Heat Pump KEYMARK database: how to manage product data

Heat Pump KEYMARK Secretariat

25 April 2024
Heat Pump KEYMARK database: how to manage product data – 25 April 2024

Danaé Kokkalis
Senior Communication Officer
European Heat Pump Association
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:10</td>
<td>Welcome &amp; introduction to EHPA</td>
<td>Danaé Kokkalis</td>
</tr>
<tr>
<td>10:10 - 10:25</td>
<td>Introduction to HPK &amp; certification process</td>
<td>Tarik Bellahcene</td>
</tr>
<tr>
<td>00:25 - 10:45</td>
<td>Presenting the database</td>
<td>André Jacob</td>
</tr>
<tr>
<td>10:45 - 10:55</td>
<td>Break</td>
<td>-</td>
</tr>
<tr>
<td>10:55 - 11:20</td>
<td>Demo</td>
<td>André Jacob</td>
</tr>
<tr>
<td>11:20 - 11:50</td>
<td>Q&amp;A session</td>
<td>-</td>
</tr>
<tr>
<td>11:50 - 12:00</td>
<td>Closing</td>
<td>Danaé Kokkalis</td>
</tr>
</tbody>
</table>
Housekeeping rules

You can ask your questions in the chat. Don’t forget to mention the name of the speaker you would like to address your question to.
Where are you connecting from?
Introduction to EHPA
The European Heat Pump Association

Founded in 2000

219 members representing the entire value chain

• Heat pump and component manufacturers
• National associations
• Testing laboratories
• Utilities, consultancies and financial partners
• Research institutes and universities
• Heat pump-based services and startups

30 countries
**Policy Department**

EHPA is the voice of the heat pump sector in the European Union and publications to raise awareness and create a market environment that facilitate faster deployment of heat pumps, to unlock their benefits on a European level. Policy work is naturally at the cornerstone of EHPA’s activities.

**Heat Pump Keymark**

The Heat Pump Keymark is a voluntary European certification mark (CEN Type II certification) for all heat pumps, combination heat pumps and heat water heaters. The scheme is owned by the European Committee of Standardization (CEN) and is operated by the European association of certification bodies across Europe.

**Our Projects**

EHPA is actively involved in several European funded projects that are part of the H2020 Framework and Horizon 2020 programmes, with excellent projects able to apply for the annual Heat Pump Award.

**Our vision**

In a fully decarbonised Europe, heat pump technologies are the number one heating and cooling solutions, and a core enabler for a renewable, sustainable and smart energy system.

**Our mission**

EHPA is a forward looking association aiming at putting Heat Pumps at the centre of the energy system by communicating the benefits of heat pumps, providing relevant information and being a reference point and integrator to all stakeholders.
Tarik Bellahcene

Head of the Heat Pump KEYMARK Secretariat

European Heat Pump Association
Introduction to the Heat Pump KEYMARK Scheme
Heat Pump KEYMARK

Your European Quality Pass

Tarik Bellahcene
Head of Heat Pump KEYMARK Secretariat
Brussels, April 2024
AGENDA

Introduction to KEYMARK

KEYMARK for Heat Pumps - Certification

Heat Pumps KEYMARK - Certification Process - Scheme Recognition

Heat Pumps KEYMARK - Database and Communication

Heat Pumps KEYMARK - Benefits
Introduction to KEYMARK
Introduction to KEYMARK

- The KEYMARK is a voluntary European quality mark for products and services. It is owned by the European standardization organizations CEN and CENELEC.

- The KEYMARK quality mark is granted by following a certification process that demonstrates compliance with European Standards and Ecodesign requirements.

