

## Part Number

**69626**

**36" LED Light Strips (65347)**



**Roof Bow Harness #2 & #3  
(63482 & 63483)**



## PRODUCT FEATURES

- This product is compatible with the Ford Transit Connect.
- Included in this kit is two (2) 36" LED light switch (65347), roof bow harness #2 & 3 (63482 & 63483), power harness (65795), two (2) switches, and various fasteners.
- There are no OEM options this product is not compatible with and there are no OEM options this product requires.

Model Year Validated:

2023

## Introduction / Comments:

Install Instructions For Interior Plug & Play Lights For Transit Connect

### **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.

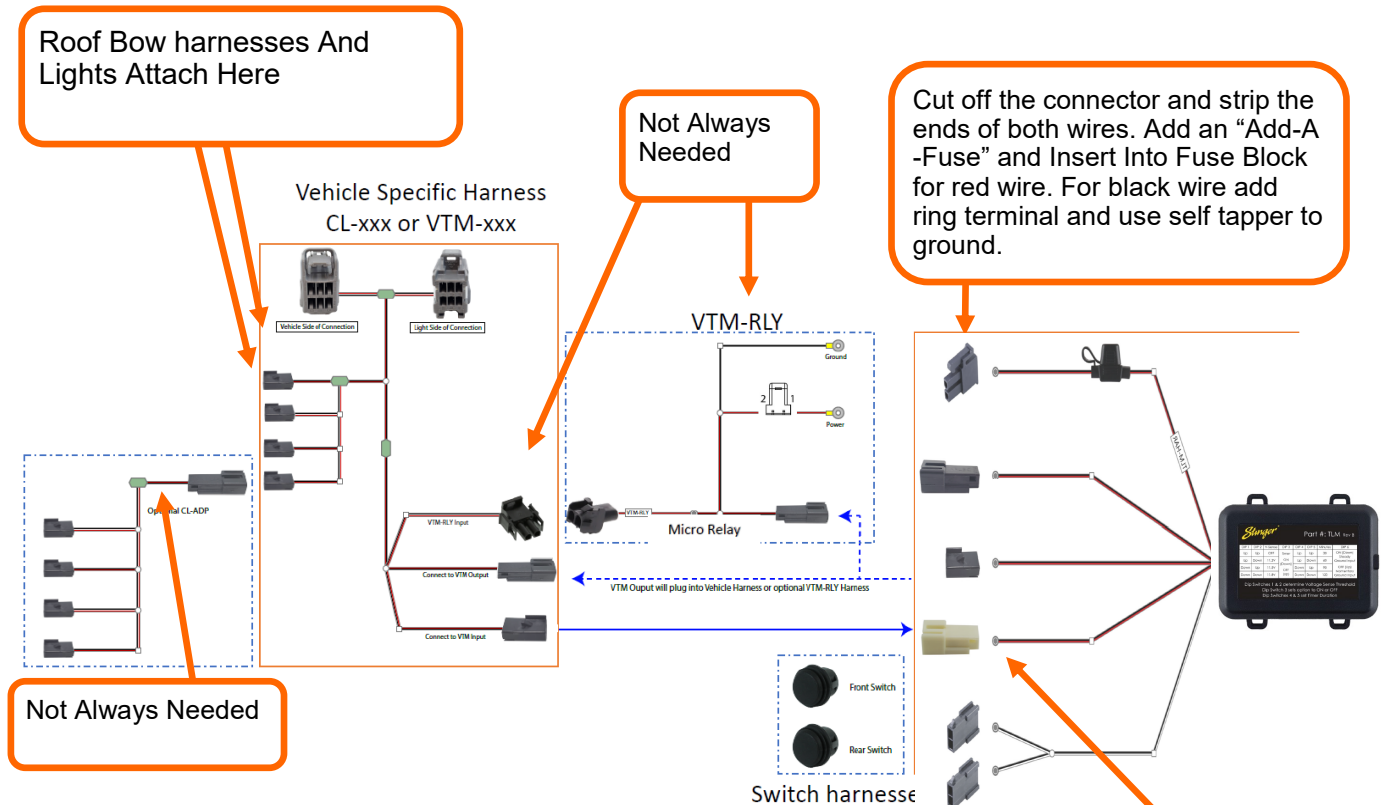


## Installation Instructions For Interior Plug And Play Lights For Transit Connect

**\*\*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 connect vehicle is the power harnesses 65795. 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:

