

# FL3KWPITCHU



## Description:

1. FL3kWPITCHU variable pitch wind turbine synopsis:

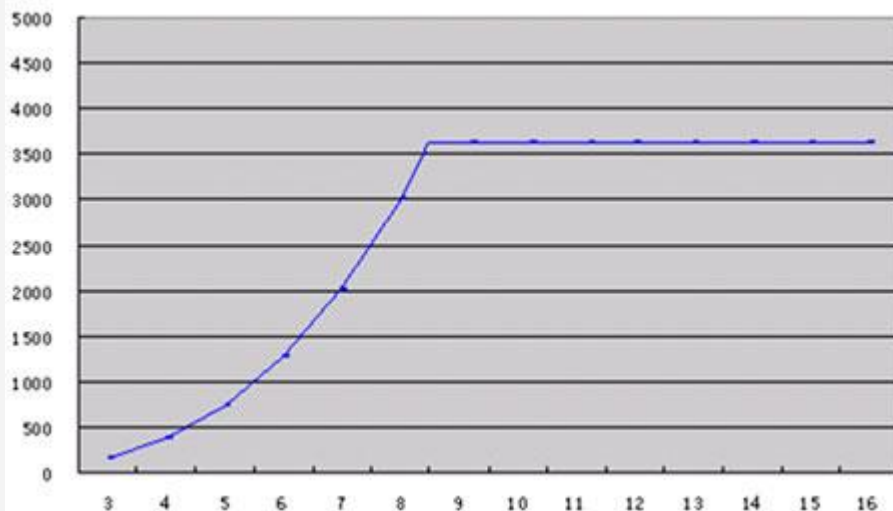
Keyword: Low wind speed start-up, Variable Pitch Regulation, Unnecessary human monitoring.

2. Wind turbine use independence-researched mechanism centrifugal technologies to come true variable pitch function, tracking rotor speed and synchronously regulate blade pitch automatically, to keep wind turbine working safety at rate wind speed and to keep power outputting stably and continuously even in the situation of facing hurricane or strong wind and without human monitoring.

2. FL3kWPITCHU variable pitch wind turbine parameters:

Rotor diameter:	6.0m
Blades quantity:	3pcs
Direction:	always upwind
Blades material:	Glass fiber reinforced plastic
Rated output:	3KW
Maximum output:	4KW
working voltage:	DC120V/ DC240 /DC400/AC220V
working wind speed:	3-30m/s
Initial wind speed:	2.5m/s
Nominal wind speed:	8.5m/s
Storm-stand:	up to 60m/s
Rated rotate speed:	240r/min
Wind turbine type:	Three-phase, PMG Alternator
Working temperature:	from -40oC to +60oC
Blade Pitch Control	Variable Pitch
Stop methods:	Brake by Manual
Speed regulation methods:	Passive pitch
Gearbox:	None, Direct Drive
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### 3. FL3kW PITCHU variable pitch Power Curve:



### 4. Characteristics Features:

1. Optimization aerodynamic design at blade: high efficiency, low noise.
2. Centrifugal variable pitch controlled mechanism: 2m/s low wind speed startup; 3-11m/s wind speed, tracking wind turbine rotor speed to synchronously adjust blade angle at optimum tip-speed-ratio, high efficiency running; over rated wind speed 8.5m/s, wind rotor never goes to over speed and rotate stably; 3-25m/s wind speed, wind turbine run very smoothly.
3. Direct drive permanent magnet generator, low startup resistance moment, constantly running ability of over loading 1.5 times, maintenance free for more than 30000 hours.
4. Safety control: Have aerodynamic brake, electric magnet brake, mechanical brake and manual stop mechanism. Adjust blade tip angle automatically at negative value when encountering strong typhoon or and the blade at stalled condition and meanwhile wind rotor rotating speed was controlled and reduced.
5. Sealed slip ring, no cable twist; Carbon brush and slip ring are clean; good conductivity for electricity transferring.
6. Streamline design, and handsome appearance
7. Long acting anticorrosive treatment, guarantee no corrosion in 15years.

### 5. Variable Pitch Principle:

Rotating speed change of wind rotor drives the centrifugal variable pitch mechanism to adjust blade pitch, to change wind pressure on wind rotor, and then control wind turbine rotating speed, let the rotor speed slow down. Adopt close loop controlling mechanism, reliable regulation. Pitch control mechanism is sensitive, reliable, and can be used in variable environments, can achieve no fault, unnecessary maintenance, and working security.

Wind turbine start up: keep a big blade pitch, start up with 2m/s;

Wind turbine start to run: reduce blade pitch step by step, better for speedup;

4-12m/s: regulate the optimum blade pitch to keep the max output power of wind turbine;

Encountering to strong wind: adjust blade pitch into negative angle to keep rotating speed within limits;