

## Dome Light Kit w/ Switches

CATALOG NUMBER

**69628**



**LED Dome Light Installed on Roof Bow**

### PRODUCT FEATURES

#### *Interior LED Dome Light w/ Switches for RAM ProMaster City*

- Included in this kit is one (1) module LED dome light, roof bow harness #2, power harness, and voltage timer module.
- This kit is ideal for the RAM ProMaster City.
- There are no OEM options that this product requires. There are also no OEM options that this product is not compatible with.
- This product is designed to provide LED lighting to the cargo area of the vehicle and can be controlled by switches.

**Model Year Validated:**  
**2021**

### Introduction / Comments:

Install Instructions For Interior Plug & Play Lights For Promaster City

#### **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.

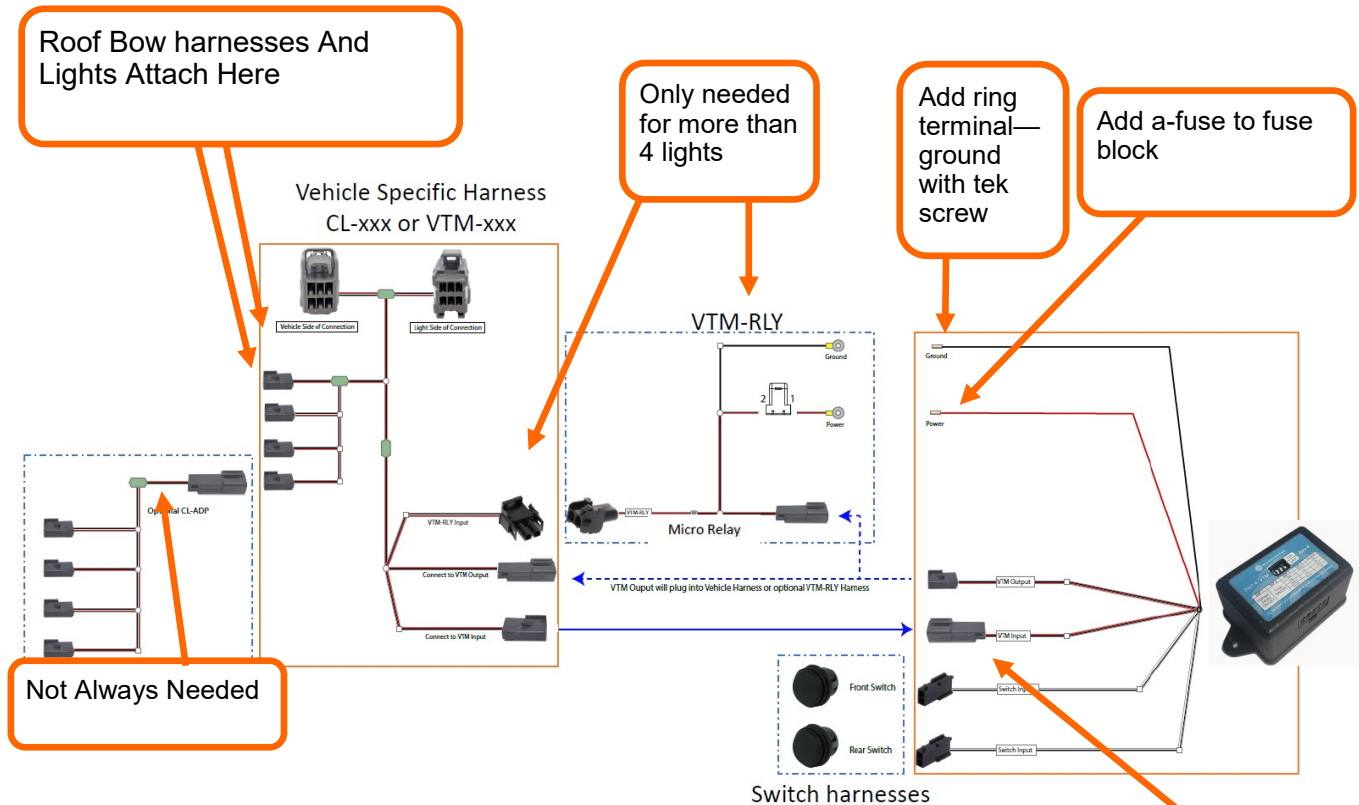


## Installation Instructions For Interior Plug And Play Lights For Promaster City

**\*\*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 65796. 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.

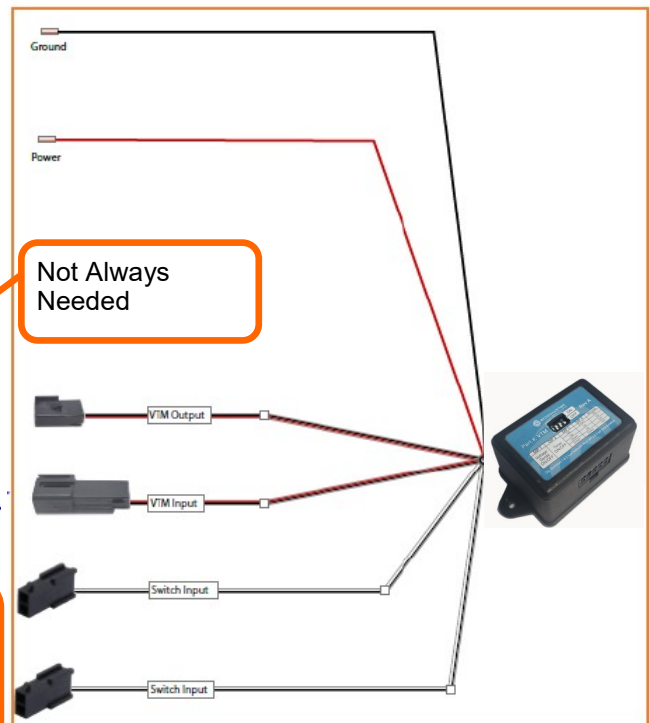
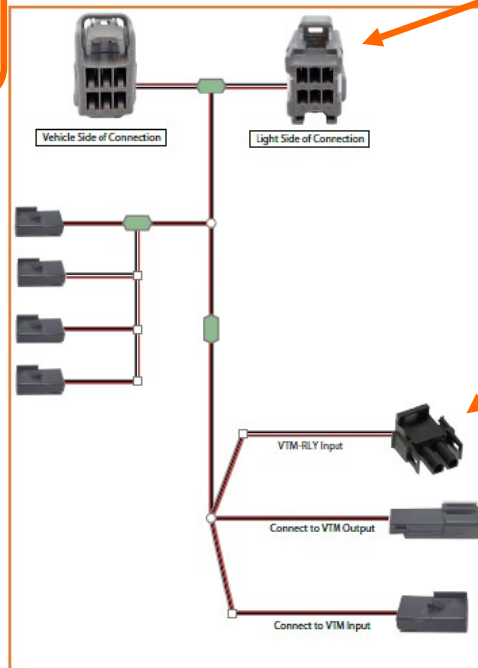
## Specific Harness Diagram



Roof Bow  
Harnesses  
and Lights  
Connect Here

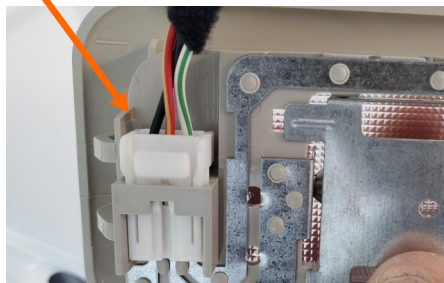
Vehicle Specific Harness  
CL-xxx or VTM-xxx

Insert into OEM  
Light Connector:  
See Below



Switch  
Harness in  
between

OEM Light Connector located on the back of the OEM light: Remove  
the OEM light from the location

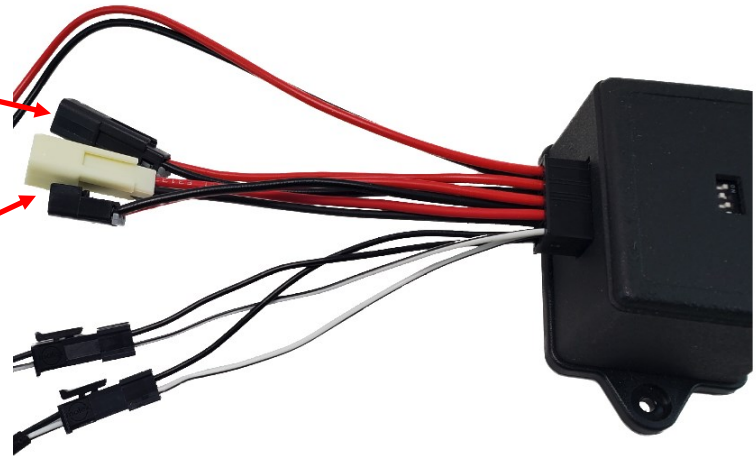




## Voltage Timer Module (VTM) Harness Reference

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 | 65786                            | Voltage Timer Module (VTM)     |
| 2 | 63480 Or 65347                   | Dome Light Or Strip Lights     |
| 3 | 63481 Or/And 63842, 63483, 63484 | Roof Bow Harnesses 1 through 4 |
| 4 | 65796                            | Power Harness                  |
| 5 | 65788, 65789                     | Switch Harness 2 and 3 for VTM |



Harness pictures are for reference only.

