KEYMARK
The Key To The European Market
Content

- History of the KEYMARK
- Elements of KEYMARK certification
- Competence of involved third parties
- Heat pump KEYMARK
- Data for conformity with ErP requirements
- Solar KEYMARK
KEYMARK – The European Quality Mark

Tested and surveyed (at least every 2 years) compliance of products or services with the European (EN) Standard and requirements specified in certification schemes, including an annual surveillance of the factory production control (FPC).

„The KEYMARK – Tested and certified once, accepted everywhere.“
General Information About KEYMARK

- **Voluntary** European third-party certification mark (system 5 certification)
- Shows conformity of **products and services** with European standards
- Owned by the European standardization organizations **CEN and CENELEC**
- **Certification** by neutral, independent, accredited certification bodies, empowered by the KEYMARK Management organization (KMO)
- **Testing and Inspection** by accredited testing laboratories and inspection bodies
- Certificates are generally **valid for 5 years**
- **Basis for certification**: CEN-CENELEC Internal Regulations, Part 4 “Certification” (2014-01)
History of KEYMARK

Recommendation of EU Council to establish a European standard conformity mark

Introduction of the KEYMARK 1993/94

Development of the European system of signs of CEN-CENELEC 1992

First KEYMARK in Germany for thermal insulation products for buildings 1995

Introduction of Solar KEYMARK 2002

Transfer of former CENCER mark for TRV to KEYMARK 2004

DIN CERTCO takes over the KEYMARK Management 2012

Introduction of Heat Pump KEYMARK 2016

2015

2012
## Facts and Figures about KEYMARK

<table>
<thead>
<tr>
<th>Facts about KEYMARK</th>
<th>2016</th>
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<tbody>
<tr>
<td>Product categories for which KEYMARK has been granted</td>
<td>14</td>
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<tr>
<td>Valid certificates</td>
<td>approx. 2,000</td>
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<td>KEYMARK-certified companies</td>
<td>approx. 900</td>
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<tr>
<td>Countries with KEYMARK certificates</td>
<td>35</td>
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<tr>
<td>EN Standards for KEYMARK</td>
<td>approx. 130</td>
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<tr>
<td>Empowered certification bodies</td>
<td>38</td>
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</table>
Elements of KEYMARK Certification

- Product related factory production control (FPC) of manufacturer taking into account
  - Elements of EN ISO 9001
  - The respective European product standard
  - The manufacturing process from raw material to the storage of the goods
- Initial inspection of FPC including product sampling
- Initial Type Test (ITT)
- At least annual inspection of FPC
- Surveillance test of the product at least every 2 years (shorter intervals, if appointed in the standard)
General Procedure of KEYMARK Certification

Manufacturer/Supplier
• Applies for testing and factory inspection

Inspector/Testing laboratory
• Inspection of FPC and sampling
• Product testing according to EN Standard

Manufacturer/Supplier
• Provides application for certification
• Sends inspection/test report

Empowered Certification Body
• Assesses the inspection and test reports and other certification relevant documents
• Awards a certificate and grants the right to use the KEYMARK

Certification Body
• Contract with testing laboratory
Requirements for Certification Bodies

- **Accreditation according to ISO/IEC 17065** by a member of the European Accreditation Association (EA) with the respective scope
- Located in one of a CEN member or CEN affiliated country
- If applicable, proof of its own certification scheme for the respective product (experience in the certification of this product area)
- **Confidentiality** according to conformity assessment procedures
- Shall **not** receive financial subsidies
- **Empowerment** by KEYMARK Management Organisation (on behalf of CEN)
Empowered KEYMARK Certification Bodies

<table>
<thead>
<tr>
<th>Country</th>
<th>CBs</th>
<th>Country</th>
<th>CBs</th>
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<tr>
<td><strong>Empowered CBs</strong></td>
<td><strong>38</strong></td>
<td></td>
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</tr>
</tbody>
</table>
Requirements for Testing Laboratories and Inspection Bodies

- Accreditation with the respective scope
  - Testing laboratories: EN ISO/IEC 17025
  - Inspection Bodies: EN ISO/IEC 17020
- Shall not receive financial subsidies
Organisation of European Scheme Groups

