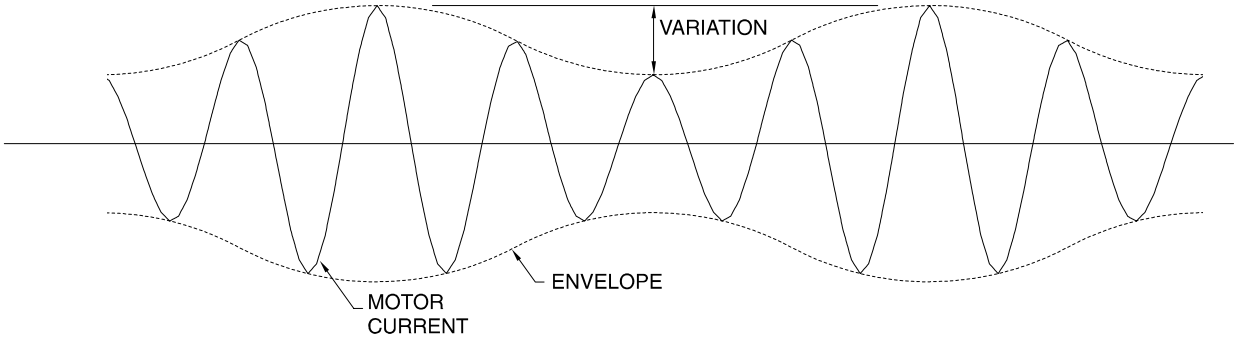
TECHNICAL INFORMATION

TITLE: MPU-16A APPLICATIONS WITH CURRENT MODULATION

Amplitude-modulated stator currents result when a reciprocating load modulates torque on a motor shaft. Frequency of this modulation is equal to the product of motor speed and the number of torque pulses per revolution. The MPU-16A reads % modulation directly according to NEMA MG1-20.82 and 21.84.



$$\% \text{ Modulation} = \frac{\text{Variation}}{1.41 \times \text{FLA}} \times 100$$

The % modulation reading available in Mode A can be used as a diagnostic tool to verify that a load is mechanically balanced, and to verify that the installed system meets the NEMA recommendation for % modulation to be less than 66%. The following table shows the percent ammeter fluctuation when measuring amplitude-modulated current.

% MODULATION (NEMA)	MODULATION FREQUENCY			
	3-5 Hz	5-10 Hz	10-20 Hz	20-60 Hz
10%	±1%	±1%	±1%	±1%
20%	±2%	±1%	±1%	±1%
30%	±4%	±2%	±1%	±1%
50%	±5%	±3%	±2%	±1%
100%	±6%	±4%	±3%	±2%