

# POWER-TRONICS™

## Electrical Power Controls

### Power-Tronics Voltage Regulator Model Crossover Chart

#### Common **Basler** Models

Original Basler Ratings			Power-Tronics Ratings				Installation Notes
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	
AVC63-4	63/105	4	XR8	XC4	63/105	8/4	
AVC63-7	63/105	7	XR8		63/105	8	
AVC63-12	63/105	7	XC14	XR8 + SEM250A	63/105	12/25	
AVC125-10	125/200	10	XR8 + SEM250B	SE300B	125/210	25	
VR63-4	63/105	4	XR8	XC4	63/105	8/4	
APR63-5	63/100	5	XR8	XC4	63/105	8/4	
APR125-5	125/200	5	XR8	XR5C	125/210	8/5	
SSR32-12	32/50	12	XC14	XR8 + SEM250A	32/52	12/25	
SSR63-12	63/100	12	XC14	XR8 + SEM250A	63/105	12/25	
SSR125-12	125/200	12	XR8 + SEM250B	SE300B	125/210	25	
AEC63-7	63/103	7	XC14	XR8 + SEM250A	63/105	12/25	
AEC42-7	42/90	7	XC14	XR8 + SEM250A	63/105	12/25	
SR4A	63/90	7	XC14	XR8 + SEM250A	63/105	12/25	Use 240V Input Power
SR8A	125/180	7	XR8 + SEM250B	SE300B	125/210	25	<b>DO NOT USE 277V Input Power!</b>
SR32A/H	32/45	20	SE300A	XR8 + SEM250A	32/52	25	Use 120V Input Power
SR32E	32/45	36	SE500A	XR8 + 2 SEM250As	32/52	40	Use 120V Input Power
SR6A	63/90	7	XC14	XR8 + SEM250A	63/105	12/25	Use 240V Input Power
SR9A	125/180	7	XR8 + SEM250B	SE300B	125/210	30	<b>DO NOT USE 277V Input Power!</b>
SR63H	63/90	20	SE300A	XR8 + SEM250A	63/105	25	<b>DO NOT USE 277V Input Power!</b>
SR63E	63/90	36	SE500A	XR8 + 2 SEM250As	63/105	40	<b>DO NOT USE 277V Input Power!</b>
SR125H	125/180	20	SE300B	XR8 + SEM250B	125/210	25	<b>DO NOT USE 277V Input Power!</b>
SR125E	125/180	36	SE500B	XR8 + 2 SEM250Bs	125/210	40	<b>DO NOT USE 277V Input Power!</b>
KR2F/FM/FF/FFM	32/45	12	XC14	XR8 + SEM250A	32/52	12/25	Use 120V Input Power
KR4F/FM/FF/FFM	63/90	3.5	XR8	XC4	63/105	8/4	Use 240V Input Power
KR7F/FM/FF/FFM	125/180	5	XR5C		125/210	5	<b>DO NOT USE 277V Input Power!</b>
KT1, 2, 3	125/180	2	XR8		125/210	8	Convert Exciter to 4-Wire
XR2004	63/90	3.5	XR8	XC4	63/105	8/4	

#### Common **Caterpillar** Models

Original Caterpillar Ratings			Power-Tronics Ratings				Installation Notes
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	
VR1-6	32/50	12	XC14	XR8 + SEM250A	63/105	12/25	Use 240V Input Power
SR43P (Transformer Type)	32/50	12	XC14	XR8 + SEM250A	63/105	12/25	Use 240V Input Power
318 Series (Shunt-Wound)	125/180	3	XR8		125/210	8	Convert Exciter to 4-Wire
318 Series (Rotor-Fed)	125/180	40	SE500B	XR8 + 2 SEM250Bs + AFM5X	125/210	40	Direct Feeding of Slip-Rings (Eliminates Rotary Exciter)
SRSE	63/90	60	SE1000A		63/105	80	Tray Type Regulator (On Top of Cabinet)
SRCR Model A	52/80	40	SE500A		63/105	40	Lift-Down Door on Side of Cabinet
SRCR (B-D)	63/80	80	SE1000A		63/105	80	Drawer Type Regulator (Above Generator Can Inside Cabinet)
SRCR (E-F)	115/180	80	SE1000B		125/210	80	Drawer Type Regulator (Above Generator Can Inside Cabinet)
Olympian (Non-Integrated)	63/100	4	XR8	XC4	63/105	8/4	
Olympian (Integrated)	63/100	4	None				<b>Integrated Models Cannot Be Replaced</b>
CDVR	63/100	12	XC14	XR8 + SEM250A	63/105	12/25	Isolate and Insulate PMG Leads (Not Used)

