

Base-H

Electronic heat cost allocator
Remote read out heat cost allocator
with various measuring principals



Application

The SensusBase heat cost allocator Base-H is used as part of the SensusBase remote read out system, when the heating costs have to be allocated among several consumers based on the actual consumption

The main areas of application are heating systems with a central heat provision, in which the heating energy is purchased individually by the consumers.

Systems of this type are, for example, used in:

- Multiple dwellings
- Office and commercial buildings.

Typical users are:

- Private building owners
- Housing associations
- Building co-operatives
- Energy service and billing companies
- Real estate management

With regard to the radiator the heat cost allocator is usable with:

- Sectional radiators
- Tubular radiators
- Panel radiators with horizontal and vertical water feed
- Radiators with internal tube register
- Convectors
- Mean design heating medium temperatures from 35 °C min. to 105 °C max. (depending on the measuring principle)

Electronic unit for allocation of heating costs by registering the heat energy given out by a radiator. Remote radio read out. Available as a single or dual sensor unit.

Functions

- Determination of the thermal energy given out by a radiator, based on the measured and rated radiator temperature
 - Cumulative consumption since the last reading date
 - Previous year's consumption
 - Remote read out by radio
 - Adjustable counting start date (if required)
 - Transfer of the consumption figures to the BaseNet or BaseGate network nodes of the SensusBase radio system
 - Tamper protection: Indication on the display and error message to the central controller upon unauthorized opening of the units
- * With the option of an optical interface for programming on site

Model Summary

Single sensor measuring principle

Unit	Model description
SensusBase heat cost allocator, compact unit	Base-H1C
SensusBase heat cost allocator, remote sensor unit	Base-H1D

Dual sensor measuring principle

SensusBase heat cost allocator, compact unit	Base-H2C
SensusBase heat cost allocator remote sensor unit	Base-H2D

Equipment

Measuring principle

The SensusBase heating cost distributor is supplied as a single sensor unit and as a dual sensor unit. On delivery the following rating factors are programmed: KcHF = 1,28 Kc = 2,50 KQ = 1000 Exp.=1,15

On delivery ex works the reference date 31.12. is programmed. If the SensusBase heat cost allocator is not working with a product scale (only possible for Base-H1C and Base-H1D), then, before billing, the consumption figure (VW) must be calculated from the reading value (AW) and the K-values (KcHF and KQ) specific to the radiator:

Single sensor unit

$$VW = 7,529 * 10^{-4} * AW * KQ * KcHF 1,15$$

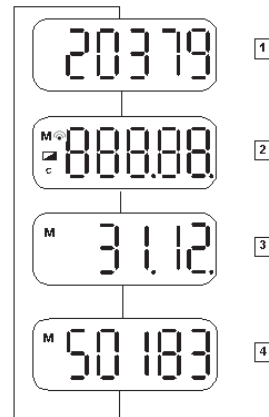
Dual sensor unit:

$$VW = 3,486 * 10^{-4} * AW * KQ * Kc1,15$$

Display

The content of the display changes cyclically and includes the following data:

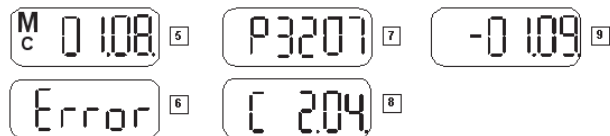
1 - Present value
2 - Display test (flashing)
3 - Reference date (date)
4 - Consumption figure on the reference date





Special displays

The following displays are also possible:

5 - New reference date
6 - Error message
7 - Rated output of the radiator
8 - Kc-value (Display 7+8 only for heat cost allocators with set parameters)
9 - Start date



Special display		IrDA communication possible again in the following month
Special display		Unit operating time of 3650 days exceeded

Accessories

Assembly jig and miscellaneous accessories

Accessories	
Assembly jig	WHZ2.ML
Spare lead seal for WHE2	U12102-2004

The lead seals are not included in the delivery specification of the Base Hxx SensusBase heat cost allocator except for remote sensor units Base H1D. The lead seals have to be ordered separately