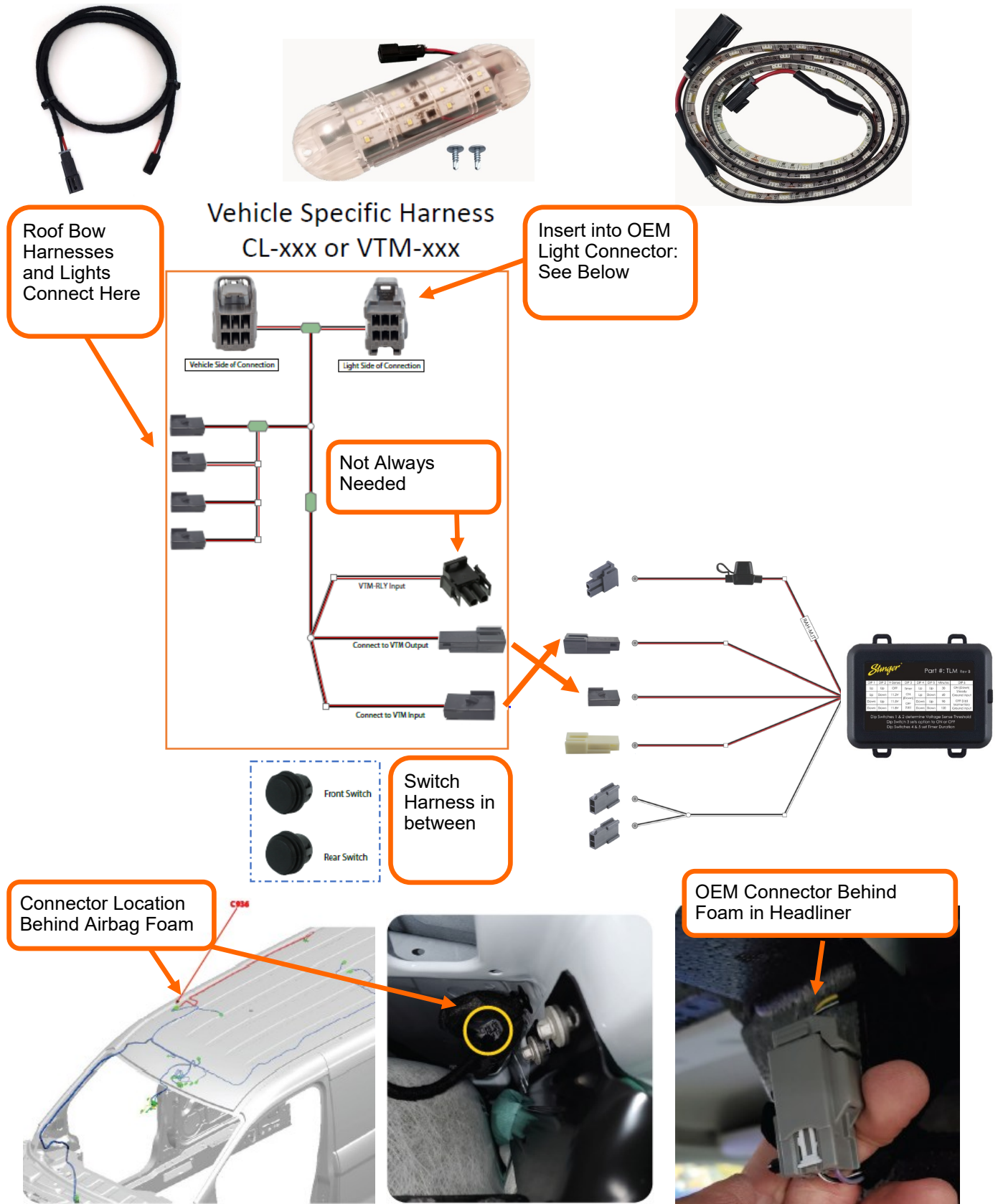
Crimpers

Power drill:  
3/8" step drill bit  
Philips head bit



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

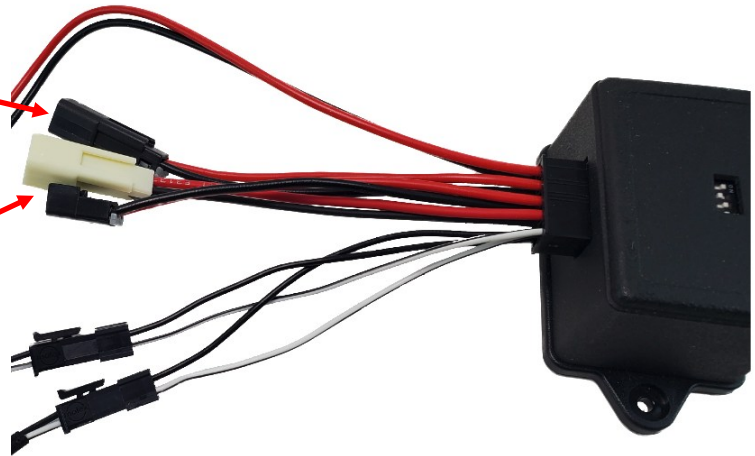
## Specific Harness Diagram



## Timer / Low Voltage Module (TLM) Harness Reference

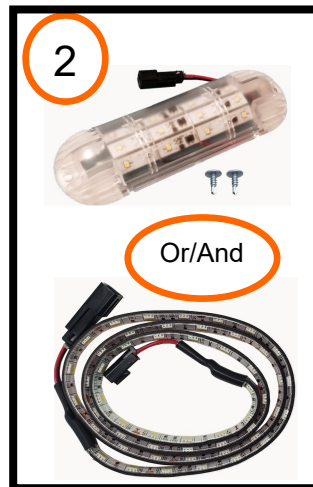
For all vehicles except RAM, the black input connector will be used to plug into the vehicle specific harness. The white connector will NOT be used.

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

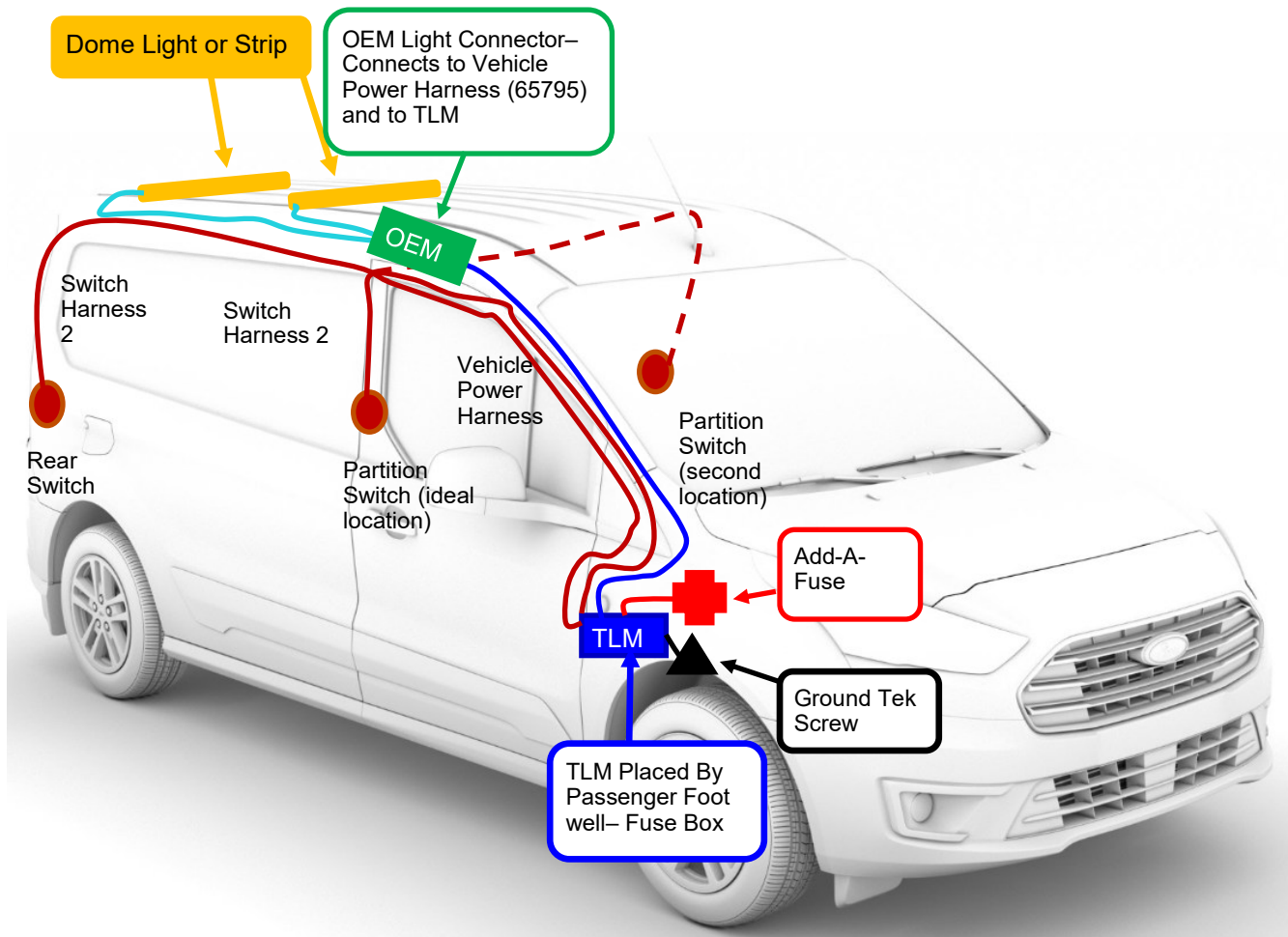


## Harnesses Needed

|   | Part Number                                   | Description                           |
|---|-----------------------------------------------|---------------------------------------|
| 1 | 71902                                         | Timer / Low Voltage Module (TLM)      |
| 2 | 63480 Or/And<br>64222, 65346,<br>65347, 65348 | Dome Light Or/And<br>Strip Lights     |
| 3 | 63481 Or/And<br>63842, 63483,<br>63484        | Roof Bow<br>Harnesses 1<br>through 4  |
| 4 | 65795                                         | Power Harness                         |
| 5 | 65787 Or/And<br>65788, 65789,<br>65790        | Switch Harness 1<br>through 4 for TLM |



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.

Figure 6.1



Figure 6.2

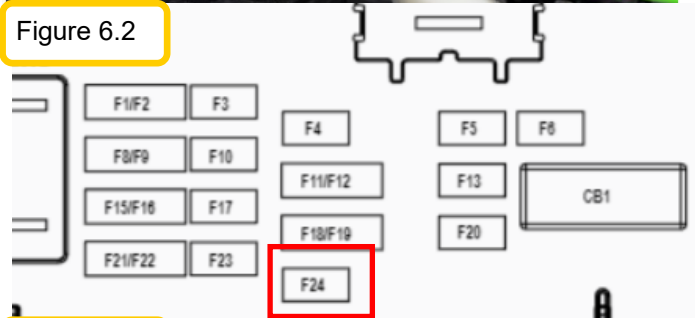


Figure 6.3

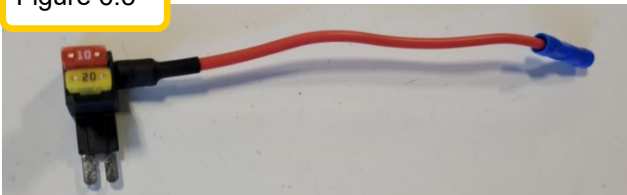


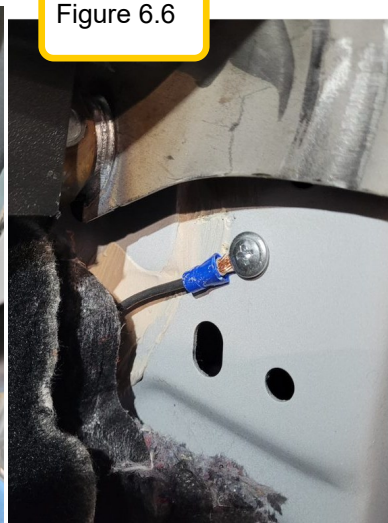
Figure 6.4



Figure 6.5



Figure 6.6



**Step 1:** Locate the TLM power harness #71902

Cut the power wires connector off and strip the ends of both the black and red wire.

