

Low-speed synchronous PM generator AW-I 3P Turbo

Rating plate

Rating rotational speed = 180 RPM
Rated power = 370 W
Rated phase current = 4.2 A
Phase = 3
Phase voltage = AC 30 V
Weight = 15 kg

Specifications

Electrical specification

	AW-I 3P Turbo
Rated power (W)	370
Output power range (W)	0-900
Rotational speed range (RPM)	0-360
Number of phases	3
Phase voltage range, AC (V)	0-70
Frequency (Hz)	0-144
Phase current at Rated Output (A)	4.2
Average efficiency (%) in rotational range (RPM)	80 (180-360)
Phase resistance (Ω)	2.5
Output Wire Square Section (mm^2)	-
Insulation class	F
Design lifetime	10 years
Ambient Temperature	-50...+45°C

Mechanical specification

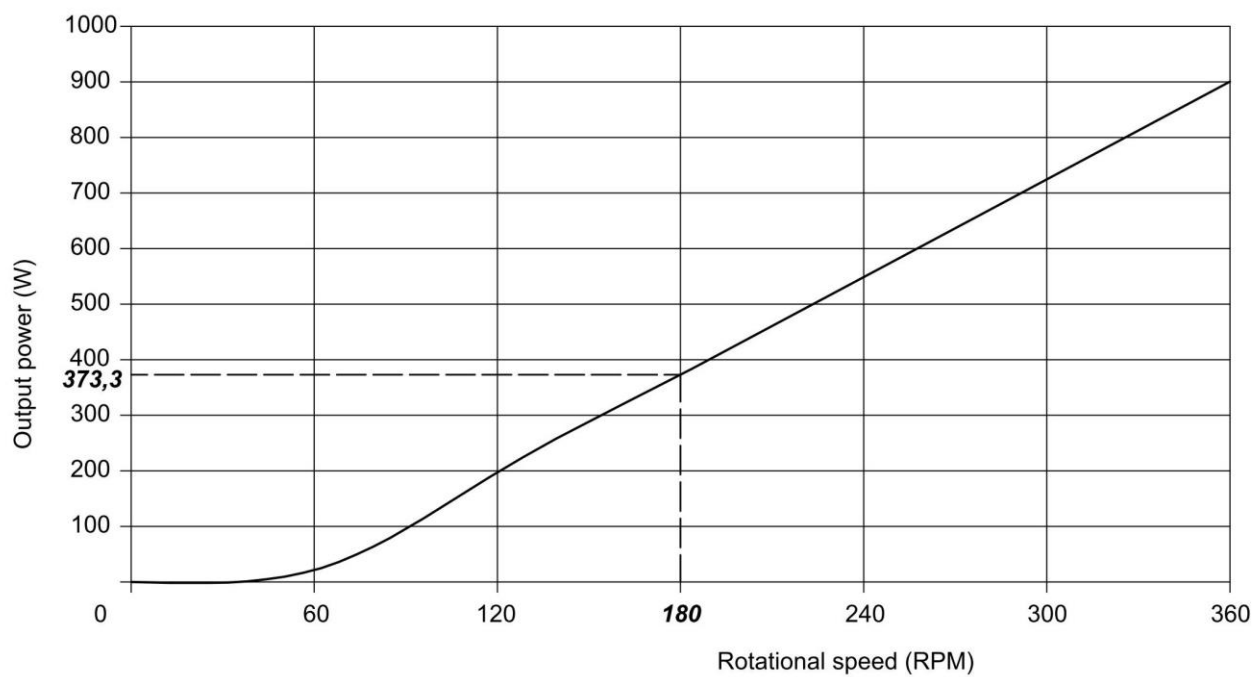
Torque at rated power (N·m)	26.5
Starting torque (N·m)	<0.1
Weight (kg)	15
Specific torque at Rated Power (N·m/kg)	1.77
Rotor inertia ($\text{kg}\cdot\text{m}^2$)	0.1

Material specification

Bearing Type	SKF 6205-2z (2 pcs)
Shaft material	Steel AISI431 (X20CrNi72)
Outer frame material	Al. alloy Al6061
Magnet material	NdFeB (N42H)
Magnet temperature rating ($^{\circ}\text{C}$)	120
Winding material	Polyesterimide enameled copper wire \varnothing 0.95mm
Winding temperature rating ($^{\circ}\text{C}$)	155
Oil	Shell Heat Transfer Oil S2