KEYMARK

Scheme Development Group for Heat Pumps

Accreditation according to EN ISO/IEC standards and/or empowerment according to further requirements

- European certification scheme
- Inspection documents
- Testing documents
- Internal regulations
- Mutual Recognition documents

Inspection Bodies (IB Group)

Manufactures (National associations)

Testing Laboratories (TL Group)

Certification Bodies (CB Group)

- Annual Inspection of product related FPC
- Production of products according to EN standards
- Testing of products according to EN and certification scheme
- Certification and Issuing of licenses

Inspection report

Test report

Certificate
Elements of Heat Pump KEYMARK Certification

- Requirements for FPC of manufacturers described in Annex B

- Initial inspection of FPC at manufacturing site according to Annex B using report template Annex C

- Initial Type Test (ITT) according to Annex A and E

- At least annual review of FPC including product sampling according to Annex B using report template Annex C

- Surveillance test of the product according to Annex A and Re-testing Guide
Heat Pump KEYMARK Certification - Documents

- European KEYMARK Scheme Heat Pumps (2016-05)
- **Annex A** KEYMARK Requirements – Type Definition and Testing
- Annex B Requirements for FI and FPC
- Annex C FI Report Template
- **Annex D1 and D2** Data Sheet and Certificate Template
- **Annex E** Test Points for Initial Type Test
- Annex F Report of Modification Template
- Annex G Brands and Sub-licenses
- Annex H Requirements for participating Testing Laboratories
- Annex I Transition Rules
- Annex J Fees

- Working Rules for Heat Pump Scheme Group (Internal Rules)
- Guidelines
Heat Pump KEYMARK - Basis of Certification

Product and testing requirements:
- EN 14511 Part 1-4, EN 14825
- EN 12102
- EN 16147
- EN 12309 Part 5 and 6

Additional product requirements:
- (EU) No 813/2013 or (EU) No 814/2013
- Ecodesign requirements for heat pumps for space heating and combination heaters
- Ecodesign requirements for water heaters and water storage tanks
Definition - Types

Type

- A type is declared by the manufacturer. All heat pumps defined by a type must use the same heat source, heat sink and driving energy (gas, electricity etc.).

- The types covered by the KEYMARK Scheme are:
  - Air/water - heat pumps
  - Water/water (including brine/water) - heat pumps
  - Exhaust air/water - heat pumps
  - Direct expansion/water - heat pumps

- Air/air – heat pumps will be included in the scheme.
Definition - Sub-types

Sub-type

A sub-type is part of a type. Heat pumps with an identical refrigeration circuit design are considered as being the same sub-type if they fulfil all conditions below:

- Same compressor: identical (manufacturer = commercial reference)
- Same condenser and evaporator: identical (manufacturer = commercial reference)
- Same defrost process (when relevant)
- Expansion device: same technology

In addition for heat pumps only designed for domestic hot water production:
- Same tank volume
- Same heat exchanger
Definition - Models

**Model**

- A sub-type may consist of several different **models**, i.e. heat pumps using identical refrigeration circuits, but otherwise differ in design.
- Examples of such differences are given, but not limited to the list below:
  - With or without integrated **circulator pump(s)**
  - With or without integrated **storage tank**
  - With or without integrated **back up heater**
  - Different **sizes** and **corrosion protection of storage tank(s)**
  - Different **location** and **dimensions on pipe connections**
  - Different **brand names**
Data sheet (Technical data annex to certificate)

- Data sheets with certified product data for
  1. Air/water, Sole/water and Water/water heat pumps
  2. Exhaust/air heat pumps
  3. Heat pumps for Domestic Hot Water (DHW)

- Annex to certificate
- Provided by manufacturer – assessed and approved by certification bodies
- Data base in preparation
### 1. Air/Water; Brine/Water; Water/Water heat pumps (if applicable)