#### Common **Delco/Gen-Power** Models

Original Delco Ratings			Power-Tronics Ratings				Installation Notes
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	
H18000 Series	125/180	1.8	XR8	XR5C	125/210	8/5	
H3500 Series	63/105	3.5	XR8	XC4	63/105	8/4	
H7000 Series	125/180	3.5	XR8	XR5C	125/210	8/5	Over-Volt Breaker Trip & Under-Freq Light Will Be Unavailable
H9000 Series	125/180	3.5	XR8	XR5C	125/210	8/5	

#### Common **Electric-Machinery (EM)** Models

Original EM Ratings			Power-Tronics Ratings				Installation Notes
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	
VR65	32/45	12	XC14	XR8 + SEM250A	32/52	12/25	Use 120V Input Power
AMPAC Series	Varies	Varies	Call Us For Sizing		-	-	Brush-Type Unit, Shunt-Wound or Direct Rotor-Fed
BEMAC I & II	32/45	12	XC14	XR8 + SEM250A	32/52	12/25	Use 120V Input Power, Typically Field Resistance < 3.5Ω
BEMAC III	63/90	12	XC14	XR8 + SEM250A	32/52	12/25	Has Field Resistance > 5.5Ω

### Common **Generac** Models

Original Generac Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
All PTO Gensets	30-60/90	10-12	XC14	XR8 + SEM250A	63/105	12/25	
All Engine-Driven Gensets	30-60/90	10-12	XC15	XR8 + SEM250A + ABF10	63/105	12/25	Requires use of Battery Flash. Isolate field from Ground.

### Common **General Electric** Models

Original GE Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
All Brushless Gensets	12/32	12	XC14	XR8 + SEM250A	32/52	12/25	Use 120V Input Power

### Common **Kato-Light/MTU** Models

Original Kato Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
KCR-360	65/90	5	XR8	XC4	63/105	8/4	
KCR-760	65/90	10	XC14	XR8 + SEM250A	63/105	12/25	
K65-12B	65/100	12	XC14	XR8 + SEM250A	63/105	12/25	
K125-10B	125/200	10	XR8 + SEM250B	SE300B	125/210	25	

### Common **Kohler** Models

Original Kohler Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
All Brush-Type Kohler	63/90	15-20	XR8 + SEM250A + AFM5X	SE300A	63/105	25	
All Brushless Kohler	63/90	3	XR8	XC4	63/105	8/4	See Marathon Section for Specific Replacement Info
All Fast-Response (LED)	-	-	-	-	-	-	No Aftermarket Support. Contact Kohler Dealer

### Common **Leroy-Somer** Models

Original Leroy-Somer Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
R220	63/90	8	XR8		63/105	8	
R230	63/90	8	XR8		63/105	8	
R438	63/90	8	XR8		63/105	8	Isolate and Insulate PMG or AREP Leads (Not Used)
R448	63/90	10	XC14	XR8 + SEM250A	63/105	12/25	Isolate and Insulate PMG or AREP Leads (Not Used)
R449	63/90	7	XR8		63/105	8	Isolate and Insulate PMG or AREP Leads (Not Used)

### Common **Marathon** Models

Original Marathon Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
SE100	63/90	2	XR8	XC4	63/105	8/4	
SE350	63/90	3.5	XR8	XC4	63/105	8/4	
VR63-4	63/105	4	XR8	XC4	63/105	8/4	
DVR2000	63/90	3.5	XR8	XC4	63/105	8/4	Isolate and Insulate PMG Leads (Not Used)
KR4F/FM/FF/FFM	63/90	3.5	XR8	XC4	63/105	8/4	Use 240V Input Power
KR7F/FM/FF/FFM	125/180	5	XR5C		125/210	5	<b>DO NOT USE 277V Input Power!</b>
G-741D	125/180	25	SE300B + ABF10	XR8 + SEM250B + AFM5X	125/210	25	Can Use Original Transformer if Intact
G-1121D	125/180	40	SE500B + ABF10	XR8 + 2 SEM250Bs + AFM5X	125/210	40	Can Use Original Transformer if Intact
G-1132D	125/180	40	SE500B + ABF10	XR8 + 2 SEM250Bs + AFM5X	125/210	40	Can Use Original Transformer if Intact

