

Part Number

68950

36" LED Light Strip (65347)



**Roof Bow Harness #2-4
(63482, 63483, 63484)**



LED Light Strips Installed

PRODUCT FEATURES

- This product is compatible with the Ford Transit mid / high roof.
- Included in this kit is four (4) LED light strips (65347), roof bow harness #2-4 (63482, 63483, 63484), power harness (65794), two switches, and various fasteners.
- There are no OEM options that this kit is not compatible with and there are no OEM options that this kit requires.

Model Year Validated:

2023

Introduction / Comments:

Install Instructions For Interior Plug & Play Lights For Transit

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.

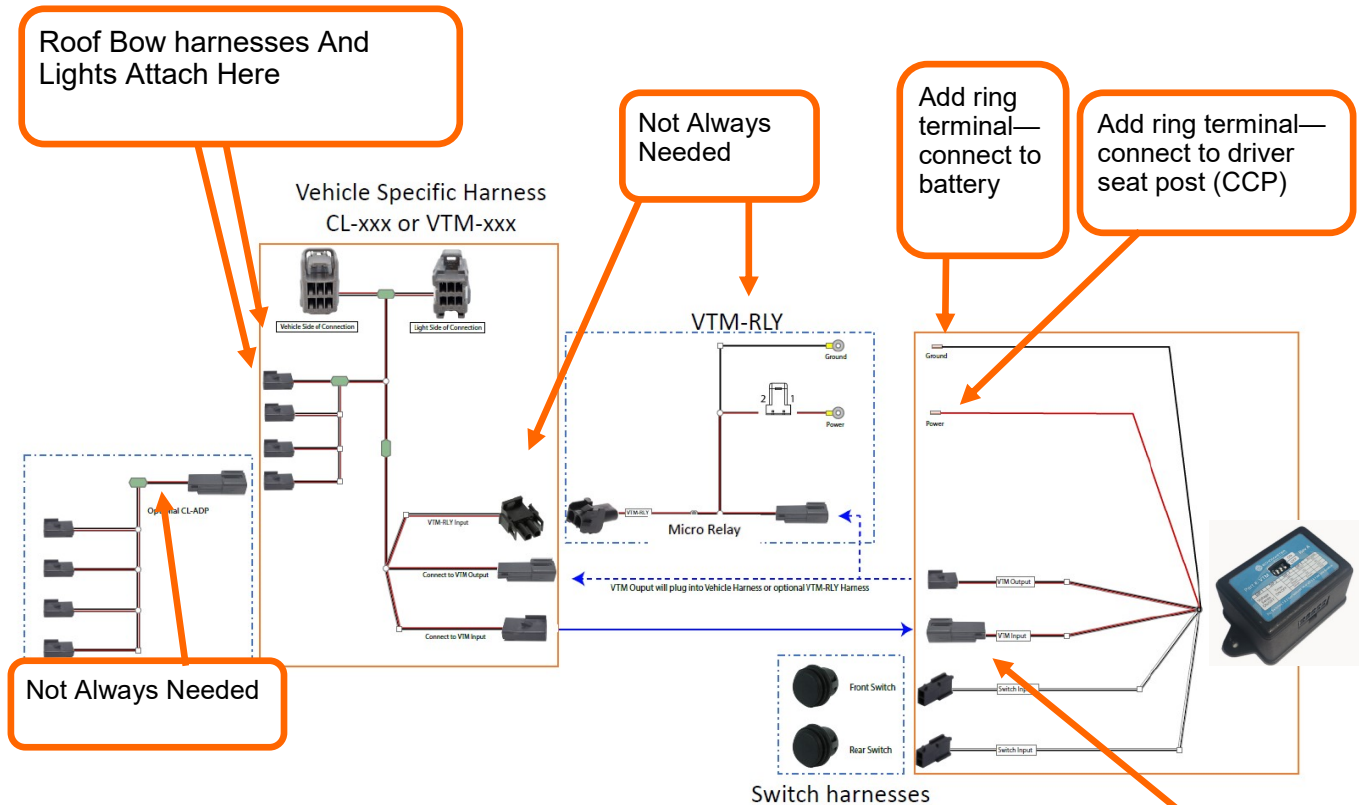


Installation Instructions For Interior Plug And Play Lights For Transit

****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 65793 and 65794 (depending on roof bow height). 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

#10 and 1/4" wrench/
drive socket

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

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



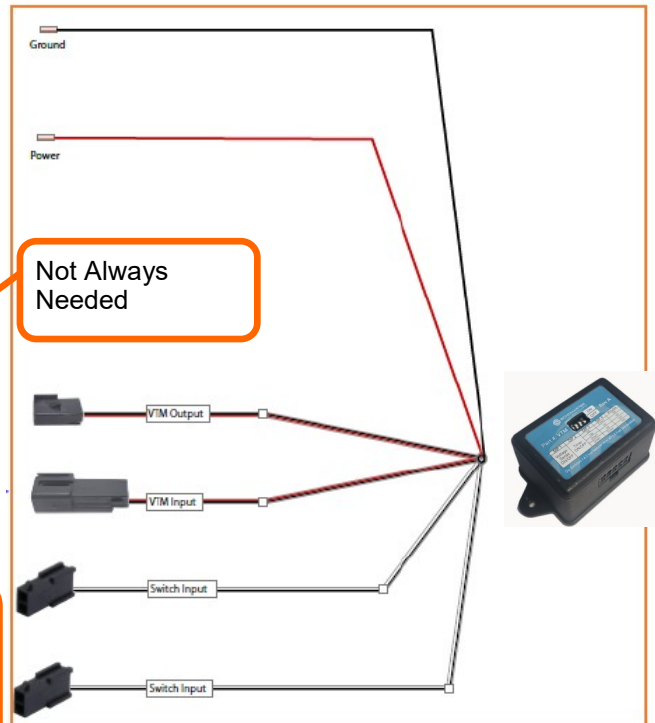
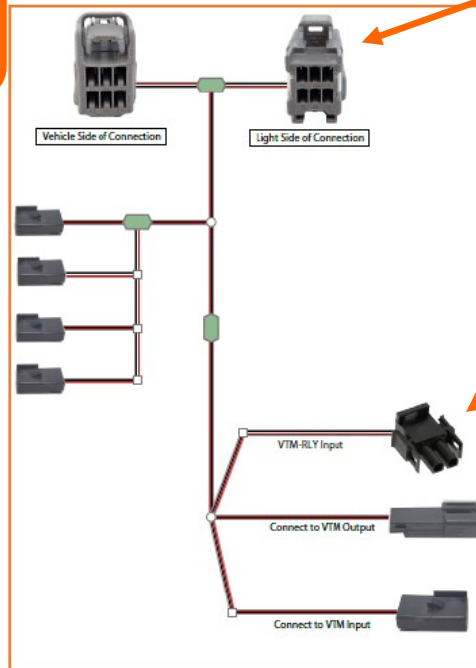
Specific Harness Diagram



