

Plug & Play Interior Strip Lighting Kit

CATALOG NUMBER

69637



LED Light Strips Installed

PRODUCT FEATURES

Plug & Play Interior Strip Lighting w/ Switches

- Included in this kit is three (3) 36" LED light strips, voltage timer module, and switches.
- This kit is ideal for the Chevrolet Express van.
- There are no OEM options that this product is not compatible with. There are no OEM options that this product requires.
- This product provides LED lighting in the cargo area of the van that can be controlled by switches.

Model Year Validated:

2023

Introduction / Comments:

Install Instructions For Interior Plug & Play Lights For GM Express

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.

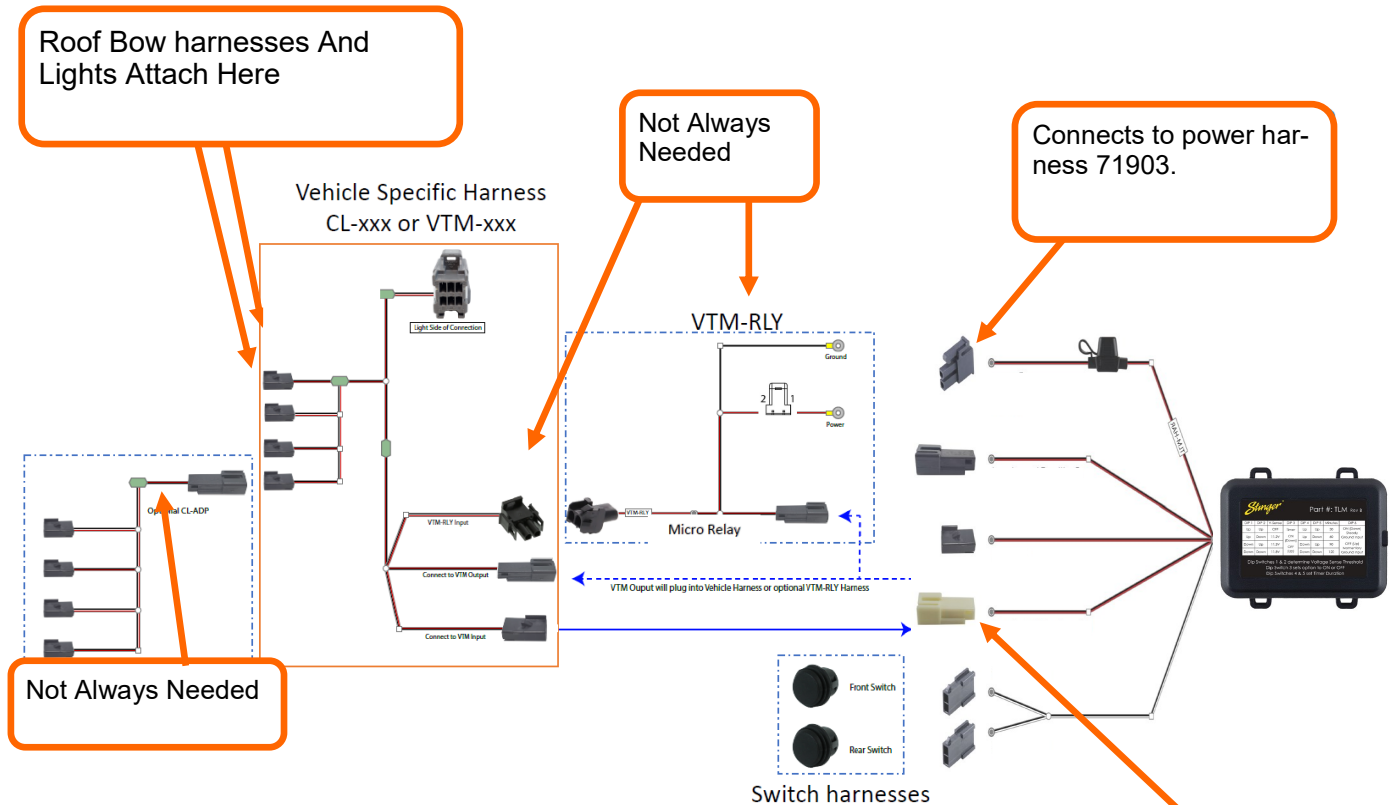


Installation Instructions For Interior Plug And Play Lights For GM Express

****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. The only harness that is specific to the transit vehicle are the power harnesses 65792. Routing will be very standard across all kits, but placement of lights and switches are subject to be different from these instructions if called out on the order drawing differently.

Overall Harness Diagram



Tools required:

Crimpers

7/16 Socket and/or wrench

Power drill, 3/8" step drill bit, Philips head bit (if installing dome lights)

For all vehicles that are NOT RAM. This connector will be black. RAM vehicles, this will be white. See page 4 for more details.



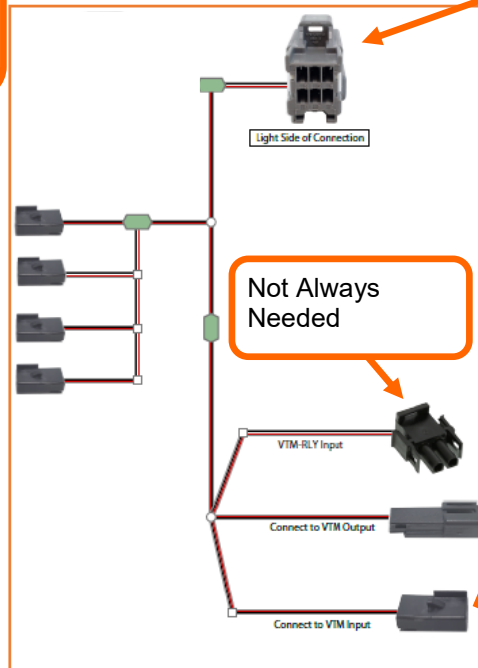
Specific Harness Diagram



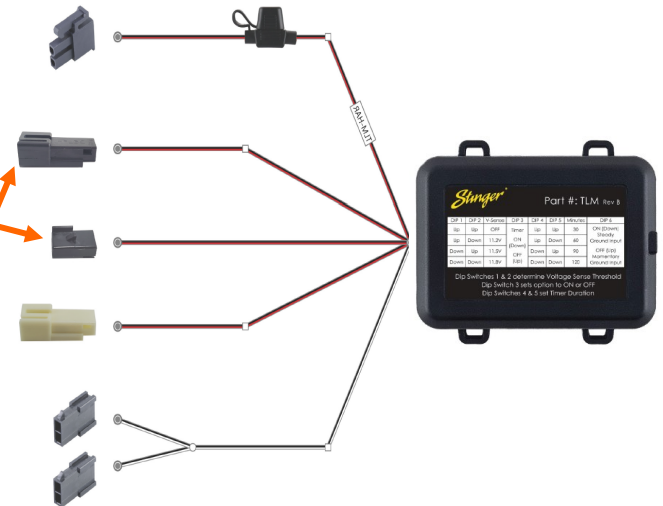
Roof Bow
Harnesses
and Lights
Connect Here

Vehicle Specific Harness
CL-xxx or VTM-xxx

Insert into OEM
Light Connector:
See Below



Switch
Harness in
between



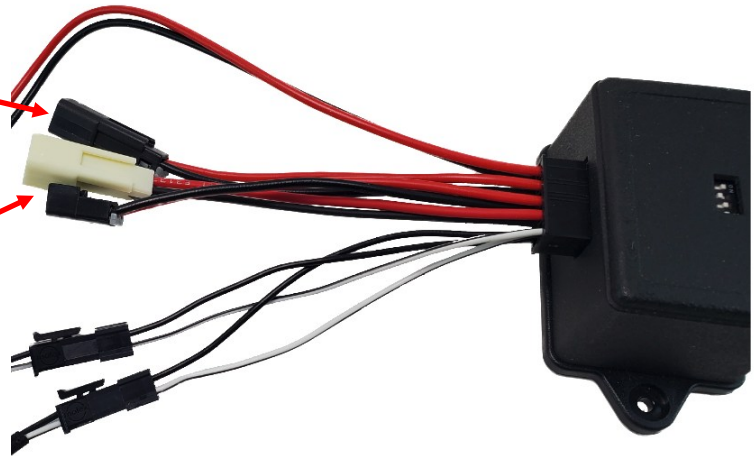
OEM Light Connector located on the OEM light: Remove the OEM
light



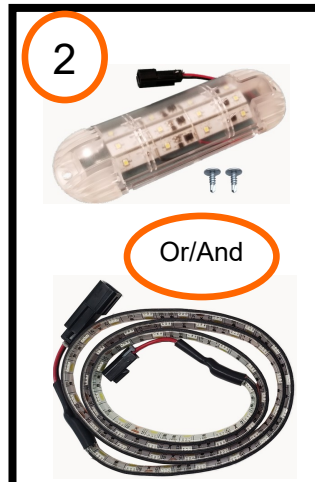
Timer / Low Voltage Module (TLM) Harness Reference

For all vehicles except RAM, the black input connector will be used to plug into the vehicle specific harness. The white connector will NOT be used.

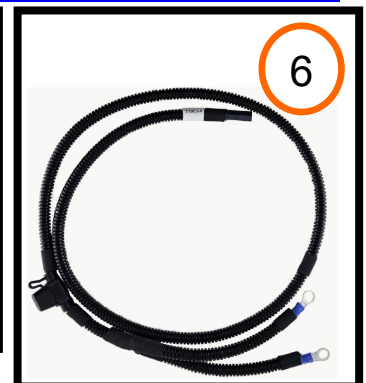
For all RAM vehicles, the white connector will be used to plug into the vehicle specific harness. The black connector will NOT be used.



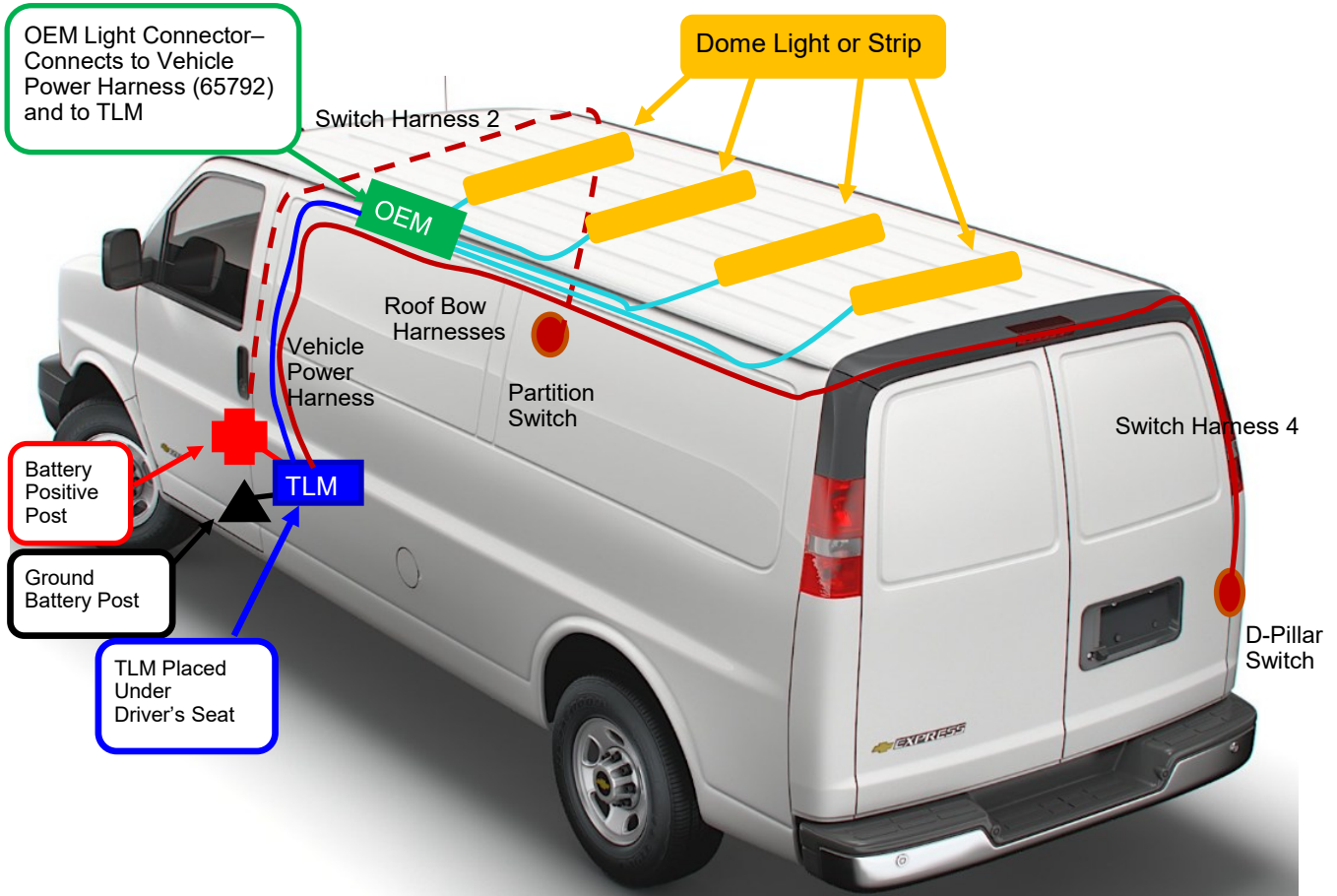
Harnesses Needed



	Part Number	Description
1	71902	Timer Lighting Module (TLM)
2	63480 Or/And 64222, 65346, 65347, 65348	Dome Light Or/And Strip Lights
3	63481 Or/And 63842, 63483, 63484	Roof Bow Harnesses 1 through 4
4	65792	Power Harness
5	65787 Or/And 65788, 65789, 65790	Switch Harness 1 through 4 for TLM
6	71903	Battery Power Harness



Harness pictures are for reference only.



