TRANSPO Rebuilder's Forum
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Regulators for Ford 6G Alternators

Inquiries on testing Ford 6G 'PCM Controlled' regulators are quite abundant these days.

Transpo Technical Services provides the following basic review of the PCM-type regulator..

Basic Operation: During alternator operation, the vehicle PCM monitors the output signal at the regulator LI pin and then provides a specific input signal to the regulator RC pin to control the regulation set point voltage. When a sudden load is applied to the charging system, the computer senses the load and effectively lowers the regulation set point voltage for a few seconds and then adjusts the signal to satisfy the demand of the vehicle electrical system. It should be noted that the PCM also monitors other peripheral loads, i.e., AC, transmission, etc. and alters the PWM signal applied to regulator RC, accordingly. This type of regulator control provides a charging system that responds very smoothly and limits the effect of the alternator load on vehicle performance.

Definition of Regulator Terminal Connections:

- **LI / Load Indicator:** This regulator 'output' pin provides a PWM feedback signal from the regulator circuit to the vehicle PCM. This feedback signal is an indication of alternator load; (how hard the alternator is working to support the required voltage set point). This regulator PWM signal has amplitude of 14 volts and a frequency of 125 Hz. It represents the field current signal, but is inverted. It should be noted that the LI has no direct control over Lamp function. Indicator Lamp function is solely controlled by the vehicle PCM..
- **RC / Regulator Control:** This regulator 'input' pin receives a vehicle PCM signal that is a 125 Hz PWM square wave. The PCM. signal communicates a desired voltage set point by providing a specific
- **AS / External Voltage Sense:** This regulator 'input' pin provides charging system reference voltage to the regulator. The regulator reacts to this by functioning in its primary voltage set point mode.

It should be noted that recent concerns regarding PCM regulator failure when bench testing units on the D&V tester has been narrowed down to a suspect program designed into the test bench adapter harness. Transpo Technical Services has been working with D&V to correct this issue.

Transpo offers a dedicated Signal Supply Module, VRC101-31 that is specifically designed to test PCM controlled Ford F601-type regulators. Instructions are provided with the VRC101-31. Contact your WAI-WRS or Authorized Transpo Distributor for availability..

Transpo 6G Regulator Overview

Transpo Regulator	Circuit	Volt Set	VSec	LRC	Active Lamp	Soft Start	OV Protect	Term Designation
F600	A	14.4	-	No	No	No	Yes	I-D-A
- **OE Visual ID:** Gray Housing w/ Gray Circuit Cover. - **Ref. No.:** F8WU-10C359-AB, 35-212. **Note:** Regulator shutdown with loss of sense (A) or light (I) connection.								
F601	A	PCM	PCM	PCM	PCM	PCM	PCM	LI-RC-AS
- **OE Visual ID:** White Housing w/ Black or Blue Circuit Cover. - **Ref. No.:** VP4F1U-10C359-AA, VP4L3U-10C359-AA, XW4U-10C359-AB, 35-213. **Note:** Regulation Voltage controlled by vehicle PCM (PWM signal input to RC-terminal). LI-terminal output provides feedback to vehicle PCM. Vehicle indicator lamp is fully controlled by the vehicle PCM.								
F602	A	14.4	-	7-Sec	No	Yes	Yes	I-FR-A
- **OE Visual ID:** White Housing w/ White or Gray Circuit Cover. - **Ref. No.:** XS7U-10C359-AC, XR2U-10C359-AB. **Note:** Regulator shutdown with loss of sense (A) or light (I) connection. FR provides feedback to vehicle PCM.								
F603	A	14.4	-	7-Sec	No	Yes	Yes	I-FR-A
- **OE Visual ID:** White Housing w/ Orange Circuit Cover. - **Ref. No.:** XS7U-10C359-AC, XS7U-10C359-BA, 35-214. **Note:** Field recovery diode circuit to protect ECU. Regulator shutdown with loss of sense (A) or light (I) connection. FR provides feedback to vehicle PCM.								
F605	A	14.4	14.6	No	No	Yes	Yes	I-D-A
- **OE Visual ID:** Gray Housing w/ Green Circuit Cover. - **Ref. No.:**VP3C3U-10C359-AA, 35-217. **Note:** Regulator goes to VSec (secondary regulation) and turns on light with loss of sense (A). With loss of light (I) connection, regulator continues to function but vehicle indicator light does not turn on. Design includes Field Current Limiting.								
F606	A	14.4	14.6	No	No	Yes	Yes	I-FR-A
- **OE Visual ID:** Black Housing w/ Black Circuit Cover. - **Ref. No.:** VP4LIU-10C359-AA. **Note:** Regulator goes to VSec (secondary regulation) and turns on light with loss of sense (A). With loss of light (I) connection, regulator continues to function but vehicle indicator light does not turn on. Design includes Field Current Limiting.								

Thank You For Your Business!