
American Rotary Advantage

American Rotary has been making premium rotary phase converters for more than a decade. For more than 10 years, American Rotary has led the industry in innovation and design. We have introduced, field-tested, and proven several technologically advanced features which have driven increases in the reliability and precision voltage balancing capabilities of phase conversion unmatched in the industry.

We provide 24/7 telephone support for technical, application and sizing issues. We stand behind our products with the best warranty in the industry. We use premium components to ensure that our products perform for you. American Rotary is a UL Certified Control Panel Builder, and our rotary phase converters are available UL Listed to US and Canadian Safety Standards. We have partnered with Baldor Electric one of the world's largest and most respected manufacturers to supply our custom-engineered idler/generators. The engineers at American Rotary worked with the engineers at Baldor for over a year designing a custom induction generator for phase conversion, which reduced the inrush current on start-up so drastically (83% reduction...a stock motor requires 600% more inrush) that American Rotary's induction generator was granted a Soft Start rating, and a resulting reduction in operating cost!

American Rotary is listed with D&B as well as the Better Business Bureau, and we are committed to high ethical and privacy standards.

American Rotary offers 3 different types of Rotary Phase Converters

**AR Series**

perfect for standard & heavy duty equipment including CNC, VFD & other voltage sensitive applications

**AD Series**

if the AR series is like a carbureted engine, the AD series is fuel injected...more powerful, reliable, and precise. Runs w/fully programmable MicroSmart controller

**ADX Series**

in addition to the AD, the ADX series adds nitrous... 250% more starting power, for compressors, pumps, flywheel loads, etc. w/fully programmable MicroSmart controller

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Standard Features

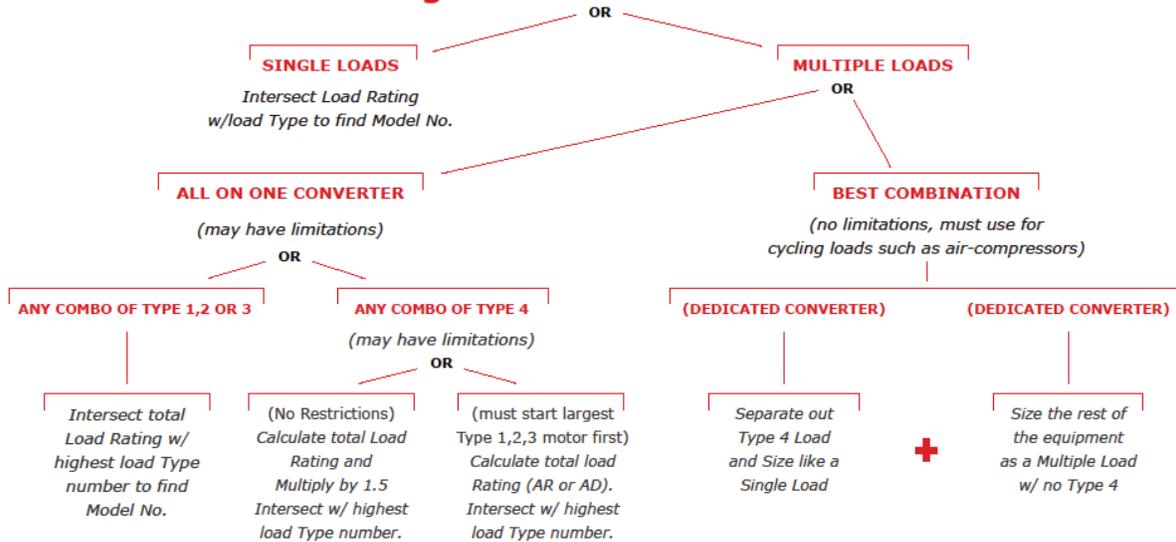
American Rotary engineers the entire phase converter system to provide optimum performance. We are the only manufacturer that has developed a read induction Generator, along with two separate optimized start and run circuits. For ease of installation, we build the starter into the converter.

	AR	AD	ADX
Made in the USA	✓	✓	✓
Modular & Expandable	✓	✓	✓
VIT Generator	✓	✓	✓
Full Current Latching Starter	✓	✓	✓
3 Phase Breaker and Receptacle Slots	✓	✓	✓
MicroSmart Digital Industrial Programmable Controller		✓	✓
CTR Transient Reactor			✓

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Sizing

Sizing Guide (use table below and round up)



