

Woodchip boiler

englisch

# POWERCHIP/POWERCORN 50 Special

Installation instructions

PH-A-00-00-01-IAEN



EN-B31-009-V14-0711

# GUNTAMATIC

## Information on this documentation

Please read through this documentation carefully.

It is intended as a reference document and contains important information on the design, safety, operation, maintenance and care of your heating system.

We are always looking to improve our products and documentation. Any ideas and suggestions you may have will be gratefully received.

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**It is important that you pay particular attention to the safety issues highlighted in the text by these symbols.**

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# 1 Introduction

## 1.1 Safety instructions

BS-01-01-00-00-01-IAEN

GUNTAMATIC heating systems represent state-of-the-art technology and meet all applicable safety regulations. Incorrect installation can endanger life and limb. Heating boilers are combustion systems and are potentially dangerous if handled incorrectly. Installation, commissioning and servicing must, therefore, only be carried out by adequately qualified technicians observing all regulations and the manufacturer's instructions.

## 1.2 Guarantee and liability

BS-01-02-00-00-01-IAEN

The manufacturer's guarantee is subject to correct installation and commissioning of the heating system. Defects and damage caused by incorrect installation, commissioning or operation are not covered by the guarantee. To ensure that the system functions as intended, the manufacturer's instructions must be followed. Furthermore, only genuine replacement parts or parts explicitly approved by the manufacturer may be fitted to the system.

## 1.3 Commissioning

BS-01-03-00-00-01-IAEN

Commissioning of the boiler must be carried out by an authorised GUNTAMATIC specialist or other qualified persons. They will check whether the system has been installed according to the plans, adjust the system settings as required and explain to the system operator how to use the heating system.

## 1.4 Site requirements

BS-01-04-00-00-01-IAEN

When establishing the site requirements, it is absolutely essential to take account of the locally applicable planning, building and implementation regulations and the dimensional specifications in the fitting guidelines, installation examples and technical data. Compliance with the locally applicable regulations and the correct implementation of the measures required on site are solely the responsibility of the system owner and are a requirement of the manufacturer's guarantee. GUNTAMATIC provides no guarantee of any kind for any type of site work. Without making any claims as to completeness or non-applicability of official requirements, we recommend the following specifications based on the Austrian Guidelines pr TRVB H 118:

## 1.4.1 Fire safety

BS-01-04-01-00-01-IAEN

If the installation site is not subject to any other fire safety requirements, the GUNTAMATIC minimum fire safety requirements must always be observed. If the installation site is subject to stricter requirements than the minimum fire safety requirements specified here, then the stricter requirements must always be observed without exception.

**Caution:** Compliance with the GUNTAMATIC minimum fire safety requirements is subject only to verification by the operator. The operator alone is responsible for strict compliance. Verification during commissioning is not provided for.

**Caution:** **National regulations must also be complied with.**

### National regulations

**Austria:** F90/T30

State legislation of the federal states

Technical Directive on Preventative Fire Safety pr TRVB H118

**Germany:** No requirements for systems up to 50 kW

Standard boiler regulations (M-FeuVO)

Hessen and Saarland – in these states §16 FeuVO Hessen applies

**Switzerland:**

Fire safety regulations ([www.vkf.ch](http://www.vkf.ch))

**France:**

Relevant fire safety authority

**Italy:**

Relevant fire safety authority

## Minimum fire safety requirements

PH-01-04-01-02-01-IAEN

### Boiler room

Floor of concrete construction, either bare or tiled. All materials for floor, walls and ceiling must be fire-resistant to F60 rating.

**Boiler room door:** The boiler room door must be a Class T30 fire door which opens in the direction of escape, is self-closing and lockable. Connecting doors to the fuel storeroom must also be Class T30 fire doors, self-closing and lockable. There must be no direct connection to rooms in which flammable gases or liquids are stored (e.g. garage).

**Sprinkler:** Connected to the outfeed unit there must be a sprinkler device set to trip at 55°C. With storeroom volumes up to 50 m<sup>3</sup>, this is used instead of the temperature monitor. When the sprinkler is triggered, the sloping outfeed auger enclosure – which also serves as a burn-back inhibiting

device – is completely flooded. The quantity of water required to do so is at least 20 litres. If the temperature drops back below 55°C, the flooding is stopped.

**Note:** The sprinkler system must be connected on all systems regardless of local regulations.

PH-01-04-01-03-01-IAEN

### Fuel storeroom

The same minimum fire safety requirements apply as for the boiler room.

**Storeroom doors/hatches:** Storeroom doors/hatches must be fire safe to Class T30, self-closing and lockable. There must be a warning sign carrying the message "**Do not enter when feeder system is running**" attached to the storeroom door/hatch.

**Temperature monitor:** If it is possible to store 50 m<sup>3</sup> of fuel or more, a temperature monitor connected to a warning device must be installed in the fuel storeroom at the point where the fuel conveyor exits the fuel store and enters the boiler room. The warning device must be triggered when the temperature exceeds 70°C. Because of the sprinkler system, the temperature monitor on the outfeed auger is not required for storerooms with a capacity of less than 50 m<sup>3</sup>.

**Manual fire extinguisher:** If 50 m<sup>3</sup> of fuel or more can be stored, a manually operated fire extinguishing facility must be installed. It must be protected against freezing and connected to a pressurised water pipe (DN20 conduit). The discharge point must be located directly above where the fuel outfeed channel exits the storeroom. The fire extinguishing facility must be identified by a sign carrying the inscription "**Fuel storeroom fire extinguisher**".

**Automatic fire extinguishing facility:** If there is also a fire wall dividing off a living area, an automatic fire extinguishing facility is required.

**Inspection covers:** There must be a lockable F90-class inspection hatch above the fuel outfeed channel.

**Services area:** For storerooms in the services area, it is possible to dispense with F90 jacketing of the fuel store. The fuel must be stored separately (wooden boarding) from other materials and the fire containment zone must be less than 500 m<sup>2</sup>.

**Filler pipes:** Filler pipes through rooms where there is a fire risk must be provided with Class F90 cladding.

## 1.4.2 Boiler room requirements

<u>Combustion air supply</u>	<p style="text-align: right; font-size: small;">PH-01-04-02-01-01-IAEN</p> <p>The pressure in the boiler room must not be less than 3 Pa (0.3 mm H<sub>2</sub>O). The air vents for boiler rooms must have a clear, net cross-sectional area of at least 200 cm<sup>2</sup> and must not be sealable. With combustion boiler systems with a fuel heat output upwards of 50 kW, the net, clear cross-sectional area must be increased to at least 5 cm<sup>2</sup> per kW rated output according to the combustion air requirement of the boiler system. The air supply ducting must connect directly to the outside and if the ducting passes through other rooms, it must be jacketed to Class F90. On the outside of the building, air vents must be covered by a protective grille with a mesh size of &gt; 5 mm. The supply of combustion air should, if possible, enter at floor level in order to prevent cooling of the boiler room.</p>
<u>Electrical installation</u>	<p style="text-align: right; font-size: small;">BS-01-04-02-02-01-IAEN</p> <p>The lighting and the electrical wiring in the boiler room must be permanently installed. There must be a clearly marked emergency off switch in an easily accessible position outside the boiler room, close to the boiler-room door.</p>
<u>Fire extinguisher</u>	<p style="text-align: right; font-size: small;">BS-01-04-02-03-01-IAEN</p> <p>A hand-held fire extinguisher (6kg gross weight, EN3) must be mounted outside the boiler room near the boiler-room door.</p>
<u>Protection against freezing</u>	<p style="text-align: right; font-size: small;">BS-01-04-02-04-01-IAEN</p> <p>The boiler room, pipes carrying water and any district heating pipes must be protected against freezing.</p>
<b><u>Minimum room size</u></b>	<p style="text-align: right; font-size: small;">PH-01-04-02-05-01-IAEN</p> <p>PH 30, PH 50                      at least 230(240) x 240 cm (W x L)  PH 75, PH 100, PH 50S    at least 230(240) x 270 cm (W x L)  (Dimensions in brackets refer to systems with automatic ash extraction system.)</p>
<b><u>Minimum room height</u></b>	<p style="text-align: right; font-size: small;">PH-01-04-02-06-01-IAEN</p> <p>PH 30, PH 50, PC 50S    at least 225 cm  (with heat exchanger cover removed at least 210 cm)  PH 75, PH 100                      at least 240 cm  (with heat exchanger cover removed at least 230 cm)</p>
<b><u>Clear access opening</u></b>	<p style="text-align: right; font-size: small;">PH-01-04-02-07-01-IAEN</p> <p>PH 30, PH 50                      at least 80 x 170 cm (W x H)  PH 75, PH 100 (PC50S)    at least 100 x 190 (170) cm (W x H)  (Dimensions refer to boiler with grate cleaner motor and stoker removed.)</p>
<b><u>Boiler dimensions</u></b>	<p style="text-align: right; font-size: small;">PH-01-04-02-08-01-IAEN</p> <p><u>Without ISO</u>  PH 30, PH 50                      at least 75 x 170 cm (W x H)  PH 75, PH 100, (PC50S)    at least 86 (83) x 180 (170) cm (W x H)  (Dimensions refer to boiler with casing, stoker, flue connecting pipe and ash box removed.)</p>

### 1.4.3 Flue requirements

BS-01-04-03-00-01-IAEN

The flue must be matched to the system in order to ensure economical and trouble-free operation.

BS-01-04-03-01-01-IADE

#### Important



**Use heat-insulated fireclay flues that are insensitive to damp.**

The flue gas temperature can be less than 105°C.

BS-01-04-03-02-01-IAEN

The system must only be connected to the flue if the flue meets the legal requirements and the technical specifications. The flue must be matched to the boiler output and dimensioned in accordance with DIN 4705. In order to be able to accurately dimension the flue, the calculations must be based on the flue gas figures. When designing new flues, high thermal insulation chimneys (DIN 18160 T1 heat transmission resistance group I) or suitable **fireclay flues** that are insusceptible to damp and have general building regulation approval should be used. It is advisable to involve those responsible for approving the flue system early on in the planning phase.

BS-01-04-03-03-01-IAEN

#### Flue height

The minimum flue height is 5 - 10 m depending on boiler output. The flue must terminate at least 0.5 m above the highest part of the building. In the case of flat rooves, the flue must terminate at least 1.5m above the surface of the roof.

#### Flue dimensioning data

Dimension the flue for rated output!  
(Averaged figures with used heat exchanger)

PH-01-04-03-05-01-IAEN

#### Rated output

Type	Flue gas temp.	CO <sub>2</sub>	Mass flow rate	Required draught
PH30	180 °C	12.5%	0.025 kg/s	15 pascals
PH50	190 °C	13.0%	0.040 kg/s	15 pascals
PS50-S	185 °C	12.5%	0.040 kg/s	15 pascals
PH75	180 °C	12.5%	0.065 kg/s	15 pascals
PH100	195 °C	12.5%	0.082 kg/s	20 pascals

#### Sub-maximum output

Type	Flue gas temp.	CO <sub>2</sub>	Mass flow rate	Required draught
PH30	130 °C	9.5%	0.010 kg/s	10 pascals
PH50	145 °C	10.0%	0.015 kg/s	10 pascals
PS50-S	140 °C	9.5%	0.015 kg/s	10 pascals
PH75	140 °C	9.5%	0.020 kg/s	10 pascals
PH100	150 °C	10.5%	0.025 kg/s	12 pascals



## 1.4.4 Fuel store requirements

<u>Access doors/hatches</u>	Above-ground fuel stores must be provided with a door or hatch that opens outwards. So that the fuel cannot run out if the fuel store is opened by mistake, the inside of the access door/hatch opening must be covered with boarding (which must be removable from the outside). Due to the risk of injury when the system is in operation, access doors/hatches must be lockable and kept locked when the system is in operation. There must be a warning sign carrying the message "Do not enter when feeder system is running" attached to the access door/hatch.	BS-01-04-04-01-01-IAEN
<u>Electrical equipment</u>	<b><u>Agitator system</u></b> Electrical equipment is prohibited in the fuel storeroom.	PH-01-04-04-02-01-IAEN
	<b><u>Overhead filler auger</u></b> The drive motor and the necessary electrics must be installed outside the storeroom.	
<u>Filler set</u>	The filler pipes must be earthed.	PH-01-04-04-03-01-IAEN
<u>Structural requirements</u>	The enclosing walls must be capable of withstanding the possible static loads created by the fuel and the pressure when filling the fuel store.	PH-01-04-04-05-01-IAEN
<u>Damp-proofing</u>	The fuel must be protected against contact with water or damp floors/walls. The storeroom must remain dry all year round. If there is a risk of temporarily damp walls, fitting a back-ventilated facing to the walls and lining them with wooden material may be required.	BS-01-04-04-09-01-IAEN

## 2 Installation and assembly

### 2.1 Delivery

BS-02-01-00-00-01-IAEN

The boiler system is delivered packed in a wooden crate wrapped in foil. Please check that the delivery is complete according to the delivery note and in perfect condition.

#### Deficiencies

Please make a note of the deficiencies identified directly on the delivery note and contact the supplier, heating installer or our Customer Service.

### 2.2 Carrying to installation site

BS-02-02-00-00-01-IAEN

The system is delivered on a wooden pallet and can be lifted and carried to the installation site using a pallet truck.

#### Carrying in dismantled

The boiler body can be dismantled into parts for carrying in. If that is done, a person authorised by GUNTAMATIC must be consulted.

### 2.3 Positioning and aligning the boiler

PH-02-03-00-00-01-IAEN

Keep to the minimum wall clearances specified by the system planner and manufacturer. If important details are missing, please refer to the planning documentation or ask our Technical Support. Position the system as close as possible to the flue to avoid having a long flue connecting pipe. The system must be accessible from the left or right side.

#### Clearance on left

at least 40 cm (preferably 70 cm)

#### Clearance on right

at least 40 cm

#### Clearance at front

at least 80 cm (leave space for fuel box door to open)

#### Clearance at back

at least 50 cm (with auto ash extraction system, at least 60 cm)

#### Floor clearance

Set the clearance between the boiler base and the floor to the required minimum of 35 mm by unscrewing the adjustable feet on the boiler base.

#### Set the boiler at a slant

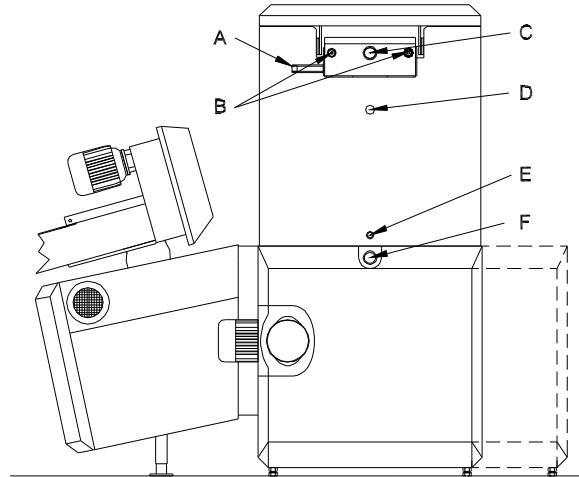
Unscrew the rear adjustable feet slightly further so that the boiler is slightly **higher at the rear**. That will allow the air inside the boiler to escape easily when the system is filled.

