IDENTIFICATION



ADRIAN STEEL

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

A

MAT'L USED: PURCHASED

DESIGNED BY: MJF

DESCRIPTION: ROOF BOW HARNESS #1

WEIGHT
(Lbs.):

.50

SEGMENT
CODE: EAU

PART NUMBER: 63481

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

N/A

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

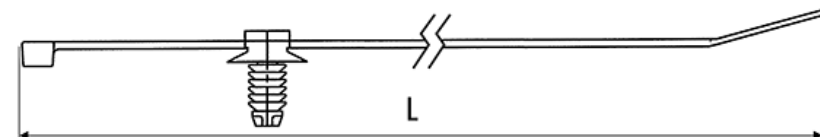
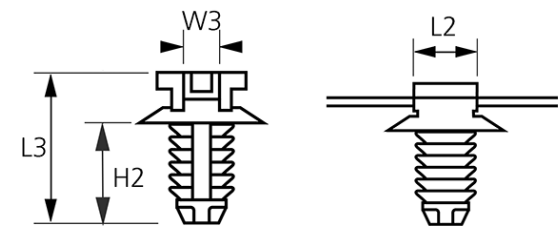
OTHER REQUIREMENTS

- **Roof Bow #2**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **1570mm Length**



P-HARRB2

(5x)



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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX)

DO NOT REQUIRE INSPECTION

FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 24359

CURRENT ECN: 24359

ECN DESCRIPTION:

QE8539 RELEASE MODULAR DOME LIGHTING

REVISED BY: MJF

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

ECHOMASTER FLEET SOLUTIONS

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

P-HARRB2

COLOR (ONLY LIST IF COLOR SPECIFIC)

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)

YES

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Sheet 1 of 1

PART / PRODUCT IDENTIFICATION



ADRIAN STEEL

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

A

MAT'L USED: **PURCHASED**

DESIGNED BY: **MJF**

DESCRIPTION: **ROOF BOW HARNESS #2**

WEIGHT
(Lbs.):

.50

SEGMENT
CODE: **EAU**

PART NUMBER: **63482**

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS															
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)															
N/A															
LOAD/RATING REQUIREMENT															
N/A															
MATERIAL REQUIREMENT															
N/A															
PACKAGING REQUIREMENT															
N/A															
OTHER REQUIREMENTS															
Note: Connector / Terminal Configuration: • MALE 2 PIN ON ONE END • FEMALE 2 PIN ON THE OPPOSITE END. BOM: <table><tr><th>Item</th><th>Qty.</th><th>Description</th></tr><tr><td>1</td><td>1</td><td>48" WHITE LED STRIP LIGHT W/ADHESIVE</td></tr><tr><td>2</td><td>2</td><td>4" ZIP TIE</td></tr><tr><td>3</td><td>2</td><td>CABLE TIE MOUNT</td></tr><tr><td>4</td><td>1</td><td>ALCOHOL PAD</td></tr></table>	Item	Qty.	Description	1	1	48" WHITE LED STRIP LIGHT W/ADHESIVE	2	2	4" ZIP TIE	3	2	CABLE TIE MOUNT	4	1	ALCOHOL PAD
Item	Qty.	Description													
1	1	48" WHITE LED STRIP LIGHT W/ADHESIVE													
2	2	4" ZIP TIE													
3	2	CABLE TIE MOUNT													
4	1	ALCOHOL PAD													



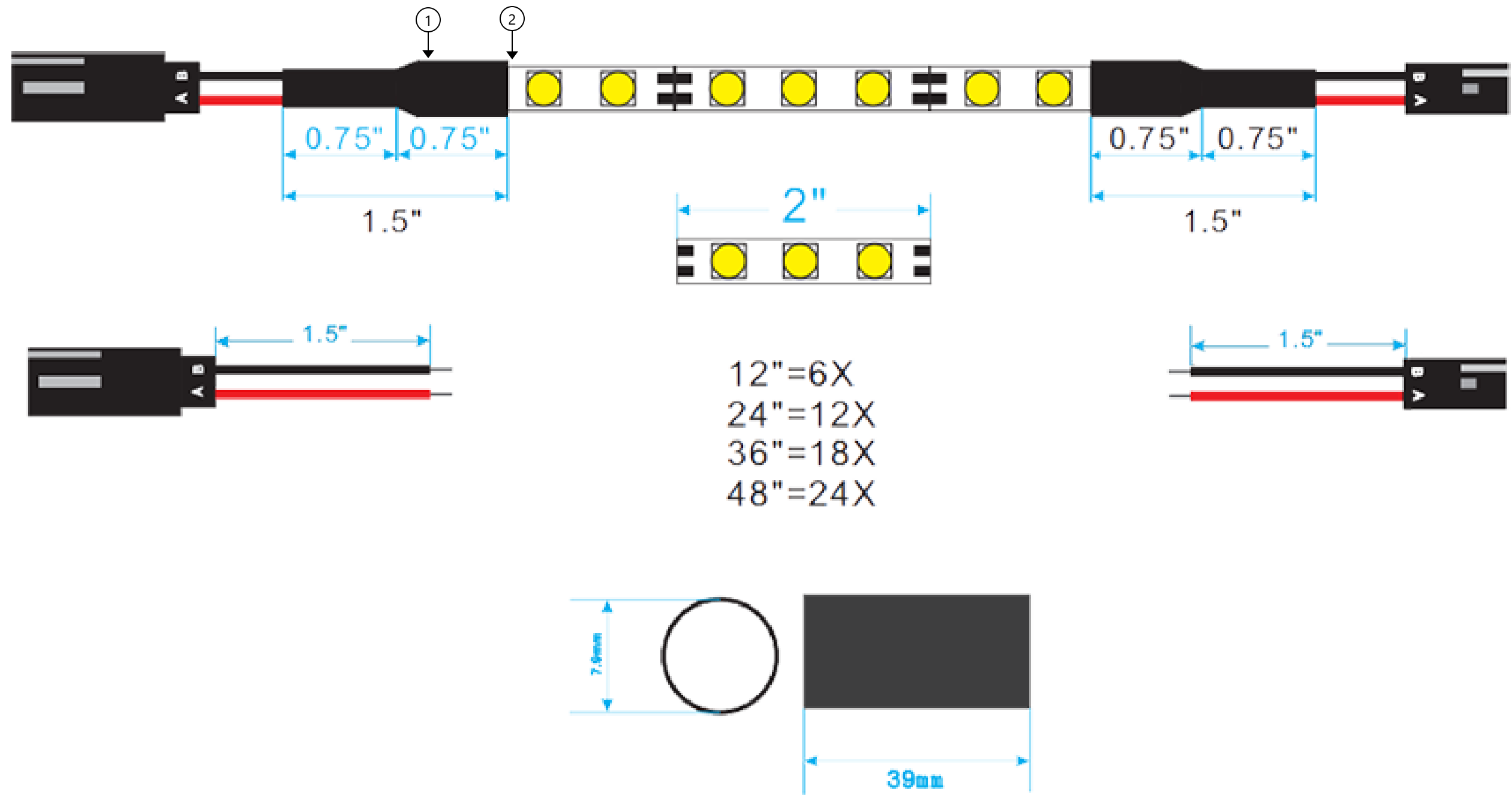
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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