FIND LOAD TYPE

A			B	C	Type 1 Load	Type 2 Load	Type 3 Load	Type 4 Load
Single or Group Load Rating Total			@240V		General Purpose, moderate load, non-computer <i>Milling Machine, Drill Press, Table Saw, Clutched Lathe, Bread Mixer, Bandsaw, Widebelt Sander, etc.</i>	Hard Loads that develop Full HP during use. <i>Gearhead Lathe, Ironworker, Hydraulic Pump, Air Conditioners, Pizza Mixer, etc.</i>	High Inertia, Start under load. <i>Flywheel, Hoists, U-frame, Air-compressors, Elevators, Foreign Motors, 2-speed, etc.</i>	CNC, VFD, current protected, precision voltage balanced, computer, rectified, resistive. <i>Machining Center, Welder, Battery Charger, EDM, motor run w/ VFD, motor w/ overloads</i>
HP	kW	amps	Model No.		Model No.	Model No.	Model No.	
1	0.75	2.8	AR, AD, ADX		AD, ADX	ADX	rec AD, (AR, ADX)	
2	1.49	5.6	3		3	ADX-3	3	
3	2.24	9.6	5		5	ADX-5	5	
5	3.37	15	7.5		7.5	ADX-7.5	7.5	
7.5	5.59	22	10		10	ADX-10	10	
10	7.46	28	12.5		15	ADX-15	15	
12.5	9.32	35	15		20	ADX-20	20	
15	11.2	42	20		25	ADX-25	25	
20	14.9	54	25		30	ADX-30	30	
25	18.6	68	30		40	ADX-40	40	
30	22.4	80	40		50	ADX-50	50	
40	29.8	104	50		60	ADX-60	60	
50	37.3	130	60		75	ADX-75	75	
60	44.7	150	75		Dual - 50	Dual ADX-50	Dual - 50	
			Dual - 50		Dual - 60	Dual ADX-60	Dual - 60	

note: Group loads according to machines that will be run at the same time.
American Rotary recommends that all Type 4 loads be run on dedicated phase converters.

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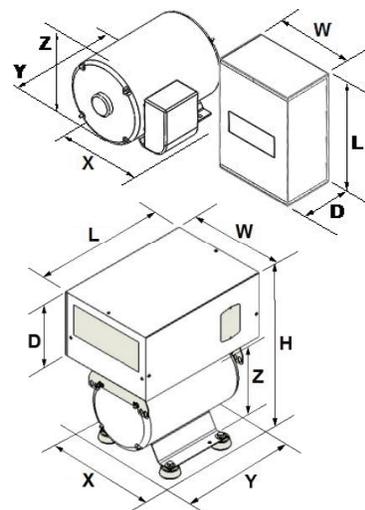
Specifications

General Specification											
Part Number AR AD ADX	3	5	7.5	10	15	20	25	30	40	50	60
kW of Generator (based on FLA)	2.2	3.7	5.6	7.4	11.2	14.9	18.7	22.4	29.8	37.3	44.8
Idler/Generator FLA	9.6	14	21	28	40	50	60	76	100	130	150
Frequency (Hz)	60										
Generator Type	GENTEC/Variable Impedance										
Magnetic Starter	Included (remote start ready)										
Panel Enclosure	NEMA 1										
Temperature rating	40 C Ambient										
Wave Form	Pure Sinusoidal Analog										
Phase Angle	120 degrees										
Efficiency	97%										
Three Phase Output Specifications (continuous)											
Output voltage	equals input voltage										
Voltage tolerance	meets IEEE Std. 241-1990 utility										
3-phase output configuration	3-wire delta										
Service factor	1.15										
Output Frequency (Hz)	Input Frequency										
-Output Current-											
<i>(use for resistive & rectified loads, i.e. Welder, CNC, VFD, Power-supply)-amps @ 240V</i>											
3-phase output current recommended for CNC, welder, VFD, voltage sensitive	4.8	7	11	14	20	25	30	38	50	65	75
Max. current for IEEE Std. utility line	6	9	13	17	24	30	36	46	60	80	90
-Starting Motor Loads- (HP/kW)											
Maximum HP/kW start (Moderate Load) Type 1	2.5/1.9	4/3	5/3.7	7.5/5.6	10/7.5	15/11.2	20/14.9	25/18.7	30/22.4	40/30	50/37.3
Maximum HP/kW start (Hard Load) Type 2	1.5/1.12	2.5/1.9	3/2.2	5/3.7	7.5/5.6	10/7.5	12.5/9.3	15/11.2	20/14.9	25/18.7	30/22.4
Maximum HP/kW start (High Inertia) Type 3	1/7.5	2/1.5	2.5/1.9	3/2.2	5/3.7	7.5/5.6	10/7.5	12.5/9.3	15/11.2	20/14.9	25/18.7
Maximum HP/kW start (High Inertia) Type 3 w/ADX	1.5/1.12	2.5/1.9	3/2.2	5/3.7	7.5/5.6	10/7.5	12.5/9.3	15/11.2	20/14.9	25/18.7	30/22.4
Maximum HP/kW Total Motor Group Load	5/3.7	7.5/5.6	10/7.5	15/11.2	22/16.4	30/22.4	37/28	45/34	60/45	75/56	90/67
Maximum HP/kW (CNC or VFD) Type 4	1.5/1.12	2.5/1.9	3/2.2	5/3.7	7.5/5.6	10/7.5	12.5/9.3	15/11.2	20/14.9	25/18.7	30/22.4
Single Phase Input Specifications (continuous)											
Voltage Input	208-250										
Input Frequency (Hz)	60										
(HP load / 1-ph amps)	1/4	1.5/6	2.5/10	3/12	5/20	7.5/29	8/31	10/39	15/59	15/59	20/78
(HP load / 1-ph amps)	2/9	2.5/11	4/18	5/22	7.5/34	10/45	12.5/56	15/67	20/90	25/112	30/134
(HP load / 1-ph amps)	3/15	4/20	6/29	7.5/37	12/59	15/74	20/98	22.5/110	30/147	37.5/184	45/221
Power Consumption (kW)	0.05	0.08	0.11	0.15	0.23	0.30	0.38	0.45	0.60	0.75	0.90
Cost to Run (@ .10/kW/HP)	\$0.05/hr	\$0.08/hr	\$0.11/hr	\$0.15/hr	\$0.23/hr	\$0.30/hr	\$0.38/hr	\$0.45/hr	\$0.60/hr	\$0.75/hr	\$0.90/hr
Minimum Breaker Size	2 x load current										

