Battery salient pole

What is a salient pole rotor?

The alternators with salient pole type rotors have large diameters (to accommodate the large number of poles on the rotor) and short axial lengths. The poles built up of thick steel stampings riveted together are either bolted or dovetailed to the rotor spider as shown in Fig. 2.

What is a salient pole?

Hence it is particularly well adapted for the highest speed electrical machines and is universally employed for 2 pole units,and some 4 pole units. The salient pole type has poles that are physically separate,each carrying a concentrated excitation winding.

What is the difference between cylindrical rotor and salient pole machine?

To summarize,the main differences between the Cylindrical Rotor and Salient Pole machines are as follows: In salient pole type of rotor consist of large number of projected polesi.e. salient poles mounted on a magnetic wheel. Construction of a salient pole rotor is as shown in the figure at left.

What is a salient pole motor?

Poles are laminated to reduce eddy current loss. The salient pole type motor is generally used for low-speed operations of around 100 to 400 rpm,and they are used in power stations with hydraulic turbines or diesel engines. Salient pole alternators driven by water turbines are called hydro-alternators or hydro generators.

What is the difference between salient pole and UN-slotted pole?

The un-slotted portions from the pole face is shown in the below figure. High speeds are obtained i.e., 1500 to 3000 rpm. Better in dynamic balancing and quiter in operation. This type of construction is mechanically very strong compared to the salient pole type. 1. Poles are projected. Outer surface is smooth (poles are not projected). 2.

How many salient poles does a rotor have?

Typically,the number of salient poles ranges from 4 to 60. Salient pole rotors generally use damper winding to prevent rotor oscillations while operating. The flux distribution is relatively poor as compared to the non-salient pole rotor,hence the induced emf waveform is not as uniform as the non-salient pole rotor.

Download scientific diagram | Salient-pole type rotor SM. from publication: Estimation of Excitation Current of a Synchronous Machine Using Machine Learning Methods | A synchronous machine is an ...

Salient Pole Type; Cylindrical Pole Type; Salient Pole Type. The salient pole rotor type alternator has a large number of protruding poles which is explained above in detail. The field winding is wounded around these poles forming N and S poles. Such alternators are used for low and medium speed. Its rotor design cannot support high speed due ...

Battery salient pole

A salient-pole rotor is a type of rotor that consists of projected poles keyed on a cylindrical core. A non-salient pole rotor is a cylindrical rotor with slots on its outer periphery to house rotor windings. Windage loss: The salient pole rotor has more windage losses. Non-salient pole rotor has fewer windage losses due to their smooth surface.

This demo model is of a salient-pole synchronous generator that feeds a rectifier circuit, producing a DC voltage. When a diode rectifier is directly connected to the machine terminals, the machine must be implemented in "voltage-behind-reactance" form. Otherwise, an RC snubber circuit across the terminals is required.

Hence, it is termed as projected or salient pole type rotor. This type of rotor is suitable only for low speed machines, particularly those driven by hydraulic turbines. The alternators with salient pole type rotors have large diameters (to accommodate the large number of poles on the rotor) and short axial lengths. The poles built ...

The salient pole type structure has the following special features, They have a large diameter and short axial length. The pole shoes cover about 2/3 of the pole pitch. Poles are laminated to reduce eddy current losses. ...

The term salient means "protruding" or "sticking out," and a salient pole is a magnetic pole that sticks out from the surface of the rotor. On the other hand, a nonsalient pole is a magnetic pole constructed flush with the surface of the rotor. Figure 1 - A nonsalient two-pole rotor for a synchronous machine . A nonsalient-pole rotor is shown in Figure 1, while a salient ...

Chapter # 3 Salient-Pole Synchronous Generator and Motor 1- Introduction A cylindrical rotor synchronous machine has a uniform air-gap, therefore its reactance remains the same, ...

In this post, we observe the behavior of salient pole theory and its fact at the synchronous machines. So let get started. The equivalent circuitry of the synchronous generator is operated for machines having a cylindrical rotor not for machines having salient pole rotor.

The Synchronous Machine Salient Pole block models a salient-pole synchronous machine using fundamental or standard parameters. Synchronous Machine Initialization Using Load-Flow Target Values If the block is in a network that is compatible with the frequency-time simulation mode, you can perform a load-flow analysis on the network.

In general, the Cylindrical Rotor type machines are confined to 2 and 4 pole turbine generators, while salient pole types are built with 4 poles upwards and include most classes of duty. Both classes of machine are ...

A 3-phase star connected salient pole generator has a direct-axis impedance of, and quadrature axis impedance of . If the generator is supplying 10 A, with a phase angle of 20 degrees

Battery salient pole

... terms of the design of the rotor, SM has two versions. The first one is the salient pole [48] shown in Figure 1, and the other one is the non-salient pole (round/cylindrical) rotor [49]...

There are mainly two types of rotors used in construction of alternator: Salient pole type. Cylindrical rotor type. The term salient means protruding or projecting. The salient pole type of rotor is generally used for ...

The term salient means "protruding" or "sticking out," and a salient pole is a magnetic pole that sticks out from the surface of the rotor. On the other hand, a nonsalient pole is a magnetic pole constructed flush with the surface of the rotor.

There are mainly two types of rotors used in construction of alternator: Salient pole type. Cylindrical rotor type. The term salient means protruding or projecting. The salient pole type of rotor is generally used for slow speed machines having large diameters and relatively small axial lengths.

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