Roof Bow
Harnesses
and Lights
Connect Here

Vehicle Specific Harness
CL-xxx or VTM-xxx

Insert into OEM
Light Connector:
See Below

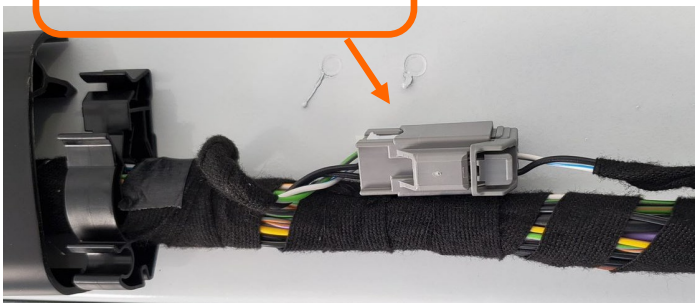


Not Always
Needed

Switch
Harness in
between



OEM Light Connector for
Mid/High Roofs - Located in
Driver's Side Cargo Harness



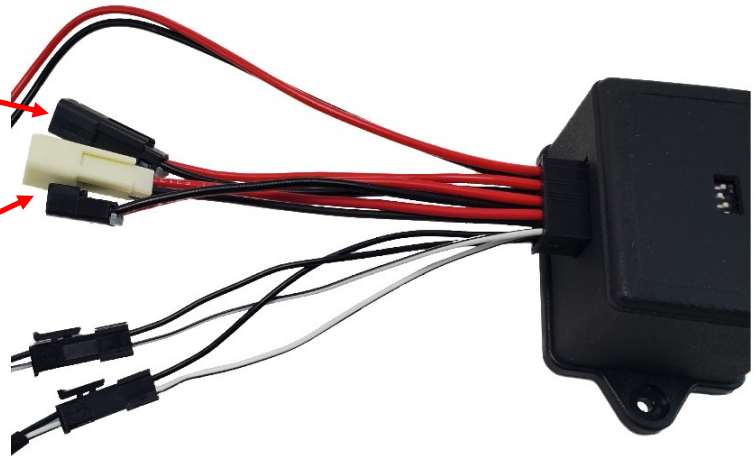
OEM Light Connector for
Low Roofs - Located in
Driver's Side Harness on
First Roof Bow



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.

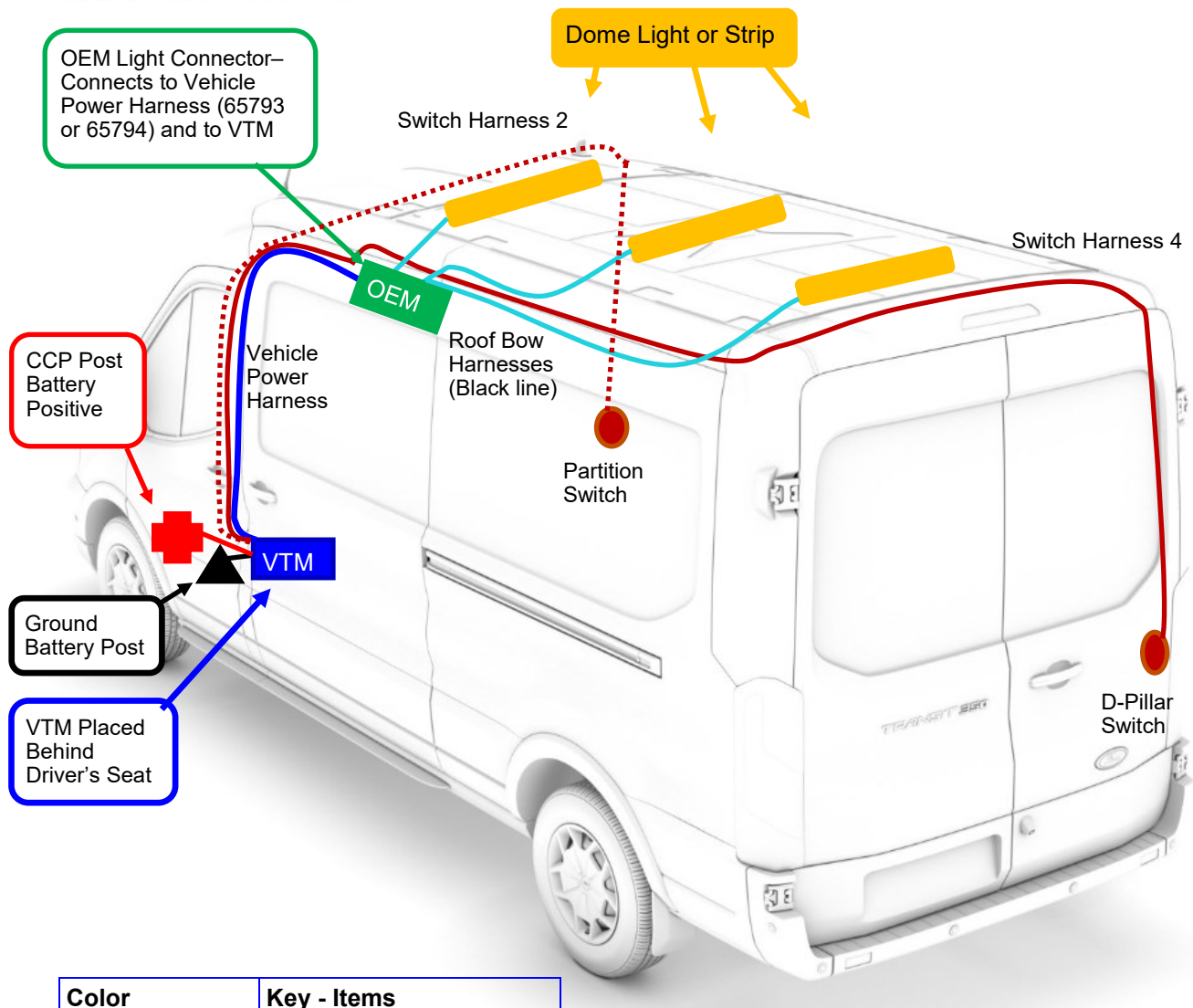


Harnesses Needed

	Part Number	Description
1	65786	Voltage Timer Module (VTM)
2	63480 Or/And 64222, 65346, 65347, 65348	Dome Light Or/And Strip Lights
3	63481 Or/And 63842, 63483, 63484	Roof Bow Harnesses 1 through 4
4	65793 or 65794	Power Harness: Depending on roof height
5	65787 Or/And 65788, 65789, 65790	Switch Harness 1 through 4 for VTM



Harness pictures are for reference only.

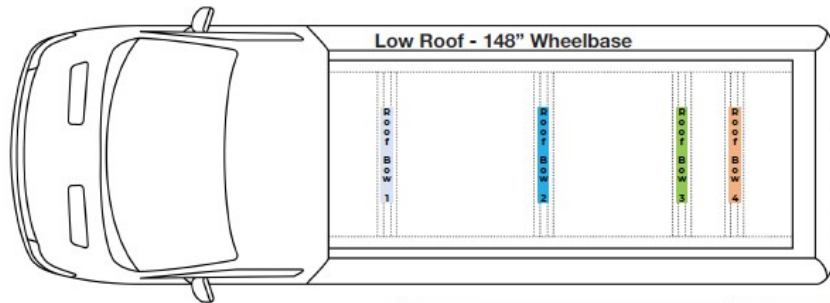
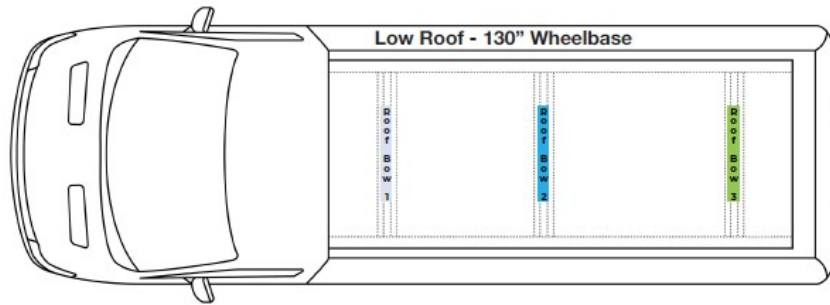


Color	Key - Items
Blue	VTM/Harness
Green	Vehicle Specific Power Harness
Black	Ground Location
Red	12V location
Redish/Brown	Switch Harnesses
Yellow	Dome or Strip Lights
Teal	Roof Bow Harnesses

