

1. SPECIFICATIONS

ACR: Electrical Specifications

Remote Programming: 10 ohms per volt (Typ.)		Input Power Factor (Typical): 0.75							
Remote Sensing: All models 1.5 volts drop maximum per load lead.		RFI: Meets MIL-I-26600 specifications for Class III equipment.							
Model		ACR500	ACR1000	ACR2000	ACR3000	ACR5000	ACR7500	ACR10,000	ACR15,000
Output Power*	Voltage (Vac)	110 to 120 Vac, Single Phase							
	k VA Range	0-50	0-1.0	0-2.0	0-3.0	0-5.0	0-7.5	0-10.0	0-15.0
Voltage Regulation ¹	Line	±0.1%				±0.15%			
	Load	±0.1%				±0.15%			
Resolution		0.05% of E _o							
Load Power Factor		Unity to zero lag ²							
Harmonic Distortion		3% maximum (introduced by regulator) ³							
Response Time		30 ms ⁴				50 ms ⁴			
Operating Temperature Range		0°C to +50°C							
Storage Temperature		-40°C to +85°C							
Drift		0.05% for 8 hours (after 30 minute warmup) ⁵							
Temperature Coefficient		0.015% E _o /°C				0.03% E _o /°C			
Meter (2% accuracy)		Output voltmeter standard							
Input Power	Voltage	95 to 130 Vac, Single Phase							
	Maximum Current (Aac)	7	14	26	39	63	94	123	183
	Frequency	50/60Hz ⁶							
% Efficiency (full VA)		84	86	88	90	92	93	94	95

*ACR units may be connected in multiple to supply regulated three phase power (Write for Application Note PAN ACR-2)

Notes:

1. For full load change or ±10% line voltage change.
2. For 7.5 kVA and larger models, the input voltage range is reduced to 100-130 Vac for power factor loads below 0.7 lagging.
3. The speed to recover to 63% of the peak deviation of the transient caused by maximum line or load changes. Complete recovery may be from 1 to 8 cycles, depending on the magnitude of line or load change or up to 10 cycles for a simultaneous combination of worst-case line and load changes.
4. With constant line, load and ambient temperature.
5. May be operated from 47 to 53 Hz or 57-63 Hz. All units are factory adjusted for optimum 60 Hz performance and may be readjusted for optimum 50 Hz performance.
6. Harmonic distortion measured at nominal 60 Hz or 50 Hz.

ACR: Mechanical Specifications

Model Number	Dimensions: Inches (mm)				Weight: Lbs (Kg)
	Width	Height	Depth	Rack Height	
500	15(381)*	5(127)	9(228.6)	5 1/4(133.4)	30(13.6)
1000	19(483)	5 1/4(133.4)	11(279.4)	5 1/4(133.4)	45(20.4)
2000	19(483)	5 1/4(133.4)	14(355.6)	5 1/4(133.4)	65(29.5)
3000	19(483)	7(177.8)	15(381)	7(177.8)	85(38.5)
5000	19(483)	7(177.8)	20(508)	7(177.8)	145(65.8)
7500	19(483)	12 7/32(310.4)	20(508)	12 7/32(310.4)	170(77.1)
10,000	19(483)	12 7/32(310.4)	20(508)	12 7/32(310.4)	190(86.2)
15,000	19(483)	12 7/32(310.4)	20(508)	12 7/32(310.4)	275(124.7)

*19 inch (483 mm) Adapter (Rack) Panel is available.

SPECIFICATION NOTES

FREQUENCY RANGE

ACR REGULATORS MAY BE OPERATED OVER AN INPUT RANGE OF 57 TO 63, OR 47 TO 53 HZ, BUT SPECIFICATIONS ARE GUARANTEED ONLY AT 60 OR 50 HZ. DISTORTION WILL INCREASE AS THE FREQUENCY IS VARIED FROM THE NOMINAL 60 OR 50 HZ, AND VOLTAGE REGULATION ACCURACY WILL BE REDUCED. OPERATION AT 50 HZ REQUIRES TAP CHANGES ON HARMONIC FILTERS L3 AND L4, AND L8 (WHERE APPLICABLE).