Attach the Micro Add-A-Fuse to the blunt cut red wire.

Attach the 1/4" ring terminal to the black wire

Remove the fuse from the inline fuse holder until the end of the install

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

**Step 2:** Locate the Fuse panel under the passenger side foot well. You will need to remove the glove box and some trim to see the fuse box.

Locate the 20 amp micro (F24) fuse shown in figure 6.1 and 6.2..

Remove the fuse carefully.

Insert the supplied 7.5A fuse into the add-a-fuse holder on the top portion of the insert.

Insert the OEM 20A fuse into the add-a-fuse in the bottom portion of the insert. Figure 6.2.

Insert the add-a-fuse back into the 20A fuse location. Figure 6.4.

Remove the trim panel on the body of the passenger side kick panel. Figure 6.5.

Use the self tapping screw (FAS0148) to ground the ring terminal/ground wire to the body of the van. Figure 6.6.

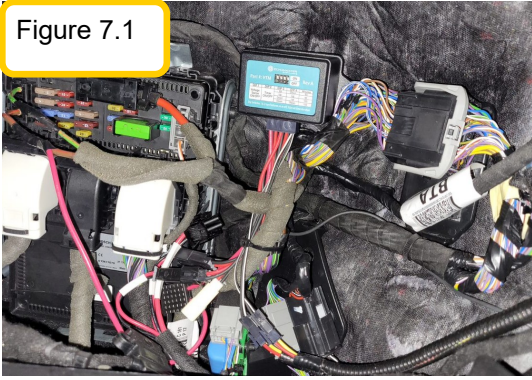
**Step 3:**

Apply the VHB tape the back of the TLM (voltage timer module). See figure 6.7.

Figure 6.7



Figure 7.1

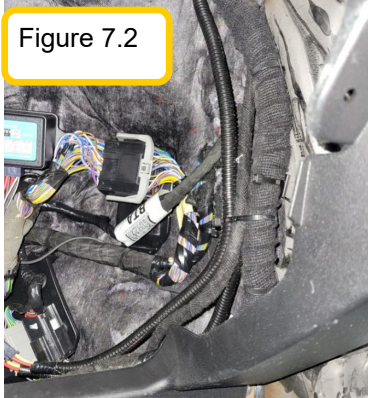


Place the TLM to the right of the fuse block like shown in figure 7.1. Secure the TLM to the OEM wire harnesses as needed with zip ties.

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.

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

Figure 7.2



Secure wiring to the OEM harnesses as needed. Figure 7.2.

**Step 4:** Locate the OEM light connector that is located in the headliner, behind the foam. Figure 7.3.

You will need to remove the foam block on 2022+ Transit Connects.

Carefully remove it from the vehicle. You will need to enter the vehicle through the passenger side slider door and remove the block by pulling down the rear passenger corner of the headliner, then pull the block straight back towards the rear of the vehicle.

The foam block needs to be re-installed after installation of lights is complete.

Disconnect the OEM connectors and plug in the ASCO connector to each side. Figure 7.4.

Figure 7.3

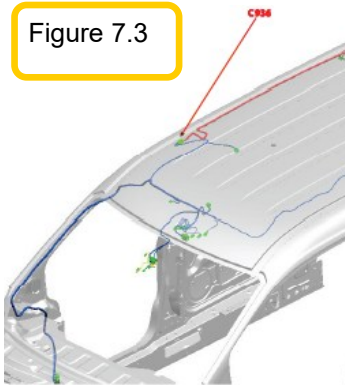
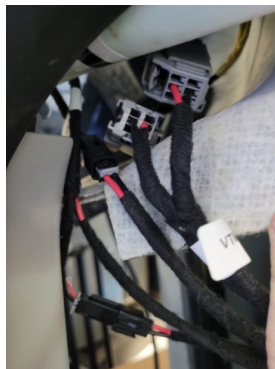


Figure 7.4



Connect the roof bow harnesses (63481 Or/And 63842, 63483, 63484 all that are applicable) to the power harness.

Use zip ties/fir trees to secure all wiring.

**Step 5:** Disassemble the A-pillar trim. Be careful not to interfere with any air bags or wiring.

### TLM Dip Switch Settings

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

| 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   |
| Up                | Down  | 11.2V   | ON (Down) | Up    | Down  | 60      | Ground Input       |
| Down              | Up    | 11.5V   | OFF (Up)  | Down  | Up    | 90      | OFF (Up) Momentary |
| Down              | Down  | 11.8V   |           | Down  | Down  | 120     | 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

Figure 10.1



Route the switch harnesses up the A-pillar, to the top of the partition area. These will be routed to their locations on the next page. Do not interfere with any airbag wiring.

Route the power harness the opposing way, down the A-pillar to the TLM. Figures 10.0 and 10.2.

Figure 10.2

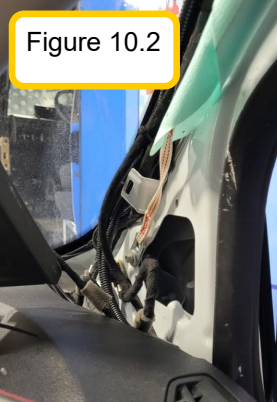


Figure 10.3



End to route to the VTM

Plug the power harness into the TLM, using only the input and output connectors. The relay connector will not be used. Reference page 3 for connections, and figure 10.3.

Be sure to use the black colored TLM input connector referenced on page 4. The white connector will NOT be used for this install.

Secure wiring with zip ties.

**Step 6:** Plug the roof bow harnesses into the power harness in the headliner area.

Route the roof bow harnesses to the light locations on the roof bows. Be sure to confirm placement of lights with the order drawing. Ideal placements are the very rear door pillar and the last roof bow.

Use the OEM roof channels and fir tree zip ties for securing the wiring. Figures 10.4 and 10.5.

**Step 7:** 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. Figure 10.6.

Dome lights are to be placed as close to the center of the roof bow as possible, while straddling the gaps in the roof bow.

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.

Figure 10.4



Figure 10.5



Figure 10.6

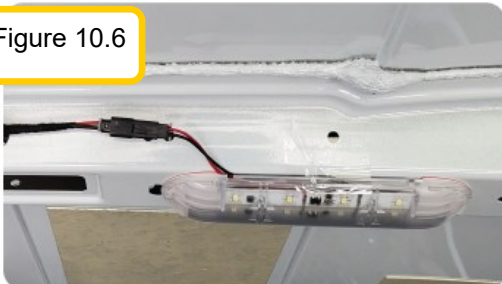
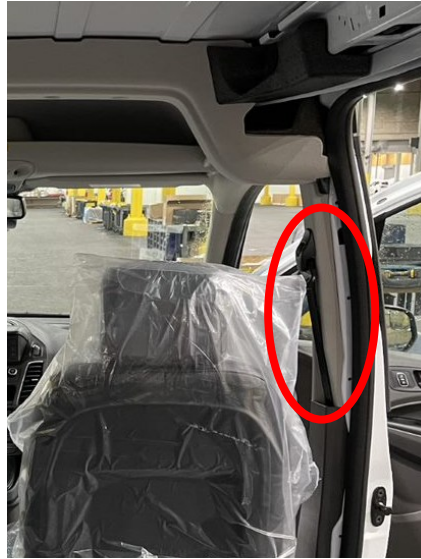


Figure 11.1



## Partition Switch

### Locations:

Switch hole in steel partition (figure 11.1) or drill out switch hole in composite partition (figure 11.2).

This location will require harness #65788.