Color	Key - Items
Blue	TLM/Harness
Green	Vehicle Specific Power Harness
Black	Ground Location
Red	12V location
Redish/Brown	Switch Harnesses
Yellow	Dome or Strip Lights
Teal	Roof Bow Harnesses

The purpose of plug and play lighting is to be completely modular. Due to this feature, refer to the order drawing for all exact lighting placements. These installation instructions are for most cases and for reference.

Optional Required Harnesses:

64244: This adapter harness allows for extra extensions to be added (if needed).



Be sure not to overload the OEM circuit by putting too many lights on the circuit. Consult ASCO Electrical Engineering team for application advice if using more than 4 lights.

Add Relay Harness 65791 for extra amperage. (Not always needed)

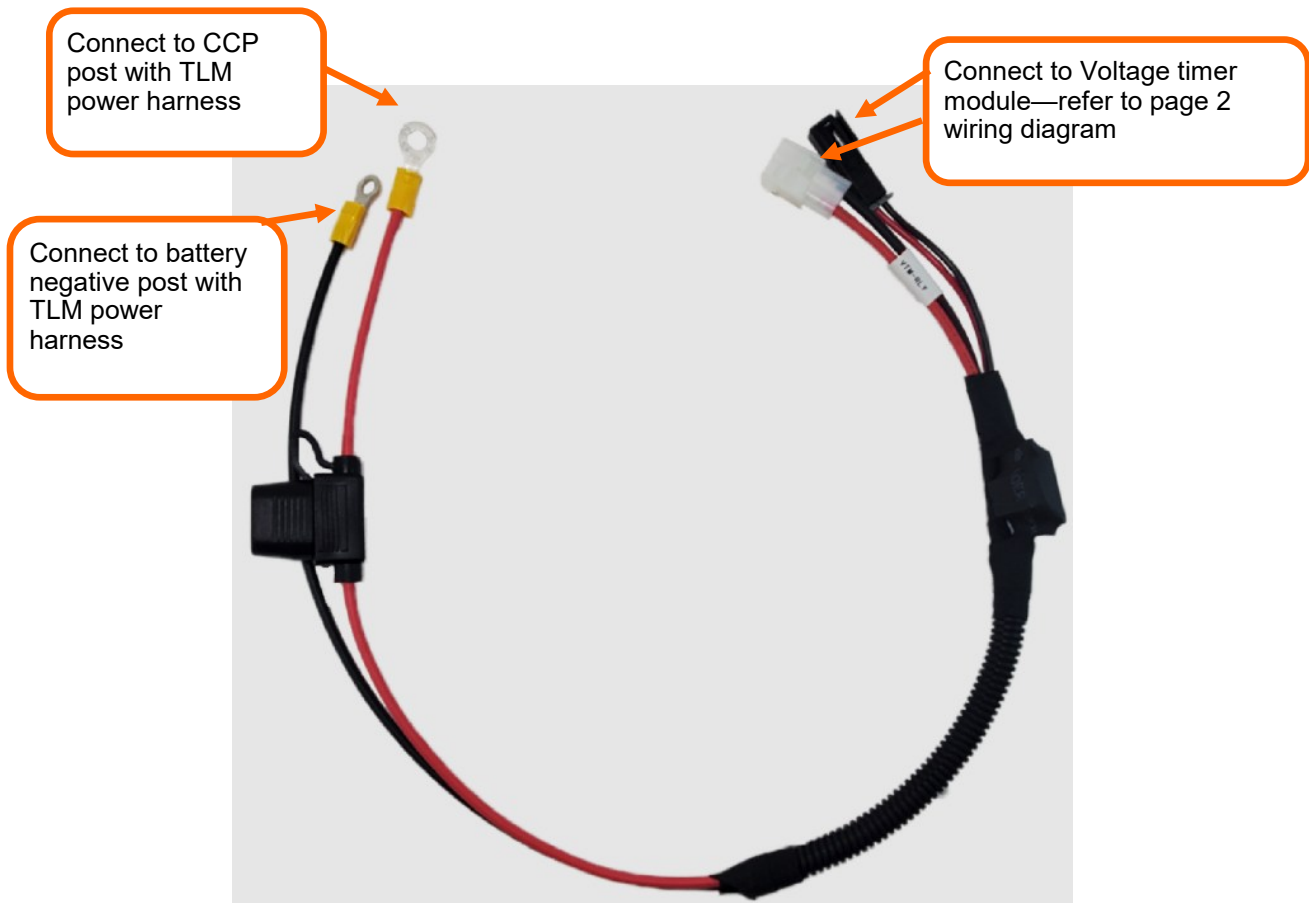


Figure 7.1



Figure 7.2



Figure 7.3



Pre Work for install:

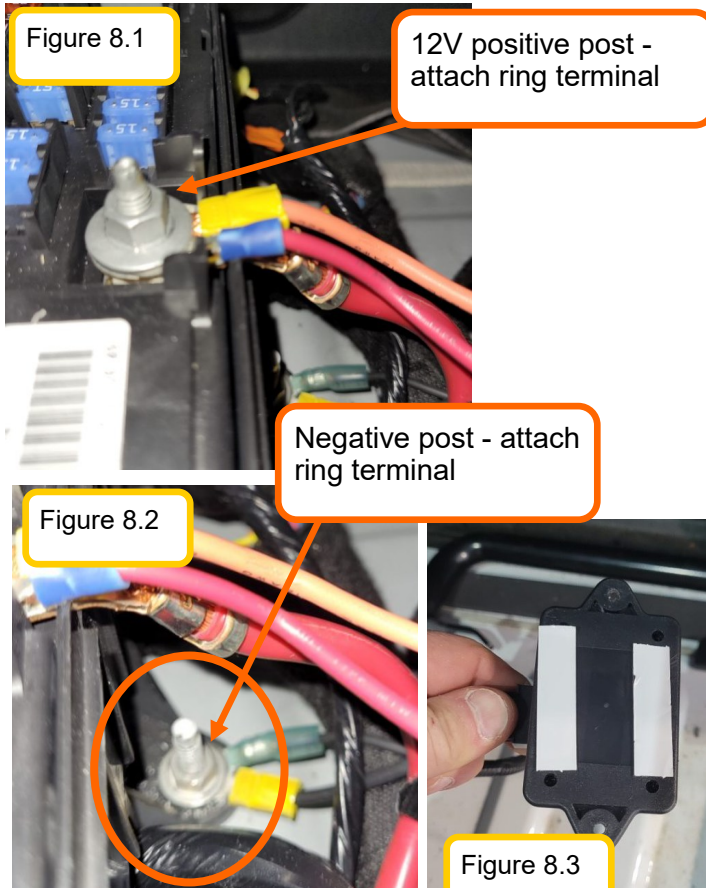
Disconnect the OEM cargo lights from the OEM harnesses by unclipping the connectors. See figure 7.1.

Do this for all the cargo roof lights.

Remove all the interior lights from the roof bows. Figure 7.2.

Unclip all the OW roof bow harnesses from the roof bow, and reposition them back into the OEM harness bundle in the roof channel.

Be sure to keep the first roof bow harness handy for the install on page 9. You can locate this harness end next to the first roof bow split. See figure 7.3 for location.



Step 1: Locate the TLM harness #71902

Plug the harness connector into the timer / low voltage module port

Step 2: Locate the power harness 71903 and plug that into the TLM harness.

Locate the fuse box under the driver's seat.

Attach the positive (red) wire to the 12V positive post. Secure with the OEM nut. See Figure 8.1.

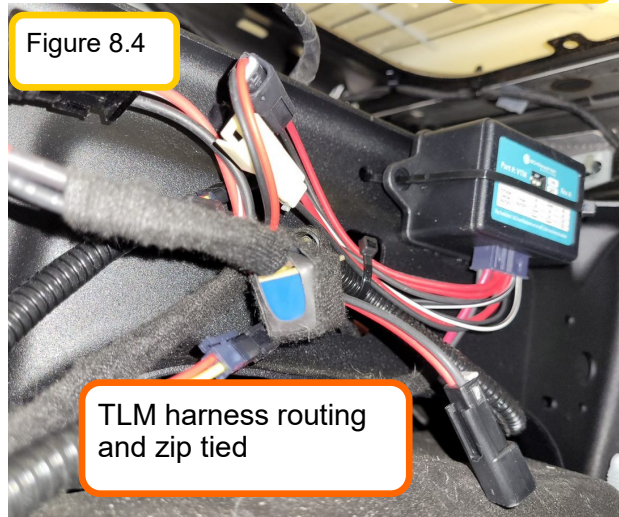
Attach the ground ring terminal (black) to the negative post on the bottom of the fuse block. Secure with the OEM nut. See Figure 8.2.

Step 3: Refer to the bottom picture for dip switch settings. If the customer would like a different amount time other than 90 minutes, use the dip switches to set the time.

Apply the VHB tape the back of the TLM (timer / low voltage module). See figure 8.3.

Stick the TLM to the back of the seat base and secure with a zip tie. See figure 8.4.

Plug the switch harnesses (65788 & 65790) into the TLM harness. See pages 2 & 3 for reference.



Stinger Part #: TLM Rev B

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

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

TLM Dip Switch Settings

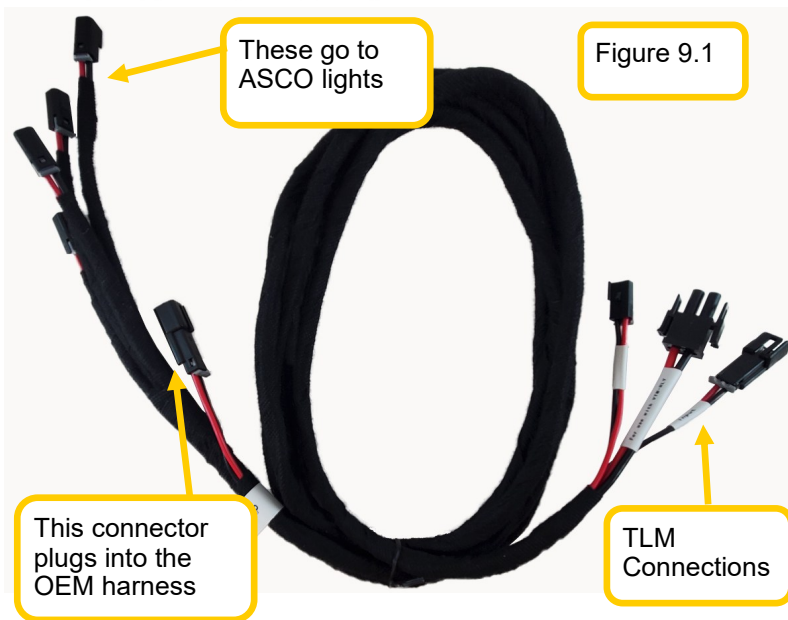


Figure 9.1

Step 4:

Locate the OEM first roof bow harness end that you saved for this part of the install.

Plug the vehicle specific power harness (65792) into the OEM connector:
Figure 9.1 and 9.2.

Route the power harness down the partition to the TLM module, and plug it in. Be sure to use the black colored TLM input connector referenced on page 4. The white connector will NOT be used for this install.



Figure 9.2

Step 5:

Connect the roof bow harnesses (63481 Or/And 63842, 63483, 63484 all that are applicable) to the power harness (ends located in the OEM harness channel) and route them to their desired light locations. (Light locations on the roof bows).
Figure 9.3.

Use zip ties/fir trees to secure all wiring. See figures 9.4 and 9.5.



Figure 9.3



Figure 9.4



Figure 9.5



Figure 10.1

Step 6:

Before mounting any lights, prep the surface where the light will be placed with the supplied alcohol pad. Let dry for a few minutes, then mount the light.

Be sure the surface is clean before applying the VHB tape. Read the supplied instructions in the lighting boxes.

Mount the strip/dome lights to their desired locations: Refer to the order drawing.

For dome lights, use the VHB tape already on the back of the light, and also secure with the supplied tek screws.

Dome lights are to be placed as close to the center of the roof bow as possible. Figure 10.1 and 10.2.

For the strip lights, use the VHB tape supplied on the back of the lights, and use the little square sticky backs with zip ties that are supplied in the box.

