



SYNCHRONOUS MOTOR FAMILY

Series 59mm (PA, PB) Direct Drive Synchronous Motor



Output Speed:	250/300 to 500/600 RPM (50/60 Hz respectively)
Insulation Class:	Class A (105°C)
Lead Wire:	4 leads 22AWG (approx. 8.5 inches [215.9 mm])
Operation Ambient Temp:	-10°C to +40°C (approx.)
Gear Unit:	Zinc Die Cast - AGMA 7 Standard with hardened steel gears
Shaft Bearing:	Sleeve Bearing
 Recognition:	E53578(N), Component-Impedance Protected Motors, 115Vac Standard Rotor
 Certification:	Card No. 42576, Motors and Generators, 115 Vac, 60 Hz, Standard Rotor, 7.5 watts max. PA, 10 watts max. PB
Capacitors are required for operation. Capacitors supplied with 115 Vac motors.	
Note: Typical data subject to change without notification	

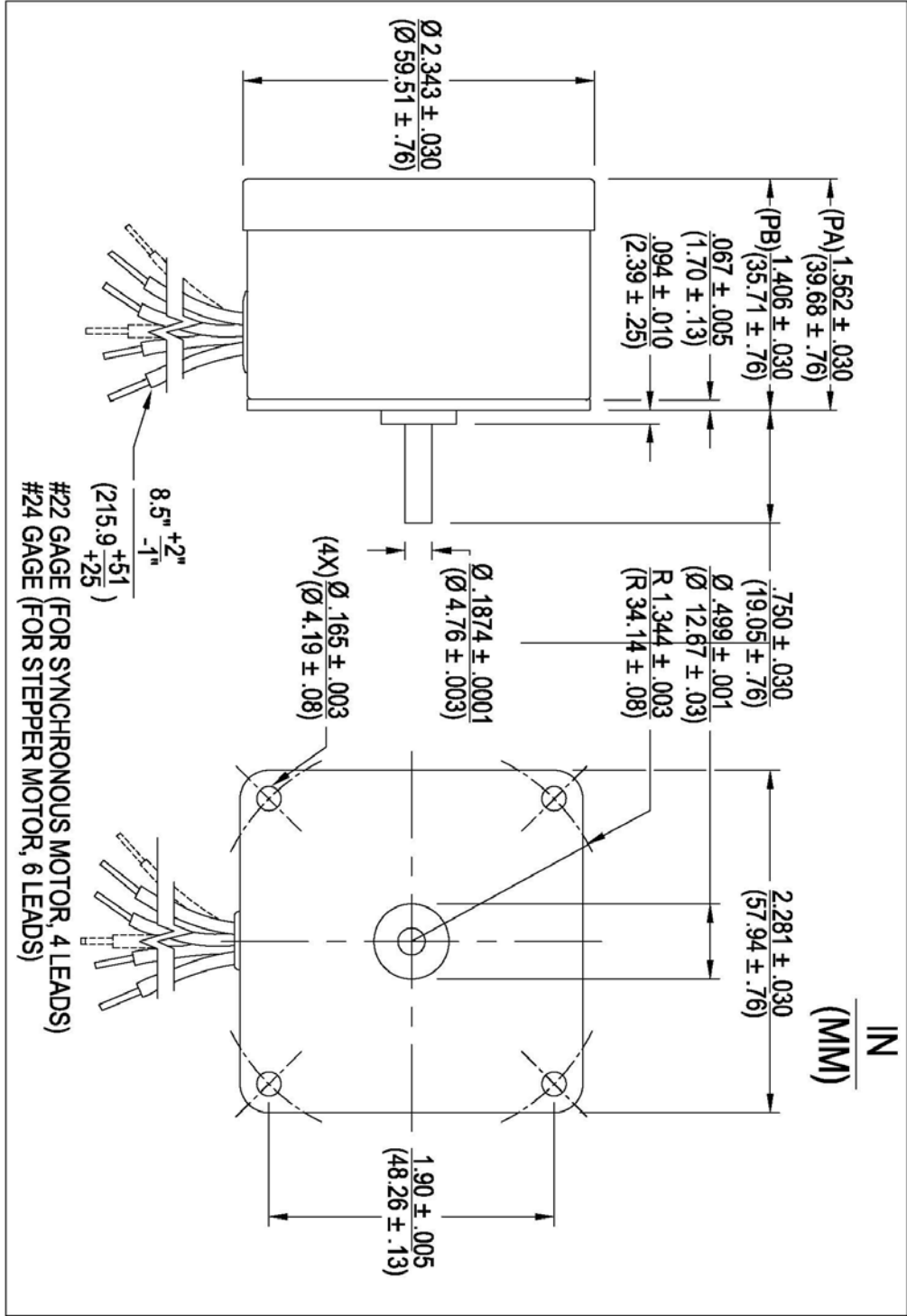
Reversible permanent magnet synchronous motors series PA and PB direct drive motors at 60Hz have a rotor speed of 300 RPM and 600 RPM respectively. Both motors are available with Hi-Torque rotors.

