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(Revision of
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IEEE Standard for Petroleum and Chemical Industry—Severe Duty Totally Enclosed Fan-Cooled (TEFC) Squirrel Cage Induction Motors—Up to and Including 370 kW (500 hp)

Sponsor

Petroleum and Chemical Industry Committee
of the
IEEE Industrial Applications Society

Approved 17 March 2001

IEEE-SA Standards Board

Abstract: This standard applies to high-efficiency totally enclosed fan-cooled (TEFC), horizontal and vertical, single-speed, squirrel cage polyphase induction motors, up to and including 370 kW (500 hp), in NEMA frame sizes 143T and larger, for petroleum, chemical, and other severe duty applications (commonly referred to as severe duty motors). Excluded from the scope of this standard are motors with sleeve bearings and additional specific features required for explosion-proof motors.
Keywords: NEMA frame motors, polyphase induction motors, severe duty motors, squirrel cage motors, totally enclosed fan-cooled (TEFC) motors

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Introduction

(This introduction is not a part of IEEE Std 841-2001, IEEE Standard for Petroleum and Chemical Industry—Severe Duty Totally Enclosed Fan-Cooled (TEFC) Squirrel Cage Induction Motors—Up to and Including 370 kW [500 hp].)

This standard has been prepared in an effort to improve the reliability, efficiency, and performance of severe duty totally enclosed fan-cooled (TEFC) squirrel cage induction motors, 370 kW (500 hp) and below; and to promote uniform specification of such motors in petroleum and chemical industry applications. This standard reflects the thinking of representatives of the petroleum and chemical industry and their supplying motor manufacturers. It was prepared by the Motors Working Group of the Petroleum and Chemical Industry Committee (PCIC). At the time this standard was approved, the working group had the following membership:

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1. Overview

1.1 Scope

This standard applies to high-efficiency totally enclosed fan-cooled (TEFC), horizontal and vertical, single-speed, squirrel cage polyphase induction motors, up to and including 370 kW (500 hp), in National Electrical Manufacturers Association (NEMA) frame sizes 143T and larger, for petroleum, chemical, and other severe duty applications (commonly referred to as severe duty motors). Excluded from the scope of this standard are motors with sleeve bearings and additional specific features required for explosion-proof motors.

1.2 Purpose

The purpose of this standard is to define a specification that deals with mechanical and electrical performance, electrical insulation systems, corrosion protection, and electrical and mechanical testing for severe duty TEFC squirrel cage polyphase induction motors, up to and including 370 kW (500 hp), for petroleum and chemical industry application. Many of the specified materials and components in this standard stem from experience with severely corrosive atmospheres and the necessity for safe, quiet, reliable, high-efficiency motors.

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