

Hydronic Metering

E53205

Heat Cost Allocator

Application

The E53205 is an electronic device for heat cost allocation on the basis of share of heat output by radiators.

The E53205S and E53205C have improved and extended wireless properties. It is available as compact and remote sensor variant.

The electronic heat cost allocator E53205 has been designed for decentralised use.

Values are measured by two temperature sensors (radiator and room air temperature).

During operation the actual difference in temperature between ambient temperature and radiator temperature is determined.

These measured values are used as basis for calculation of the consumption calculation.

The main area of application is in central heating systems where heating energy is used individually by different consumers.

The electronic heat cost allocator is operated as 2-sensor measuring system with product and unit scale.

The E53205 is the successor model to the E43205.

Communication with actual software versions of the HMA Suite and ACT46 is possible without restrictions.

In S mode (Walk-by and AMR), the E53205 is 100 % compatible to the E43205.

In C-mode (Walk-by and OMS) the wireless capacities and ranges have been significantly improved compared to the E43205 in S-mode.

Such systems are used in e.g.:

- Apartment buildings
- Offices and administration buildings

Typical users are:

- Meter reading service companies
- Housing industry and housing associations
- Building service companies and property management

The heat cost allocator can be used for the following types of radiator:

- Ribbed radiators
- Tubular radiators
- Panel-type radiators with horizontal and vertical water flow
- Radiators with internal tube register
- Convectors



Restrictions

Electronic heat cost allocators cannot be used with steam heaters, fresh-air radiators, underfloor heating, ceiling heating elements or flap-controlled radiators.

In the case of combined valve and flap-controlled radiators, metering devices may only be installed if the flap control unit has been removed or disabled in the "open" position.

Convectors that can change their output through an electric fan and towel heaters with an electric heating cartridge must not be fitted with electronic heat cost allocators unless the respective electric system has been removed or disabled.

1-sensor and 2-sensor metering system

A joint use of different metering device types is only allowed within a property as long as they all use a standard metering system and have a standard measuring algorithm.

Technical Data

General device data	
Measuring system:	2-sensor metering system 1 sensor each for radiator and room air temperature
Temperature sensors:	NTC, prematurely aged
Sensor temperature range:	0 °C ... 105 °C
tm-max:	105 °C (compact and remote device)
tm-min*:	35 °C
Radiator power range:	21 Watt ... 9.999 Watt
Power supply:	3V lithium battery
Service life:	typ. 10 years
Display:	Liquid crystal display (LCD)
Scope of display:	5 digits (00000 ... 99999)
Device type:	(P2) profile compatibility HKVE 20x
Evaluation:	Algorithm 2: K-values values (basis: K-value 60)

Technical Characteristics

AMR

E53205 electronic heat cost allocators are equipped with a AMR radio transmitter. The rcu4 radio system is not supported by the E53205.

OMS

In C-mode the electronic heat cost allocator E53205 transmits OMS (Generation 4) telegrams (OMS = Open Metering System) parallel to the Walk-By telegrams.

The OMS telegrams meet the "Open Metering System Specification" and can thus be received by all OMS-compatible devices.

Data interface

The E53205 heat cost allocator can be programmed with the IrDA close-range interface (HCA PH001001) of E43205 device family.

Programming accessories

The programming accessories are used for communication with the metering devices.

- The HCA (E53...) can be programmed and read out using the actual HMA Suite
- The HCA (E53...) can be programmed by using the programming adapter (HCA PH001001) as an individual programming tool
- The programming adapter (HCA PH001001) can be used as well as a combiadapter for the IrDA programming and readout head (WFZ.IRDA-USB)
- The IrDA programming and readout head (WFZ.IRDA-USB) can be used as well as a communication tool between a PC/netbook and the HCA (E53...)