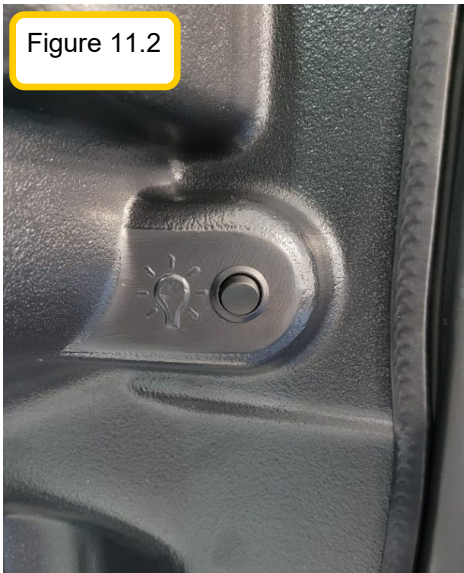
### Rear Switch Location:

Passenger side rear D-pillar trim.

2.5" left of the D-pillar and 3.5" down from the top edge of the trim.

See figure 11.3 below for reference.

Figure 11.2



This location will also require harness #65788.

**Step 8:** Route the front switch harness from the TLM harness location to the partition switch location. (From fuse box under passenger side seat, up the A-pillar, then down the partition to the switch hole.

Do the same with the rear harness the D-pillar switch location. Route in the upper channels on the van to the D-pillar then to the switch location.

Figure 11.3

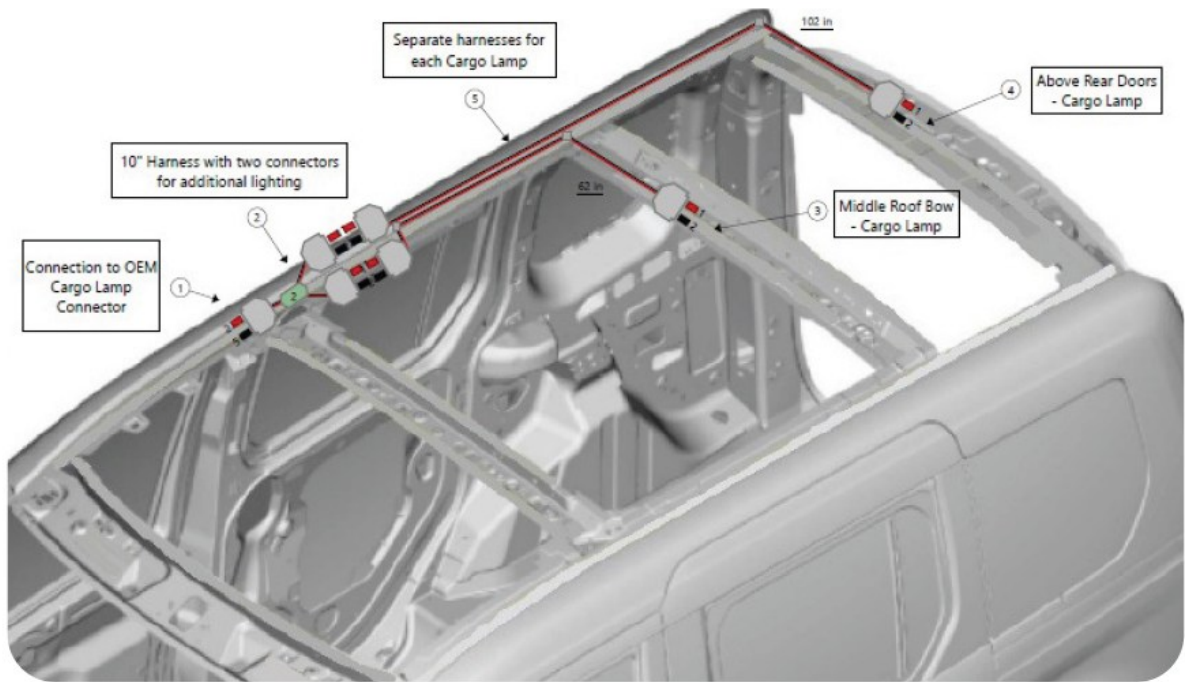


Reference page 5 for routing paths.

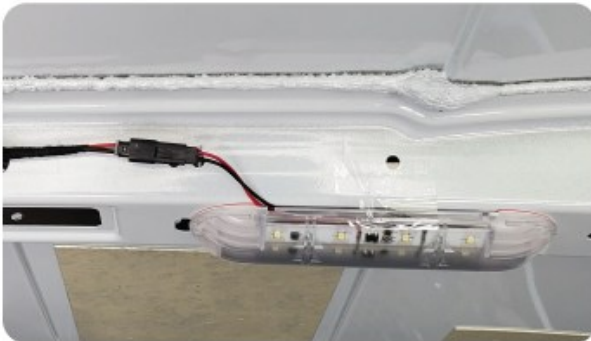
Use Zip ties to secure wiring.

Drill needed holes for the switches in rear D pillar trim 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).



Final install reference pictures



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.

## Transit Connect basic photos for install



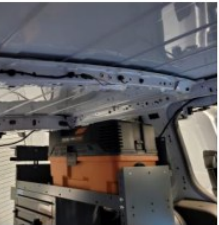
20amp fuse does not  
fit anything in vehicle,  
use a spare 20amp  
fuse from BCM