TOLERANCES & INSPECTION			RELEASE & REVISIONS	
UNLESS OTHERWISE SPECIFIED			INITIAL ECN: 24697	
ALL BEND ANGLES ARE 90 DEGREES			CURRENT ECN: 25778	
ALL DIMENSIONS ARE IN INCHES.			ECN DESCRIPTION:	
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION			Revise Modular Lights With New 3M Adhesive	
FEATURES	HOLES/SLOTS	ANGLES		
0.0 = ± .125	0.0 = ± .062	0° = ± 2°		
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°		
0.000 = ± .031	0.000 = ± .015			
Material Thickness: per ASTM Std.			REVISED BY: JLT	
Weld Callouts per AWS				

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER CL-48BLED rev.B
COLOR (ONLY LIST IF COLOR SPECIFIC)
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) YES

PRINTED DOCUMENT IS UNCONTROLLED			Sheet 1 of 1
PART / PRODUCT IDENTIFICATION			
	ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
	DESIGNED BY: J. TYNER		REVISION LEVEL B
MAT'L USED:		DESCRIPTION: MODULE DOME LED STRIP 48"	
WEIGHT (Lbs.): 0.4	SEGMENT CODE: EAU	PART NUMBER: 65348	

Notes	
①	3:1 Adhesive Heat Shrink to be placed over LED Solder Joints
②	5925 Adhesive Liner Edges to be exposed next to heat shrink

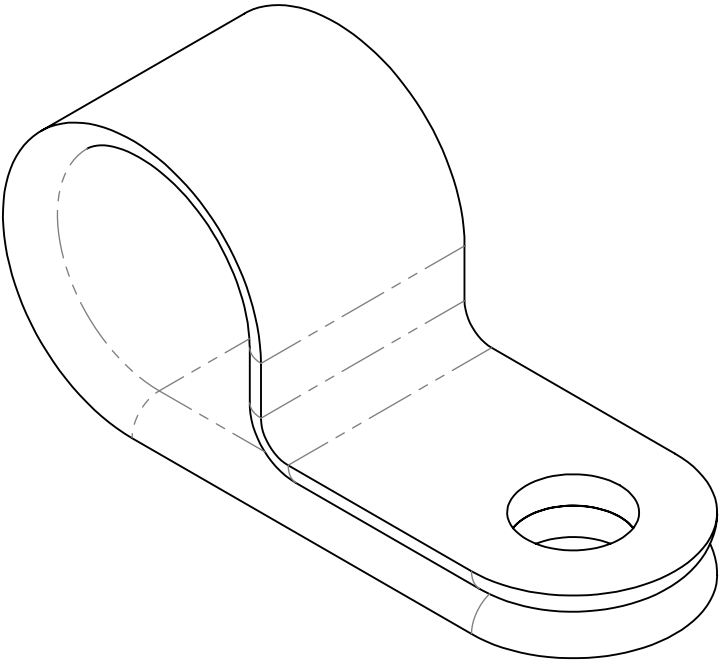


Revisions			
Rev.	Date	Author	Description
A	11/1/21	Bennet Fisher	Initial Drawing
B	7/27/2022	Bennet Fisher	Adhesive changed to VHB 5925

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	Designed By	Bennet Fisher	11/1/21		
	Engineering Approval				
	Manufacturing Approval				
	Revision Approval			Part Number: CL-48BLEDD	
	Quality Assurance			Description: 48" LED Strip	
				Revision: B Sheet: 1	

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS
N/A



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TOLERANCES & INSPECTION
UNLESS OTHERWISE SPECIFIED
ALL BEND ANGLES ARE 90 DEGREES
ALL DIMENSIONS ARE IN INCHES.
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION
FEATURES 0.0 = ± .125 0.00 = ± .062 0.000 = ± .031
HOLES/SLOTS 0.0 = ± .062 0.00 = ± .031 0.000 = ± .015
ANGLES 0° = ± 2° 0.0° = ± 1°
Material Thickness: per ASTM Std. Weld Callouts per AWS

RELEASE & REVISIONS
INITIAL ECN: 25297
CURRENT ECN: 25334
ECN DESCRIPTION: UPDATE SUPPLIER TO SAY EQUIVALENT
REVISED BY:

PURCHASED
COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
MCMaster-CARR OR EQUIVALENT
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
8876T38 OR EQUIVALENT
COLOR (ONLY LIST IF COLOR SPECIFIC)
BLACK
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

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Sheet 1 of 1

PART / PRODUCT IDENTIFICATION			
	ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
	MAT'L USED:		DESIGNED BY: E.BURKE
DESCRIPTION: Nylon Plastic Loop Clamp			
WEIGHT (Lbs.): 0.001	SEGMENT CODE: HDW	PART NUMBER: 66843	