Strip lights are to be placed centered between the channel/valley of the bow. You will see that these lights fit almost perfectly in the channel. Figure 10.3

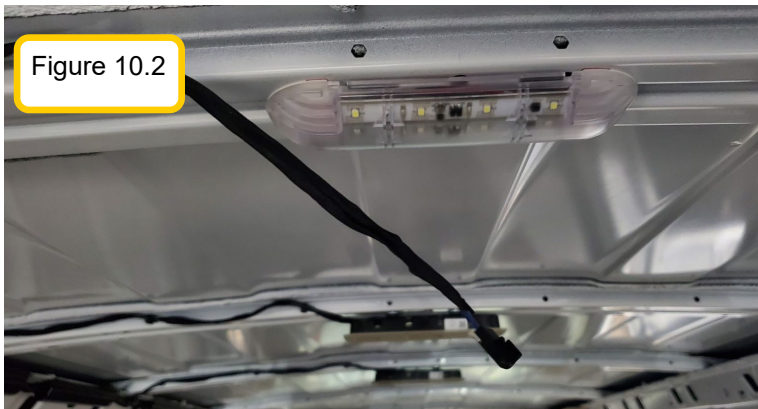


Figure 10.2



Figure 10.3

Figure 11.1



Partition Switch

Locations:

Switch hole in steel partition behind the passenger's seat (figure 11.1) or drill out switch hole in composite partition (figure 11.2).

This location will require harness #65788

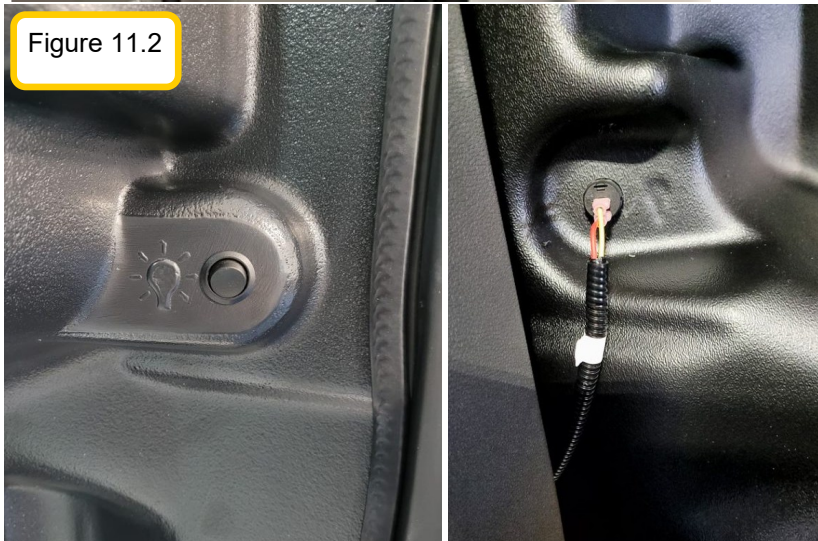
Rear Switch Location:

Passenger side rear D-pillar.

Drill out the horizontal slit in the D-pillar, to fit the switch.

See figure 11.3 below for reference.

Figure 11.2



This location will require harness #65790

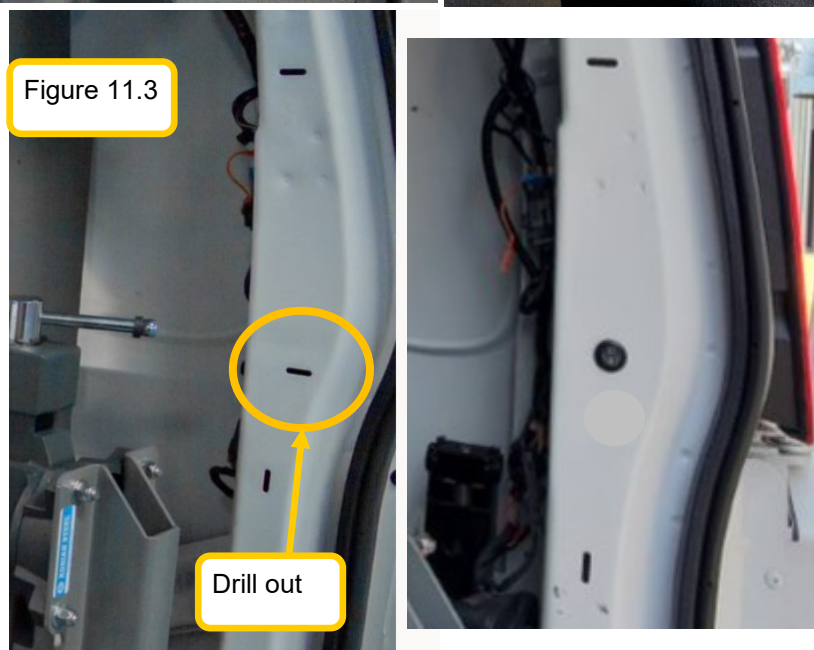
Step 7:

Route the 65788 harness from the TLM harness location (above the drivers seat in the headliner - see routing diagram for reference) to the partition switch location.

Do the same with harness 65790 to the D-pillar switch location.

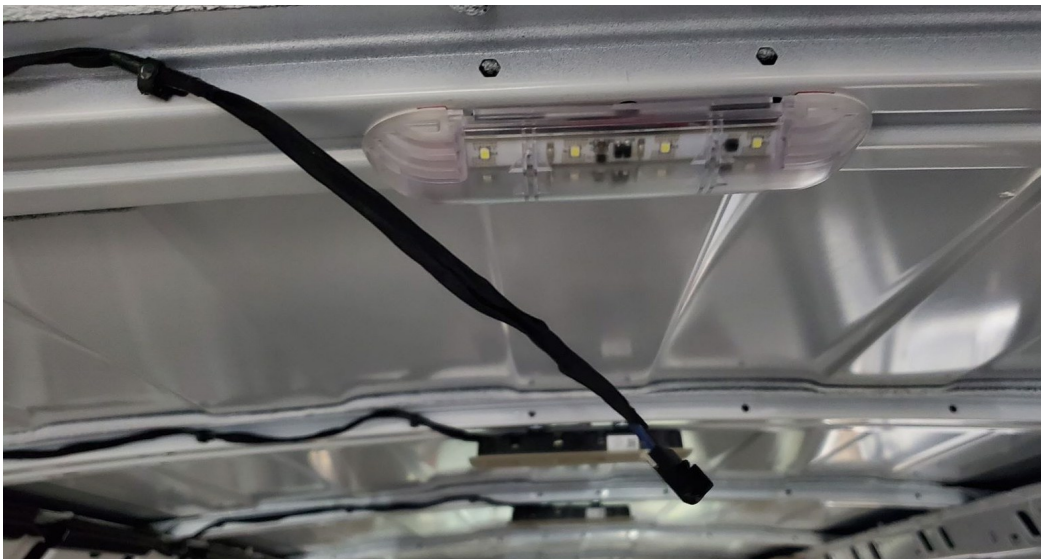
Use Zip ties to secure wiring.

Figure 11.3



Drill needed holes for the switches in rear D pillar panel, and composite partition (if applicable).

Insert the switches into the holes with the "1" in the 12:00 position, connect the harness (the connection orientation does not matter).



Insert the fuse into the inline-fuse holder on the power harness. The install is now complete. Secure all wiring with zip ties. Re-attach all trim. Double check the functionality of the lights and switches.

Express basic photos for install



Bolt on top of fuse box provides 12v, and nut holding fuse box down in back provides ground



VTM mounted to underneath and back of driver seat bracket and VTM harness wire tied to bracket



VTM harness routed up street side B pillar



Parts List

- VTM
- VTM relay harness
- CL-ADP
- 5 – P-HARRB1
- 2 – P-HARRB2
- 2 – P-HARRB3



STL-4048902



Install from Transit. The P-HARRB3 will come down on the left side of bin vs right in picture



This is from a Transit but the concept is still the same. Only there are 3 shelves instead of 4, so 2 lights used instead of 3

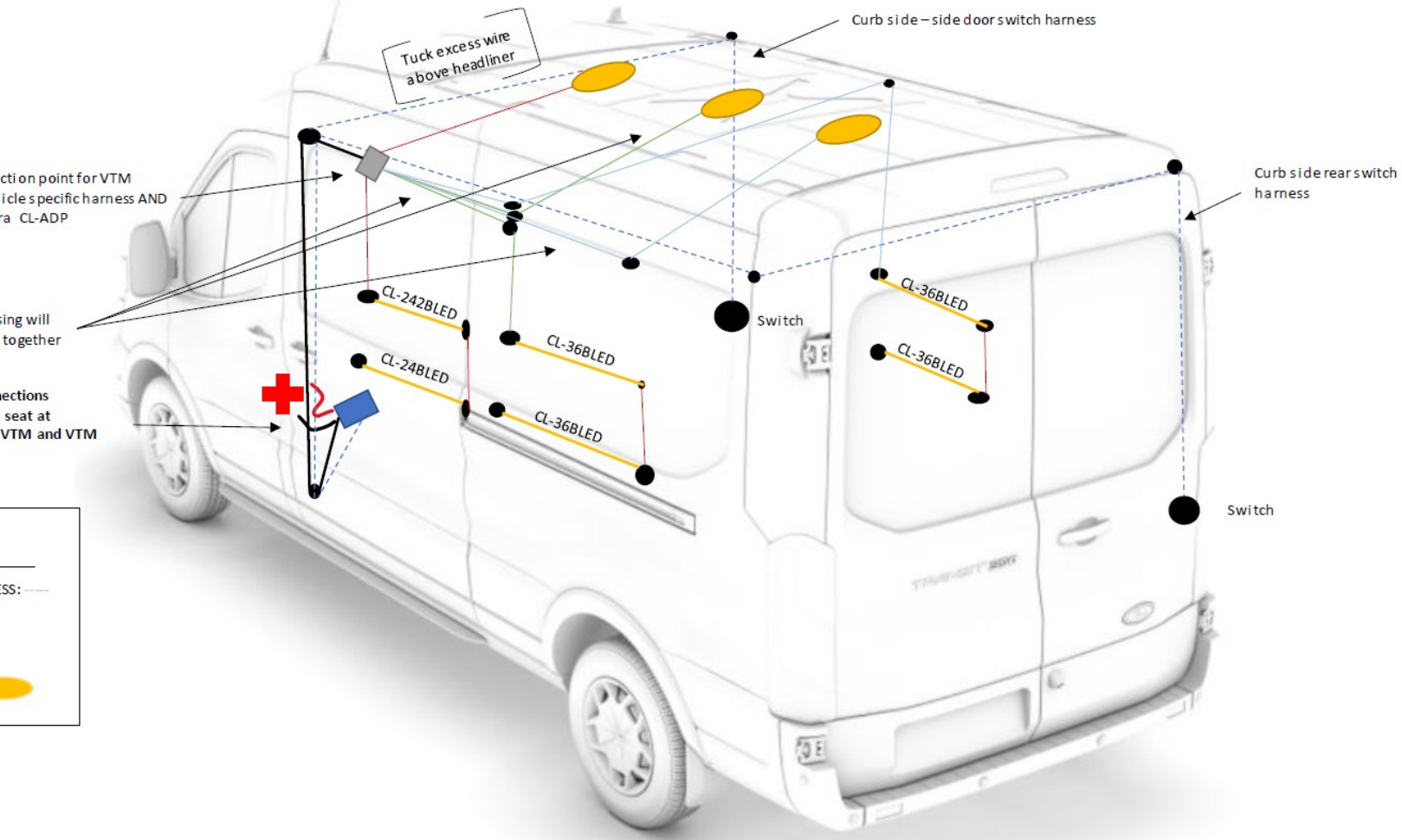


CL-ADP to be added onto Vehicle Specific Harness



Excess rear switch harness to be tucked in cavity in pillar above rear switch

Express line diagram for install



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

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

Base is a 0.975 inch square

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

OTHER REQUIREMENTS

Black adhesive wire tie mounting base.

Cure Time: Bond 15 Min., Max
Adhesion 1 Hr.