A wide range of speeds and voltages are available for both 50Hz and 60Hz operation. Sleeve bearings are standard but ball bearings may be specified.

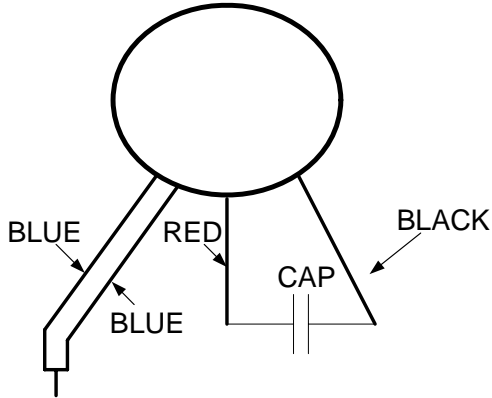
Note:

- Capacitors are required and must be used in the circuit even if the motor is applied in a unidirectional mode.
- Capacitors are furnished with 115V motors.

Model	Part Number	Rated Torque (oz-in)	Rated Torque (mN-m)	Output Speed (RPM)	Input Power (watts)	Voltage (VAC) 50HZ	Voltage (VAC) 60HZ	Full Load Temp. Rise °C	Capacitor Value (mfd)	Capacitor not supplied	Weight (oz)	Weight (g)	Hi-Torque Rotor
PA	3201-003	8.5	60	250	6	220		31	0.18 440VAC +/-10%	X	13	368.5	
PA	3228-003	12.25	86.5	250	11	220		42	0.22 440VAC +/-10%	X	13	368.5	
PA	3228-004	12.25	86.5	250	11	115		42	0.85		13	368.5	
PA	3201-001	8.5	60	300	7.5		115	31	0.68		13	368.5	
PA	3201-004	8.5	60	300	7.5		24	31	15 100VDC +/-10%	X	13	368.5	
PA	3228-001	11	77.7	300	9.5		115	42	0.85		13	368.5	X
PB	3203-006	6.6	46.6	500	10	240		44	0.22 440VAC +/-10%	X	13	368.5	
PB	3203-007	6.6	46.6	500	10	230		44	0.25 440VAC +/-10%	X	13	368.5	
PB	3203-001	5.5	38.8	600	10		115	44	0.82		13	368.5	
PB	3230-001	7.5	53	600	11		115	45	1		13	368.5	X

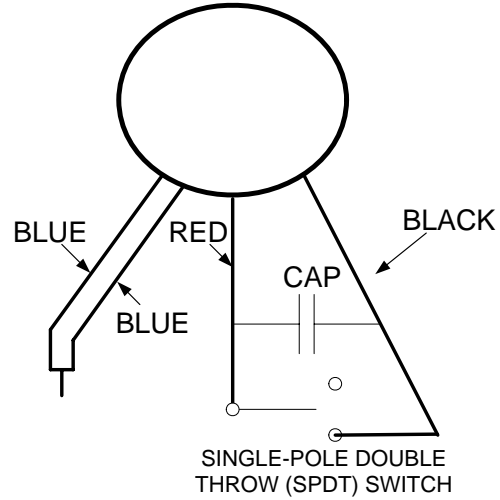


Wiring Diagram



Capacitors are non-polarized and must always be connected between the red and black leads. Always connect the (2) coil blue leads together. Connect the power supply to the blue leads and red lead to produce clockwise (CW) rotation viewing shaft end. Connect the power supply to the blue leads and black lead to produce counter-clockwise (CCW) rotation viewing shaft end.

Optional Wiring Diagram with Switch



Capacitors are non-polarized and must always be connected between the red and black leads. Always connect the (2) coil blue leads together. Connect the power supply to the blue leads and red lead to produce clockwise (CW) rotation viewing shaft end. Connect the power supply to the blue leads and black lead to produce counter-clockwise (CCW) rotation viewing shaft end.