C-RSA751
Remote Stop/Start with Shift Lock and Fast Idle
2018 Dodge Ram
Contact InterMotive for additional vehicle applications.

Introduction

The C-RSA751 product is designed for the boom truck market. It comes in two models – the basic and the enhanced or the "-E" model. The C-RSA751 is capable of all operations with ignition key removed. This adds an obvious level of protection for the boom operator who can retain the key while working.

Basic Model (BV) – The C-RSA751-A basic model combines manual remote start/stop capabilities with shift lock and fast idle along with appropriate logic for controlling required boom functions. One input is used to engage/disengage fast idle, and two more inputs are for the remote start /stop. A hood switch interlock prevents C-RSA751-A from starting/stopping the engine if hood is open. Additional inputs are required to control other functions.

Enhanced Model (EV) – The C-RSA751-A-E model includes all the functions of the basic model with the addition of the following:

- Battery charge protection feature: auto-starts the engine when battery voltage (VBAT) falls below a programmed limit (2 different battery sources can be monitored independently).

- Independent ITC: engaged when the Master Switch is OFF.

- Aux battery current monitoring including "night feature" (see explanation below).

Installation Instructions

Disconnect vehicle battery before proceeding with the installation.

WARNING
Disconnect the battery to prevent setting a check engine light.

It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers.
It is important to avoid placing the module where it could encounter strong magnetic fields from high current cabling connected to motors, solenoids, etc. Also avoid radio frequency energy from antenna's or inverters next to the module. Finally, avoid high voltage spikes in vehicle wiring by always using diode clamped relays when installing upfitter circuits.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 1 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725-INS

Installation Instructions (continued)

Data Link Harness

The 2018 Ram has a "Gateway" module connected to the OBDII connector. The module is located behind the OEM Radio. The C-RSA751 data link harness T's into an 8-pin and 12-pin connector on this gateway module.

Follow the steps below to access the Gateway module.

1. Remove the upper (1) center bezel tray liner.
2. If equipped with the 115 V power outlet (4), remove the lower right (3) center bezel tray liner.


3. Remove the two fasteners (1) to the upper tray.

4. If equipped with the 115 V power outlet (2), remove the fastener (1) inside the lower right tray above the outlet.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 2 of 15

www.intermotive.net
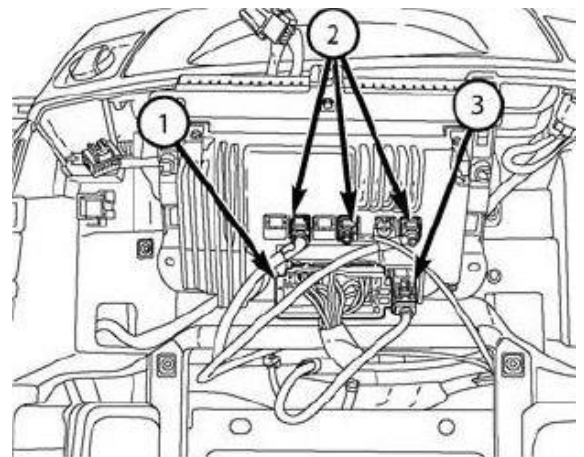products@intermotive.net
C-RSA751-012725-INS

5. Using a trim removal tool, disengage the retainer clips (2) that secure the instrument panel center bezel to the instrument panel.

6. Disconnect the wire harness connectors (1) and remove the center bezel from the vehicle.
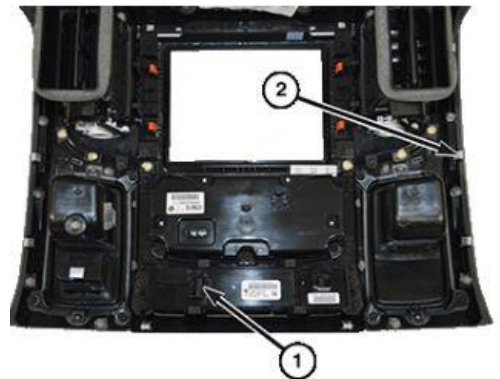
7. Remove the four fasteners (1) securing the Radio Receiver Module (RRM) (2) to the instrument panel.