**2.4 Plumbing connections**

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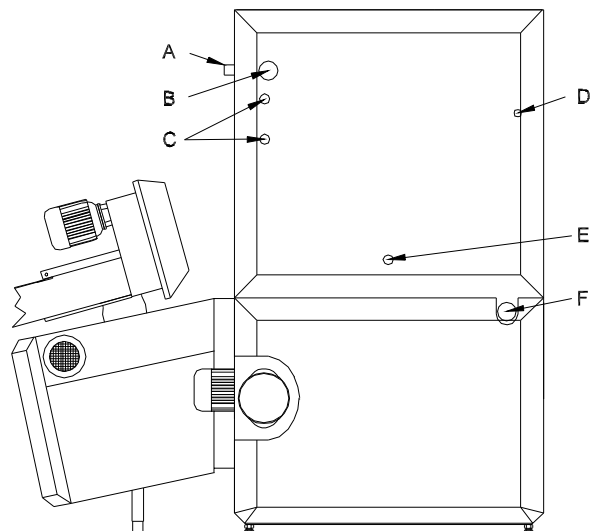
PH30, PH50 and PC50 Special

- A** → Sensor for temp. relief valve, 1/2"
- B** → Temperature-relief heat exchanger
- C** → Heating return, 1 1/4"
- D** → Boiler sensor, safety temperature limiter (STL)
- E** → External thermostat, 1/2"
- F** → Heating flow, 1 1/4"



Powerchip 75/100

- A** → Sensor for temp. relief valve, 1/2"
- B** → Heating flow, 2"
- C** → Temperature-relief heat exchanger
- D** → External thermostat, 1/2"
- E** → Drain
- F** → Heating return, 2"

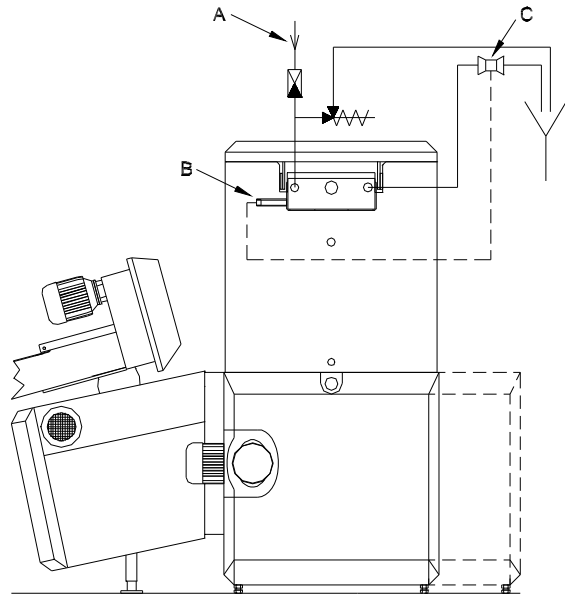


Temperature-relief heat exchanger

The maximum permissible operating temperature of the boiler is 110°C. In order to prevent the maximum allowable operating temperature being exceeded, connection of a temperature-relief valve conforming to Austrian standard ÖNORM 8131 and DIN 4751 and with a response temperature of 95°C is required. The supply pressure must be at least 2 bar but no more than 6 bar.

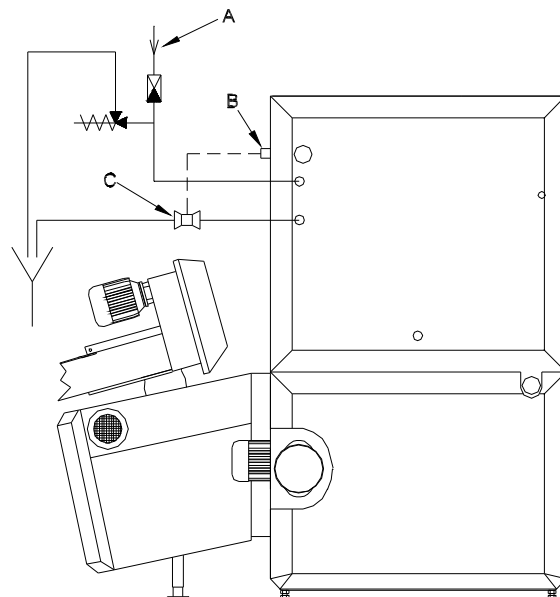
Powerchip 30/50 and Powercorn 50 Special

- A** → Cold water supply for Temperature-relief heat exchanger
- B** → Sensor for temp. relief valve, 1/2"
- C** → Temp. relief valve, 95°C



Powerchip 75/100

- A** → Cold water supply for Temperature-relief heat exchanger
- B** → Sensor for temp. relief valve, 1/2"
- C** → Temp. relief valve, 95°C



PH-02-04-00-02-01-IAEN

Thermal store

Installing a thermal store is not necessary as the boiler is operated by a modulating control system and the system can be quickly shut down. However, if the required continuous heat output in the summer months is below 10 kW for systems up to 50 kW, or 22 kW for systems upwards of 50 kW, combination with a thermal store is necessary for reasons of efficiency.

PH-02-04-00-03-01-IAEN

Return boost

The boiler return temperature must be at least 55 °C and must be held at the required level by a bypass pump between the boiler flow and return pipes. If a thermal store is connected, the boiler return temperature must similarly be at least 55 °C, which must be ensured by a return boost (cross-over valve) set as shown in the plumbing diagram. If this requirement is not complied with, there is an increased risk of corrosion and guarantee entitlement will be lost as a result. Connect the return boost set precisely as specified in our plumbing diagrams.

**Important**

The dimensioning of the return boost pump (set) is designed for the arrangements shown in GUNTAMATIC plumbing diagrams. If additional components such as heat meters are incorporated in the system plumbing, or if the overall thermal store pipe run (flow and return) is more than 30 m, re-dimensioning of the boiler charging pump (HP0) may be necessary.

SY-02-04-00-04-01-IAEN

Expansion vessel

The boiler operates in a sealed heating system and must be provided with an expansion vessel for pressure compensation. To calculate the expansion volume, the volume of the system when cold must be known. Please select the expansion vessel on the basis of the manufacturer's specifications. The expansion volume of the system is calculated as follows:

**System volume x Expansion factor x Additional allowance factor**

- Expansion factor for wood-fuel boilers = 0.03
- Additional allowance factor = 3.0 for systems under 30 kW
- Additional allowance factor = 2.0 for 30-150 kW systems
- Additional allowance factor = 1.5 for systems over 150 kW

Example calculation: 2500 litres x 0.03 x 3 = 225 litres

BS-02-04-00-05-01-IAEN

Plastic piping

If plastic piping for underfloor heating or district heating pipes are connected, they must be protected against excessive temperatures by using a limiting thermostat for the circulation pumps.

BS-02-04-00-06-01-IAEN

Pump selection

The choice of pump must be made by the installer or building technology planner on the basis of the friction data, the pipe cross-sectional area and the required delivery pressure for the piping system planned.

## 2.5 Filling and bleeding the system

BS-02-05-00-00-01-IAEN

The system is filled with water from the domestic supply. Please note the guidelines on "Corrosion and boiler protection in heating and domestic water systems".

### Water quality

The water quality of hot water systems with flow temperatures of max. 100°C is subject to VDI 2035. According to VDI 2035 Part 1, "Avoiding damage to hot water systems", which comply with EN12828, the first-fill and replenishment water, must be conditioned (preferably softened) if the following overall hardness limits [ $^{\circ}\text{dH}$ ] according to total heat output (kW) are exceeded:

- < 50kW: with circulating flow heaters, if  $^{\circ}\text{dH} > 16.8$
- 50 to 200 kW: if  $^{\circ}\text{dH} > 11.2$
- 200 to 500 kW: if  $^{\circ}\text{dH} > 8.4$
- > 500kW: if  $^{\circ}\text{dH} > 0.11$

### Water heater

If a water heater is also used in addition to the GUNTAMATIC boiler, it should be filled according to the installation instructions for it.

### Filling the system

- Match the pressure of the system when cold to the air charge pressure of the expansion vessel
- Check the operating pressure on the pressure gauge

### Bleeding the system

- Switch off and bleed circulation pumps.
- Bleed boiler by opening the bleed valve on the boiler and allowing air to escape until water runs out.
- Bleed radiator heating system (if present) by opening the bleed valve on every radiator and allowing air to escape until water runs out.
- Bleed underfloor heating system (if present) by opening each heating circuit and flushing through thoroughly until there are no more air bubbles in the heating circuit pipes.
- **Important:** perform sequence in the correct order! Start bleeding in the cellar or on the ground floor and finish in the attic.
- Check the system operating pressure on the pressure gauge and add more water if necessary.
- Restart circulation pumps.



**Only systems that have been properly bled guarantee effective conveyance of heat.**

## 2.6 Connecting the flue

PH-02-06-00-01-01-IAEN

The boiler is connected to the flue by means of a flue connecting pipe which must be gas-tight and insulated between the heating boiler and the chimney (insulation thickness 50 mm).

### Flue connecting pipe

The following diameters should be used:

- PH 30, PH 50                      dia. = 150 mm
- PC 50-S, PH 75, PH 100      dia. = 180 mm

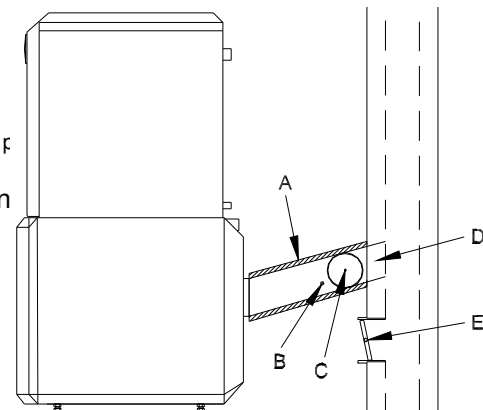
Flue connecting pipes longer than 4 m or with more than 3 bends:

- PH 30, PH 50                      dia. = 160 mm
- PC 50-S                              dia. = 200 mm
- PH 75, PH 100                    dia. = 220 - 250 mm

The hole in the wall for connecting the flue pipe must be lined with a built-in double-skinned lining tube or fireproof material. The flue connecting pipe must rise upwards from the boiler to the flue at an angle of at least 6° and be connected with gas-tight joints. An inspection cover must be provided for cleaning the flue connecting pipe.

PH-02-06-00-02-01-IAEN

- A** → Flue connecting pipe insulation (50 mm)
- B** → Testing point for flue draught  
(Distance from boiler = at least 3 x dia. of flue connecting pipe)
- C** → Alternatively: Flue draught regulator in flue connecting pipe  
(As close as possible to junction with the flue)
- D** → Flue connecting pipe, min. gradient 6°
- H** → Flue draught regulator/pressure-surge compensator in flue  
(Preferred fitting arrangement)



BS-02-06-00-03-01-IAEN



### Note

- The flue connecting pipe must be gas-tight
- An energy-saving flue draught regulator with pressure-surge compensator (Class RE) must be fitted
- Insulate the flue connecting pipe
- Do not brick in the flue connecting pipe (noise transmission)
- The flue connecting pipe must not extend into the flue

## 2.7 Energy-saving flue draught regulator and pressure-surge compensator

BS-02-07-00-00-01-IAEN



Fitting an energy-saving flue draught regulator/pressure-surge compensator (Class RE) is absolutely imperative.

### Purpose

- To ventilate the flue when the system is not in operation
- To compensate for pressure surges
- To regulate and limit the flue draught

### Fitting requirement

The energy-saving flue draught regulator must be fitted in accordance with the local regulations, preferably in the flue approx. 0.5 m below the point where the flue connecting pipe joins or alternatively in the flue connecting pipe close to its junction with the flue.

### Flue draught setting:

- Adjusting the flue draught is only of any use at outside temperatures below +5°C.
- The system must have been in operation for at least an hour
- Ensure there is sufficient demand for heat for the boiler to be run at rated output for at least 15 minutes
- Measure the flue draught between the boiler and the flue draught regulator (distance of measuring point from boiler ideally 3 x flue diameter from connection between boiler and flue connecting pipe).

### Flue draught

The flue draught should not differ by more than +/- 3 pascals from the figure specified in the flue dimensioning data. If the flue draught cannot be reduced to the required figure, either a larger draught regulator should be fitted or an additional flue baffle fitted between the flue and the draught regulator.

### Too much flue draught

May cause the flue gas temperature to increase and accelerate combustion as a result. Poor boiler output adjustability, increased dust discharge and malfunctions can result.

### Too little flue draught

Performance problems, incomplete combustion and malfunctions when operating below rated output can result.



## 2.8 Fuel outfeed installation

### 2.8.1 AGITATOR system

PH-02-08-01-00-01-IAEN

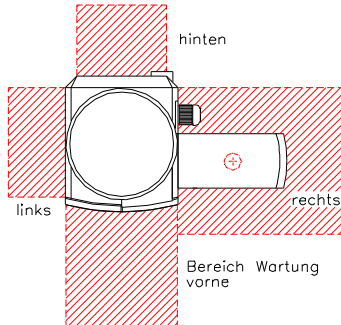


Fig. 2

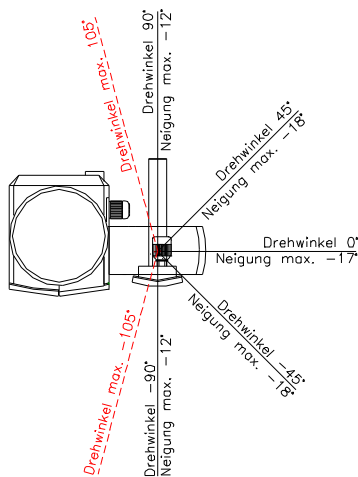


Fig. 3

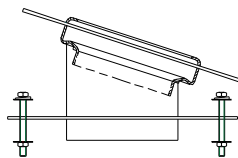


Fig. 4

- 1.) Erect the boiler in the boiler room with the required minimum wall clearances, setting the adjustable feet so that the boiler is slightly higher at the rear so that the air inside the boiler can escape when the system is filled.
- 2.) When erecting the boiler make sure that the fuel auger is fitted on the right of the boiler and can only be turned approx. 90° forwards or backwards (Fig. 3).
- 3.) The storeroom should not be significantly lower down than the boiler room. The maximum possible inclination angles for the outfeed auger are shown in Fig. 3. With the optional fuel chute extension (Fig. 4, Art. no. PH030-9-200-0) inclinations of up to 23° can be achieved. In such cases, the storeroom must be adapted to the slope of the agitator.
- 4.) With the stoker unit removed, insert the inlet seal (A, Fig. 9) between the stoker unit and boiler flange and secure with four M08x30 hexagon-head bolts, spring washers and nuts. Unscrew the foot (B, Fig. 9) on the stoker unit to take the weight of the stoker unit. Connect the electrical leads for the ignition fan, fill level switch, fire safety motor, stoker sensor, drive motor G1 and drive motor A1.
- 5.) Place the drive unit (C, Fig. 9) on the stoker unit and turn it towards the storeroom. The drive unit ball should form an airtight seal with the rubber seal (D, Fig. 9) of the stoker unit.
- 6.) Pre-assemble the required conveyor trough sections (0.22 m, 0.55 m, 1.10 m, 2.20 m or 2.97 m) on the floor. Always fit the 0.50 m trough section supplied (E, Fig. 9) in the area where the auger passes through the wall. Screw the individual trough sections firmly together using M08x30 hexagon-head bolts, washers and nuts (joints should be flush on the inside). Join the individual auger sections together so that the auger slope is even and continuous (F, Fig. 9). Then connect the pre-assembled outfeed auger to the drive unit (C, Fig. 9).
- 7.) Connect the agitator (G, Fig. 9) to the outfeed auger, making sure that the auger slope is even and continuous (F, Fig. 9). Then screw the auger trough sections firmly together.