Max. Operating 158

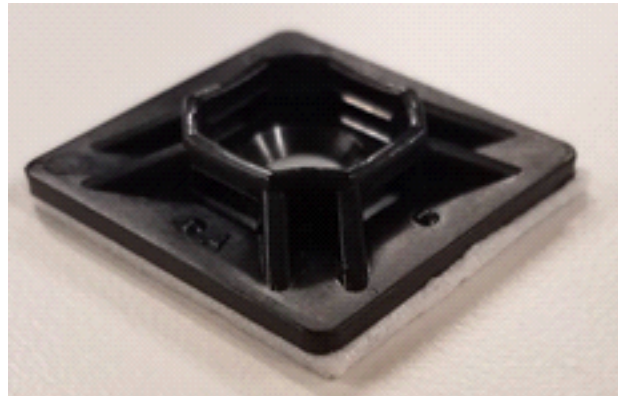
Temp. F:

Max. Operating 70

Temp. C:

Min. Installation 65

Temp. F:



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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: 17429

CURRENT ECN: 22185

ECN DESCRIPTION:

**Size of the base changed with a
change in supplier**

REVISED BY: D. LaCroix

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

Midstate

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

49401

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

B

MAT'L USED:

DESIGNED BY: **RJB**

DESCRIPTION:

Adhesive wire tie base

WEIGHT
(Lbs.): **0.05**

SEGMENT
CODE: **HDW**

PART NUMBER: **49401**

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

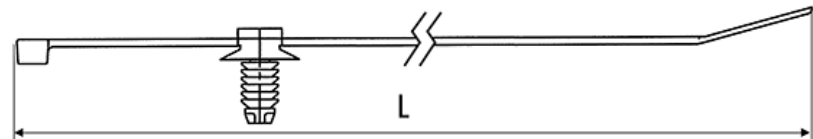
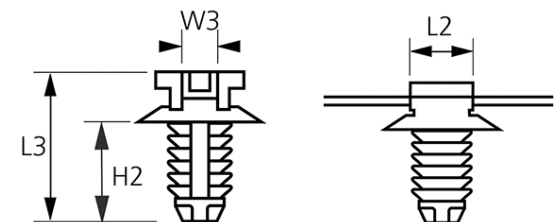
- **Roof Bow #1 (Cargo area, first Roof bow after partition)**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **1100mm Length**



P-HARRB1



(5x)



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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)
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Sheet 1 of 1

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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

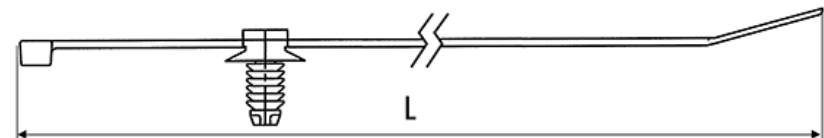
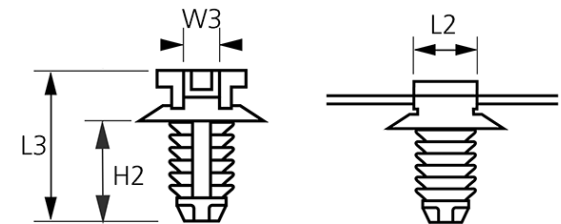
OTHER REQUIREMENTS

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



P-HARRB2

(5x)



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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)
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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

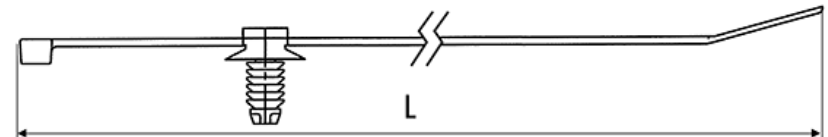
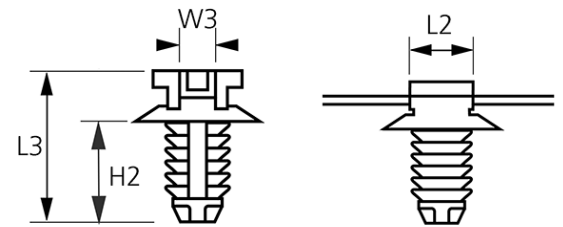
OTHER REQUIREMENTS

- **Roof Bow #3**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **2570mm Length**



P-HARRB3

(5x)



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0.000 = ± .031	0.000 = ± .015	

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Weld Callouts per AWS

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ECN DESCRIPTION:

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LIGHTING**

REVISED BY: MJF

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

ECHOMASTER FLEET SOLUTIONS

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

P-HARRB3

COLOR (ONLY LIST IF COLOR SPECIFIC)

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906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

A

MAT'L USED: **PURCHASED**

DESIGNED BY: **MJF**

DESCRIPTION: **ROOF BOW HARNESS #3**

WEIGHT
(Lbs.):

.50

SEGMENT
CODE: **EAU**

PART NUMBER: **63483**

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>36" 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	36" 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	36" WHITE LED STRIP LIGHT W/ADHESIVE													
2	2	4" ZIP TIE													
3	2	CABLE TIE MOUNT													
4	1	ALCOHOL PAD													



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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:	24697
CURRENT ECN:	25778
ECN DESCRIPTION:	
Revise Modular Lights With New 3M Adhesive	
REVISED BY: JLT	

PURCHASED
COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
CL-36BLED 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

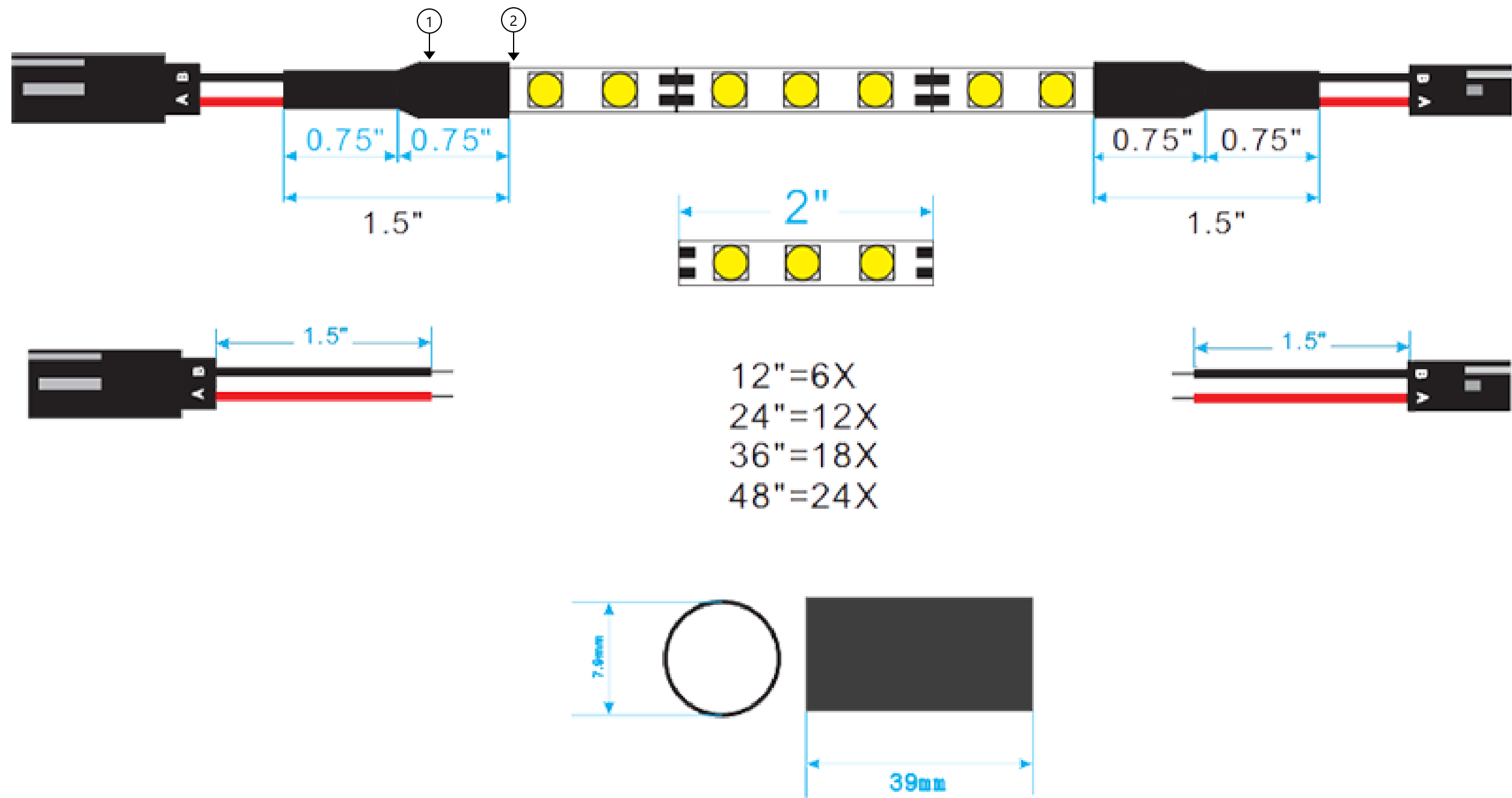
PRINTED DOCUMENT IS UNCONTROLLED

Sheet 1 of 1

PART / PRODUCT IDENTIFICATION

		ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221		REVISION LEVEL B
MAT'L USED:				DESIGNED BY: J. TYNER		
DESCRIPTION: MODULE DOME LED STRIP 36"						
WEIGHT (Lbs.): 0.3		SEGMENT CODE: EAU		PART NUMBER: 65347		

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-36BLED	
	Quality Assurance			Description: 36" 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	



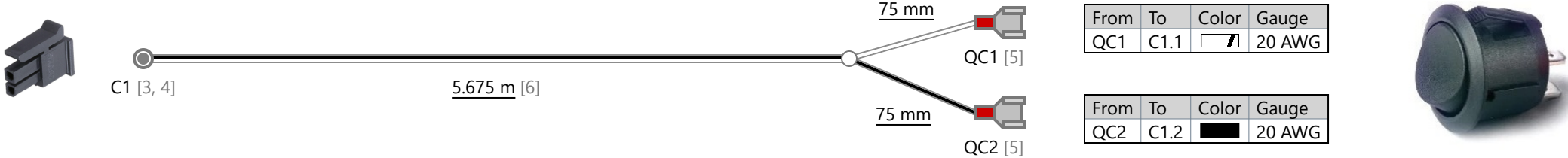
THIS DRAWING IS THE PROPERTY OF ADRIAN STEEL COMPANY AND IS NOT TO BE USED IN ANY MANNER DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY	
TOLERANCES & INSPECTION	RELEASE & REVISIONS
UNLESS OTHERWISE SPECIFIED	INITIAL ECN: 25377
ALL BEND ANGLES ARE 90 DEGREES	CURRENT ECN: 25377
ALL DIMENSIONS ARE IN INCHES.	ECN DESCRIPTION:
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION	RELEASE FOR PRODUCTION
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	REVISED BY:

PURCHASED COMPONENT	
REFERENCED SUPPLIER AND/OR MANUFACTURER	
AAMP GLOBAL	
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER	
VTM-SW2 OR 65788	
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
	DESIGNED BY: E.BURKE		REVISION LEVEL A
MAT'L USED:	PURCHASED	DESCRIPTION: SWITCH 2 HARNESS FOR VTM	
WEIGHT (Lbs.):	0.2	SEGMENT CODE: ELE	PART NUMBER: 65788

Coverings	
Id	Assembly
[6]	

From	To	Color	Gauge
C1.1	QC1		20 AWG
C1.2	QC2		20 AWG



From	To	Color	Gauge
QC1	C1.1		20 AWG

From	To	Color	Gauge
QC2	C1.2		20 AWG

Revisions			
Rev.	Date	Author	Description
1	6/10/21	Bennet Fisher	Initial Drawing

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	Designed By	Bennet Fisher	6/10/2021		
	Engineering Approval				
	Manufacturing Approval				
	Revision Approval			Part Number: VTM-SW2	
	Quality Assurance			Description: 5.675 Meter Switch Harness	
				Revision: 1	
				Sheet: ----	

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



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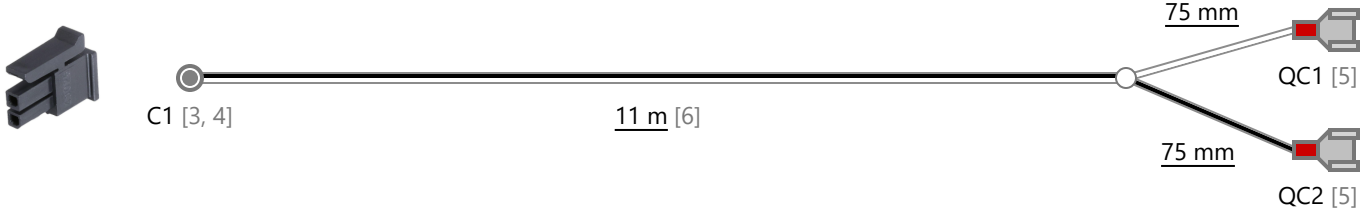
TOLERANCES & INSPECTION	RELEASE & REVISIONS
UNLESS OTHERWISE SPECIFIED	INITIAL ECN: 25377
ALL BEND ANGLES ARE 90 DEGREES	CURRENT ECN: 25377
ALL DIMENSIONS ARE IN INCHES.	ECN DESCRIPTION:
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION	RELEASE FOR PRODUCTION
FEATURES 0.0 = ± .125 0.00 = ± .062 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	REVISED BY:

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP GLOBAL
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
VTM-SW4 OR 65790
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 A
DESCRIPTION: SWITCH 4 HARNESS FOR VTM			
WEIGHT (Lbs.): 0.2	SEGMENT CODE: ELE	PART NUMBER: 65790	

Coverings	
Id	Assembly
[6]	

From	To	Color	Gauge
C1.1	QC1		20 AWG
C1.2	QC2		20 AWG



From	To	Color	Gauge
QC1	C1.1		20 AWG

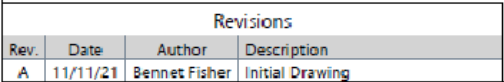
From	To	Color	Gauge
QC2	C1.2		20 AWG



Revisions			
Rev.	Date	Author	Description
1	6/10/21	Bennet Fisher	Initial Drawing

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	Designed By	Bennet Fisher	6/10/2021			
	Engineering Approval					
	Manufacturing Approval					
	Revision Approval			Part Number: VTM-SW4		Revision: 1
	Quality Assurance			Description: 11 Meter Switch Harness		Sheet: ----