- The KEYMARK quality mark is issued by empowered certification bodies.
KEYMARK quality mark for various types of products

- As a rule, the KEYMARK can be issued for all products and services, that are subject to a European Standard (EN)

- KEYMARK quality mark cover various sectors such solar thermal products, thermal insulation materials, thermostatic radiator valves, ceramic tiles, heat pumps or fire extinguishers
KEYMARK Schemes

KEYMARK certification schemes are solid reference across various industry sectors – Heat Pumps represent 37% of total KEYMARK issued certificates

- 2488 Thermal Insulation Products for Buildings KEYMARK Certificates
- **2122 Heat Pump KEYMARK Certificates**
- 1020 Solar Thermal Products for Buildings KEYMARK Certificates
- 77 Thermostatic Radiator Valves KEYMARK Certificates
- 63 Thermal Insulation Products for Industrial Applications KEYMARK Certificates
KEYMARK for Heat Pumps
KEYMARK for Heat pumps – Scope

The scope of this KEYMARK scheme encompasses a large variety of electrical driven heat pumps. This mainly includes:

- Space heating/cooling heat pumps
- Domestic Hot Water heat pumps
- Combination heater heat pumps

Using mainly the following Heat pump Technologies:

- Air to Water
- Brine to Water
- Air to Air
KEYMARK for Heat pumps – Testing types

Depending on the heat pump type applications, the following tests are required according to EN Standards:

• Space heating tests
• Space cooling tests
• Hot Water tests
• Sound Power level tests
• Operating tests
KEYMARK for Heat pumps - Standards

The tests are made according to the following EN Standards:

- EN 14511-1/2/3/4 Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors
- EN 14825 Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling - Testing and rating at part load conditions and calculation of seasonal performance
- EN 16147 Heat pumps with electrically driven compressors - Testing, performance rating and requirements for marking of domestic hot water units
- EN 12102-1/2 Air conditioners, liquid chilling packages, heat pumps, process chillers and dehumidifiers with electrically driven compressors - Determination of the sound power level - Part 1: Air conditioners, liquid chilling packages, heat pumps for space heating and cooling, dehumidifiers and process chillers
- EN 15879-1 Testing and rating of direct exchange ground coupled heat pumps with electrically driven compressors for space heating and/or cooling - Part 1: Direct exchange-to-water heat pumps
The European KEYMARK Certification Scheme and rules for heat pumps were developed by:

- Heat Pump Scheme Group (HPSG)
- Heat Pump Steering Committee (HPSC)
- Heat Pump KEYMARK Secretariat run by European Heat Pump Association (EHPA)

Involving directly the following stakeholders and interested parties:

- Manufacturers
- Testing Laboratories
- Certification Bodies
- European Heat Pump Association

With support and supervision of KEYMARK Management Organisation (KMO) on behalf of CEN
KEYMARK for Heat Pumps – Secretariat Role

KEYMARK RECOGNITION IN ALL MEMBER STATES

ESTABLISHED BRAND AWARENESS AND NEW PARTICIPATING BODIES

IMPROVED DATABASE EXPERIENCE AND IMPROVED INTERACTION WITH EHPA QL DB
KEYMARK for Heat pumps – Verified by a Third Party

- Certification Bodies are accredited for the relevant European standards on the basis of ISO/IEC 17065. CBs are empowered by the Keymark Management Organization (KMO)

- Laboratories having an ISO 17025 accreditation for one or more of the relevant standards and test methods as defined and used in HP KEYMARK and recognized by a certification body
KEYMARK for Heat Pumps - Certification Decision

The KEYMARK certification scheme is maintained by

HP KEYMARK Certification Bodies

11

HP KEYMARK Testing Laboratories

29
KEYMARK for Heat pumps - Certification Bodies
KEYMARK for Heat pumps - Testing laboratories
KEYMARK for Heat Pumps - Certificates issued

The KEYMARK certification scheme is still fast growing

HP KEYMARK Certificate Holders: 141
HP KEYMARK Certificates Issued: 2122
HP KEYMARK Certified Models: 8654
KEYMARK for Heat Pumps - Certificates issued

With 645 new certificates, we recorded in 2023 the highest number of new certificates since launch of the scheme
KEYMARK quality mark for Heat Pumps
Certification Process
Scheme Recognition
1. Application: manufacturers or distributors contact one of the empowered certification bodies of their choice