REVISION LEVEL

B

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS
TIMER LIGHTING MODULE FOR INTERIOR PLUG AND PLAY LIGHTING ON TOPPERS



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TOLERANCES & INSPECTION		
UNLESS OTHERWISE SPECIFIED		
ALL BEND ANGLES ARE 90 DEGREES		
ALL DIMENSIONS ARE IN INCHES.		
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION		
FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	
Material Thickness: per ASTM Std. Weld Callouts per AWS		

RELEASE & REVISIONS
INITIAL ECN: 26830
CURRENT ECN: 27950
ECN DESCRIPTION:
Update to Rev B
REVISED BY: JJC

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71902
COLOR (ONLY LIST IF COLOR SPECIFIC)
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PRINTED DOCUMENT IS UNCONTROLLED			Sheet 1 of 1
PART / PRODUCT IDENTIFICATION			
 ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221	
MAT'L USED: PURCHASED		DESIGNED BY: E.BURKE	
DESCRIPTION: TIMER LIGHTING MODULE			
WEIGHT (Lbs.): 0.2	SEGMENT CODE: ELE		PART NUMBER: 71902



TLM

Timer/Low Voltage Module

INSTALLATION MANUAL

Stinger[®]



Thank you for purchasing the
TLM



WHAT'S INCLUDED:



- Timer/Low Voltage Module
- Module Harness
- Cable Ties

COMPATIBLE ACCESSORIES:



- Vehicle-specific harness (P-VTM-xxx)
- Switch harness (VTM-SWx)
- High current harness (VTM-RLY)

FEATURES:



- Selectable timer durations - 30, 60, 90, and 120 minutes
- Selectable Low Voltage Sense shut off - 11.8V, 11.5V, and 11.2V
- Timer and Low Voltage sense work independently of each other
- Inputs for 2 momentary switches or a steady ground input
- 10A max current output





OPERATING INSTRUCTIONS:

DIP 1	DIP 2	V-Sense	DIP 3	DIP 4	DIP 5	Minutes	DIP 6
Up	Up	OFF	Timer ON (Down) OFF (Up)	Up	Up	30	ON (Down) Steady Ground Input
Up	Down	11.2V		Up	Down	60	
Down	Up	11.5V		Down	Up	90	OFF (Up) Momentary Ground Input
Down	Down	11.8V		Down	Down	120	

DIP 1-2

If Voltage Sense feature is turned ON, low voltage shut down will occur when the input voltage to the TLM module drops below the V-Sense setting. To eliminate false triggers, there is a 20 second delay before shut down.

If Voltage Sense is turned OFF, input voltage level will not be monitored.

NOTE: Voltage Sense takes precedence over Timer.

DIP 3

If the Timer feature is turned ON and switch input is activated, output voltage will be provided for specified timer duration.

DIP 4-5

Switch settings will determine how long output will be active after the switch input is activated.

NOTE: If an invalid time is selected (e.g. Up, Up, Up or Down, Down, Down) the output will turn off 10 seconds after the switch input is activated.

DIP 6

Steady Ground Input Applications:

Applying ground to the switch input will activate the output, removing ground from switch input will disable the output. If ground is applied once again, the output will be re-activated, and the timer will reset/start over.

Momentary Ground Input Applications:

Applying a pulsed ground to the switch input will activate the output, a second pulsed ground to the switch input will disable the output. If a pulsed ground is applied once again, the output will be re-activated, and the timer will reset/start over.



Steady Ground Input Applications

Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	Monitoring Input Voltage	N/A
Not Active	N/A	OFF	N/A	N/A
Not Active	Activated (Input Grounded)	ON	Monitoring Input Voltage	Timer Starts
Not Active	Deactivated (Ground Removed)	OFF	N/A	Timer Off
Not Active	Activated (Input Grounded)	ON	Monitoring Input Voltage	Timer Starts

Momentary Ground Input Applications

Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	Monitoring Input Voltage	N/A
Not Active	N/A	OFF	N/A	N/A
Not Active	Activated (Pulsed)	ON	Monitoring Input Voltage	Timer Starts
Not Active	Activated (Pulsed)	OFF	N/A	Timer Off
Not Active	Activated (Pulsed)	ON	Monitoring Input Voltage	Timer Starts

In the tables above "Trigger Input" refers to the Positive Trigger Input and Negative Trigger Input of the module.

If a Trigger Input is active, its function takes precedence. Attempting to activate the Switch Input while a Trigger Input is active will have no effect on the modules output.





WIRING DIAGRAMS:

TLM Harness



If necessary, connectors may be removed for hardwire applications.

Positive Trigger Input: Applying 12V to Red wire will activate output

Negative Trigger Input: Applying ground to Black wire will activate output

Switch Input: Closing loop between switch input wire leads will activate output





VTM-RLY (Optional Harness)

For larger current demands, use the optional VTM-RLY and connect to power and ground, along with the TLM harness. VTM-RLY supports up to 15A.



VTM-RLY Output connects to P-VTMxxx harness for vehicle lighting

VTM-RLY Input connects to the output from the TLM harness





Troubleshooting Table:

Output does not activate when Positive or Negative Trigger Input is activated	Check fuse on TLM harness	Replace fuse if it is bad
	Check power and ground connections	Fix loose or bad wire connection
	Confirm module has power and ground at its input	Replace module or damaged harness if necessary
Output does not activate when Switch Input is activated	Confirm DIP 6 on module matches switch type being used	Change DIP 6 setting to match switch type
	Confirm switch being used is not defective	Replace bad switch if necessary
Switch Input - Irregular behavior	Output does not turn off with switch	Check DIP 6 and confirm it matches switch type
		Confirm switch is not damaged or defective; replace if necessary
	Output activates for 5 seconds then turns off	Input voltage to module is below Voltage Sense setting





Stinger[®]

Phone – 866-931-8021 (option 3)

E-Mail – support@stingersolutions.com

StingerSolutions.com

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS
PLUG AND PLAY POWER HARNESS FOR TOPPER FORD KITS
POWER FROM BATTERY TO TLM MODULE