Ground for timer module



Harness ran up the  
passenger kick panel and  
into the A pillar



Low lighting front  
kick



VTM connection point

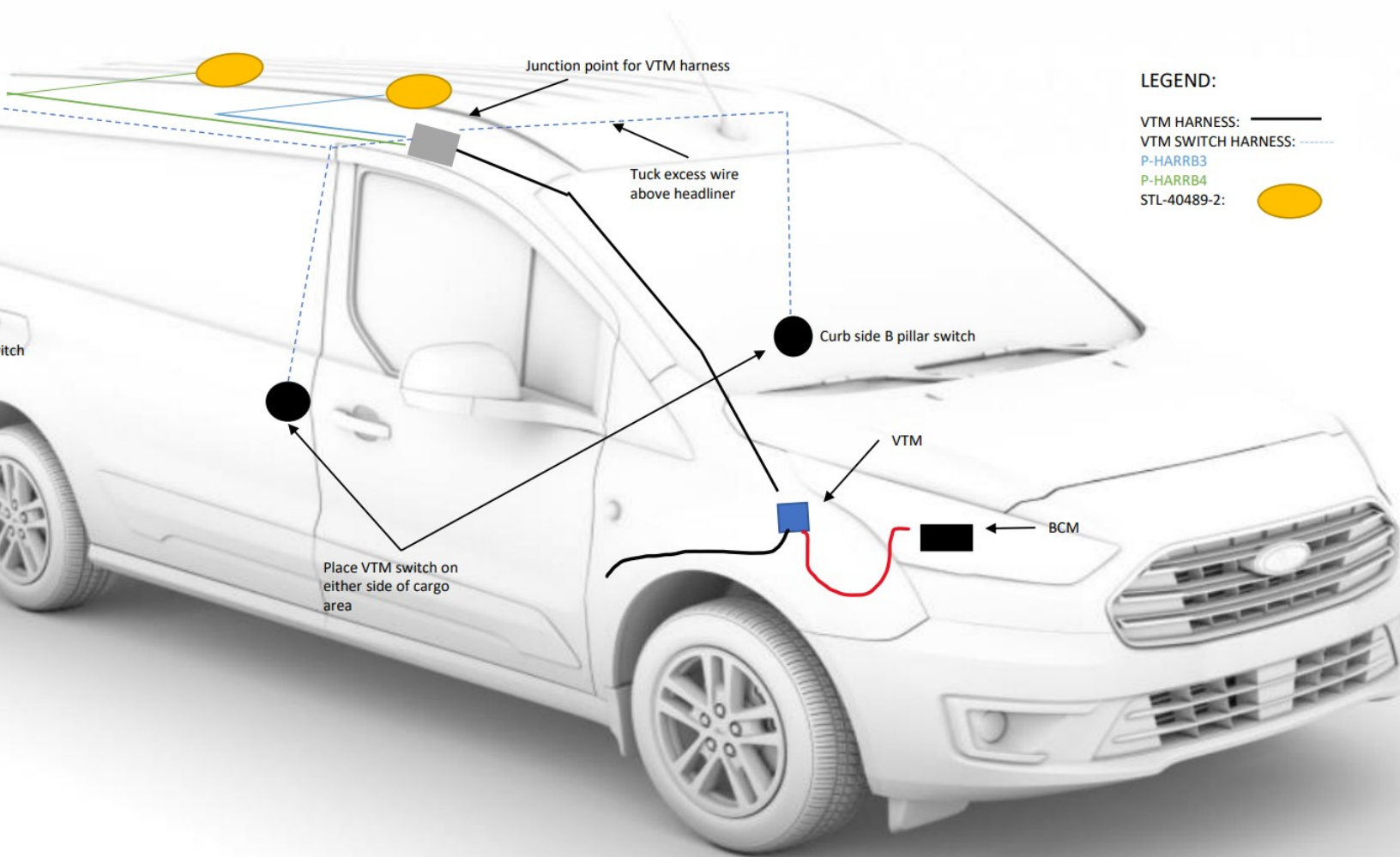


VTM harness cable tied to  
factory harness in  
passenger A pillar

### Parts List

- VTM
- ATCM add-a-fuse w/ 7.5A fuse
- 1/4" ring terminal
- Vehicle specific harness
- P-HARRB3
- P-HARRB4
- (2) STL-40489-2

## Transit Connect line diagram for install



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, MI 49221  
517-265-6194  
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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

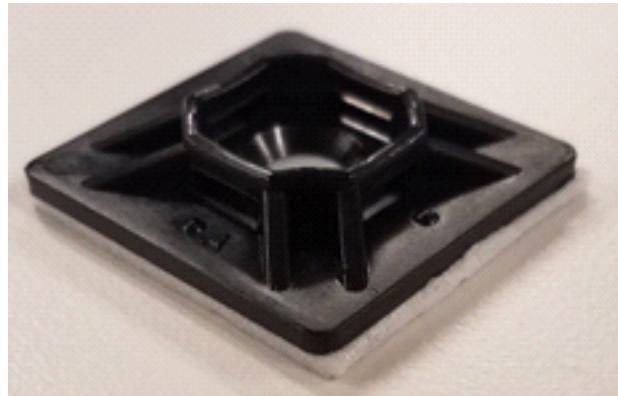
Temp. F:

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**

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: **RJB**

DESCRIPTION:

**Adhesive wire tie base**

WEIGHT  
(Lbs.): **0.05**

SEGMENT  
CODE: **HDW**

PART NUMBER: **49401**

**ITEM DESCRIPTION: MICRO2 ADD-A-FUSE FUSE HOLDER**

MANUFACTURER: WAYTEK

MANUFACTURERS PART NUMBER: 46177 or similar

SPECIFICATIONS: (1) Add-A-Fuse Micro2 style

SPECIAL NOTES: None.

**SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!****PURCHASED PRODUCT DATA SHEET (PPDS)**

Page 1 of 1

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LINES, CONTROL LINES AND ELECTRICAL  
WIRING BEFORE DRILLING! ALWAYS USE  
DRILL BITS WITH INTEGRAL STOPS  
WHENEVER POSSIBLE!

DRAWN BY  
RJB

DATE DRAWN  
08/27/2015

ECN NUMBER  
17776

ECN DATE  
08/27/2015

PART WEIGHT  
0.01 LBS.

REV. LEVEL  
A

PART NUMBER

**49987**

# 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

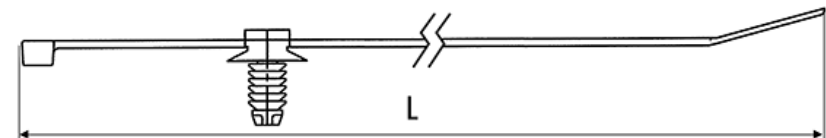
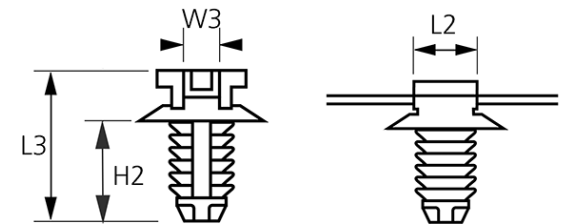
OTHER REQUIREMENTS

- **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

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REFERENCE DIMENSIONS (X.XXX)

DO NOT REQUIRE INSPECTION

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|----------------|----------------|-------------|
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| 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

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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 #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

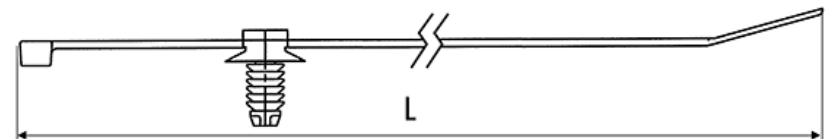
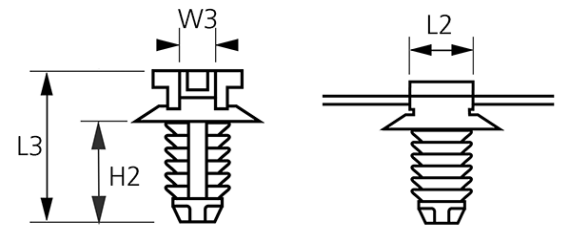
OTHER REQUIREMENTS

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



**P-HARRB3**

**(5x)**



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| 0.000 = ± .031 | 0.000 = ± .015 |             |

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-HARRB3**

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 #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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                                      |             |   |   |                                      |   |   |            |   |   |                 |   |   |             |
| <p><b>Note:</b></p> <p><b>Connector / Terminal Configuration:</b></p> <ul style="list-style-type: none"><li>• MALE 2 PIN ON ONE END</li><li>• FEMALE 2 PIN ON THE OPPOSITE END.</li></ul> <p><b>BOM:</b></p> <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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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)<br>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.<br>Weld Callouts per AWS |                |             |