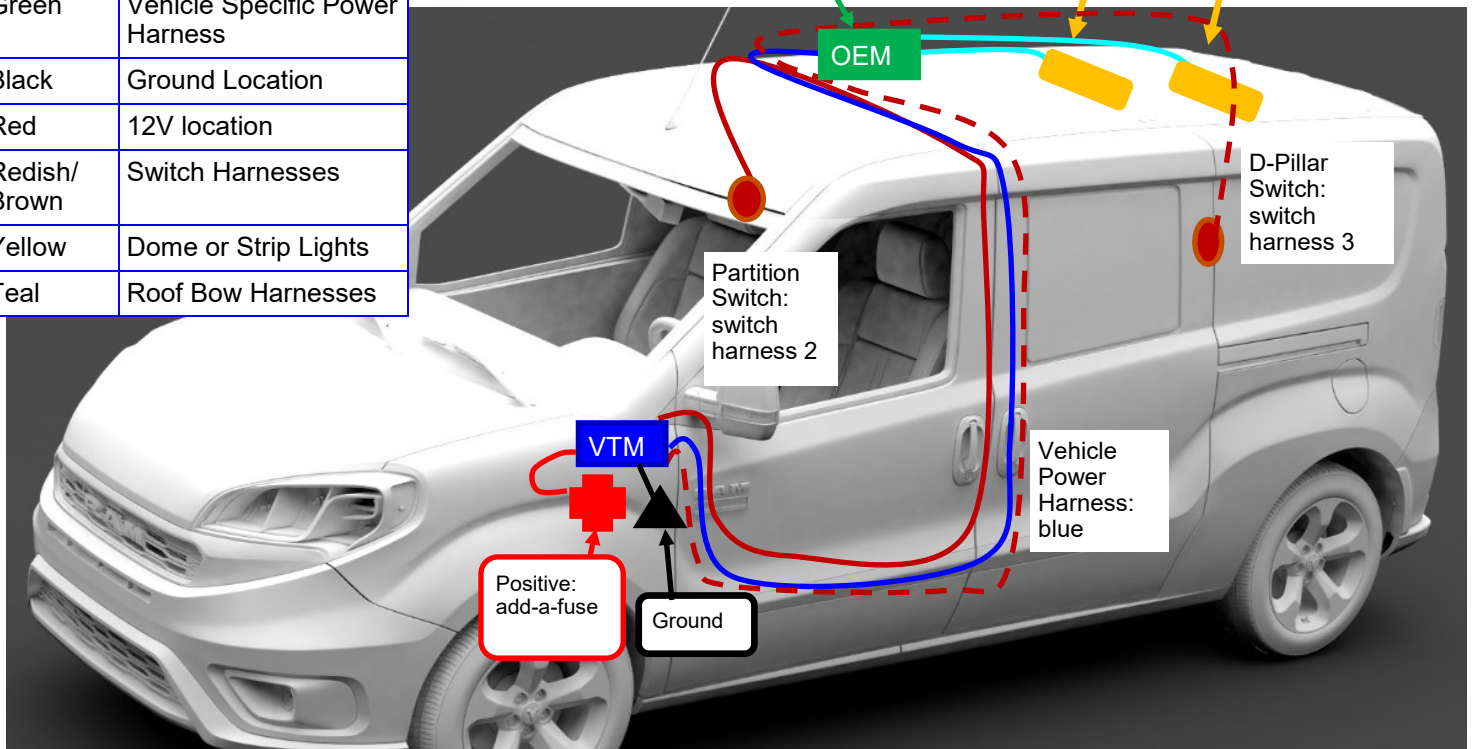


**ADRIAN STEEL®**

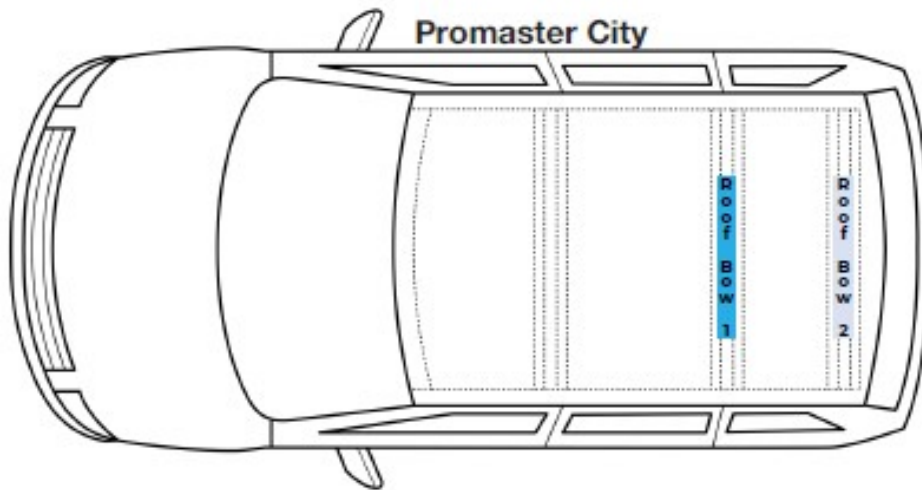
Cargo Management Solutions for Commercial Vehicles

## Install Instructions Interior Plug & Play Lights—Promaster City

| Color        | Key - Items                    |
|--------------|--------------------------------|
| Blue         | VTM/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             |



| Vehicle        | Roof Bow 1 | Roof Bow 2 |
|----------------|------------|------------|
| Promaster City | P-HARRB2   | P-HARRB1   |

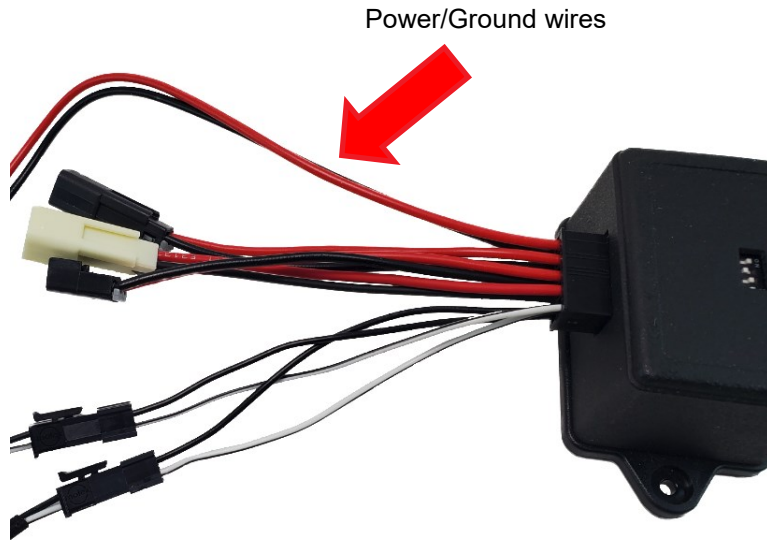


**Roof bow  
placements with  
harness reference**

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.

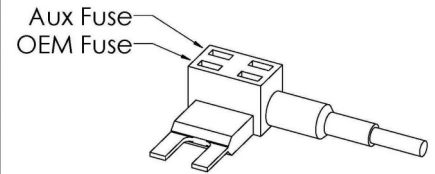
## Step 1: VTM Installation

Locate the VTM Module and harness. Remove the inline fuse from the inline fuse holder. Attach a 1/4" ring terminal to the Negative (Black) wire and crimp the Add-A-Fuse to the Positive (RED) wire.



Power/Ground wires

Diagram of Add-A-Fuse



Locate Fuse Panel under Driver Steering Wheel and Remove Cover (Figure 1-1)

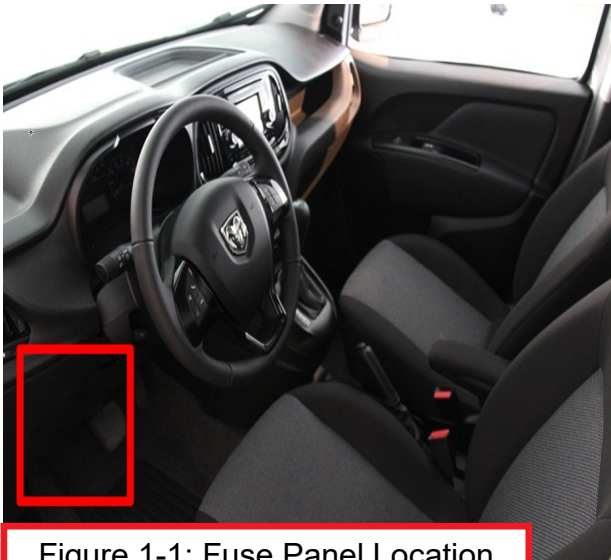
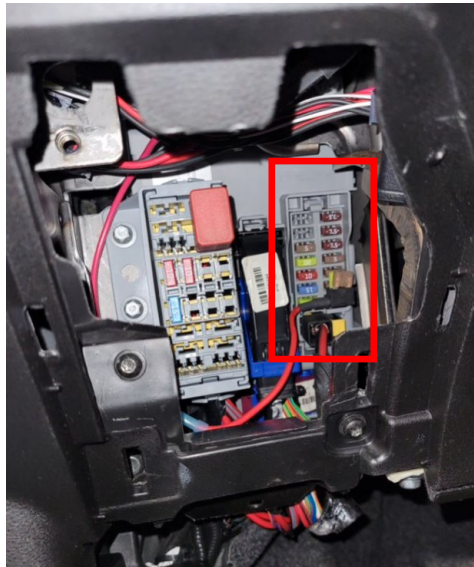


Figure 1-1: Fuse Panel Location



- The auxiliary fuse panel is located below the left side of the steering wheel.

