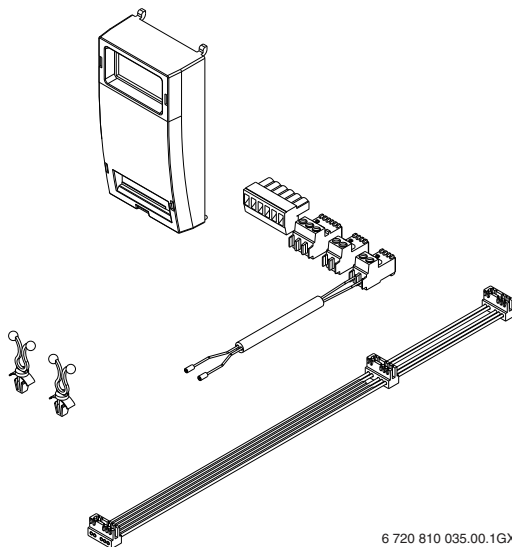


# Extension Clip-in



6 720 810 035.00.1GX

7716842101

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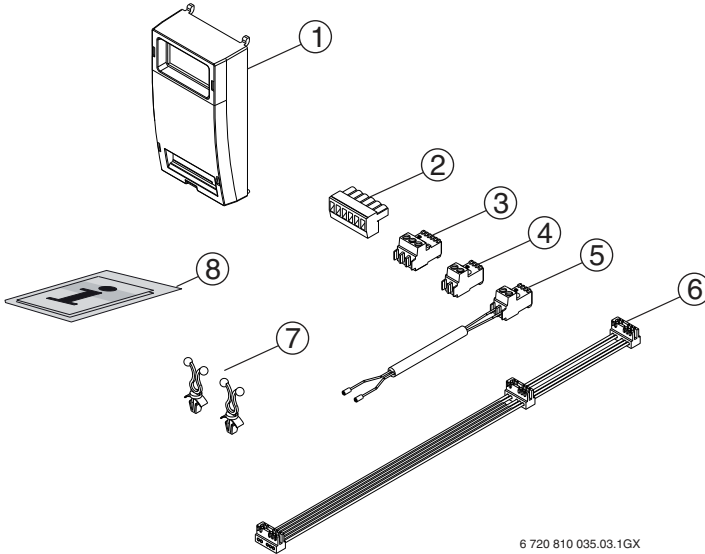
# I - OVERVIEW

## 1 - DESCRIPTION

The extension ClipIn is used to extend the functions of LMS.... boiler management units.

## 2 - COMPOSITION

Fig. 1



6 720 810 035.03.1GX

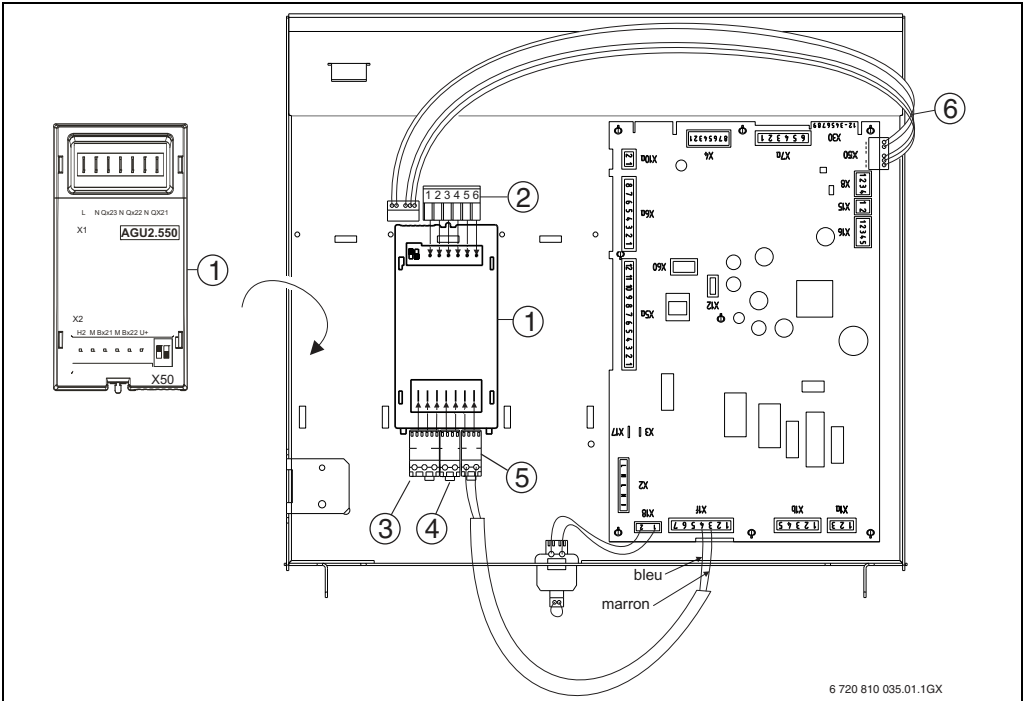
- [1] Extension Clip-in (AGU2-550)
- [2] 6 pin plug
- [3] 3 pin plug
- [4] 2 pin plug
- [5] Clip-in power supply cables (2 pin plug connection to AGU2.550)
- [6] Double-joint connect cable
- [7] Twist-Lock cable clips
- [8] Installation instructions

