

NAME	VR-B709 Electrical Specification	NO	VR-1-1-1984
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<p align="center">Regulation System Connection Wire Diagram</p>	<p>Regulator Features :</p> <ul style="list-style-type: none"> ● Voltage Set Point : 14.3V ● Voltage Set Point : 13.4V (C_(PWM) 50 % duty cycle) ● Regulation : B – Circuit ● Active Lamp ● Soft Start ● Short Circuit Protection ● C terminal is PWM Regulation Voltage Control
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PARAMETERS AND CONDITIONS		SYMBOLS	MIN.	TYP.	MAX.	UNITS
Operating Temperature Range		T _{OP}	-30	---	125	°C
Field		I _F	---	5	---	A
Voltage Set Point (2500 RPM, at 20A load)	@ C = 20% duty cycle	V _{SET}	14.4	14.7	15.0	V
	@ C = 50% duty cycle		13.1	13.4	13.7	
	@ C = 70% duty cycle		12.1	12.4	12.7	
	@ C open (Default)		14.0	14.3	14.6	
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}	---	-0.4	-0.5	V
Saturation Voltage @ 5A, 12Volts		V _{SAT}	---	0.6	0.8	V
Standby Current (Key off, V _{BAT} = 12.6V)		I _{SB}	---	---	2.0	mA
Temperature Coefficient		T _C	-5	-2	--	mA/°C
LRC Delay Time (@ >3000rpm)		T _{LRC}	---	---	---	Sec
Soft-Start Duty		D _{SS}	15	25	35	%
Cut-in Speed		R _{CIS}	---	---	1300	RPM
Over Current Protection Threshold (@ 25°C)		I _{SD}	10	12	14	A
Regulator Operating frequency		f _{Reg}	225	250	275	Hz

Safety Characteristics:

- **Over voltage :** V_s = 24 V , 60 sec. from the ignition SW. is turned ON/OFF without failure.
- **Short Circuit Protection :** The regulator shall stand **short circuit on Field** without failure and return normal operation within 2 seconds once short condition is removed.
- **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 reliably at the load from 80% to 100% of the alternator rated current and at 6000 rpm (shaft speed) for a minimum of 10 hours at 125°C.

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