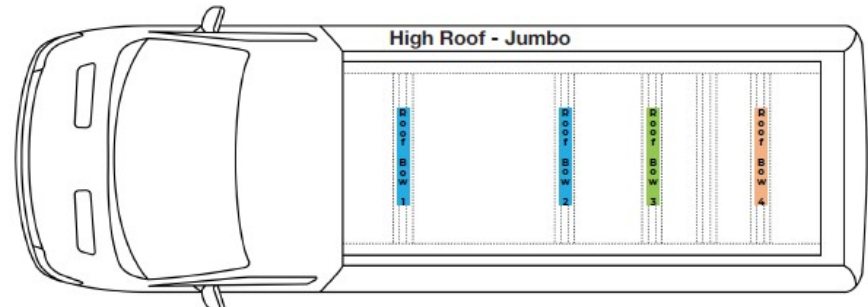
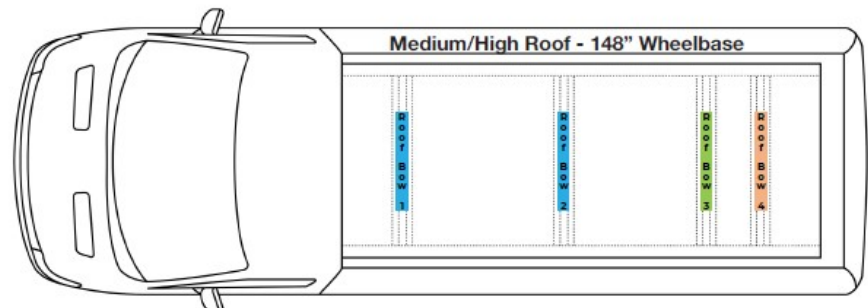
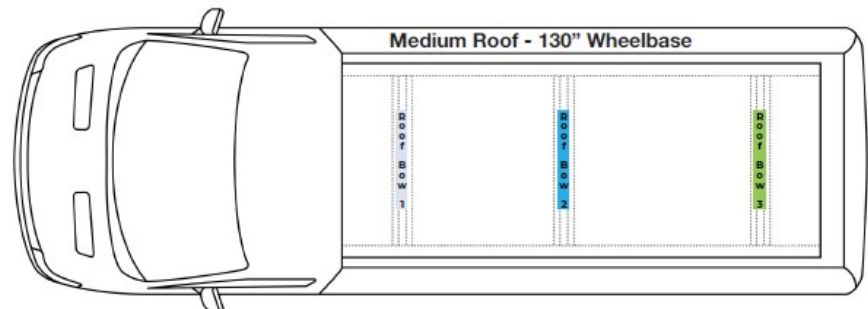
The purpose of plug and play lighting is to be completely modular. Due to this feature, refer to the order drawing for all exact lighting placements. These installation instructions are for most cases and for reference.

Vehicle	Roof Bow 1	Roof Bow 2	Roof Bow 3	Roof Bow 4
Transit - Low Roof 130" WB	P-HARRB1	P-HARRB2	P-HARRB3	N/A
Transit - Low Roof 148" WB	P-HARRB1	P-HARRB2	P-HARRB3	P-HARRB4

**Roof bow
placements with
harness reference**



Vehicle	Roof Bow 1	Roof Bow 2	Roof Bow 3	Roof Bow 4
Transit - Med Roof 130" WB	P-HARRB1	P-HARRB2	P-HARRB3	N/A
Transit - Med/High Roof 148" WB	P-HARRB2	P-HARRB2	P-HARRB3	P-HARRB4
Transit - High Roof (Jumbo)	P-HARRB2	P-HARRB2	P-HARRB3	P-HARRB4



Optional Required Harnesses:

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



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

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

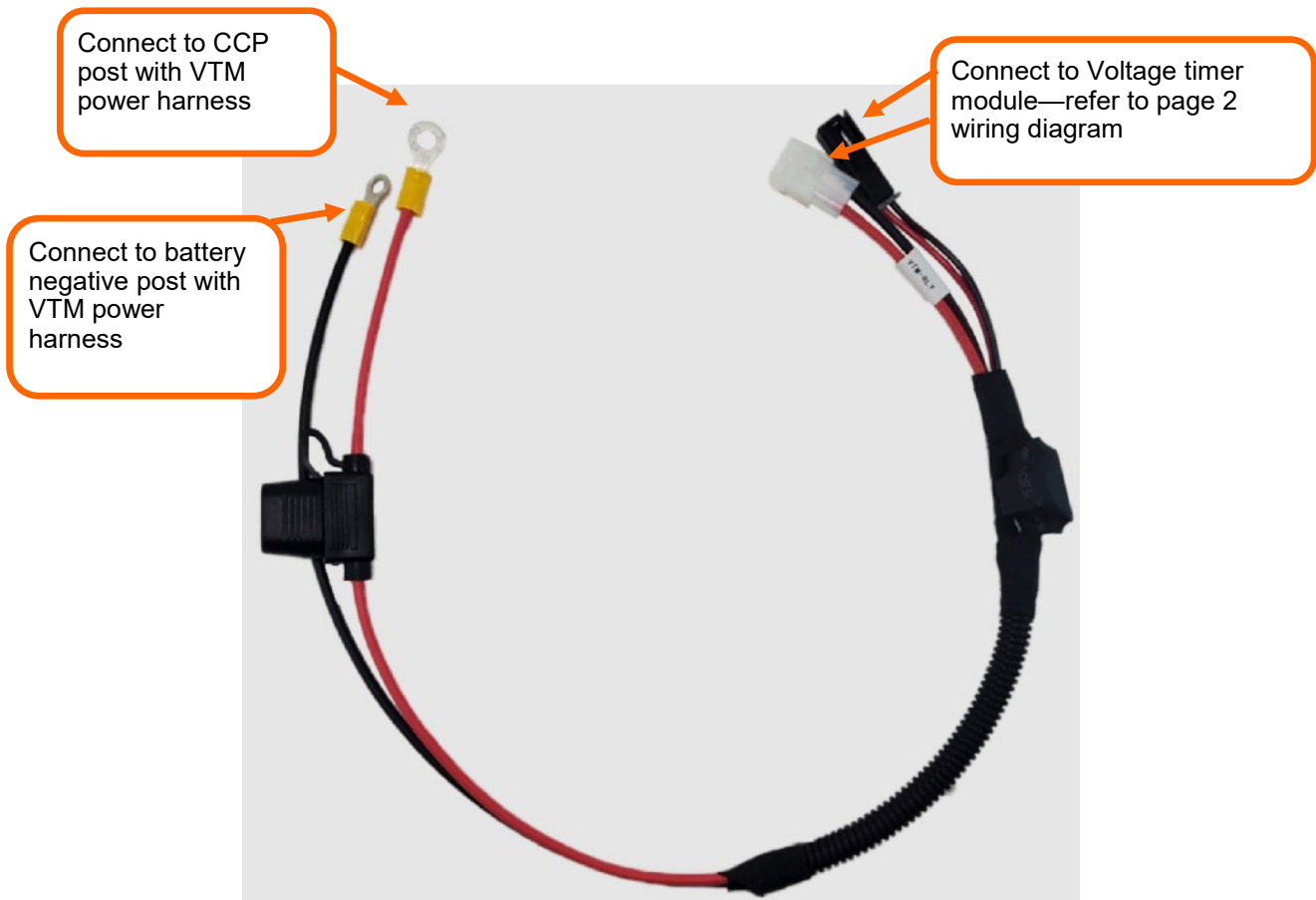
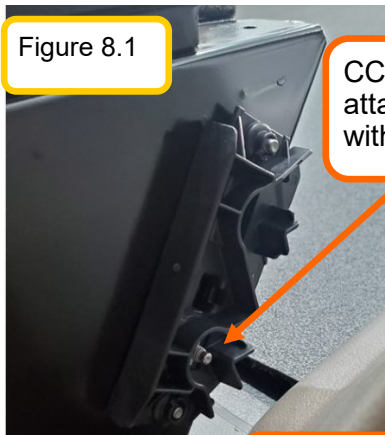
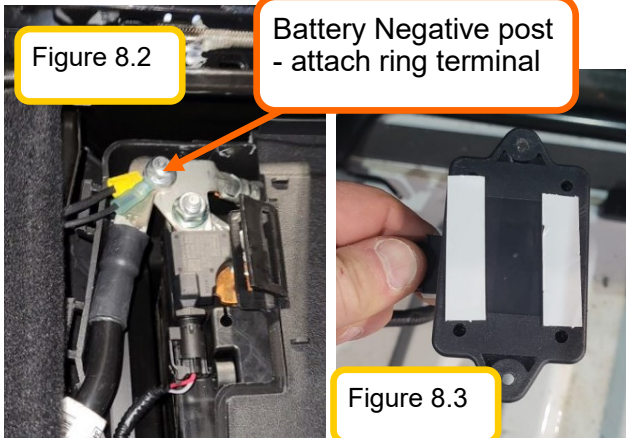