8. Pull the RRM out far enough to access the back of the RRM.
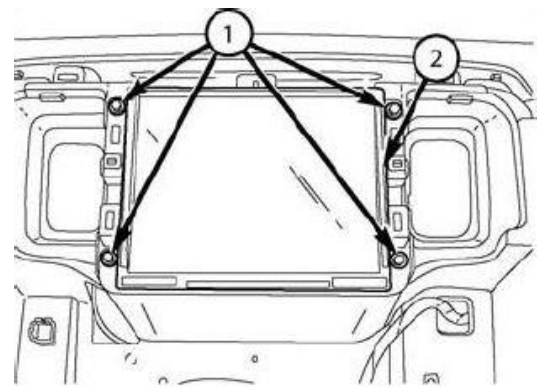
9. Disconnect the antennas (2), and electrical connector (1).

10. If equipped, disconnect the USB connector (3).

11. Remove the RRM from the instrument panel.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 3 of 15

www.intermotive.net
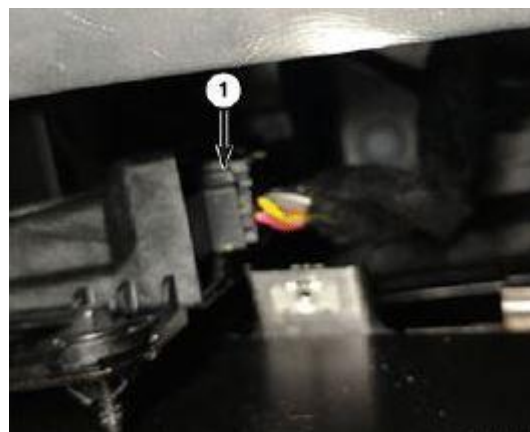products@intermotive.net
C-RSA751-012725-INS

Installation Instructions (continued)

12. Remove the 2 bolts (1).

13. Disconnect the Gateway Module wire harness connectors (1).
14. Remove the Gateway Module from the vehicle.

15. Plug in the 12-pin and 8-pin connectors from the Intermotive C-RSA751 Data Link harness. Plug the OEM 12-pin and 8-pin connectors into the mating connectors on the C-RSA751 Data Link connector.

16. Plug the free end of the Data Link harness into the mating 6-pin connector on the C-RSA751 module.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 4 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725-INS

Installation Instructions (continued)

Ignition Switch Harness

1. Locate the vehicle's ignition switch connector located below the steering column and behind the ignition switch (see photo).

2. Remove the connector from the ignition switch (push in on tab and pull out).

3. Install the C-RSA751 harness between the ignition switch and the OEM connector.

4. Plug the 12-Pin connector into the mating 12-Pin connector on the C-RSA751 module.

5. Plug the single row 4-Pin connector into the mating 4-Pin connector on the C-RSA751 module.

6. Plug the 8-Pin connector into the mating 8-Pin connector on the C-RSA751 module.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 5 of 15

www.intermotive.net
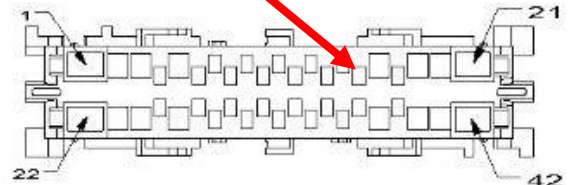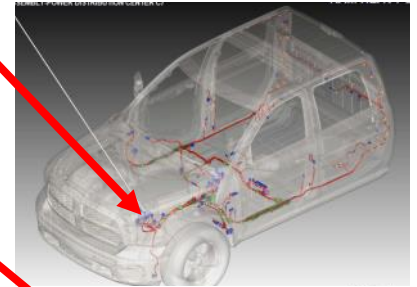products@intermotive.net
C-RSA751-012725-INS