## II - INSTALLATION



Prior to any intervention, ensure that the electricity supply is cut off.

### 1 - INSTALLATION



[1] Extension Clip-in (AGU2-550)

[2] 6 pin plug

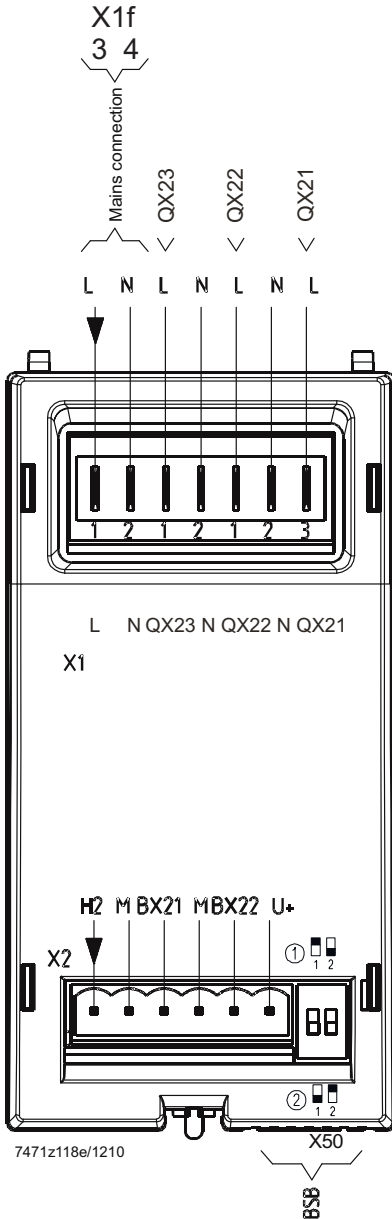
[3] 3 pin plug

[4] 2 pin plug

[5] Clip-in power supply cables (2 pin plug connecting to AGU2.550)

[6] Double-joint connect cable

- Open the control panel
- Install the clip-in (AGU2.550) [1] in its designated place inside the boiler control panel.
- Connect cable [5] to terminal X1 rep. L/N of clip-in [1] and to terminal X1f rep. 3/4 of the LMS.
- Connect the double joint connect cable [6] to the terminal X50 of the clip-in [1] and the terminal X50 of the LMS



①		= module 1
②		= module 2
	ON/ON	= module 3
	OFF/OFF	= no function

X50	LMS
-----	-----

6 720 810 035.02.1GX

## 2 - EXTENSION MODULES



Under the most unfavorable conditions, the signals from the extension modules to the LMS14..., and vice versa, may take up to 40 seconds to be refreshed via the BSB.

This can lead to functional restrictions and detrimental effects on the limit thermostat functions.

### 2.1 - Function extension module 1, 2, 3

Line	Operating line
6020	Function extension module x
6021	None
6022	Multifunctional

#### None

Function is deactivated.

#### Multifunctional

The choice of functions that can be assigned to the multifunctional inputs/outputs can be accessed via the following parameters.