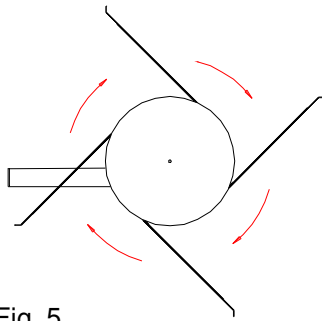


Fig. 5

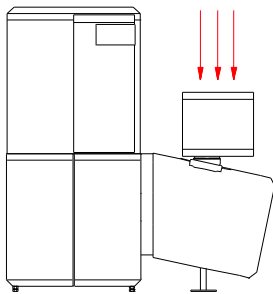


Fig. 6

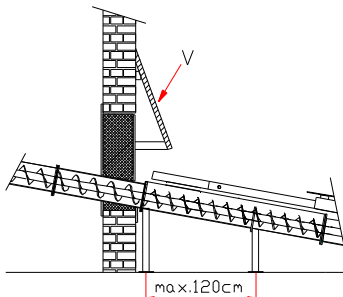


Fig. 7

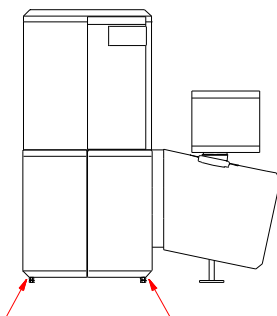


Fig. 8

8.) Fit the spring arms to the agitator. The agitator rotates clockwise (Fig. 5). Fit the longest arms opposite one another. The spring arms (I, Fig. 9) must be 15-20 mm above the outfeed auger at the point where they pass over it. Do not tighten the bolts (H, Fig. 9) on the spring arms. The agitator feet (J, Fig. 9) must be adjusted so that the longest arm is 3-4 cm clear of the floor at its lowest point (K, Fig. 9).

9.) Screw the drive unit to the stoker unit using the fixing screws (L) (M10x100 and M10x140 mm) making sure it forms an airtight seal.

Always ensure the drive unit is fitted vertically (at 90° to the floor, see Fig. 6).

10.) Place the agitator centrally in the storeroom so that the spring arms clear the storeroom walls by a few centimetres. Firmly secure the agitator to the storeroom floor using masonry screws and wall plugs.

11.) Using the legs supplied, support the outfeed auger in the storeroom at the mid-point of the auger and where it exits the storeroom (Fig. 7) – the legs should not be more than 120 cm apart.

Position the feet so that they cannot move lengthways. The legs should rest against the flanges/support brackets of the auger. Place sound insulating material underneath to prevent noise transmission. Adjust the legs vertically so that the auger is resting firmly on them. Firmly secure the legs to the storeroom floor using masonry screws and wall plugs.

12.) Seal the hole in the wall (H, Fig. 9, dimensions H 700 x W 450 mm) around the outfeed auger with mineral wool and cover the gap on both sides of the wall with the cover plates supplied. If necessary, break out the perforations in the cover plates.

13.) Screw the galvanised mounting brackets supplied to the boiler base (Fig. 8) using the M8x16 hexagon-head bolts and slide the base insert and insulation (N, Fig. 9) under the boiler base.

14.) If the boiler is to be run on woodchips, a sloping storeroom floor is not absolutely imperative. If it is to be run on grain or pellets, a sloping storeroom floor must be constructed.

- Use planed timber boards (larch) or blockboard panels 3 cm thick
- Rest the boards/panels on the lip of the outfeed auger. A supporting substructure as shown in Fig. 11 should be constructed at the rear of the agitator.

- 15.) The boarding (V, Fig. 7) over the inspection hatch must be provided on site and prevents uncontrolled spillage of the fuel into the boiler room. A sloping board 3 cm thick and 80 cm wide must be fitted at an angle of approx. 20°, 40 cm above the outfeed auger and 40 cm from the storeroom wall. The structure must be adequately fixed and adequately supported underneath.

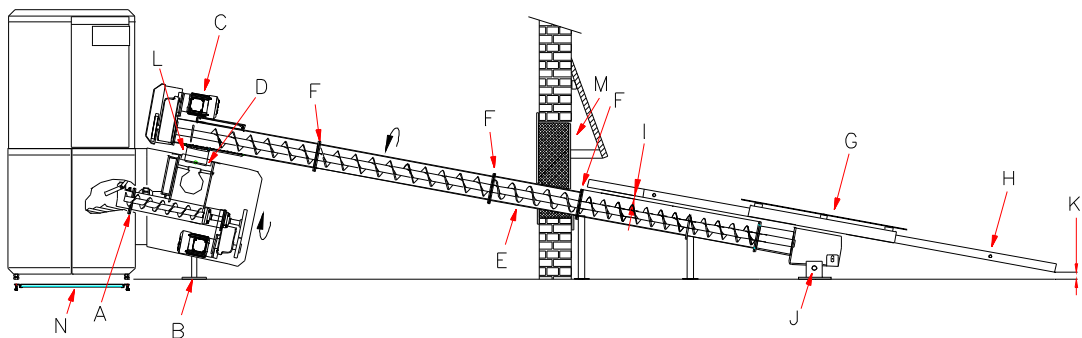


**Important** →

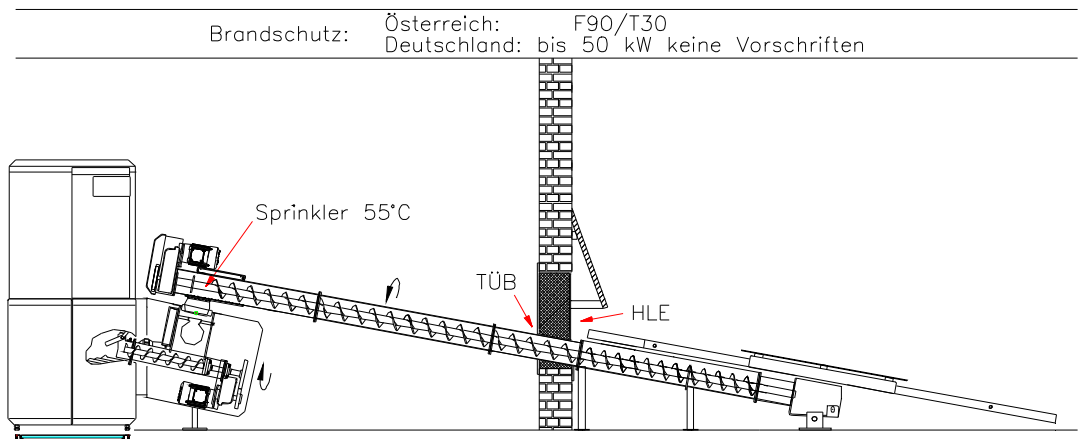
The auger drive unit must form a 100% airtight seal with the fuel chute. The rubber seal must completely seal the ball joint. Fix the drive unit securely with the screws supplied.

- 16.) Because of the sprinkler system, the temperature monitor on the outfeed auger is not required for storerooms with a capacity of no more than 50 m<sup>3</sup>. If the storeroom capacity is larger than 50 m<sup>3</sup>, the temperature monitor as well as the sprinkler unit must be connected to the outfeed channel near to where it passes through the wall. If 50m<sup>3</sup> of fuel or more can be stored, a manually operated fire extinguishing facility must be installed. It must be protected against freezing and connected to a pressurised water pipe (DN20 conduit). The discharge point must be located directly above where the fuel outfeed channel exits the storeroom. The fire extinguishing facility must be identified by a sign carrying the inscription "Fuel storeroom fire extinguisher".

**Fig. 9 Installation of boiler, fuel auger and agitator**



**Fig. 10 Installation of safety systems**



**Fig. 11 Installation of sloping floor, emergency off switch, air vents, fire extinguisher, wall opening, safety systems**

Sloping floors made of wood or concrete must be provided on site. If made of wood, the sloping floor should be constructed of timber boards (larch) or blockboard panels 3 cm thick. The substructure of 10 x 10 cm battens should be as shown in Fig. 11. The posts must stand on concrete or metal plates. The clearance between the agitator arms and the sloping floor must be 15 - 20 mm. With concrete sloping floors, the auger channel clearance should be 2-3 cm.

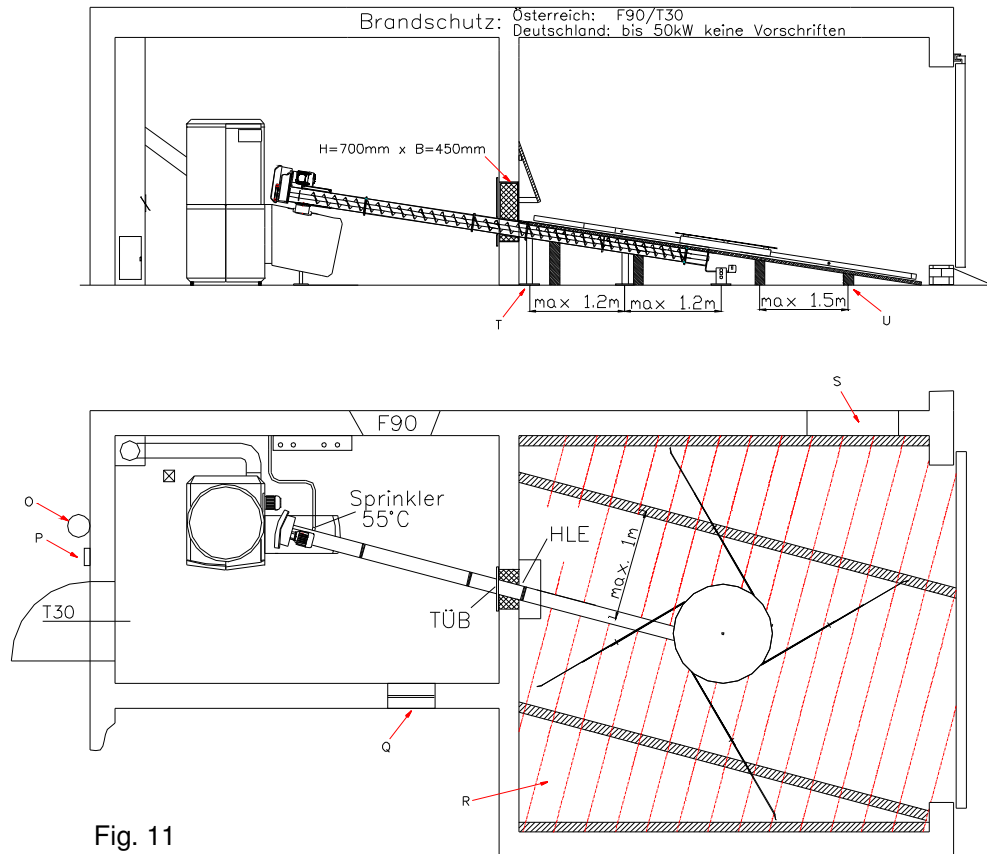


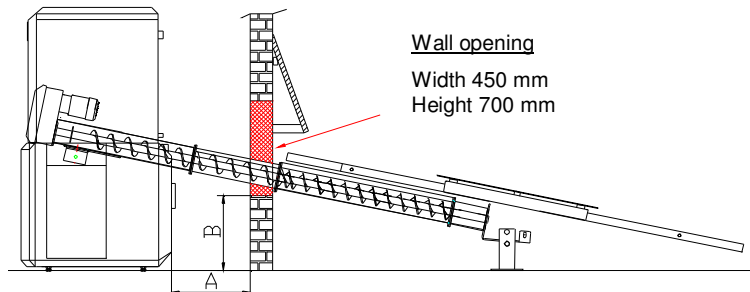
Fig. 11

- O** → Fire extinguisher (6 kg) adjacent to boiler room door
- P** → Emergency off switch outside boiler room
- Q** → Air vent, at least 200 cm<sup>2</sup>, or 5 cm<sup>2</sup> per kW if output is 50 kW or more
- R** → Sloping floor made of wood or concrete
- S** → Storeroom ventilation only required for woodchips
- T** → Supports for outfeed auger
- U** → Supports for sloping wooden floor

## Wall opening and constructing the inspection hatch

### Wall opening

The table of dimensions below details the measurements for positioning the wall opening. The dimensions refer to the standard agitator outfeed system specifications, i.e. outfeed unit + 0.55 m trough and agitator.



Agitator	Dimension A	Dimension B
1.5 m	500 mm	370 mm
2.0 m	500 mm	410 mm
2.5 m	500 mm	440 mm
3.0 m	500 mm	470 mm
3.5 m	500 mm	500 mm
4.0 m	500 mm	530 mm
4.5 m	500 mm	540 mm
5.0 m	500 mm	550 mm

### Inspection hatch construction

The construction of the inspection hatch and the associated wall lining should be carried out as described below and will enable access to the storeroom for the purposes of removing any objects that may be jammed in the auger before the enclosed section of the auger trough. The hatch canopy constructed as per Fig. 7 prevents the stored fuel spilling out when the inspection hatch is opened.

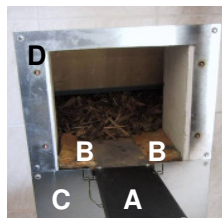


Fig. 13

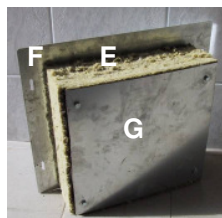


Fig. 14



Fig. 15

- 1.) Pack the gap at the sides and below the outfeed auger (A) with mineral wool (B).
- 2.) Fit the cover plates supplied (C) on the inside and outside.
- 3.) Fix the top edge of the lining (D) in the wall flush with the cover plates.
- 4.) Cut a section of mineral wool (E) to size to fit the hatch opening.
- 5.) Insert the mineral wool (E) between the cover plate (F) and the inspection hatch rear panel (G) as shown in Fig. 14 using the hexagon-head bolts supplied.
- 6.) Fit the inspection hatch cover (H) and secure with wing nuts.