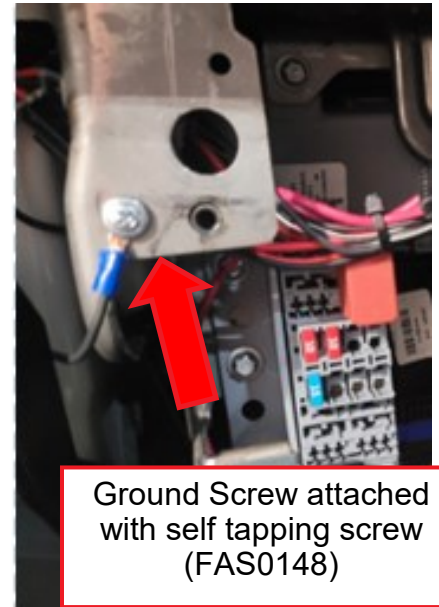


## Step 1: VTM Installation (Continued)

Locate the 20 Amp fuse in bottom right corner of fuse panel and insert add-a-fuse connected to the VTM Power wire. Then attach the Ground wire ring terminal to the metal post with self tapping screw (FAS0148).

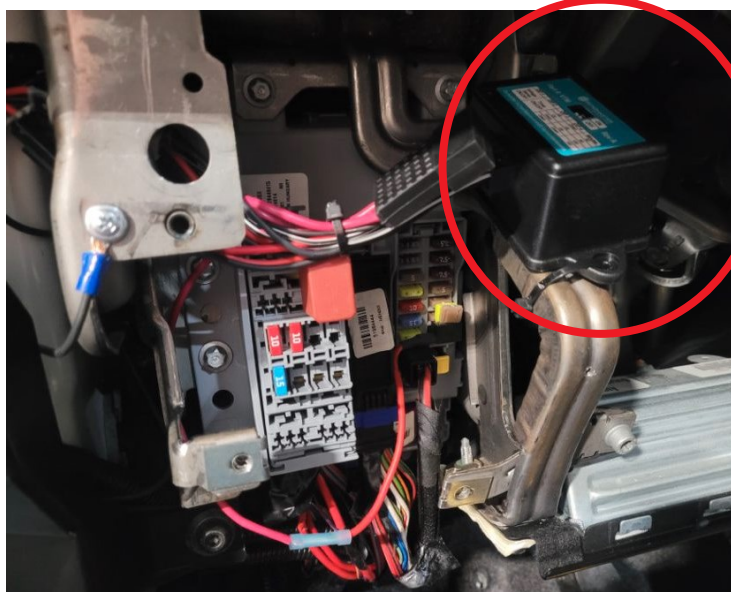


Inside Auxiliary Fuse Panel



Ground Screw attached with self tapping screw (FAS0148)

Connect the VTM light power harness(65796), the Rear Switch Harness(65789), and the Front Switch Harness(65788) to the VTM. Secure the VTM with zip ties and adhesive tape if needed) to the metal post shown below.



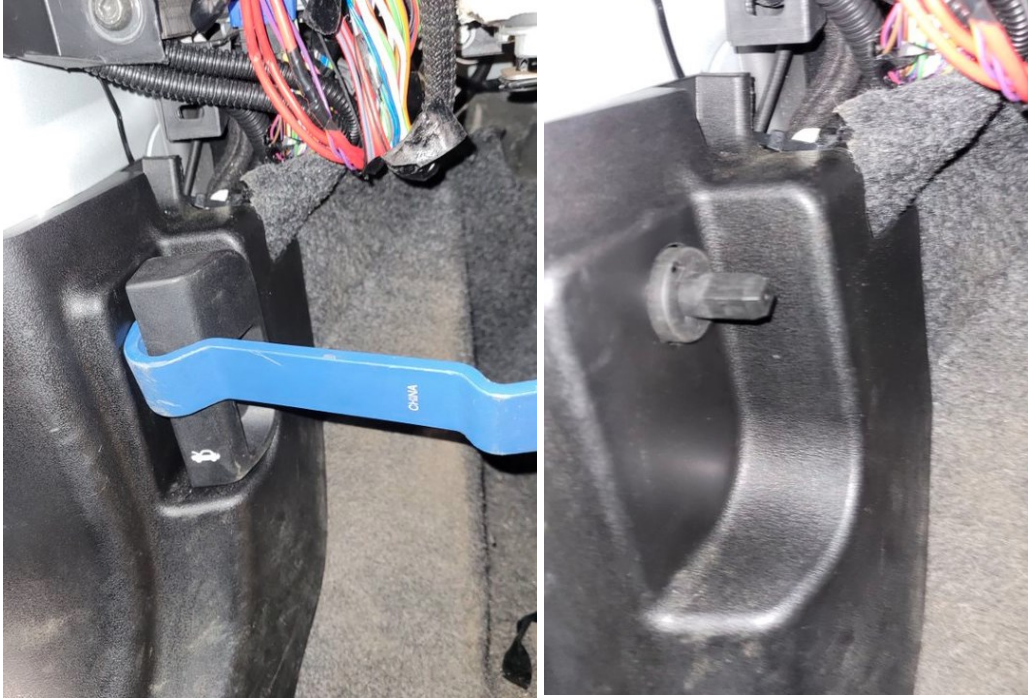
**\*\*\*Please be sure to set all the dip switches on the VTM UP\*\*\***  
Refer to the bottom picture for dip switch settings.  
If the customer would like a different amount time other than 90 minutes, use the dip switches to set the time.

| DIP SWITCH 1<br>UP/DOWN | DIP SWITCH 2<br>UP/DOWN | DIP SWITCH 3 | DIP SWITCH 4 | Timer Duration<br>(Minutes) |
|-------------------------|-------------------------|--------------|--------------|-----------------------------|
| Voltage Sense<br>ON/OFF | Timer<br>ON/OFF         | UP           | DOWN         | 60                          |
|                         |                         | UP           | UP           | 90                          |
|                         |                         | DOWN         | UP           | 120                         |
|                         |                         | DOWN         | DOWN         | 150                         |

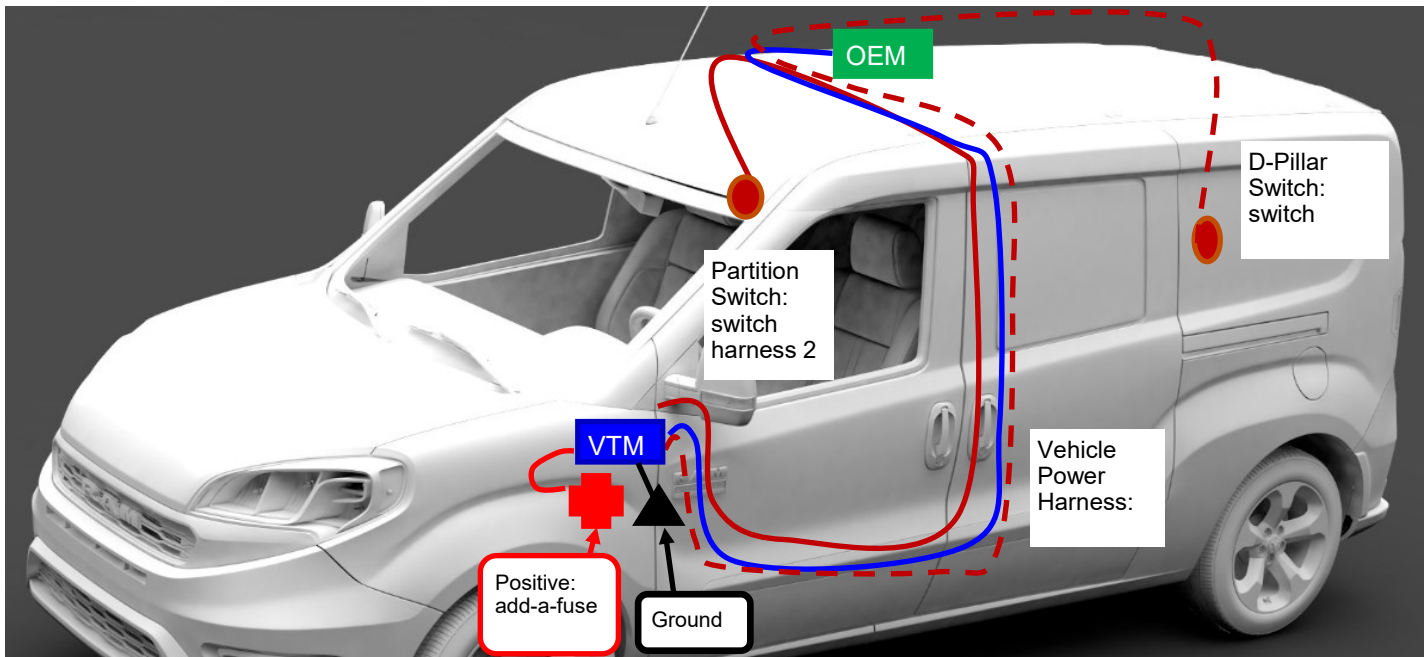


## Step 2: Harness Routing

Remove Hood latch and plastic door jam cover to route the Harness from the VTM to the rear of the vehicle. (pictured below)



Both the switch harnesses and VTM power harness will be routed under the driver side door jam, up the B-pillar, across the headliner to the passenger side. More pictures to follow for reference.