*Conductors should be sized according to Minimum Breaker Size and NEC requirements

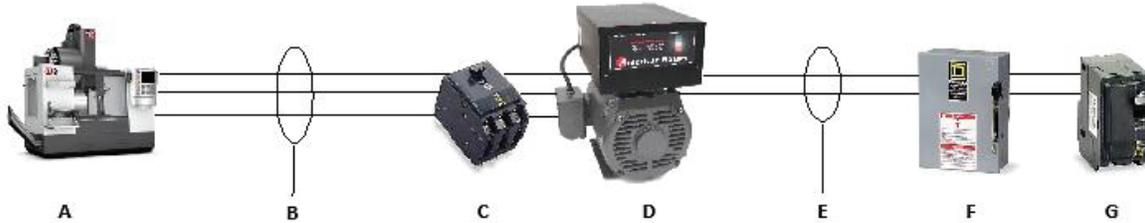
Dimensions & Weights

Part Number	3	5	7.5	10	15	20	25	30	40	50	60
AR AD ADX	3	5	7.5	10	15	20	25	30	40	50	60
L (in.)	15.8	15.8	15.8	15.8	15.8	15.8	19.3	19.3	23	23	23
W (in.)	11.3	11.3	11.3	11.3	11.3	11.3	13.5	13.5	19	19	19
D (in.)	7.75	7.75	7.75	7.75	7.75	7.75	8.25	8.25	8.3	8.3	8.3
X (in.)	9.5	11.5	13	12.5	14.5	17.5	17.5	20.5	23	23	22
Y (in.)	11	12	12.5	12	15.5	14	17	18.5	21	21	21
Z (in.)	7	8.5	9.5	10	11	12	13	14	16	16	17
H (in.)	15.9	17.4	18.4	18.9	19.9	20.9	22.5	23.5	26	26	27
Weight (lbs.)	102	123	142	168	249	296	320	382	398	506	568



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Installation



Load FLA (full load amps)	3 ph. Wire gauge	3 ph. Breaker or Fuse	Panel to Generator wire gauge	1 ph. Wire gauge	1 ph. Safety Disconnect	1 ph. Breaker or Fuse
Amps @ operating voltage	Load FLA x 1.2 (round up)	3 ph. Wire amp rating x 1.25 (round up)	3 ph. Wire from Phase converter panel to idler/generator	3 ph. Load amps x	1 ph. Amps (round up)	1 ph. Wire amp rating x 1.25 (round up)
240V = HP X 2.8 = (KW X 2.8)/PF = Kva / 2.75	increase wire size for every 50 feet wire size amps		Converter HP wire size	1.5 for AR, AD, ADX voltage balanced phase converters or 1.9 for other rotary type phase converters by other manufacturers	available in these common sizes	Caution: This is a minimum rating for breaker or Fuse for proper performance and operation of the phase converter and may not meet applicable local, state or national electric codes.
	480V = HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4	14				
208V = HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15		12	25	5	12	60A
	PF (power factor) typical motor = .8 resistive heater = 1 welder = .85	10	35	7.5	12	100A
= HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4		8	50	10	12	200A
	= HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15	6	65	15	12	400A
= HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4		4	85	20	10	600A
	= HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15	3	100	25	8	also commonly available in fused or non-fused
PF (power factor) typical motor = .8 resistive heater = 1 welder = .85		2	115	30	8	
	= HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4	1	130	40	6	Use table in column B to find wire size.
= HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15		1/0	150	50	4	
	= HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4	2/0	175	60	3	increase wire size for every 50 feet.
= HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15		3/0	200	75	2	
	= HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4	4/0	230			
= HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15		250	255			
	= HP x 1.4 = (kW x 1.4)/PF = kVA / 1.4	300	285			
= HP X 3.2 = (Kw X 3.2)/PF = Kva / 3.15		350	310			

NOTE: Ground all equipment. This table is not intended to replace or superceed Local, State or National Electric codes.