Automatic Forced Regen Controller

RPM CONTROL COMPANY

1-866-519-9817

MADE IN CANADA

P/N AFR101

Automatic Forced Regen Controller Operation

The Automatic Forced Regen Controller (AFRC) will automatically perform a Parked Regen when the engine says it is necessary automatically. The system can be left on while driving and will only start to work once the interlocks are in their proper states continuously for five minutes. The AFRC will monitor the regen state of the engine and it will automatically send a signal to the engine for it to start a Parked Regen cycle. After the signal has been sent, it will look to see if the engine has accepted our signal and has gone into a Parked Regen State.

When the AFRC dash switch has been turned on, the indicator light will come on for two seconds and then go out if the interlocks are not in their proper states. Once the interlocks are in there proper states the system will count down from five minute and indicator light will flash slowly (Once per ½ second). When the timer has finished counting down the system will check to see if the engine needs a regen, if it does not need a regen, then depending on the engine temperature it will either increase the RPM of the engine to 900 or to 1200 RPM. At this time the indicator light will become solid and it will run at this RPM until the engine say it needs a regen. When the engine needs a regen, it will remove the set RPM request which will drop the engine to idle, once the engine is at idle, it will send a signal to the engine to start a Parked Regen. Once the engine is in a Parked Regen state the indicator light will blink slowly (Once per second). It will stay in this position until the engine has completed its regen cycle or the switch has been turn off.

If for some reason the engine is not accepting our signal to perform a Parked Regen due to low Def fluid, hard fault with the system, etc. then after 5 attempts it will turn our system off and the indicator light will flash quickly (Three times per second) showing that there is a problem on the truck side. Once the switch is turn off, this will reset our controller.

The AFRC comes with an indicator light for both power and a J1939 signal on the side of the box that will help with diagnosing.

Interlocks

Automatic Transmission: Parking Brake, Service Brake, Neutral or Park, Road Speed.

Standard Transmission: Parking Brake, Service Brake, Road Speed.

Troubleshooting

1) Indicator Light comes on solid for two seconds then goes out – System is waiting for the Interlocks to be in their proper states.
2) Indicator Light is flashing slowly (Once per Half Second) – Interlocks are in their proper state and system is counting down to put the engine into a fast idle state.
3) Indicator Light is solid – Engine is running at a Set RPM and waiting for the engine to need to be put in a regen state.
4) Indicator Light is flashing (Once per Second) – System is in a regen state.
5) Indicator Light is flashing quickly (Three times per Second) – System is in a failed state, unable to perform a regen. Check engine for diagnostic codes to identify the problem.

Automatic Forced Regen Controller
Installation Instructions
2014-2015 Western Star with DDEC13/15

1. Remove screws from center switch panel, remove parking brake knobs.
2. Mount the AFR Controller behind switch panel to the air plenum, use the screws supplied in kit or Velcro to mount.
3. Plug in both the 8 pin harness and the 4 pin harness into the connectors on the controller.
4. Run the 2 wire data cable over to the Diagnostic Connector found on the left side of the dash.
5. Where the DLC connector is mounted, remove the 3 screws that hold the knee bolster to the dash and there are 2 push pin clips that also have to be removed. Once removed, the DLC can be accessed from behind. Use the blue removal tool to remove the green wire found in Cavity "D", then install it into the Deustch 2 pin connector in cavity "1" as show in drawing. Install the green wire from the "Tee" harness into cavity "D". Use the blue removal tool to remove the yellow wire found in Cavity "C", then install it into the Deustch 2 pin connector in cavity "2" as show in drawing. Install the yellow wire from the "Tee" harness into cavity "C".
6. From the 8 pin connector locate the single black wire and run it to the back of the Regen Dash Switch. Locate the wire marked 492K going into the switch, it should be the wire that goes to the CPC 4/17 (Blue Connector). Tee into this wire using the scotch lock provided (or for a more secure connection, you may want to either butt connect or solder this connection).
7. To mount the switch and the indicator light, using the dash label supplied, find a location that you can mount the dash switch and light without interfering with any existing wiring or air lines. Once location is found affix the label to the dash, use the label as a guide and use a 1/8" drill bit to drill a hole in the center of both holes in the label. Then use a 3/8" drill bit to drill a hole in both of the previous 1/8" holes. Pick which side that you would like to mount the switch into and drill use a 15/32" drill bit to drill out that hole. Mount the toggle switch and diagnostic light into the appropriately drilled holes.
8. Run the power and ground wires to the fuse panel, plug the orange connector into the Ignition power source cavity found in the lower center of the fuse panel. Test this cavity to make sure that it turns on and off with the key switch. Secure the ground eye connector to a known good chassis ground.
9. To test for proper operation, make sure that the Power and J1939 communication lights on the side of the box are on solid. With the truck running, parking brake applied, transmission in neutral, (Clutch released on Standard Transmissions) turn toggle switch on and the indicator light should come on solid for two seconds and go out. Once the interlocks are in their proper states, the indicator light will come on and slowly flash (once per ½ second). At this time the system is counting down from 5 minutes, once this has completed without any interruptions, the engine will go to a set RPM of either 900 RPM or 1200 RPM depending on the engine temperature. See description page for the complete operation of the AFR101.