Delivery

Device versions:	a) Compact device Remote sensor device (compact device with inserted remote sensor) b) Remote sensor device (Cable length: 2.5 m or 5 m)
Installation material: New installation and conversion: Standard replacement, extension installation and repair re-placement:	E53205 with actual installation material E53205 can use the originally used E4x installed material

*mean design temperature

Norms and standards

Component	Number
Heat cost allocator for acquiring consumption data for room heating	DIN EN 834:2013
Type approval acc. to HKVO	A1.01.2011 - E53205 - P2
CE conformity	Roller counter and unit
With radio support	Directive 2014/53/EU (RED)

The following information can be programmed before the measuring device is put into operation:

Standard parameters

- Sensor type
1-sensor or 2-sensor measuring system
- K-value / KC / KQ
Evaluation factors for calculation of radiator heat output (depending on HCA algorithm and sensor type)
- Next due date
Day annual value is stored (can also be programmed without IrDA interface using programming adapter)
- Device name / device code
Device access data as protection against unauthorised access

S-Mode (Wireless) Features

- Radio system – parallel transmission of Walk-By and AMR data telegrams
- Transmission delay (offset)
Time delay for sending telegrams after the due date or at the beginning of the month in days (standard = 0 days)
- Transmission-free day
A maximum of 2 days from Friday, Saturday and Sunday can be defined as transmission-free days.
At least 1 day must be set (standard = Sunday)
- No change with the remote sensor system

Transmission behaviour of S-Mode

Walk-By	AMR
every 128 seconds	every 4 hours
10 hours per day (8 am - 6 pm)	24 hours per day
monthly: 4 readout days from the first of each month	7 days per week
annually: 48 days after due date	365 days per year

Walk-By	AMR
current consumption values 13 Statistic values	Data telegrams and statistics, consumption values

C-Mode (Wireless) Features

- Increased radio capacity in C-mode max. 10 dBm
- Radio system – parallel transmission of Walk-By and OMS data telegrams
- No change with the remote sensor system

Transmission behaviour of C-Mode

Walk-By* ¹	AMR (OMS)* ²
every 112 seconds	every 7.5 minutes
10 hours per day (8 am - 6 pm)	24 hours per day
365 days per year	365 days per year
current consumption values 13 Statistic values	current consumption values

*¹ For this mobile data logger RML10-STD and the associated RM APP are required.

*² OMS "Open Metering System" communication architecture for intelligent meters for different manufacturers and branches.

Mode Change

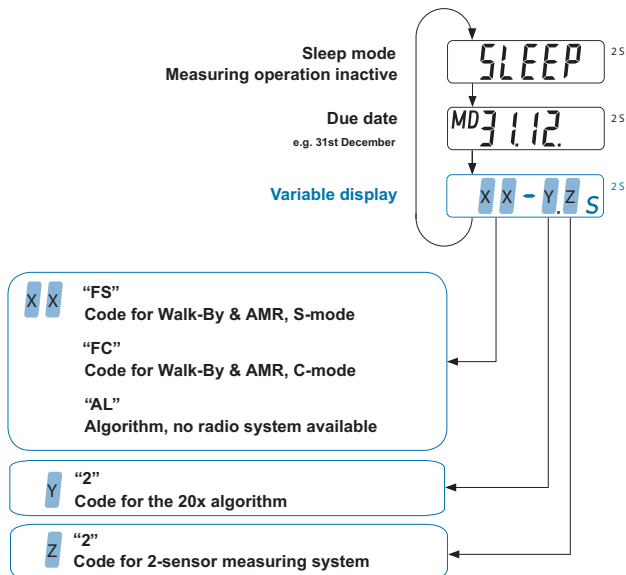
It is possible to change between S-mode and C-mode in both directions.