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	



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		

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER AAMP GLOBAL
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER VTM-EXP OR 65792
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

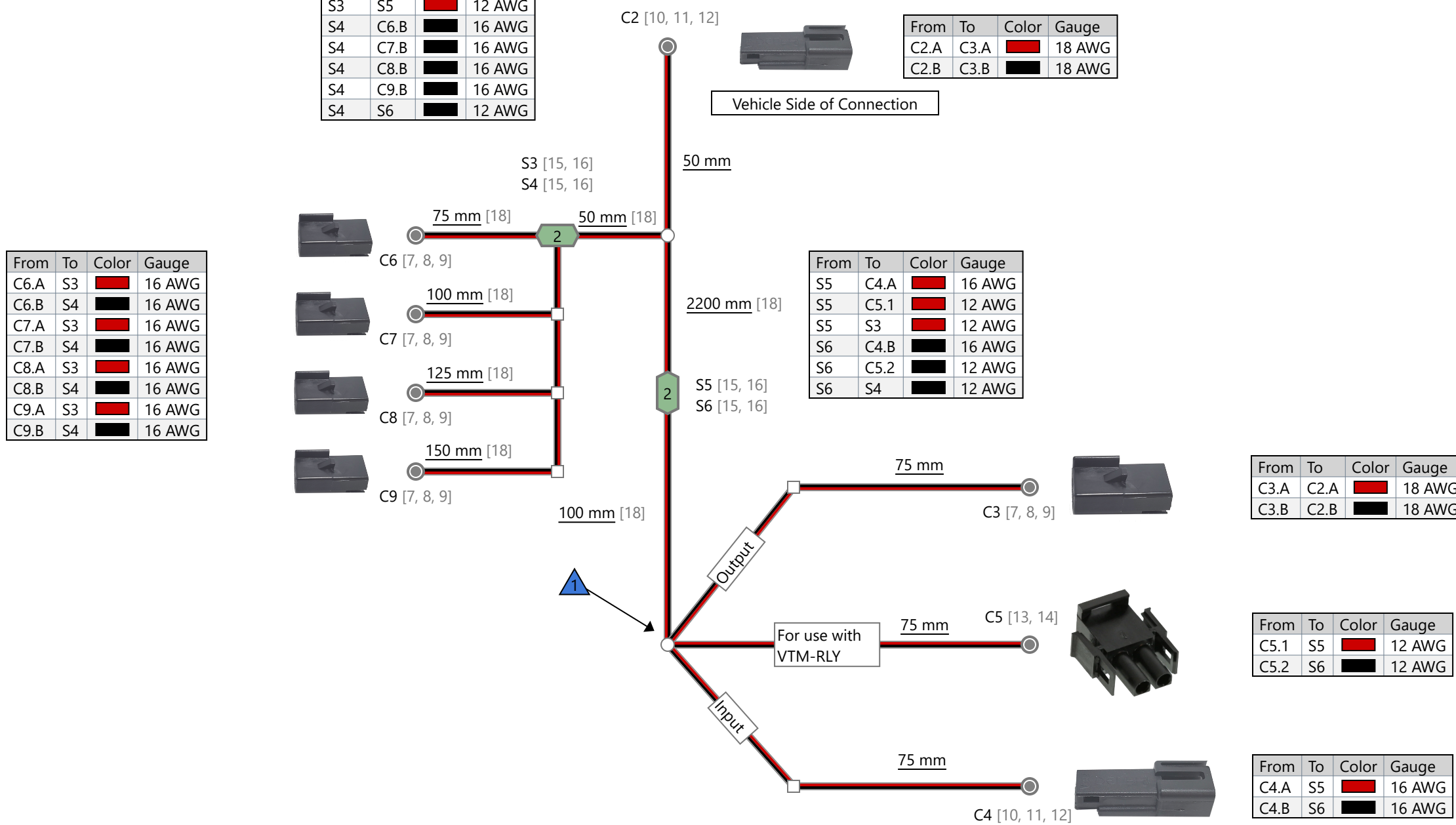
PRINTED DOCUMENT IS UNCONTROLLED		Sheet 1 of 1
PART / PRODUCT IDENTIFICATION		
 ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
REVISION LEVEL		A
MAT'L USED: PURCHASED	DESIGNED BY: E.BURKE	
DESCRIPTION: HARN, POWER VTM EX		
WEIGHT (Lbs.): 0.2	SEGMENT CODE: ELE	PART NUMBER: 65792

Coverings	
Id	Assembly
[18]	

Notes	
1	Tape stops 75mm behind connectors

From	To	Color	Gauge
S3	C6.A		16 AWG
S3	C7.A		16 AWG
S3	C8.A		16 AWG
S3	C9.A		16 AWG
S3	S5		12 AWG
S4	C6.B		16 AWG
S4	C7.B		16 AWG
S4	C8.B		16 AWG
S4	C9.B		16 AWG
S4	S6		12 AWG

From	To	Color	Gauge
C2.A	C3.A		18 AWG
C2.B	C3.B		18 AWG



Revisions			
Rev.	Date	Author	Description
A	11/11/21	Bennet Fisher	Initial Drawing

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	Designed By	Bennet Fisher	11/11/2021		
	Engineering Approval				
	Manufacturing Approval				
	Revision Approval			Part Number: VTM-EXP	Revision: A
	Quality Assurance			Description: 2020-2022 Chevrolet Express - Timer Module Harness	Sheet:

Introduction / Comments:

Install Instructions For Interior Plug & Play Lights For GM Express

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.

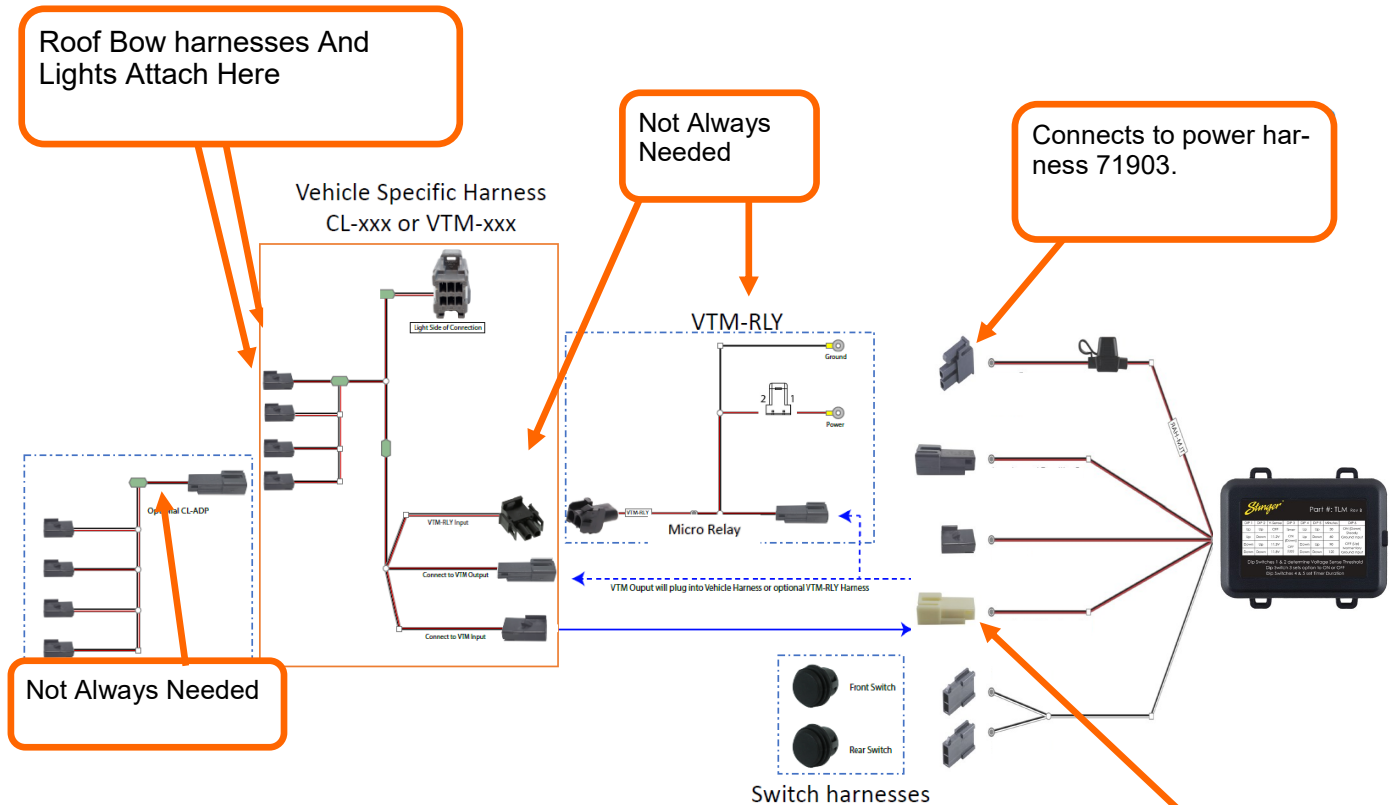


Installation Instructions For Interior Plug And Play Lights For GM Express

****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. The only harness that is specific to the transit vehicle are the power harnesses 65792. Routing will be very standard across all kits, but placement of lights and switches are subject to be different from these instructions if called out on the order drawing differently.

Overall Harness Diagram



Tools required:

Crimpers

7/16 Socket and/or wrench

Power drill, 3/8" step drill bit, Philips head bit (if installing dome lights)



For all vehicles that are NOT RAM. This connector will be black. RAM vehicles, this will be white. See page 4 for more details.

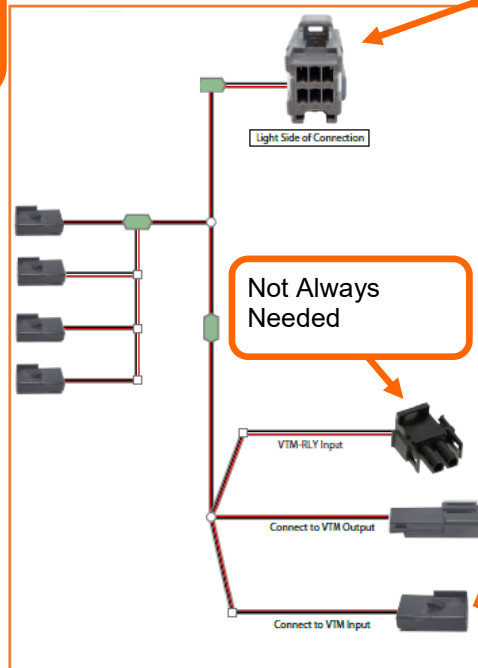
Specific Harness Diagram



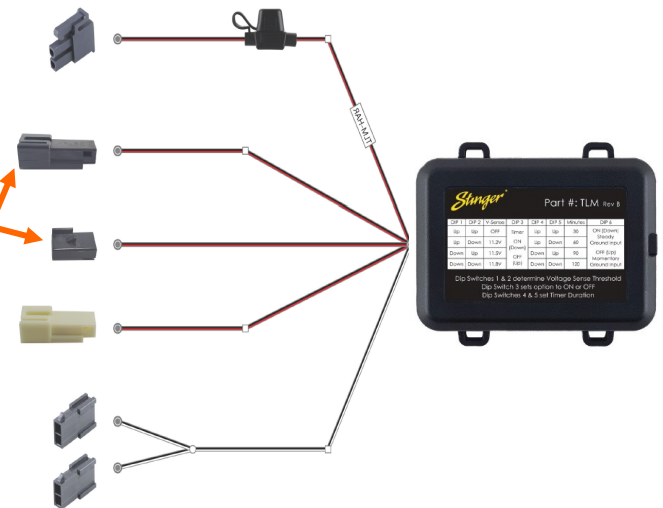
Roof Bow
Harnesses
and Lights
Connect Here

Vehicle Specific Harness
CL-xxx or VTM-xxx

Insert into OEM
Light Connector:
See Below



Switch
Harness in
between



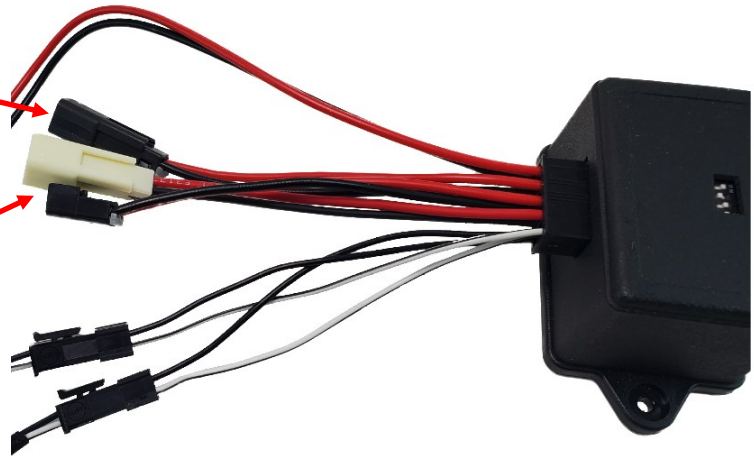
OEM Light Connector located on the OEM light: Remove the OEM
light



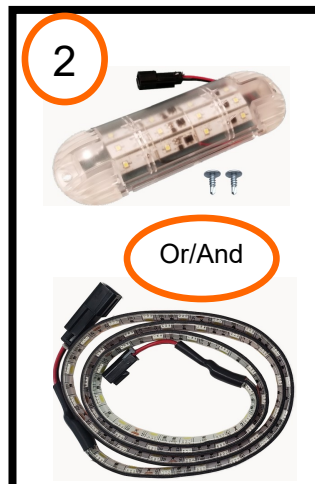
Timer / Low Voltage Module (TLM) Harness Reference

For all vehicles except RAM, the black input connector will be used to plug into the vehicle specific harness. The white connector will NOT be used.