2. Factory inspection and product sampling by an authorized inspector

3. Testing of the sampled units by an authorized testing institute chosen by the manufacturer among the ones recognized by the certification body

4. Conformity assessment of all the reports and documents by the certification body

5. Annual monitoring
The applicant declares the values of the heat pumps in the heat pump KEYMARK database and submit the entries to the certification body for the review.
HPK Certificate to a direct listing in MCS DB

- The MCS Installations Database, sometimes abbreviated to the MID, is a central online database that holds the information of every MCS certified small scale, low carbon installation in the UK since 2010 including Heat Pumps.

- The MID is the most comprehensive reference for small scale, renewable energy installations in the UK. It is unique to MCS.

Your Heat Pump KEYMARK Certificate will give you direct access to MCS

Contact your HPK CB
The Quality Label is a programme developed by EHPA aiming to assure the end consumer of the quality of a heat pump unit.

The label is based on tests according to international standards EN 14511, EN 14825, EN 15879 and EN 16147.

Your Heat Pump KEYMARK Certificate will give you direct access to EHPA QL

Contact one of the EHPA QL National Commission of the country you are planning to enter the market
KEYMARK for Heat Pumps - Scheme recognition at EU level

**European Recognition**
A single certificate for a single EU market

**Quality of Products**
Third-party testing based test points from Ecodesign

**Open to All Interested Parties**
and mutually accepted by all participating certification bodies

**Continuous Development of the Scheme**
 according to the industry needs and flexible approach
KEYMARK quality mark for Heat Pumps

*Database - Communication*
Heat Pumps

A Single Certificate for a Single European Market

The Heat Pump KEYMARK is a voluntary, independent European certification mark (ISO type 5 certification) for all heat pumps, combination heat pumps and hot water heaters (as covered by Ecodesign, EU Regulation 813/2013 and 814/2013).
Heat Pump KEYMARK Certificates

Number of subtypes: 1052
Number of models: 4363

Certificate Holders
- Advantix S.p.A.
- AERMEC S.p.A.
- Airwell Residential S.A.S.
- ait-deutschland GmbH
- Argoclima S.p.A.
- Ariston Thermo Group
- August Brötje GmbH
- BAXI Climatización S.L.U
- BAXI Heating UK Limited
- BAXI Potterton Myson
- BAXI S.p.A.
- BDR THERMEA FR (BRÔTJE)
- BDR Thermea FR (CHAPPEE)
- BDR Thermea FR (DE DIETRICH)
- BDR Thermea FR (OERTLI)
- BDR THERMEA FR (REMEA)
- Bosch Termotecno S.A.
- Bosch Thermotechnik GmbH
- Bosch Thermotechnik GmbH (Buderus)
## Certificate holders

**SUBTYPE**
ECOAIR 1-9 PRO

<table>
<thead>
<tr>
<th>Certificate Holder</th>
<th>Ecoforest Geotermia S.L.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reg. No.</td>
<td>911-1W0469</td>
</tr>
<tr>
<td>Certification Body</td>
<td>DIN CERTCO Gesellschaft für Konformitätsbewertung mbH</td>
</tr>
<tr>
<td>Subtype title</td>
<td>ecosair 1-9 PRO</td>
</tr>
<tr>
<td>Driving energy</td>
<td>Electricity</td>
</tr>
<tr>
<td>Heat Pump Type</td>
<td>Outdoor Air/Water</td>
</tr>
<tr>
<td>Refrigerant</td>
<td>R290</td>
</tr>
<tr>
<td>Mass of Refrigerant</td>
<td>0,850 kg</td>
</tr>
<tr>
<td>Certification Date</td>
<td>03.06.2021</td>
</tr>
<tr>
<td>Testing basis</td>
<td>HP KEYMARK certification scheme rules rev. 8</td>
</tr>
</tbody>
</table>

[Generate PDF]  [Export model CSV]

