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Skip to content SALE \$392.00 Original price was: \$392.00.\$235.00Current price is: \$235.00. Published by Publication Date Number of Pages IEC 02/01/2022 166 Description Documents History IEC 60034-1 Ed. 14.0 b - Rotating electrical machines - Part 1: Rating and performance This part of IEC 60034 is applicable to all rotating electrical machines, except rotating electrical machines for rail and road vehicles, which are covered by the IEC 60349 series of standards. Machines within the scope of this document may also be subject to superseding, modifying or additional requirements in other standards, for example, IEC 60079 and IEC 60092. NOTE If particular clauses of this document are modified to meet special applications, for example machines subject to radioactivity or machines for aerospace, all other clauses apply insofar as they are compatible. Product Details Edition: 14.0 Published: 02/01/2022 ISBN(s): 9782832210768 Number of Pages: 166 File Size: 1 file, 2.7 MB Note: This product is unavailable in Ukraine, Russia, Belarus \$392.00 Original price was: \$392.00.\$235.00Current price is: \$235.00. Add to cart \$352.00 Original price was: \$352.00.\$211.00Current price is: \$211.00. Add to cart \$235.00 Original price was: \$235.00.\$141.00Current price is: \$141.00. Add to cart provided by Conrad U. Brunner, Rita Werle, Zurich, Switzerland and Maarten van Werkhoven, Amsterdam, the Netherlands According to the IEA electric motor driven systems are responsible for 53% of global electricity use. The IEC has contributed to the definition of energy-efficient electric motor systems through the internationally relevant test standard IEC 60034-2-1 for electric motors and the IEC 60034-30-1 classification scheme comprising four levels of motor efficiency ("E-code"). IE4 Super Premium Efficiency These IE-codes serve as a reference for governments who specify the efficiency levels for their minimum energy performance standards (MEPS). The European Union has first set motor MEPS in 2009 and has after 10 years upgraded its minimum requirements in 2019 with regulation number 2019/1781 covering a larger scope: electric motors from 0.12 kW to 1000 kW output power including 2-, 4-, 6- and 8-pole motors. From 1 July 2021 motors between 0.75 kW and 1000 kW will be required to meet a minimum efficiency class of IE3, the group of smaller motors from 0.12 kW to 0.75 kW minimum IE2. From 1 July 2023, motors between 75 kW and 200 kW will be required to meet the even higher efficiency class of IE4. All the details are available here. The European Union has also included for the first time requirements for converters in the 2019/1781 motor regulation based on the IEC 61800-9-2, edition 1. From 1 July 2021, the minimum requirement is IE2 class of losses of converters between 0.12 kW and 1000 kW. 1 IEA, International Energy Agency: World Energy Outlook 2016, Paris, France, 2016 The USA was the first country in the world to set MEPS for motors. In 1997 (Energy Policy Act) the minimum required level was set at the equivalent of IE2. In 2007 (Energy Independence and Security Act) the MEPS were raised to the equivalent of the IE3 level (NEMA Premium), in 2015 the scope was further widened to include small polyphase motors from 0.18 kW up to 2.2 kW with IE3 and single-phase with IE2. The USA currently recognizes in its legal requirements the national testing standard IEEE 112B, the Canadian test standard CSA390 but not yet the IEC test Standard IEC 60034-2-1 (the differences are minimal). The adjustment of the requirements to allow testing according to the IEC standard is under consideration. Australia and New Zealand set MEPS levels for 0.75 kW to 185 kW at IE2 in 2000 (AS/NZS 1359.5:2000), effective since 2001, based since 2018 on the IEC test standard IEC 60034-2-1. China has upgraded in 2019 its motor efficiency standard GB 18613 for small and medium three-phase asynchronous motors for 0.12 - 1000 kW and 2-, 4-, 6- and 8-poles aligned with IEC standards. It still has kept its motor MEPS from 0.75 kW to 375 kW at the IE2 level with the date of the formal enforcement of the more advanced MEPS with IE3 and IE4 as a reach standard pending. Japan decided to align its national JIS with IEC efficiency classes and to include electric motors at the IE2 and IE3 level in its Toprunner programme in 2014. India has a comparative efficiency label since 2009 and a voluntary standard on IE2 level since 2012. In 