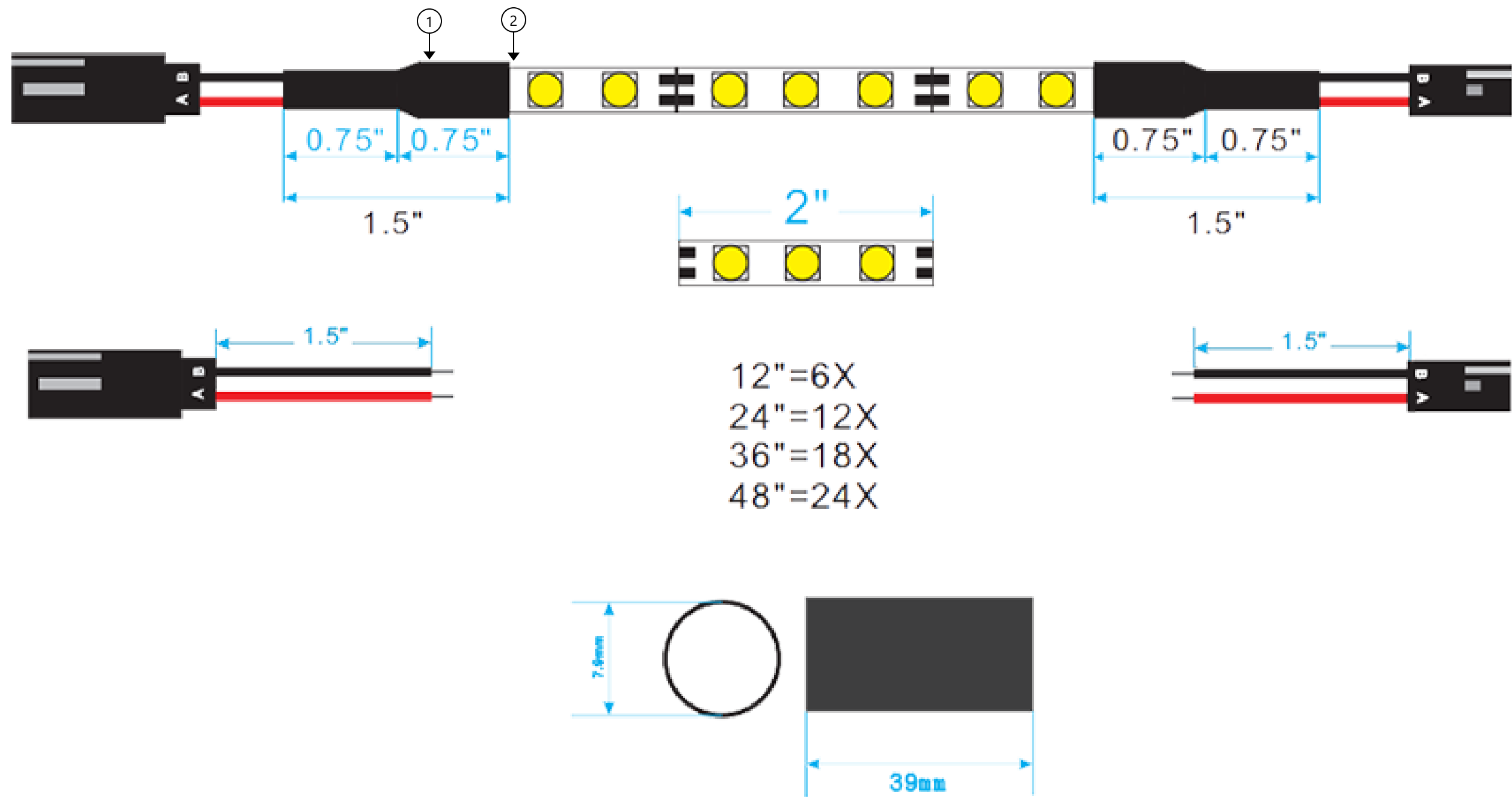
RELEASE & REVISIONS

|                                               |       |
|-----------------------------------------------|-------|
| INITIAL ECN:                                  | 24697 |
| CURRENT ECN:                                  | 25778 |
| ECN DESCRIPTION:                              |       |
| Revise Modular Lights With New 3M<br>Adhesive |       |
| REVISED BY: JLT                               |       |

| PURCHASED<br>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)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) |
| YES                                                                                                                                 |

| PRINTED DOCUMENT IS UNCONTROLLED                                                      |                       |                                        | Sheet 1 of 1                                               |
|---------------------------------------------------------------------------------------|-----------------------|----------------------------------------|------------------------------------------------------------|
| PART / PRODUCT IDENTIFICATION                                                         |                       |                                        |                                                            |
|  | <b>ADRIAN STEEL®</b>  |                                        | ADRIAN STEEL COMPANY<br>906 JAMES STREET, ADRIAN, MI 49221 |
|                                                                                       | DESIGNED BY: J. TYNER |                                        | REVISION LEVEL<br><b>B</b>                                 |
| MAT'L USED:                                                                           |                       | 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 |

|                                                                                                                                                                                                                                                                                                                                              |                        |               |         |                                                                                                                           |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|---------|---------------------------------------------------------------------------------------------------------------------------|--|
| UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN MILLIMETERS [INCHES]<br>TOLERANCES: ±5MM<br><br><b>PROPRIETARY AND CONFIDENTIAL</b><br><br>THE INFORMATION CONTAINED IN THIS<br>DRAWING IS THE SOLE PROPERTY OF<br>AAMP GLOBAL. ANY REPRODUCTION IN<br>PART OR AS A WHOLE WITHOUT THE<br>WRITTEN PERMISSION OF AAMP GLOBAL<br>IS PROHIBITED. |                        | Name          | Date    | <br>— ADVANCING VEHICLE TECHNOLOGY — |  |
|                                                                                                                                                                                                                                                                                                                                              | Designed By            | Bennet Fisher | 11/1/21 |                                                                                                                           |  |
|                                                                                                                                                                                                                                                                                                                                              | Engineering Approval   |               |         |                                                                                                                           |  |
|                                                                                                                                                                                                                                                                                                                                              | Manufacturing Approval |               |         |                                                                                                                           |  |
|                                                                                                                                                                                                                                                                                                                                              | Revision Approval      |               |         | Part Number: CL-36BLED                                                                                                    |  |
|                                                                                                                                                                                                                                                                                                                                              | Quality Assurance      |               |         | Description:<br>36" LED Strip                                                                                             |  |
|                                                                                                                                                                                                                                                                                                                                              |                        |               |         | Revision: B                                                                                                               |  |
|                                                                                                                                                                                                                                                                                                                                              |                        |               |         | Sheet:<br>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                             |  |



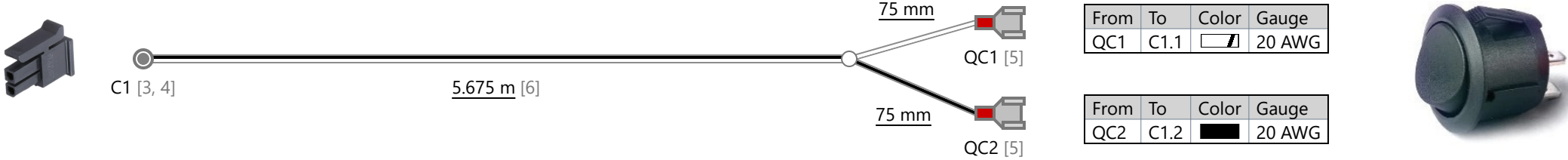
| THIS DRAWING IS THE PROPERTY OF ADRIAN STEEL COMPANY AND IS NOT TO BE USED IN ANY MANNER DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 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)<br>DO NOT REQUIRE INSPECTION                                                                                     | RELEASE FOR PRODUCTION |
| FEATURES<br>0.0 = ± .125<br>0.00 = ± .062<br>0.000 = ± .031                                                                                   |                        |
| HOLES/SLOTS<br>0.0 = ± .062<br>0.00 = ± .031<br>0.000 = ± .015                                                                                |                        |
| ANGLES<br>0° = ± 2°<br>0.0° = ± 1°                                                                                                            |                        |
| Material Thickness: per ASTM Std.<br>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)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) |  |
| NO                                                                                                                                  |  |

| PRINTED DOCUMENT IS UNCONTROLLED                                                      |                      |                                       | Sheet 1 of 1                                               |
|---------------------------------------------------------------------------------------|----------------------|---------------------------------------|------------------------------------------------------------|
| PART / PRODUCT IDENTIFICATION                                                         |                      |                                       |                                                            |
|  | <b>ADRIAN STEEL®</b> |                                       | ADRIAN STEEL COMPANY<br>906 JAMES STREET, ADRIAN, MI 49221 |
|                                                                                       | DESIGNED BY: E.BURKE |                                       | REVISION LEVEL<br><b>A</b>                                 |
| 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 |

|                                                                                                                                                                                                                                                                                                                                                                 |                        |               |           |                                                                                                                                       |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------|--|
| <div>UNLESS OTHERWISE SPECIFIED<br/>DIMENSIONS ARE IN MILLIMETERS [INCHES]<br/>TOLERANCES: ±5MM</div> <div>PROPRIETARY AND CONFIDENTIAL</div> <div>THE INFORMATION CONTAINED IN THIS<br/>DRAWING IS THE SOLE PROPERTY OF<br/>AAMP GLOBAL. ANY REPRODUCTION IN<br/>PART OR AS A WHOLE WITHOUT THE<br/>WRITTEN PERMISSION OF AAMP GLOBAL<br/>IS PROHIBITED.</div> |                        | Name          | Date      | <div><br/>— ADVANCING VEHICLE TECHNOLOGY —</div> |  |
|                                                                                                                                                                                                                                                                                                                                                                 | Designed By            | Bennet Fisher | 6/10/2021 |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                 | Engineering Approval   |               |           |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                 | Manufacturing Approval |               |           |                                                                                                                                       |  |
|                                                                                                                                                                                                                                                                                                                                                                 | Revision Approval      |               |           | Part Number: VTM-SW2                                                                                                                  |  |
|                                                                                                                                                                                                                                                                                                                                                                 | Quality Assurance      |               |           | Description:<br>5.675 Meter Switch Harness                                                                                            |  |
|                                                                                                                                                                                                                                                                                                                                                                 |                        |               |           | Revision: 1<br>Sheet:<br>----                                                                                                         |  |

| PURCHASED<br>COMPONENT<br>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                             |     |