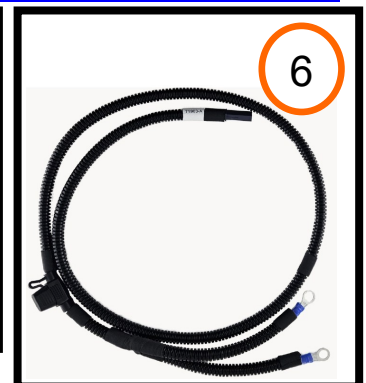
For all RAM vehicles, the white connector will be used to plug into the vehicle specific harness. The black connector will NOT be used.



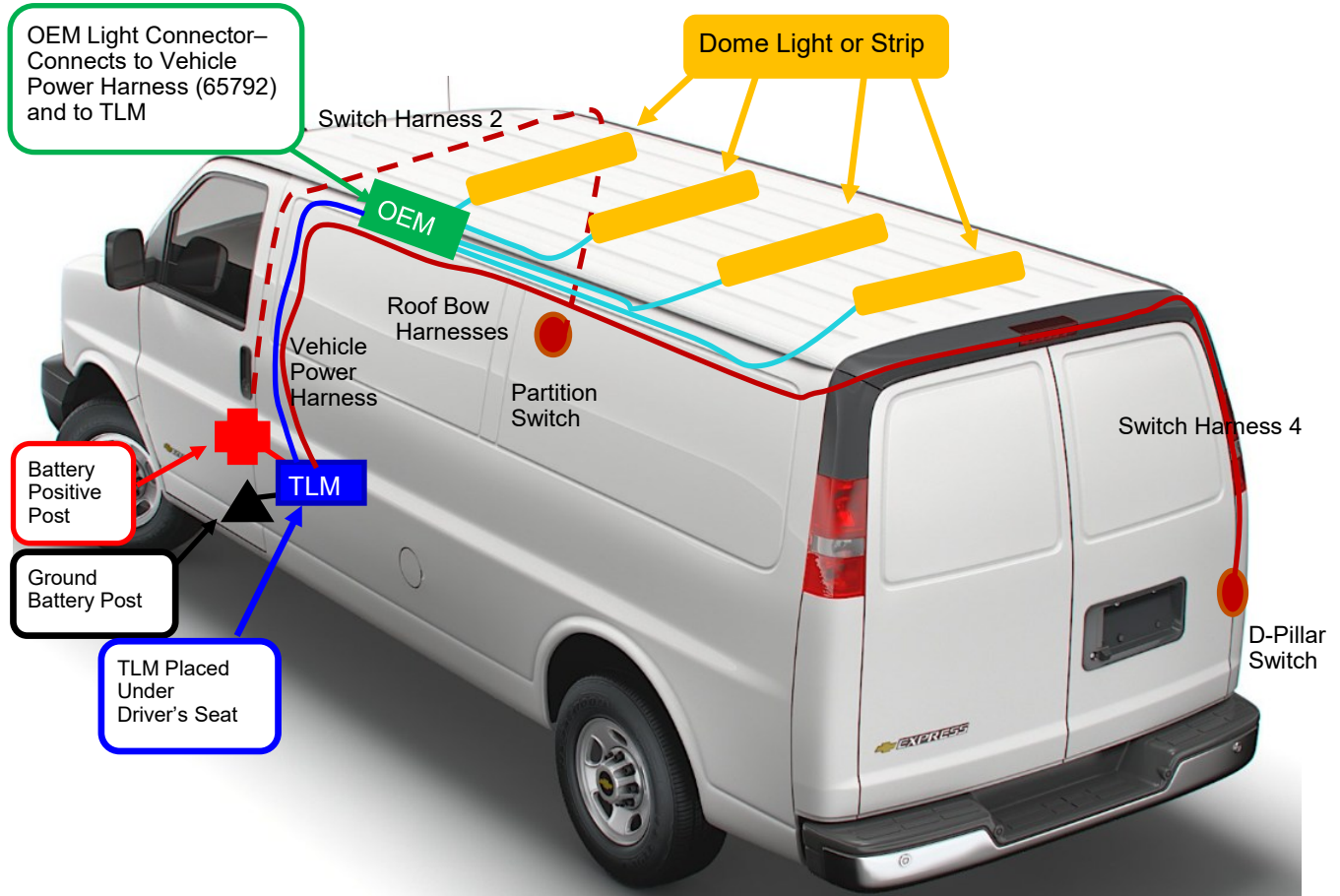
Harnesses Needed



	Part Number	Description
1	71902	Timer Lighting Module (TLM)
2	63480 Or/And 64222, 65346, 65347, 65348	Dome Light Or/And Strip Lights
3	63481 Or/And 63842, 63483, 63484	Roof Bow Harnesses 1 through 4
4	65792	Power Harness
5	65787 Or/And 65788, 65789, 65790	Switch Harness 1 through 4 for TLM
6	71903	Battery Power Harness



Harness pictures are for reference only.



Color	Key - Items
Blue	TLM/Harness
Green	Vehicle Specific Power Harness
Black	Ground Location
Red	12V location
Redish/Brown	Switch Harnesses
Yellow	Dome or Strip Lights
Teal	Roof Bow Harnesses

The purpose of plug and play lighting is to be completely modular. Due to this feature, refer to the order drawing for all exact lighting placements. These installation instructions are for most cases and for reference.

Optional Required Harnesses:

64244: This adapter harness allows for extra extensions to be added (if needed).



Be sure not to overload the OEM circuit by putting too many lights on the circuit. Consult ASCO Electrical Engineering team for application advice if using more than 4 lights.

Add Relay Harness 65791 for extra amperage. (Not always needed)

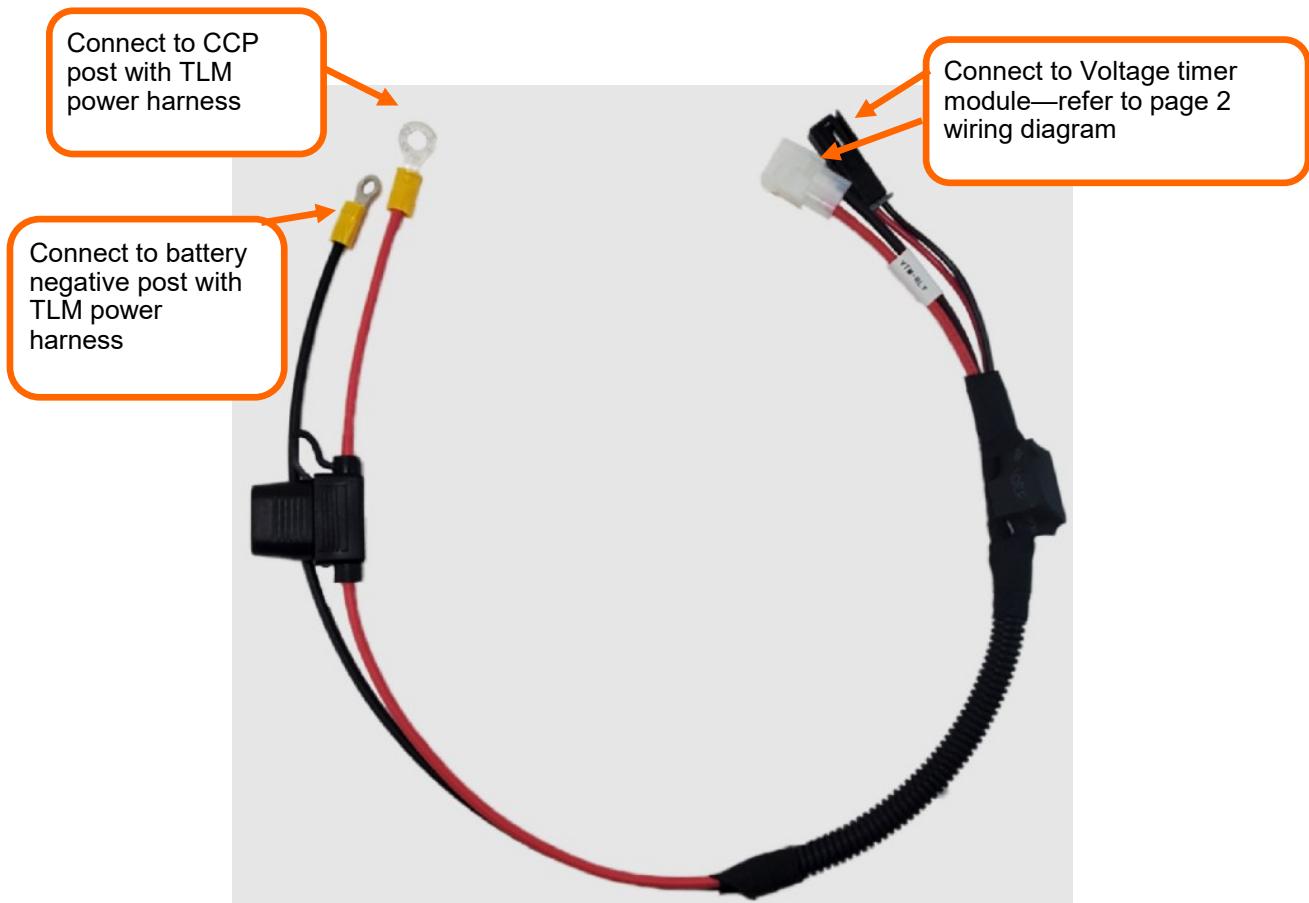


Figure 7.1



Figure 7.2



Figure 7.3



Pre Work for install:

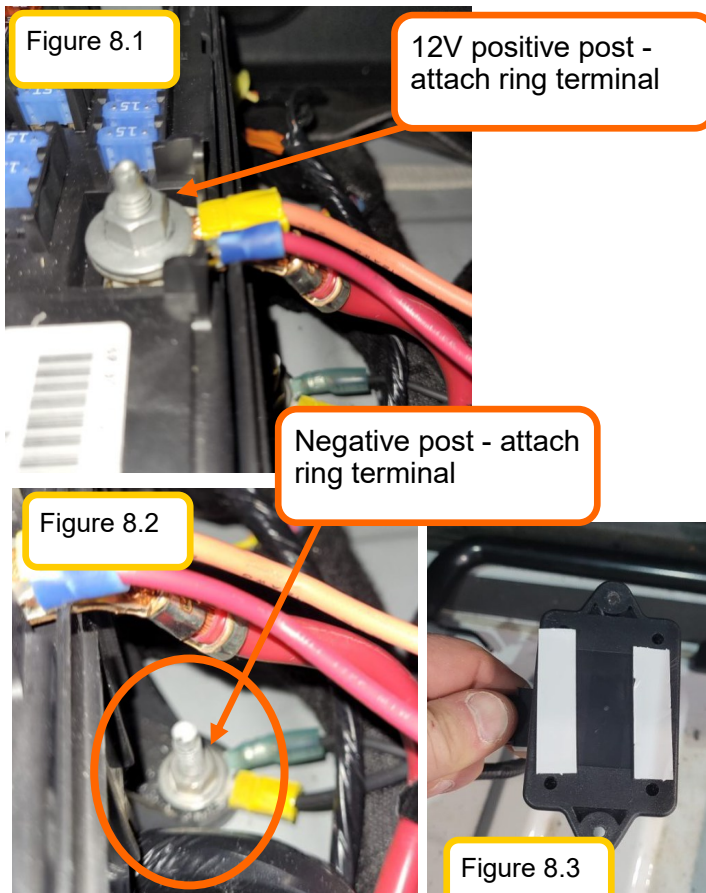
Disconnect the OEM cargo lights from the OEM harnesses by unclipping the connectors. See figure 7.1.

Do this for all the cargo roof lights.

Remove all the interior lights from the roof bows. Figure 7.2.

Unclip all the OW roof bow harnesses from the roof bow, and reposition them back into the OEM harness bundle in the roof channel.

Be sure to keep the first roof bow harness handy for the install on page 9. You can locate this harness end next to the first roof bow split. See figure 7.3 for location.



Step 1: Locate the TLM harness #71902

Plug the harness connector into the timer / low voltage module port

Step 2: Locate the power harness 71903 and plug that into the TLM harness.

Locate the fuse box under the driver's seat.

Attach the positive (red) wire to the 12V positive post. Secure with the OEM nut. See Figure 8.1.