Figure 8.1



CCP positive post -
attach ring terminal
with FAS0159 nut

Figure 8.2



Battery Negative post
- attach ring terminal

Figure 8.3

Figure 8.4



VTM harness routing
and zip tied



Step 1: Locate the power harness #65793

Attach the 5/16" ring terminal to the red wire.

Attach the #10 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 voltage timer module port

Step 2: Attach the positive (red) wire to the CCP on the driver's seat post. Secure with the supplied nut (FAS0159). See Figure 8.1.

Attach the ground ring terminal (black) to the battery negative post. See Figure 8.2.

Route the wires the back of the driver's seat. Secure wires with zip tie

Step 3: ***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

Apply the VHB tape the back of the VTM (voltage timer module). See figure 8.3.

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

Plug the switch harnesses (65789 & 65790) into the VTM harness. See pages 2 & 3 for reference.

VTM Dip Switch Settings

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

Figure 9.1



Step 4:

Plug the vehicle specific power harness into the OEM connector:

Medium/High roof vehicles: The connector is located along the driver's side OEM wire harness. See figure 9.1.

Figure 9.2



Low roof vehicles: The connector is located on the first roof bow. See figure 9.2.

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

Figure 9.3



Step 5:

Connect the roof bow harnesses (63481 Or/And 63842, 63483, 63484 all that are applicable) to their desired light locations.

Use zip ties/fir trees to secure all wiring. See figure 9.3.

Overall roof bow routing reference.





Figure 10.1

Step 6:

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

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

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



Figure 10.2

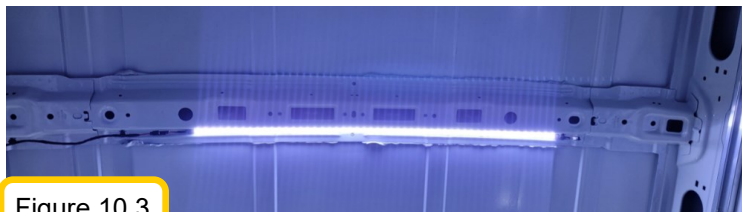


Figure 10.3

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

Dome lights are to be placed as close to the center of the roof bow as possible, while straddling the gaps in the roof bow. Figure 10.1.

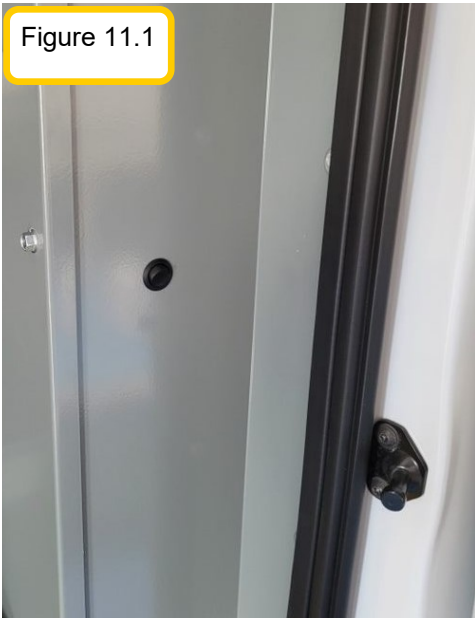


Figure 10.4

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

Strip lights are to be placed on the front side of the roof bow, between the channel/groove. You will see that these lights fit almost perfectly in the channel. Refer to figures 10.2, 10.3, and 10.4 for placements.

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

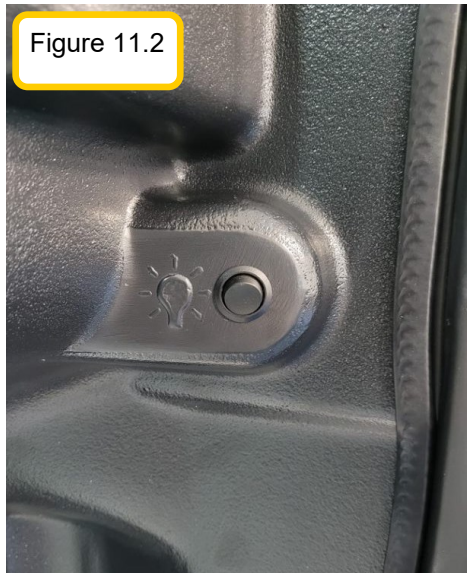
Rear Switch Location:

Passenger side rear D-pillar

See figure 11.3 below for reference.

This location will require harness #65790

Figure 11.2



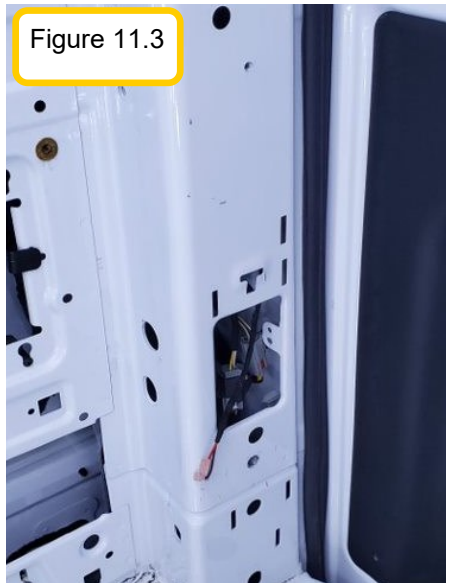
Step 7:

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

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

Use Zip ties to secure wiring.

Figure 11.3



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

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

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.

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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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

ITEM DESCRIPTION: RING TERMINAL, 5/16"ID FOR 14-16 GA WIRE



Typical vinyl insulated

MANUFACTURER: WAYTEK or CTW

MANUFACTURERS PART NUMBER: #31505 or #60-14-16

SPECIFICATIONS: INSTALLER SUPPLIED RING TERMINAL
 14-16 GA WIRE
 5/16" ID
 BLUE VINYL INSULATED

SPECIAL NOTES:

SUPPLIED BY: THIS ITEM IS ADRIAN AVAILABLE!

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DRAWN BY
MDG

DATE DRAWN
10/01/2007

ECN NUMBER
13982

ECN DATE
06/27/2011

PART WEIGHT
0.01 LBS.

REV. LEVEL
B

PART NUMBER

35120-0

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

Base is a 0.975 inch square

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

OTHER REQUIREMENTS

Black adhesive wire tie mounting base.