**Harnesses routed under the driver side door jam, up the B-pillar, across the headliner to the passenger side.**



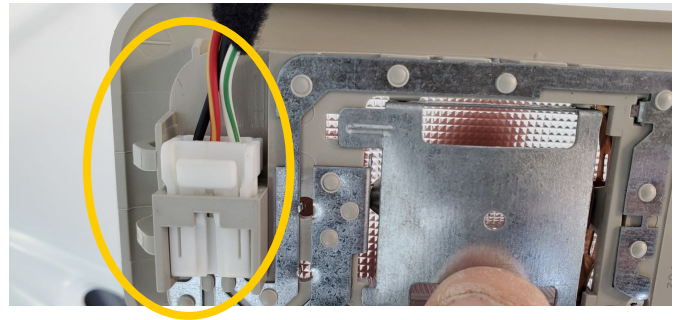
**Leave the side switch harness (65788) on the passenger side B-pillar. You can continue to route the rest of the harnesses rearward following the roof channels.**





## **Step 3: VTM Power Harness**

Locate the OEM cargo light in the passenger side header, behind the side door. Remove the cargo light with a trim tool, then unplug the OEM connector from the back of the light



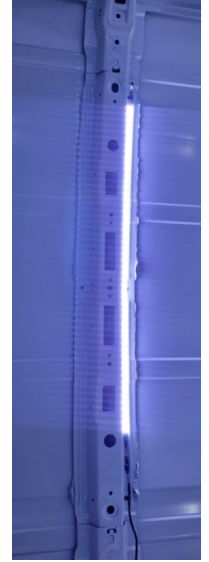
Plug the vehicle specific power harness (65796) into the OEM connector. You no longer need the OEM light. You can dispose of it how you would like. Connect the roof bow harnesses (63481 Or/And 63842, 63483, 63484 all that are applicable) to the power harness.





## Step 4: Mounting Lights

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.



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## Step 5: Roof Bow Harnesses

Route the roof bow harnesses to their desired light locations. (Light locations on the roof bows). Reference page 5 for roof bow locations. Route through roof channels as much as possible. When not applicable, use fir tree zip ties to secure wiring.



## **Step 6: Switch Installations**

**Switch Locations: Partition Hole (composite or steel) and Rear D-Pillar Trim.**

**Route the switch harnesses to the desired switch locations. Switch 2 (65788) will go to the partition, and switch 3 (65783) will go rearward to the D-pillar area (passenger side). See pictures below for locations.**

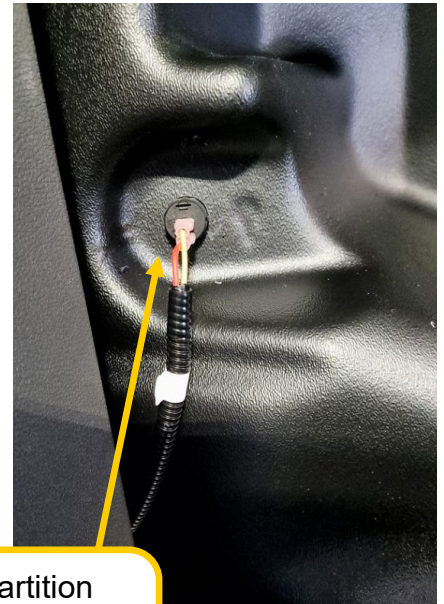
**Drill out needed holes for the switch as applicable. Use your best judgement for the rear D pillar trim hole.**



Steel partition  
hole behind  
passenger seat



Composite partition  
behind passenger  
seat. Drill out the hole.



Remove panel to drill  
the hole and to route  
the wiring



Rear D-Pillar Trim  
Panel Passenger side.  
Drill out switch hole.





## **Step 6: Switch Installations (Continued)**

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

Secure wiring with zip ties.

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## **Step 7: Finish Install**

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.





PART NUMBER

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

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

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

SPECIAL NOTES: PART NUMBER IS BLACK.

**SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!**

**PURCHASED PRODUCT DATA SHEET (PPDS)**

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**ADRIAN STEEL**  
VAN AND PICKUP EQUIPMENT

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



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

DRAWN BY  
MDG

DATE DRAWN  
10/26/2006

ECN NUMBER  
18021

ECN DATE  
11/13/2015

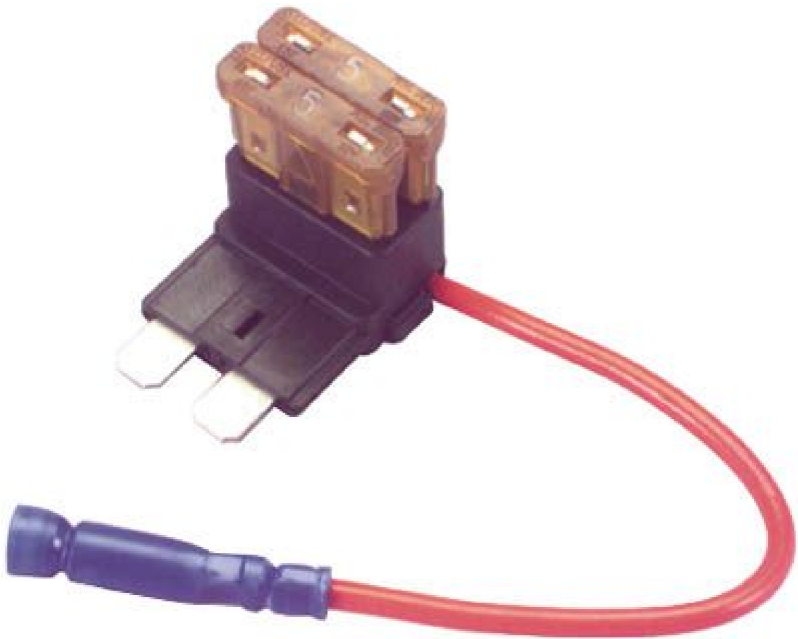
PART WEIGHT  
0.01 LBS.

REV. LEVEL  
D

PART NUMBER  
**13905-0**

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><br/><b>Waytek</b></p> <p>Manufacturers P/N: 46044</p> |



Mini Fuse Holder, Add a Circuit Tap: 41842

Note: For Mini Fuses Only

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| 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)<br/>DO NOT REQUIRE INSPECTION</div> |                |             | <div>INITIAL ECN: 14217</div> <div>CURRENT ECN: 22269</div> <div>ECN DESCRIPTION:<div>RELEASE TO PRODUCTION</div></div> <div>REVISED BY: RMW</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.<br>Weld Callouts per AWS                                                                                                                                     |                |             |                                                                                                                                                    |  |

| PURCHASED<br>COMPONENT                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER                                                                                             |
| Waytek                                                                                                                              |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER                                                                                 |
| 46044                                                                                                                               |
| 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: <b>RBB</b> |                                                                | REVISION LEVEL<br><b>C</b>                                 |
| MAT'L USED:                      |                         | DESCRIPTION: <b>Mini Fuse Holder, Add a Circuit Tap: 41842</b> |                                                            |
| WEIGHT (Lbs.):                   | <b>.018</b>             | SEGMENT CODE: <b>ELE</b>                                       | PART NUMBER: <b>41842</b>                                  |

# 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

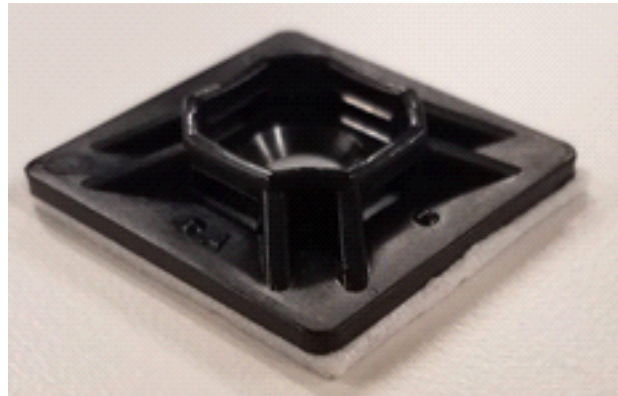
Temp. F:

Max. Operating 70

Temp. C:

Min. Installation 65

Temp. F:



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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: 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**