HVAC Connection

There are two available A/C systems (standard and Automatic). Follow the appropriate instructions for the A/C system installed on the vehicle.
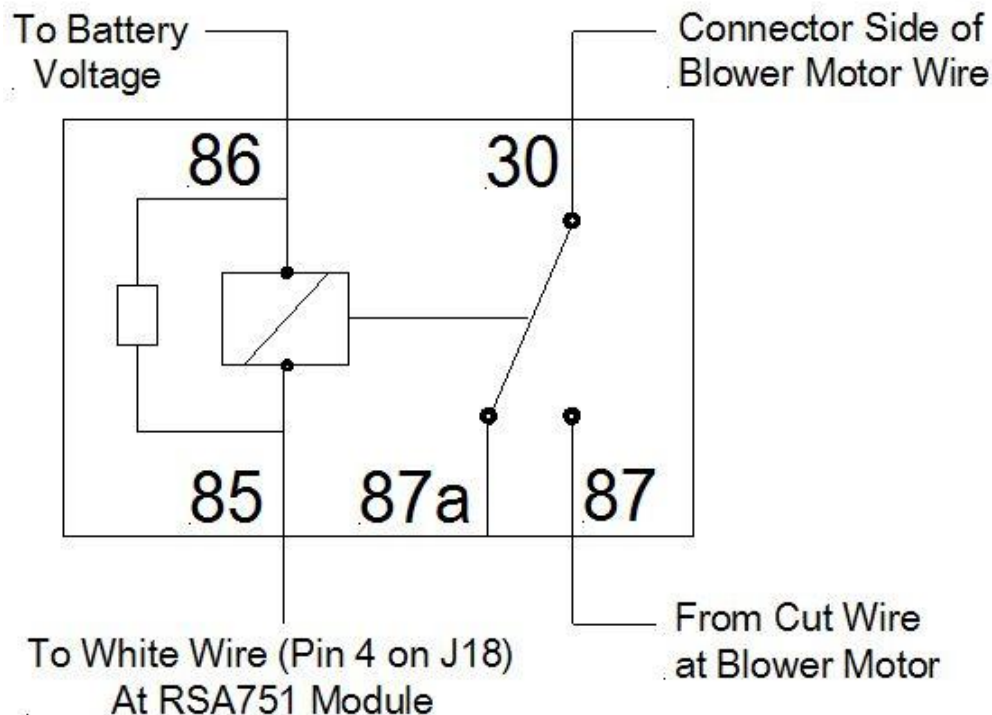
HVAC Connection (Automatic)

1. Locate the Power Distribution Center under the hood on the drivers side of the vehicle.

2. Locate the Black wire, pin 16 on the 42-pin connector (C7).

3. Cut the Black wire about three inches from the connector.

4. The short piece of the wire (connector side) should be stripped and connected (solder and either tape or heat shrink) to an 18 AWG wire.

5. Route the wire through the firewall to Pin 4 on the 6-pin Black connector on the C-RSA751 module.

6. The other side of the cut Black wire should be taped up as not to interfere with surrounding devices.

Wire Insertion Side

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 6 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725-INS

HVAC Connection (Standard)

1. Drop the main front HVAC panel to gain access to the rear of the HVAC controls.
2. Locate the large Black wire on the 5-pin (blower) connector located to the left, and cut this wire about three inches from the connector.
3. The short piece of the wire (connector side) should be stripped and connected (solder and either tape or heat shrink) to a 10 or 12 AWG wire and attached to pin 30 on a customer supplied relay).
4. The other side of the cut Black wire should be stripped and connected (solder and either tape or heat shrink) to a 10 or 12 AWG wire and attached to pin 87 on the customer supplied relay).
5. Attach a wire to pin 86 on the customer supplied relay and connect it to Battery Voltage.
6. Attach the White wire from Pin #4 (J18 at the C-RSA751 module to pin 85 at on the customer supplied relay.
7. Replace the front panel.

Blower Motor Relay Installation

InterMotive Inc.   Phone: (530) 823-1048   www.intermotive.net
12840 Earhart Ave.   Fax: (530) 823-1516   products@intermotive.net
Auburn, CA 95602   Page 7 of 15   C-RSA751-012725-INS

Installation Instructions (continued)

C-RSA751 Power Lug

Connect a fused VBAT source to the 1/4" power lug. It is the installers responsibility to size the fuse accordingly. A fuse no greater than 60 Amps is recommended. The C-RSA751 is designed for a maximum cable size of 2 AWG for this power connection. Installer **must** provide strain relief on cable outside of the C-RSA751's enclosure. It is recommended that the strain relief be within 6" of the enclosure. The absence of strain relief could result in damage to the module.

12-Pin Input Connector (J3) Definition

- Pin #1 - Master Switch (High True) - Must be asserted for "Key Out" and other operations. <u>NOTE: when the Master Switch is turned on, the HVAC system is disabled disallowing any AC in the front cab</u>. Some functions are independent of Master Switch position (See below).

- Pin #2 - Compartment Lights (High True) - Controls the compartment lights as long as the vehicle Park Lights or Headlights are On. These will operate with or without Master Switch.

- Pin #3 - N/C

- Pin #4 - Manual Engine Start (Low True) - A momentary low input will start the engine and run it at base idle as long as "hood switch closed" input is active. There is no start warning when using this input.

- Pin #5 - Manual Engine Stop (Low True) - A momentary low input will stop a running engine. <u>If the engine was started automatically, asserting this input is interpreted as an "Emergency Stop", and the engine will not auto start again until after a key cycle</u>.