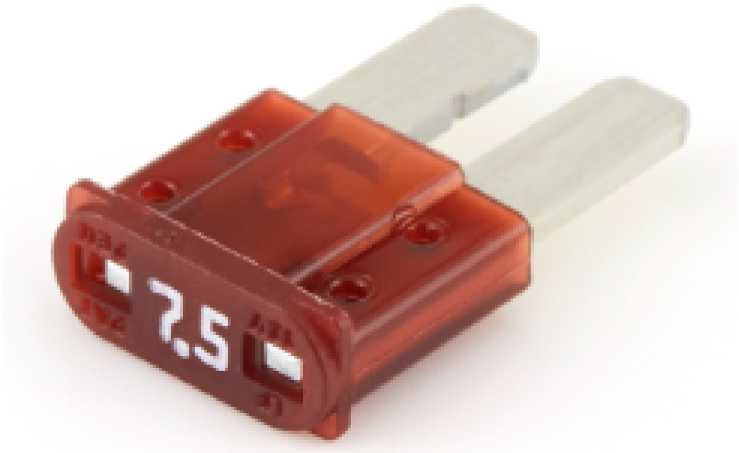
| PURCHASED COMPONENT KEY FEATURES                                         |  |
|--------------------------------------------------------------------------|--|
| DESCRIPTION OF REQUIREMENTS                                              |  |
| DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)                           |  |
| N/A                                                                      |  |
| LOAD/RATING REQUIREMENT                                                  |  |
| N/A                                                                      |  |
| MATERIAL REQUIREMENT                                                     |  |
| N/A                                                                      |  |
| PACKAGING REQUIREMENT                                                    |  |
| N/A                                                                      |  |
| OTHER REQUIREMENTS                                                       |  |
| RING TERMINAL:<br>16-14GA<br>1/4" STUD SIZE<br>BLUE<br>TIN PLATED COPPER |  |



|                                                                                                                                                  |  |  |                                                                                                                                              |  |             |              |                     |  |                   |  |                    |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------------------|--|-------------|--------------|---------------------|--|-------------------|--|--------------------|--|
| THIS DRAWING IS THE PROPERTY OF ADRIAN STEEL COMPANY AND IS NOT TO BE USED IN ANY MANNER<br>DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY |  |  | PRINTED DOCUMENT IS UNCONTROLLED                                                                                                             |  |             | Sheet 1 of 1 |                     |  |                   |  |                    |  |
| TOLERANCES & INSPECTION                                                                                                                          |  |  | PART / PRODUCT IDENTIFICATION                                                                                                                |  |             |              |                     |  |                   |  |                    |  |
| UNLESS OTHERWISE SPECIFIED                                                                                                                       |  |  | <div><div><div><div>AS</div></div><div>ADRIAN STEEL®</div></div><div>ADRIAN STEEL COMPANY<br/>906 JAMES STREET, ADRIAN, MI 49221</div></div> |  |             |              | REVISION LEVEL      |  |                   |  |                    |  |
| ALL BEND ANGLES ARE 90 DEGREES                                                                                                                   |  |  |                                                                                                                                              |  |             |              | A                   |  |                   |  |                    |  |
| ALL DIMENSIONS ARE IN INCHES.                                                                                                                    |  |  | MAT'L USED: PURCHASED                                                                                                                        |  |             |              | DESIGNED BY: EMB    |  |                   |  |                    |  |
| REFERENCE DIMENSIONS (X.XXX)<br>DO NOT REQUIRE INSPECTION                                                                                        |  |  | DESCRIPTION: WIRE TERM 1/4"RING 14-16G                                                                                                       |  |             |              |                     |  |                   |  |                    |  |
| FEATURES                                                                                                                                         |  |  | HOLES/SLOTS                                                                                                                                  |  | ANGLES      |              | WEIGHT (Lbs.): 0.01 |  | SEGMENT CODE: ELE |  | PART NUMBER: 69511 |  |
| 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.<br>Weld Callouts per AWS                                                                                       |  |  |                                                                                                                                              |  |             |              |                     |  |                   |  |                    |  |
| RELEASE & REVISIONS                                                                                                                              |  |  | PURCHASED COMPONENT                                                                                                                          |  |             |              |                     |  |                   |  |                    |  |
| INITIAL ECN: 25975                                                                                                                               |  |  | REFERENCED SUPPLIER AND/OR MANUFACTURER<br>WAYTEK                                                                                            |  |             |              |                     |  |                   |  |                    |  |
| CURRENT ECN: 25975                                                                                                                               |  |  | REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER<br>37393                                                                                 |  |             |              |                     |  |                   |  |                    |  |
| ECN DESCRIPTION:                                                                                                                                 |  |  | COLOR (ONLY LIST IF COLOR SPECIFIC)<br>BLUE                                                                                                  |  |             |              |                     |  |                   |  |                    |  |
| RELEASE TO PRODUCTION                                                                                                                            |  |  | COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)<br>NO    |  |             |              |                     |  |                   |  |                    |  |
| REVISED BY: N/A                                                                                                                                  |  |  |                                                                                                                                              |  |             |              |                     |  |                   |  |                    |  |

PURCHASED  
COMPONENT  
KEY FEATURES

| DESCRIPTION OF REQUIREMENTS                                     |
|-----------------------------------------------------------------|
| DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)<br><b>MICRO2</b> |
| LOAD/RATING REQUIREMENT<br><b>5 AMP</b>                         |
| MATERIAL REQUIREMENT<br><b>N/A</b>                              |
| PACKAGING REQUIREMENT<br><b>N/A</b>                             |
| OTHER REQUIREMENTS<br><b>(1) 7.5 AMP FUSE MICRO 2 STYLE</b>     |



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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

| TOLERANCES & INSPECTION                                                                                                                                                                               |                |             | RELEASE & REVISIONS                                                                                                       |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|---------------------------------------------------------------------------------------------------------------------------|--|
| <div>UNLESS OTHERWISE SPECIFIED</div> <div>ALL BEND ANGLES ARE 90 DEGREES</div> <div>ALL DIMENSIONS ARE IN INCHES.</div> <div>REFERENCE DIMENSIONS (X.XXX)</div> <div>DO NOT REQUIRE INSPECTION</div> |                |             | <div>INITIAL ECN: 26015</div> <div>CURRENT ECN: 26015</div> <div>ECN DESCRIPTION:</div> <div>RELEASE TO PRODUCTION.</div> |  |
| 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: N/A                                                                                                           |  |

| PURCHASED<br>COMPONENT                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER<br><b>WAYTEK</b>                                                                                          |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER<br><b>46117</b>                                                                               |
| COLOR (ONLY LIST IF COLOR SPECIFIC)                                                                                                               |
| COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)<br><b>YES</b> |

| PRINTED DOCUMENT IS UNCONTROLLED                                                                           |                          |                                                            | Sheet 1 of 1               |
|------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------|----------------------------|
| PART / PRODUCT IDENTIFICATION                                                                              |                          |                                                            |                            |
|  <b>ADRIAN STEEL®</b> |                          | ADRIAN STEEL COMPANY<br>906 JAMES STREET, ADRIAN, MI 49221 |                            |
| MAT'L USED:                                                                                                |                          | DESIGNED BY: <b>E.Burke</b>                                | REVISION LEVEL<br><b>A</b> |
| DESCRIPTION: <b>FUSE, MICRO2 7.5 AMP</b>                                                                   |                          |                                                            |                            |
| WEIGHT (Lbs.): <b>.10</b>                                                                                  | SEGMENT CODE: <b>ELE</b> | PART NUMBER: <b>69821</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<br>PLUG AND PLAY LIGHTING ON TOPPERS |



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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)<br>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.<br>Weld Callouts per AWS |                |             |

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

| PURCHASED<br>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)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) |
| NO                                                                                                                                  |

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



**TLM**

## Timer/Low Voltage Module

**INSTALLATION MANUAL**

**Stinger<sup>®</sup>**



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<br>ON<br>(Down)<br>OFF<br>(Up) | Up    | Up    | 30      | ON (Down)<br>Steady<br>Ground Input   |
| Up    | Down  | 11.2V   |                                      | Up    | Down  | 60      |                                       |
| Down  | Up    | 11.5V   |                                      | Down  | Up    | 90      | OFF (Up)<br>Momentary<br>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<br>(Input Grounded)   | ON     | Monitoring Input Voltage | Timer Starts |
| Not Active    | Deactivated<br>(Ground Removed) | OFF    | N/A                      | Timer Off    |
| Not Active    | Activated<br>(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<br>(Pulsed) | ON     | Monitoring Input Voltage | Timer Starts |
| Not Active    | Activated<br>(Pulsed) | OFF    | N/A                      | Timer Off    |
| Not Active    | Activated<br>(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.