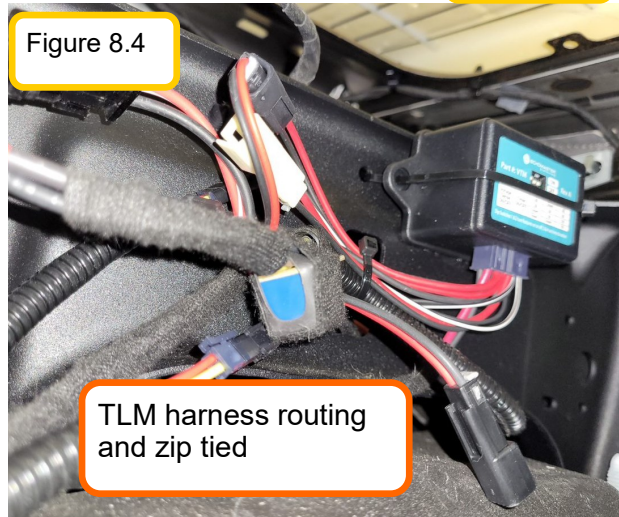
Attach the ground ring terminal (black) to the negative post on the bottom of the fuse block. Secure with the OEM nut. See Figure 8.2.

Step 3: Refer to the bottom picture for dip switch settings. If the customer would like a different amount time other than 90 minutes, use the dip switches to set the time.

Apply the VHB tape the back of the TLM (timer / low voltage module). See figure 8.3.

Stick the TLM to the back of the seat base and secure with a zip tie. See figure 8.4.

Plug the switch harnesses (65788 & 65790) into the TLM harness. See pages 2 & 3 for reference.



Stinger Part #: TLM Rev B

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

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

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

TLM Dip Switch Settings

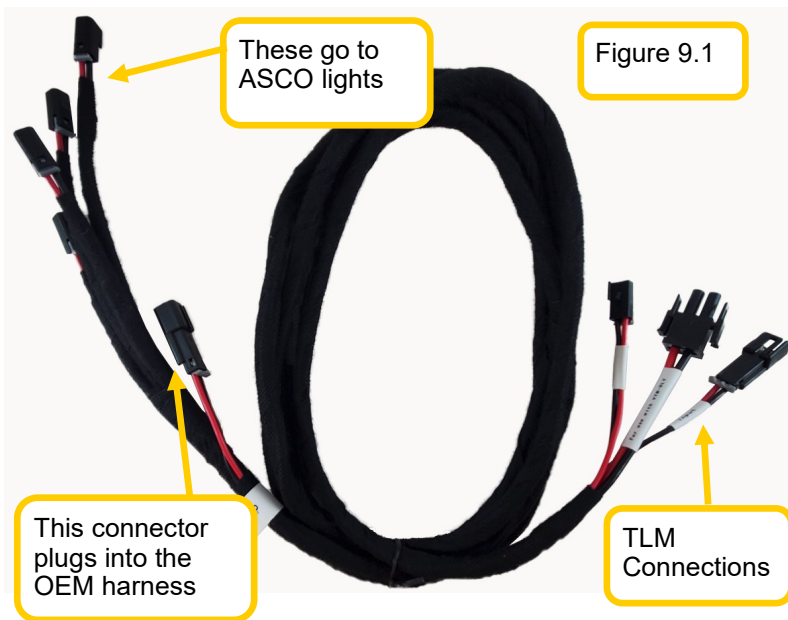


Figure 9.1

Step 4:

Locate the OEM first roof bow harness end that you saved for this part of the install.

Plug the vehicle specific power harness (65792) into the OEM connector:
Figure 9.1 and 9.2.

Route the power harness down the partition to the TLM module, and plug it in. Be sure to use the black colored TLM input connector referenced on page 4. The white connector will NOT be used for this install.



Figure 9.2

Step 5:

Connect the roof bow harnesses (63481 Or/And 63842, 63483, 63484 all that are applicable) to the power harness (ends located in the OEM harness channel) and route them to their desired light locations. (Light locations on the roof bows).
Figure 9.3.

Use zip ties/fir trees to secure all wiring. See figures 9.4 and 9.5.



Figure 9.3



Figure 9.4



Figure 9.5



Figure 10.1

Step 6:

Before mounting any lights, prep the surface where the light will be placed with the supplied alcohol pad. Let dry for a few minutes, then mount the light.

Be sure the surface is clean before applying the VHB tape. Read the supplied instructions in the lighting boxes.

Mount the strip/dome lights to their desired locations: Refer to the order drawing.

For dome lights, use the VHB tape already on the back of the light, and also secure with the supplied tek screws.

Dome lights are to be placed as close to the center of the roof bow as possible. Figure 10.1 and 10.2.

For the strip lights, use the VHB tape supplied on the back of the lights, and use the little square sticky backs with zip ties that are supplied in the box.

Strip lights are to be placed centered between the channel/valley of the bow. You will see that these lights fit almost perfectly in the channel. Figure 10.3

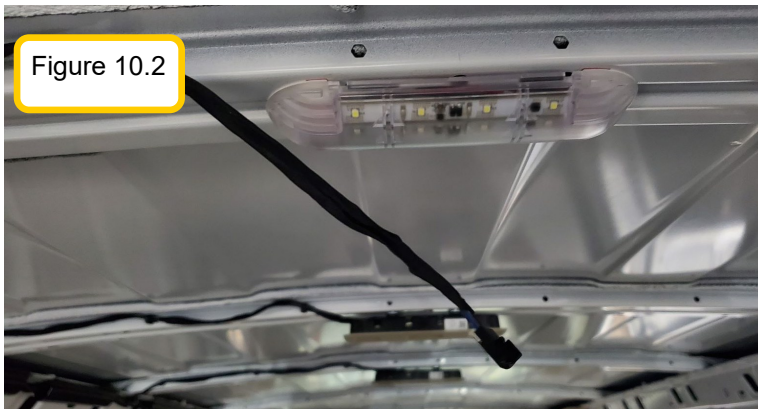


Figure 10.2



Figure 10.3

Figure 11.1



Partition Switch

Locations:

Switch hole in steel partition behind the passenger's seat (figure 11.1) or drill out switch hole in composite partition (figure 11.2).

This location will require harness #65788

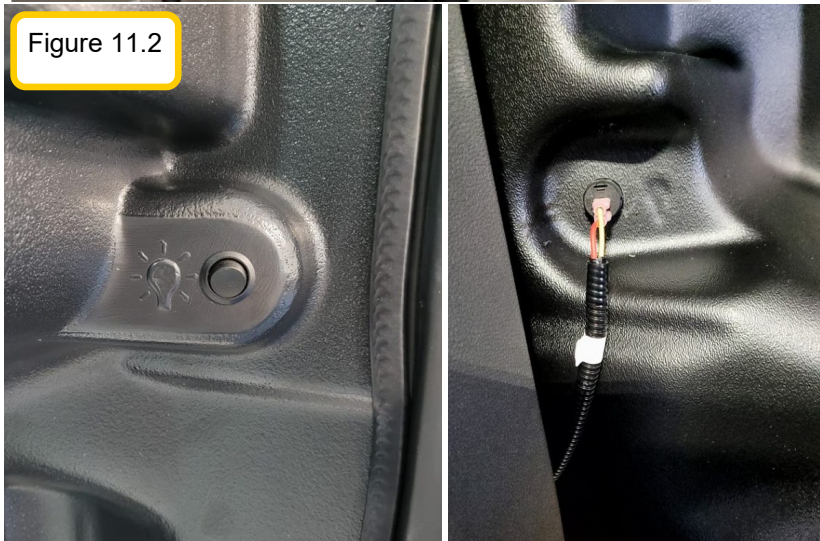
Rear Switch Location:

Passenger side rear D-pillar.

Drill out the horizontal slit in the D-pillar, to fit the switch.

See figure 11.3 below for reference.

Figure 11.2



This location will require harness #65790

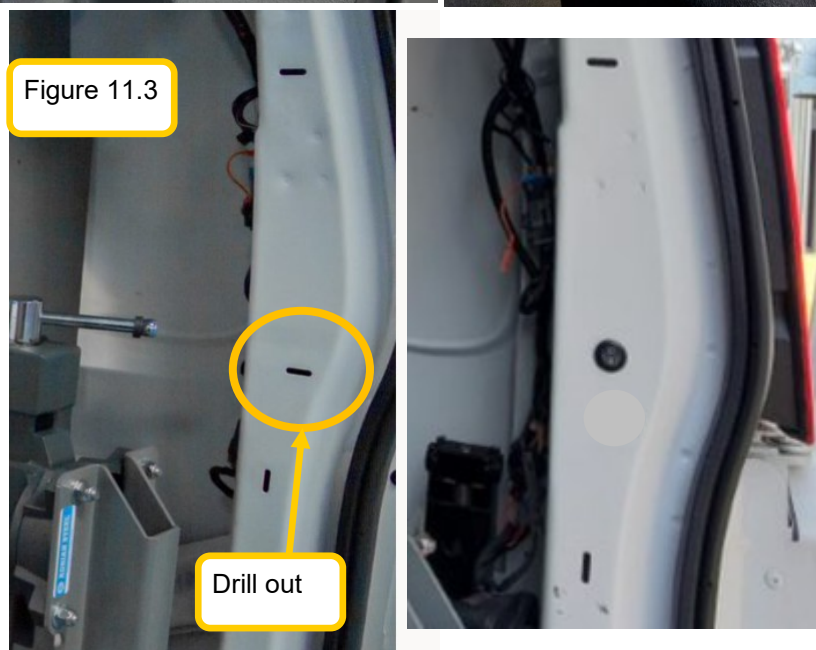
Step 7:

Route the 65788 harness from the TLM harness location (above the drivers seat in the headliner - see routing diagram for reference) to the partition switch location.

Do the same with harness 65790 to the D-pillar switch location.

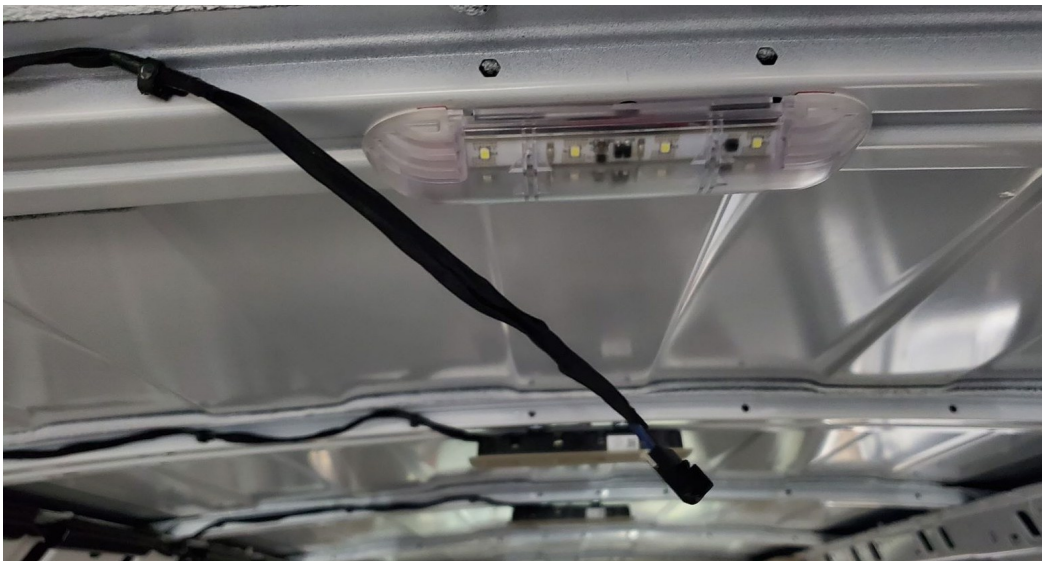
Use Zip ties to secure wiring.

Figure 11.3



Drill needed holes for the switches in rear D pillar panel, and composite partition (if applicable).

Insert the switches into the holes with the "1" in the 12:00 position, connect the harness (the connection orientation does not matter).



Insert the fuse into the inline-fuse holder on the power harness. The install is now complete. Secure all wiring with zip ties. Re-attach all trim. Double check the functionality of the lights and switches.