2020, the point was reached where countries consuming 76% of the global electricity consumption by electric motor systems have set MEPS for motors at either IE2 or IE3 level. This is a high level of international alignment for a globally traded product, recognizing at the same time that MEPS can differ according to the market situation of individual countries or regions. The barriers to trade are reduced through the transparent nomenclature and definitions of the IE-code (MEPS levels at IE2 / IE3 / IE4). Motor energy efficiency standards used around the world Nationally Required Minimum Energy Performance Standards; IEC Efficiency Classes and Testing Standards (source: EMSA 2020) The focus on motor efficiency has shifted from the product "motor" to the "Electric Motor Driven System" which is the system consisting of the motor control with a variable frequency converter, the motor itself, the mechanical equipment and the driven application (pump, fan, compressor, etc.). It is widely accepted that the efficiency improvement and the subsequent energy savings in EMDS can only be achieved with an integrated system consisting of well-matched and highly efficient individual components that is operated according to the required load in an efficient way. Electric Motor Driven System (EMDS) IEC 61800-9-2, edition 1, 2017 was published as a test standard and an efficiency classification for converters. The Group Efficiency Standard IEC 61800-9-1 defines the interface between the electrical and the mechanical part of the EMDS. In IEC 60034-2-3, 2020 a test method was published for motors driven by converters. Also, in IEC TS 60034-30-2, 2016 an efficiency classification for motors driven by converters was published. Pump system, (source: EcoAmbassador Academy) In 2019, IEC ACEE2 formed a Task Group 6 to explore the possibilities of coordinating and aligning international standards and regulations for pumps, fans and compressors, Zurich, Switzerland 2016 • Part 2: Recommendations for aligning standards and regulations for pumps, fans and compressors, Zurich, Switzerland 2019 3 EEMODS: International conference on Energy Efficiency in Motor Driven Systems, organized by the Joint Research Centre of the European Commission STARS FR Sample 1 Sample 2 EN FR The standard, IEC 60034-1:2022, provides guidelines for rating and performance of rotating electrical machines. It is applicable to all types of rotating electrical machines, excluding those used in rail and road vehicles, which are addressed by other standards. The standard acknowledges that machines within its scope may also need to comply with additional requirements from other standards such as IEC 60079 and IEC 60092. This fourteenth edition of the standard supersedes and replaces the thirteenth edition published in 2017. It emphasizes the importance of establishing a comprehensive framework for evaluating the rating and performance of rotating electrical machines. The standard aims to provide reliable and consistent criteria for determining the capabilities and limitations of such machines. Purchase Right after completing the purchase process, you will immediately get a digital copy of this standard which is: Not Locked Printable Multi-User \$ 59.50 We are not affiliated with any brand or entity on this form. Use a Iec 60034 14 Pdf template to make your document workflow more streamlined. Show details Hide details 60034-14:2018 RLV © IEC 2018 CONTENTS FOREWORD ..... 4 1 Scope .....

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Here is a list of the most common customer questions. If you can't find an answer to your question, please don't hesitate to reach out to us. Need help? Contact support What is the IEC 60034-1 standard? IEC 60034-1 classifies the temperature rise limits of insulation materials and specifies the maximum permissible temperatures that the various classes of insulation materials could withstand. What is the IEC 60034-14 standard? IEC 60034-14 Revised Applies to d.c. and three-phase a.c. machines, with shaft heights 56 mm and higher and a rated power up to 50 MW, at nominal speeds from 600 rev/min up to and including 3 600 rev/min. What is IEC 60204 standard? EN IEC 60204 applies to electrical, electronic and programmable electronic equipment and systems to machines not portable by hand while working, including a group of machines working together in a co-ordinated manner. What does IEC mean in motors? In short: the International Electrotechnical Commission (IEC) standards are the uniform standards indicating the efficiency classes for electric motors. In 1999, the European Commission established different efficiency classes for electric motors. What motor is excluded from IEC 60034 30 1 2014 standard? The following motors are excluded from IEC/EN 60034-30-1 - Single-speed motors with 10 or more poles or multi-speed motors - Motors completely integrated into a machine (for example, pump, fan or compressor) that cannot be tested separately from the machine. What is IEC 60034 standard? IEC 60034-30 specifies energy-efficiency classes for single-speed, continuous duty(S1), three-phase, cage-induction motors with 2, 4 or 6 poles. It classifies three classes: IE1 (standard), IE2 (high) and IE3 (premium). For each class the efficiency is defined for a rated output range from 0.75 to 375 kW. What does IEC standard mean? The International Electrotechnical Commission (IEC) headquartered in Geneva, Switzerland, is the organization that prepares and publishes international Standards for all electrical, electronic and related technologies. What is IEC TS 60034 25 2014? IEC TS 60034-25:2014 describes the performance characteristics of a.c. electrical machines for use on converter supplies. For electrical machines specifically designed for converter duty application design features are defined. Be ready to get more If you believe that this page should be taken down, please follow our DMCA take down process here. 50%(2)50% used this document useful (2 votes)709 views IEC standardsSave IEC 60034-2112014 Standard on Efficiency Measurment... For Later50%65% found this document useful, undefined learn more Motors for hazardous areas learn more Motors for fans and ventilators learn morelearn morelearn morelearn morelearn more Motor for shredders and crushers learn morelearn more Custom motor projects USA learn morePage 2A special advantage for our industrial customersOne of our decisive advantages is our 24-hour emergency service for motor deliveries to any place in the world. We exclusively operate an emergency telephone line, so that our industrial customers can also reach us outside normal business hours if they face a plant standstill. MENZEL maintains one of the largest inventories of brand-new three-phase asynchronous motors up to 15,000 kW as well as direct current motors of different sizes, including special constructions. Even when our help is required very quickly in case of a plant standstill, you can always count on the proven service and quality of MENZEL Elektromotoren! Our stocked industrial motors can be adapted to your requirements within a very short time. They will be tested in our in-house test field and directly delivered to you also on weekends, no matter on what continent you are based. One call to MENZEL can save you time and money! JSA GROUPとは 産業界標準化及び規格統一に関するおよび及び啓発を目的、技術的向上、生産の効率化に貢献することを目的としています。QC検定 品質管理の知識を毎年2回、全国主要都市で開催しています。規格 企業関係者、学識経験者などの知識の結集により日本産業界規格（JIS）や国際規格（ISO、IEC）等広範囲な規格の開発に努めています。組織認証 長年の品質管理の普及に努めてきた経験と、蓄積された蓄技術力のノウハウ等を活かし、公平性を重視した組織認証事業を行っています。 員認証 第三者による審査員等の評価登録（委員認証）サービスとして、各種資格の登録を行っています。 ジャーナル 標準化と品質管理プラットフォームをはじめ世界中の最新情報や記事発信しております。 ISO認証及びITS認証はこちら マネジメントシステム審査員、翻訳者、規格開発エンジニアなど登録、検索はこちら JIS登録認証機関協議会 IEC活動推進会議 国際標準化協議会 会員（有料）の方は季刊誌「標準化と品質管理」オンラインジャーナルを無料で読むことができます。 詳しくみる 新型コロナウイルス感染症にDXなど、昨今企業を取り巻く環境は大きく変化しています。 ニューノーマル時代における組織の持続的発展に役立つ標準化情報をもめました。 詳しくみる 一般財団法人日本規格協会の取り扱う規格や書籍、研修などのWeb販売・申込サイトです。併せて、規格の最新情報など様々な情報をご提供し、お客様の様々なリクエストにお応えする窓口の機能を有します。24時間ごなたでもご利用いただけます。 詳しくみる 発行年月日：2020-10-07 状態：有効 邦訳版：無 Four Conformity Assessment Systems that cover the breadth of electrical and electronic technologies Over 30 000 experts and more than 100 years expertise A global network that covers 99% of the world population and offers a free programme to developing countries Develop international standards that represent a global consensus of state-of-the-art know-how Four Conformity Assessment Systems that cover the breadth of electrical and electronic technologies Over 30 000 experts and more than 100 years expertise Anchor placeholder #justpublished Skip to content Share by email Main image Click to view image in fullscreen IEC 60034-1:2022 Rotating electrical machines - Part 1: Rating and performance IEC 60034-1:2022 is applicable to all rotating electrical machines, except rotating electrical machines for rail and road vehicles, which are covered by the IEC 60349 series of standards. Machines within the scope of this document may also be subject to