



## Product Range Overview

## LMU5... LMU6...

The LMU5... / LMU6... Boiler Management Units provide all supervisory and control functions required for operating burners, for space heating and DHW heating. Using integrated communication interfaces, they also make possible modular system extensions.

- Uniform and consistent operating philosophy including menu-driven operation
- Connection facility for service tool and remote supervision

### Use

Buildings	<ul style="list-style-type: none"> <li>• Residential and nonresidential buildings with own zone heating circuit and DHW heating</li> <li>• Residential and nonresidential buildings with central heat generation and supply</li> </ul>
Heat generating equipment	<ul style="list-style-type: none"> <li>• Gas-fired appliances with premix burners</li> <li>• Control of premix burners with capacity ranges of &lt; 70 kW, 70...120 kW and &gt; 120 kW in intermittent operation with direct ignition of main burner</li> <li>• Modulation of output via a PWM-controlled fan</li> </ul>
Heating plants	<ul style="list-style-type: none"> <li>• Standard heating systems in the form of radiator, convector, underfloor, ceiling or radiant heating systems plus DHW heating</li> </ul>

### Documentation

The present product range overview is a **technical description** of the available products / product range.

Target groups	<ul style="list-style-type: none"> <li>• Sales engineers</li> <li>• In-house staff</li> <li>• HVAC installers</li> </ul>
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## Functions

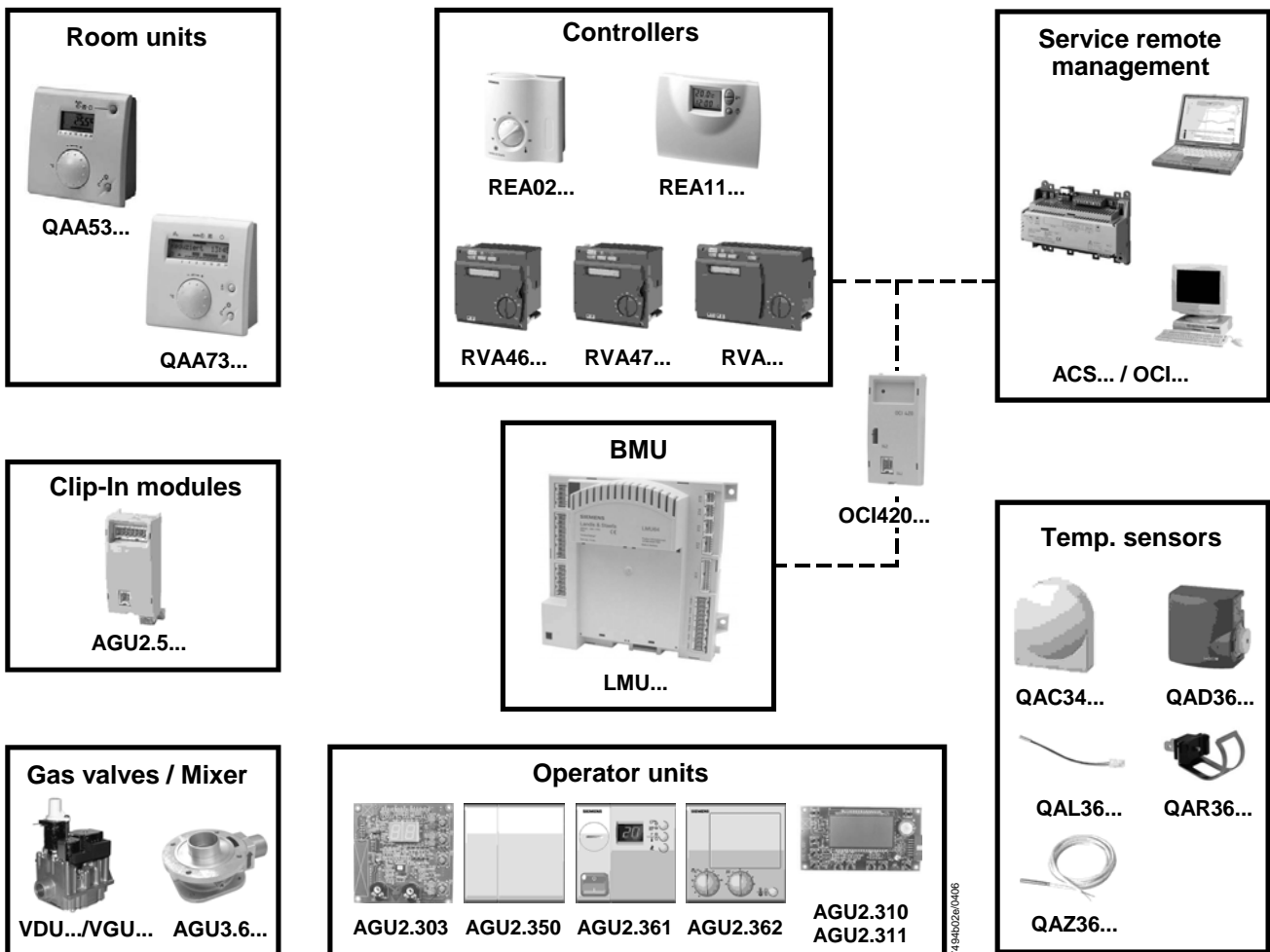
<b>Heat source boiler</b>
Minimum and maximum limitation of the boiler temperature
Time switch program (heating circuit, DHW)
Forced intermittent operation
Burner control program
Acquisition of actual values
Flue gas temperature supervision
Electronic safety limit thermostat (S)TL
Temperature limiter function
Proof of flow / water pressure supervision
Pressure sensor
Output limitation
Speed limitation
Ionization current limitation / ionization current supervision
Burner lock
Continuous pump operation
Boiler control
Determination of compensation variants
Consumer management (CM)
Frost protection boiler
<b>Heat source solar</b>
DHW storage tank charging via solar
Overtemperature protection collector and storage tank
Frost protection solar
<b>Heating circuit control</b>
Pure weather compensation
1st pump heating circuit with 7-day program
2nd mixing valve / pump heating circuit with 7-day program
Giving consideration to building dynamics (building time constant)
Connection facility for room unit
Automatic adaptation of heating curve
Automatic summer / winter changeover
Automatic 24-hour heating limit
Quick setback and boost heating
Optimum start / stop control
Floor curing function
Frost protection flow and plant
<b>DHW control</b>
DHW storage tank charging with 7-day program
DHW charging with charging pump or diverting valve
DHW charging with 1, 2 sensors or thermostat
DHW charging with 1 sensor or thermostat
Selectable priority (absolute / none)
Selectable DHW program (according to DHW program / heating programs, 24 hours)
DHW push (manually or automatically)
Legionella function
Control of DHW circulating pump
ECO function
DHW temperature control
Instantaneous DHW heater
Aqua-boost system
Frost protection for DHW

