HAVIS
Productivity in motion

IDLERIGHT2™
IDLE REDUCTION SYSTEM

Havis, Inc.
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U.S. Patents 7,983,812

HOW IT WORKS

Once installed and the enable input is active, the IdleRight2 will monitor the battery's voltage while the vehicle is turned off and your lights or electronics equipment are still on. If the voltage of the battery drops below the low voltage sense level IdleRight2 triggers the Remote Starter to idle vehicle. The system then runs the engine to charge the battery, the Remote Starter turns the vehicle off, and the process begins again.

SPECIFICATIONS (Part # IR-1002)

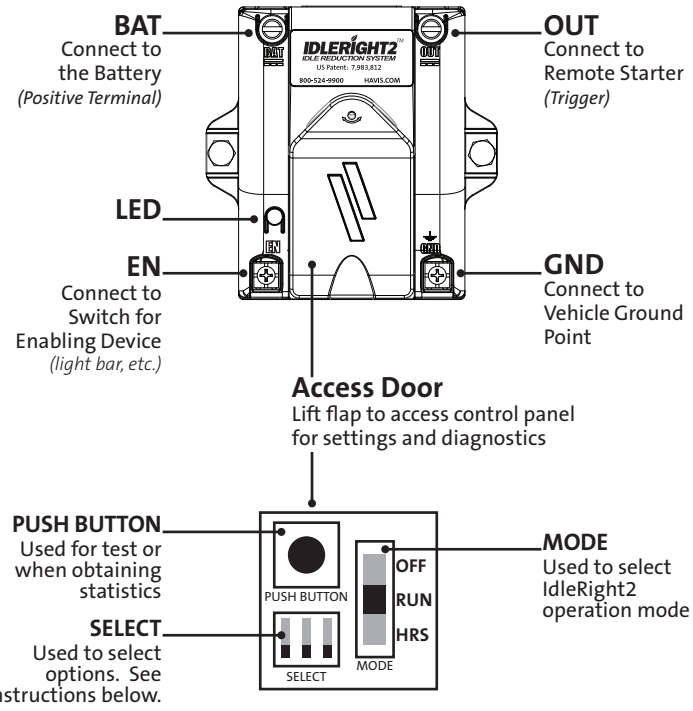
Model Number:	IR-1002
Operating Voltage:	9V - 18V DC
Low Voltage Sense:	11.75 - 12.0 V DC
Stand-by Current:	5mA
Operating Current:	80mA
Operating Temperature:	-20˚C to 70˚C
3 Year Limited Warranty	Made in USA

COMPATIBLE REMOTE STARTERS

IR-1002 system is compatible with aftermarket remote starters that are equipped with a negative or positive "activation input".

Some manufacturers for reference:
Avital, Clifford, Python and VIPER.
Contact your remote start installer to determine if an interface module is available for your specific vehicle.

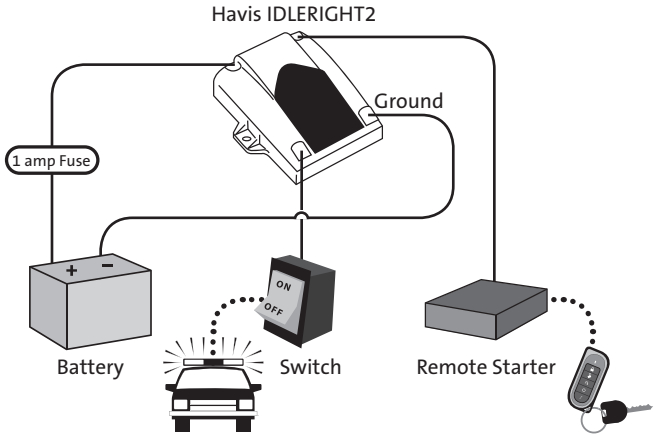
PART IDENTIFICATION



LED DIAGNOSTICS

OFF	IdleRight2 is not active.
GREEN (solid)	Vehicle engine is off and IdleRight2 is monitoring battery voltage.
GREEN (blinking)	Vehicle engine is running and IdleRight2 is monitoring battery voltage.
RED (solid)	**RUN mode:** IdleRight2 has triggered Remote Starter, but vehicle engine is not running. LED will remain solid red until vehicle engine is running.
	HRS mode: Indicates the end of statistics check.

