

BRC805

Brake Retarder Controller

Medium Duty J1939 Vehicles: F650/750 (diesel only),
International, and Freightliner



Introduction

The Brake Retarder Controller product is a control interface module to be used with a KLAM PWM brake retarder controller (ECS). The module will collect real time vehicle information (required by the ECS) and provide this data to the brake retarder controller.

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.

Disconnect the battery before proceeding with the installation.



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

Installation Instructions

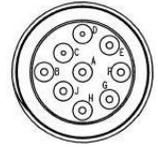
BRC805 Module

Remove the lower dash panel below the steering column and find a suitable location to mount the BRC805 module. Do not mount the module where it will be exposed to excessive heat. Do not mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module.

J1939 Data Link Harness (Blunt Cut version)

(Do not perform if using the optional P2 or P3 Plug and Play Data Link Harness)

- **Important:** On the following wires use solder and electrical tape to make all of the connections.
- Locate the vehicle's J1939 Connector. It will be mounted below the lower left dash panel. Remove the J1939 Connector from the mounting bracket.
- Locate Pin A of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Black wire from the BRC805-A Data Link Harness.
- Locate Pin B of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Red wire from the BRC805-A Data Link Harness.
- Locate Pin C of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Yellow wire from the BRC805-A Data Link Harness.
- Locate Pin D of the J1939 connector. Do not cut the wire! Strip the insulation 1" from the J1939 connector and attach the Green wire from the BRC805-A Data Link Harness.
- Plug the free end of the Data Link harness into the mating 6-pin connector on the BRC805-A module.
- Secure the BRC805-A Data Link harness so that it does not hang below the lower dash panel.



Back of the connector



J1939 Data Link Harness (Optional P2 Plug and Play Data Link Harness)

- Locate the vehicle's J1939 Connector. It will be mounted below the lower left dash panel.
- Remove the J1939 Connector from the mounting bracket.
- Connect the BRC805-A Data Link harness J1939 female connector to the vehicle's J1939 connector.
- Mount the BRC805-A Data Link harness J1939 male connector to the vehicle's J1939 connector mounting bracket.
- Plug the free end of the Data Link harness into the mating 6-pin connector on the BRC805-A module.
- Secure the BRC805-A Data Link harness so that it does not hang below the lower dash panel.



J1939 Data Link Harness (Optional P3G Plug and Play Data Link Harness - MT-45 Chassis)

- Locate the vehicle's J1939 Connector. It will be mounted below the lower left dash panel.
- Remove the J1939 Connector from the mounting bracket.
- Connect the BRC805-A Data Link harness J1939 female connector to the vehicle's J1939 connector.
- Mount the BRC805-A Data Link harness J1939 male connector to the vehicle's J1939 connector mounting bracket.
- Plug the free end of the Data Link harness into the mating 6-pin connector on the BRC805-A module.
- Secure the BRC805-A Data Link harness so that it does not hang below the lower dash panel.



12 pin BRC connector pin-out definition

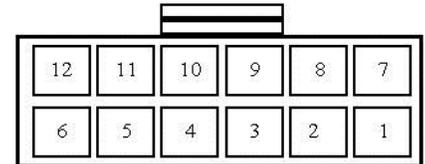
This connector contains the output pins.

The outputs are defined as follows:

- Pin #1 Throttle Position Equal to Closed
- Pin #2 ABS Event Equal to True
- Pin #3 Not Used
- Pin #4 Not Used
- Pins #5-6 Not Used
- Pin #7 Jumper Wire to Pin #12
- Pin #8 Engine Running
- Pin #9 VSS 2.2Hz/MPH
- Pin #10 Transmission Range Equal to Park
- Pin #11 Clean Tach. Out - $CTO = ((RPM/2)*\#Cyl) = \text{pulses per minute.}$
E.G. 600rpm = 2400ppm (8 cylinders)
- Pin #12 Jumper Wire to Pin #7



12 Pin IO



Back of Connector

Harnessing will be provided by customer. **A jumper wire must be connected between Pins 7 and 12.**

Reconnect the vehicle battery

Initial Installation Power-Up:

The following sequence must be performed prior to mounting the BRC805 module. The initial installation is completed as follows:

1. Ensure the Data Link harness 6 pin connector is NOT yet connected to the BRC805 module.
2. Turn the vehicle key on, engine off.
3. Press the Red button on the BRC805 module printed circuit board labeled "Test", while plugging in the 6-pin Data Link connector. This allows the BRC to capture the VIN to ensure proper operation.
4. If the VIN is captured and recognized, no LEDs on the module will light up.
5. If the VIN is not present or not received, the LEDs will scroll from low to high.
6. If the VIN is received but not recognized, the LEDs will scroll from high to low.
7. LEDs scrolling from the center outward indicates an invalid configuration is loaded on the module.

Note: Step 3 must be repeated if a module is moved to a new vehicle.

BRC805 Module Mounting

Ensure all the harnesses are properly connected and routed, and are not hanging below the dash area. Locate the BRC805 module in an area away from any external heat sources (engine heat, heater ducts, etc.). Mount the module using two screws, Velcro, or double backed tape.