- Pin #6 - Aux Battery current sense (PWM). This input measures the current from a remote sensor. If the current draw is continually below a programmed threshold for an amount of time (configurable), the module assumes the vehicle is parked for the night and maybe the Master Switch was left ON inadvertently. (See operations section for further details).

- Pin #7 - Key In - Comes pre-built into the harness.

- Pin #8 - Manual Fast Idle (Low True) - Momentary low input will engage/ disengage fast idle. The result of asserting this pin will differ depending on whether the engine is running or not. See the "Functional Notes" area of the "C-RSA751 Operation" section below for detailed explanation.

- Pin #9 - Current sense timer reset (High True) - A momentary high here will reset the countdown timer used for night (parked) operation. This should be connected to a source which asserts periodically whenever there is a person in the bucket .

12 Pin Input
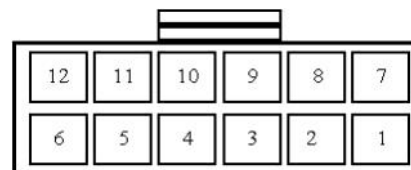
Back of Connector

12-Pin Input Connector (J3) Definition (continued)

- Pin #10 - Hood Closed (Low True) - Safety input; engine will not start/stop if hood is not closed.
- Pin #11 - Aux Battery Input (Analog) - Monitors an auxiliary battery voltage source if so configured.
- Pin #12 - Boom Out of Rest (High True) - Active when boom is away from its home position.
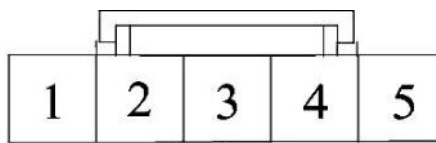
5-Pin C-RSA751 Connector (J17) Pin-Out Definition

Each Main Power output is fused and rated at up to +12V/20A. The Low current outputs are not fused (but are self-monitoring) and are each rated at +12V/0.5A.

The 5 fused output pins on connector J17 are defined as follows:
- Pin #1 Compartment Lights
- Pin #2 Boom Lights
- Pin #3 N/C
- Pin #4 N/C
- Pin #5 N/C

Connect the desired outputs to vehicle equipment as needed. Tape up unused leads.

5 Pin Output

| 1 | 2 | 3 | 4 | 5 |

Back of Connector

6-Pin C-RSA751 Connector (J18) Pin-Out Definition

- Pin #1 - N/C
- Pin #2 - Hour Meter
- Pin #3 - N/C
- Pin #4 - HVAC Blower
- Pin #5 - Master 2 (12V)
- Pin #6 - Master 1 (12V)

6 Pin Output

| 1 | 2 | 3 | 4 | 5 | 6 |
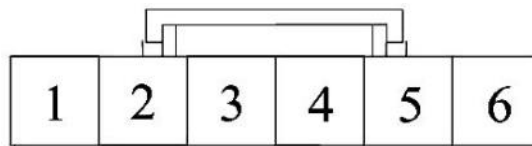
Back of Connector

2-Pin C-RSA751 Connector (J20)

Connector J20 contains the two Black ground wires for relay output fuse sensing and low true relay outputs. This is not an optional connection. The wires in this connector must be attached to a good chassis ground for the system to function properly.

Reconnect the vehicle battery

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 9 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725-INS

C-RSA751 OPERATION

The majority of the C-RSA751 functions are enabled only upon turning on the Master Switch and removing the ignition key. However, Compartment Lights, Boom Lights, and ITC function (if configured) are active and can be operated regardless of the Master Switch position.
To activate all other functions, the following sequence should be performed:

1. Place the vehicle in PARK with the Park Brake applied and Key in the "Run" position.
2. Turn On the Master Switch — the beeper will start.
3. Turn key to ACC then to OFF position and remove key - beeper will stop and the master outputs will be enabled. Key should be kept out of ignition until time to drive the vehicle again. The C-RSA751 is now in control of the ignition functions and is able to start and stop the engine automatically.
4. All RSA functions are now enabled; NOTE: When the Master Switch is turned On, the shifter will be locked. The shift lock is enabled (by default) when either the Master Switch is On or the boom is away from its rest position. Shift lock is disabled with Master Switch Off and the boom at rest. This can be changed via the programmability option of locking the shifter only when the boom is out.

Disable operation sequence for the C-RSA751:

1. Make sure the boom is back in its rest position so shift lock can be disengaged at the proper time.
2. Turn the Master Switch to "Off" - this will disable all C-RSA751 functions and return ignition control back to key operation. NOTE: If for some reason the boom is not back at its rest position at this time, shift lock will remain engaged, and module will not go into Sleep mode as noted in #3.
3. If nothing else is done at this point (assuming the Key is out of the ignition), the C-RSA751 will go into a Sleep mode (low power) as soon as CAN traffic stops on the vehicle. Module "wakes up" as a result of CAN traffic resuming.