TIME CONSTANT

WHEN AN ABRUPT CHANGE OCCURS IN THE INPUT VOLTAGE OR OUTPUT LOAD, AN INSTANTANEOUS CHANGE IN OUTPUT VOLTAGE OCCURS. THIS CHANGE IS QUICKLY SUPPRESSED BY THE REGULATING ACTION OF THIS REGULATOR. THE TIME CONSTANT OF ACR REGULATORS IS THE SPEED TO RECOVER TO 63% OF THE PEAK DEVIATION OF THE TRANSIENT CAUSED BY MAXIMUM LINE OR LOAD CHANGES. COMPLETE RECOVERY MAY BE FROM 3 TO 8 CYCLES DEPENDING ON THE MAGNITUDE OF LINE OR LOAD CHANGE, OR UP TO 10 CYCLES FOR A SIMULTANEOUS COMBINATION OF WORST-CASE LINE AND LOAD CHANGES.

SINCE RMS RECOVERY TIME OBSERVATIONS ARE DIFFICULT TO OBTAIN, PEAK DEVIATIONS ARE USED AS ESTIMATES FOR TRANSIENT RECOVERY TIME. HOWEVER, IT IS POSSIBLE FOR THE PEAK VALUE OF THE VOLTAGE WAVE TO PERMANENTLY CHANGE AS MUCH AS 9% AFTER A LOAD CHANGE (EVEN THOUGH THE RMS VALUE REMAINS WITHIN A $\pm 0.1\%$ BAND). BY SPECIFYING TIME CONSTANT OF RESPONSE WE TEND TO AVOID THIS AMBIGUITY BETWEEN PEAK AND RMS READING.

REGULATION ACCURACY

REGULATION IS SPECIFIED AS $\pm X\%$ ABOUT AN ARBITRARY POINT. AS THIS VALUE CAN BE EITHER ALL POSITIVE OR ALL NEGATIVE FROM THE CHOSEN POINT, THE OUTPUT IS KEPT WITHIN A BANDWIDTH OF $2 X\%$ RMS. DETECTION OF RMS REGULATION WITH RECTIFIER TYPE VOLTMETERS, VTVM PEAK VOLTMETERS, OR OSCILLOSCOPE OBSERVATION, MAY BE IN ERROR. USE ONLY THERMOCOUPLE OR DYNAMOMETER TYPE VOLTMETERS TO OBSERVE REGULATION.

INPUT VOLTAGE

THE SPECIFIED INPUT VOLTAGE RANGE IS NOT GENERALLY AFFECTED BY NOMINAL (115 VOLTS) OUTPUT VOLTAGE SETTING, INPUT FREQUENCY OR LOAD POWER FACTOR. HOWEVER, THERE IS A VARIATION DUE TO ALL OF THESE QUANTITIES AS SHOWN IN FIGURE 1.

OUTPUT DISTORTION (TYPICAL)

OUTPUT DISTORTION VARIES TO A CERTAIN EXTENT WITH LINE AND LOAD MAGNITUDE, AND POWER FACTOR. TYPICALLY, FOR LOADS BETWEEN 1/4 AND FULL LOAD AND 1.0 AND 0.7 POWER FACTOR, FOR LINE VOLTAGE EXCURSIONS BETWEEN 105 AND 125 VOLTS, AND FOR INPUT DISTORTION LESS THAN 2%, THE OUTPUT DISTORTION WILL NOT EXCEED 3%.

INPUT-OUTPUT ISOLATION

THE ACR SERIES DOES NOT PROVIDE FOR INPUT-OUTPUT ISOLATION. ACR'S HAVE A COMMON INPUT AND OUTPUT LINE WHICH ACTS SIMILAR TO AN AUTO-TRANSFORMER.

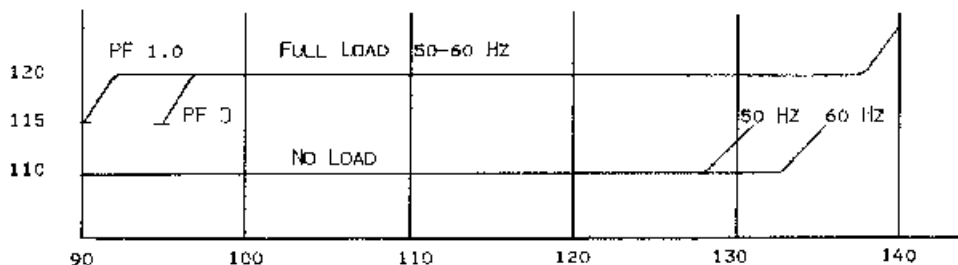


Figure 1. Input Voltage Range