



Electronic Heat Cost Allocators

WHE37...

Electronic device for heat cost allocation by acquiring the amount of heat emitted by radiators. Storage of cumulated consumption values on a selectable set day. The WHE37... with its infrared interface can be parameterized and offers semiautomatic readout based on the IrDA standard. It is available as a single- or double-sensor unit and also in remote sensor versions. The double-sensor unit is specially suited for low-temperature heating systems but can also be used in standard heating plants.

Use

WHE37... is used to allocate heat costs to the various consumers based on actual heat consumption.

Major fields of application are heating systems with central heat generation where heating energy is supplied to several individual consumers.

Heating systems of this type are used in houses or buildings such as

- Multi-family houses
- Office and administrative buildings

Typical users are:

- Private building owners
- Property associations
- Building services companies and real estate agencies

The WHE37... is suitable for

- Sectional radiators (made from cast iron or cast steel)
- Tube radiators
- Panel radiators with horizontal or vertical water flow

- Pipe register radiators and convectors

Functions

- Determination of the amount of heat emitted by a radiator based on the measured radiator temperature
- Cumulation of heat consumption since the last set day (zero reading on the set day)
- Storage of consumption data on the set day
- Continuous self-test with error messages
- Semiautomatic readout via optoelectronic interface (IrDA) with special handheld computer
- For use in low-temperature heating systems ($t_{\min} < 48\text{ °C}$), the double-sensor unit must be parameterized, that is, the specific radiator data must be entered

Type summary

The heat cost allocator is delivered complete with heat conductor as standard. For replacement purposes, it is also available without heat conductor.

Type of device	Type reference
Compact device (single-sensor unit)	WHE37
Compact device (single-sensor unit) without heat conductor	WHE37.A
Compact device (double-sensor unit)	WHE37Z
Compact device without heat conductor	WHE37Z.A
Remote sensor device (single-sensor unit)	WHE37.FR
Remote sensor device (double-sensor unit)	WHE37Z.FR

Technical design

Measuring principle

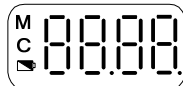
Double-sensor measuring system

The device can be used unscaled up to a lower temperature limit of $t_{\min} = 48\text{ °C}$, and up to $t_{\min} 35\text{ °C}$ when scaled. It comes with the following factory settings:

$$\begin{array}{ll}
 K_{\text{CHF}} = 1.28 & K_c = 2.5 \\
 K_Q = 1000 & \text{EXP} = 1.15
 \end{array}$$

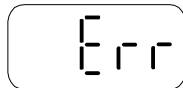
Display

The display alternates automatically:

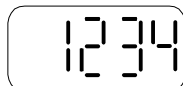


Error display

This display appears only in the event of severe errors. In that case, it does not switch over to any other display.



Current consumption (3 s)



The current consumption is displayed in the form of a 4-digit value with no additional symbols. To ensure optimum readout, the display is maintained for 3 seconds.

Segment display test (0.5 s)



0.5 seconds



0.5 seconds

Each segment of the display appears for half a second. Then, no segment will be displayed.

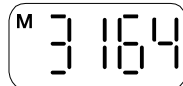
Date of set day (1 s)



1 second

The date of the set day is displayed with no additional symbol. The date always appears in the format of day and month. The year is not displayed. The display is shown for 1 second.

Set day value (3 s)



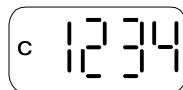
3 seconds

The set day value is displayed as a 4-digit value with an "M" in the upper corner to the left. For optimal readability, the value is displayed for 3 seconds.

The set day values in the first year are displayed as follows:

The date of the next set day is also entered in the date of the last set day, so that the display will read "31.12", for example. The set day value will be substituted by 4 dashes "----".