### 3 Electrical connections

#### 3.1 Heating system electrical connections

PH-03-01-00-00-01-IAEN

##### Mains connection

##### Standard specifications

- 400V, 50Hz, 13A fuse (surge protector recommended)
- 1 Boiler control panel (BCE)
- 1 Boiler circuit board (230VAC)
- 1 Router module (400VAC)
- 1 Fault signal output (24VDC 200mA – if freewheeling diode relay used)
- 1 Safety temperature limiter (STL)
- 1 Boiler sensor (KVT20  $\Omega$ )
- 1 Stoker sensor (PT1000  $\Omega$ )
- 1 Flue gas temperature sensor (thermocouple)
- 1 Oxygen sensor (12V DC)
- 1 Fire safety flap (24V DC)
- 1 Flue draught fan (230V AC)
- 1 Grate cleaner motor (230V AC)
- 1 TKS 1 (firebox and ash box door switch, 24VDC)
- 1 TKS 2 (fuel outfeed monitor)
- 1 Stoker drive motor G1 (400V AC)
- 1 Outfeed drive motor A1 (400 VAC)
- 1 Outfeed drive motor A2 (400 VAC – for feeder auger)
- 1 Ignition fan (230V AC)
- 1 Boiler enabling switch (emergency off)
- 1 KLP output (230VAC)

##### Optional equipment

- 4 Pump outputs (230VAC)
- 2 Mixer valve outputs (230VAC)
- 1 Outside temperature sensor input (KVT20  $\Omega$ )
- 1 DHW cylinder sensor input (KVT20  $\Omega$ )
- 2 Flow temperature sensor inputs (KVT20  $\Omega$ )

##### Resistances

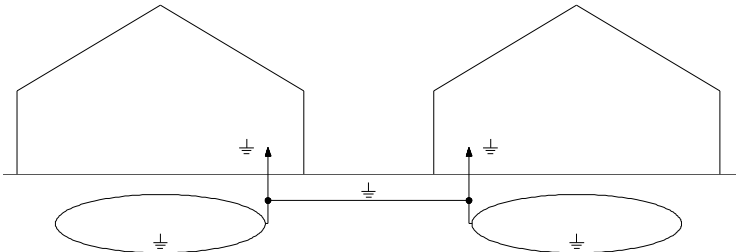
Temperature in $^{\circ}\text{C}$	KVT20 in $\text{k}\Omega$	Temperature in $^{\circ}\text{C}$	PT1000 in $\text{k}\Omega$
-16 $^{\circ}\text{C}$	1.434	0 $^{\circ}\text{C}$	1.000
-8 $^{\circ}\text{C}$	1.537	10 $^{\circ}\text{C}$	1.039
0 $^{\circ}\text{C}$	1.644	30 $^{\circ}\text{C}$	1.117
10 $^{\circ}\text{C}$	1.783	40 $^{\circ}\text{C}$	1.155
20 $^{\circ}\text{C}$	1.928	50 $^{\circ}\text{C}$	1.194
30 $^{\circ}\text{C}$	2.078	60 $^{\circ}\text{C}$	1.232
40 $^{\circ}\text{C}$	2.234	70 $^{\circ}\text{C}$	1.271
50 $^{\circ}\text{C}$	2.395	80 $^{\circ}\text{C}$	1.309
60 $^{\circ}\text{C}$	2.563	100 $^{\circ}\text{C}$	1.385
70 $^{\circ}\text{C}$	2.735	125 $^{\circ}\text{C}$	1.480

3.2 Wiring requirements

PH-03-02-00-00-01-IAEN

Surge protection

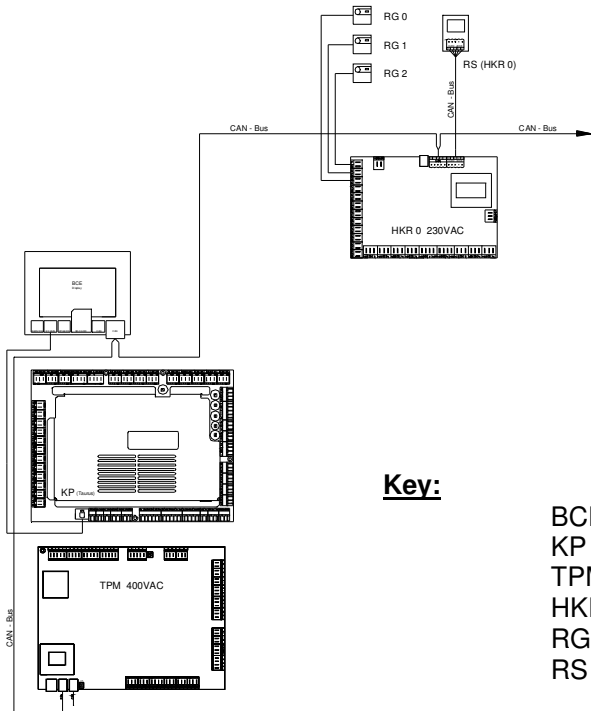
Where CAN bus cables run between different buildings, the earthing conductors of the buildings must be connected to each other for potential equalisation purposes. If the earthing conductors cannot be interconnected, a 10 mm rustless ring earth must be laid along with the CAN bus cable in the ground. The earthing conductors and ring earth must then be connected to one another.



Sensor 2 x 1mm<sup>2</sup>

Analogue room stat RFF 2 x 1mm<sup>2</sup>

CAN bus connecting cable 2 x 2 x 0.5 mm<sup>2</sup> twisted pair, shielded



More outside-temp. based controllers can be connected via CAN bus

Key:

- BCE → Control panel
- KP → Boiler PCB
- TPM → Router module
- HKR → Heating circuit controller
- RG → Analogue room stat
- RS → Digital room controller

Wiring CAN bus in line

Whenever possible, always wire the CAN bus "in line", i.e. from the display and control unit to heating circuit controller 0 then from there to heating circuit controller 1, and so on. If wired in a star pattern, the overall length of the CAN bus must not exceed 100 metres. Wire the CAN bus +/- and H/L connections with twisted-pair cable in each case.

### 3.3 Electrical connections

BS-03-03-00-00-01-IAEN

The electrical connections to the boiler system on site may only be made by an approved electrical installer observing all the applicable regulations. In addition, it is essential that electrical system components are protected against damage from heat radiation.

All boiler system internal wiring is wired up at the factory ready for use. The work required on site by the electrical installer consists only of connecting the mains power and wiring up and connecting the system components such as thermal store, CAN bus, heating circuit pumps, mixer valve motors, etc.

#### Mains power supply

400V, 50Hz, 13A fuse

PH-03-03-00-01-01-IAEN

The mains power must be connected by means of the standard non-reversible power socket on the rear panel of the boiler. It must be possible to isolate the system entirely from the mains without opening the switch panel cover, e.g. by means of an automatic circuit-breaker.



**Pay attention to correct connection of phases!**

#### Opening switch panel

Before the switch panel is opened, the boiler mains lead must be unplugged from the power supply. The system must not be live.

PH-03-03-00-02-01-IAEN

- Undo switch panel securing screw.
- Lift up front right panel section slightly, unclip and draw forwards to remove.
- The circuit boards with the associated connectors and fuses (see electrical wiring diagram) are located underneath it in an easily accessible position.
- The appropriate cable ducts must be used when connecting electrical leads.



<u>Outside-temperature based controller</u>	The MKR outside-temperature based heating circuit controller set is offered as an option and activated on the boiler circuit board if required. The MK261 wall controller set, on the other hand, can only be fitted externally and connected to the system via the CAN bus. Operation and configuration is via the boiler control panel.
<u>Set MKR</u>	The heating circuit controller can be used to control a DHW cylinder, a pumped heating circuit (HC0) and two mixed heating circuits (HC1, HC2). If heating circuit 0 is not used, the " <i>supplementary</i> " function can be used to operate a second DHW cylinder (HWP) or an external burner (EXTERNAL).
<u>Wall controller set MK261</u>	<p>The wall controller set MK261 must be connected to the power supply at terminal H35 and connected to the control panel via the CAN bus.</p> <p>The wall controller set can be used to control a DHW cylinder, a pumped heating circuit, 2 mixed heating circuits, one "<i>supplementary function</i>" (WWP or EXTERNAL) and a "<i>district heating pipe</i>" function (TSP/CP/FP). If the "<i>supplementary</i>" and "<i>district heating</i>" functions are not used, heating circuit 0 can be operated as a 3rd mixed circuit.</p>
<u>Analogue room stat</u>	The room stat should be connected to the relevant heating circuit controller input at terminals 1 and 2 (see electrical wiring diagram).
<u>Digital room controller</u>	The room controller must be connected to the control panel (BCE) or wall controller set MK261 via CAN bus.
<u>3rd mixed heating circuit</u>	<p><b>Can only be activated on wall controller</b></p> <p>Heating circuit 0 can only be used as a mixed heating circuit if the "<i>supplementary</i>" and "<i>district heating</i>" functions are not activated. Mixer valve 0 (MI 0) is connected to output terminals H25 and H26 and heating circuit pump 0 (HKP 0) to terminal H33 on the wall controller. The "<i>district heating pipe</i>" and "<i>supplementary</i>" functions are then not available.</p>
<u>2nd DHW cylinder</u>	<p>Can be activated internally and/or on the wall controller.</p> <p>On the MKR controller set and on the MK261 wall controller set, an additional DHW cylinder (HWP) can be activated using the "<i>supplementary</i>" function. The district heating function on the wall controller set remains available but the 3rd mixed heating circuit cannot be connected.</p>
<u>External burner request</u>	<p><b>Can be activated internally and/or on the wall controller.</b></p> <p>On the MKR controller set and on the MK261 wall controller set, an external heating boiler (External) can be called for using the "<i>supplementary</i>" function. The load on the output must not exceed 230VAC and 2.0A. The district heating function on the wall controller set remains available but the 3rd mixed heating circuit cannot be connected.</p>

Boiler cascade

Up to four heating boilers can be operated in a cascade system (sequential control system) and must be connected in-line via a CAN bus. **The CAN bus lead must be wired without connecting the + terminal.**



**Pay special attention to the section "Wiring requirements, Wiring CAN bus in line".**

Emergency off switch

BS-03-03-00-04-01-IAEN  
According to prTRVB H 118, it must be possible to switch off the system using an emergency off switch fitted outside the boiler room near to the boiler room door. The burner must then shut down but the heating controller and all safety equipment must remain functional. Connected to the boiler enabling switch, terminals 22/23 on the boiler circuit board (see electrical wiring diagram).

Surge protection

BS-03-03-00-05-01-IAEN  
We recommend the installation of a power surge protector in the building's consumer unit.



**Pay special attention to the section "Wiring requirements, Surge protection".**

Earthing

The entire system is to be joined to the earth circuit conductor via the connected piping system according to the regulations.



**When connecting the earth circuit conductor pay particular attention to keeping the connecting runs as short as possible.**

Emergency power supply

Only use regulated generators.

## 4 Final checks/Commissioning

BS-04-00-00-00-01-IAEN

### Final checks

- After completing installation of the system, check again that all joints and pipes are properly tightened and not leaking.
- Check that all covers are fitted and secured.
- Check that the fitting of all connections (water, flue, electrical, ...) has been done correctly.
- Check that all required safety signs and instructions are attached and hand over all documentation (operating and installation instructions) for the system.
- Check that all electrical connections have been properly wired before connecting the system to the power supply.
- Clean the system and clear up the installation site.
- Always leave the boiler room clean.

### Initial commissioning

Commissioning must only be carried out by GUNTAMATIC or a qualified specialist. The precondition is that the flue technician, heating installer and electrician have cleared the system for operation. The authorised GUNTAMATIC specialist will carry out the following work during commissioning:

- Check the entire system
- Check the electrical functions
- Adjust the programmer to the system
- Commission the system
- Explain to the user how the system functions and how to operate and clean it
- Record the details of the customer and the system and complete the commissioning log



**Important** →

Any deficiencies identified must be recorded in writing and rectified within the following 4 weeks in order to maintain guarantee entitlement.

**The fully completed commissioning checklist must be sent to GUNTAMATIC immediately as otherwise the guarantee will be void.**



**Important** →

These installation instructions should not be destroyed after commissioning but kept permanently with the system together with the operating instructions.

## 5 Standards/Regulations

BS-05-00-00-00-01-IAEN

The boiler is designed as a Class 3 appliance as defined by the draft standard ÖNORM EN 303-5 (CEN/TC7/WG 1 – Doc. N 36-D) of 15/12/1996 and the agreement of the [Austrian] Federal States according to Art. 15a BVG, in accordance with the Austrian fire safety regulations, safety systems, CE and on safety measures for small combustion heating systems and the combustion heating system approval regulations (LGB.33/1992) of the Austrian Federal State of Steiermark. The original design approval certificates (BLT Wieselburg, IBS Linz) are available for inspection at the manufacturer's offices. When connecting the boiler, the following general, standard and safety regulations must be followed in addition to the local fire safety and building control requirements:

- ÖNORM EN303-5 Boilers for solid fuels, manually and automatically stoked, with outputs up to 300 kW; terms, requirements, testing and identification;
- ÖNORM H 5195-1 Assessment and suitability of the heating water (minimum requirements for the heating water);
- ÖNORM M 7510 Guidelines for the inspection of central heating systems;
- ÖNORM M 7550 Central heating boilers up to 100°C – Terms, requirements, tests, standard identification;
- ÖNORM B 8130 Safety systems;
- ÖNORM B 8131 Sealed water-circulation heating systems, safety requirements;
- ÖNORM B 8133 Safety requirements, domestic hot water systems;
- pr TRVB H 118 Technical Directive on Preventative Fire Safety
- DIN 4751-1 / Safety systems for heating systems with flow temperatures up to 110°C (120°C in course of preparation);
- DIN 4751-2 / Water-circulation heating systems – sealed heating systems with thermostatic safety systems and flow temperatures up to 120°C – safety systems;
- DIN 4751-4 / Safety systems for domestic hot water systems with flow temperatures up to 120°C; sealed water-circulation heating systems with static heads over 15 m or rated heat outputs over 350 kW;
- DIN 1988 Mains water piping systems on building plots, technical regulations for construction and operation;
- DGVO §7(2) Technical requirements for systems for producing domestic hot water with a temperature not higher than 110°C which are stoked by hand with solid fuel;
- HEATING OUTPUT: The heating output is to be selected (set) by the engineer in accordance with the local heating system regulations so that the rated heat output does not exceed the heat requirement determined according to DIN 4701 or ÖNORM M7500;
- Swiss Clean Air Regulations (LRV)
- Swiss Regulations on Small Combustion Heating Systems
- VKF Fire Safety Directive for Heating Systems (Switzerland)
- SIA 384 (Switzerland)

## 6 Plumbing diagrams

PH-06-00-00-00-01-IAEN

### Diagrams for boiler outputs up to 50 kW

Diagram no.: <b>PH-01-3</b>	PH with high/low temperature system (2 mixed circuits) outside-temperature based controller, ECO DHW cylinder
Diagram no.: <b>PH-01-4</b>	PH with high/low temperature system (3 mixed circuits) outside-temperature based controller (wall controller), ECO DHW cylinder
Diagram no.: <b>PH-02-3</b>	PH with HT/LT system, PSF thermal store (inc. WSU) outside-temperature based controller, PSF thermal store, connected solar panel system
Diagram no.: <b>PH-03-2</b>	PH with HT/LT system, PS thermal store outside-temperature based controller, ECO DHW cylinder, PS thermal store
Diagram no.: <b>PH-04-3</b>	PH combined with wood-burning boiler, PSF thermal store outside-temperature based controller, wood-burning boiler, PSF thermal store
Diagram no.: <b>PH-05-3</b>	PH with HT/LT system, district heating pipe, no thermal store outside-temperature based controller, ECO DHW cylinder
Diagram no.: <b>PH-06-2</b>	PH with HT/LT system, district heating pipe, PS thermal store outside-temperature based controller, ECO DHW cylinder, PS thermal store

