TLM

Timer/Low Voltage Module

INSTALLATION MANUAL

Thank you for purchasing the TLM

WHAT'S INCLUDED:

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

COMPATIBLE ACCESSORIES:

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

FEATURES:

- Selectable timer durations - 30, 45, 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 or a steady ground input
- 10A max current output

OPERATING INSTRUCTIONS:

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

DIP 1
If Voltage Sense feature is turned ON, low voltage shut down will occur when the input voltage to the TLM module 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.

DIP 2
If the Timer feature is turned ON and switch input is activated, output voltage will be provided for specified timer duration.

DIP 3-5
Switch settings will determine how long output will be active after the switch input is activated.

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

DIP 6
Steady Ground Input Applications:
Applying ground to the switch input will activate the output, removing ground from switch input will disable the output. If ground is applied once again, the output will be re-activated, and the timer will reset/start over.

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

Steady Ground Input Applications

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

Momentary Ground Input Applications

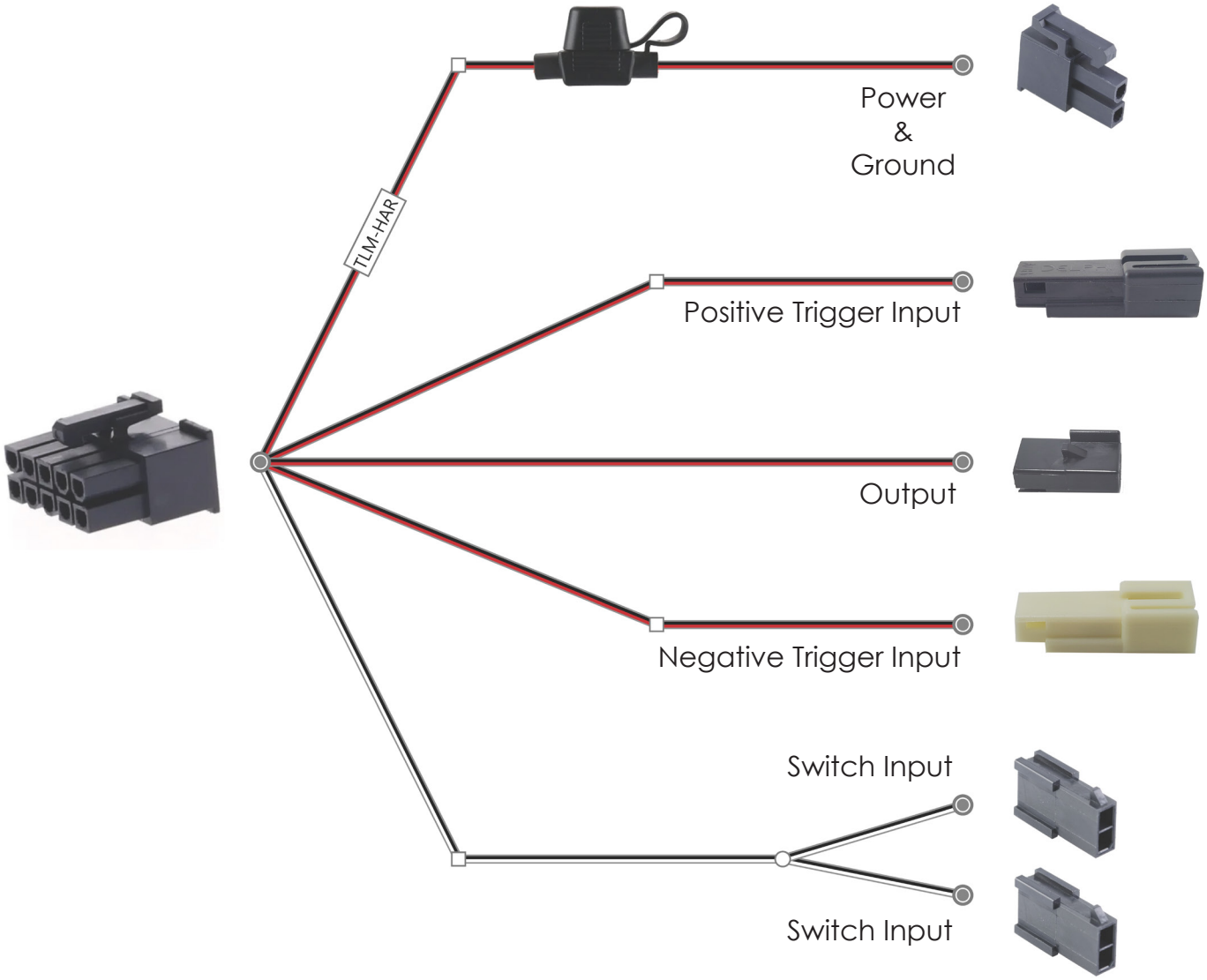
Trigger Input	Switch Input	Output	Voltage Sense (ON)	Timer (ON)
Active	N/A	ON	Monitoring Input Voltage	N/A
Not Active	N/A	OFF	N/A	N/A
Not Active	Activated (Pulsed)	ON	Monitoring Input Voltage	Timer Starts
Not Active	Activated (Pulsed)	OFF	N/A	Timer Off
Not Active	Activated (Pulsed)	ON	Monitoring Input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