Displays

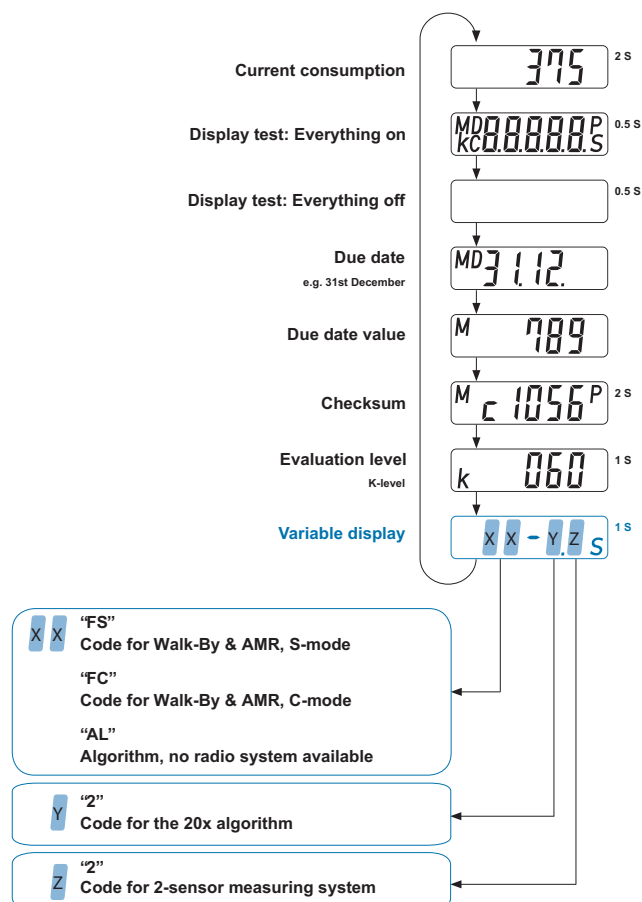
Device states, consumption values and measuring system information are displayed on the LCD in a display loop.

The heat cost allocators are supplied in sleep mode. Measuring operation is inactive.

Display Loops in Sleep Mode



Display Loops in Normal Operation



Special displays



Error messages

"Err 1" appears permanently. All other error messages are displayed in quick succession alternating with consumption values.



Consumption display suppressed

Displayed in the event of an error in place of the invalid consumption values, depending on programming.



End of battery run time

Displayed after end of service life, alternating with consumption values, depending on programming.

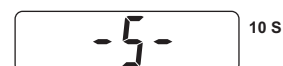


Manipulation or housing opening

Displayed in the event of manipulation either as plain text alternating with consumption values or by indicator "c" shown discreetly on all displays, depending on programming.



Example: Display "current value" with "c".



Data interface

(IrDA close-range interface) Indicates an active IrDA close-range interface.



Radio system activated

S-mode: Walk-By & AMR

C-mode: Walk-By & OMS

Indicates transmission of installation.

Display sequence: InSt8, InSt7, ... InSt1



Commissioning

Display appears following fitting to installation plate. After that display changes to normal mode display loop.