## Functions (cont'd)

<b>General</b>
Automatic summer- / wintertime changeover
Standard time programs
Multifunctional inputs and outputs
Connection facility for operator units
Connection facility for mixing valve module for 2nd mixing / pump heating circuit
Connection facility for service tool (via OC1490...)
Connection facility for remote supervision (via OC16...)
Automatic identification of sensors
Maintenance and fault status messages



Not all functions listed above are contained in the basic unit and only available in connection with the extension modules!



## Product presentation

### BMU

#### **LMU5...** (printed circuit board design)

PCB version

The basic unit is the actual burner control and heating controller with all-polar input / output terminals for external plant components. It has no operating elements. Operation takes place through detached, communicating, wire-bound ancillary units.



#### **LMU6...** (housing design)

Housing version

The basic unit is the actual burner control and heating controller with all-polar input / output terminals for external plant components. It has no operating elements. Operation takes place through detached, communicating, wire-bound ancillary units.



### Operator units

The operator units are for integration into the boiler and are wired to the basic unit. They display the functions and settings of the basic unit, thus ensuring ergonomic and straightforward operation. Cutout dimensions of housing versions: 96x144 mm.

#### **AGU2.361A109**

Operator unit boiler, housing version for flush-panel mounting, degree of protection IPx4D.



#### **AGU2.362A109**

Operator unit heating circuit, housing version for flush-panel mounting, degree of protection IPx4D.



#### **AGU2.303B109**

Operator unit for boiler and heating circuits, PCB version.



#### **AGU2.310A109**

Operator unit with LCD and buttons, for boiler and heating circuits, PCB version, clock function, with backlit display.

#### **AGU2.311A109**

Operator unit with LCD and buttons, for boiler and 2 heating circuits, PCB version, weekday function, with improved (intensive) backlit display.



**AGU2.350A109**

Dummy cover, housing version for flush-panel mounting, degree of protection IPx4D.