### Diagrams for boiler outputs upwards of 50 kW

Diagram no.: <b>PH-07-3</b>	PH with high/low temperature system, PS thermal store outside-temperature based controller, ECO DHW cylinder, PS thermal store
Diagram no.: <b>PH-08-3</b>	PH with HT/LT system, PSF thermal store (inc. WSU) outside-temperature based controller, PSF thermal store, connected solar panel system
Diagram no.: <b>PH-10-2</b>	PH with high/low temperature system outside-temperature based controller, ECO DHW cylinder
Diagram no.: <b>PH-11-3</b>	PH with HT/LT system, district heating pipe, no thermal store outside-temperature based controller, ECO DHW cylinder
Diagram no.: <b>PH-12-3</b>	PH with HT/LT system, district heating pipe, PS thermal store outside-temperature based controller, ECO DHW cylinder, PS thermal store

### Diagrams for systems supplying multiple properties (max. 3 properties)

Diagram no.: <b>PH-13-2</b>	Properties supplied via district heating pipe function CP (charging pump) per property – 1 outside-temp. based controller, 1 ECO DHW cylinder 1 PS thermal store
Diagram no.: <b>PH-14-2</b>	Properties supplied via district heating pipe function FP (feeder pump) per property – 1 outside-temp. based controller, 1 ECO DHW cylinder
Diagram no.: <b>PH-15-2</b>	Properties supplied via district heating pipe function TSP (thermal store pump) per property – 1 outside-temp. based controller, 1 ECO DHW cylinder 1 PS thermal store

### Diagram for sequential boiler control system (cascade system)

Diagram no.: <b>PH-16-2</b>	Sequential boiler control system (boiler cascade system) for max. 4 boilers
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**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP with high/low temperature system** (2 mixed heating circuits)  
 outside-temperature based controller, ECO DHW cylinder

Tel. 07276 / 2441-0

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[www.guntamatic.com](http://www.guntamatic.com)

# GUNTAMATIC

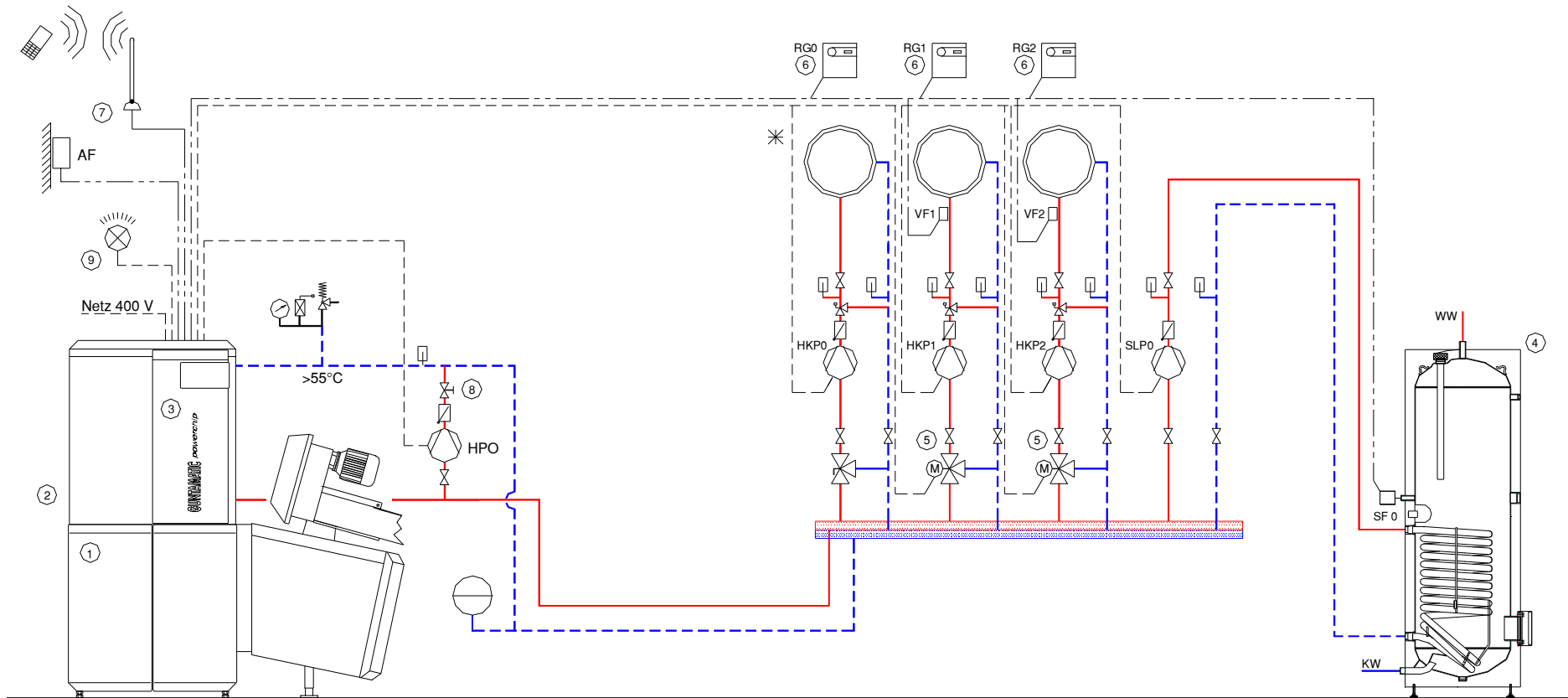
## Diagram no. PH-01-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

1. Powerchip boiler
2. Flue draught regulator RE (size to suit flue diameter) as per price list
3. Outside temp. based controller set MKR Art. no.: S30-031
4. DHW cylinder ECO305 Art. no.: 048-500
5. Mixer valve positioner motor SM70 Art. no.: S50-501
6. Room stat RFF25 Art. no.: S70-006
7. GSM module Art. no.: S15-002
8. Branch control valve Not supplied
9. Fault indicator lamp **Important: follow wiring diagram!** Not supplied



**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP with high/low temperature system** (3 mixed heating circuits)  
 outside-temperature based controller (wall controller), ECO DHW cylinder

Tel. 07276 / 2441-0

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# GUNTAMATIC

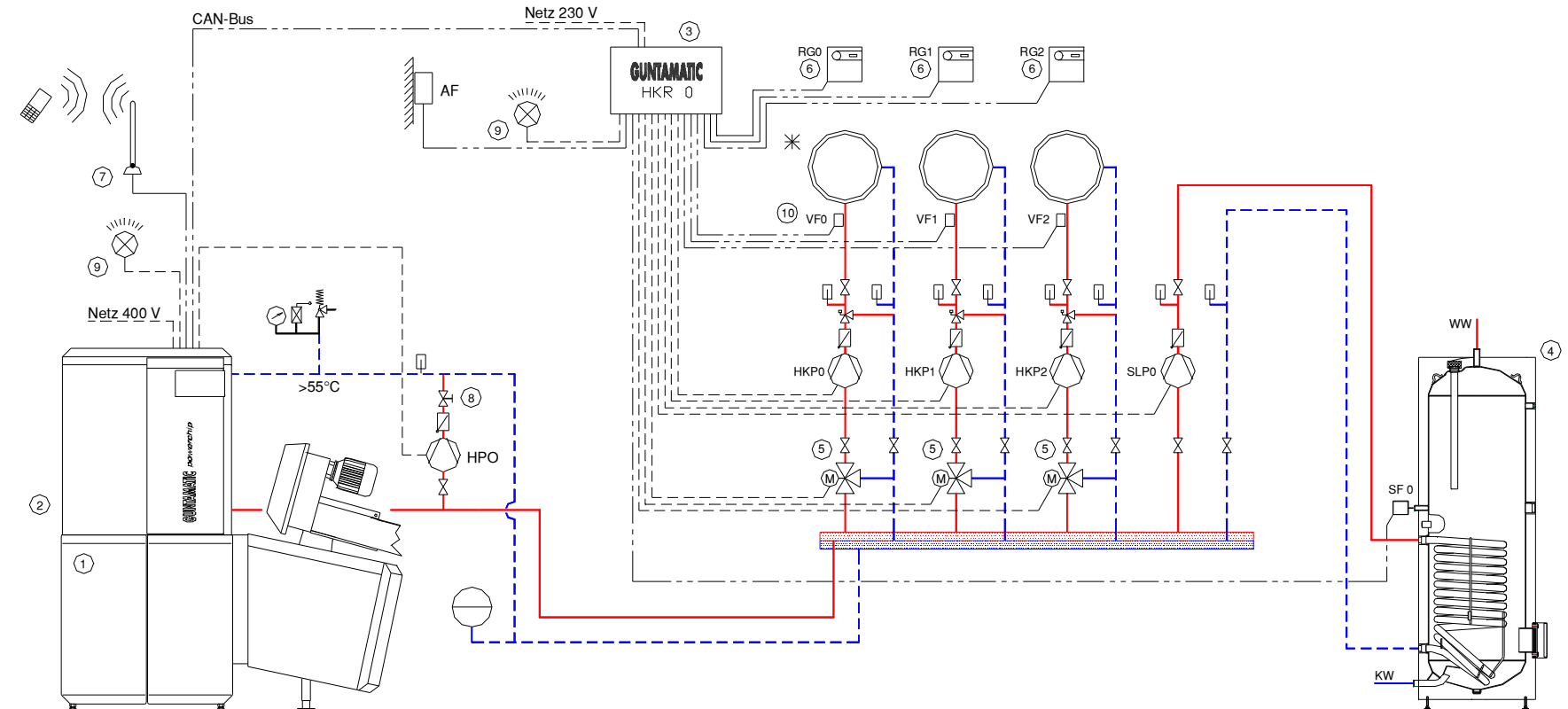
## Diagram no. PH-01-4

Electrical connections as per operating and installation instructions

- With wall controller set MK261, the supplementary output (terminal H25) and the district heating pipe output (terminal H26) can be used to control heating circuit 0 using a mixer valve motor. The heating circuit pump is connected to output HKP 0 (terminal H33) and flow temperature sensor 0 to terminal H21/H22. With this configuration option, the district heating pipe and supplementary functions are not available.

### GUNTAMATIC components

1. Powerchip boiler
2. Flue draught regulator RE (size to suit flue diameter) as per price list
3. Outside temp. based wall controller set MK261 Art. no.: S30-030
4. DHW cylinder ECO305 Art. no.: 048-500
5. Mixer valve positioner motor SM70 Art. no.: S50-501
6. Room stat RFF25 Art. no.: S70-006
7. GSM module Art. no.: S15-002
8. Branch control valve Not supplied
9. Fault indicator lamp **Important: follow wiring diagram!** Not supplied
10. Flow temp. sensor VF20 (VF0 for HK 0) Art. no.: S70-002



Settings on HP0 parameters menu: → HP0 mode = Feeder pump

Heat from biomass 31

**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP with high/low temperature system, PSF thermal store** (inc. water supply unit)  
 outside-temperature based controller, thermal store PSF, connected solar panel system

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# GUNTAMATIC

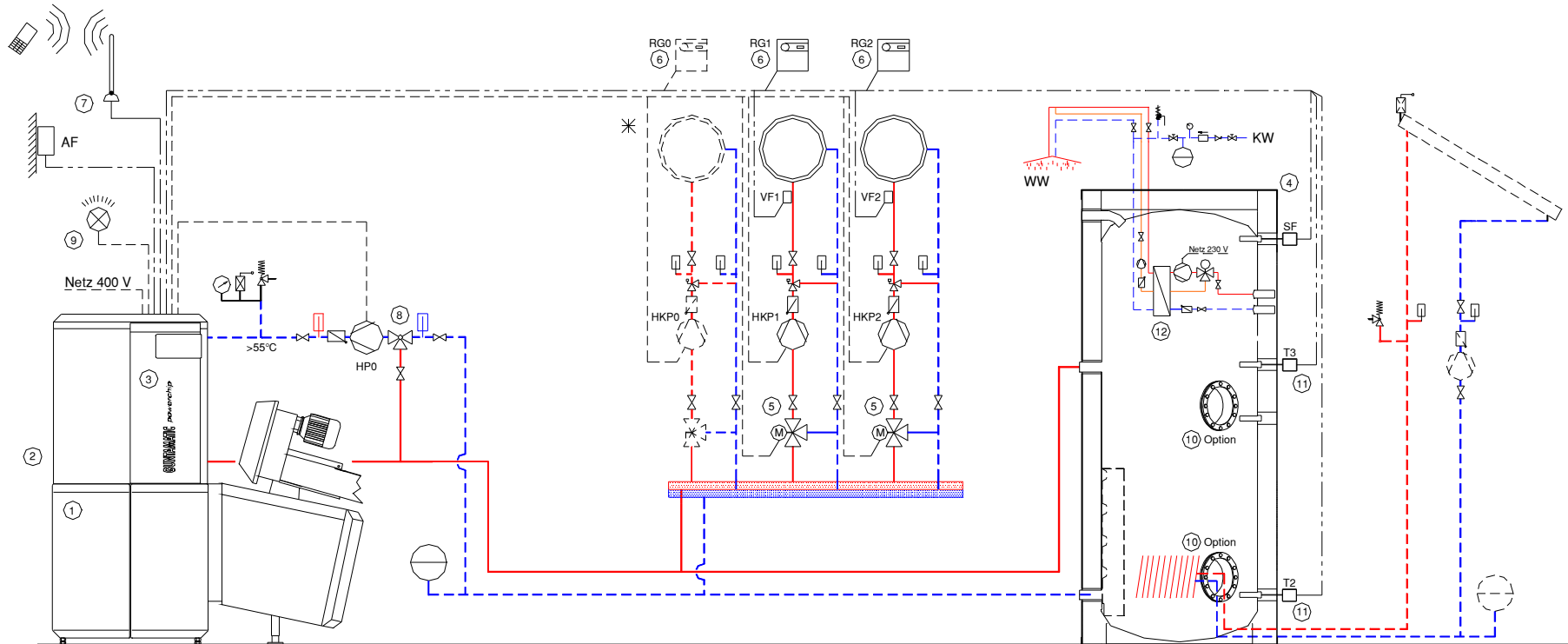
## Diagram no. PH-02-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |  |                   |
|--|-------------------|
| 1. Powerchip boiler  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)        | As price list     |
| 3. Outside temp. based controller set MKR                        | Art. no.: S30-031 |
| 4. Thermal store PSF   | As price list     |
| 5. Mixer valve positioner motor SM70                             | Art. no.: S50-501 |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. Return boost set RA60   | Art. no.: H39-001 |
| <b>Alternatively:</b> RA60 EnergieA                              | Art. no.: H39-003 |
| 9. Fault indicator lamp <b>Important: follow wiring diagram!</b> | Not supplied      |
| 10. <b>Option:</b> 12-hole flange and ridged pipe heat exchanger |                   |
| 11. Thermal store sensor   | Art. no.: S70-003 |
| 12. <b>Option:</b> Secondary return unit                         | Art. no.: 045-250 |