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TOLERANCES & INSPECTION	RELEASE & REVISIONS	
UNLESS OTHERWISE SPECIFIED	INITIAL ECN: 26830	
ALL BEND ANGLES ARE 90 DEGREES	CURRENT ECN: 26830	
ALL DIMENSIONS ARE IN INCHES.	ECN DESCRIPTION:	
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION	RELEASE FOR MARKET FILL	
FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	
Material Thickness: per ASTM Std. Weld Callouts per AWS		
	REVISED BY: FMB	

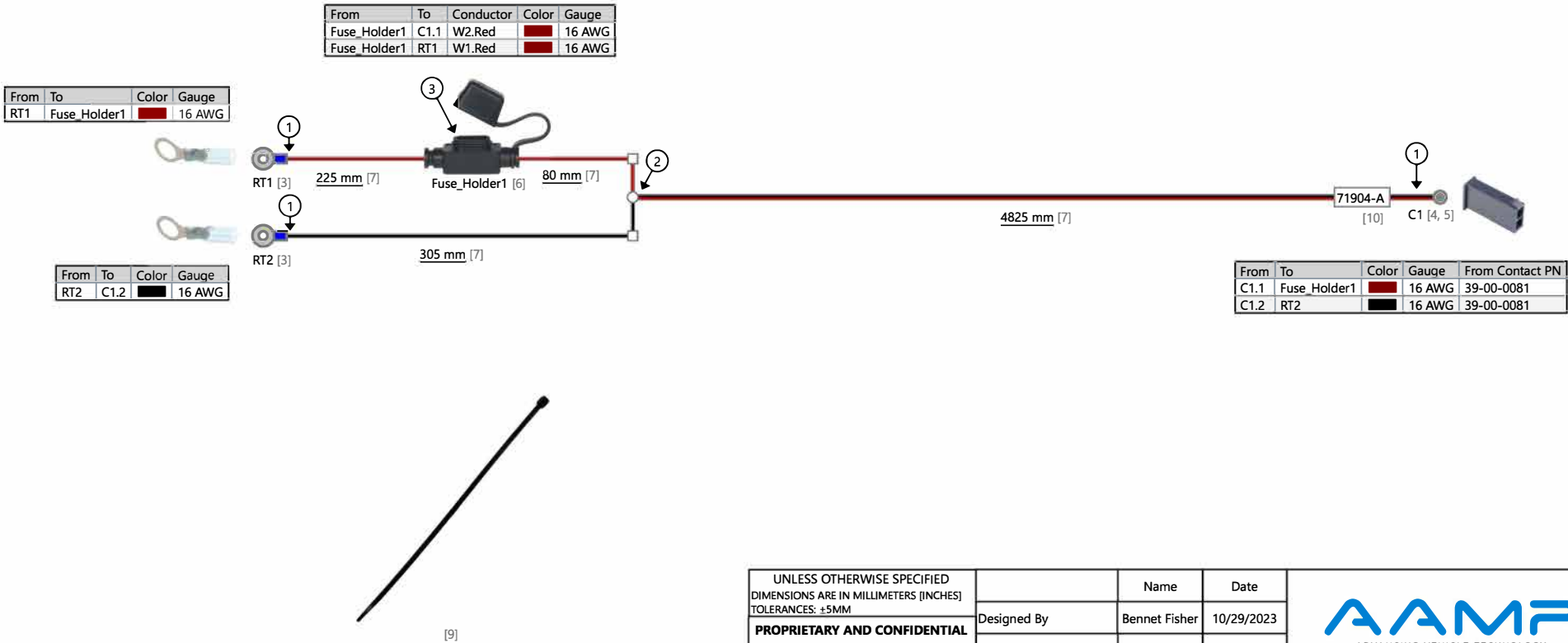
PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71904
COLOR (ONLY LIST IF COLOR SPECIFIC)
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PRINTED DOCUMENT IS UNCONTROLLED			Sheet 1 of 1
PART / PRODUCT IDENTIFICATION			
ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221	
MAT'L USED: PURCHASED		DESIGNED BY: E.BURKE	REVISION LEVEL
DESCRIPTION: HARN, PWR TLM BATT 16.8'			A
WEIGHT (Lbs.): 0.2	SEGMENT CODE: ELE	PART NUMBER: 71904	

Bill of Materials				
Id	Type	Manufacturer	Part Number	Quantity
1	Wire		16 AWG Red GXL	5130 mm
2	Wire		16 AWG Black GXL	5130 mm
3	Ring Terminal	Molex	19164-0027	2
4	Connector	Molex	46993-0211	1
5	Contact	Molex	39-00-0081	2
6	Splice		ATM Fuse Holder	1
7	Corrugated Tubing		0.25" Nylon Split Wall	5435 mm
8	Fuse	Littelfuse	297010.WXNV	1
9	Cable Tie	HellermannTyton	T30LL0M4	10
10	Label		Heat Shrink Style Label	1

Coverings	
Id	Assembly
[7]	

Notes	
①	Lock tape loom behind connector with Tesa 51036
②	Tape knuckle with Tesa 51036
③	Install 10A Mini Fuse



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	Designed By	Bennet Fisher	10/29/2023		
	Engineering Approval				
	Manufacturing Approval				
	Revision Approval			Part Number: 71904-A	Revision: A
	Quality Assurance			Description: HARN, PWR TLM BATT 16.8'	Sheet: 1

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS
PLUG AND PLAY TIMER LIGHTING MODULE
POWER HARNESS TO LIGHTS



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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