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

Max. Operating 158

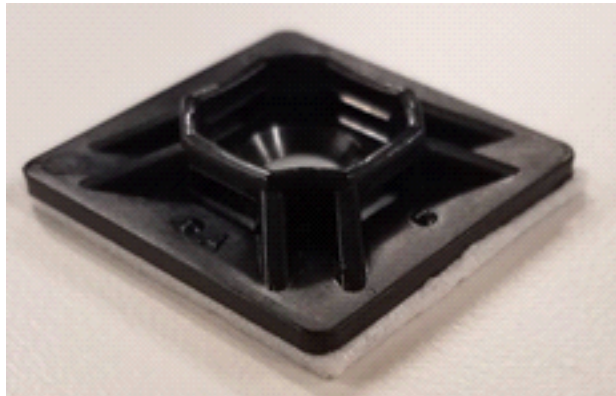
Temp. F:

Max. Operating 70

Temp. C:

Min. Installation 65

Temp. F:



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TOLERANCES & INSPECTION

UNLESS OTHERWISE SPECIFIED

ALL BEND ANGLES ARE 90 DEGREES

ALL DIMENSIONS ARE IN INCHES.

REFERENCE DIMENSIONS (X.XXX)

DO NOT REQUIRE INSPECTION

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

Material Thickness: per ASTM Std.
Weld Callouts per AWS

RELEASE & REVISIONS

INITIAL ECN: 17429

CURRENT ECN: 22185

ECN DESCRIPTION:

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

REVISED BY: D. LaCroix

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER

Midstate

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER

49401

COLOR (ONLY LIST IF COLOR SPECIFIC)

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

YES

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Sheet 1 of 1

PART / PRODUCT IDENTIFICATION



ADRIAN STEEL®

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL

B

MAT'L USED:

DESIGNED BY: **RJB**

DESCRIPTION:

Adhesive wire tie base

WEIGHT
(Lbs.):

0.05

SEGMENT
CODE: **HDW**

PART NUMBER: **49401**

PURCHASED COMPONENT KEY FEATURES

DESCRIPTION OF REQUIREMENTS

DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)

N/A

LOAD/RATING REQUIREMENT

N/A

MATERIAL REQUIREMENT

N/A

PACKAGING REQUIREMENT

N/A

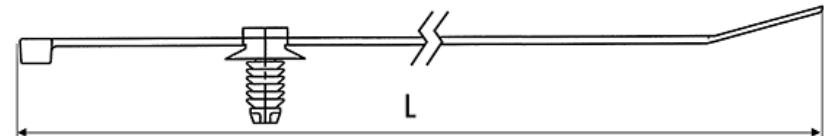
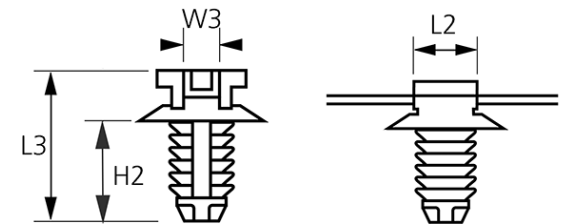
OTHER REQUIREMENTS

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



P-HARRB2

(5x)



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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)
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Sheet 1 of 1

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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

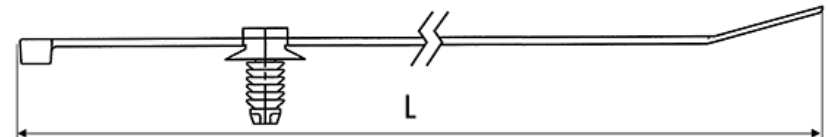
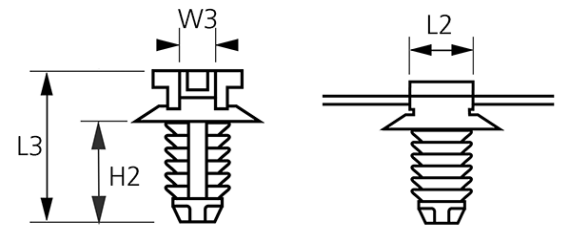
OTHER REQUIREMENTS

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



P-HARRB3

(5x)



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REFERENCE DIMENSIONS (X.XXX)

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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-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

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Sheet 1 of 1

PART / PRODUCT IDENTIFICATION



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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

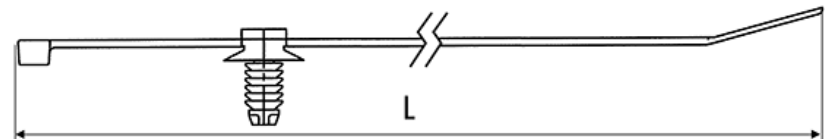
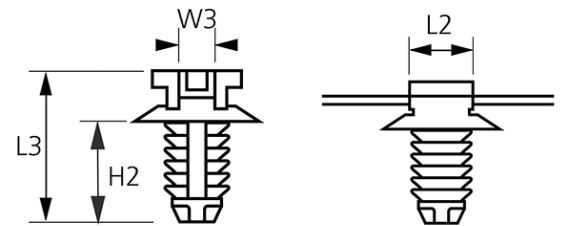
OTHER REQUIREMENTS

- **Roof Bow #4**
- **(5x) WIRE TIE W/CHRISTMAS TREE**
- **3470mm Length**



P-HARRB4

(5x)



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DO NOT REQUIRE INSPECTION

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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-HARRB4

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 #4

WEIGHT
(Lbs.):

.50

SEGMENT
CODE: **EAU**

PART NUMBER: **63484**

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS															
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)															
N/A															
LOAD/RATING REQUIREMENT															
N/A															
MATERIAL REQUIREMENT															
N/A															
PACKAGING REQUIREMENT															
N/A															
OTHER REQUIREMENTS															
Note: Connector / Terminal Configuration: • MALE 2 PIN ON ONE END • FEMALE 2 PIN ON THE OPPOSITE END. BOM: <table><tr><th>Item</th><th>Qty.</th><th>Description</th></tr><tr><td>1</td><td>1</td><td>36" WHITE LED STRIP LIGHT W/ADHESIVE</td></tr><tr><td>2</td><td>2</td><td>4" ZIP TIE</td></tr><tr><td>3</td><td>2</td><td>CABLE TIE MOUNT</td></tr><tr><td>4</td><td>1</td><td>ALCOHOL PAD</td></tr></table>	Item	Qty.	Description	1	1	36" WHITE LED STRIP LIGHT W/ADHESIVE	2	2	4" ZIP TIE	3	2	CABLE TIE MOUNT	4	1	ALCOHOL PAD
Item	Qty.	Description													
1	1	36" WHITE LED STRIP LIGHT W/ADHESIVE													
2	2	4" ZIP TIE													
3	2	CABLE TIE MOUNT													
4	1	ALCOHOL PAD													

