

<p style="text-align: center;"><b>Regulation System Connection Wire Diagram</b></p> <p>The diagram shows a terminal block on the left with terminals labeled W, L, S, FR, and PS. On the right is a physical regulator with terminals labeled F (Bottom), G, and B+.</p>	<p><b>System Regulator Type:</b></p> <ul style="list-style-type: none"> <li>● Voltage Set Point (Default): 28.4V</li> <li>● Regulation : A – Circuit</li> <li>● Active Lamp</li> <li>● S Open Lamp Off</li> <li>● IG Open Lamp On</li> <li>● W : Phase</li> <li>● FR: Terminal connected to Computer</li> </ul>
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PARAMETERS AND CONDITIONS		SYMBOLS	MIN.	TYP.	MAX.	UNITS
Operating Temperature Range		$T_{OP}$	-40	---	125	°C
Field		$I_F$	---	5	---	A
Voltage Set Point (2500 RPM, at 20A load)	@ IG = 20% duty cycle	$V_{SET}$	25.90	26.20	26.50	V
	@ IG = 50% duty cycle		27.80	28.10	28.40	
	@ IG = 70% duty cycle		29.00	29.30	29.60	
	@ IG = Hi (Default)		28.10	28.40	28.70	
Secondary Set Point (2500 RPM ,at 20A load)	@ IG = 20% duty cycle	$V_{SET2}$	25.90	26.20	26.50	V
	@ IG = 50% duty cycle		27.80	28.10	28.40	
	@ IG = 70% duty cycle		29.00	29.30	29.60	
	@ IG = Hi (Default)		28.10	28.40	28.70	
Speed Regulation (2000 RPM to 6000 RPM ,at load = 15A)		$V_{SR}$	---	-0.1	-0.3	V
Load Regulation (10% to 95% ,at Speed = 6000 RPM)		$V_{LR}$	---	-0.3	-0.5	V
Saturation Voltage @ 5A, 24Volts		$V_{SAT}$	---	0.6	0.8	V
Standby Current (Key off, VBAT = 25.2V)		$I_{SB}$	---	---	1.0	mA
Temperature Coefficient		$T_c$	-6	-3	0	mV/°C
Under voltage Indication		$V_{UV}$	15.0	16.0	17.0	V
IG signal frequency (The duty cycle will determine the set point.)		$f_{Rc}$	180	200	220	Hz
Regulator Operating frequency		$f_{Reg}$	200	250	300	Hz

**Safety Characteristics:**

- **Over voltage :**  $V_s = 48 V$  , 60 sec. from the ignition SW. is turned ON/OFF without failure.
- **Short Circuit Protection :** The regulator stands short circuit of Field without failure.
- **Repetitive Thermal Shock :**  
The Regulator shall be designed to withstand 500 cycles of -30°C to 125°C in 20 minutes and 125°C to -30°C in 20 minutes.
- **High Temperature Test :**  
The Regulator shall be designed to operate reliability at the rated current of alternator is 80% to 100% and at 6000 rpm ( shaft speed ) for a minimum of 10 hours at 125°C.

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<b>DATE OF FIRST EDITION</b>	<b>DATE OF REVISED EDITION</b>	<b>EDITION</b>	<b>MANU-SCRIPT</b>	<b>ORI-GINAL REVIEW</b>	<b>SECOND REVIEW</b>	<b>APP-ROVAL</b>	<b>ISSUED MARK</b>	<b>COPY'S NUMBER</b>