TOLERANCES & INSPECTION			RELEASE & REVISIONS													
UNLESS OTHERWISE SPECIFIED			INITIAL ECN: 26830													
ALL BEND ANGLES ARE 90 DEGREES			CURRENT ECN: 26830													
ALL DIMENSIONS ARE IN INCHES.			ECN DESCRIPTION:													
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION			RELEASE FOR MARKET FILL													
<table><tr><th>FEATURES</th><th>HOLES/SLOTS</th><th>ANGLES</th></tr><tr><td>0.0 = ± .125</td><td>0.0 = ± .062</td><td>0° = ± 2°</td></tr><tr><td>0.00 = ± .062</td><td>0.00 = ± .031</td><td>0.0° = ± 1°</td></tr><tr><td>0.000 = ± .031</td><td>0.000 = ± .015</td><td></td></tr></table>			FEATURES	HOLES/SLOTS	ANGLES	0.0 = ± .125	0.0 = ± .062	0° = ± 2°	0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°	0.000 = ± .031	0.000 = ± .015		REVISED BY: EMB	
FEATURES	HOLES/SLOTS	ANGLES														
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0.000 = ± .031	0.000 = ± .015															
Material Thickness: per ASTM Std. Weld Callouts per AWS																

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71905
COLOR (ONLY LIST IF COLOR SPECIFIC)
NO
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

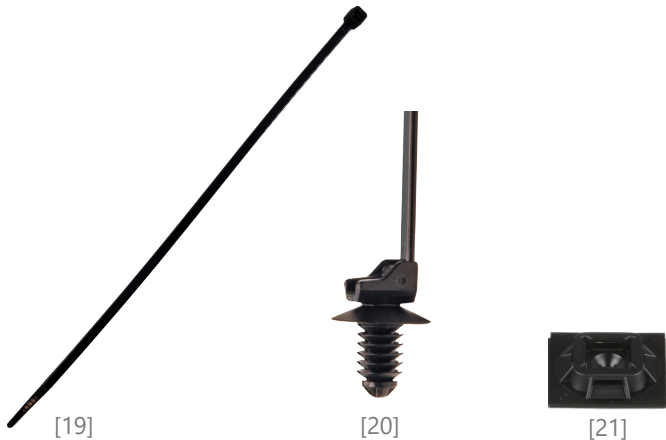
PRINTED DOCUMENT IS UNCONTROLLED			Sheet 1 of 1
PART / PRODUCT IDENTIFICATION			
	ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
	DESIGNED BY: E.BURKE		REVISION LEVEL A
MAT'L USED:	PURCHASED	DESCRIPTION: HARN,POWER TLM LIGHT SIF1	
WEIGHT (Lbs.):	0.2	SEGMENT CODE: ELE	PART NUMBER: 71905

Bill of Materials				
Id	Type	Manufacturer	Part Number	Quantity
1	Wire		20 AWG White-Black	10520 mm
2	Wire		20 AWG Black	10520 mm
3	Wire		16 AWG Red GXL	11470 mm
4	Wire		16 AWG Black GXL	11470 mm
5	Connector	Aptiv	12047663	1
6	Contact	Aptiv	12047581	2
7	Lock	Aptiv	12047665	1
8	Connector	Molex	43025-0210	2
9	Contact	Molex	43030-0001	4
10	Connector	Molex	43020-0201	3
11	Contact	Molex	43031-0001	6
12	Connector	Aptiv	12047662	4
13	Contact	Aptiv	12047767	8
14	Lock	Aptiv	12047664	4
15	Splice		Generic Splice	6
16	Heat Shrink	CYG	CB-DWT-3/16	6
17	Corrugated Tubing		0.25" Nylon Split Wall	6960 mm
18	Tape	Tesa	51608	
19	Cable Tie	HellermannTyton	T30LL0M4	35
20	Cable Tie with Mount	Hellermann Tyton	T50RTM250HSM4	10
21	Cable Tie Mount	Panduit	SGABM25-AV-C300	10
22	Label		Heat Shrink Style Label	1

From	To	Color	Gauge	From Contact PN
C1.A	S3	Red	16 AWG	12047581
C1.B	S4	Black	16 AWG	12047581

From	To	Color	Gauge	From Contact PN
C2.1	S1	White/Black	20 AWG	43030-0001
C2.2	S2	Black	20 AWG	43030-0001

From	To	Color	Gauge	From Contact PN
C3.1	S1	White/Black	20 AWG	43030-0001
C3.2	S2	Black	20 AWG	43030-0001



Revisions			
Rev.	Date	Author	Description
	10/29/2023	Bennet Fisher	Initial Drawing
	12/29/2023	Bennet Fisher	Added fourth 12047662 (C9) connector, modified length to C10
A	1/16/2024	Bennet Fisher	Modified lengths to C4, C5, and C10

Coverings	
Id	Assembly
[17]	
[18]	

Notes	
1	Lock tape end of loom with 51608

From	To	Color	Gauge	From Contact PN
C7.A	S3	Red	16 AWG	12047767
C7.B	S4	Black	16 AWG	12047767

From	To	Color	Gauge	From Contact PN
C9.A	S3	Red	16 AWG	12047767
C9.B	S4	Black	16 AWG	12047767

From	To	Color	Gauge	From Contact PN
C6.A	S3	Red	16 AWG	12047767
C6.B	S4	Black	16 AWG	12047767

From	To	Color	Gauge	From Contact PN
C8.A	S3	Red	16 AWG	12047767
C8.B	S4	Black	16 AWG	12047767

From	To	Color	Gauge
S3	C1.A	Red	16 AWG
S3	C6.A	Red	16 AWG
S3	C7.A	Red	16 AWG
S3	C8.A	Red	16 AWG
S3	C9.A	Red	16 AWG
S4	C1.B	Black	16 AWG
S4	C6.B	Black	16 AWG
S4	C7.B	Black	16 AWG
S4	C8.B	Black	16 AWG
S4	C9.B	Black	16 AWG