Settings on HP0 parameters menu: → HP0 mode = Thermal store pump HP0 sensor = Boiler

Heat from biomass 32



**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP with high/low temperature system, PSF thermal store (inc. water supply unit)**  
 outside-temperature based controller, ECO DHW cylinder, PS thermal store

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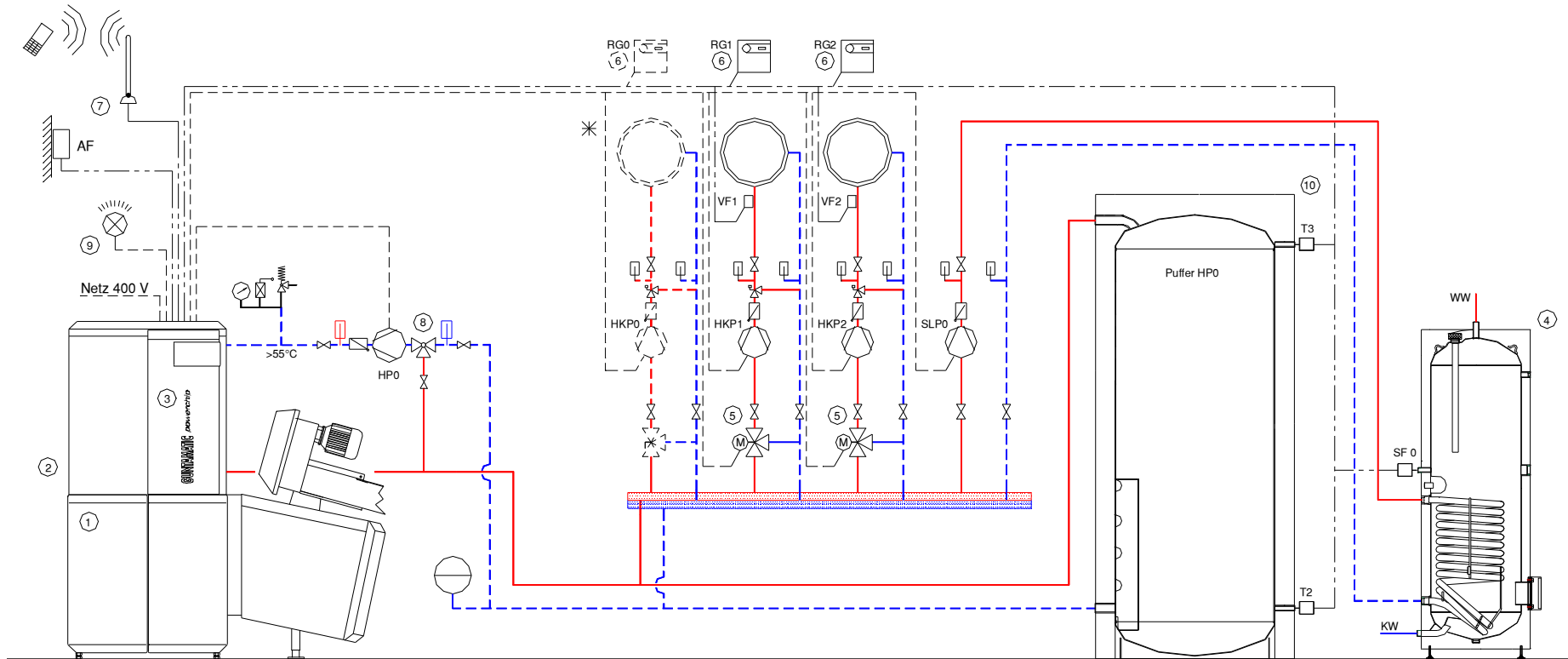
## Diagram no. PH-03-2

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |   |   |
|---|---|
| 1. Powerchip boiler                                       |   |
| 2. Flue draught regulator RE (size to suit flue diameter) | As price list   |
| 3. Outside temp. based controller set MKR                 | Art. no.: S30-031                                     |
| 4. DHW cylinder ECO305                                    | Art. no.: 048-500                                     |
| 5. Mixer valve positioner motor SM70                      | Art. no.: S50-501                                     |
| 6. Room stat RFF25  | Art. no.: S70-006                                     |
| 7. GSM module   | Art. no.: S15-002                                     |
| 8. Return boost set RA60                                  | Art. no.: H39-001                                     |
| <b>Alternatively:</b> RA60 EnergieA                       | Art. no.: H39-003                                     |
| 9. Fault indicator lamp                                   | <b>Important: follow wiring diagram!</b> Not supplied |
| 10. Thermal store PSB                                     | As price list   |
|   | S70-003   |



Settings on HP0 parameters menu: → HP0 mode = Thermal store pump HP0 sensor = Boiler

Heat from biomass 33

**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP combined with wood-burning boiler, PSF thermal store** (inc. water supply unit)  
 outside-temperature based controller, wood-burning boiler, thermal store PSF

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# GUNTAMATIC

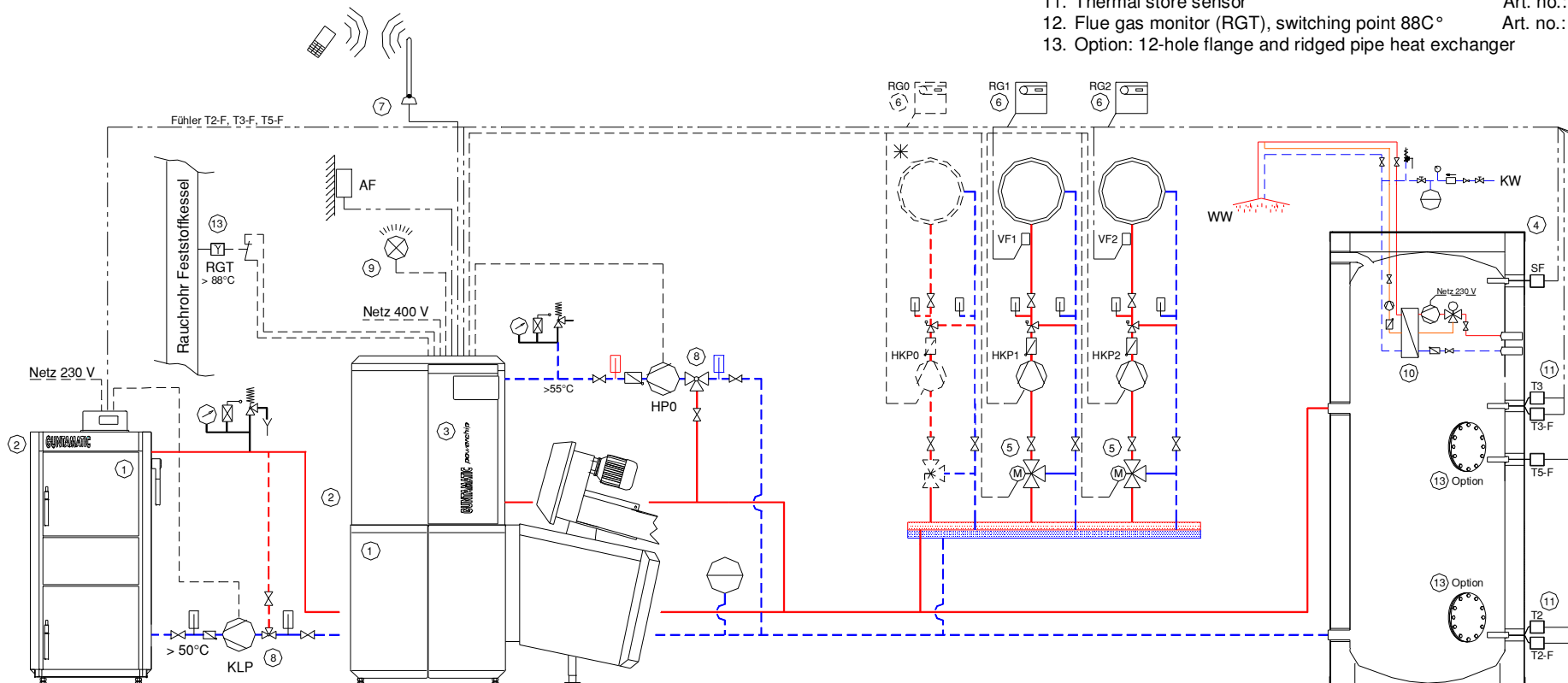
## Diagram no. PH-04-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system.
- Flue gas monitor (RGT) connected to terminals 22/23 (boiler enabling switch on boiler circuit board)

### GUNTAMATIC components

1. Powerchip boiler and solid fuel boiler
2. Flue draught regulator RE (size to suit flue diameter) As price list
3. Outside temp. based controller set MKR Art. no.: S30-031
4. Thermal store PSF As price list
5. Mixer valve positioner motor SM70 Art. no.: S50-501
6. Room stat RFF25 Art. no.: S70-006
7. GSM module Art. no.: S15-002
8. Return boost set RA60 Art. no.: H39-001  
**Alternatively:** RA60 EnergieA Art. no.: H39-003
9. Fault indicator lamp **Important: follow wiring diagram!** Not supplied
10. **Option:** Secondary return unit Art. no.: 045-250
11. Thermal store sensor Art. no.: S70-003
12. Flue gas monitor (RGT), switching point 88C° Art. no.: H00-801
13. Option: 12-hole flange and ridged pipe heat exchanger



Settings on HP0 parameters menu: → HP0 mode = Thermal store pump HP0 sensor = Boiler

**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP with high/low temperature system, district heating pipe, no thermal store**  
 outside-temperature based controller, ECO DHW cylinder

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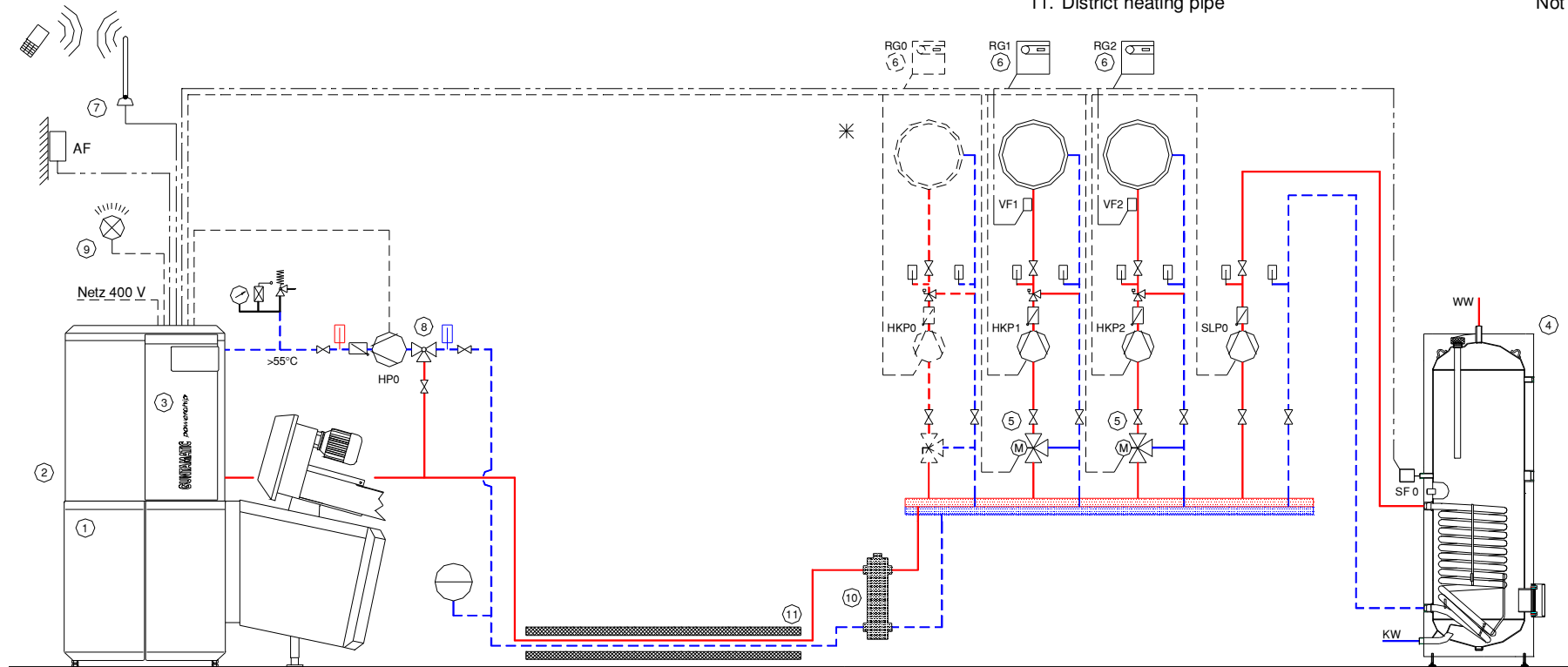
## Diagram no. PH-05-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |   |   |
|---|---|
| 1. Powerchip boiler                                       |   |
| 2. Flue draught regulator RE (size to suit flue diameter) | As price list   |
| 3. Outside temp. based controller set MKR                 | Art. no.: S30-031                                     |
| 4. DHW cylinder ECO305                                    | Art. no.: 048-500                                     |
| 5. Mixer valve positioner motor SM70                      | Art. no.: S50-501                                     |
| 6. Room stat RFF25  | Art. no.: S70-006                                     |
| 7. GSM module   | Art. no.: S15-002                                     |
| 8. Return boost set RA60                                  | Art. no.: H39-001                                     |
| <b>Alternatively: RA60 EnergieA</b>                       | Art. no.: H39-003                                     |
| 9. Fault indicator lamp                                   | <b>Important: follow wiring diagram!</b> Not supplied |
| 10. Flow equaliser  | Not supplied  |
| 11. District heating pipe                                 | Not supplied  |



**Diagrams for boiler outputs up to 50 kW**  
**POWERCHIP with high/low temperature system, district heating pipe, PS thermal store**  
 outside-temperature based controller, ECO DHW cylinder, PS thermal store