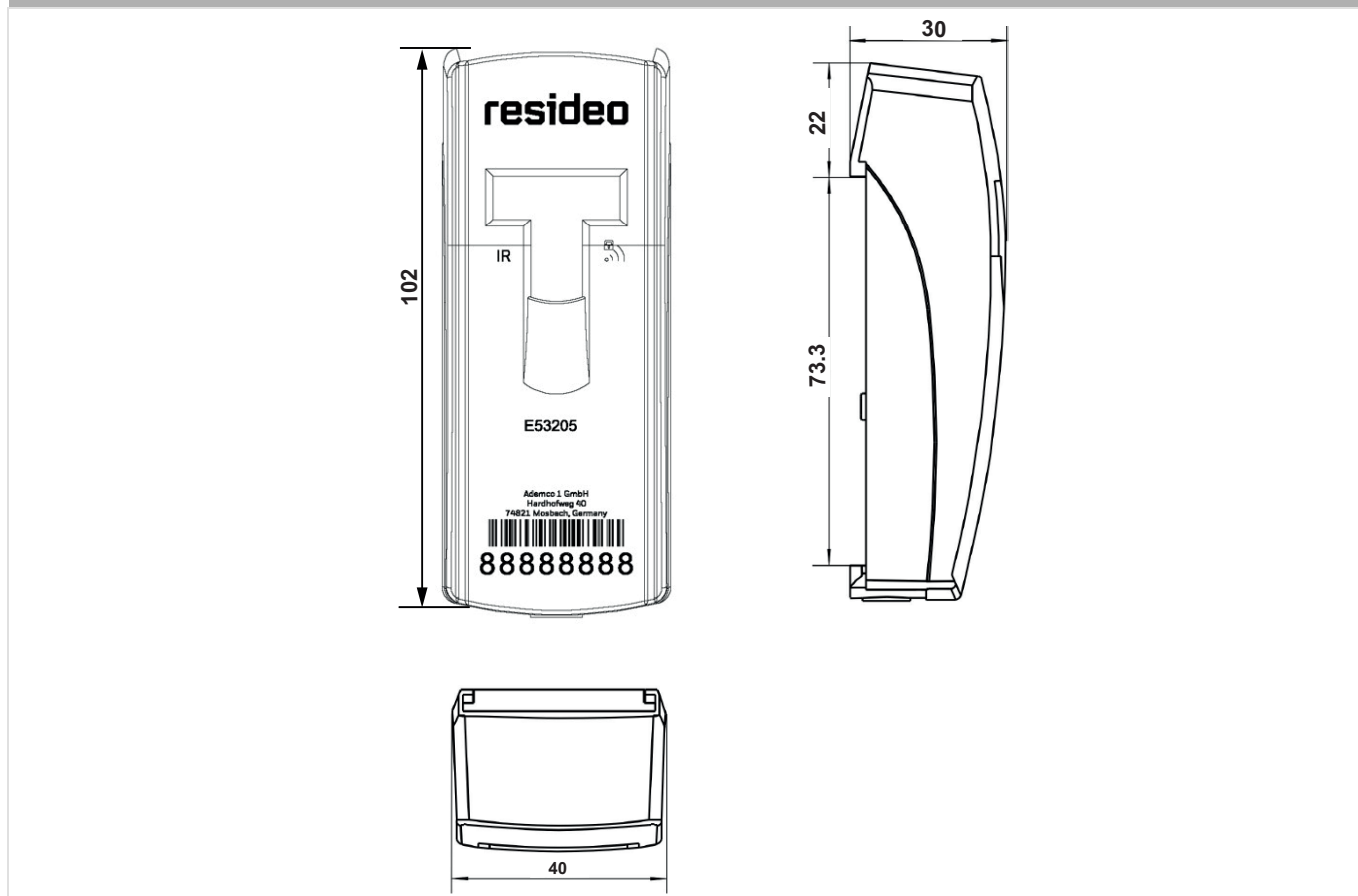
Remote sensor code 3 S

HCA has detected a remote sensor and adjusts its measuring behaviour accordingly.