Functional Notes:

- The module has a Manual Engine Start input, and a Manual Engine Stop input which operate with the Master Switch engaged. Starting the engine manually will also start the Idle Timer Controller (ITC) if configured, and the engine will shut down at the end of the programmable delay; the default delay is set to 5 min. The engine runs at base idle when manually started. The beeper will announce 15 sec. before shutdown.

- The module has a single input for manually controlling fast idle. It will either engage or disengage fast idle depending on the current state. If (BV), the engine must be running in order to use this manual input; If (EV), the engine will first auto start (if not already running) and then go into fast idle. Any time fast idle is engaged, the ITC feature is overridden i.e. the engine will run at least as long as fast idle is engaged. ITC will resume counting down when fast idle is disengaged. Fast Idle can be temporarily disabled by pressing the service brake. Fast Idle resumes when the brake is released.

- (EV) The Charge Protect feature automatically starts the engine and engages fast idle when either of two battery voltages falls below a predetermined level. The engine will continue to run until the Stop conditions are met. The Stop conditions can be programmed in two different ways: 1. Engine stops after the battery voltage has risen to a fixed amount (1.6v above the low trip point) and has continued for an additional (configurable) amount of time or 2. Engine stops after a (configurable) time window without concern for voltage level. NOTE: voltage samples are filtered and must be consistent for 5 sec. (low threshold) and 3 sec. (high threshold) to be considered valid.

InterMotive Inc.   Phone: (530) 823-1048   www.intermotive.net
12840 Earhart Ave.   Fax: (530) 823-1516   products@intermotive.net
Auburn, CA 95602   Page 10 of 15   C-RSA751-012725-OP

Functional Notes:

- Besides the low battery condition, additional preconditions for auto starting the engine for the charge protect feature are: 1. Vehicle in PARK. 2. Vehicle speed less than 2MPH 3. Engine Coolant temp. below 110 degrees C. and 4. Vehicle hood closed. If the Minimum ECT feature is enabled, this also becomes a precondition. NOTE: Fast Idle will not engage unless engine speed is between 400 and 2800 RPM.

- (EV) Any time the engine is running <u>as a result of an auto-start</u> and the manual Stop is asserted, the C-RSA751 treats this as an emergency Stop and will not allow any more auto-starts until after the next key cycle (i.e. disabling RSA functions by turning OFF the Master Switch and then back ON again).

- (EV) "Night Feature" If the aux battery current monitor is installed and enabled, the module monitors this current while the Master Switch is on. If the current falls below a configurable threshold for a continuous period of time (configurable), the module considers this to be a situation where the vehicle is parked for the night unattended. In this case, the module disables the auto start/stop feature. Further, if the aux battery voltages falls below an "emergency" value (configurable), the module turns off all loads under its control. If the main battery voltage falls below an "emergency" value (configurable), the module generates a Key Off condition which will cause the module to go to sleep (low power mode) after CAN traffic ceases. During the countdown time, if the current rises above the predetermined level, the timer will shut off and reset. Also during this period of counting down, a particular input (pin 9), if connected, can (by assertion) reset the countdown timer. In both of these cases, normal operation would continue with auto start/stop fully functional.

  <u>CURRENT SENSOR CALIBRATION</u>

  For the current sensor to operate accurately, it must first be calibrated. This is done with the sensor in a "no load" condition (i.e. no current flowing) by performing the following sequence: 1. Key in the RUN position, engine OFF, and Master Switch OFF. 2. Press the red TEST button 5 times slowly (i.e. take about 2 sec. for a complete push and release). During this time, other LEDs may turn on and off. After the fifth time, the STATUS LED will be blinking 4 times (bursts). 3. Press and hold the Service Brake and press the test button one more time. The STATUS and FAULT LEDs will blink together and RED LEDs (8 through 4B) will turn on successively indicating the current sensor is taking readings and calibrating. If these last group of LEDs fail to turn on it may mean you were not applying the service brake. Once this sequence completes, the current monitor is calibrated. NOTE: the current monitor indicates a <u>difference</u> in current from that which it measured at calibration and the present value.