Clipin

**AGU2.500A109**

Clipin function module for additional pump or mixing circuit.



**AGU2.500A209**

Clipin function module for pump or mixing circuit (PCB version).



**AGU2.511A109**

Clipin function module for voltage input, with 3 relay outputs.

**AGU2.513A109**

Clipin function module for current input, with 3 relay outputs.

**AGU2.514A109**

Clipin function module for sensor input, with 3 relay outputs.

**AGU2.515A109**

Clipin function module for digital input, with 3 relay outputs.

**AGU2.530A109**

Solar clipin function module with input for collector sensor, with 3 relay outputs.



**OCI420A109**

Clipin communication LPB interface (housing version).



**OCI420A209**

Clipin communication LPB interface (PCB version).



## Product presentation (cont'd)

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### Cables

#### **AGU2.100A109**

Connecting cable LMU5... / LMU6... ↔ AGU2.303... / AGU2.361... / AGU2.310... / AGU2.311..., length 800 mm.



#### **AGU2.100A209**

Connecting cable LMU5... / LMU6... ↔ AGU2..., length 300 mm.

#### **AGU2.101A109**

Connecting cable AGU2.361... ↔ AGU2.362..., length 180 mm.



#### **AGU2.102A109**

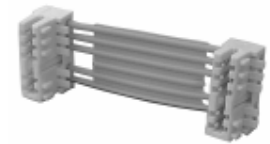
Connecting cable AGU2.361... ↔ QAA73...control panel mounting, length 170 mm.

#### **AGU2.103A109**

Connecting cable service interface AGU2.361... ↔ QAA73...control panel mounting, length 1000 mm.

#### **AGU2.104A109**

Connecting cable LMU5... / LMU6... ↔ ClipIn AGU2.500... / OCI420..., length 35 mm.



### Room thermostats

#### **REA02...**

For control of the room temperature.



### Room temperature controllers

#### **REA11...**

Mains-independent, straightforward operation and easy-to-understand display. Self-learning 2-position controller featuring PID mode (patented). Choice of 2 different 24-hour operating modes.





## Product presentation (cont'd)

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### Room units

#### QAA53...

Digital units with room temperature acquisition. Can be fitted in the room or on the boiler. Displays the functions and settings of the basic unit, thus ensuring ergonomic and straightforward operation.

The room unit must be wired.



#### QAA73...

Digital, multifunctional units for 1 or 2 heating circuits and DHW control. Boiler control delivers the outside temperature and other information via OpenTherm communication interface to the QAA73... room unit. Based on the outside temperature, the room temperature and a number of parameters, the QAA73... calculates the required flow temperature setpoints for 1 or 2 heating circuits and forwards them to boiler control. The DHW setpoint is also transmitted to boiler control. Optimization functions offer energy savings without sacrificing comfort. The room temperature sensor is built in.



### Heating circuit controllers

#### RVA46...

The Albatros controllers are designed for integration in volume produced heating plants and offer the following types of control:

- 2- or 3-position mixing valve and circulating pump
- Optional connection of BMU
- Extension to heating plant with heat generation



### Cascade controllers

#### RVA47...

The Albatros controllers can be used as single-boiler or cascade controllers for up to 12 heat sources via LPB. They are designed for integration in heat sources / plants.

Heating circuit control is weather-compensated; DHW charging operates depending on the storage tank temperature and the time program. In connection with the RVA43.222 Albatros controller, mixed cascades (modulating / multistage) with up to 15 heat sources can be implemented.

In the case of gas-fired boilers, the controller operates in connection with a BMU. It is also possible to use BMUs of other manufacture provided they are adequately equipped. In that case, consult Siemens first.



## Product presentation (cont'd)

### Heating circuit controllers

#### RVA63...

The Albatros controllers are designed for integration in volume produced heating plants and offer the following types of control:

- 1- or 2-stage burner, modulating burner of a BMU
- DHW charging pump or diverting valve
- 3-position mixing valve and circulating pump
- Various applications via multifunctional outputs
- RVA63.242...: 1 mixing circuit and 2 multifunctional outputs
- RVA63.280...: 2 mixing circuits



### Heat energy managers

#### RVA65...

The Albatros controllers are suited for use with solar collectors, wood-fired boilers, oil- or gas-fired boilers, management of buffer, DHW or combi storage tanks, and a pump or mixing circuit.