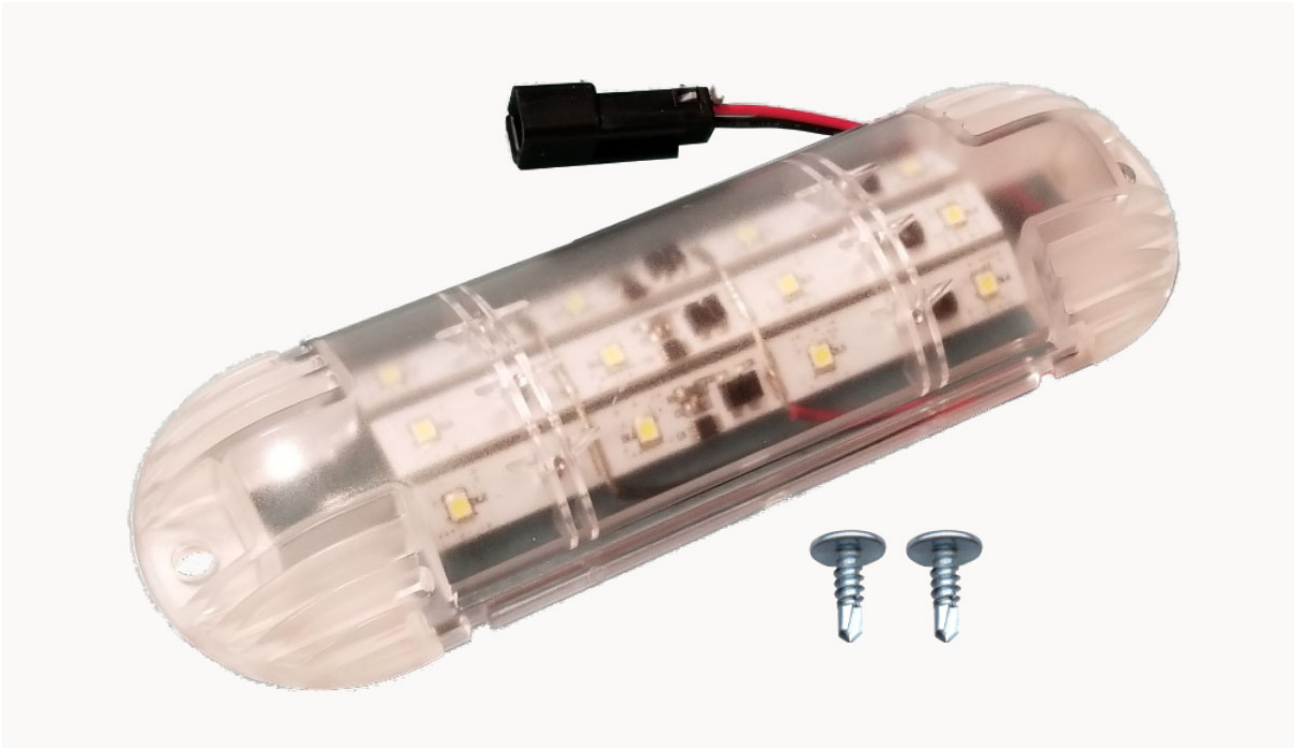
SEGMENT  
CODE: **HDW**

PART NUMBER: **49401**



# 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                                 |
| (1) LED LIGHT WITH 12 LED<br>GROUPED IN THREE ROWS |
| (2) TEK SCREWS INCLUDED                            |



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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: <b>24359</b>     |
| CURRENT ECN: <b>25886</b>     |
| ECN DESCRIPTION:              |
| <b>UPDATE SUPPLIER PART #</b> |
| REVISED BY: <b>A. ELLISON</b> |

| PURCHASED<br>COMPONENT                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER                                                                                             |
| <b>OBERTON ELECTRONICS / ECHOMASTER FLEET SOLUTIONS</b>                                                                             |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER                                                                                 |
| <b>8018-6000 / STL40489-3</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.) |

| 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: <b>A. ELLISON</b> |                                           | REVISION LEVEL<br><b>B</b>                                 |
| MAT'L USED:                                                                           | <b>PURCHASED</b>               | DESCRIPTION: <b>MODULE DOME LED LIGHT</b> |                                                            |
| WEIGHT<br>(Lbs.):                                                                     | <b>.50</b>                     | SEGMENT<br>CODE: <b>EAU</b>               | PART NUMBER: <b>63480</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

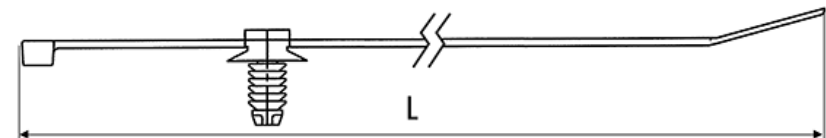
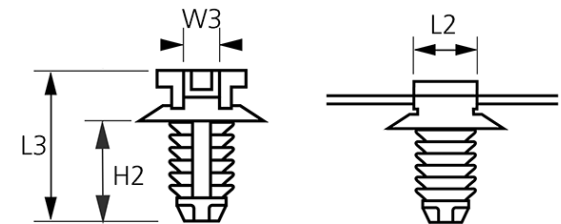
OTHER REQUIREMENTS

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



**P-HARRB2**

**(5x)**



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## TOLERANCES & INSPECTION

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ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX)

DO NOT REQUIRE INSPECTION

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

Material Thickness: per ASTM Std.  
Weld Callouts per AWS

## RELEASE & REVISIONS

INITIAL ECN: 24359

CURRENT ECN: 24359

ECN DESCRIPTION:

**QE8539 RELEASE MODULAR DOME LIGHTING**

REVISED BY: MJF

## PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

**ECHOMASTER FLEET SOLUTIONS**

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

**P-HARRB2**

COLOR (ONLY LIST IF COLOR SPECIFIC)

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

**YES**

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 #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                             |
| INCLUDES HARNESS - "P-VTM-HAR"                 |



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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: 25377     |
| CURRENT ECN: 25377     |
| ECN DESCRIPTION:       |
| RELEASE FOR PRODUCTION |
| REVISED BY:            |

PURCHASED  
COMPONENT

|                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER                                                                                             |
| AAMP GLOBAL                                                                                                                         |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER                                                                                 |
| VTM OR 65786                                                                                                                        |
| 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                                                                                                                                  |

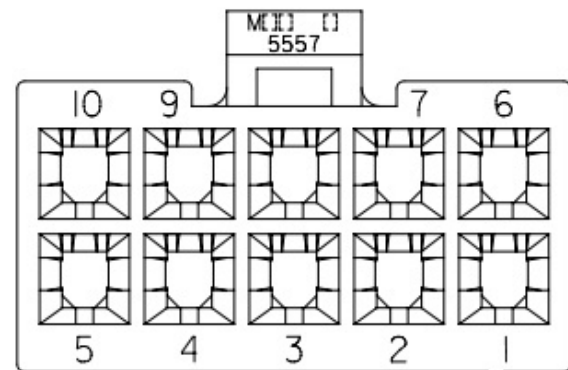
PRINTED DOCUMENT IS UNCONTROLLED

Sheet 1 of 1

PART / PRODUCT IDENTIFICATION

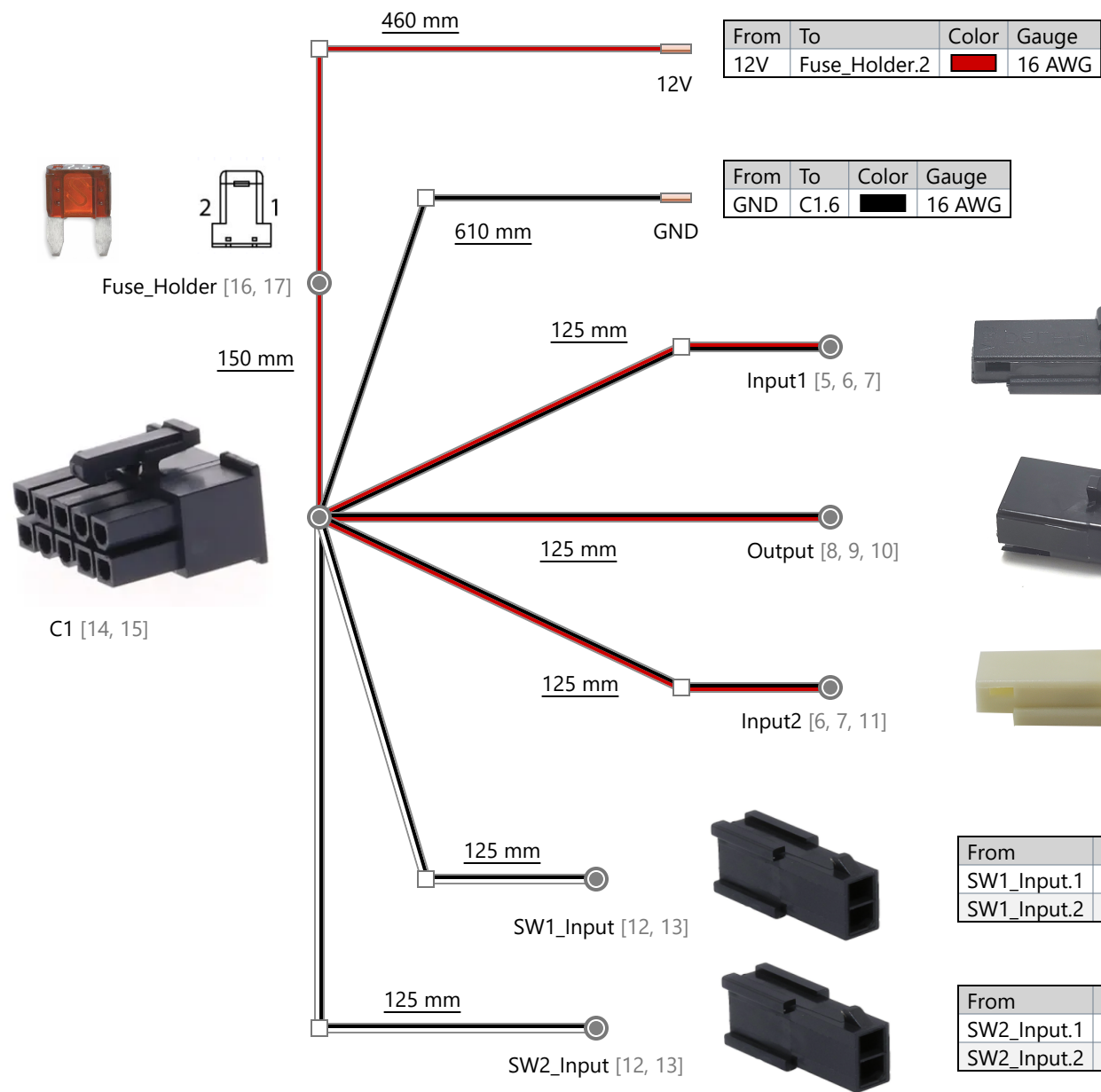
|                                                                                       |  |                          |  |                                                            |  |                            |  |
|---------------------------------------------------------------------------------------|--|--------------------------|--|------------------------------------------------------------|--|----------------------------|--|
|  |  | <b>ADRIAN STEEL®</b>     |  | ADRIAN STEEL COMPANY<br>906 JAMES STREET, ADRIAN, MI 49221 |  | REVISION LEVEL<br><b>A</b> |  |
| MAT'L USED:                                                                           |  | PURCHASED                |  | DESIGNED BY:                                               |  | E.BURKE                    |  |
| DESCRIPTION: <b>VOLTAGE TIMER MODULE</b>                                              |  |                          |  |                                                            |  |                            |  |
| WEIGHT (Lbs.): <b>0.2</b>                                                             |  | SEGMENT CODE: <b>ELE</b> |  | PART NUMBER: <b>65786</b>                                  |  |                            |  |