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

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

WIRING DIAGRAMS:

TLM Harness

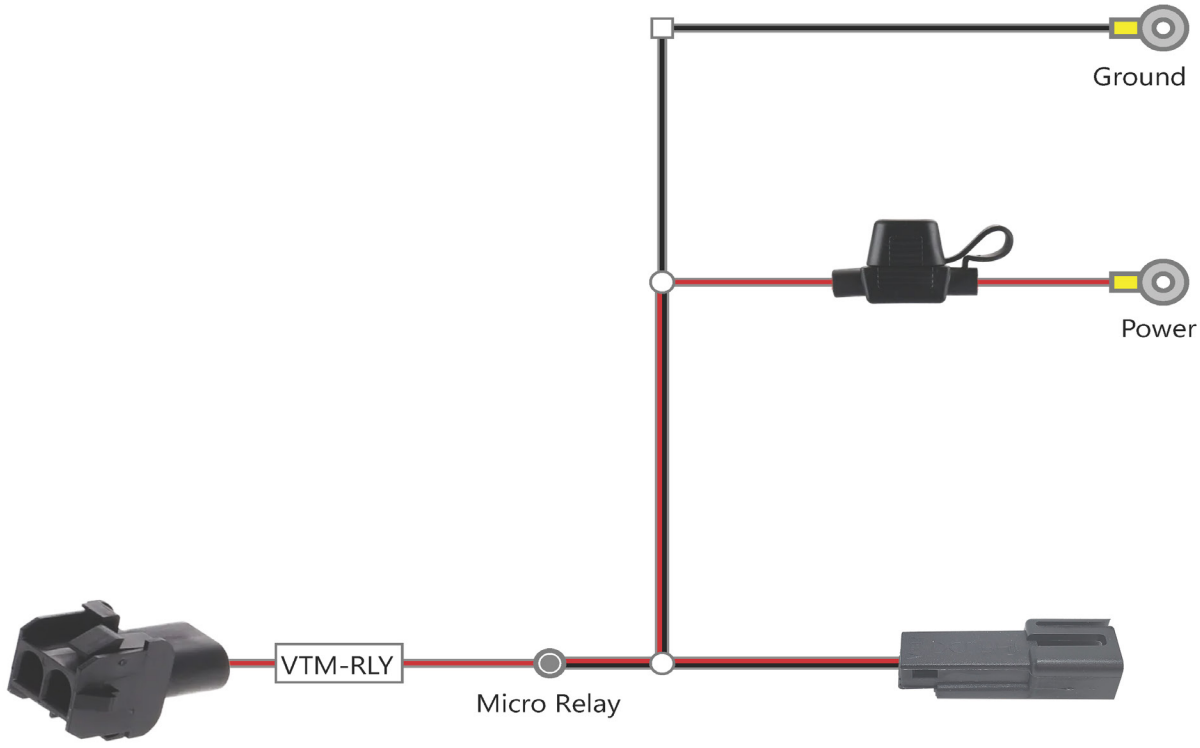


If necessary, connectors may be removed for hardwire applications.

Positive Trigger Input: Applying 12V to Red wire will activate output
Negative Trigger Input: Applying ground to Black wire will activate output
Switch Input: Closing loop between switch input wire leads will activate output

VTM-RLY (Optional Harness)

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



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

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

Troubleshooting Table:

Output does not activate when Positive or Negative Trigger Input is activated	Check fuse on TLM harness	Replace fuse if it is bad
	Check power and ground connections	Fix loose or bad wire connection
	Confirm module has power and ground at its input	Replace module or damaged harness if necessary
Output does not activate when Switch Input is activated	Confirm DIP 6 on module matches switch type being used	Change DIP 6 setting to match switch type
	Confirm switch being used is not defective	Replace bad switch if necessary
Switch Input - Irregular behavior	Output does not turn off with switch	Check DIP 6 and confirm it matches switch type
		Confirm switch is not damaged or defective; replace if necessary
	Output activates for 5 seconds then turns off	Input voltage to module is below 11.8V
	Output Activates for 10 seconds then turns off	Non-valid timer setting; check DIP switches 3-5

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