**Number of models**

<table>
<thead>
<tr>
<th>MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ecosair 1-9 PRO</td>
</tr>
</tbody>
</table>
## EN 14511-2

<table>
<thead>
<tr>
<th></th>
<th>Low temperature</th>
<th>Medium temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat output</td>
<td>4.20 kW</td>
<td>4.10 kW</td>
</tr>
<tr>
<td>El input</td>
<td>0.84 kW</td>
<td>1.30 kW</td>
</tr>
<tr>
<td>COP</td>
<td>4.98</td>
<td>3.15</td>
</tr>
</tbody>
</table>

## EN 14511-4

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shutting off the heat transfer medium flow</td>
<td>passed</td>
</tr>
<tr>
<td>Complete power supply failure</td>
<td>passed</td>
</tr>
<tr>
<td>Defrost test</td>
<td>passed</td>
</tr>
</tbody>
</table>

## EN 12102-1

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Low temperature</th>
<th>Medium temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound power level indoor</td>
<td>0 dB(A)</td>
<td>0 dB(A)</td>
</tr>
<tr>
<td>Sound power level outdoor</td>
<td>57 dB(A)</td>
<td>57 dB(A)</td>
</tr>
</tbody>
</table>

## EN 14825

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Low temperature</th>
<th>Medium temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\eta_s$</td>
<td>218 %</td>
<td>171 %</td>
</tr>
</tbody>
</table>
KEYMARK quality mark for Heat Pumps

Benefits
KEYMARK for Heat pumps – Benefits

- A Third-party certification aids the purchasing decision and gives the consumers confidence that they have bought a quality product

- The recognized KEYMARK quality mark can be used as a reference to have access to public subsidies in majority of the European countries

- The scheme is open to all interested parties and details of certificate holders and certified products are publicly visible
Thank you for listening

Tarik Bellahcene

@helloheatpumps

European Heat Pump Association

@EuropeanHeatPumpAssociation
Which category do you belong to?
André Jacob

Head of Technology

Bundesverband Wärmepumpe
(German Heat Pump Association)
Presenting the database
Seven Steps to Success

- Manufacturer reaches out to CB of choice (outside the database)
- CB and manufacturer agree on the scope certification and testing
- Manufacturer creates the subtype in the database
- Manufacturer enters certifiable performance data
- Manufacturer sends the subtype for approval to the CB
- Manufacturers informs the CB about the newly submitted subtype
- CB verifies the data using test reports and publishes the subtype
How to Get the Engine Running

● As a Manufacturer:
  ○ Reach out to an empowered CB
  ○ The Heat Pump Keymark Secretariat will be notified to add manufacturer’s company to the database
  ○ Alternatively, reach out to the Secretariat directly
  ○ A user account will be created and a request to reset one’s password will be sent

● As a Certification Body:
  ○ Send an application form to the KEYMARK Management Organisation (KMO)

● As a Testing Laboratory
  ○ Establish contact to one of the CBs
  ○ Pay attention to the requirements for testing laboratories (Annex H)
Log in to Database for the First Time

- (Re)set your password prior to your first login
- Enter your credentials into the login form

CHANGE YOUR PASSWORD
Please enter your new password twice. Password needs a minimum length of 6 chars.
Enter new password

Repeat new password

Submit

Forgot your password?
Access the Internal Area to Create and Manage Subtypes I

- Navigate to the manufacturers’ area and click on New Subtype

Manufacturers

<table>
<thead>
<tr>
<th>Subtype title</th>
<th>Submitting Date</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW EHPA</td>
<td></td>
<td>Data Entry</td>
</tr>
<tr>
<td>HP 4kw</td>
<td></td>
<td>Data Entry</td>
</tr>
<tr>
<td>nuovo</td>
<td></td>
<td>Data Entry</td>
</tr>
</tbody>
</table>
Access the Internal Area to Create and Manage Subtypes II

