Pumbad. Labapumbad. Märgmootoriga ringluspumbad. Osa 3: Toodetesse integreeritud ringluspumpade energiatõhususe indeks (EEI)

Pumps - Rotodynamic pumps - Glandless circulators - Part 3: Energy efficiency index (EEI) for circulators integrated in products

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16297-3:2012 sisaldab Euroopa standardi EN 16297-3:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 16297-3:2012 consists of the English text of the European standard EN 16297-3:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 17.10.2012.	Date of Availability of the European standard is 17.10.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Pumps - Rotodynamic pumps - Glandless circulators - Part 3: Energy efficiency index (EEI) for circulators integrated in products

Pompes - Pompes rotodynamiques - Circulateurs sans presse-étoupe - Partie 3: Calcul de l'indice d'efficacité énergétique (EEI) pour les circulateurs intégrés dans des produits

Pumpen - Kreiselpumpen - Umwälzpumpen in Nassläuferbauart - Teil 3: Berechnung des Energieeffizienzindexes (EEI) von in Produkte integrierten Umwälzpumpen

This European Standard was approved by CEN on 18 August 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 16297-3:2012) has been prepared by Technical Committee CEN/TC 197 “Pumps”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

EN 16297 consists of the following parts under the general title *Pumps — Rotodynamic pumps —Glandless circulators*:

— Part 1: General requirements and procedures for testing and calculation of energy efficiency index (EEI);

— Part 2: Calculation of energy efficiency index (EEI) for standalone circulators;

— Part 3: Energy efficiency index (EEI) for circulators integrated in products.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard has been prepared under mandate M/469 EN of 22 June 2010 given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Requirements of the EU Directive 2005/32/EC of 6 July 2005 and Commission Regulation (EC) 641/2009 of 22 July 2009 by describing procedures for measurement and calculation of hydraulic power, power consumption, and energy efficiency index of

1 Scope

This European Standard specifies the procedure for calculating the energy efficiency index (EEI) of circulators integrated in products.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 809:1998+A1:2009, *Pumps and pump units for liquids – Common safety requirements*

EN 16297-1:2012, *Pumps – Rotodynamic pumps – Glandless circulators – Part 1: General requirements and procedures for testing and calculation of energy efficiency index (EEI)*

EN 60335-2-51:2003, *Household and similar electrical appliances – Safety – Part 2-51: Particular requirements for stationary circulation pumps for heating and service water installations*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in EN 16297-1:2012 and the following apply.

3.1
circulators integrated in products
circulator designed to operate dependently of a product that generates and/or transfers heat

Note 1 to entry For the purpose of this document, the term **circulator** is used in the following in place of circulators integrated in products

3.2
specific speed of a circulator
dimensionless quantity used to classify pump impellers as to their type and proportions

Note 1 to entry Specific speed of a circulator is calculated by:

$$n_s = \frac{n}{60} \times \frac{\sqrt{Q}}{H^{0,75}}$$

where:

n_s is specific speed of a circulator

n is rotational speed in r.p.m. in this instance $n_{100\%}$ defined at $Q_{100\%}$ and $H_{100\%}$

Q is flow rate in this instance defined as $Q_{100\%}$ (see also EN 16297-1)

H is Head in this instance defined as $H_{100\%}$ (see also EN 16297-1)

Note 2 to entry $n_{100\%}$ is determined by linear interpolation of speeds around $Q_{100\%}$ and $H_{100\%}$

3.3
inline pump housing
pump housing where inlet and outlet are on the same axis