## 3 - QX EXTENSION MODULES 1/2/3



Under the most unfavorable conditions, the signals from the extension modules to the LMS14..., and vice versa, may take up to 40 seconds to be refreshed via the BSB.

This can lead to functional restrictions and detrimental effects on the limit thermostat functions.

### 3.1 - Relay output QX... module 1, 2, 3

Line	Operating line
6030	Relay output QX21 module 1
6031	Relay output QX22 module 1
6032	Relay output QX23 module 1
6033	Relay output QX21 module 2
6034	Relay output QX22 module 2
6035	Relay output QX23 module 2
6036	Relay output QX21 module 3
6037	Relay output QX22 module 3
6038	Relay output QX23 module 3

The relay output settings assign the appropriate functions.

#### None

Relay output with no function.

Circulating pump Q4

The connected pump serves as a DHW circulating pump. Operation of the pump can be scheduled as required on operating page DHW, operating line *Circulating pump release* (1660).

DHW El imm heater DHW K6

Using the connected electric immersion heater, the DHW can be heated according to operating page *DHW storage tank (El imm heater optg mode (5060), El immersion heater release (5061) and El immersion heater control (5062))*..



**The electric immersion heater must be equipped with a safety limit thermostat!**

Note :

- *El imm heater optg mode (5060)* of the electric immersion heater's operating mode must be appropriately set.

**Collector pump Q5**

When using a solar collector, a circulating pump for the collector circuit is required.

**Cons circuit pump VK1 Q15**

Consumer circuit pump VK1 can be used for an additional consumer. Together with an external request for heat at input H and configuration Consumer request VK1, an air heater or similar piece of equipment can be operated.

**Boiler pump Q1**

The connected pump is used for circulating the boiler water.

**Bypass pump Q12**

Function is not implemented.

**Alarm output K10**

The alarm relay signals faults, should they occur. In the event of fault, the relay's contact closes after an adjustable Alarm delay (6612). When the fault is corrected, that is, when the fault status is no longer present, the relay is deenergized with no delay.

Note :

- If the fault cannot immediately be corrected, it is still possible to reset the alarm relay. This is made on operating page Faults.

**2nd pump speed HC1 Q21**

Pump speed 2 for heating circuit 1 is activated.

**2nd pump speed HC2 Q22**

Pump speed 2 for heating circuit 2 is activated.

**2nd pump speed HC3 Q23**

Pump speed 2 for heating circuit 3 is activated.

**Heat circuit pump HC3 Q20**

Pump heating circuit HC3 is activated.

**Cons circuit pump VK2 Q18**

Consumer circuit pump VK2 can be used for an additional consumer. Together with an external request for heat at input H and configuration Consumer request VK2, an air heater or similar piece of equipment can be operated.

**System pump Q14**

The connected pump serves as a system pump, which can be used to supply heat to additional consumers. It is put into operation when there is a request for heat from one of the consumers. If there is no request, the pump is deactivated on completion of the overrun time.

**Heat gen shutoff valve Y4**

If the buffer storage tank holds a sufficient amount of heat, the consumers can draw their heat from it, and the heat sources need not be put into operation. The automatic heat generation lock locks the heat sources and hydraulically disconnects them from the rest of the plant via heat source shutoff valve Y4. This means that the consumers draw their heating energy from the buffer storage tank and wrong circulation through the heat sources will be prevented.

**Solid fuel boiler pump Q10**

For the connection of a solid fuel boiler, a circulating pump for the boiler circuit is required.

**Time program 5 K13**

The relay is controlled according to the settings made in Time program 5.

**Buffer return valve Y15**

This valve must be configured for return temperature increase/decrease or partial charging of the buffer storage tank.

**Solar pump ext exch K9**

For the external heat exchanger, solar pump external exchanger K9 must be set at the multifunctional relay output QX or PWM output P1. If a DHW and a buffer storage tank are available, External solar exchanger (5841) must be set also.

**Solar ctrl elem buffer K8**

If several heat exchangers are used, the buffer storage tank must be set at the respective relay output and, in addition, the type of solar controlling element must be defined on Solar controlling element (5840).