Assembly kits

Each assembly kit includes all available components. The right parts have to be selected for the specific assembly situation. Assembly kits exist for:

- Panel radiators
- Sectional radiators and tubular radiators
- Convector
- Finned radiators
- Tubular radiators
- Aluminium radiators

Assembly kit for panel radiators

Components	Variants	Delivery unit	Model description
Heat conductor	Heat conductor 3/1	50 off	F12130-2001/1
Heat conductor 4		50 off	F12130-2001/4
Slotted nut	M3	500 off	F12102-2019
Welding stud	M3 x 6 mm	100 off	02/572
Welding stud	M3 x 10 mm	100 off	02/574
Welding stud	M3 x 15 mm	500 off	F12102-2041
Welding stud (Aluminium)	M3 x 16 mm	1.000 off	F12102-2041/1
Shank nut (hexagon)	M3 x 3 mm	100 off	FZ253-210
Shank nut (hexagon)	M3 x 6 mm	1.000 off	FZ253-200
Shank nut (hexagon)	M3 x 9,5 mm	100 off	FZ253-220
Ratchet nut	M3	1.000 off	FZ253-230

Assembly kit for sectional radiators

Depending on the assembly situation the particular heat conductor is to be used with a suitable slide nut.

Components	Variants	Delivery unit	Model description
Heat conductor	Heat conductor 3/1	50 off	F12130-2001/1
Heat conductor	Adapter 2/55 mm	25 off	F12105-2061
Single start slide nut 35	35 mm	50 off	FZ253-300
Single start slide nut 50	50 mm	50 off	FZ253-310
Single start slide nut 65	65 mm	50 off	FZ253-320
Screw	M4 x 35	1.000 off	F12105/2084
Screw	M4 x 50	500 off	F12105/2085
Screw	M4 x 70	500 off	F12105/2086

Assembly kit for convectors (remote sensor unit)

The remote sensor has to be fixed on the assembled convector assembly bracket with the pull-off nut.

Components	Variants	Delivery unit	Model description
Convector bracket complete (bracket, backing piece, 2 x Slotted nut, pull-off nut)		1 off	F12105-1051
Welding stud	M3 x 6	100 off	02/572
Slotted nut	M3	500 off	F12102-2019

Assembly kit for aluminium radiators

Depending on the assembly variant either the 2 self tapping screws C 4.2 x 25 or two toggles with their M 3 x 25 screws are to be used

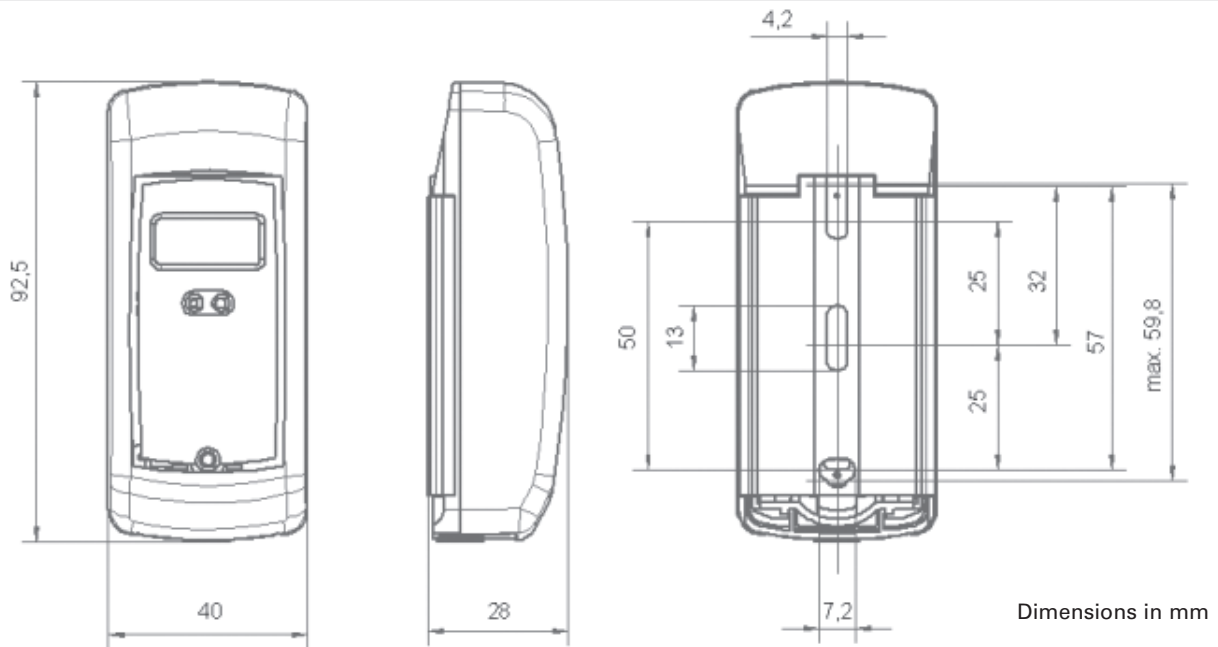
Components	Variants	Delivery unit	Model description
Heat conductor	Heat conductor 3/1	50 off	F12130-2001/1
2 x toggles		50 off	FZ253-160
2 x cross head screw	M3 x 25	500 off	F12105-2076
2 x self tapping screw	C 4,2 x 25 C	500 off	F10102-2026
		(instead of toggle)	