Checksum (3 s)

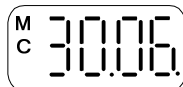


3 seconds

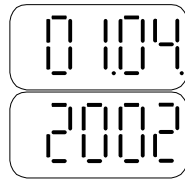
The checksum is displayed as a 4-digit value with a "C" to the left. The checksum is calculated from the last 4 digits of the device number, the current reading, the date of the set day, and the set day value. This display is maintained for 3 seconds. If the heat cost allocator is a scaled device, 2 additional decimal points will appear. The checksum ensures tamper-proof postcard readings.

The next set day

During production of the WHE37..., identical dates for the last set day and the next set day are entered. By changing the next scheduled set day in the field, the next set day will be inserted in the display sequence. This display is identified by an "M" and "C". When displaying the data, only the "day . month" format is possible. The year will not be shown.



Starttag



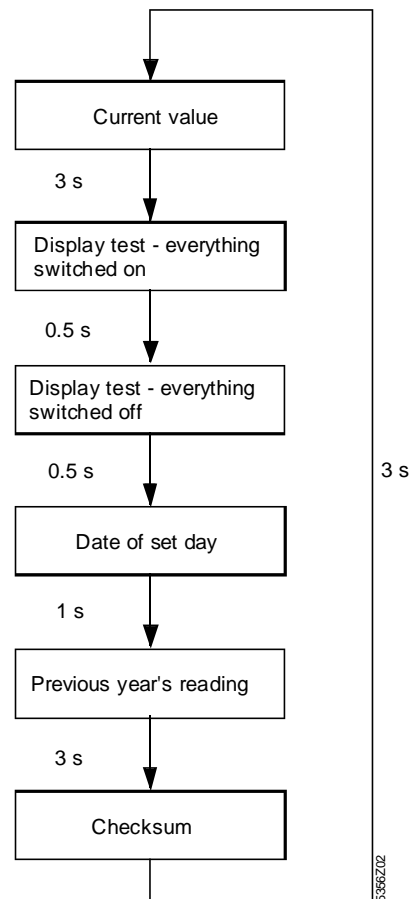
It is possible to enter a start date in the WHE37... In that case, heat consumption will not be recorded until that date is reached. This function is used when installing the device in new buildings prior to occupancy, for example. The heat cost allocator can thus be installed before the actual heating phase begins, without recording consumption. Day, month and year are shown in an alternating sequence. There is no other display. When the start date is reached, the standard display is invoked and the device starts to record the amount of heat emitted by the radiator.

Battery symbol

After 10 years of runtime, the battery symbol is displayed.

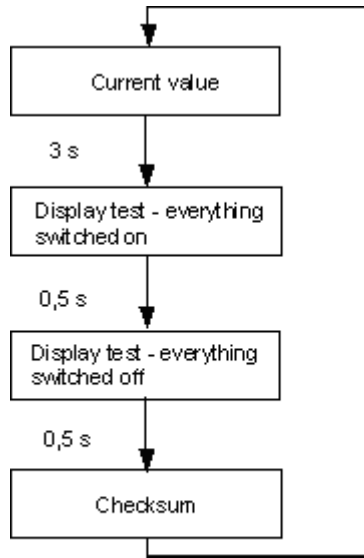


Standard parameterization



Per default, the heat cost allocator comes with a set day "31.12." and the following display parameters.

Parameterization with a programming adapter



Using the ACT200 parameterization tool, the last day of the month can be set as the set day. The set day can also be set to "00.00.". In that case, the device will not perform the set day function. The display simply continues to run. If this is programmed, the display is automatically reduced to a few values only.

If, later, a set day is programmed, the complete display will appear.

Accessories

Parameterization

<i>Programming units</i>	<i>Type reference</i>
Parameterization software for metering devices	ACT20
USB toolset WHZ3.USB (for USB port)	WHZ3.USB
Infrared adapter F12130-2018 (for COM port)	F12150-2018

To parameterize WHE37..., it is necessary, to use the ACT20 parameterization software on PC/laptop with Windows XP/2000 together with diverse IrDA interface cables.

