SIEMENS

OEM

QAA53.110   QAA73.110

ALBATROS

Room Units for Boiler Temperature Control

QAA53.110
QAA73.110

OpenTherm interface

Digital, multifunctional room units for enhancing the functionality of boiler controllers.
With integrated temperature sensor, heating program and a number of control functions.

Use

Use

Used in combination with a boiler controller or heating controller. Room temperature control in:
- Single or 2-family houses
- Smaller multifamily houses
- Holiday houses and villas

Application

For use in all standard heating systems, such as radiator or convector heating systems. Especially suited for heating plants with pump heating circuits. If the boiler control systems feature integrated mixing valve control, it is also possible to control mixing heating circuits.

Siemens Building Technologies
HVAC Products

CE1Q2282en
04.09.2001

| Market | The room units are designed for the OEM market. They are supplied directly to the boiler manufacturer and enhance the functionality and the level of control of small gas-fired appliances with integrated boiler temperature controllers. |

Functions

		QAA73.110	QAA53.110
Functions	• Generation of the flow temperature setpoint	x	x
	• Pure room temperature control	x	x
	• Weather-compensated flow temperature control while giving consideration to the building's thermal dynamics	x	
	• Weather-compensated flow temperature control with room compensation	x	
	• Effect of room temperature deviation can be adjusted	x	
	• Optimum start / stop control	x	
	• ECO functions (24-hour limit switch, automatic summer / winter changeover)	x	
	• Quick setback	x	x
	• Room temperature switching differential for limiting the room temperature	x	x
	• Adjustable maximum limitation of the flow temperature (especially in connection with floor heating systems)	x	
	• Limitation of the rate of increase of the flow temperature setpoint	x	
	• Frost protection for the building	x	x
	• Frost warning	x	
	• D.h.w. control with release and preselection of setpoint for the boiler controller	x	
	• Legionella function	x	
	• Integrated yearly clock with backup (minimum 12 hours)	x	
	• Integrated 24-hour clock with backup (minimum 12 hours)		x
Operating functions	• Operating levels based on ergonomic and functional considerations	x	x
	• Operating mode, setpoint adjustment and occupancy button	x	x
	• Every setting or change is displayed and thus acknowledged	x	x
	• Clear text display in a number of selectable languages	x	
	• 7-segment display		x
	• A number of actual values can be accessed via the Info button	x	
	• Additional functions can be programmed after opening the cover	x	
	• Special service level with protected access	x	
	• Yearly clock with automatic summer- / wintertime changeover	x	
	• One 7-day program per heating circuit and up to 3 switching cycles per day can be selected on an individual basis	x	
	• 24-hour heating program with up to 3 switching cycles		x
	• 7-day d.h.w. heating program with up to 3 switching cycles per day can be selected on an individual basis	x	
	• Holiday program	x	
	• The heating programs and the d.h.w. program can be reset to their default settings	x	
	• Programming lock (e.g. for child-proofing)	x	
	• Special mode for setting the parameters of Siemens boiler control systems	x	

Other features	• Elegant housing made of recyclable plastic	x	x
	• Communication with the boiler control via OpenTherm interface	x	x
	• Power supply via OpenTherm bus	x	x
	• Straightforward installation	x	x
	• Cable entry for wall mounting or mounting on a recessed conduit box	x	x

Type summary

Type	Type reference	Compatible with
QAA73.110 QAA53.110	Room unit with OpenTherm interface	• LMU... with OpenTherm interface • Other types of boiler controllers with OpenTherm interface
AVS92.299	Mounting clips for panel mounting	

Technical features

Communication

For communication between the room unit and the boiler control, the OpenTherm bus is used.

