

# SS-GM-01

# GM Start/Stop Control Module



## Key Features

- Microprocessor Programmable Operation
- The SS-GM-01 provides a clean, reliable Start/Stop interface
- Provides Start/Stop for GM 2019+ C4500 – C6500 Vehicles with Factory Installed PTO Option and Remote PTO controls enabled
- Provides Start/Stop for the International CV chassis with Factory Installed PTO Option and Remote PTO controls enabled
- Optional Dual Voltage Monitoring for Chassis and Aux
- Compact Size with Panel-Mount case

## Ordering Guide

Model	Description	Outputs
SS-GM-01	GM Start Stop Controller	1 Extra Output for Custom Applications
SS-GM-01-C	Customizable	

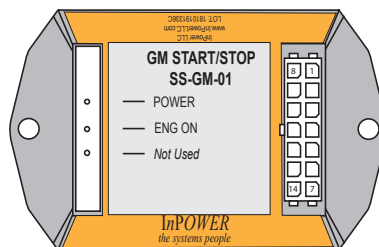
## System Diagram

### LED Definitions:

**POWER:** On solid when power is applied to module.

**ENG ON:** On when PTO Relay is on.

**LED 3:** (Not Used)



### OUTPUT Definitions:

**OH1 (Pin 10):** On when IL2 input is at ground to trigger Remote Set 1 Speed

**OH2 (Pin 11):** On if the module is in the engine start or run section  
Off if engine is off or fails to start after the start sequence.

### I/O Definition:

**Black Wire (Pin 1):** Ground input

**Brown Wire (Pin 5):** IH1 high true input: PTO Engage Relay HI pin B of connector X191

**Yellow Wire (Pin 6):** IL1 low true input 1: Start/Stop Control

**Tan Wire (Pin 7):** IL2 low true input 2: High Idle Input

**Red Wire (Pin 8):** +12V power input

**Green Wire (Pin 10):** OH1 12V Output: Remote High Idle Set pin N of connector X191

**Blue Wire (Pin 11):** OH2 12V Output: Engine Start or Run

**Violet Wire (Pin 12):** Pin A of connector X191

**White Wire (Pin 13):** Pin J of connector X191

**Orange Wire (Pin 3):** CTI input not used

**Gray Wire (Pin 4):** VAUX input not used

### Vehicles Supported:

GM 2019+ C4500 – C6500 and International CV Chassis Vehicles with PTO Option and Remote PTO controls enabled

### Functional Description:

On power up this module detects if engine is running or off and goes to the proper section.

#### Engine Off/Start Section:

With the engine off the module waits for an open circuit to ground transition on IL1 input (yellow wire) and then runs the remote engine start routine which takes a full 5 seconds. The module now monitors IH1 input (Brown wire) for a 12V signal from the PTO Engage Relay HI indicating the engine is running. If a 12V signal is detected the module will turn on the engine run LED and switch to the engine running routine. It could take up to 20 seconds for the engine to start and the PTO Engage Relay outputs to activate. Because the required time for the engine to start is not consistent the module will wait on the 12V signal for 21 seconds. If a 12V signal is not detected the module will transition back to the beginning of the Engine Off Section after another 3 second delay.

#### Engine On/High Idle Section:

When the engine is running the module will monitor IL2 input for a ground signal. When a ground signal is detected the module will turn on output OH1 for as long as the input is held at ground to activate the Remote High Idle Set 1 speed. The Set 1 rpm default value is 1200rpm and can be changed with the GDS2 software. If the engine stops during high idle operation the module will return to the beginning of the Engine Off section after a 3 second delay.

#### Engine On/Stop Section:

With the engine running the module waits on an open circuit to ground transition on IL1 input and then runs the remote engine stop routine which only takes a few seconds. The module now monitors IH1 input for an open circuit condition from the PTO Engage Relay HI indicating the engine has stopped. After a 3 second delay the module goes to engine off section. If the 12V signal on IH1 from the PTO Engage Relay HI output does not go to an open circuit within 6 seconds the module goes to the beginning of the Engine On Section and waits for another IL1 transition.