### Common **Onan (Pre-Cummins)** Models

Original Onan Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
VR21	32/50	3.5	XR8	XC4	63/105	8/4	Use 120 or 240V Input Power
VR22	32/90	5	XR8	XC4	63/105	8/4	Use 240V Input Power
Magneciter (All)	63/90	10-15	XC14	XR8 + SEM250A	63/105	12/25	Use 240V Input Power

### Common **Stamford, Newage, Cummins-Onan** Models

Original Newage/Stamford Ratings			Power-Tronics Ratings				
Model	Excitation Volts	Excitation Amps	Model	Alternate Model	Excitation Volts	Excitation Amps	Installation Notes
AS440	63/82	4	XR8	XC4	63/105	8/4	
AS480	45/82	4	XR8	XC4	63/105	8/4	
DM110	63/90	7	XC14	XR8 + SEM250A	63/105	12/25	Isolate and Insulate PMG Leads (Not Used)
MA330	125/180	6	XR8 + SEM250B	SE300B	125/210	25	
MX321	63/120	3.5	XR8	XC4	63/105	8/4	Isolate and Insulate PMG Leads (Not Used)
MX341	63/120	2.7	XR8	XC4	63/105	8/4	Isolate and Insulate PMG Leads (Not Used)
SX440	63/90	4	XR8	XC4	63/105	8/4	
SX460	63/90	4	XR8	XC4	63/105	8/4	
G-741D	125/180	25	SE300B + ABF10	XR8 + SEM250B + ABF10	125/210	25	Can Use Original Transformer if Intact
G-1121D	125/180	40	SE500B + ABF10	XR8 + 2 SEM250Bs + ABF10	125/210	40	Can Use Original Transformer if Intact
G-1132D	125/180	40	SE500B + ABF10	XR8 + 2 SEM250Bs + ABF10	125/210	40	Can Use Original Transformer if Intact
Power-Command	63/90	5	XR5C		63/105	5	Extremely non-linear excitation curve. 2-3% regulation accy.

### Unusual or Mechanical Models

Original Ratings			Power-Tronics Ratings			
Model	Excitation Volts	Excitation Amps	Model	Excitation Volts	Excitation Amps	Installation Notes
Carbon-Pile Regulator	32/63/125	<3	XR8	32/63/105	8	Convert Exciter to 4-Wire (See Instruction Manual)
Reg-Ohm (Multi-Tap)	125	<3	XR8	125/210	8	Convert Exciter to 4-Wire (See Instruction Manual)
Rocking-Armature Regulators	125	<5	XR8	125/210	8	Convert Exciter to 4-Wire (See Instruction Manual)
Westinghouse Silverstat	125	3	XR8	125/210	8	Convert Exciter to 4-Wire (See Instruction Manual)
Simplex VR-1	125	2	XR8	125/210	8	Convert Exciter to 4-Wire (See Instruction Manual)
Manual-Rheostat	32/63/125	<2	XR8	32/63/125	8	Convert Exciter to 4-Wire (See Instruction Manual)
Most Military Gensets***	32/50	<15	XC15	32/52	12	Use 120V Input Power, Battery-Flash Typically Required
Aircraft 400Hz GPU	63/125	<5	XR5B-400	63/125	5	Compatible With All PTI Static Exciter Modules & Accessories
Aircraft 28VDC GPU (50/60Hz)	63/125	<8	SPXR5-28VDC	63/125	8	Compatible With All PTI Static Exciter Modules & Accessories
Aircraft 28VDC GPU (400Hz)	63/125	<8	SPXR5-28VDC 400Hz	63/125	8	Compatible With All PTI Static Exciter Modules & Accessories

\*\*\*Exceptions Exist for Military Gensets! Always Verify Exciter Field Resistance and Excitation Voltage! 400Hz Models CANNOT BE CONVERTED to 60Hz!