### Heating circuit or primary controllers

#### RVA66...

The Albatros controllers are designed for integration in volume produced heating plants and offer the following types of control:

- 2- or 3-position mixing valve and circulating pump
- DHW charging pump



### Service tool

#### OCI490A109

Display, handling and recording of setting parameters on site with the help of the ACS420 software package.

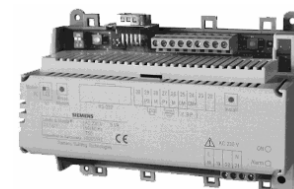


#### OCI611...

Remote supervision and operation of the system from any location via a telephone network with the help of the ACS700 software package.



The modem required is not part of the scope of delivery!



#### ACS420

Software for OCI490A109.

#### ACS421

Software for final inspection on the production line / parameter settings.



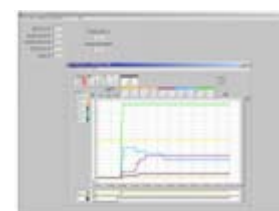
Can only be used in connection with OCI490... interface!

#### ACS700

Software for remote supervision / parameter settings.



Can only be used in connection with LPB clipin OCI420!



**Gas valves**

**VGU2...**

The gas combi valves are for use in gas-fired heating boilers in the residential sector and for DHW heating with automatic ignition. They are also suited for a broad range of gas-fired heating appliances used in catering, direct fired air heaters and back boilers.



Functional versions:

- Quick and slow opening for on / off control
- Selectable slow opening, ensuring that the burner will not be abruptly ignited

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**VGU7...**

The gas combi valves are for use in gas-fired heating boilers in the residential sector and for DHW heating with automatic ignition and premix burners. They are also suited for a broad range of gas-fired heating appliances used in catering, direct fired air heaters and back boilers.



Gas / air ratio 1:1:

- 2 shutoff valves
- Servo pressure governor
- Pressure test points for inlet and outlet pressure
- All settings can be made from the top of the valve
- Fine-mesh strainer integrated in the inlet area
- Adjustment of parallel displacement

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**VGU8...**

The gas combi valves are for use in gas-fired heating boilers in the residential sector and for DHW heating with automatic ignition and premix burners. They are also suited for a broad range of gas-fired heating appliances used in catering, direct fired air heaters and back boilers.



Gas / air ratio 1:1 with main gas flow throttle:

- Like VGU7...
- Pressure test point for gas pressure on the ratio controller
- Adjustment of gas volume

**Gas / Air Mixer**

**AGU3.6...**

Gas / air mixing unit for compact gas control loops in connection with combination gas valves VGU...

Suited for gas-fired appliances of low capacity (wall-hung and floor-standing models) with modulating premix burners.



**Choice of sensors  
for LMU...**

**QAC34/101**

Outside sensor NTC 1 k $\Omega$   
Passive sensor for acquiring the outside temperature and – to a small extent – solar radiation, the influence of wind and the temperature of the wall.

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**QAD36/101**

Strap-on temperature sensor NTC 10 k $\Omega$   
For installation on pipes, for acquiring the medium temperature.

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**QAK36...**

Screwed immersion temperature sensor NTC 10 k $\Omega$   
For acquiring the medium temperature in boilers, DHW storage tanks and heat exchangers through direct immersion.

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**QAL36.225**

Universal temperature sensor NTC 10 k $\Omega$   
For indirect acquisition of the medium temperature in boilers and heat exchangers through immersion in the respective hole / protection pocket, or by fitting on pipes with the help of a clamping band.

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**QAR36...**

Surface-mounted temperature sensors NTC 10 k $\Omega$

- For acquiring the medium temperature in pipes
- ClipOn version for fitting to pipes
- Flat-mounted version for screwing to flat services

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**QAZ36.522/109**

Cable temperature sensor NTC 10 k $\Omega$ , cable length 2 m  
For acquiring the medium temperature in boilers, DHW storage tanks, heat exchangers and solar plants. For installation with protection pockets.

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**QAZ36.526/109**

Cable temperature sensor NTC 10 k $\Omega$ , cable length 6 m  
For acquiring the medium temperature in boilers, DHW storage tanks, heat exchangers and solar plants. For installation with protection pockets.



**Choice of sensors  
for RVA...**

**QAC21...**

Outside sensor LG-Ni1000

For acquiring the outside temperature and – to a small extent – solar radiation, the influence of wind and the temperature of the wall.