Dimensions

Heat Cost Allocator

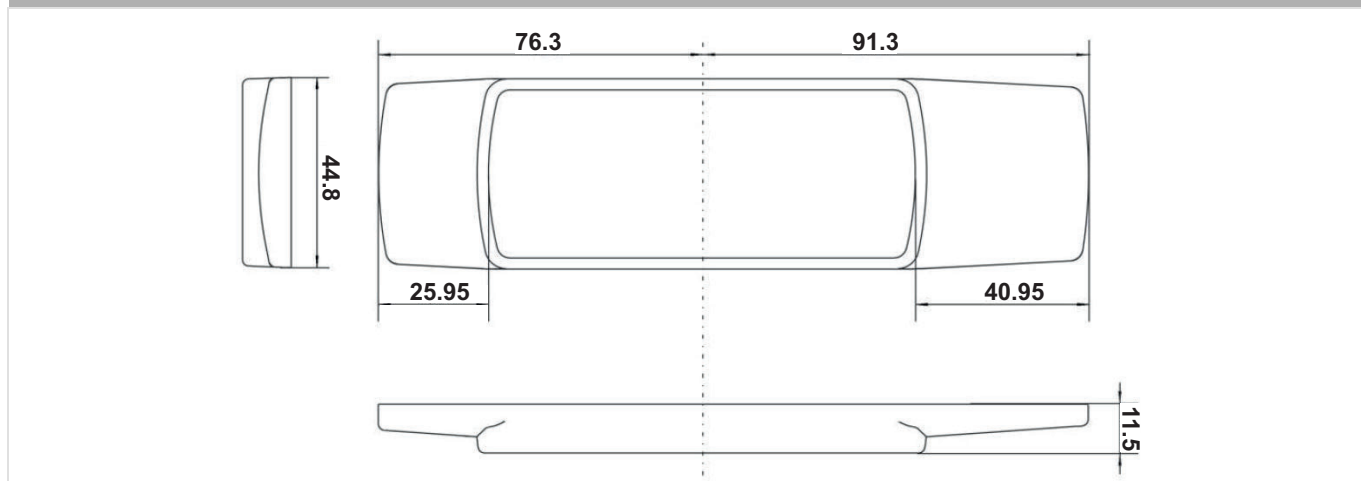
Overview



Note: All dimensions in mm unless stated otherwise

Snap on Panel

Overview

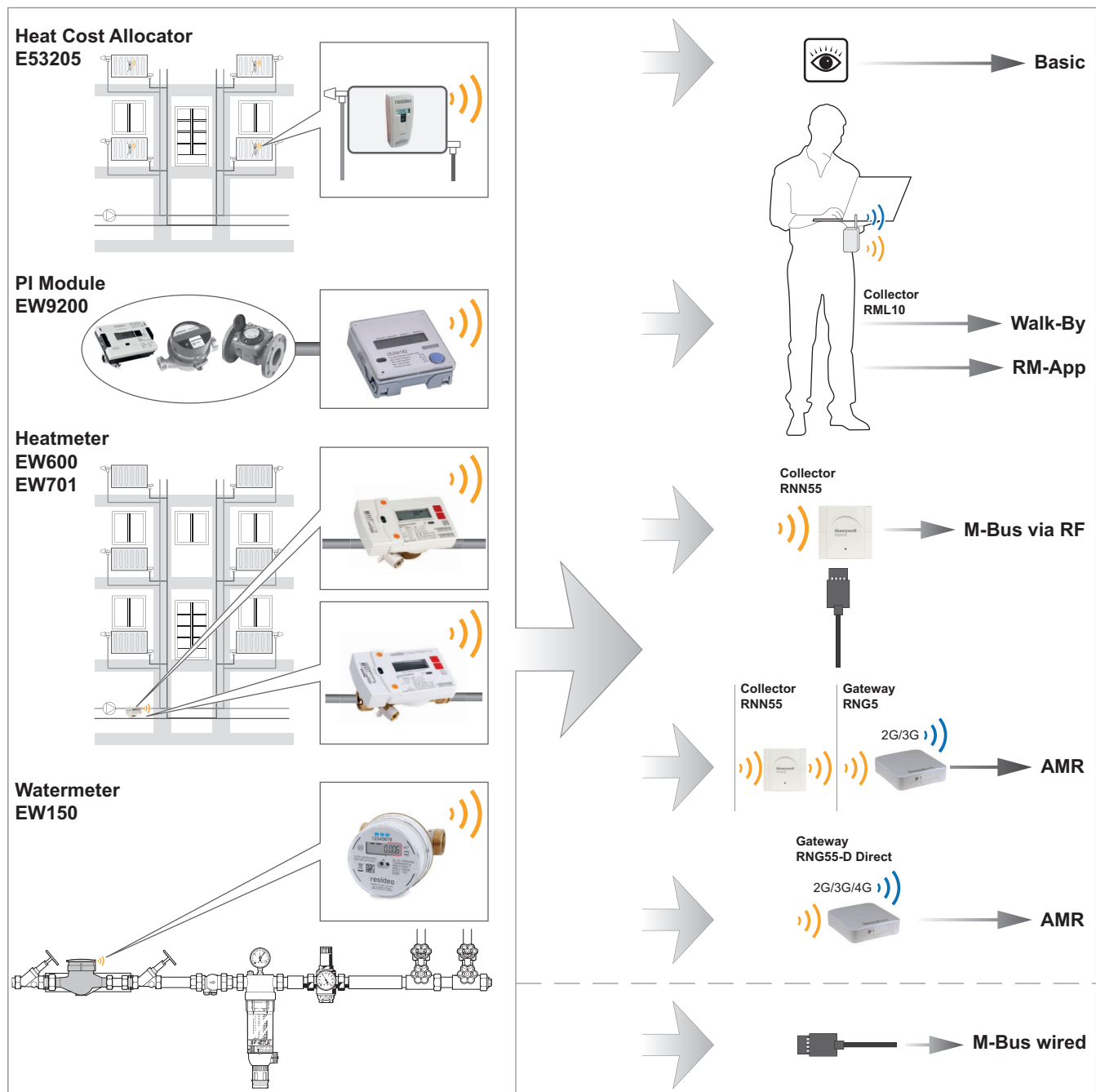


Note: All dimensions in mm unless stated otherwise

System Overview

The Heat cost allocator can be integrated into various type of Resideo RF systems.