**Previous Power-Tronics *Voltage Regulator* Models**

Original Model Rating			Replacement Model Ratings				
Model	Rectification Type	Excitation Amps	Model	Alternate Model	Excitation Amps	Rectification Type	Installation Notes
VR500/VR500A	Half-Wave	5	XR8	XR5C	8 / 5	Half-Wave	XR8 is Best Upgrade Model. <b>Use Hookup Connection B.</b>
VR504A	Half-Wave	5	XR8	XR5C	8 / 5	Half-Wave	XR8 is Best Upgrade Model. <b>Use Hookup Connection B.</b>
VR505A	Full or Half-Wave	5	XR8	XR5C	8 / 5	Full-Wave	XR8 is Best Upgrade Model. <b>Use Hookup Connection A.</b>
VR250	Half-Wave	2.5	XC4	XR8	4 / 8	Half-Wave	Use Hookup Connection B for XR8.
A50	Half-Wave	5	XC4	XR8	4 / 8	Half-Wave	Use Hookup Connection B for XR8.
VR758	Half-Wave	8	XR8	XC14	8 / 12	Half-Wave	XR8 is Best Upgrade Model. <b>Use Hookup Connection B.</b>
UVR500	Full or Half-Wave	5	XR8	XR5C	8 / 5	Full or Half-Wave	XR8 is Best Upgrade Model. XR5C is Exact Replacement.
UVR501	Full or Half-Wave	5	XR8	XR5C	8 / 5	Full or Half-Wave	XR8 is Best Upgrade Model. XR5C is Exact Replacement.
XR500B	Full or Half-Wave	5	XR8	XR5C	8 / 5	Full or Half-Wave	XR8 is Best Upgrade Model. XR5C is Exact Replacement.
XR500C	Full or Half-Wave	5	XR8	XR5C	8 / 5	Full or Half-Wave	XR8 is Best Upgrade Model. XR5C is Exact Replacement.
XR500D	Full or Half-Wave	5	XR8	-	8	Full or Half-Wave	XR8 is Exact Replacement.
VR50	Half-Wave	5	XC4	XR8	4 / 8	Half-Wave	Use Hookup Connection B for XR8.
UVR500-180	Full or Half-Wave	5	XR5B-180	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
UVR500-400	Full or Half-Wave	5	XR5B-400	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
UVR501-180	Full or Half-Wave	5	XR5B-180	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
UVR501-400	Full or Half-Wave	5	XR5B-400	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500B-25	Full or Half-Wave	5	XR5B-25	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500B-180	Full or Half-Wave	5	XR5B-180	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500B-400	Full or Half-Wave	5	XR5B-400	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500B-480	Full or Half-Wave	5	XR5B-480	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500D-25	Full or Half-Wave	5	XR5B-25	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500D-180	Full or Half-Wave	5	XR5B-180	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500D-400	Full or Half-Wave	5	XR5B-400	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
XR500D-480	Full or Half-Wave	5	XR5B-480	-	5	Full or Half-Wave	Special Frequency Models Built to Order.
SPXR500-28VDC	Full or Half-Wave		SPXR500-28VDC Series II	-	5	Full or Half-Wave	
XR125DC	DC PWM	5	SPXR-DC10	-	10	DC PWM	For Shunt-Wound DC Generators
XR125DC-10	DC PWM	10	SPXR-DC10	-	10	DC PWM	For Shunt-Wound DC Generators
XR250DC-20	DC PWM	20	SPXR-DC10	-	10	DC PWM	For Shunt-Wound DC Generators
DC250	DC PWM	20	SPXR-DC10	-	10	DC PWM	For Shunt-Wound DC Generators
DC125i	DC PWM	12	SPXR-DC10	-	10	DC PWM	For Shunt-Wound DC Generators
DC250i	DC PWM	12	SPXR-DC10	-	10	DC PWM	For Shunt-Wound DC Generators
Volt-Pro VP4	Half-Wave	4	XC4	XR8	4 / 8	Half-Wave	Use Hookup Connection B for XR8.
Volt-Pro VP5	Half-Wave	5	XC4	XR8	4 / 8	Half-Wave	Use Hookup Connection B for XR8.
KXR20	Half-Wave	1	-	-	-	-	No Longer Manufactured.