- (EV) Any time the engine is about to auto start, an external warning (if connected and enabled) will be heard either as a continuous or a beeped output (configurable) for an amount of time (configurable) prior to actual engine start. <u>No such warning is given for an engine manual start.</u>

- While the Master Switch is enabled, the C-RSA751 keeps track of engine run time. It stores this accumulated time (in seconds) in non-volatile memory, and using the download cable and a laptop, this time can be displayed. Besides an overall time (which just continues to accumulate), a resettable "lap time" can also be checked. To reset the lap timer: Have the Park Brake applied, Transmission in Park and Master Switch OFF. Pump the Service Brake rapidly (at least 4 times within 5 sec.). The beeper will briefly sound indicating the lap timer has been reset to zero.

InterMotive Inc.	Phone: (530) 823-1048	www.intermotive.net
12840 Earhart Ave.	Fax: (530) 823-1516	products@intermotive.net
Auburn, CA 95602	Page 11 of 15	C-RSA751-012725-OP

C-RSA751 OPERATION (Continued)
Idle Timer Controller on Enhanced module (ITC):

As previously noted, the ITC feature is enabled when vehicle is operating in the Master Mode (Master Switch ON and key out of ignition), but it is also enabled with the Master Switch OFF under the following preconditions: 1. Transmission in Park or Neutral, 2. VSS < 2, 3. Minimum ECT reached & 4. Engine running. The ITC countdown window is the same as for the Master Mode ITC operation, and pushing the service brake will reset the count as usual. The module beeper will sound 15 sec. prior to engine stop. NOTE: Once the engine has stopped, module disables AC blower (and AC) operation — to reset the blower, user must restart the engine then enter and exit the Master Mode.

Diagnostics:

The C-RSA751 module has a number of LEDs and a "TEST" button that can be used to gain information about it's operation and assist in diagnosing problems. Some indicators are only meaningful to Intermotive Techs and are indicated below with "IM internal" :

- Status LED (1, amber): Has different definitions depending on the situation. In normal operation, it will be ON until Master Mode is entered, then it turns OFF. When in Diagnostic mode, it will either blink out the ID of the AFIS state or blink out the particular Diagnostic Page. Diagnostic pages (of which there are 4) are entered each time the "TEST" button is pushed (see below). If the Fault LED is ON, it will blink out the fault or error ID.

- Fault LED (1, red): Turns ON whenever there is an internal fault or error. Usually the "Status" LED will also be blinking if this LED is ON.

- Relay LEDs (8, green): Any time a power relay is energized, its associated LED turns ON.

- Fuse LEDs (11, red): Various definitions; In normal operation, any one of these being ON indicates the associated fuse is blown. When in PAGE 1 of Diag. Mode , active LCO outputs on J4 are indicated as follows :

Fuse1	LCO1-Vehicle Secure		Fuse4B	LCO5-Ignition Control
Fuse2	LCO2-Engine Start Warning		Fuse6	LCO8-Current Sensor Power
Fuse4A	LCO4-Ignition Control			

When in PAGE 2 of Diag. Mode, active Digital inputs on J3 are indicated as follows:

Fuse1	Pin1 – Master Switch (High True)		Fuse4C	Pin8 – Manual AFIS Ctl (Low True)
Fuse2	Pin2 – Comp Lights (High True)		Fuse5A	Pin9 – Countdown Reset (High True)
Fuse3	Pin4 – Engine Start (Low True)		Fuse5B	Pin10 – Hood Closed (Low True)
Fuse4A	Pin5 – Engine Stop (Low True)		Fuse6	Pin12 – Boom Out of Rest (High True)
Fuse4B	Pin7– Key Sense (High True)			

When in PAGE 3 & 4 of Diag. Mode - IM internal.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 12 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725-OP

Diagnostics (continued):

To enter Diagnostic "pages" requires pushing the Test button. After the first "push" the STATUS LED will blink out the state of the Fast Idle routine (IM internal). The next push puts you on Page 1 - STATUS LED will blink one time and repeat to indicate this. Pushing the button again will go to Page 2 with the STATUS LED blinking twice and repeat etc. After the fifth push, the program reverts back to normal operation. NOTE: while in any Diag. Page, normal operational functions continue.

Because the module LEDs are not readily observable, a method is needed to alert a person (in the bucket for example) of any faults that may have occurred. The module handles this by turning on the "Engine Start" warning for 2 sec then turning it OFF for 20 sec. then back ON again for 2 sec. etc. If this is observed, the user should remove the cover on the module to look at the STATUS LED to determine the fault code. It will be blinking out a 2-digit number with the following meanings:

41, 42	CAN Fault		47	LCO output Faulted
43	LCO Initialization Fault		48	Lost LIN data
44	Board over temperature Fault		49	STOP engine input active while trying to start engine
45	Current Sensor - Invalid Calibration Reading			
46	Current Sensor - Invalid Reading			

Parameter modification (optional):

The C-RSA751 has many parametric settings which dictate its operation. The module comes from the factory with default settings in place, but these can be adjusted in the field to suit the user. Additional equipment is needed to do this and also to view engine run times as stated earlier.