**Solar ctrl elem swi pool K18**

If several heat exchangers are used, the swimming pool must be set at the respective relay output and, in addition, the type of solar controlling element must be defined on Solar controlling element (5840).

**Swimming pool pump Q19**

This function enables swimming pool heating to be released by the heat source.

**Cascade pump Q25**

Common boiler pump for all boilers in a cascaded system.

**St tank transfer pump Q11**

If the temperature level of the buffer storage tank is high enough, the DHW storage tank can be charged by the buffer. This transfer can be made via storage tank transfer pump Q11.

**DHW mixing pump Q35**

Separate pump for storage tank circulation during the time the Legionella function is active.

**DHW intern circ pump Q33**

Charging pump with DHW storage tank using an external heat exchanger.

**Heat request K27**

Contact makes to inform an external heat source that a request for heat is pending.

**Refrigeration request K28**

Output K28 is activated when there is a request for cooling energy in cooling circuit 1.

**Heat circuit pump HC1 Q2**

Pump heating circuit HC1 is activated.

**Heat circuit pump HC2 Q6**

Pump heating circuit HC2 is activated.

**DHW ctrl elem Q3**

Controlling element for DHW storage tank.

**Instant heater ctrl elem Q34**

Controlling element for instantaneous water heater.

**Water filling K34**

Function is not implemented.

**2nd boiler pump speed Q27**

Speed 2 of the boiler pump is activated.

**Status output K35**

The status output is activated:

- When, from standby, a request from the controller to the burner control is active
- When startup is initiated in the phase
- In the operation phase
- When a request from the controller is pending

When one of the above mentioned preconditions is fulfilled, the status output is set, even if start prevention – caused by an open gas pressure switch – is demanded.

In all other cases, the status output is deactivated.

The status output is also used if power supply for an additional gas valve (e.g. for liquefied gas in an external tank) is required. With these types of application, output K35 remains activated if an open gas pressure switch causes start prevention, and the burner control quits start prevention again when gas pressure returns (gas pressure switch closes) and a heat request is pending.

If the gas pressure switch switches off during operation, output K35 is only deactivated during postpurging. If the request for heat continues to exist and the burner control goes to start prevention, output K35 is activated again and remains activated.

**Status information K36**

The output is switched when the Operation phase (modulation) is active and when the status output is selected for use with one of the relay outputs QX1...3.

**Fan shutdown K38**

Function Fan shutdown to turn off power when the fan is not needed.



## 4 - BX EXTENSION MODULES



**Under the most unfavorable conditions, the signals from the extension modules to the LMS14..., and vice versa, may take up to 40 seconds to be refreshed in the LMS14... via the BSB.**

**This can lead to functional restrictions and detrimental effects on the limit thermostat functions.**

### 4.1 - Sensor input BX... module 1, 2, 3

Line	Operating line
6040	Sensor input BX21 module 1
6041	Sensor input BX22 module 1
6042	Sensor input BX21 module 2
6043	Sensor input BX22 module 2
6044	Sensor input BX21 module 3
6045	Sensor input BX22 module 3

The relay output settings assign the appropriate functions.

#### None

Sensor input with no function.

#### DHW sensor B31

DHW storage tank sensor at the bottom.

#### Collector sensor B6

This sensor is required for the solar function.

#### DHW circulation sensor B39

DHW circulation sensor/standby sensor.

#### Buffer sensor B4

Buffer storage tank sensor at the top.

#### Buffer sensor B41

Buffer storage tank sensor at the bottom.

#### Flue gas temperature sensor B8

This sensor is required for flue gas supervision.

#### Common flow sensor B10

This sensor is required for the common flow.

#### Solid fuel boiler sensor B22

This sensor is required for the solid fuel boiler.

#### DHW charging sensor B36

This sensor is required for DHW charging.

#### Buffer sensor B42

Third buffer storage tank sensor (in the middle).

#### Common return sensor B73

This sensor is required for the common return.

#### Cascade return sensor B70

This sensor is required for the cascade return.

#### Swimming pool sensor B13

This sensor is required for the swimming pool.

#### Solar flow sensor B63

Solar flow sensor for yield measurement.

#### Solar return sensor B64

Solar return sensor for yield measurement.

#### Primary exch sensor B26

Customer-specific sensor.



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