The room unit differentiates between 2 OpenTherm modes, *Plus* and *Lite:*

• In OpenTherm Plus mode, the room unit can read or write various standardized objects via the bus
• In OpenTherm Lite mode, the room unit of the boiler control only delivers a signal for controlling the heat output. In the event of fault, the boiler control sends message *Boiler Lockout Fault* to the room unit

Right after the electrical connection, the room unit ascertains whether the boiler controller supports the OpenTherm Plus or the OpenTherm Lite protocol.

Maximum limitation of the flow temperature
(only QAA53.110)

Usually, maximum limitation of the flow temperature is predefined by the BMU and sent to the room unit via OpenTherm. If the BMU does not transmit any limitation , it can be lowered on the room unit from 80 °C (standard setting) to 60 °C by cutting the oppropriate wire link. This is especially required when the flow temperatures called for by the heating circuit are below 60 °C.
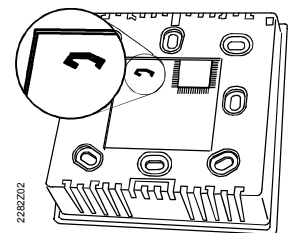
Caution

The wire link must be cut in a way that the ends of the wires do not touch any more, that they do not make contact with other conductive surfaces and that parts of the wire link do not fall inside the unit!

Additional function descriptions

For a more detailed description of the technical design, refer to documentation CE1P2284.

Mechanical design

Room unit

The unit consists of the following components:
- Housing with integrated electronics and operating elements
- Base for wall mounting with the connection terminals

Operating elements

- Button for selecting the operating mode
- Setting knob for adjusting the setpoint
- Occupancy button for temporary changeover
- Info button (QAA73.110)
- Line selection and adjustment of values with buttons behind the housing front (QAA73.110)

Display

QAA53.110

QAA73.110
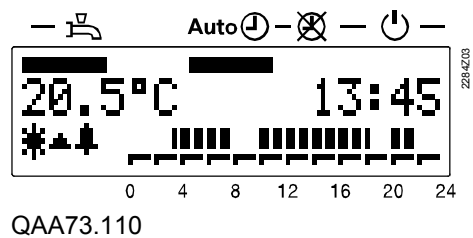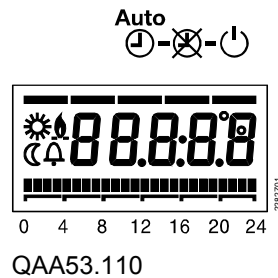
Technical data

|		
Operating voltage	OpenTherm bus	
	Connection	2-wire connection (interchangeable)
	Cable length	max. 50 m
	Cable resistance	max. 2 x 5 Ω
	Power consumption	35 mW (typically)
Protection	Safety class	III to EN 60730
		(when mounted correctly)
	Degree of protection of housing	IP 20 to EN 60529
	Contamination	environment to EN 60730
Environmental conditions	Operation	IEC 721-3-3 class 3K 5
	Temperatures	0...50 °C
	Humidity	< 85 % r.h.
	Transport	IEC 721-3-2 class 2K 3
	Temperatures	-25..0.70 °C
	Humidity	< 95 % r.h.
	Storage	IEC 721-3-1 class 1K 3
	Temperatures	-25..70 °C
	Humidity	< 95 % r.h.
Standards	$C \epsilon$ conformity	
	EMC directive	89/336/EEC
	– Immunity	EN 50082-1, EN 50082-2, EN 60730-1
		EN 50090-2
	– Emissions	EN 50081-1, EN 50081-2, EN50090-2-2
	Low voltage directive	73/23/EEC
	– Electrical safety	EN 60730-1, EN 60730-2-9
Room sensor	Measuring range	0...45 °C
Other features	Backup of time switch	min. 12 h
	Software class	A to EN 60 730
	Weight	approx. 0.17 kg

Product liability
- The products may only be used in building services plant and applications as described above
- When using the products, all requirements specified under "Technical data" must be observed
- The local regulations for electrical installation must be complied with