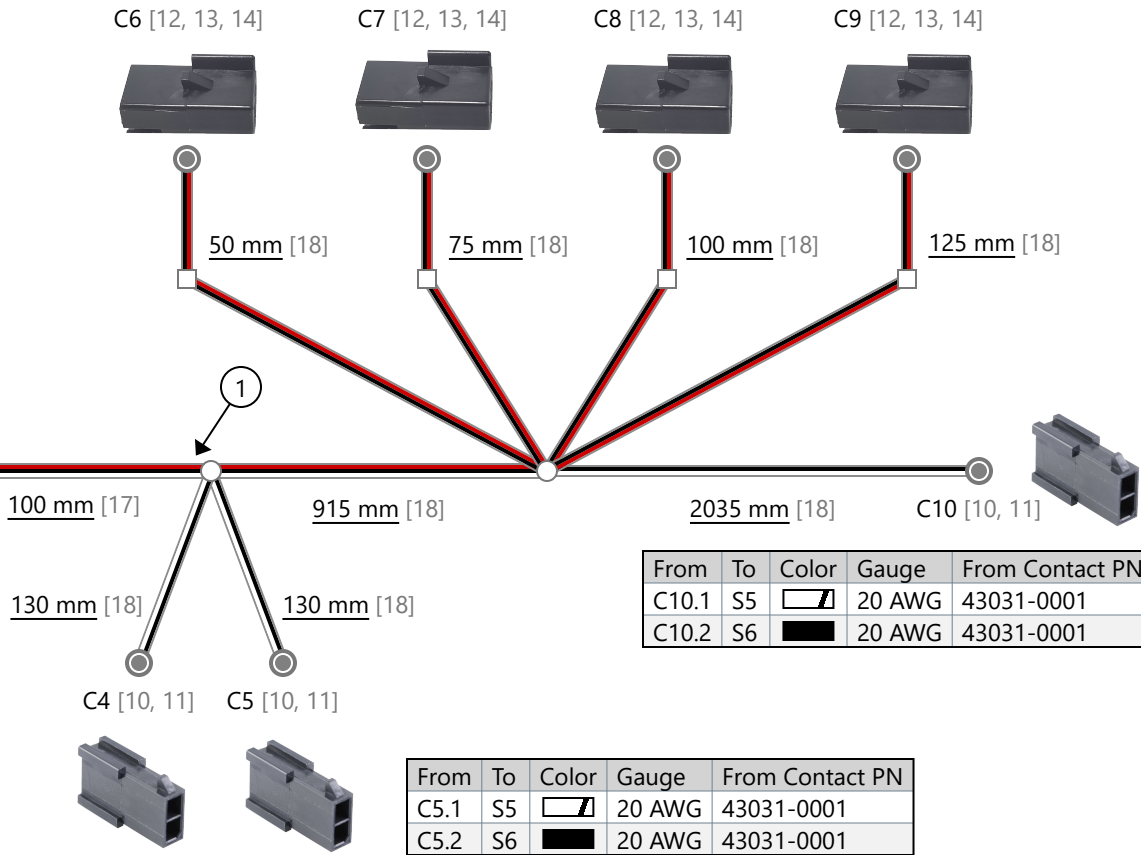
From	To	Color	Gauge
S1	C2.1	White/Black	20 AWG
S1	C3.1	White/Black	20 AWG
S1	S5	White/Black	20 AWG
S2	C2.2	Black	20 AWG
S2	C3.2	Black	20 AWG
S2	S6	Black	20 AWG

From	To	Color	Gauge
S5	C4.1	White/Black	20 AWG
S5	C5.1	White/Black	20 AWG
S5	C10.1	White/Black	20 AWG
S5	S1	White/Black	20 AWG
S6	C4.2	Black	20 AWG
S6	C5.2	Black	20 AWG
S6	C10.2	Black	20 AWG
S6	S2	Black	20 AWG

From	To	Color	Gauge	From Contact PN
C4.1	S5	White/Black	20 AWG	43031-0001
C4.2	S6	Black	20 AWG	43031-0001

From	To	Color	Gauge	From Contact PN
C5.1	S5	White/Black	20 AWG	43031-0001
C5.2	S6	Black	20 AWG	43031-0001

From	To	Color	Gauge	From Contact PN
C10.1	S5	White/Black	20 AWG	43031-0001
C10.2	S6	Black	20 AWG	43031-0001



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS [INCHES] TOLERANCES: ±5MM PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF AAMP GLOBAL. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF AAMP GLOBAL IS PROHIBITED.		Name	Date		
	Designed By	Bennet Fisher	10/29/2023		
	Engineering Approval				
	Manufacturing Approval				
	Revision Approval			Part Number: 71905	
	Quality Assurance			Description:	
				TLM - Switch & Light Extension Harness	
				Revision: A	
				Sheet:	
				1	

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) N/A
LOAD/RATING REQUIREMENT N/A
MATERIAL REQUIREMENT N/A
PACKAGING REQUIREMENT N/A
OTHER REQUIREMENTS PLUG AND PLAY MAGNETIC SWITCHES FOR TOPPER INTERIOR LIGHTING BAG INCLUDES: 3 MAGNETIC SWITCH SETS WITH WIRE LEADS AND CONNECTORS



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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

TOLERANCES & INSPECTION		
UNLESS OTHERWISE SPECIFIED		
ALL BEND ANGLES ARE 90 DEGREES		
ALL DIMENSIONS ARE IN INCHES.		
REFERENCE DIMENSIONS (X.XXX)		
DO NOT REQUIRE INSPECTION		
FEATURES	HOLES/SLOTS	ANGLES
0.0 = ± .125	0.0 = ± .062	0° = ± 2°
0.00 = ± .062	0.00 = ± .031	0.0° = ± 1°
0.000 = ± .031	0.000 = ± .015	
Material Thickness: per ASTM Std.		
Weld Callouts per AWS		