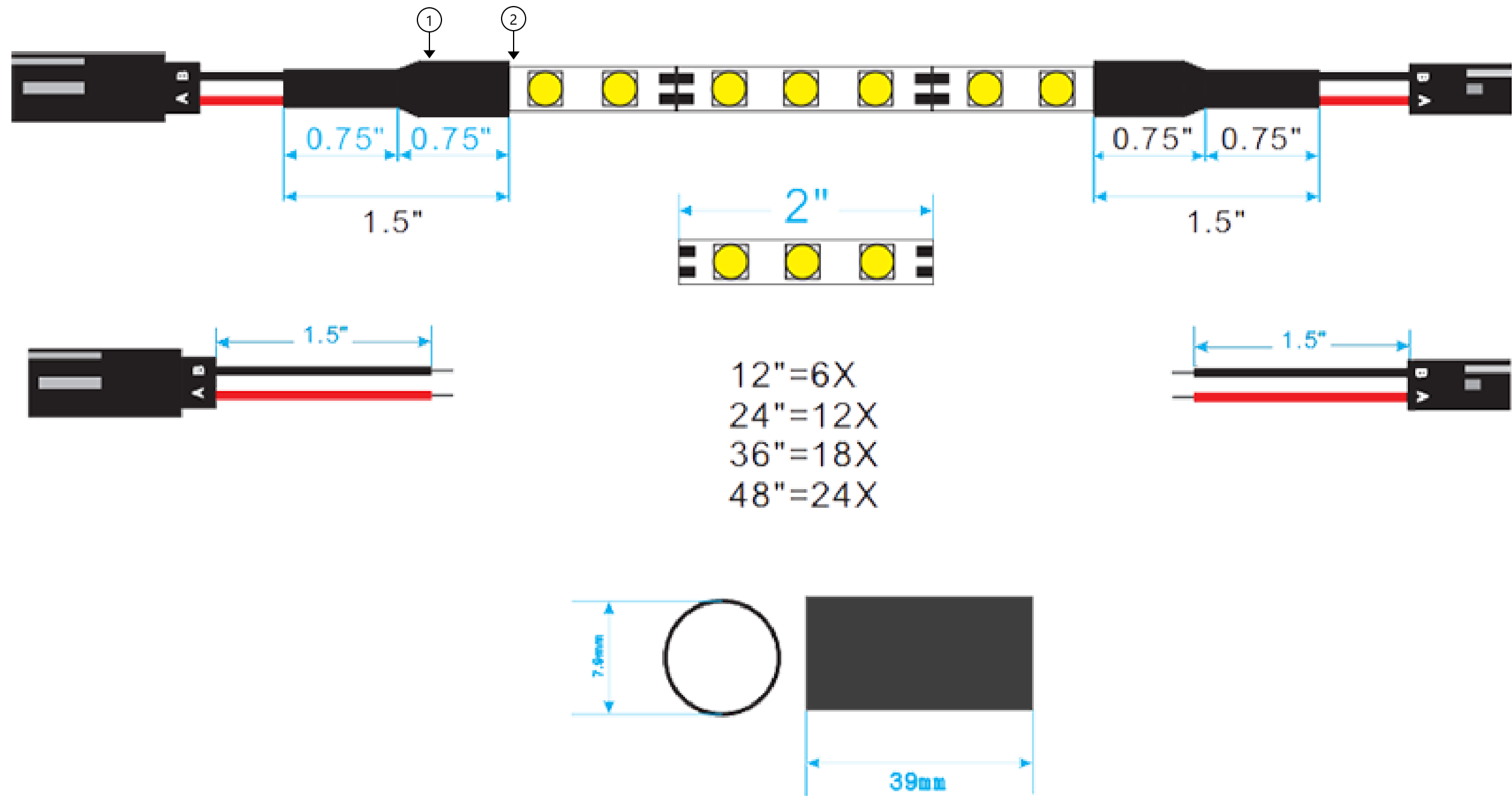


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TOLERANCES & INSPECTION	RELEASE & REVISIONS	
UNLESS OTHERWISE SPECIFIED	INITIAL ECN:	24697
ALL BEND ANGLES ARE 90 DEGREES	CURRENT ECN:	25778
ALL DIMENSIONS ARE IN INCHES.	ECN DESCRIPTION:	Revise Modular Lights With New 3M Adhesive
REFERENCE DIMENSIONS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

PURCHASED COMPONENT
REFERENCED SUPPLIER AND/OR MANUFACTURER AAMP
REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER CL-36BLED rev.B
COLOR (ONLY LIST IF COLOR SPECIFIC)
COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
YES

PRINTED DOCUMENT IS UNCONTROLLED			Sheet 1 of 1
PART / PRODUCT IDENTIFICATION			
 ADRIAN STEEL®	ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221		REVISION LEVEL B
	MAT'L USED:	DESIGNED BY: J. TYNER	
DESCRIPTION: MODULE DOME LED STRIP 36"			
WEIGHT (Lbs.): 0.3	SEGMENT CODE: EAU	PART NUMBER: 65347	

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



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

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

PURCHASED
COMPONENT
KEY FEATURES

DESCRIPTION OF REQUIREMENTS
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)
N/A
LOAD/RATING REQUIREMENT
N/A
MATERIAL REQUIREMENT
N/A
PACKAGING REQUIREMENT
N/A
OTHER REQUIREMENTS
INCLUDES HARNESS - "P-VTM-HAR"



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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: 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) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PRINTED DOCUMENT IS UNCONTROLLED			Sheet 1 of 1
PART / PRODUCT IDENTIFICATION			
	ADRIAN STEEL®		ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221
	DESIGNED BY: E.BURKE		REVISION LEVEL A
MAT'L USED:	PURCHASED		
DESCRIPTION:	VOLTAGE TIMER MODULE		
WEIGHT (Lbs.):	0.2	SEGMENT CODE:	ELE
		PART NUMBER:	65786



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 UP/DOWN	DIP SWITCH 2 UP/DOWN	DIP SWITCH 3	DIP SWITCH 4	Timer Duration (Minutes)
Voltage Sense ON/OFF	Timer 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.

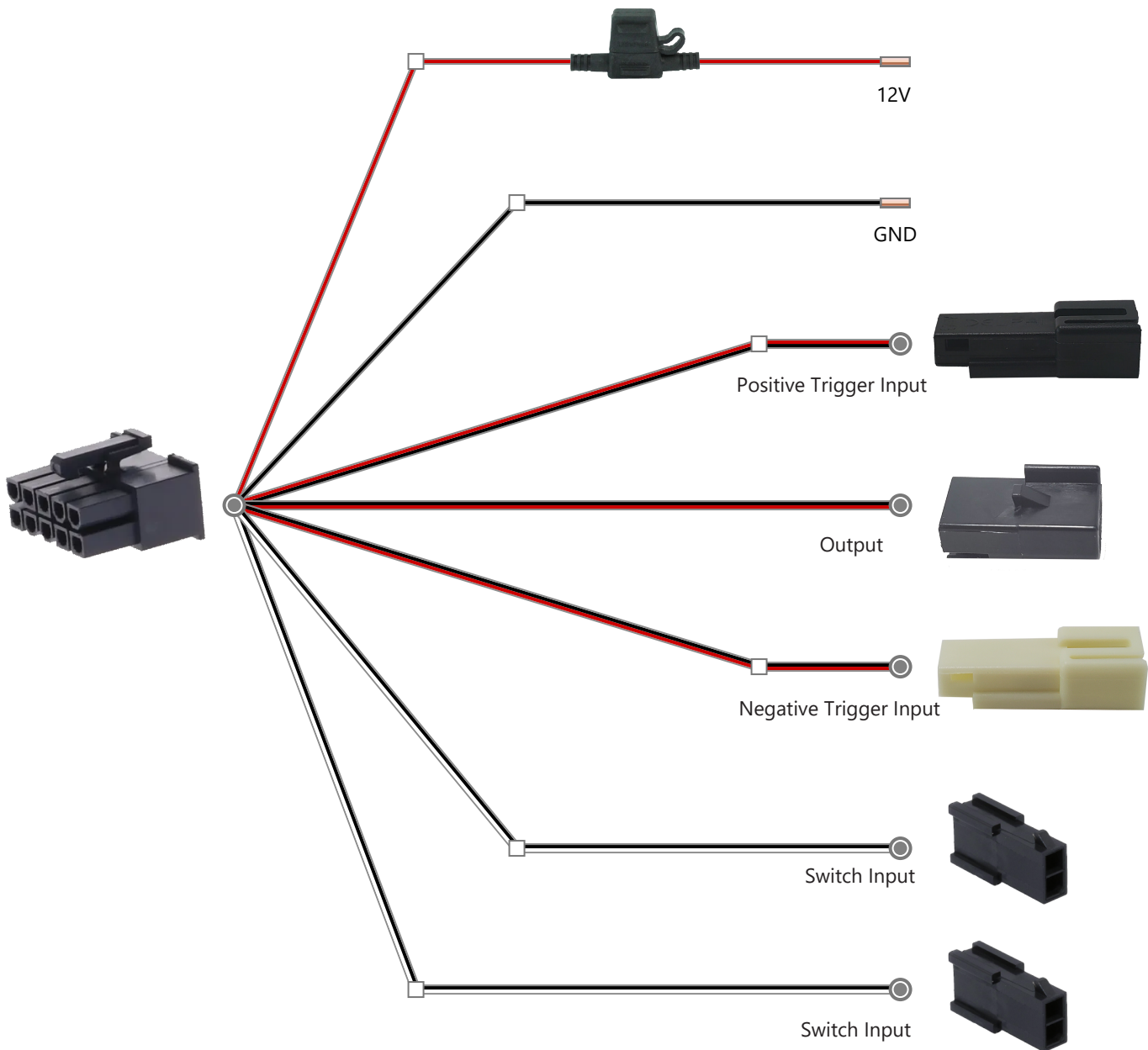
Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	N/A	N/A
Deactivated	N/A	OFF	N/A	N/A
Not Active	Activated (Pressed)	ON	Monitoring Input Voltage	Timer starts
Not Active	Activated (Pressed)	OFF	N/A	Timer off
Not Active	Activated (Pressed)	ON	Monitoring Input Voltage	Timer resets

