



A Leader in Electric Motor Testing

Efeito Redemoinho

Uma ferramenta espectral útil na detecção de barras rompidas no rotor é o Efeito Redemoinho, que ocorre exatamente antes da 5ª Harmônica da Frequência da Rede (300 Hz em uma rede de 60 Hz). Picos do Redemoinho confirmam a análise das bandas laterais da Frequência de Passagem de Polos em torno da Frequência da Rede e ocorrem em:

$$F_{Redem} = [1 - (2/5)ks]5f_{Rede}$$

Onde:

F_{Redem} = localização dos picos antes da 5ª harmônica da Frequência da Rede
k = número da harmônica 1,2,3...
s = Escorregamento
 F_{Rede} = Frequência da Rede

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Swirl Effect

A useful spectral tool for detecting broken rotor bars is the swirl effect, which occurs just below the 5th harmonic of line frequency (300 Hz on a 60 Hz line frequency). Swirl peaks are a confirming tool for the pole-pass frequency sidebands around line frequency and occur at:

$$f_{swirl} = [1 - (2/5)ks]5f_{Line}$$

Where:

f_{swirl} = location of the peaks just below the 5th harmonic of line frequency
k = harmonic index 1,2,3...
s = Slip
 f_{Line} = line frequency

For more information read *Using a Six Fault Zone Approach for Predictive Maintenance on Motors* at http://www.pdma.com/pdfs/Articles/Using_a_Six_Fault_Zone_Approach_for_Predictive_Maintenance_on_Motors.pdf

You are invited to submit an Electrical Motor Testing Tip of your own and receive a free PdMA mug or hat if we publish it. Contact Lou at lou@pdma.com.

We hope you find our Tip of the Week useful and invite your feedback. For more technical information and to view previous tips visit us at www.pdma.com.

Upcoming Events

Power Test	February 21-24, 2011
Reliable Plant	April 19-21, 2011
MARTS	April 26-29, 2011
NPRA	May 24-27, 2011
EASA	June 26-28, 2011
SMRP	October 17-20, 2011
IMC/Solution 2.0	December 5-8, 2011