- For weather-compensated flow temperature control
- Measuring sensor for optimization functions



**QAD21...**

Strap-on temperature sensor LG-Ni 1000

For installation on pipes, for acquiring the medium temperature.

- Control and limitation of the flow temperature
- Limitation of the return temperature



**QAZ21...**

Cable temperature sensor LG-Ni1000

For acquiring the medium temperature in refrigeration plant. Can be used as a strap-on sensor with 2 clamping bands or in connection with a protection pocket. For the control and limitation of the temperature in refrigeration plant, especially for acquiring the suction gas temperature and for the control of superheat. Suited for use with controllers operating with LG-Ni1000 sensing elements.



## Available documentation

ASN (type reference)	Title	Documentation
ACS420	Software	CE1B2530 <sup>1)</sup>
ACS421	Software	CE1B2530 <sup>1)</sup>
ACS700	Software	CE1N5641 <sup>1)</sup>
AGU2.100A109	Connecting cable	CC1U7494.3 <sup>1)</sup>
AGU2.100A209	Connecting cable	CC1U7494.3 <sup>1)</sup>
AGU2.101A109	Connecting cable	CC1U7494.3 <sup>1)</sup>
AGU2.102A109	Connecting cable	CC1U7494.3 <sup>1)</sup>
AGU2.103A109	Connecting cable	CC1U7494.3 <sup>1)</sup>
AGU2.104A109	Connecting cable	CC1U7494.3 <sup>1)</sup>
AGU2.303B109	Operator unit	CC1U7494.3
AGU2.310A109	Operator unit, LCD	CC1U7494.3
AGU2.311A109	Operator unit, backlit LCD	CC1U7494.3
AGU2.350A109	Operator unit, dummy cover	CC1U7494.3
AGU2.361A109	Operator unit, boiler	CC1U7494.3
AGU2.362A109	Operator unit, heating circuit	CC1U7494.3
AGU2.500A109	Clipin module, additional pump or mixing circuit	CC1U7494.3
AGU2.500A209	Clipin module, PCB version, additional pump or mixing circuit	CC1U7494.3
AGU2.511A109	Clipin module, voltage input	CC1U7494.3
AGU2.513A109	Clipin module, current input	CC1U7494.3
AGU2.514A109	Clipin module, sensor input	CC1U7494.3
AGU2.515A109	Clipin module, digital input	CC1U7494.3
AGU2.530A109	Solar clipin with input for collector sensor	CC1U7494.3
AGU3.6...	Gas / Air Mixer	CC1N7211 <sup>1)</sup>
LMU54...	Boiler Management Units (BMUs)	CC1N7494
LMU64...	Boiler Management Units (BMUs)	CC1N7494
OCI420A109	Clipin module, LPB interface	CC1U7494.3
OCI420A209	Clipin module, LPB interface	CC1U7494.3
OCI490A109	Service tool	CC1U7494.3
OCI611...	Service tool	CE1N2530 / N2531 <sup>1)</sup>
QAA53...	Room units	CE1Q2282
QAA73...	Room units	CE1P2284
QAC21...	Outside sensors	CE1Q1811
QAC34/101	Outside sensors	CE1Q1811
QAD36/101	Strap-on temperature sensors	CE1Q1801
QAD21...	Strap-on temperature sensors	CE1Q1801
QAK36...	Screwed immersion temperature sensors	CE1Q1844 <sup>1)</sup>
QAL36.225	Universal temperature sensor	CE1Q1842
QAR36...	Surface-mounted temperature sensors	CE1Q1806
QAZ21...	Cable temperature sensors	CE1Q1701
QAZ36.522/109	Cable temperature sensors	CE1Q1843
QAZ36.526/109	Cable temperature sensors	CE1Q1843
REA02... (REA20...)	Room thermostats	CE1N3002
REA11...	Room temperature controllers	CE1P2274
RVA46...	Heating circuit controllers	CE1P2372
RVA47...	Cascade controllers	CE1P2379
RVA63...	Heating circuit controllers	CE1P2373 <sup>1)</sup>
RVA65...	Heat energy managers	CE1P2392 <sup>1)</sup>
RVA66...	Heating circuit or primary controllers	CE1P2378 <sup>1)</sup>
VGU2...	Gas combi valves	CC1N7663
VGU7...	Gas combi valves	CC1N7664
VGU8...	Gas combi valves	CC1N7664

<sup>1)</sup> On request

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