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



WIRING DIAGRAMS:

VTM Harness

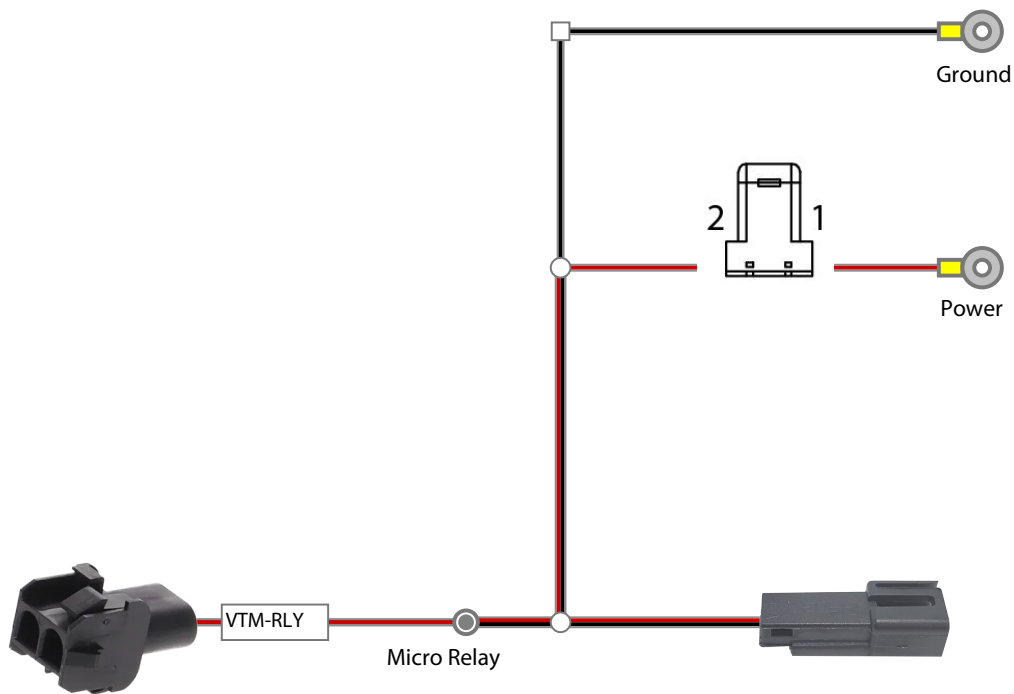


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VTM-RLY (Optional Harness)

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



EchoMaster Fleet Solutions is a Power Brand of AAMP Global

EchoMasterfleetsolutions.com

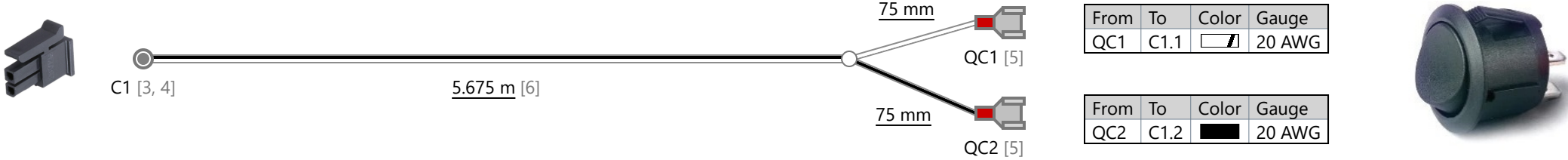
PURCHASED COMPONENT KEY FEATURES	
DESCRIPTION OF REQUIREMENTS	
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)	
N/A	
LOAD/RATING REQUIREMENT	
N/A	
MATERIAL REQUIREMENT	
N/A	
PACKAGING REQUIREMENT	
N/A	
OTHER REQUIREMENTS	



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TOLERANCES & INSPECTION			PART / PRODUCT IDENTIFICATION					
UNLESS OTHERWISE SPECIFIED			AS ADRIAN STEEL® ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221				REVISION LEVEL	
ALL BEND ANGLES ARE 90 DEGREES							A	
ALL DIMENSIONS ARE IN INCHES.								
REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION								
FEATURES			MAT'L USED:		PURCHASED		DESIGNED BY: E.BURKE	
HOLES/SLOTS			DESCRIPTION: SWITCH 2 HARNESS FOR VTM					
ANGLES								
0.0 = ± .125			WEIGHT (Lbs.):		0.2		SEGMENT CODE: ELE	
0.00 = ± .062			PART NUMBER:		65788			
0.000 = ± .031								
Material Thickness: per ASTM Std. Weld Callouts per AWS								
RELEASE & REVISIONS			PURCHASED COMPONENT					
INITIAL ECN: 25377			REFERENCED SUPPLIER AND/OR MANUFACTURER					
CURRENT ECN: 25377			AAMP GLOBAL					
ECN DESCRIPTION:			REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER					
RELEASE FOR PRODUCTION			VTM-SW2 OR 65788					
			COLOR (ONLY LIST IF COLOR SPECIFIC)					
			COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)					
REVISED BY:			NO					

Coverings	
Id	Assembly
[6]	

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



From	To	Color	Gauge
QC1	C1.1		20 AWG

From	To	Color	Gauge
QC2	C1.2		20 AWG

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

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

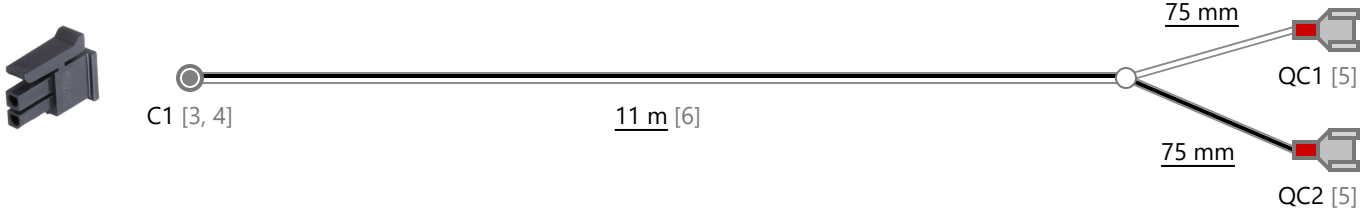
PURCHASED COMPONENT KEY FEATURES	
DESCRIPTION OF REQUIREMENTS	
DIMENSIONAL REQUIREMENTS (AS SHOWN ON DRAWING)	
N/A	
LOAD/RATING REQUIREMENT	
N/A	
MATERIAL REQUIREMENT	
N/A	
PACKAGING REQUIREMENT	
N/A	
OTHER REQUIREMENTS	



