

*distortion, efficiency, induction motor,  
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## **THE INFLUENCE OF THE VOLTAGE UNBALANCE AND VOLTAGE VARIATIONS ON OPERATION CHARACTERISTICS OF AN ELECTRICAL DRIVE WITH AN INDUCTION MOTOR**

Induction motors are the most widespread types of electrical motors in electrical drives. Their main advantages include high reliability, simple construction and corresponding nearly maintenance-free, and the possibility to feed them from the common AC power network. To control their speed, frequency converters are widely used in structures of adjustable speed drives. This paper deals with the influence of voltage unbalance and voltage variations in the supply network on operation characteristics of a tested adjustable speed drive with an induction motor and a frequency converter. Supply voltage parameters were adjusted using a programmable power source Pacific 3120AMX. Monitored drive parameters were computed from measured signals and depicted in graphs. Calculated parameter dependencies have confirmed an increase in the input current drive distortion and changes in its harmonic spectrum caused by an unbalance of the supply voltage, and only moderate influence of voltage variations on efficiency of drive components and total drive efficiency.

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