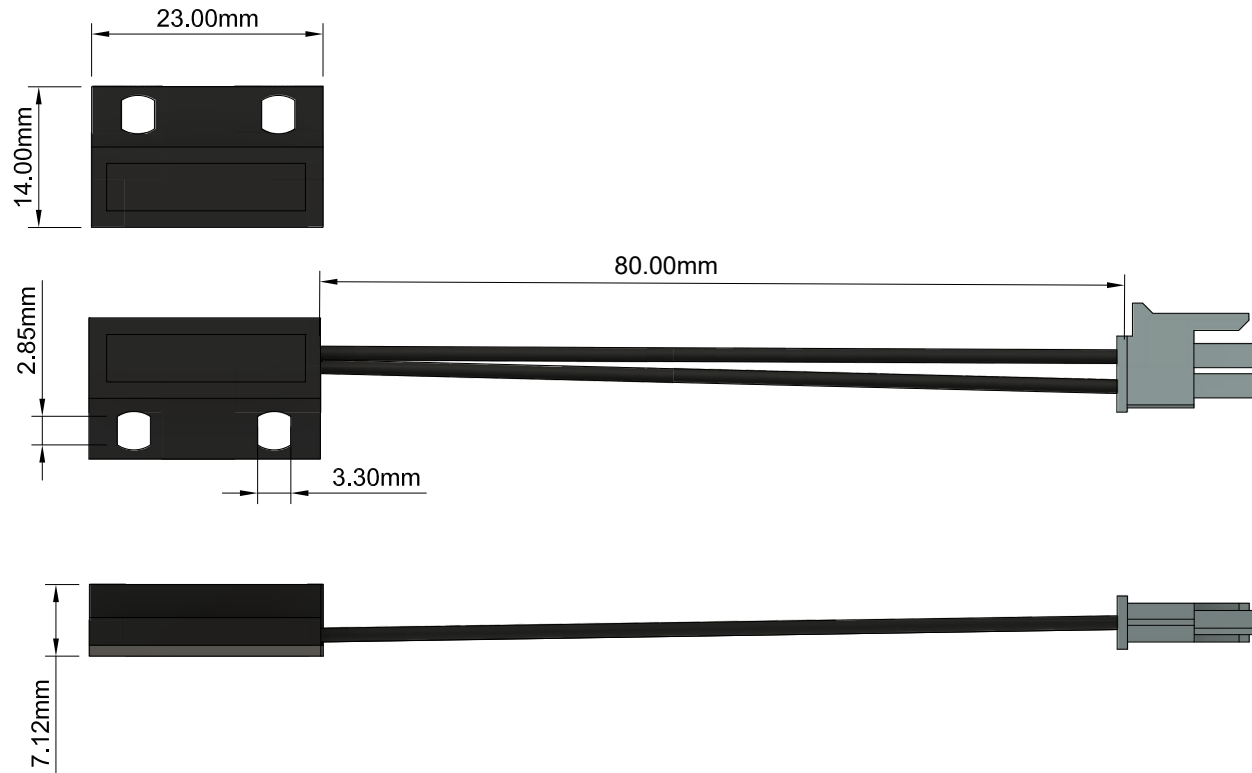
RELEASE & REVISIONS
INITIAL ECN: 26830
CURRENT ECN: 26830
ECN DESCRIPTION: RELEASE FOR MARKET FILL
REVISED BY: EMB

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER 71907 COLOR (ONLY LIST IF COLOR SPECIFIC)
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) NO

PRINTED DOCUMENT IS UNCONTROLLED

Sheet 1 of 1

PART / PRODUCT IDENTIFICATION			
 ADRIAN STEEL [®]	ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221		REVISION LEVEL A
	MAT'L USED: PURCHASED	DESIGNED BY: E.BURKE	
DESCRIPTION: TLM MAGNETIC SWITCH P&P			
WEIGHT (Lbs.): 0.02	SEGMENT CODE: ELE	PART NUMBER: 71907	



Magnetic Switch Type: N.O. (Normally Open)
 Housing: Black ABS 15E1
 Wire: 22AWG Black
 Operating Distance: 15-20mm
 Working Current: 0.5A
 Operating Voltage: 0-110Vdc
 IP Rating: IP67
 Operating Temperature: -40 ~ 110°C
 Reed Operating Temperature: -40 ~ 125°C
 ABS Operating Temperature: -40 ~ 110°C
 Package: 3pcs/kitted set

Dept.	Technical reference	Created by Bennet Fisher 4/12/2024	Approved by	
		Document type	Document status	
		Title Magnetic Switch Part # 71907	DWG No.	
		Rev.	Date of Issue	Sheet 1/1

Reed Switch

ORD324

Issue Date: Mar. 25, 2008

■ Features

- In order to achieve high electrical capacity and long, uses iridium with high hardness and high melting point.
- When power is turned on maximum voltage can reach 200V.
- To maintain the contact stability of the contacts, the contacts are sealed in a glass tube filled with inert gas.

■ Applications

- Position detection machine
- Rotation detection machine
- Vehicle electrical equipment
- Civil products

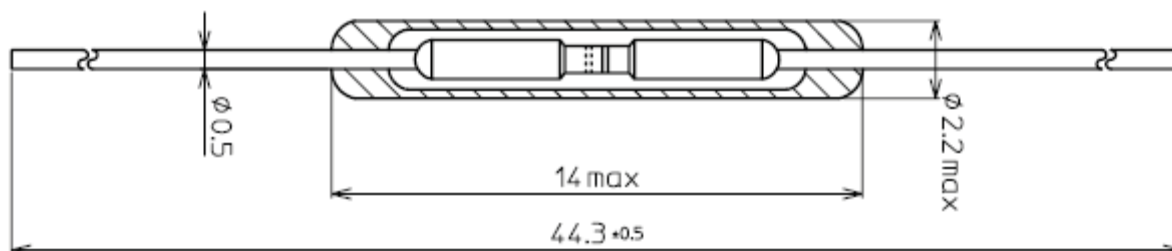
■ Appearance



■ Features

Contact material / contact form	Iridium / 1A	Unit
Pull in value (PI)	10 ~ 40	AT
Disconnect value (DO)	5 min	AT
Contact resistance value (CR)	100max	mΩ
Withstand voltage between contacts	250min	Vdc
Insulation resistance	1×10^{10} min	Ω
Electrostatic capacity between contacts	0.3max	pF
Contact rating	10	W
Maximum switching voltage	200	Vdc
Maximum switching current	0.5	A
Maximum power current	1	A
Release time	0.4max	ms
Bounce time	0.3max	ms
Recovery time	0.05max	ms
Shock proof	100G-6ms	---
Vibration resistance	50G (10 ~ 2kHz)	---
Operating temperature range	-40 ~ +125	°C
Life (5Vdc-1mA, impedance load)	1×10^8	---