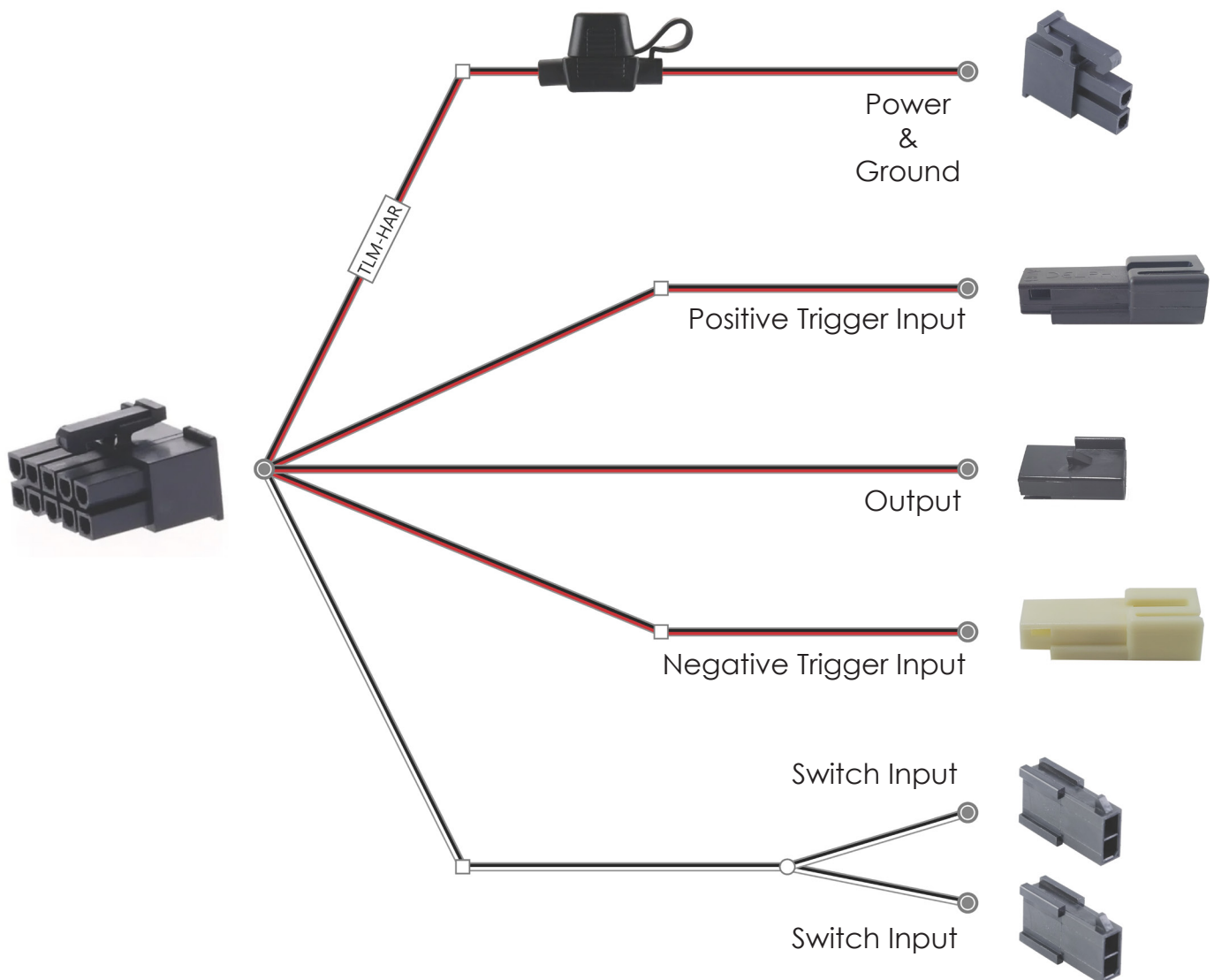
If a Trigger Input is active, its function takes precedence. Attempting to activate the Switch Input while a Trigger Input is active will have no effect on the modules output.





## 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

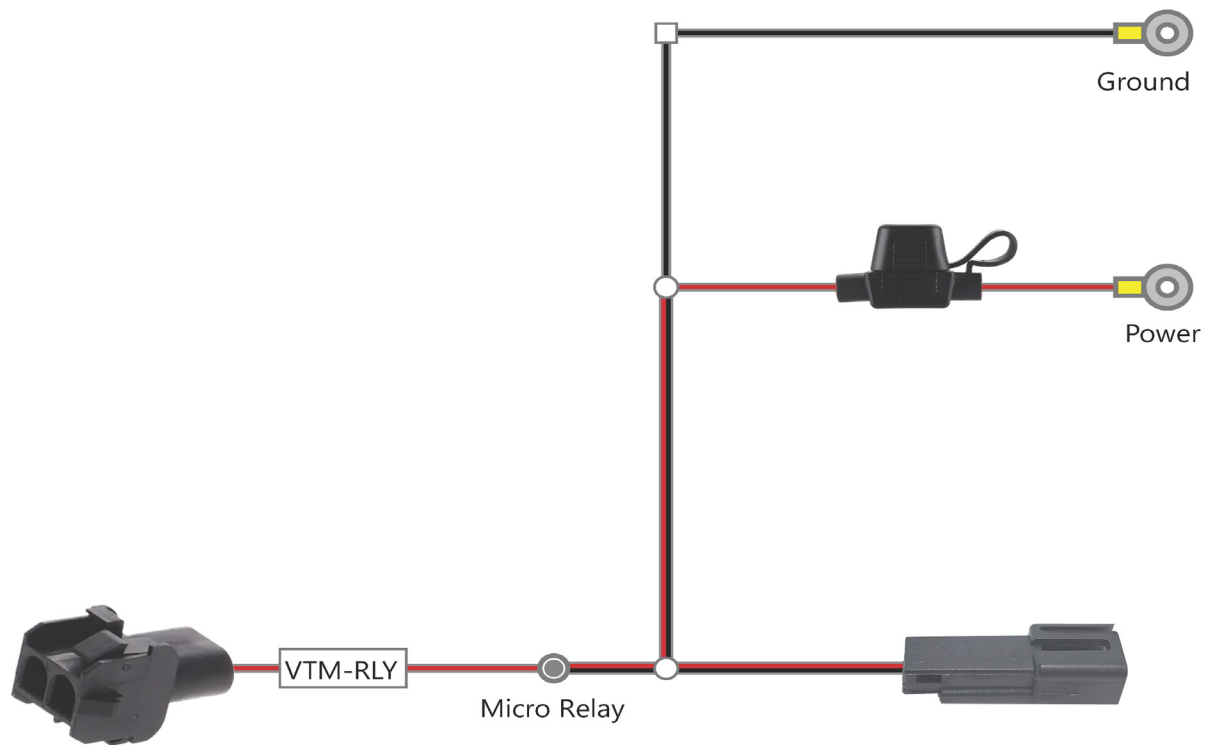
Switch Input: Closing loop between switch input wire leads will activate output





## 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           |





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