Rear View of Connector -  
Wire Side of Connector

| From  | To            | Color       | Gauge  |
|-------|---------------|-------------|--------|
| C1.1  | Fuse_Holder.1 | Red         | 16 AWG |
| C1.2  | Input1.A      | Red         | 16 AWG |
| C1.3  | Output.A      | Red         | 16 AWG |
| C1.4  | Input2.A      | Red         | 16 AWG |
| C1.5  | SW1_Input.1   | White/Black | 20 AWG |
| C1.5  | SW2_Input.1   | White/Black | 20 AWG |
| C1.6  | GND           | Black       | 16 AWG |
| C1.7  | Input1.B      | Black       | 16 AWG |
| C1.8  | Output.B      | Black       | 16 AWG |
| C1.9  | Input2.B      | Black       | 16 AWG |
| C1.10 | SW1_Input.2   | Black       | 20 AWG |
| C1.10 | SW2_Input.2   | Black       | 20 AWG |



| From | To            | Color | Gauge  |
|------|---------------|-------|--------|
| 12V  | Fuse_Holder.2 | Red   | 16 AWG |

| From | To   | Color | Gauge  |
|------|------|-------|--------|
| GND  | C1.6 | Black | 16 AWG |

| From     | To   | Color | Gauge  |
|----------|------|-------|--------|
| Input1.A | C1.2 | Red   | 16 AWG |
| Input1.B | C1.7 | Black | 16 AWG |

| From     | To   | Color | Gauge  |
|----------|------|-------|--------|
| Output.A | C1.3 | Red   | 16 AWG |
| Output.B | C1.8 | Black | 16 AWG |

| From     | To   | Color | Gauge  |
|----------|------|-------|--------|
| Input2.A | C1.4 | Red   | 16 AWG |
| Input2.B | C1.9 | Black | 16 AWG |

| From        | To    | Color       | Gauge  |
|-------------|-------|-------------|--------|
| SW1_Input.1 | C1.5  | White/Black | 20 AWG |
| SW1_Input.2 | C1.10 | Black       | 20 AWG |

| From        | To    | Color       | Gauge  |
|-------------|-------|-------------|--------|
| SW2_Input.1 | C1.5  | White/Black | 20 AWG |
| SW2_Input.2 | C1.10 | Black       | 20 AWG |

Input.1 for each switch is the ground signal that will be fed back to the timer module for activation

Input.2 for each switch is a ground that will be provided by the timer module

| Revisions |           |               |                                                                                                      |
|-----------|-----------|---------------|------------------------------------------------------------------------------------------------------|
| Rev.      | Date      | Author        | Description                                                                                          |
| v1        | 03/26/21  | Bennet Fisher | Initial Drawing                                                                                      |
| v2        | 7/1/2021  | Bennet Fisher | Revised pin 4 and 9 connections; spliced switch inputs                                               |
| v3        | 7/22/2021 | Bennet Fisher | Changed second dome connector                                                                        |
| v4        | 11/8/2021 | Bennet Fisher | Eliminated White/Black and Black wire splices;<br>Corrected contacts for C1.4, C1.5, C1.9, and C1.10 |

|                                                                                                                                                                                                                                                                                                                               |                        |               |         |                                      |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|---------|--------------------------------------|------------------|
| 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 DRAWING IS THE SOLE PROPERTY OF AAMP GLOBAL. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF AAMP GLOBAL IS PROHIBITED. |                        | Name          | Date    |                                      |                  |
|                                                                                                                                                                                                                                                                                                                               | Designed By            | Bennet Fisher | 3/26/21 |                                      |                  |
|                                                                                                                                                                                                                                                                                                                               | Engineering Approval   | ----          | ----    |                                      |                  |
|                                                                                                                                                                                                                                                                                                                               | Manufacturing Approval | ----          | ----    |                                      |                  |
|                                                                                                                                                                                                                                                                                                                               | Revision Approval      | ----          | ----    | Part Number: P-VTM-HAR_              |                  |
| Quality Assurance                                                                                                                                                                                                                                                                                                             |                        | ----          | ----    | Description:<br>Timer Module Harness | Sheet:<br>1 of 1 |



**VTM**

**Voltage Timer Module**

**INSTALLATION MANUAL**





## Thank you for purchasing the **VTM**



### WHAT'S INCLUDED:

- Voltage Timer Module
- Voltage Timer Module Harness
- Screws

### COMPATIBLE ACCESSORIES:

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

### FEATURES:

- Selectable timer durations - 60, 90, 120, and 150 minutes
- Low voltage shut off at 11.8V
- Timer and Low Voltage sense work independently of each other
- Inputs for 2 momentary switches
- 7.5A max current output







## OPERATING INSTRUCTIONS:

| DIP SWITCH 1<br>UP/DOWN | DIP SWITCH 2<br>UP/DOWN | DIP SWITCH 3 | DIP SWITCH 4 | Timer Duration<br>(Minutes) |
|-------------------------|-------------------------|--------------|--------------|-----------------------------|
| Voltage Sense<br>ON/OFF | Timer<br>ON/OFF         | UP           | DOWN         | 60                          |
|                         |                         | UP           | UP           | 90                          |
|                         |                         | DOWN         | UP           | 120                         |
|                         |                         | DOWN         | DOWN         | 150                         |

If Voltage Sense is turned ON, low voltage shut down will occur when voltage input drops below 11.8V. 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. Voltage Sense is only active when the Switch Inputs are activated. Voltage Sense does not monitor VTM Trigger Input.

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

While output voltage is active, pressing a switch will disable the output voltage. If pressed once again, output voltage will be re-activated and reset the timer.

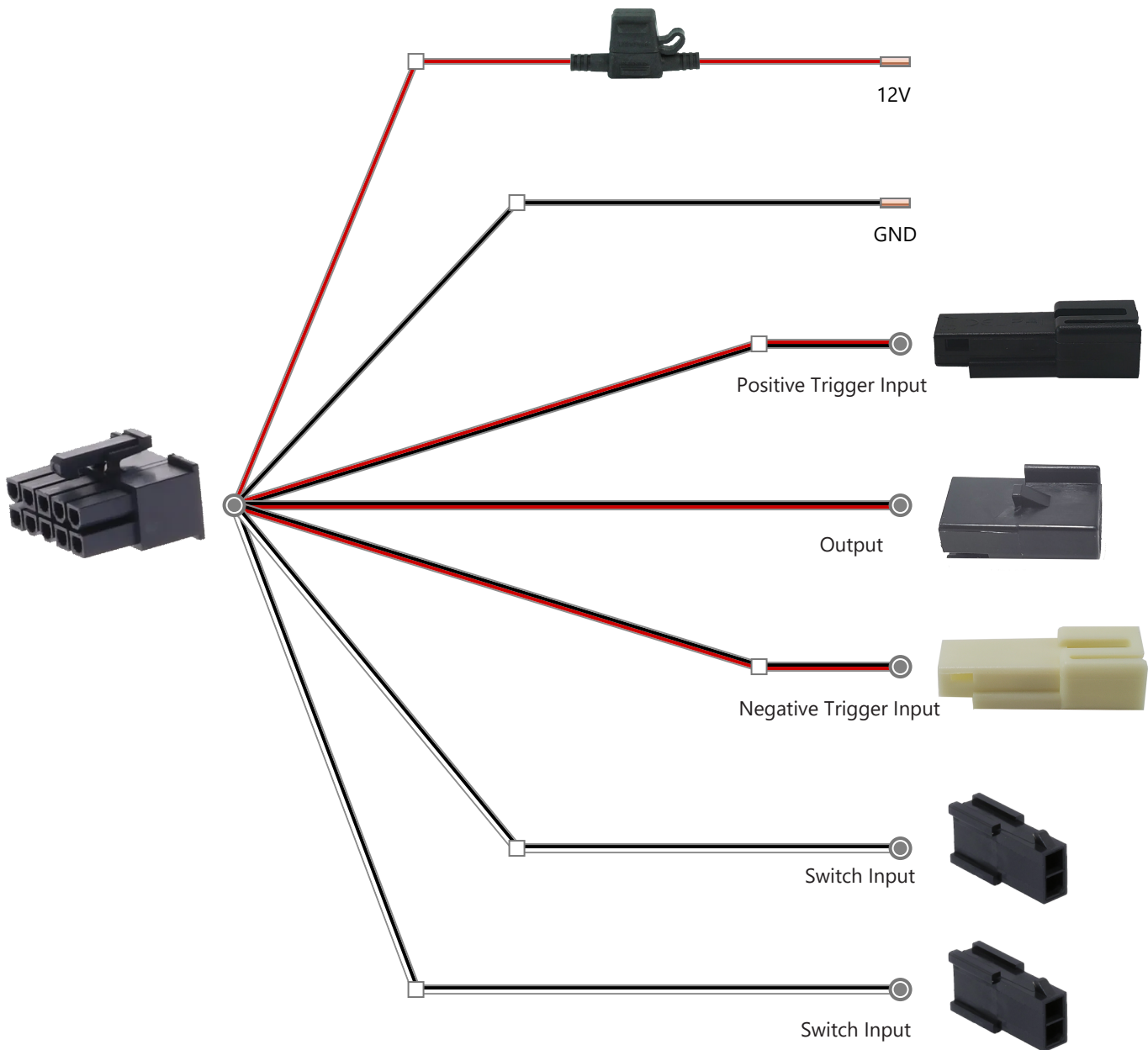
| Trigger Input | Switch Input           | Output | Voltage Sense (ON)       | Timer (ON)   |
|---------------|------------------------|--------|--------------------------|--------------|
| Active        | N/A                    | ON     | N/A                      | N/A          |
| Deactivated   | N/A                    | OFF    | N/A                      | N/A          |
| Not Active    | Activated<br>(Pressed) | ON     | Monitoring Input Voltage | Timer starts |
| Not Active    | Activated<br>(Pressed) | OFF    | N/A                      | Timer off    |
| Not Active    | Activated<br>(Pressed) | ON     | Monitoring Input Voltage | Timer resets |