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5) Indicator Light is flashing quickly (Three times per Second) – System is in a failed state, unable to perform a regen. Check engine for diagnostic codes to identify the problem.

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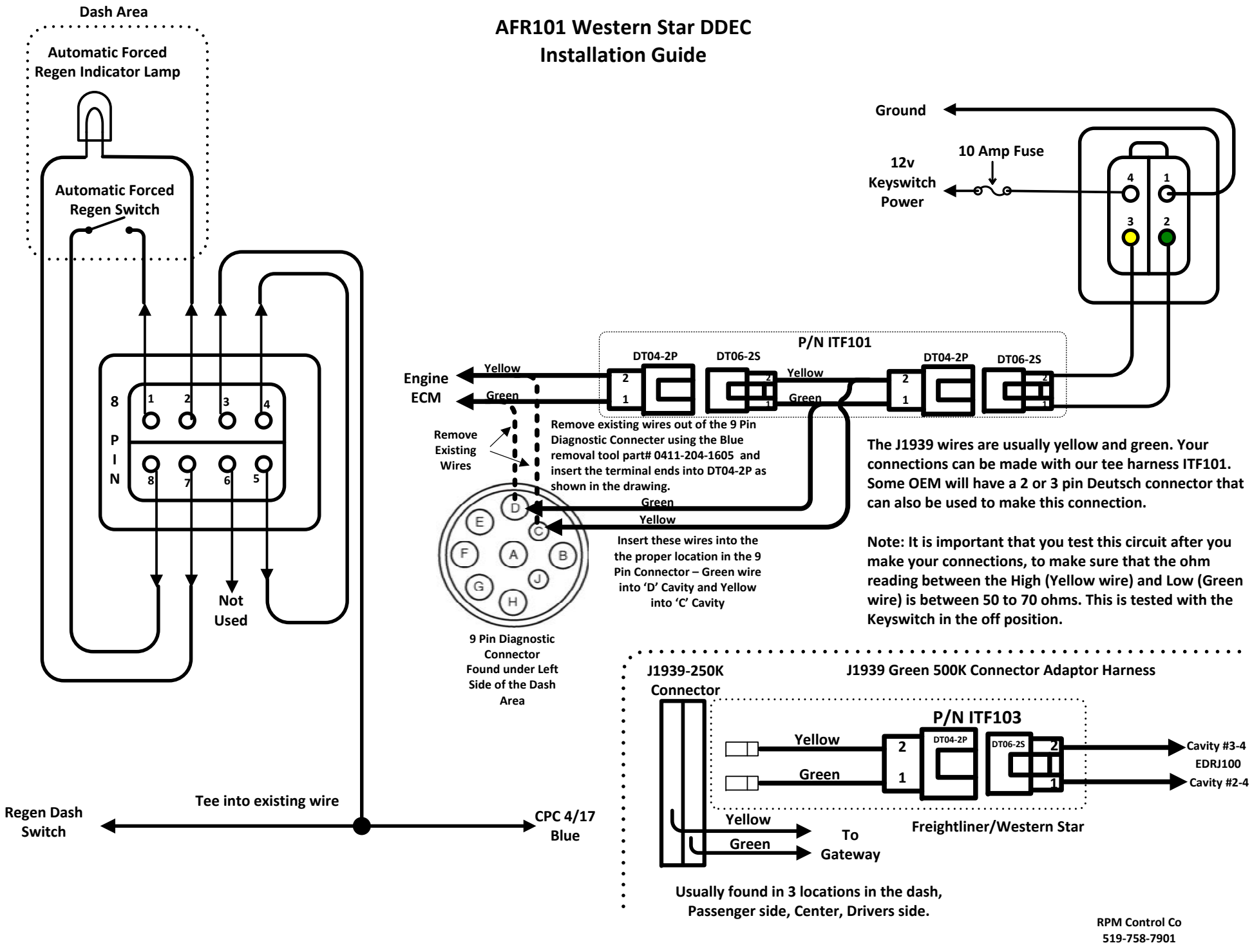
AFR101 Western Star DDEC
Installation Guide