# SS-GM-01

# GM Start/Stop Control Module

## Specifications

Power Input (BAT): +11 to 16 Vdc  
Ground (GND): Connection to vehicle ground (Battery Negative)  
Outputs Drive: 700mA

## Customization (Extra Features)

Extra Frequency Measuring Input Pin for monitoring variety of signals (frequency)  
2 Voltage Monitoring Pins  
(1) 12 Volt Chassis Battery  
(1) Aux Battery  
Extra Output can be utilized to activate PTO Set 2 High Idle Speed.

## Installation

1. This module is not water proof and must be mounted in a protected environment.
2. Refer to GM Silverado Electrical Body Builder Manual and UI Bulletin 120 for complete system operation and list of Upfitter provided components.

### NOTES:

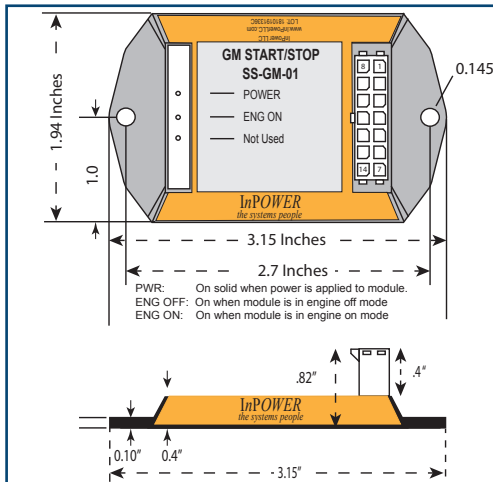
1. System works with the key in the ignition or removed from the vehicle.
2. PTO Feedback is on by default which requires a feedback signal from the PTO pressure switch. This option can be turned off with the GM GDS2 software.
3. Accelerator pedal can be disabled with the GM GDS2 software.
4. Engine Shutdown Conditions
  - a. Low Fuel – This can be adjusted with the GDS2
  - b. Engine Coolant Hot
  - c. Transmission Fluid Hot
  - d. Low Engine Oil
4. Engine Shutdown Conditions (continued)
  - e. Low Engine Oil Pressure
  - f. Diesel Particulate Filter Regeneration Warning
  - g. Pressing on the Service Brake
  - h. Releasing the Parking Brake
5. Remote Start/Stop/High Idle Interlocks
  - a. Cruise Control must be OFF
  - b. Shifter must be in PARK
  - c. The Parking Brake must be ON/SET
  - d. Service Brake must be OFF
  - e. Hood must be CLOSED
  - f. Accelerator Pedal must be OFF
  - g. The Vehicle must be STOPPED
6. X191 Mating Connector part number is 15326868 and can be purchase from the following distributors.
  - a. [www.mouser.com](http://www.mouser.com)
  - b. [www.ttiinc.com](http://www.ttiinc.com)

## GM PTO configuration options

GM PTO configuration options that must be change in order for the SS-GM-01 to properly operate.

1. PTO Control Change to PTO Remote Mode Switch
2. PTO Control from Passenger Compartment Change to Disabled
3. PTO Remote Mode Switch Configuration Change to Set
4. PTO Remote Engine Start Change to Enabled
5. PTO Engine Shutdown Change to Enabled
6. PTO Remote Control from Passenger Compartment Change to Enabled
7. PTO Engine Speed Command System Type Change to PTO Remote Control from Passenger Compartment
8. Engine Shutdown Change to Enabled \*\*There are 2 similar settings – both must be enabled

## Mechanical Drawing



## Mechanical

Weight: 0.3 lbs.  
Operating Temperature: -40° C to +85° C  
Dimensions: 3.15" L x 1.94" W x .82" H

All dimensions in inches.  
Do not scale.