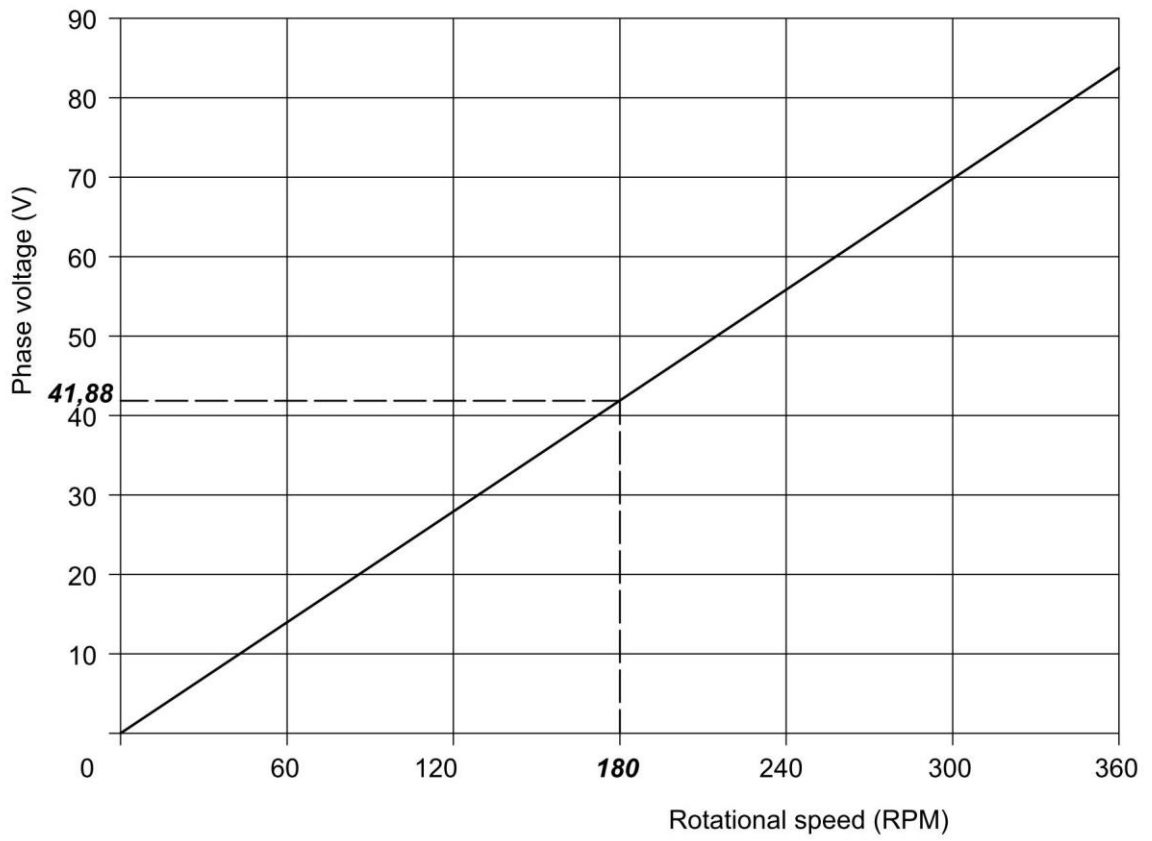
Curves

Power curve $P = f(n)$ at a fixed rated current $I = 4.2A$



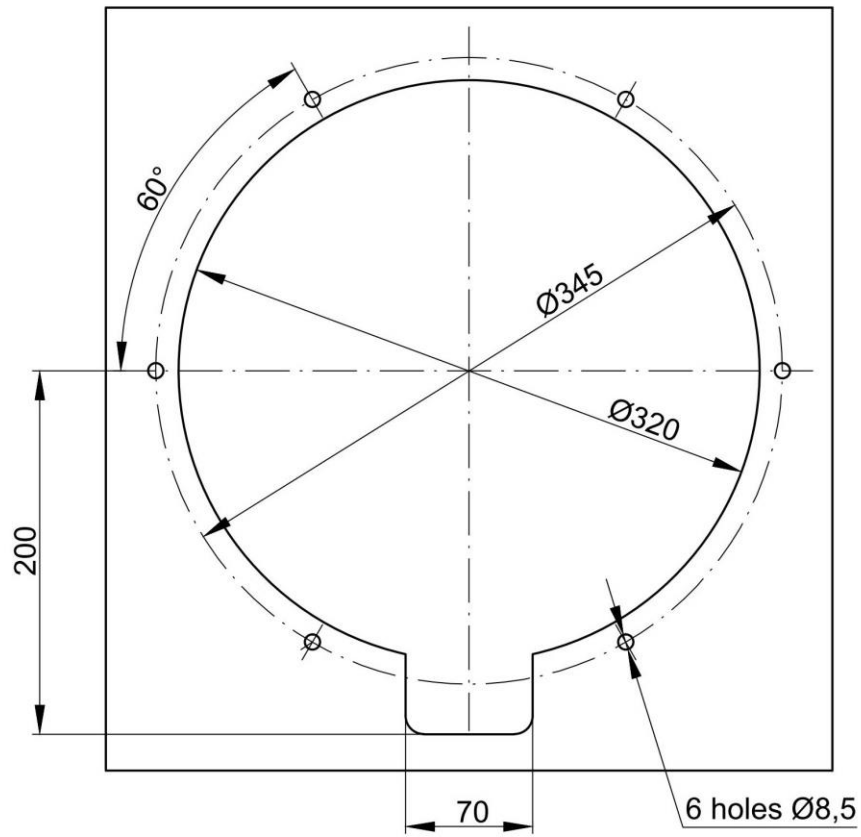