If VTM Trigger Input to the VTM module is active, its function takes precedence.



## WIRING DIAGRAMS:

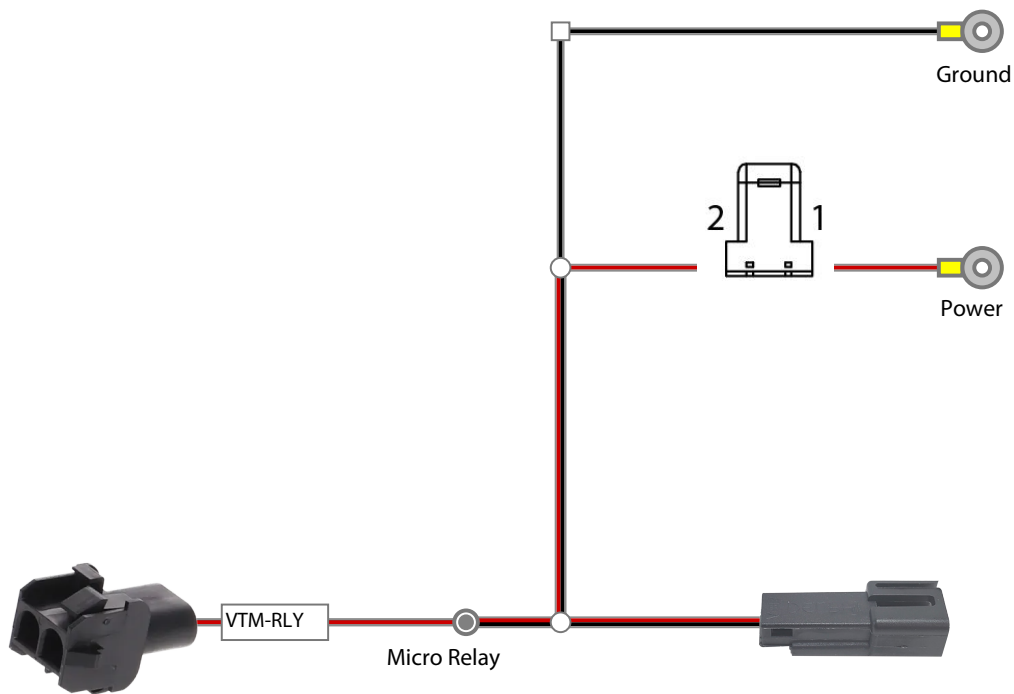
### VTM Harness



.....

## VTM-RLY (Optional Harness)

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



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

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





Phone – 866-931-8021 (option 3)

E-Mail – [support@echomasterfleetsolutions.com](mailto:support@echomasterfleetsolutions.com)



**EchoMaster Fleet Solutions is a Power Brand of AAMP Global**

[EchoMasterfleetsolutions.com](http://EchoMasterfleetsolutions.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                             |  |



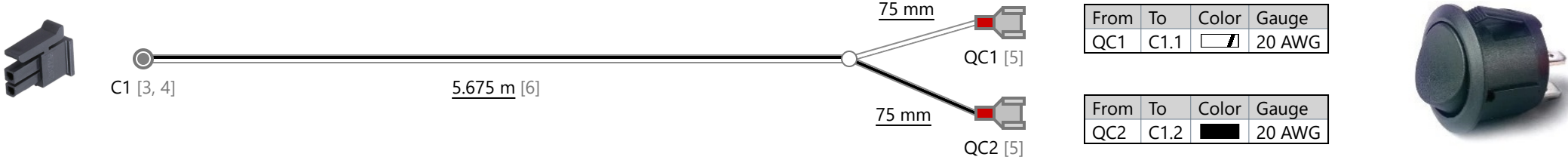
| THIS DRAWING IS THE PROPERTY OF ADRIAN STEEL COMPANY AND IS NOT TO BE USED IN ANY MANNER DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 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                                                                                                                           |  |
|                                                                                                                                                                                                                                                                                                                                                                 |                        |               |           | 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                             |     |

|                                                |     |
|------------------------------------------------|-----|
| DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING) | N/A |
| LOAD/RATING REQUIREMENT                        | N/A |
| MATERIAL REQUIREMENT                           | N/A |
| PACKAGING REQUIREMENT                          | N/A |

**N/A**

**N/A**

**N/A**

**N/A**

OTHER REQUIREMENTS



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DETRIMENTAL TO THE INTERESTS OF ADRIAN STEEL COMPANY

# TOLERANCES & INSPECTION

---

*UNLESS OTHERWISE SPECIFIED*

---

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX)  
DO NOT REQUIRE INSPECTION

---

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

Material Thickness: per ASTM Std.  
Weld Callouts per AWS

| FEATURES       | HOLES/SLOTS    | ANGLES      |
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REVISÉD BY:

|                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER<br><b>AAMP GLOBAL</b>                                                                                    |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER<br><b>VTM-SW3 OR 65789</b>                                                                   |
| COLOR (ONLY LIST IF COLOR SPECIFIC)<br><br>                                                                                                      |
| COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)<br><b>NO</b> |

**NO**

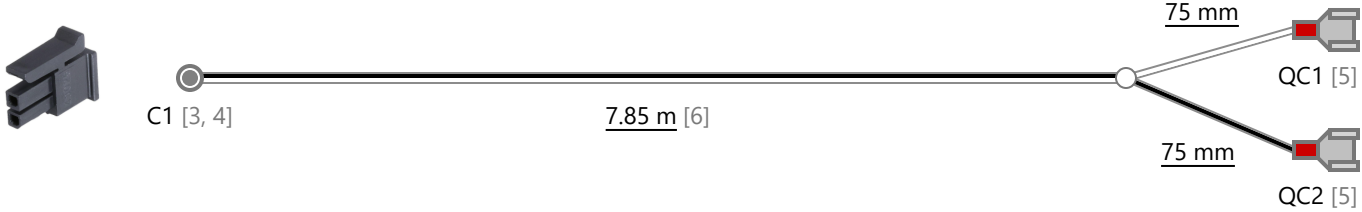
PART NUMBER: **65789**

|               |            |
|---------------|------------|
| SEGMENT CODE: | <b>ELE</b> |
|---------------|------------|