BRC Post Installation Testing

1. Turn the ignition ON to wake up and initialize the BRC805 module.
2. With conditions met, ensure that the Brake Retarder functions properly.

The BRC805 is properly installed only if it passes the above tests. If any irregular operational issues persist, recheck the data configuration.

Contact InterMotive at 530-823-1048 for technical assistance.

Diagnostics:

To enter diagnostic mode, momentarily press the Red "Test" button on the BRC805 printed circuit board while the ignition is on. The on-board LED's will light when a corresponding load is active:

LED1 = Pin1 LED2 = Pin2 LED3 = Pin3 LED4 = Pin4
LED5 = Pin8 LED6 = Pin9 LED7 = Pin10 LED8 = Pin11
LED9 = Discrete Input 1 Active LED10 = Discrete Input 2 Active

Output Trouble Codes:

If there is an issue with one of the BRC outputs, the status LED will flash a two digit code while in diagnostic mode. A 1-1 code means everything is working properly. The first digit will correspond to the output number and the second digit will indicate the specific problem. The second digit can be:

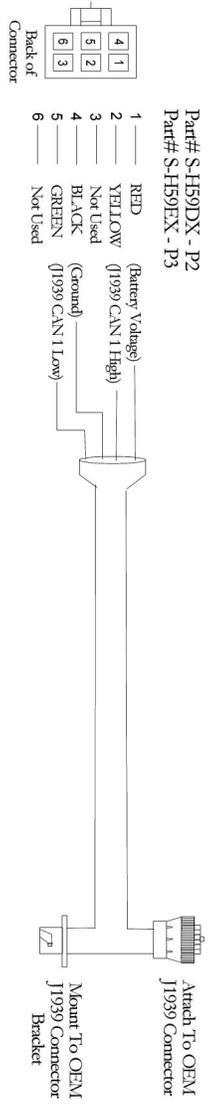
- 2 - Output fault (overcurrent or overvoltage)
- 3 - Invalid data (The data associated with the output is invalid)
- 4 - Data timed out (The data associated with the output has timed out)
- 5 - Unsupported data (The data associated with the output is not supported on the current vehicle)

BRC Operation:

Turning the vehicle ignition ON will wake up and initialize the BRC805 module.

When the key is turned OFF, the BRC805 module will go into a low power sleep mode. This may take up to five minutes, and the LED's on the module will go out once in sleep mode. Other vehicle activity such as opening doors, inserting key in the ignition, etc. may delay sleep mode.

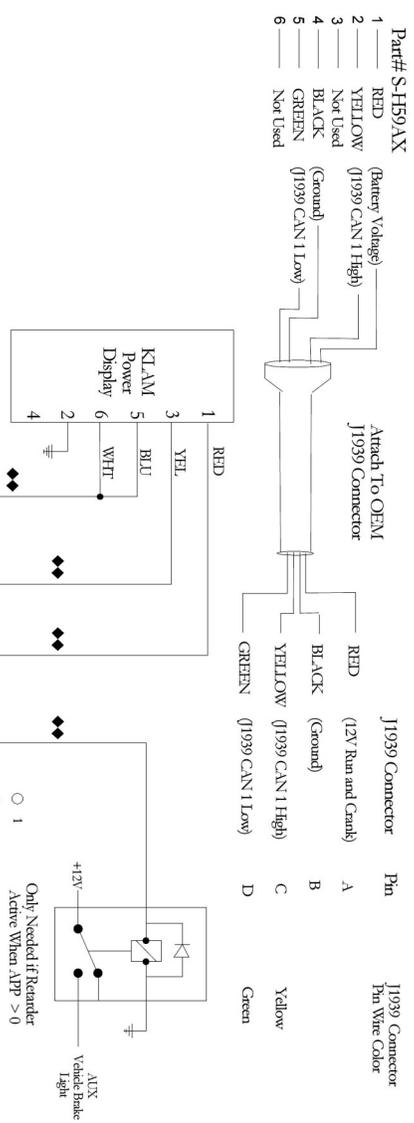
Optional
Data Link
Harness



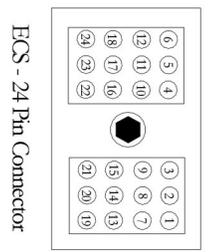
Part# S-H59DX - P2
Part# S-H59EX - P3

Part# S-H59AXX
1 RED
2 YELLOW
3 Not Used
4 BLACK
5 GREEN
6 Not Used

Back of Connector



Molex Part # 39-01-2120
Terminal Part # 3900-0077



Vehicle provides from Air Brake Pressure Sensor

Intermotive
B-BRC805

Wires 20 AWG to Intermotive module.
Lengths to be minimized based on
module location

- ◆ Connector view is from the back (wire insertion) side
- ◆◆ Lengths to be determined by installation design

Submit product registration at www.intermotive.net

If the BRC fails any step in the Post Installation Test, review the installation instructions and the loaded configuration by running the Graphical User Interface application. If necessary, call

InterMotive technical support @ (530) 823-1048.

BRC805-A-103020-CAD