Installation ruler and other accessories

<i>Accessories</i>	<i>Type reference</i>
Installation ruler	WHZ2.ML
Seal for WHE30Z	U12130-2004
Bezel for WHE30Z to cover unsightly radiator spots	WHZ3.B1
Bezel for WHE30Z to install on welding bolts with a spacing of 32 mm or 57 mm	WHZ3.B

The WHE37... is delivered complete with seals. For replacement purposes, the seals must be ordered as separate items.

Installation kits

The following installation kits include all possible components. The appropriate components must be selected individually for each installation. Kits are available for:

- Panel radiators
- Ribbed radiators
- Convector
- Finned radiators
- Aluminum radiators

Installation kit for steel panel radiators

<i>Parts</i>	<i>Variants</i>	<i>Packaging unit</i>	<i>Type reference</i>
Heat conductor	Heat conductor 4-1	50 pieces	F12130-2001/4-2
Slotted round nut	M3	500 pieces	F12102-2019
Welding bolt	M3 x 6 mm	100 pieces	02/572
Welding bolt	M3 x 10 mm	100 pieces	02/574
Welding bolt	M3 x 15 mm	500 pieces	F12102-2041
Welding bolt (aluminum)	M3 x 16 mm	1.000 pieces	F12102-2041/1
Shank nut (hexagon nut)	M3 x 3 mm	100 pieces	FZ253-210
Shank nut (hexagon nut)	M3 x 6 mm	1.000 pieces	FZ253-200
Shank nut (hexagon nut)	M3 x 9.5 mm	100 pieces	FZ253-220
Corrugated-head nut	M3	1.000 pieces	FZ253-230

Installation kit for ribbed radiators

<i>Parts</i>	<i>Variants</i>	<i>Packaging unit</i>	<i>Type reference</i>
Heat conductor	Heat conductor 4-1	50 pieces	F12130-2001/4-2
Heat conductor	Adapter 2/55mm	25 pieces	F12105-2061
Trapeze slide nut 35	35 mm	50 pieces	FZ253-300
Trapeze slide nut 50	50 mm	50 pieces	FZ253-310
Trapeze slide nut 65	65 mm	50 pieces	FZ253-320
Screw	M4 x 35	1.000 pieces	F12105-2084
Screw	M4 x 50	500 pieces	F12105-2085
Screw	M4 x 70	500 pieces	F12105-2086

The corresponding heat conductor and the appropriate trapeze slide nut must be used depending on installation requirements.

Installation kit for convectors (remote sensor installations)

<i>Parts</i>	<i>Variants</i>	<i>Packaging unit</i>	<i>Type reference</i>
Complete convector clamp (clamp, counter-support, 2 slotted nuts, pull-off nut)		1 piece	F12105-1051
Welding bolt	M3 x 6	100 pieces	02/572
Slotted round nut	M3	500 pieces	F12102-2019

The remote sensor must be attached to the previously installed convector clamp by using the pull-off nut.

Installation kit for finned radiators and similar models

<i>Parts</i>	<i>Variants</i>	<i>Packaging unit</i>	<i>Type reference</i>
Heat conductor	Heat conductor 4-1	50 pieces	F12130-2001/4-2
Complete installation kit (2 screws, 2 spacers, 4 spreaders, 2 hexagon nuts)		1 piece	WHZ2.FWE

Installation kit for tubular radiators

<i>Parts</i>	<i>Variants</i>	<i>Packaging unit</i>	<i>Type reference</i>
Heat conductor	Heat conductor 4-1	50 pieces	F12130-2001/4-2
Heat conductor	Adapter 2/55 mm	25 pieces	F12105-2061
Slide nut	36 mm	1 piece	FZ253-130
Slide nut	45 mm	1 piece	FZ253-120
Hexagon screw	M4 x 35	1.000 pieces	F12105-2084
Hexagon screw	M4 x 50	500 pieces	F12105-2085
Hexagon screw	M4 x 70	500 pieces	F12105-2086
Profile spacer		10 pieces	F12130-2016