Technical data

Measuring principle:	Single sensor or Dual sensor
Range of use ¹⁾ :	
Single sensor units	$t_{min,m} = 55 \text{ °C}$, $t_{max,m} = 105 \text{ °C}$
Dual sensor units	$t_{min,m} = 35 \text{ °C}$, $t_{max,m} = 105 \text{ °C}$
Start of count:	(t_z relates to the determined heating medium temperature)
Single sensor units	$t_z \geq 30 \text{ °C}$ (for $t_L = 20 \text{ °C}$) unrated $t_z \geq 28 \text{ °C}$ (for $t_L = 20 \text{ °C}$) rated
Dual sensor units	$t_z - t_L \leq 5 \text{ K}$
1) Definitions to DIN EN 834	
$t_{min,m}$	Lowest mean design heating medium temperature, for which the heating cost distributor may be used. For single pipe heating systems this is the mean design heating medium temperature of the last radiator in the run
$t_{max,m}$	Highest mean design heating medium temperature, for which the heating cost distributor may be used.
t_z	Mean heating medium temperature of the radiator at which the register of the heating cost distributor starts to run
t_L	Reference air temperature
t_m	Mean heating medium temperature
Dimensions (B x H x T):	92,5 x 40 x 28 mm
Life	10 years plus 15 months reserve
Display	LCD, five character with special symbols
Weight	120 g
Transmission frequency	868 MHz
Transmission power	< 1 mW
Storage temperature	-25° to +60°C

Standards

Heat cost allocator for registering the consumption figures of room heating surfaces	EN 834
Electromagnetic Compatibility, Immunity to interference	ETSI EN 301 489 –1 V1.4.1 (2002-08) ETSI EN 301 489 –3 V1.4.1 (2002-08) EN 61000-6-2:2001
Emitted interference	EN 300 220 –1 V1.3.1 (2000-09) EN 300 220 –3 V1.1.1 (2000-09) EN 61000-6-3:2001
Security of IT equipment	EN 60950
CE - Conformity	Directive 1995/5/EC (R&TTE Directive) Law on radio equipment and Telecommunications equipment (FTEG)



SensusBase Documentation summary

The SensusBase system allows a remote wireless read out of measuring units. To link in further Sensus meters, e.g. for the Residia Apartment Water Meter, the Base-R Module is used. For the integration of third party system meters with pulse outlet into the radio system, the pulse adapter Base-P is available.

Unit	Type	Documents
SensusBase-System		Data Sheet LS2100 INT
Heat meter	PolluCom-E/-C	Data Sheet LH 1100 INT and LH 1300 INT
Water meter	Residia...	Data Sheet LA 2100 INT, LA 2110 INT and LA 2200 INT

UK & Ireland Enquiries

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