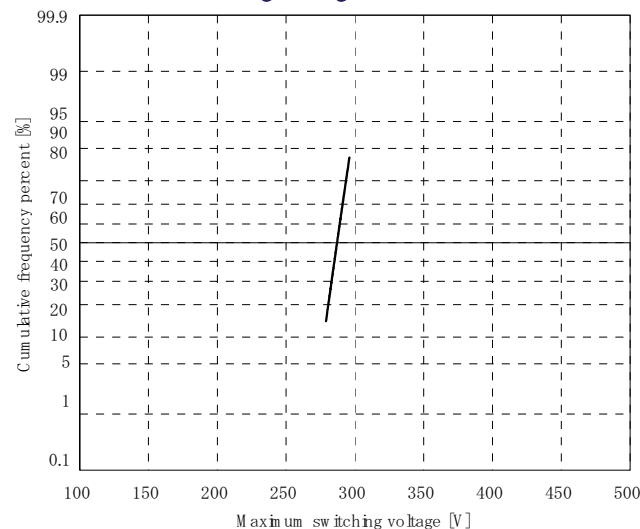
■ Dimensions (unit: mm)



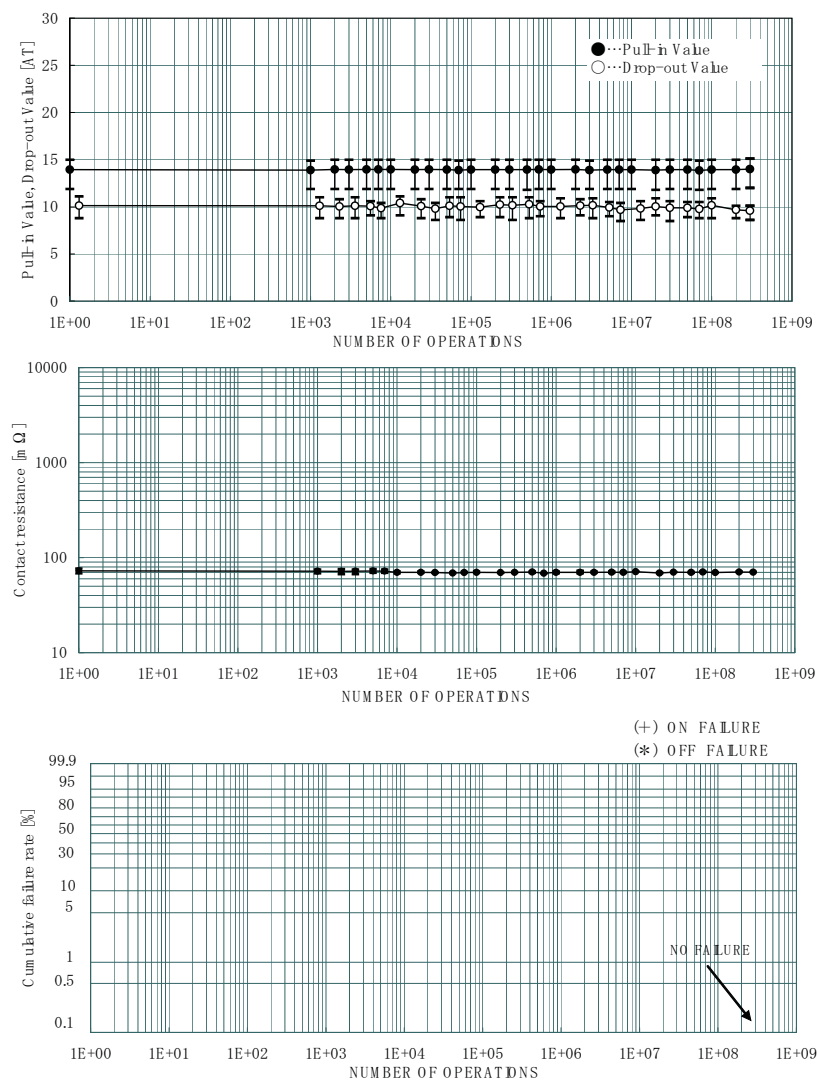
■ Withstand voltage between contacts



■ Maximum switching voltage



■ Life test data: 5Vdc-1mA



PURCHASED COMPONENT KEY FEATURES	
DESCRIPTION OF REQUIREMENTS	
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)	
N/A	
LOAD/RATING REQUIREMENT	
N/A	
MATERIAL REQUIREMENT	
N/A	
PACKAGING REQUIREMENT	
N/A	
OTHER REQUIREMENTS	
80lbs Tensile Strength - Low-Profile M5/M6 Stud Mount - Color: Black	



Low-Profile head allows mounts to stack, providing more mounting versatility from a single stud.

Four-pawl, three-tooth design delivers outstanding stud retention to keep bundles secure.

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TOLERANCES & INSPECTION		PART / PRODUCT IDENTIFICATION			
UNLESS OTHERWISE SPECIFIED ALL BEND ANGLES ARE 90 DEGREES ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION		PURCHASED COMPONENT		REVISION LEVEL	
INITIAL ECN: 78320 CURRENT ECN: 78320 ECN DESCRIPTION: Release		REFERENCED SUPPLIER AND/OR MANUFACTURER HellermannTyton REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER 157-00460 COLOR (ONLY LIST IF COLOR SPECIFIC) COMMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) No		ADRIAN STEEL® ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221 A	
REVISED BY: LJK		MATERIAL USED: Purchased		DESIGNED BY: L. Kaleniecki	
FEATURES 0.0 = ± .125 0.00 = ± .062 0.000 = ± .031		HOLES/SLOTS 0.0 = ± .062 0.00 = ± .031 0.000 = ± .015		ANGLES 0° = ± 2° 0.0° = ± 1°	
Material Thickness: per ASTM Std. Weld Callouts per AWS		DESCRIPTION: 7.5" STUD MNT CABLE TIE		WEIGHT (Lbs.): 0.01 SEGMENT CODE: HDW PART NUMBER: 78320	