WIRING DIAGRAM



INSTALLATION

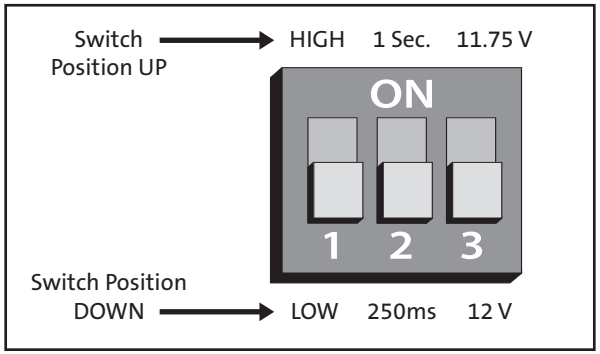
1. First, install and test a compatible after market Remote Starter in vehicle. *(See; COMPATIBLE REMOTE STARTERS, opposite)*
2. Set the timing on Remote Starter to run for 20*(+)* minutes.
3. Inspect parts and ensure nothing is damaged.
   a. IdleRight2 unit
   b. Two (2) Mounting Screws
   c. Decal for rear window of vehicle
   d. ATTENTION sticker for dashboard of vehicle
4. Attach IdleRight2 to the inside of vehicle. To utilize the Idle Hours Saved function, the unit should be mounted in a location where a user can access the Access Door of the unit.
5. Connect wires to all four (4) IdleRight2 terminals. See PART IDENTIFICATION on the other side of this sheet for Terminal locations.
   (18AWG wire or larger is recommended for all connections)
   BAT: Connects to battery. This terminal should be attached to the battery positive (+12V) through a 1 amp fuse. Input must be "Always On".
   OUT: Connects to Remote Starter. This terminal connects to the "trigger" input on the Remote Starter unit.
   EN: Connects from a Switch Source (this will be the signal used to enable the IdleRight2 to monitor the battery voltage). This input requires a +12V input to activate.
   GND: Connects to Vehicle Ground Point. This wire needs to be connected directly to a vehicle ground point, such as Fuse Box or Negative Battery Terminal, as it is used to measure the battery voltage.

⚠ **GROUND CONNECTION MUST BE VERIFIED TO NEGATIVE TERMINAL OF BATTERY (Less than 1 OHM).**

6. Set the MODE under the Access Door:
   OFF position: IdleRight2 is disabled. Use this setting when performing vehicle maintenance.
   RUN position: IdleRight2 is ready to use. Use this as the normal operating mode.
   HRS position: IdelRight2 is in Statistics mode. Use this to determine the number of hours IdleRight2 has saved your vehicle from idling.

⚠ **UNIT WILL NOT OPERATE UNLESS IT IS SWITCHED BACK INTO "RUN" MODE.**

7. SELECT switches under the Access Door:
   1: TRIGGER POLARITY - Defines the active state of the signal to interface with the Remote Starter System. Set to LOW for most Remote Staters.
   2: TRIGGER PULSE WIDTH - Signal active time duration for the Trigger Signal.
   3: LOW VOLTAGE LEVEL - Sets the level of Low Voltage Sense.



8. **Test the unit:** To ensure proper installation, set the Mode Switch to RUN mode and press the PUSH BUTTON. IdleRight2 should then engage the Remote Starter to start vehicle engine. If Remote Starter does not engage vehicle, please check all wires and installation of the unit or contact your Havis representative.

OPERATION

NORMAL OPERATION

Once IdleRight2 is set to operate in RUN mode, the unit will not activate the Remote Starter until the following steps occur.

a. Park vehicle at the location where the enabling device will be in use.
b. Switch on the enabling device needed and turn ignition off. Doing this will activate IdleRight2.

ONCE IDLERIGHT2 IS ACTIVATED:

a. Remove keys from vehicle, lock doors, and walk away.
b. Idleright2 will then monitor the battery voltage and activate the Remote Starter to start engine once voltage drops below the Low Voltage Sensing.

NOTE: In order to validate the Low Voltage Level and to prevent a false trigger, there is a 15 second delay from Sensing the Low Voltage to the trigger output.

c. When ready to leave the scene, switch off the enabling device, start vehicle engine, and drive away.

OFF MODE

Once IdleRight2 is set to operate in OFF mode, the unit is not active and the Remote Starter will not be triggered to start engine. Vehicle can be serviced in this mode.

NOTE: The remote starter can still be activated with manufacturer's key fob/remote when IdleRight2 is in OFF mode. Take care to follow Remote Starter manufacturer's vehicle maintenance preventions when servicing vehicle.

STATISTICS - IDLE HOURS SAVED

Use this feature to determine the number of idle hours your IdleRight2 has saved your vehicle. Once you obtain the number of idle hours saved, visit www.idleright.com to calculate your fuel & maintenance savings. Hours saved will be indicated by the flashing of the LED, starting with the least significant digit and working backwards to fill each place holder of the total number of hours, up to 4 digits only.

(For example, if your total hours saved is 258, the LED will first flash 8 times red follwed by a green flash, when engaged again the LED will flash 5 times red followed by a green flash, engaged again the LED will flash 2 times red, followed by a green flash, and because this is the final digit, when engaged again the LED will show solid red, indicating the completion of the Statistics check.)

a. Set the Mode switch to HRS position.
b. Press the PUSH BUTTON once and count the number of times the LED flashes red, the completion of this digit reading will be indicated by a single green flash. Write this number down.
c. Press the PUSH BUTTON again and count the number of times the LED flashes red, followed again by a single green flash to indicate completion of this digit reading. Write this number down to the LEFT of the first number.
d. Press the PUSH BUTTON a third time and count the number of times the LED flashes red. Write this number down to the LEFT of the second number.
e. Press the PUSH BUTTON a fourth time and count the number of times the LED flashes red. Write this number down to the LEFT of the third number.

Place holder for digit in Step E.	Place holder for digit in Step D.	Place holder for digit in Step C.	Place holder for digit in Step B.

NOTE: If any digit is a ZERO *(e.g., 204 hours saved)*, the LED will display a single green flash in lieu of the red flashes when the PUSH BUTTON is pressed.

NOTE: LED will turn solid red to indicate the end of statistics check. If the total idle hours saved is less than 4 digits, LED will turn solid red after the PUSH BUTTON is pressed.