Additional Requirements:
- USB to Serial Communication Cable (part number a-IPU) which is a one time purchase. This kit is required for all programming and is recommended to be kept in a central location.
- Laptop computer (parametric modification is done while module is installed on the vehicle)

Reconfiguration
1. Ensure that the proper drivers are installed for the USB to Serial Communication cable provided by InterMotive. All driver files are located online at: http://www.ftdichip.com/Drivers/VCP.htm
2. Find the correct drivers for your system and follow the steps to download the latest version (located under the "Driver Version" heading). If unsure about the installation process, please contact InterMotive for further assistance.
3. Once the installation process is complete, plug the Communication cable into one of the computer's USB ports.
4. Ensure the vehicle's key is off and plug the other end of the download cable into the port labeled 'COMM' on the module.
5. Open the communication application HyperTerminal. This program can be found under: Start > All Programs > Accessories > Communications > HyperTerminal.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 13 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725-OP

Parameter modification (continued)

Reconfiguration

5. A prompt will appear to give this connection setup a name. It's recommended to use something meaningful such as "RSA Config".

The next window will prompt to select the COM port to setup the connection on. Typically, the highest numbered COM port will be the InterMotive Communication cable.

Note: This can be double-checked on Windows XP by right-clicking on 'My Computer' and selecting 'Properties.' From this window select the 'Hardware' tab and click on 'Device Manager.' In the Device Manager window, expand the 'Ports' menu and the download cable will display as 'USB Serial Port.'

In the next window, several of the default parameter for the Port Settings need to be changed: Change the Bits per second to: **57600**, Data bits: **8**, Parity: **None**, Stop bits: **1**, and Flow control: **None**. HyperTerminal setup is now complete.

Making Changes:

1. Turn the vehicle key to the ON position. The RSA module will wake up and text will display on the open HyperTerminal window.

2. If text does not appear, unplug the 6 pin connector from the RSA module, wait several seconds and plug the connector back in.

3. If text still does not appear, go to File > New Connection and try re-configuring the HyperTerminal as described above. If unsuccessful, contact InterMotive for further assistance.

```
        RSA750A Configuration Mode

Modify parameters by selecting one of following numbers:
   1 = Idle Shutoff Timer (delay)
   2 = Min ECT for Idle Timer shutoff
   3 = Min ECT threshold for Fast Idle operation
   4 = Low (VBAT/Aux VBAT) threshhold values
   5 = Fast Idle duration (for Low VBAT trig)
   6 = Fast Idle RPM value
   7 = AuxBat Current Monitor
   8 = Auto-Start Warning Duration
   9 = System ON/OFF Functions

       . ..Press ESC to Exit Configuration Mode

   Select -->_
```
Screen Shot 1

4. With communication established, type in the characters **cfg** (followed by the enter key) and the screen will look like Screen Shot 1.

5. Enter the number (1 - 9) for the parameter you wish to change.

6. Follow the screen instructions to make changes. Changes are stored in non-volatile memory, so they will only need to be made once.

7. Press the ESC key to leave the configuration mode.

8. When finished, Key Off ignition and disconnect the communications cable.

NOTE: Typing the characters **itime** (then enter) will display the three values of accumulated engine running time.

InterMotive Inc.
12840 Earhart Ave.
Auburn, CA 95602

Phone: (530) 823-1048
Fax: (530) 823-1516
Page 14 of 15

www.intermotive.net
products@intermotive.net
C-RSA751-012725

C-RSA751
S-MI521E-15

S-H123BX

Pin	Wire	Function
1	OPEN	(No Connection)
2	PINK	(Auto Start Warning)
3	BLUE	(Ignition Function)
4	DARK BLUE	(Ignition Function)
5	GRAY	(Ignition Function)
6	OPEN	(No Connection)
7	YELLOW	(Ignition Function)
8	RED	(+5V DC)

S-H133TAX

Pin	Wire	Function
1	RED	(Battery Voltage)
2	YELLOW	(CAN 1 High)
3	GREEN	(CAN 2 High)
4	GRAY	(Ground)
5	BROWN	(CAN 1 Low)
6	BLUE	(CAN 2 Low)