**Previous Power-Tronics *Static Exciter Modules***

Original Model Rating			Replacement Model Ratings				
Model	Rectification Type	Excitation Amps	Model	Alternate Model	Excitation Amps	Rectification Type	Installation Notes
A504 Caterpillar Adaptor	Half-Wave	20	SEM250A	-	25	Half-Wave	Direct Upgrade.
SE350	Half-Wave	30	SEM250A	-	25	Half-Wave	Exact Replacement.
SE450	Full-Wave	30	SEM250B	-	25	Full-Wave	Exact Replacement.
SE900	Half-Wave	90	SE1000A	-	100	Half-Wave	Complete Exciter Upgrade. Contains AVR and Fusing.
SEM100A	Half-Wave	100	SE1000A	-	100	Half-Wave	Complete Exciter Upgrade. Contains AVR and Fusing.

**Previous Power-Tronics *Static Exciter* Models**

Original Model Rating			Replacement Model Ratings				
Model	Rectification Type	Excitation Amps	Model	Alternate Model	Excitation Amps	Rectification Type	Installation Notes
150HE-100-105	Half-Wave	100	SE1000A	-	100	Half-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
150HE-100-210	Full-Wave	100	SE1000B	-	100	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE1500A	Half-Wave	100	SE1000A	-	100	Half-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE1500AX	Half-Wave	100	SE1000A	-	100	Half-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE1500AF	Half-Wave	100	SE1000A	-	100	Half-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE1500B	Full-Wave	100	SE1000B	-	100	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE1500BX	Full-Wave	100	SE1000B	-	100	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE1500BF	Full-Wave	100	SE1000B	-	100	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE2000BX	Full-Wave	200	SE2000B	-	200	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE2000BF	Full-Wave	200	SE2000B	-	200	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE3000BX	Full-Wave	300	SE3000B	-	300	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.
SE6000BX	Full-Wave	600	SE6000B	-	600	Full-Wave	Direct Upgrade. Modern Models Have Smaller Footprint.

**Previous Power-Tronics *Accessory Modules***

Original Model Rating		Replacement Model Ratings		
Model	Module Type	Model	Module Type	Installation Notes
AFM30	Buildup Module	-	-	No Longer Manufactured. Unnecessary with Current Models.
AFM500X	Buildup / Battery Flash Module	AFM5X	Buildup / Battery Flash Module	
BU120 / BU240	Battery Flash Module	AFM5X	Buildup / Battery Flash Module	
BU500 / BU500X	Buildup / Battery Flash Module	AFM5X	Buildup / Battery Flash Module	
CFM12	Battery Flash Module	ABF10	Battery Flash Module	
EIC10V	External Interface Module	EIM1020VM	External Interface Module	EIM1020VM is Direct Replacement.
EIC1020	External Interface Module	EIM1020VM	External Interface Module	EIM1020VM is Direct Replacement.
HVD1	Overvoltage Protection Relay	HVD2	Overvoltage Protection Relay	HVD2 Has Selectable Sensing Voltage.
H7000 Adaptor Module	H7000 Adaptor Module	-	-	No Longer Manufactured.
KFR2	Kohler Fast-Response Adaptor	-	-	No Longer Manufactured.
KIC2V	Kohler Fast-Response Adaptor	-	-	No Longer Manufactured.
MP12	Motorized Potentiometer	MOP1224HD	Motorized Potentiometer	MOP1224HD Does Not Offer Through-Panel Mounting.
MP24	Motorized Potentiometer	MOP1224HD	Motorized Potentiometer	MOP1224HD Does Not Offer Through-Panel Mounting.
MP12/24	Motorized Potentiometer	MOP1224HD	Motorized Potentiometer	MOP1224HD Does Not Offer Through-Panel Mounting.
UIC100 / UIC100X	External Interface Module	EIM1020VM	External Interface Module	Use 0-10V Input Terminals on EIM1020VM.
UIC200	External Interface Module	EIM1020VM	External Interface Module	Use 0-10V Input Terminals on EIM1020VM.
VPBF8	Battery Flash Module	ABF10	Battery Flash Module	ABF10 Compatible Only with XC4 and Newer AVR's.