For further details or variants of the Resideo RF systems please contact your account manager.

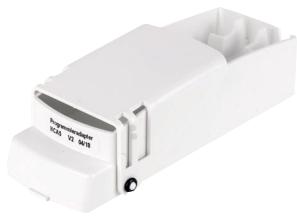


Ordering Information

Options

Description	Item No.
G5.5 Heat Cost Allocator, C mode	E53205C-HW
G5.5 Heat Cost Allocator, S mode	E53205S-HW

Accessories

	Description	Item No.
	HCAPIH Mechanical programming adapter	
	Programming adapter for G5 and G5.5 systems	HCAPIH001001
	WFZ.IRDA-USB USB Programming adapter	
	USB to IrDA programming adapter	WFZ.IRDA-USB
	FKx Installation Material	
	Prism	FKA0001
	Installation plate P2 standard	FKA0005
	Installation plate for remote sensor (BP10)	FKA0009
	Security seal blue P2 for G5 HCAS	FKK0037
	Safety cap for remote sensor	FKK0045
	Welding stud M3 x 12 (BP1000)	FKT0011
	Clamping bracket (pipes TE 46 mm)	FKT0016
	Clamping bracket trapezoidal 35mm (BP10)	FKT0018
	Clamping bracket trapezoidal 50 mm	FKT0019
	Clamping bracket trapezoidal 65 mm	FKT0020
	Selflocking nut M3, 1000 pcs.	FNM0005
	Cross-slot screw M4 x 40 (BP500)	FNR0004
	Wall bracket for EW600 Meter	HMRIK001001
	Bateria para WTT16... (3.6V / 13AH)	WTZ.BAT
	HCAI-K00x Installation sets for compact devices	
	MTG kit ribbed rads ptch greater than 40 mm	HCAI-K001-001
	MTG kit rib rads ptch less than 40 mm	HCAI-K001-002
	MTG kit cast radiators, slender, division 20 - 40 mm	HCAI-K001-003
	End faces cast radiators	HCAI-K001-004
	MTG kit ribbed rads clearance greater than 40 mm	HCAI-K001-006
	MTG kit hygiene rads welded installation	HCAI-K001-007
	HCA mounting kit vertical panel rads	HCAI-K002-001
	Installation set for alu ribbed radiator	HCAI-K004-001
	HCA mounting kit lamella type radiator	HCAI-K007-001
	Installation set flat tube radiator	HCAI-K007-003
	HCAI-K010 Installation sets for remote devices	
	Sensor attach kit rib rad GRTR 40 mm	HCAI-K010-001
	Sensor attachment cast radiator RR KR	HCAI-K010-004
	Sensor attachment for panel radiator	HCAI-K010-005
	Sensor attachment for all ribbed radiator	HCAI-K010-010
	Sensor attachment for ribbed convectors	HCAI-K010-012
	HCA wall bracket P2	HCAI-K010-0P2
	HCA remote sensor 2.5 m cable	HCAI-K010-0S2
	HCA remote sensor 5.0 m cable	HCAI-K010-0S5
	Dismanteling tool for remote sensor	HCAI-P002-001

Associated Products

Item No.	Description	EAN Code
Associated Datacollector (fixed):		
RNN55-STD	Network node G5.5 C/S - STD	50 59087 00174 0
RNN55-230V	Network node G5.5 C/S - 230 V	50 59087 00173 3
Associated Datacollector (mobile):		
RML10-STD	Tool for RM-App (Para and Read-Out)	50 59087 01936 3
Associated Gateway:		
RNG5-STD	RNG5 Gateway (Battery supply)	40 29289 08160 5
RNG5-230V	RNG5 Gateway (230 V AC supply)	40 29289 08305 0
RNG55-D-STD	Network Gateway 5.5 direct 2G/3G - STD	50 59087 00172 6
RNG55-D-230V	Network Gateway 5.5 direct 2G/3G - 230 V	50 59087 00171 9



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