Installation kits for aluminum radiators

Parts	Variants	Packaging unit	Type reference
Heat conductor	Heat conductor 4-1	50 pieces	F12130-2001/4-2
square pins		50 pieces	FZ253-160
screws	M3 × 25	500 pieces	F12105-2076
self-tapping screws	C 4.2 × 25 C (in place of square pin)	500 pieces	F10102-2026

Either 2 self-tapping screws C 4.2 × 25 or 2 square pins with the appropriate screws M 3 × 25 must be used, depending on the mounting method.

Technical data

General device data

Measuring principle	double-sensor
Operating range	
Standard scale	$t_{\min} = 35\text{ °C}$, $t_{\max} = 105\text{ °C}^{1)}$
Scaled	to $t_{\min} = 48\text{ °C}$
Battery life	10 years
Display	LCD with 4 digits + special symbols
Weight	90 g

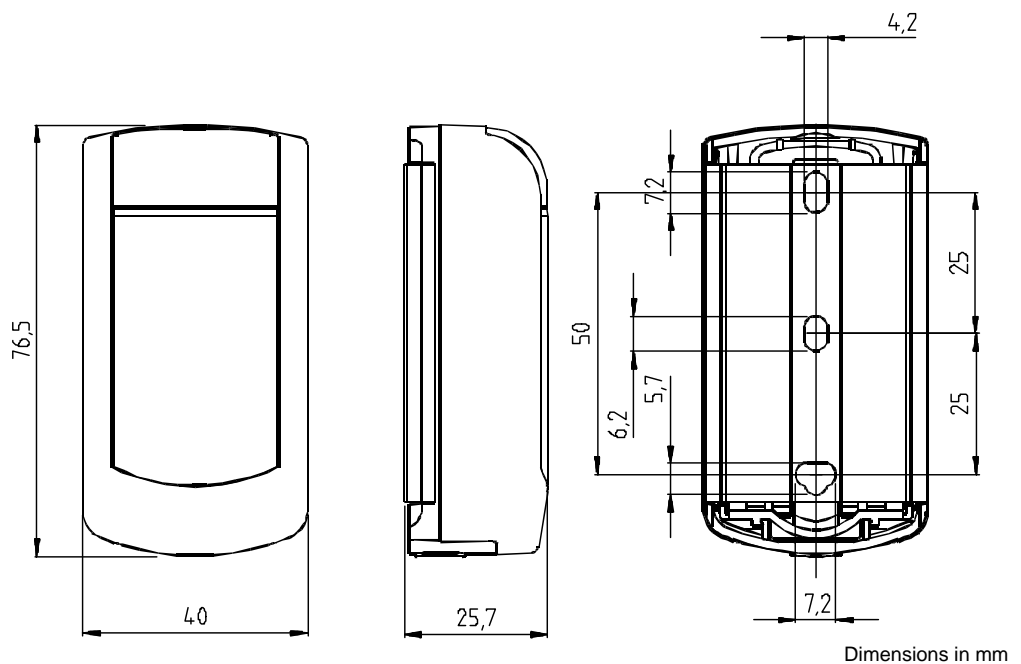
t_{\min} is the lowest mean design heating medium temperature

t_{\max} is the highest mean design heating medium temperature

Standards

Heat cost allocators for the determination of the consumption of room heating radiators	EN 834
Electromagnetic compatibility	
Immunity	EN 61000-6-2:1999 (EN 50082-2:1995)
Emissions	EN 50081-1:1992 (EN 55022:1999-05)

Dimensions



The information provided in this Data Sheet only gives general descriptions and general technical features which, in the case of specific applications, may not necessarily apply, or which may change due to further development of the product. Technical features are binding only when expressly agreed upon at the time a contract is concluded.

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