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TOLERANCES & INSPECTION			PART / PRODUCT IDENTIFICATION					
UNLESS OTHERWISE SPECIFIED			AS ADRIAN STEEL® ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221				REVISION LEVEL	
ALL BEND ANGLES ARE 90 DEGREES							A	
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			PURCHASED COMPONENT					
INITIAL ECN: 25377			AAMP GLOBAL					
CURRENT ECN: 25377			VTM-SW4 OR 65790					
ECN DESCRIPTION:			COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)					
RELEASE FOR PRODUCTION			NO					
REVISED BY:								

Coverings	
Id	Assembly
[6]	

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



From	To	Color	Gauge
QC1	C1.1		20 AWG

From	To	Color	Gauge
QC2	C1.2		20 AWG

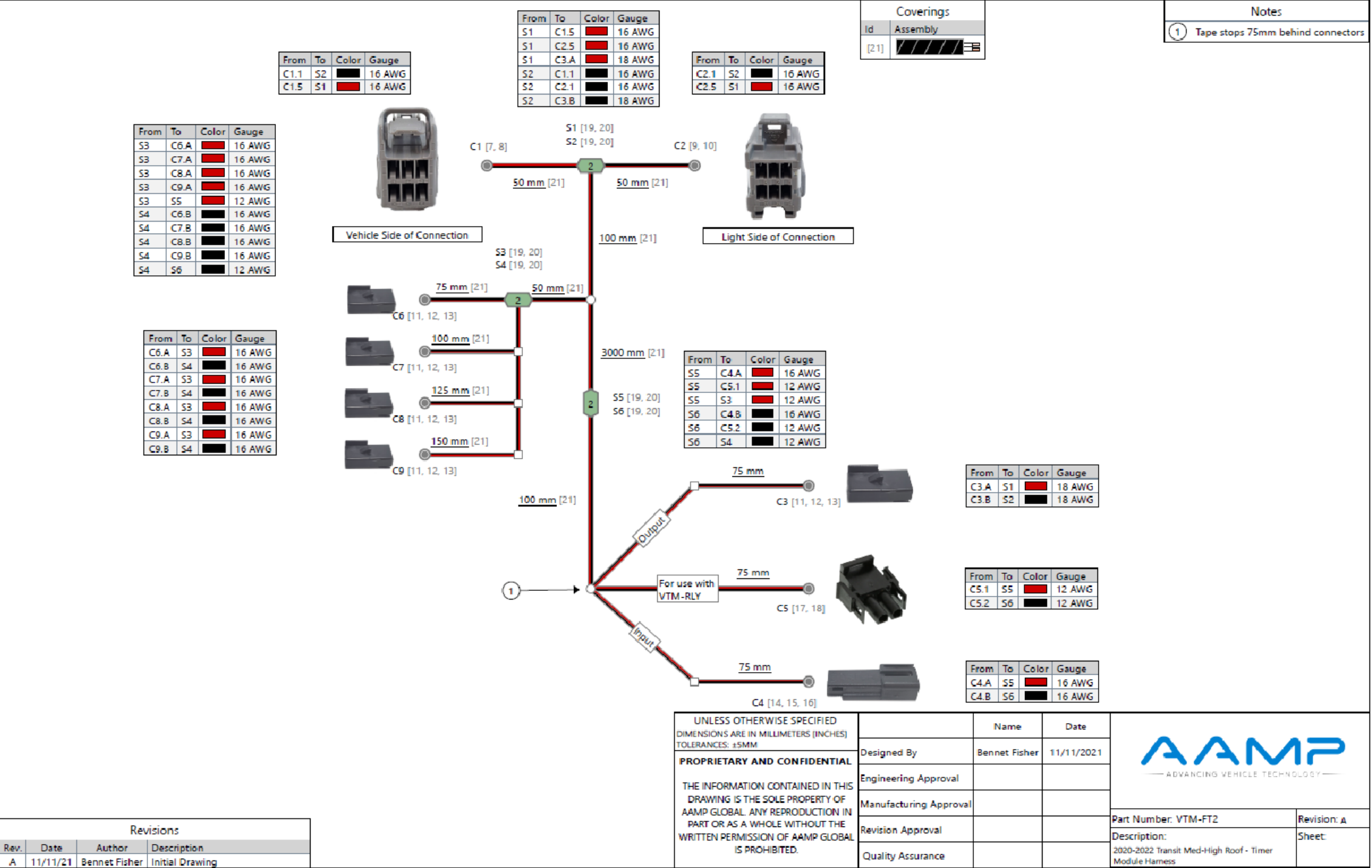


Revisions			
Rev.	Date	Author	Description
1	6/10/21	Bennet Fisher	Initial Drawing

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

PURCHASED
COMPONENT
KEY FEATURES

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



TOLERANCES & INSPECTION	RELEASE & REVISIONS
UNLESS OTHERWISE SPECIFIED ALL BEND ANGLES ARE 90 DEGREES ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION	INITIAL ECN: 25377 CURRENT ECN: 25377 ECN DESCRIPTION: RELEASE FOR PRODUCTION
FEATURES 0.0 = ± .125 0.00 = ± .062 0.000 = ± .031 Material Thickness: per ASTM Std. Weld Callouts per AWS	REVISED BY: EMB

PURCHASED COMPONENT

REFERENCED SUPPLIER AND/OR MANUFACTURER
AAMP GLOBAL

REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER
VTM-FT2 OR 65794

COLOR (ONLY LIST IF COLOR SPECIFIC)
NO

COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE)
(NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.)
NO

PRINTED DOCUMENT IS UNCONTROLLED

Sheet 1 of 1

PART / PRODUCT IDENTIFICATION

**ADRIAN STEEL®**

ADRIAN STEEL COMPANY
906 JAMES STREET, ADRIAN, MI 49221

REVISION LEVEL
A

MAT'L USED: **PURCHASED**

DESIGNED BY: **E.BURKE**

DESCRIPTION: **HARN, POWER VTM FT2**

WEIGHT (Lbs.): **0.2**

SEGMENT CODE: **ELE**

PART NUMBER: **65794**

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: 16-14GA 1/4" STUD SIZE BLUE TIN PLATED COPPER	



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TOLERANCES & INSPECTION		PART / PRODUCT IDENTIFICATION			
UNLESS OTHERWISE SPECIFIED ALL BEND ANGLES ARE 90 DEGREES ALL DIMENSIONS ARE IN INCHES. REFERENCE DIMENSIONS (X.XXX) DO NOT REQUIRE INSPECTION		ADRIAN STEEL® ADRIAN STEEL COMPANY 906 JAMES STREET, ADRIAN, MI 49221			REVISION LEVEL A
FEATURES 0.0 = ± .125 0.00 = ± .062 0.000 = ± .031		HOLES/SLOTS 0.0 = ± .062 0.00 = ± .031 0.000 = ± .015		WIRE TERM 1/4"RING 14-16G	
ANGLES 0° = ± 2° 0.0° = ± 1°					
Material Thickness: per ASTM Std. Weld Callouts per AWS					
RELEASE & REVISIONS		PURCHASED COMPONENT			
INITIAL ECN: 25975		REFERENCED SUPPLIER AND/OR MANUFACTURER WAYTEK			
CURRENT ECN: 25975		REFERENCED SUPPLIER AND/OR MANUFACTURER PART NUMBER 37393			
ECN DESCRIPTION:		COLOR (ONLY LIST IF COLOR SPECIFIC) BLUE			
RELEASE TO PRODUCTION		COMODITY ITEM (Y/N) (YES = ALL DIMENSIONS AND NOTES ARE REFERENCE) (NOTE: DIMENSIONS AND FEATURES MAY VARY FOR A COMODITY ITEM.) NO			
REVISED BY: N/A		WEIGHT (Lbs.): 0.01		SEGMENT CODE: ELE	PART NUMBER: 69511