S-H123BX

Pin	Wire	Function
1	YELLOW	Input 1 (Master Switch)
2	LIGHT BLUE	Input 2 (Compartment Lights)
3	OPEN	Input 3 (No Connection)
4	WHITE	Input 4 (Engine Start)
5	ORANGE	Input 5 (Engine Stop)
6	BROWN	Input 6 (Aux. Battery Current Sense)
7	YELLOW	Input 7 (Key Input from Ignition)
8	VIOLET	Input 8 (Manual AFIS On/Off)
9	GRAY	Input 9 (Current Sense Countdown Reset)
10	DARK GREEN	Input 10 (Hood Closed)
11	RED	Input 11 (AUX VBat Monitor)
12	DARK BLUE	Input 12 (Boom out of Rest)

S-H123BX
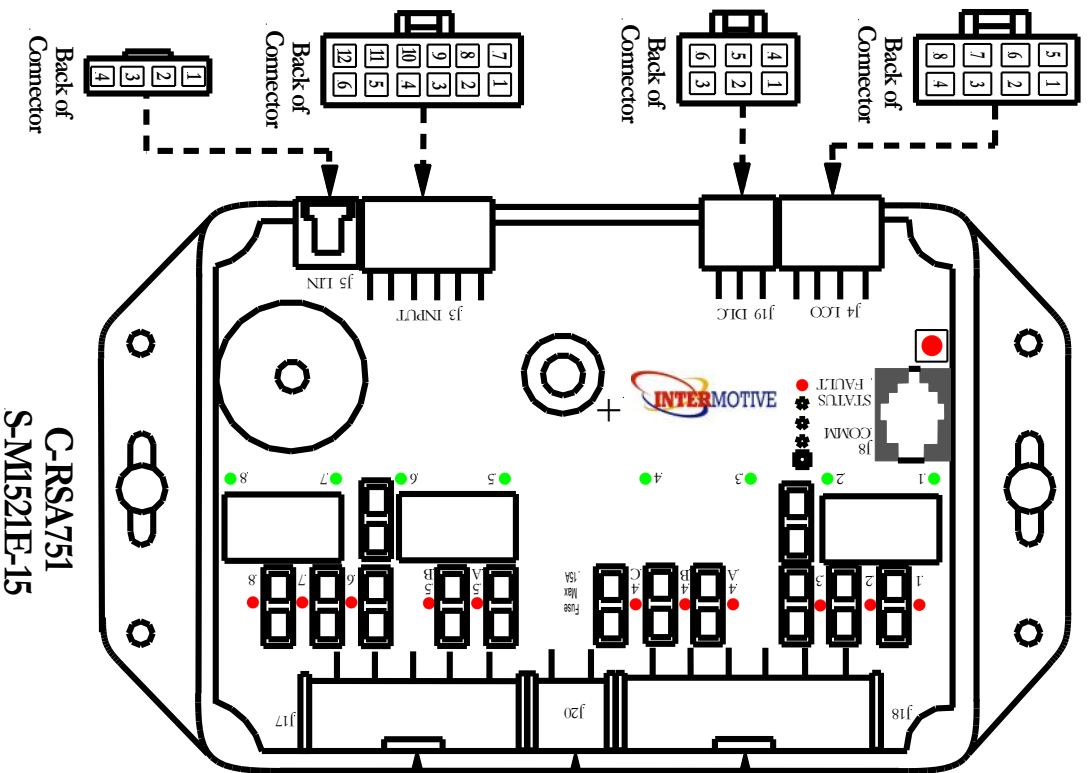
Pin	Wire	Function
1	BLACK	(Ground)
2	WHITE	(Not Used)
3	DARK GREEN	(Ignition Function)
4	WHITE	(Not Used)

S-H100BX

Pin	Function
1	(No Connection)
2	(Hour Meter)
3	(No Connection)
4	(HVAC Blower)
5	(Master 2 Control)
6	(Master 1 Control)

S-H99BX

Pin	Function
1	(Power/Ground)
2	(Power/Ground)

S-H98BX

Pin	Function
1	(Compartment Lights)
2	(Boom Lights)
3	(No Connection)
4	(No Connection)
5	(No Connection)

Back of Connector

J5 LIN   J3 INPUT   J19 DLC   J4 LCO

STATUS   FAULT   COMM

INTERMOTIVE

Fuse Max 15A

J17   J20   J18

Submit product registration at www.intermotive.net

If the C-RSA751 fails any step in the Post Installation Test, review the installation instructions and check all connections. If necessary, call InterMotive Technical Support at (530) 823-1048.