Express basic photos for install



Bolt on top of fuse box provides 12v, and nut holding fuse box down in back provides ground



VTM mounted to underneath and back of driver seat bracket and VTM harness wire tied to bracket



VTM harness routed up street side B pillar



Parts List

- VTM
- VTM relay harness
- CL-ADP
- 5 – P-HARRB1
- 2 – P-HARRB2
- 2 – P-HARRB3



STL-4048902



Install from Transit. The P-HARRB3 will come down on the left side of bin vs right in picture



This is from a Transit but the concept is still the same. Only there are 3 shelves instead of 4, so 2 lights used instead of 3

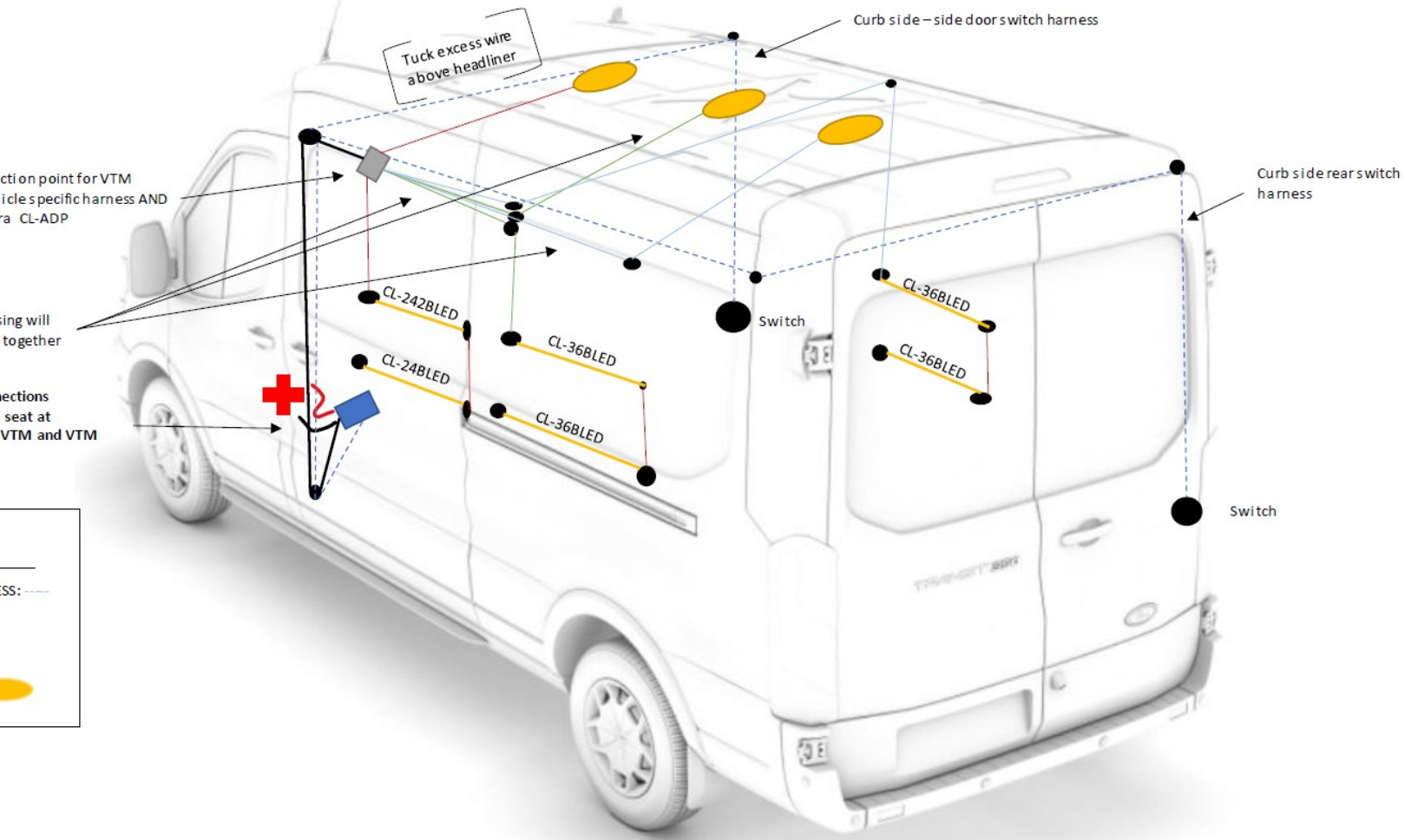


CL-ADP to be added onto Vehicle Specific Harness



Excess rear switch harness to be tucked in cavity in pillar above rear switch

Express line diagram for install



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



THIS DRAWING IS THE PROPERTY OF ADRIAN STEEL COMPANY AND IS NOT TO BE USED IN ANY MANNER
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: 27950
ECN DESCRIPTION:
Update to REV B
REVISED BY: JJC

PURCHASED
COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
Stinger
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	REVISION LEVEL B
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.

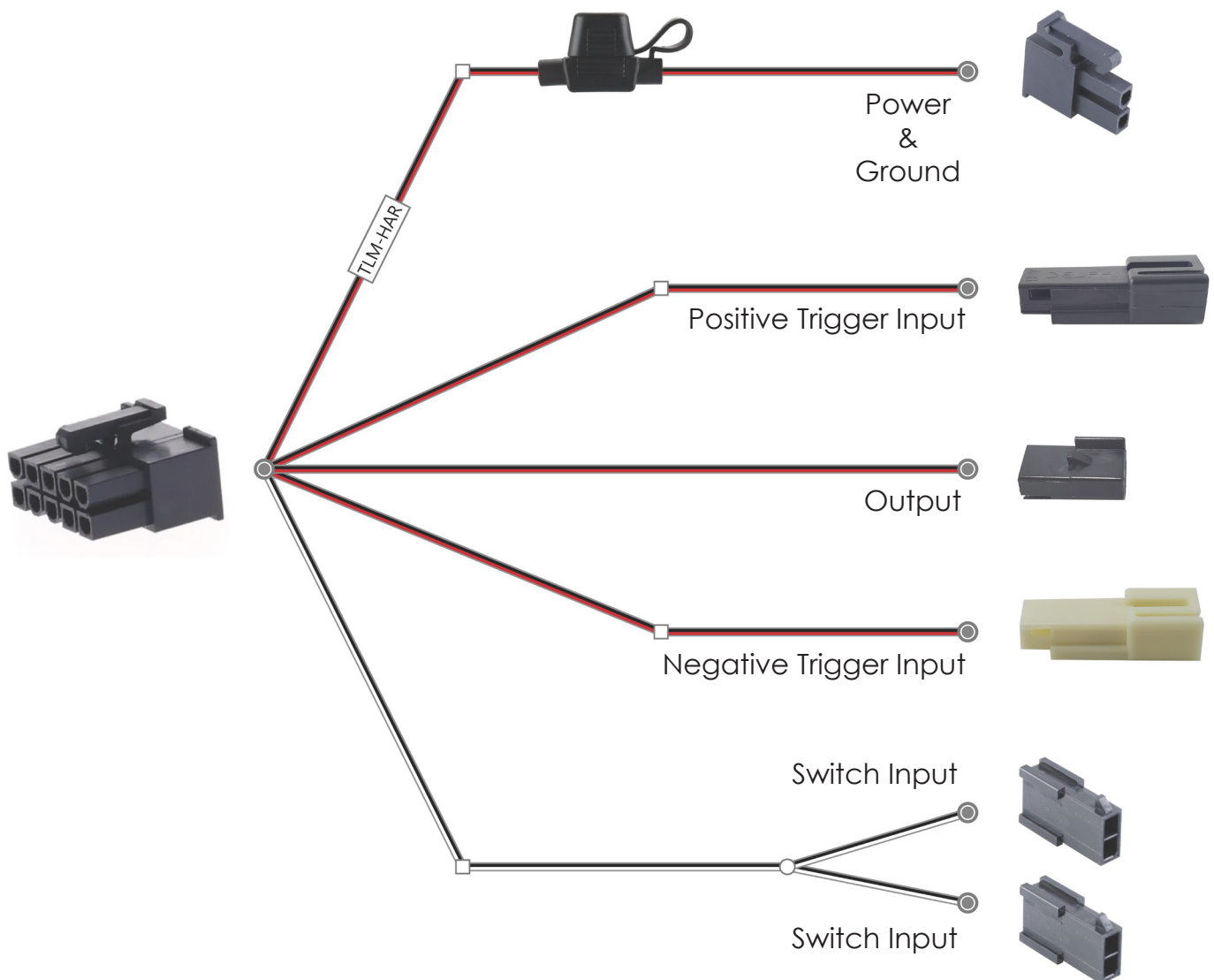
If a Trigger Input is active, its function takes precedence. Attempting to activate the Switch Input while a Trigger Input is active will have no effect on the modules output.





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

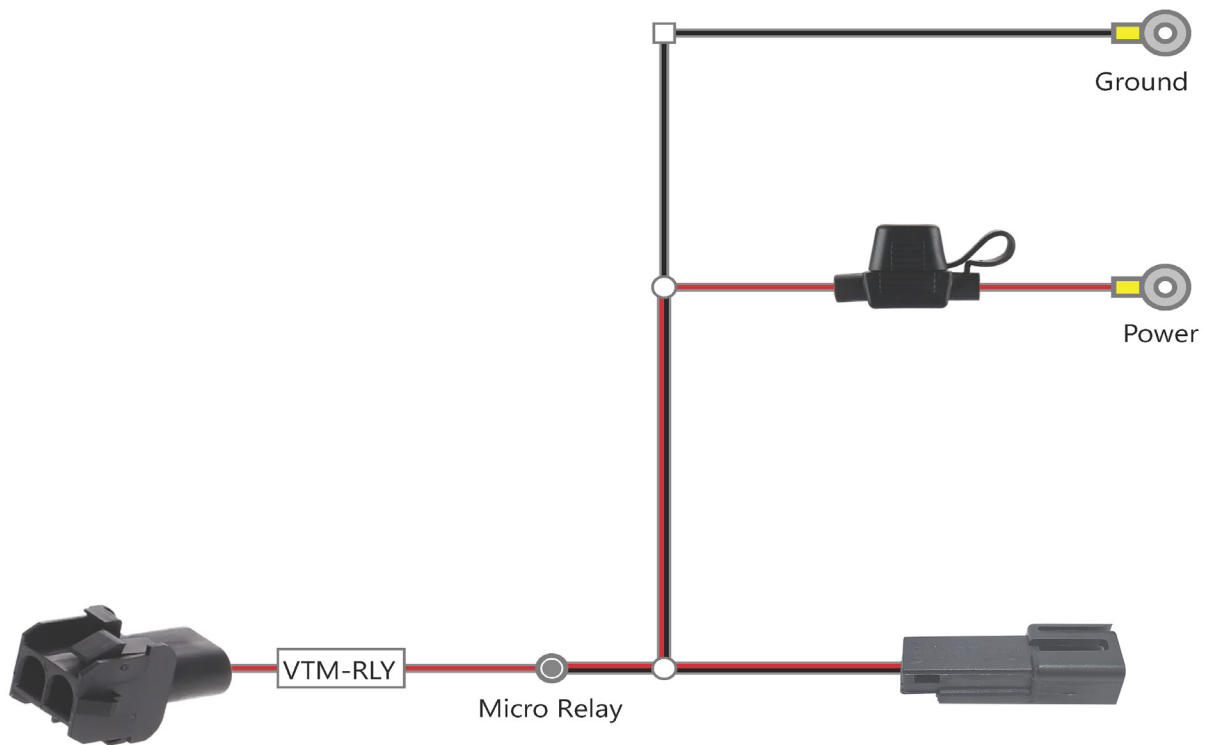
Switch Input: Closing loop between switch input wire leads will activate output





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 SILVERADO AND RAM KITS
POWER FROM BATTERY TO TLM MODULE



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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

TOLERANCES & INSPECTION		
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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: FMB

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
71903
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

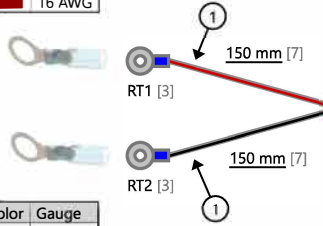
PART / PRODUCT IDENTIFICATION		
ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
MAT'L USED: PURCHASED	DESIGNED BY: E.BURKE	REVISION LEVEL A
DESCRIPTION: HARN,POWER TLM BATTERY 4'		
WEIGHT (Lbs.): 0.2	SEGMENT CODE: ELE	PART NUMBER: 71903

Bill of Materials				
Id	Type	Manufacturer	Part Number	Quantity
1	Wire		16 AWG Red GXL	1220 mm
2	Wire		16 AWG Black GXL	1220 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	1370 mm
8	Fuse	Littelfuse	297010.WXNV	1
9	Cable Tie	Hellerman nTyton	T30LL0M4	5
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

From	To	Color	Gauge
RT1	Fuse_Holder1	Red	16 AWG

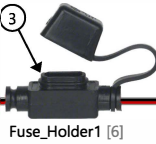


From	To	Color	Gauge
RT2	C1.2	Black	16 AWG

From	To	Conductor	Color	Gauge
Fuse_Holder1	C1.1	W2.Red	Red	16 AWG
Fuse_Holder1	RT1	W1.Red	Red	16 AWG

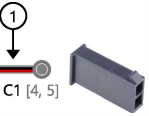
From	To	Color	Gauge	From Contact PN
C1.1	Fuse_Holder1	Red	16 AWG	39-00-0081
C1.2	RT2	Black	16 AWG	39-00-0081

75 mm [7]



995 mm [7]

71903-A [10]



[9]

Revisions			
Rev.	Date	Author	Description
A	10/29/2023	Bennet Fisher	Initial Drawing

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS [INCHES]
TOLERANCES: ±5MM

PROPRIETARY AND CONFIDENTIAL

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IS PROHIBITED.

	Name	Date
Designed By	Bennet Fisher	10/29/2023
Engineering Approval		
Manufacturing Approval		
Revision Approval		
Quality Assurance		



Part Number: 71903-A	Revision: A
Description: HARN, PWR TLM BATTERY 4'	Sheet: 1