| 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 |

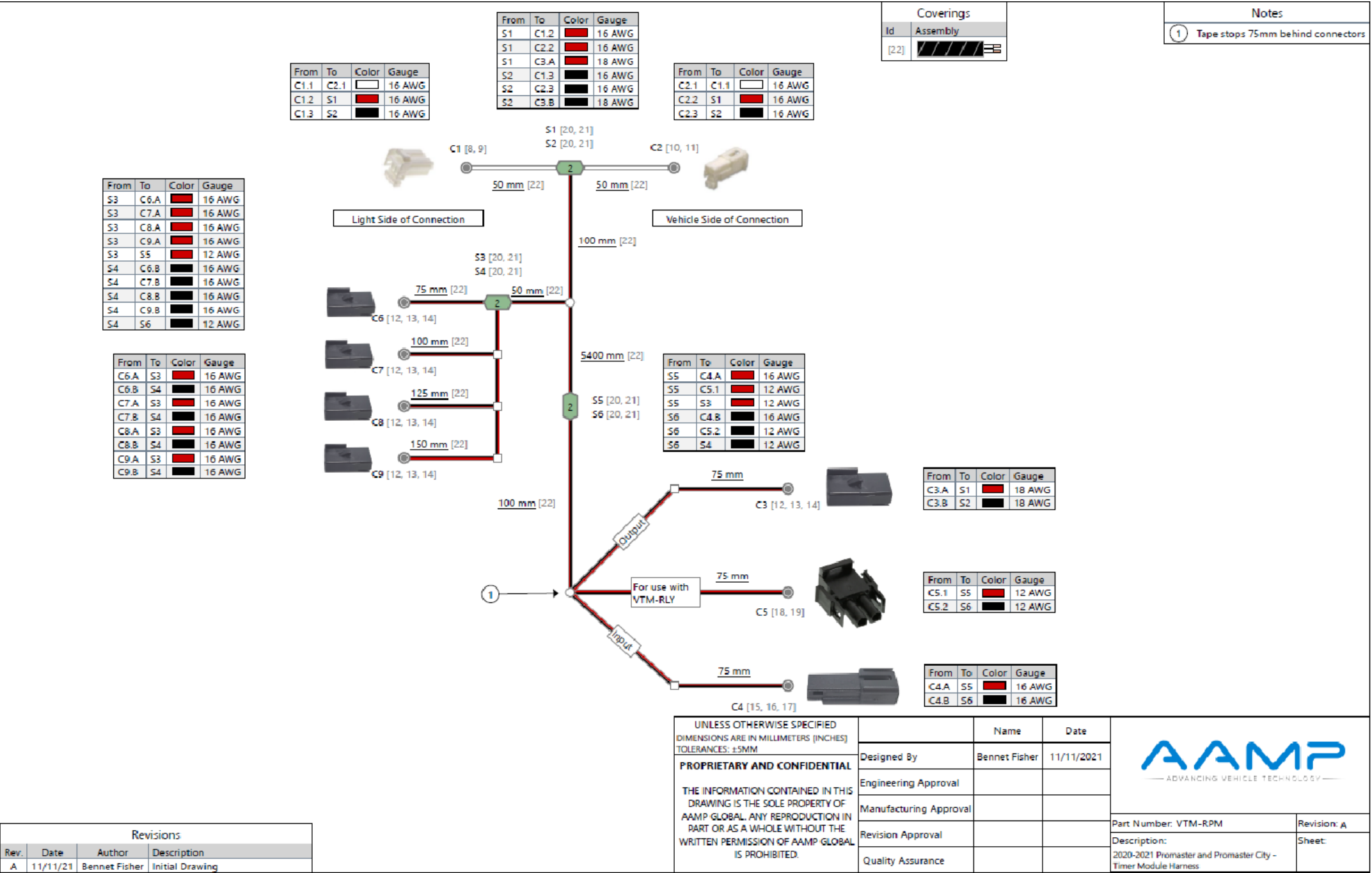


| Revisions |         |               |                 |
|-----------|---------|---------------|-----------------|
| Rev.      | Date    | Author        | Description     |
| 1         | 6/10/21 | Bennet Fisher | Initial Drawing |

|                                                                                                                                                                                                                                                                                                                                                                 |                        |               |           |                                                                                                                                       |  |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|---------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------|--|----------------|
| <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-SW3                                                                                                                  |  | Revision: 1    |
|                                                                                                                                                                                                                                                                                                                                                                 | Quality Assurance      |               |           | Description:<br>7.85 Meter Switch Harness                                                                                             |  | Sheet:<br>---- |

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

|                                                            |                |             |
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RELEASE & REVISIONS

|                                                         |
|---------------------------------------------------------|
| INITIAL ECN: 25377                                      |
| CURRENT ECN: 27060                                      |
| ECN DESCRIPTION:<br>PPDS Change: Manuf# and Description |
| REVISED BY: MLH                                         |

PURCHASED  
COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER  
AAMP GLOBAL

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER  
VTM-RPM

COLOR (ONLY LIST IF COLOR SPECIFIC)  
NO

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

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SHEET 1 OF 1

PART / PRODUCT IDENTIFICATION

ADRIAN STEEL®

ADRIAN STEEL COMPANY  
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL  
A

MAT'L USED: PURCHASED

DESIGNED BY: E.BURKE

DESCRIPTION: HARN, POWER VTM-RPM

WEIGHT (Lbs.): 0.2

SEGMENT CODE: ELE

PART NUMBER: 65796

PURCHASED  
COMPONENT  
KEY FEATURES

| DESCRIPTION OF REQUIREMENTS                                                                        |
|----------------------------------------------------------------------------------------------------|
| DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)<br><br>N/A                                          |
| LOAD/RATING REQUIREMENT<br><br>N/A                                                                 |
| MATERIAL REQUIREMENT<br><br>N/A                                                                    |
| PACKAGING REQUIREMENT<br><br>N/A                                                                   |
| OTHER REQUIREMENTS<br><br>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  
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: 25975                            |
| CURRENT ECN: 25975                            |
| ECN DESCRIPTION:<br><br>RELEASE TO PRODUCTION |
| REVISED BY: N/A                               |

| PURCHASED<br>COMPONENT                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER<br>WAYTEK                                                                                         |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER<br>37393                                                                              |
| COLOR (ONLY LIST IF COLOR SPECIFIC)<br>BLUE                                                                                               |
| COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)<br>(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)<br>NO |

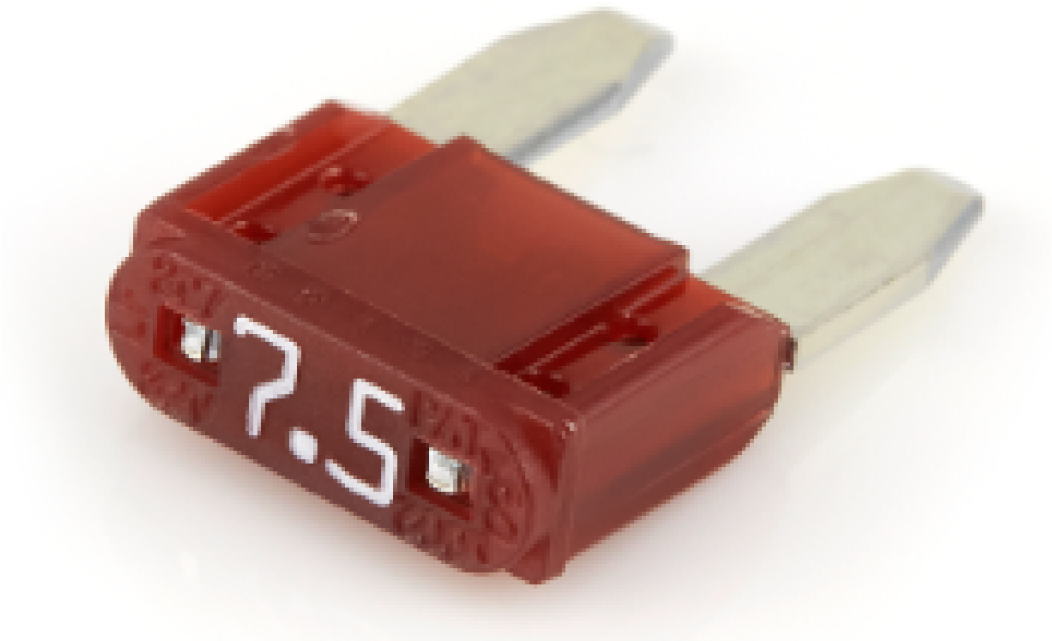
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Sheet 1 of 1

| PART / PRODUCT IDENTIFICATION                                                                                                              |                          |                                                                               |                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------|-----------------------------------------------|
| <div><div></div><div><b>ADRIAN STEEL®</b></div></div> |                          | <div>ADRIAN STEEL COMPANY</div> <div>906 JAMES STREET, ADRIAN, MI 49221</div> | <div>REVISION LEVEL</div> <div><b>A</b></div> |
| MAT'L USED: <b>PURCHASED</b>                                                                                                               |                          | DESIGNED BY: <b>EMB</b>                                                       |                                               |
| DESCRIPTION: <b>WIRE TERM 1/4"RING 14-16G</b>                                                                                              |                          |                                                                               |                                               |
| WEIGHT (Lbs.): <b>0.01</b>                                                                                                                 | SEGMENT CODE: <b>ELE</b> |                                                                               | PART NUMBER: <b>69511</b>                     |

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 MINI STYLE</b>        |



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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:     | <b>26016</b>                  |
| CURRENT ECN:     | <b>26016</b>                  |
| ECN DESCRIPTION: | <b>RELEASE TO PRODUCTION.</b> |
| REVISED BY:      | <b>N/A</b>                    |

PURCHASED  
COMPONENT

|                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCED SUPPLIER AND/OR MANUFACTURER<br><b>WAYTEK</b>                                                                                          |
| REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER<br><b>46254</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> |

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Sheet 1 of 1

PART / PRODUCT IDENTIFICATION

|                                                                                                            |                             |                                                            |                            |
|------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------------------------------------|----------------------------|
|  <b>ADRIAN STEEL®</b> |                             | ADRIAN STEEL COMPANY<br>906 JAMES STREET, ADRIAN, MI 49221 | REVISION LEVEL<br><b>A</b> |
| MAT'L USED:                                                                                                |                             | DESIGNED BY: <b>E.Burke</b>                                |                            |
| DESCRIPTION: <b>FUSE,MINI 7.5 AMP</b>                                                                      |                             |                                                            |                            |
| WEIGHT<br>(Lbs.): <b>.10</b>                                                                               | SEGMENT<br>CODE: <b>ELE</b> | PART NUMBER: <b>69879</b>                                  |                            |