superseding, modifying or additional requirements in other standards, for example, IEC 60079 and IEC 60092. This fourteenth edition cancels and replaces the thirteenth edition published in 2017. Technical committee: TC 2 Rotating machinery Publication type:International Standard Publication date:2022-02-14 Edition:1.4.0 ICS 29.160.01 Stability date:2025 ISBN number:9782832240144 Pages:161 File size:7.24 MB Under development EditionDate:PublicationEditionStatus:Ensure inclusive and equitable quality education Achieve gender equality and empower all women and girls Ensure availability and sustainable management of water and sanitation for all Ensure access to affordable, reliable, sustainable and modern energy for all Promote inclusive and sustainable economic growth, full and productive employment and decent work for all Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation Reduce inequality within and among countries Make cities and human settlements inclusive, safe, resilient and sustainable Ensure sustainable consumption and production patterns Take urgent action to combat climate change and its impacts Conserve and sustainably use ocean, sea and marine resources Promote sustainable use of terrestrial ecosystems, halt and reverse land degradation and biodiversity loss Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable institutions at all levels Strengthen the means of implementation and revitalize the global partnership for sustainable development See more Related publicationsShow all publications Show less For many years, the energy efficiency classes of electric motors (low-voltage three-phase motors) were defined only on the basis of a voluntary commitment by the manufacturers of the motors. The globally increasing demand for energy-efficient, operationally optimized electric motors gave rise to a range of different regulations for determining efficiency. It was only in 2008 that the international standard IEC 60034-30 globally regulated the efficiency classes and legal requirements placed upon the energy efficiency of low-voltage three-phase motors in a uniform manner. The energy efficiency of electric motors is defined in the international standard on efficiency classes for motors: IEC 60034 Part 30 - Efficiency Classes of line operated AC motors (IE code). IEC stands for the International Electrical Commission, a global standardization organization. The aim of the new efficiency classifications as per IEC 60034-30-1 was the global standardization of regulations in order to enable international comparisons and to facilitate the certification of electric motors. The new internationally standardized energy efficiency classes relate to three-phase asynchronous squirrel cage motors. MENZEL Elektromotoren GmbH in Berlin is one of the manufacturers of such motors. The new standard IEC 60034-30-1 was published in March 2014, replacing its predecessor IEC 60034-30 from 2008. Compared with the old IEC standard from 2008, which defined three efficiency values for three-phase asynchronous motors, the updated standard IEC 60034-30-1 has the additional efficiency class IE4. In addition, the new IEC standard now takes 8-pole motors into account as well as a larger power range. The new standard IEC 60034-30-1 defines the following four energy efficiency classes or IE efficiency classes for line-operated three-phase asynchronous motors. Designation takes place on the basis of the designation for IP protection classes (International Protection) with IE (International Efficiency): Code IEC 60034-30 Efficiency class IE1 Standard Efficiency IE2 High Efficiency IE3 Premium Efficiency IE4 Super Premium Efficiency Electric motors that are identified with the new IE code for energy efficiency classes must also be measured with the new measurement procedure as per IEC 60034-2-1:2007. With this measurement procedure, additional losses are determined more precisely today than previously. The IEC 60034-30-1 efficiency standard applies to low-voltage three-phase AC squirrel cage motors in accordance with the following criteria: Power range: 0.12 - 1,000 kWVoltage range: Low voltage motors up to 1,000 VMain frequency: 50 and 60 HzNumber of poles: 2, 4, 6, 8 polesProtection classes: AllOperating mode: S1 (continuous load) and electric motors that are designed for other operating modes but can still be operated at rated power in continuous operationMotors with two switchable rated voltages (if the magnetic flux is the same for both