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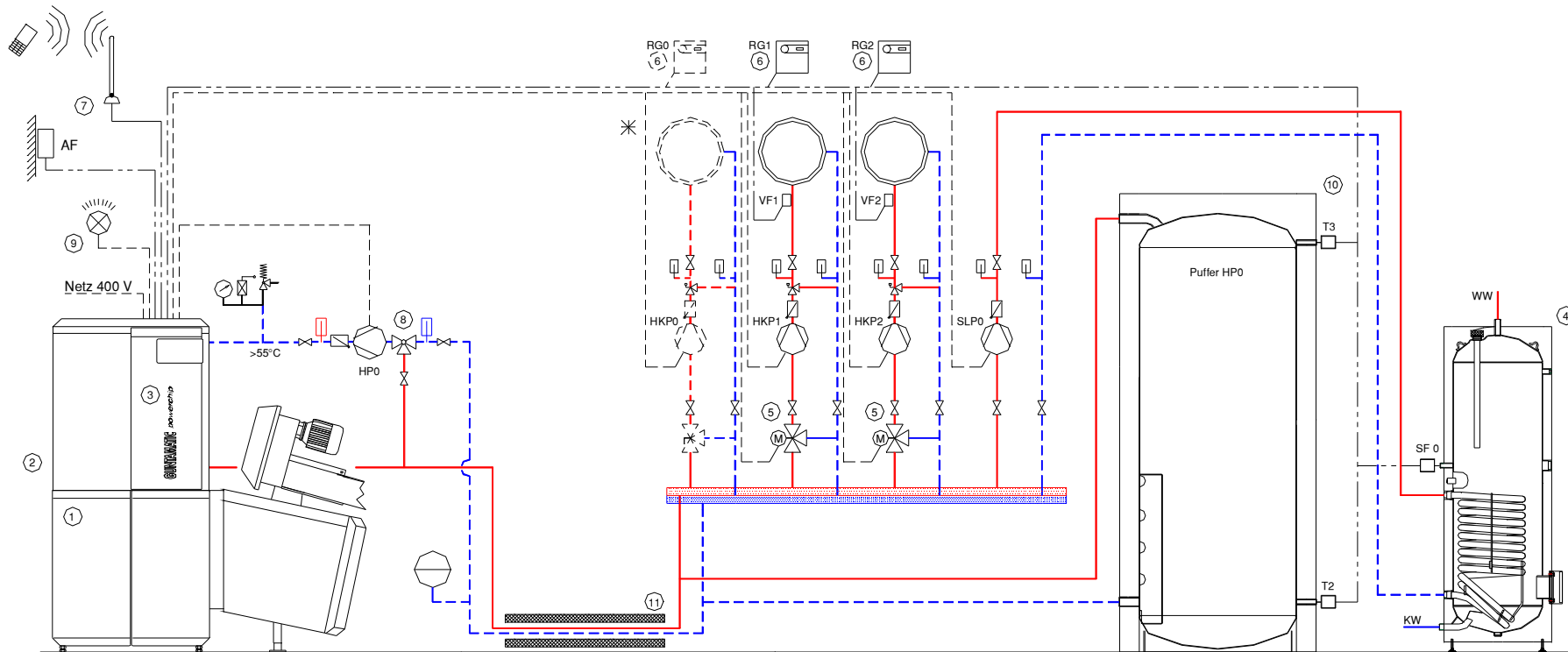
## Diagram no. PH-06-2

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |   |   |
|---|---|
| 1. Powerchip boiler                                       |   |
| 2. Flue draught regulator RE (size to suit flue diameter) | As price list   |
| 3. Outside temp. based controller set MKR                 | Art. no.: S30-031                                     |
| 4. DHW cylinder ECO305                                    | Art. no.: 048-500                                     |
| 5. Mixer valve positioner motor SM70                      | Art. no.: S50-501                                     |
| 6. Room stat RFF25  | Art. no.: S70-006                                     |
| 7. GSM module   | Art. no.: S15-002                                     |
| 8. Return boost set RA60                                  | Art. no.: H39-001                                     |
| <b>Alternatively: RA60 EnergieA</b>                       | Art. no.: H39-003                                     |
| 9. Fault indicator lamp                                   | <b>Important: follow wiring diagram!</b> Not supplied |
| 10. Thermal store PSB                                     | As price list   |
| 11. District heating pipe                                 | Not supplied  |
|   | : S70-003   |



**Diagrams for boiler outputs upwards of 50 kW**  
**POWERCHIP with high/low temperature system, PSF thermal store (inc. water supply unit)**  
 outside-temperature based controller, ECO DHW cylinder, PS thermal store

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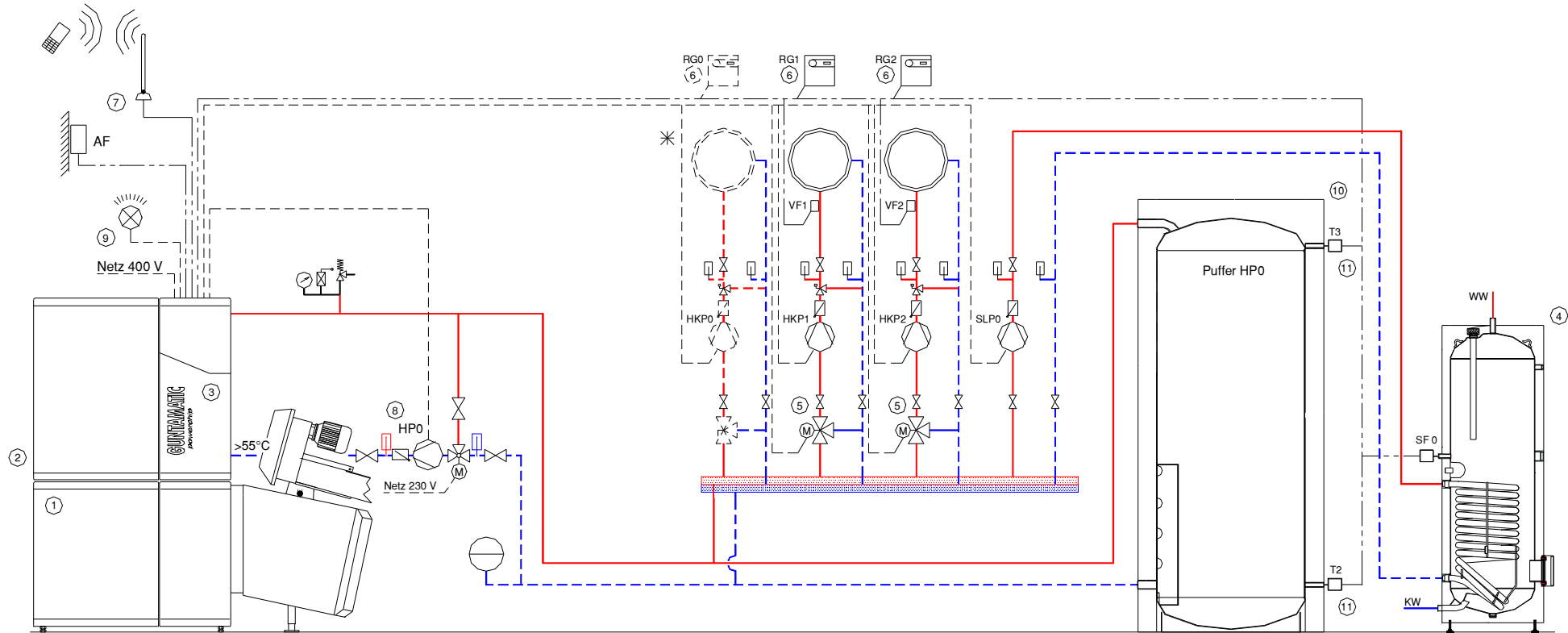
**Diagram no. PH-07-3**

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

**GUNTAMATIC components**

- |  |                   |
|--|-------------------|
| 1. Powerchip boiler  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)        | As price list     |
| 3. Outside temp. based controller set MKR                        | Art. no.: S30-031 |
| 4. DHW cylinder ECO305   | Art. no.: 048-500 |
| 5. Mixer valve positioner motor SM70                             | Art. no.: S50-501 |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. Return boost set RA100 EnergieA                               | Art. no.: H39-010 |
| 9. Fault indicator lamp <b>Important: follow wiring diagram!</b> | Not supplied      |
| 10. Thermal store PSB  | As price list     |
| 11. Thermal store sensor   | Art. no.: S70-003 |



**Diagrams for boiler outputs upwards of 50 kW**  
**POWERCHIP with high/low temperature system, PSF thermal store** (inc. water supply unit)  
 outside-temperature based controller, thermal store PSF, connected solar panel system

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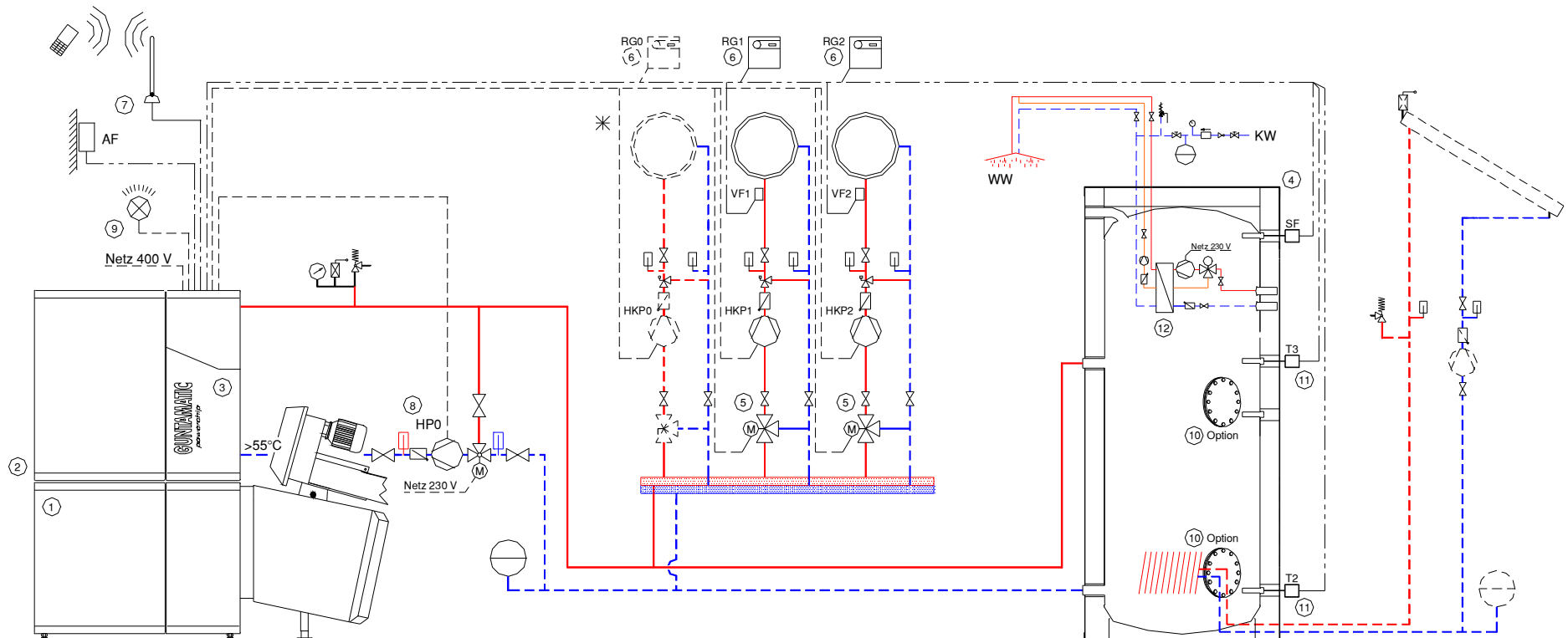
## Diagram no. PH-08-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |  |                   |
|--|-------------------|
| 1. Powerchip boiler  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)        | As price list     |
| 3. Outside temp. based controller set MKR                        | Art. no.: S30-031 |
| 4. Thermal store PSF   | As price list     |
| 5. Mixer valve positioner motor SM70                             | Art. no.: S50-501 |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. Return boost set RA100 EnergieA                               | Art. no.: H39-010 |
| 9. Fault indicator lamp <b>Important: follow wiring diagram!</b> | Not supplied      |
| 10. <b>Option:</b> 12-hole flange and ridged pipe heat exchanger |                   |
| 11. Thermal store sensor   | Art. no.: S70-003 |
| 12. <b>Option:</b> Secondary return unit                         | Art. no.: 045-250 |



Settings on HP0 parameters menu: → HP0 mode = Thermal store pump HP0 sensor = Boiler

Heat from biomass 38

**Diagrams for boiler outputs upwards of 50 kW  
POWERCHIP with high/low temperature system**  
outside-temperature based controller, ECO DHW cylinder

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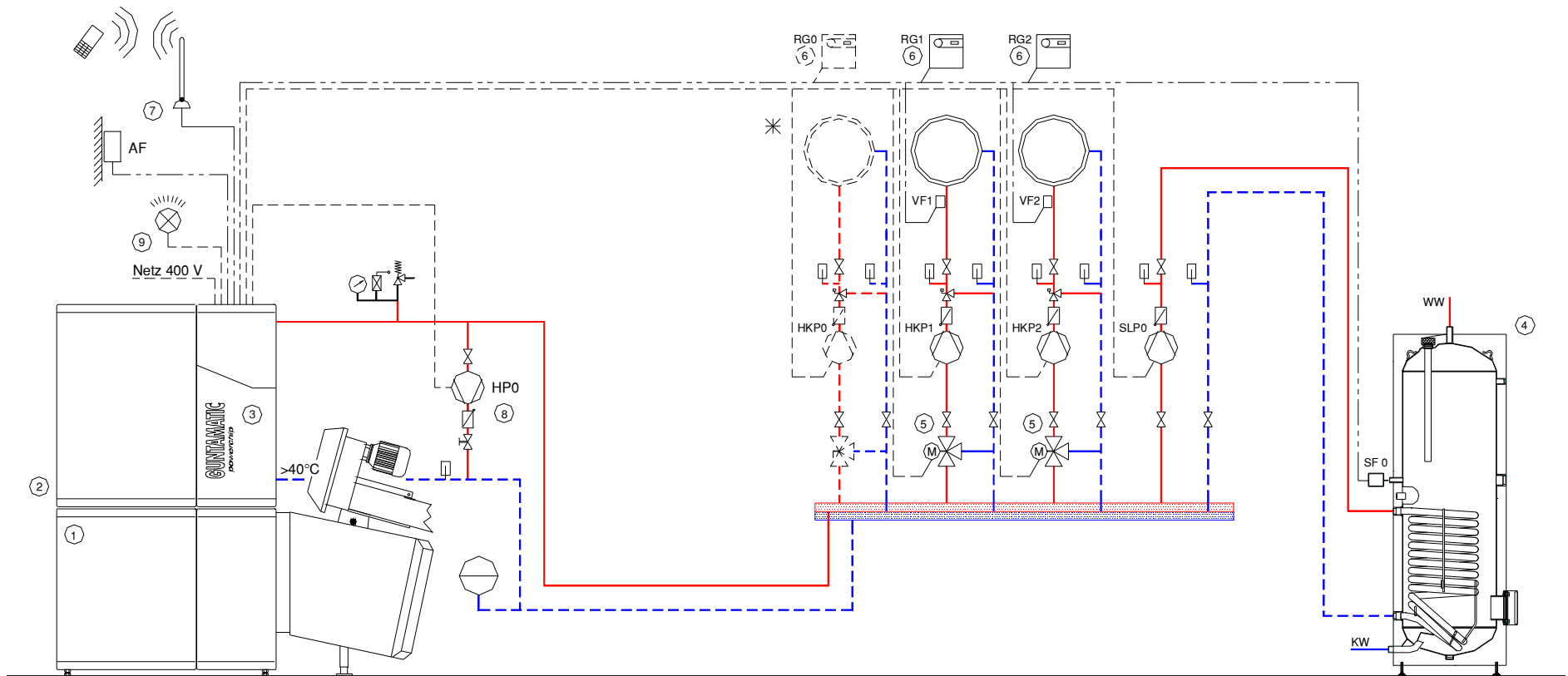
**Diagram no. PH-10-2**

