

Harmonic Distortion Caused by Electric Bus Battery Charger in Alexandria Distribution System

Authors : Mohamed Elhosienny Aly Ismail

Abstract : The paper illustrates the total voltage and current harmonic distortion impact caused by fast-charging an electric bus and maintaining standard limit compliance. Measuring the current harmonic level in the range of 2 kHz-9 kHz. Also, the impact of the total demand distortions current caused by fast charger electric bus on the utility by measuring at the point of common coupling and comparing the measurement with IEEE519 -2014 standard. The results show that the total harmonic current distortion for the charger is within the limits of IEC 61000-3-12 and the fifth harmonic current was the most dominant frequency then the seventh harmonic current. The harmonic current in the range of 2 kHz- 9 kHz shows the frequency 5.1kHz is the most dominant frequency.

Keywords : electric vehicle, total harmonic distortion, IEEE519-2014, IEC 61000-3-12, super harmonic distortion

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