- Enter the basic information on the subtype
- Basic information is shared across the subtype
- Information can be edited before submission
- You will be redirected to the subtype’s detail view upon creation
Add a Model to Your Subtype

- Title will be used in the internal and public area to identify the model
- Internal ID will be used to identify in the internal area as well as for data exports and imports
- Climate zone / Climate zone (for heating)
  - show no difference for heating-only applications
  - “Climate zone” applies for water-heating and “Climate zone (for heating)” applies for space-heating in combined applications
Enrich Your Model with Performance Data

- Upon creation, empty data fields ("n/a") will be added to the model
- The data fields are generated depending on the model properties ("dynamic datasheet")
- Two methods of data enrichment: manual input and data import

Heat Pump KEYMARK database: how to manage product data | 25 Apr 2024 | André Jacob
Enrich Your Model with Performance Data II

- The method of manual input will a separate input form for each section
- Valid data ranges are shown as placeholders in the form controls
- Example: EN 14511-2

![Form Example](image)

- Heat output
- EL input
- COP

Low temperature

- 0.01 - 400 kW

Medium temperature

- 0.01 - 400 kW
- 0.01 - 15 kW
Importing data allows for quickly editing model data

- The format to be used is CSV, more than one model may be included in one file
- Data is linked to models using the internal ID (“modelID”) and data identifiers (see Import Manual)
Consistency Checks at Work

- Data is checked for consistency on change
- Inconsistent data is highlighted
- Data is expected to reside within an admissible margin (5 % or 8 %)
- Subtype cannot be sent for approval while consistencies are present
Hand the Subtype over to the CB for Approval

- Submit the subtype to the CB using the corresponding button at the bottom of the subtype detail view
- Once a subtype is submitted, it can no longer be altered
- Its status changed from “Data Entry” to “Submitted”
- Inform the CB outside the database about your submission
While on the Certification Body’s Side…

- The CB has a detailed subtype view similar to manufacturers
- Change Status will either return the subtype to the manufacturer ("Data Entry") or publish it ("Certified")

<table>
<thead>
<tr>
<th>SUBTYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicant</td>
</tr>
<tr>
<td>Registration number</td>
</tr>
<tr>
<td>Certification Body</td>
</tr>
<tr>
<td>Subtype title</td>
</tr>
<tr>
<td>Driving energy</td>
</tr>
<tr>
<td>Heat Pump Type</td>
</tr>
<tr>
<td>Refrigerant</td>
</tr>
<tr>
<td>Mass of Refrigerant</td>
</tr>
<tr>
<td>Submitting Date</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>Status</td>
</tr>
<tr>
<td>Status Date</td>
</tr>
<tr>
<td>Phase-out Date</td>
</tr>
</tbody>
</table>

- European Heat Pump Association (EHPA)
- Rue d’Afon 63-67
- 1040 Brussels
- Belgium
- n/a
- European Heat Pump Association (EHPA)
- Database Demo Subtype
- Electricity
- Outdoor Air/Water
- R410A
- 4,5
- 23.04.2024
- Submitted
- n/a
The subtype shall be amended by the testing basis, the registration number as well as a PDF file of the certificate prior to publication.
Break (10 min.)
What is your energy level?
Demo
Q & A

You can ask your questions in the chat. Don’t forget to mention the name of the person you are addressing your question to.
New database guidelines

CEN HEAT PUMP Database – a summary

SCOP SEER water based HP V7.1 (99 KB)
SGUEh SGUEc water based HP 20 REV1 (110 KB)
Database Guidelines 25 April 2024 V2 (1.72 MB)
HPK Scheme documents for Certificate Holders and HPK Working Group
MCS Database

Link here.
What topics would you like us to address in our next webinar?
Keep up with the latest updates!

- www.heatpump.keymark.eu
- Heat Pump KEYMARK
- @hpkeymark

Get in touch!

- tarik.bellahecne@ehpa.org
- jacob@waermepumpe.de
- danae.kokkalis@ehpa.org

Thank you!