<table>
<thead>
<tr>
<th>General data</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model…</th>
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<tbody>
<tr>
<td>Refrigerant</td>
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<tr>
<td>Mass of refrigerant [kg]</td>
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<td></td>
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<tr>
<td>GWP according to EU Nr. 517/2014 [CO₂eq]</td>
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<tr>
<td>Frequency [Hz]</td>
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<td></td>
<td></td>
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<tr>
<td>Voltage [V]</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Test points EN 14511-2 Air/Water heat pump (if applicable)</th>
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</thead>
<tbody>
<tr>
<td>A7/W35 heat output [kW]</td>
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<td></td>
<td></td>
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<tr>
<td>EI input [kW]</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>COP</td>
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</tr>
<tr>
<td>A7/W55 heat output [kW]</td>
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<tr>
<td>COP</td>
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<td>(if applicable)</td>
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</tbody>
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22/01/2017
Data sheet - II

- Air/Water, Water/Water, Sole/Water, Exhaust air heat pumps
  - General data
  - Test points according to EN 14511-2
    - A7/W35, A7/W55
    - A20/W35
  - Test results (EN 14511-4)
  - Average climate low temperature application
    - Declared values (EN 14825)
    - Sound power level according to EN 12102
    - Declared data regarding ErP regulation
  - Average climate medium temperature application, warmer climate and colder climate
Heat pumps for domestic hot water
- General data
- Technical data – average climate
- Technical data – colder climate
- Technical data – warmer climate
Empowered Heat pump KEYMARK CBs

<table>
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<td><strong>Empowered CBs</strong></td>
<td><strong>6</strong></td>
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</table>
Elements of Solar KEYMARK

- Inspection of Factory production control (FPC) at manufacturing site incl. sampling
- Initial type test according to EN ISO 9806, EN 12976 or EN 12977
- Conformity assessment
- Issuance of certificate and right to use KEYMARK (with Reg. No.)
- Periodical surveillance
  - Products (Physical Inspection every two years) and
  - Production (annual Factory Inspektion)
Solar KEYMARK - Documents I

- Specific Scheme Rules for Solar Thermal Products
- Annex A1, A1b: Harmonized factory inspection procedures & check list
- Annex A2: Solar KEYMARK surveillance test
- Annex A3, A4: Parts lists, drawings and specifications
- Annex B1, B2, B3, B4: Harmonized formats for data sheets
- Annex C: Solar KEYMARK Fees
- Annex D: System families - requirements and extrapolation procedures
- Annex E: Factory production control
Solar KEYMARK - Documents II

- Annex G: Solar KEYMARK certificates and sub-licenses for other brands, product names, and sellers
- Annex I: Template for Complaints
- Annex J: Specific requirements for PVT collector Certification
Solar KEYMARK - Basis of Certification

- Product requirements
  - EN 12975-1 for solar collectors
  - EN 12976-1 for factory made systems
  - EN 12977-1 for solar water heaters and combisystem

- Testing requirements
  - ISO 9806 for solar thermal collectors
  - EN 12976-2 for factory made systems
  - EN 12977-2 for solar water heaters and combisystem
Empowered Solar KEYMARK Certification Bodies

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How can interested parties support and participate?

- Giving feedback to KMO on interested associations, manufacturers etc.
- Inviting KMO as speakers for KEYMARK presentations
- Marketing of KEYMARK at fairs
- Participation in existing Scheme Groups
- Creating new Scheme Groups
- Requesting KEYMARK certified products
Further KEYMARK Information

www.dincertco.de/keymark_en

- Application for empowerment
- European KEYMARK database
- Empowered certification bodies and scopes
- Information on existing and active Scheme Groups
- General KEYMARK Flyer
- FAQs
- News and Events
Benefits of The KEYMARK

- Reduces costs for testing, inspection, and certification
- Designed as basis for granting of national subsidies (e.g. Solar thermal collectors)
- Improves consumer protection against mark inflation and gives decision support
- Strengthens trust in product quality
- Gives better visibility in the competition
- Is known and accepted in many European countries (easier access to European market)
Useful Websites

- Website DIN CERTCO (KEYMARK Management on behalf of CEN)
  http://www.dincertco.de/keymark_en
- Guide for CE-marking
- European heat pump association (ehpa)
  www.ehpa.org
- KEYMARK-Homepage CEN
  www.cen.eu/work/keymark
- Heat pump KEYMARK
  www.heatpumpkeymark.com
Finally ...

... thank you very much for your attention!

KEYMARK Management. At your Service.

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