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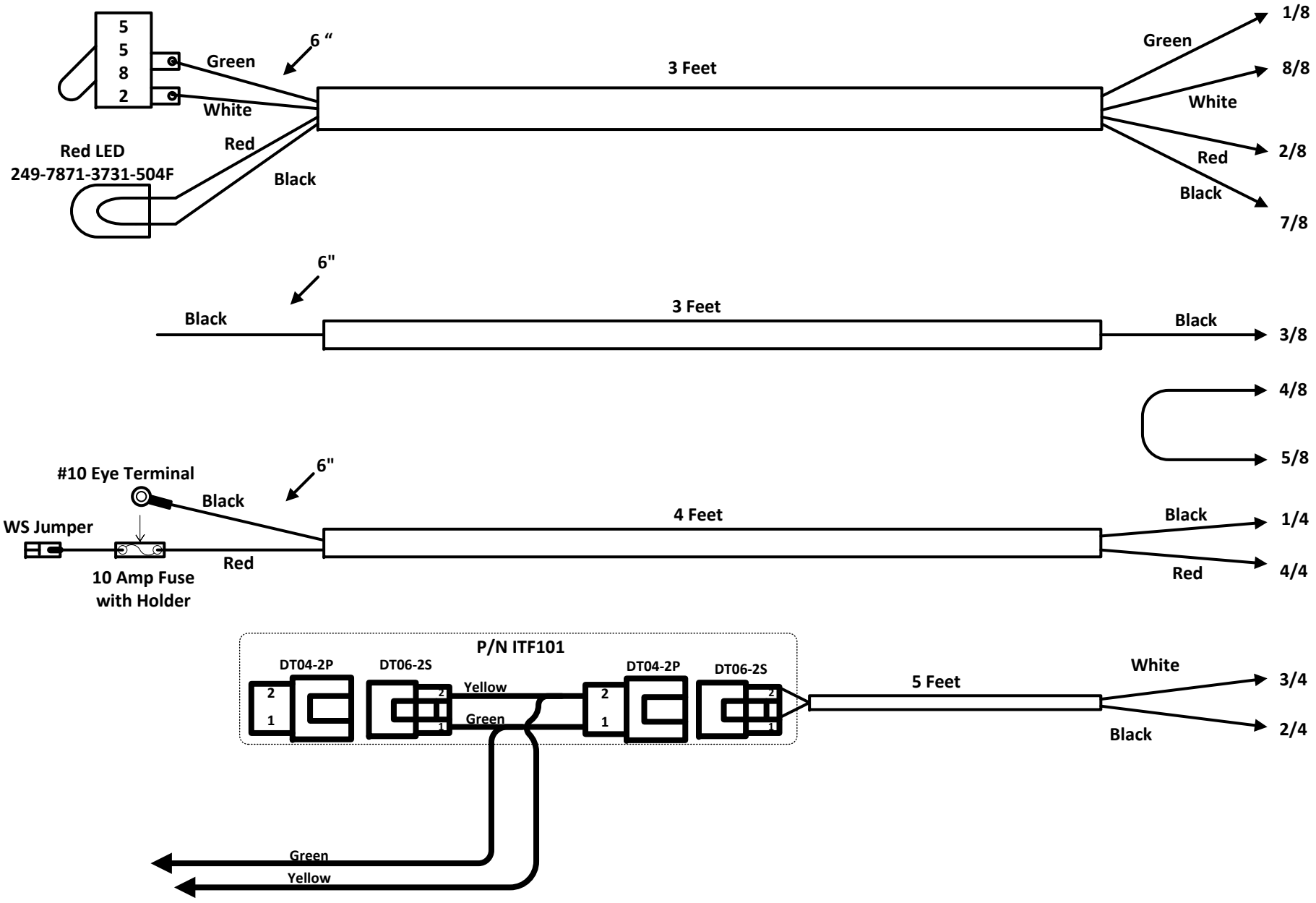
AFR101 – Harnesses



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