voltages)Temperature range: -20°C to +60°CInstallation altitude: Up to 4,000 m above sea levelMotors for a speed with 10 or more poles and motors designed for a multiple speedsMotors with mechanical commutators (such as DC motors)Motors that are fully integrated into a machine (such as pumps, fans, and compressors) and cannot practically be tested independentlyMotors with integrated variable frequency drives (compact drives) if the motor cannot be tested separately from the converter (defined in a separate standard)Submersible motors that are designed specially so that they can be operated completely submerged in a liquidExplosion-proof motors and brake motors Nominal limit values (in %) for low-voltage 3-phase AC squirrel cage motors for 50 Hz (as per IEC60034-30-1:2014) MENZEL motor type plate The limit values displayed in the overview apply to a mains frequency of 50 Hz.Designation of energy efficiency class on type plate Each MENZEL low-voltage three-phase squirrel cage motor is equipped with a type plate or rating plate. The specifications that must be made on the type plate are also regulated by the standard IEC 60034-1. In accordance with the specifications on the designation of the energy efficiency class, MENZEL Elektromotoren makes the following standard specifications on the type plate for low-voltage three-phase squirrel cage motors: Efficiency class IE1, IE2, IE3, or IE4 as per IEC 60034-30Specifications on the efficiency class at 100% of the rated load and rated currents (no voltage range) on the basis of the stated standardIndicator of the year of constructionMore information is specified in the MENZEL motor documentation. When it comes to saving on energy and resources, electric motors have a special key role. After all, around 2/3 of industrial energy consumption is due to machines driven by electric motors. Naturally, increasingly stringent requirements are placed on the energy efficiency of electric motors. The efficiency of electric motors is described by means of their efficiency class. Globally standardized efficiency classes facilitate international trade and the comparison of low-voltage asynchronous motors on today's market. However, the journey to the creation of a uniform standard and legal requirements for motor efficiency was a long one.From EFF to IE naming - background informationHow did the old EFF naming to the IE naming come about? Until a few years ago, low-voltage three-phase motors in Europe were placed into different efficiency classes on the basis of a voluntary agreement (CEMEP). These classes were called EFF3, EFF2, and EFF1, and were just part of a voluntary EU agreement. The still diverse regulations on the determination of efficiency in the individual countries continued to make trade difficult for manufacturers producing motors on the global market.To change this, the International Electrotechnical Commission (IEC) introduced the standard IEC 60034. This aimed to provide a uniform global basis for the comparable assessment of individual low-voltage asynchronous motors. This heralded the switch from the EFF code to the uniform IE code, significantly facilitating the international comparison and certification of electric motors.A comparison of the old and new efficiency classesThe main difference between the EFF and IE efficiency classes is the procedure used to determine them. If you compare the values directly on the same motor, you can expect the efficiency class determined using the new measurement procedure to be reduced. Code IEC 60034-30 Efficiency classes Old EFF Code (as per CEMEP) EFF 3 (motors with low efficiency) IE1 Standard Efficiency EFF 2 (motors with improved efficiency) IE2 High Efficiency EFF 1 (motors with higher efficiency) IE3 Premium Efficiency - IE4 Super Premium Efficiency - In addition to pure performance and energy efficiency data, there are lots of other reasons to choose a low-voltage three-phase motor from MENZEL Elektromotoren. We're happy to present our entire product portfolio to you along with the benefits during a personal meeting. Call us or send us an e-mail. You are looking for powerful and energy efficient electric motors for industrial applications? Please send us your enquiry!Enquiry Form Flyer Energy Efficiency Classes IEC 60034-30-1 (English) Share — copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt — remix, transform, and build upon the material for any purpose, even commercially. 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