Engineering
- In the main living room or reference room
- The place of installation should be chosen so that the sensor can capture the room temperature as accurately as possible, without being affected by direct solar radiation or other heating or cooling sources.
- Mounting height is about 1.5 meters above the floor
- The unit can be fitted to most commercially available recessed conduit boxes or directly on the wall.
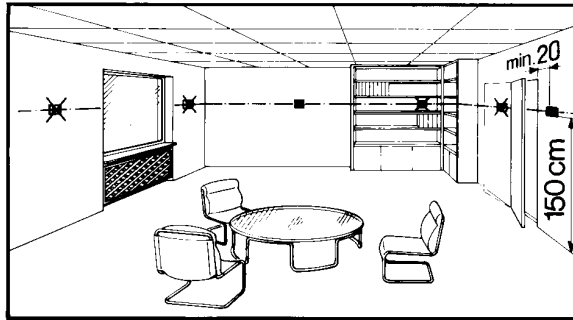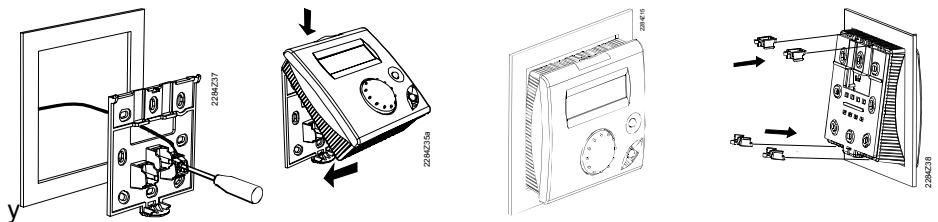

installation
- Wall mounting
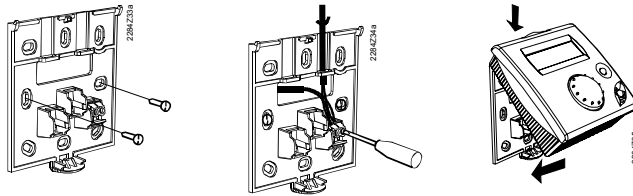
- Boiler control panel, securing with mounting clips (only QAA73.110). When using flush panel mounting, the effect of room temperature deviations must be deactivated
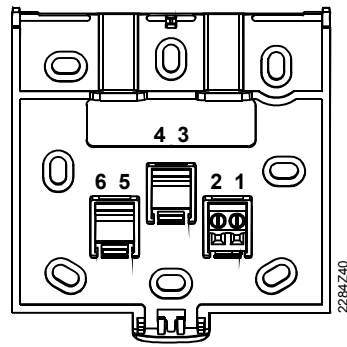

- The controller may not be exposed to dripping water
- Permissible ambient temperature: 0..0.50 °C

Installation
- The local regulations for electrical installations must be complied with.

5/6

Connection diagram
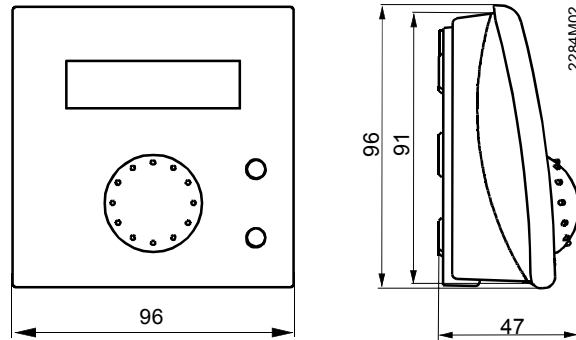

1	COA	OpenTherm terminal A (interchangeable)
2	COB	OpenTherm terminal B (interchangeable)
3	-	-
4	-	-
5	-	-
6	-	-

⚠ 23 mA max

QAA73 and QAA53 with

Dimensions

Room unit

96   96   91   47

Panel cutout

96   96 $92^{+0.8}_{-0}$ $92^{+0.8}_{-0}$ 1...2.5

©Siemens Building Technologies Ltd.
Subject to alteration