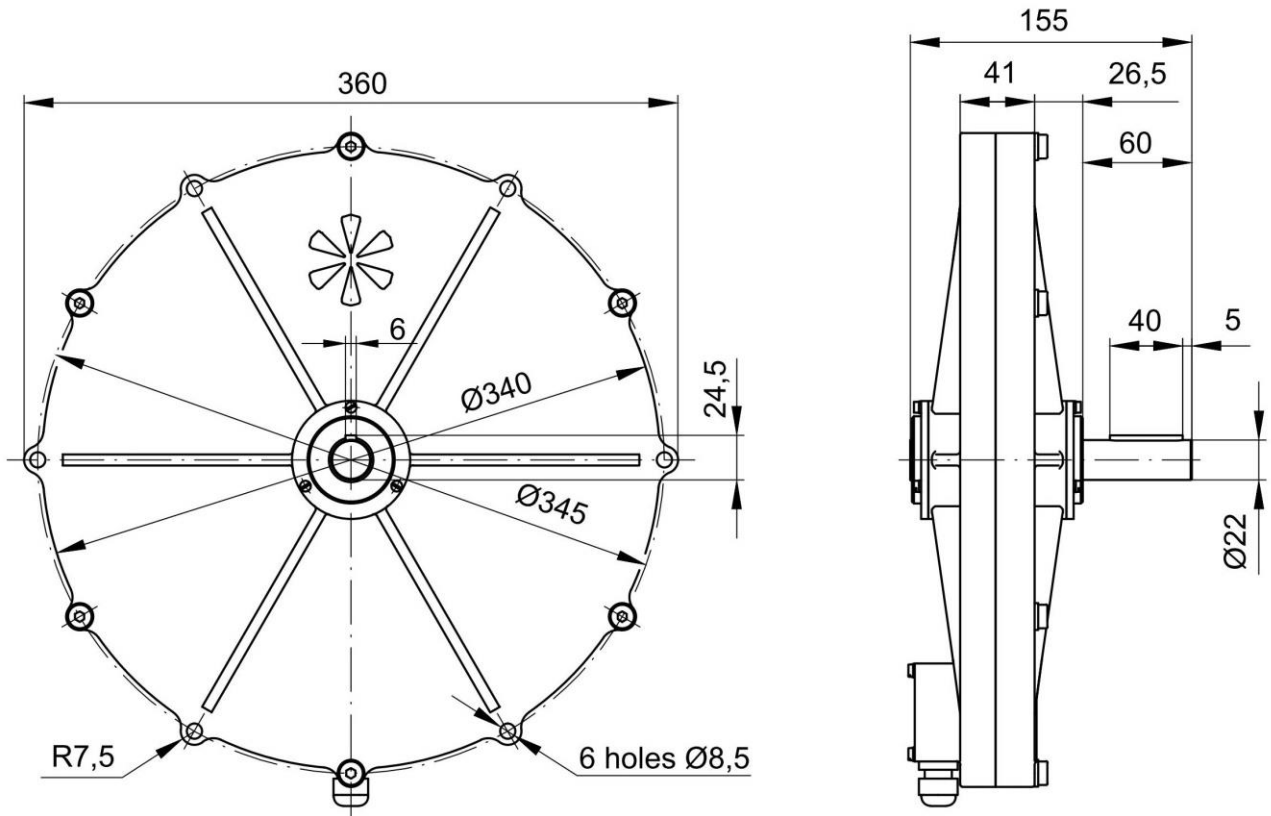
Rotational speed (RPM)	Power (W)
0	0
60	21,5
120	197,4
180	373,3
240	549,1
300	725,0
360	900,9

Unload voltage curve $U=f(n)$

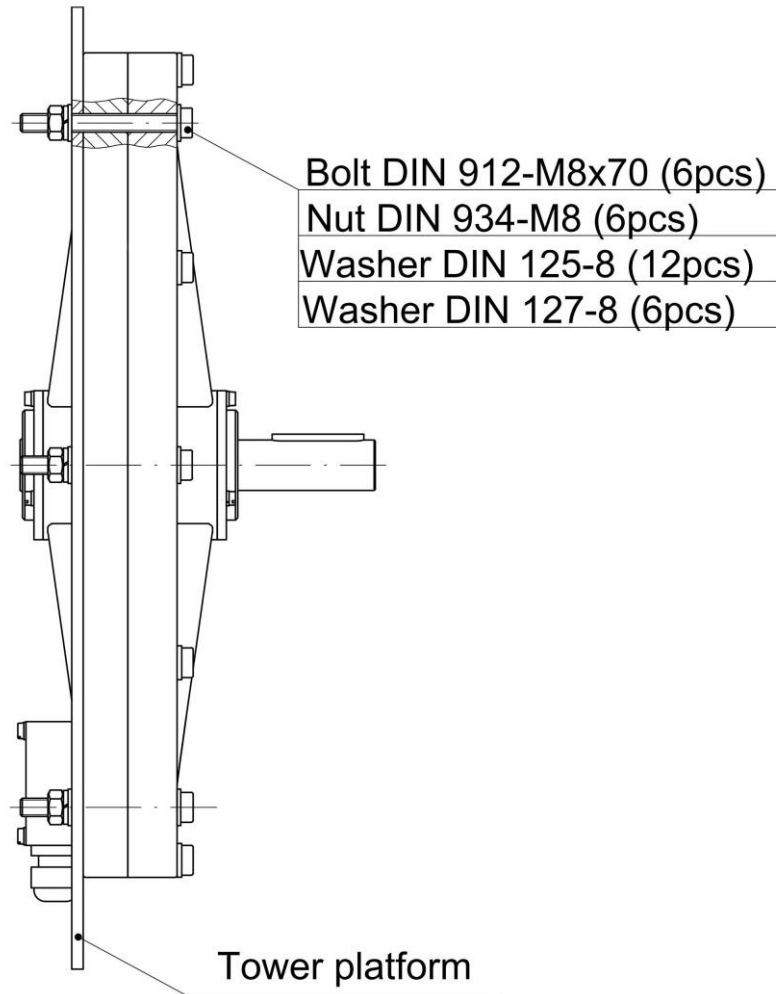


Rotational speed (RPM)	Phase voltage (V)
0	0
60	13,96
120	27,92
180	41,88
240	55,83
300	69,8
360	83,75

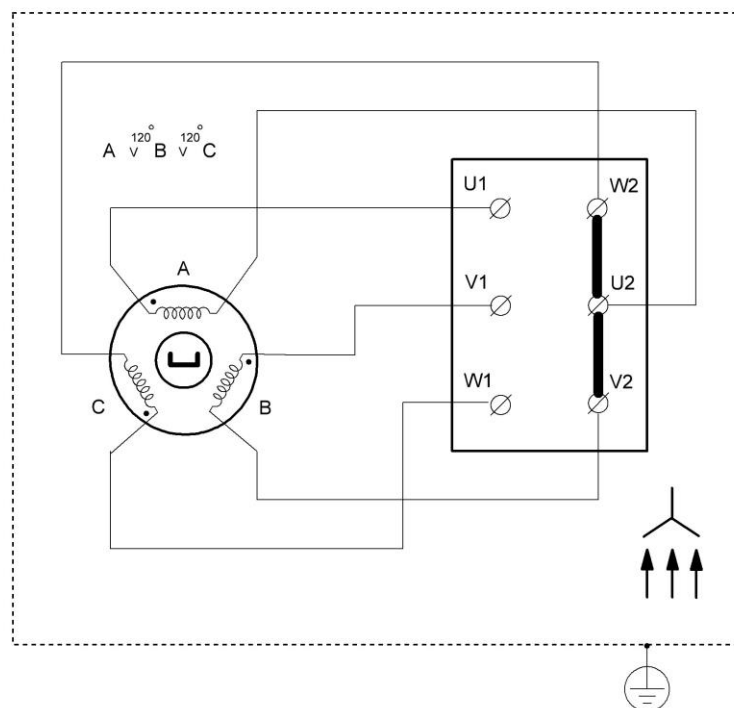
Outer Dimensions and Mounting Dimensions



Mounting diagram



Electric circuit diagram (Y-connection)



Wiring diagram in the terminal box