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

**GUNTAMATIC components**

- |  |                   |
|--|-------------------|
| 1. Powerchip boiler  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)        | As price list     |
| 3. Outside temp. based controller set MKR                        | Art. no.: S30-031 |
| 4. DHW cylinder ECO305   | Art. no.: 048-500 |
| 5. Mixer valve positioner motor SM70                             | Art. no.: S50-501 |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. <b>Recommended pump</b> Wilo EAS/6-3 P                        | Art. no.: H39-101 |
| 9. Fault indicator lamp <b>Important: follow wiring diagram!</b> | Not supplied      |



Settings on HP0 parameters menu: → HP0 mode = Feeder pump

**Diagrams for boiler outputs upwards of 50 kW**  
**POWERCHIP with high/low temperature system, district heating pipe, no thermal store**  
 outside-temperature based controller, ECO DHW cylinder

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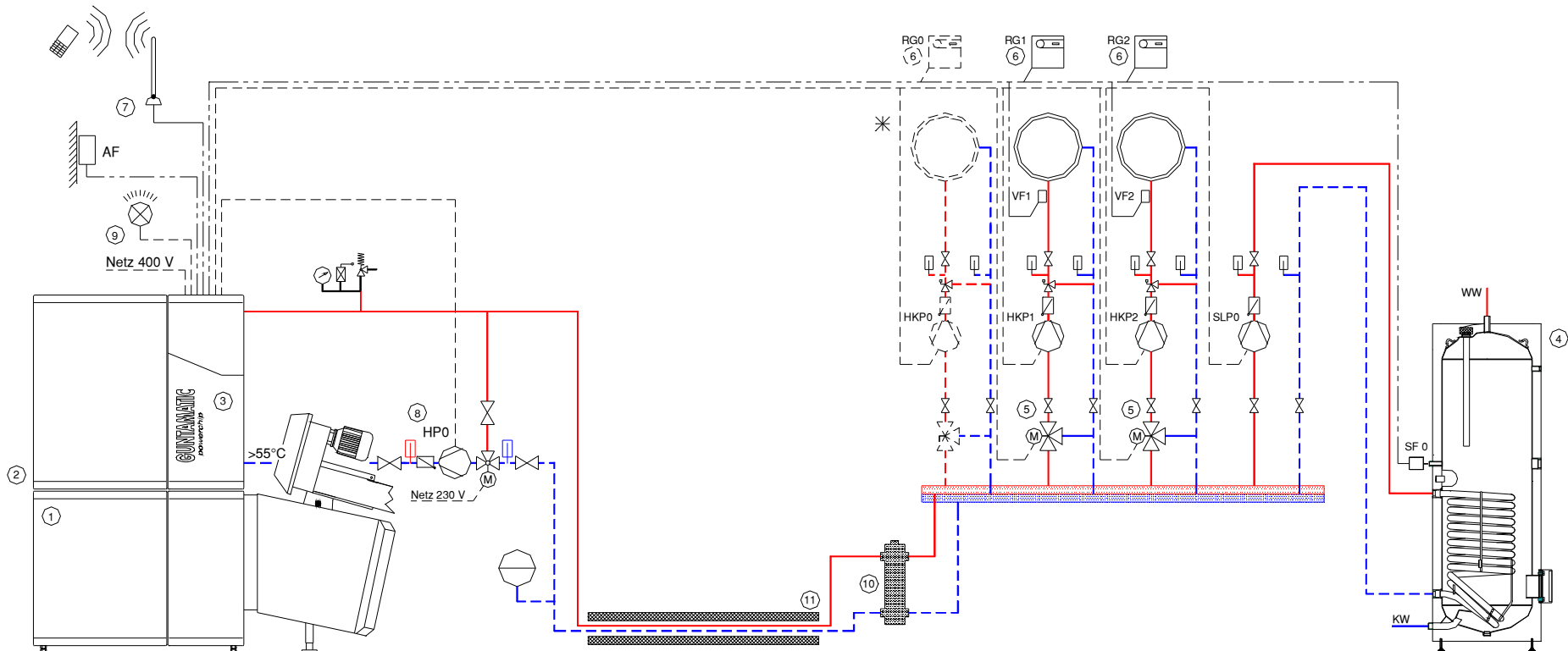
## Diagram no. PH-11-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |  |                   |
|--|-------------------|
| 1. Powerchip boiler  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)        | As price list     |
| 3. Outside temp. based controller set MKR                        | Art. no.: S30-031 |
| 4. DHW cylinder ECO305   | Art. no.: 048-500 |
| 5. Mixer valve positioner motor SM70                             | Art. no.: S50-501 |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. Return boost set RA100 EnergieA                               | Art. no.: H39-010 |
| 9. Fault indicator lamp <b>Important: follow wiring diagram!</b> | Not supplied      |
| 10. Flow equaliser   | Not supplied      |
| 11. District heating pipe  | Not supplied      |





**Diagrams for boiler outputs upwards of 50 kW**  
**POWERCHIP with high/low temperature system, district heating pipe, PS thermal store**  
 outside-temperature based controller, ECO DHW cylinder, PS thermal store

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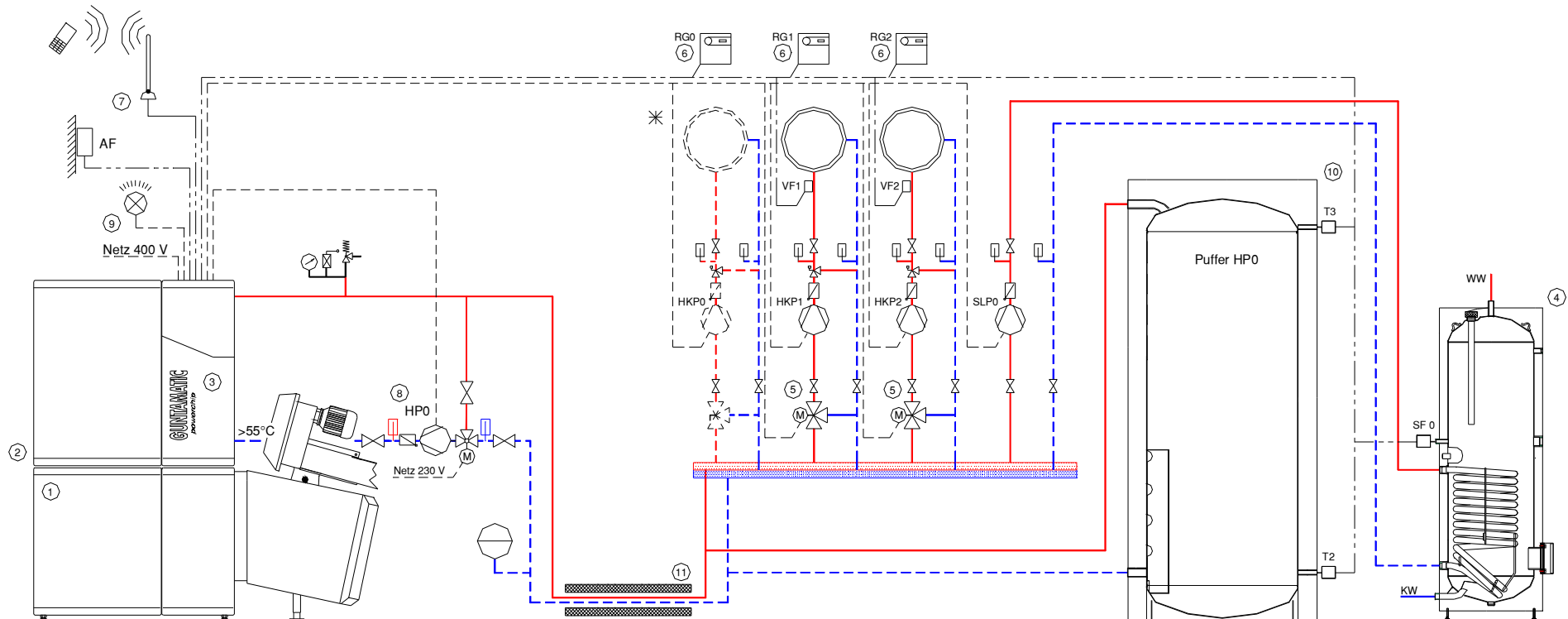
## Diagram no. PH-12-3

Electrical connections as per operating and installation instructions

- Heating circuit 0 can be used with a fixed-setting controller for a low-temperature heating system or Heating circuit 0 can be room-temperature controlled using an RFF25 room stat for a radiator heating system

### GUNTAMATIC components

- |  |                   |
|--|-------------------|
| 1. Powercorn boiler  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)        | As price list     |
| 3. Outside temp. based controller set MKR                        | Art. no.: S30-031 |
| 4. DHW cylinder ECO305   | Art. no.: 048-500 |
| 5. Mixer valve positioner motor SM70                             | Art. no.: S50-501 |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. Return boost set RA100 EnergieA                               | Art. no.: H39-010 |
| 9. Fault indicator lamp <b>Important: follow wiring diagram!</b> | Not supplied      |
| 10. Thermal store PSB  | As price list     |
| 11. District heating pipe  | Not supplied      |



Settings on HP0 parameters menu: → HP0 mode = Thermal store pump HP0 sensor = Boiler

Heat from biomass 41

**System supplying a maximum of 3 properties** (suitable for POWERCHIP, BIOCORN and POWERCORN)  
**District heating pipe function CP** (charging pump)  
 Per property – 1 outside-temperature based controller, 1 ECO DHW cylinder, 1 PS thermal store

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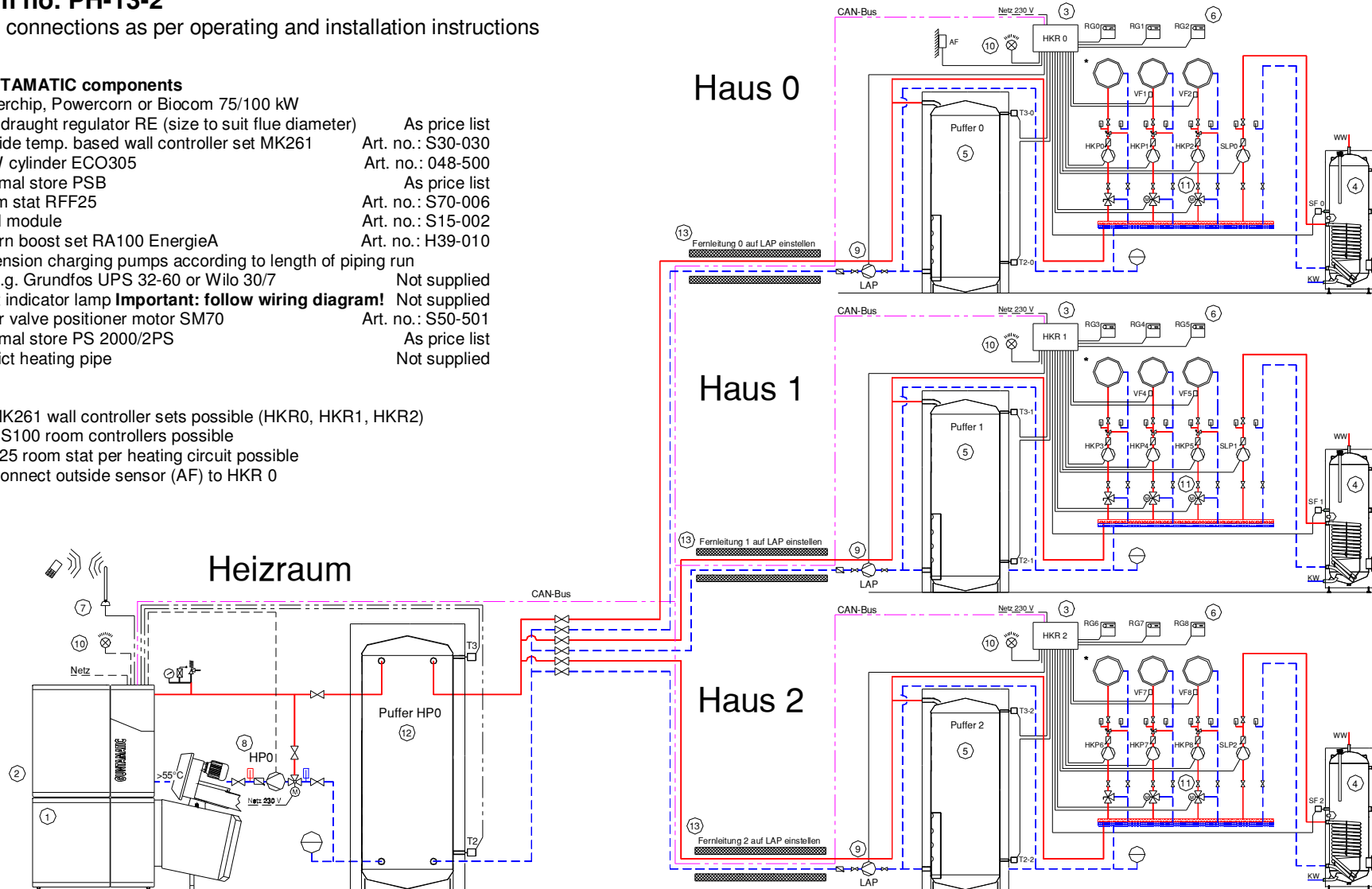
## Diagram no. PH-13-2

Electrical connections as per operating and installation instructions

### GUNTAMATIC components

- |   |                   |
|---|-------------------|
| 1. Powerchip, Powercorn or Biocorn 75/100 kW  |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)   | As price list     |
| 3. Outside temp. based wall controller set MK261  | Art. no.: S30-030 |
| 4. DHW cylinder ECO305  | Art. no.: 048-500 |
| 5. Thermal store PSB  | As price list     |
| 6. Room stat RFF25  | Art. no.: S70-006 |
| 7. GSM module   | Art. no.: S15-002 |
| 8. Return boost set RA100 EnergieA  | Art. no.: H39-010 |
| 9. Dimension charging pumps according to length of piping run<br>e.g. Grundfos UPS 32-60 or Wilo 30/7 | Not supplied      |
| 10. Fault indicator lamp <b>Important: follow wiring diagram!</b>                                     | Not supplied      |
| 11. Mixer valve positioner motor SM70   | Art. no.: S50-501 |
| 12. Thermal store PS 2000/2PS   | As price list     |
| 13. District heating pipe   | Not supplied      |

max. 3 MK261 wall controller sets possible (HKR0, HKR1, HKR2)  
 max. 3 RS100 room controllers possible  
 one RFF25 room stat per heating circuit possible  
 Always connect outside sensor (AF) to HKR 0



Settings on HP0 parameters menu: → HP0 mode = Thermal store pump

**System supplying a maximum of 3 properties** (suitable for POWERCHIP, BIOCORN and POWERCORN)  
**District heating pipe function FP** (feeder pump)  
 Per property – 1 outside-temperature based controller, 1 ECO DHW cylinder

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## Diagram no. PH-14-2

Electrical connections as per operating and installation instructions

### GUNTAMATIC components

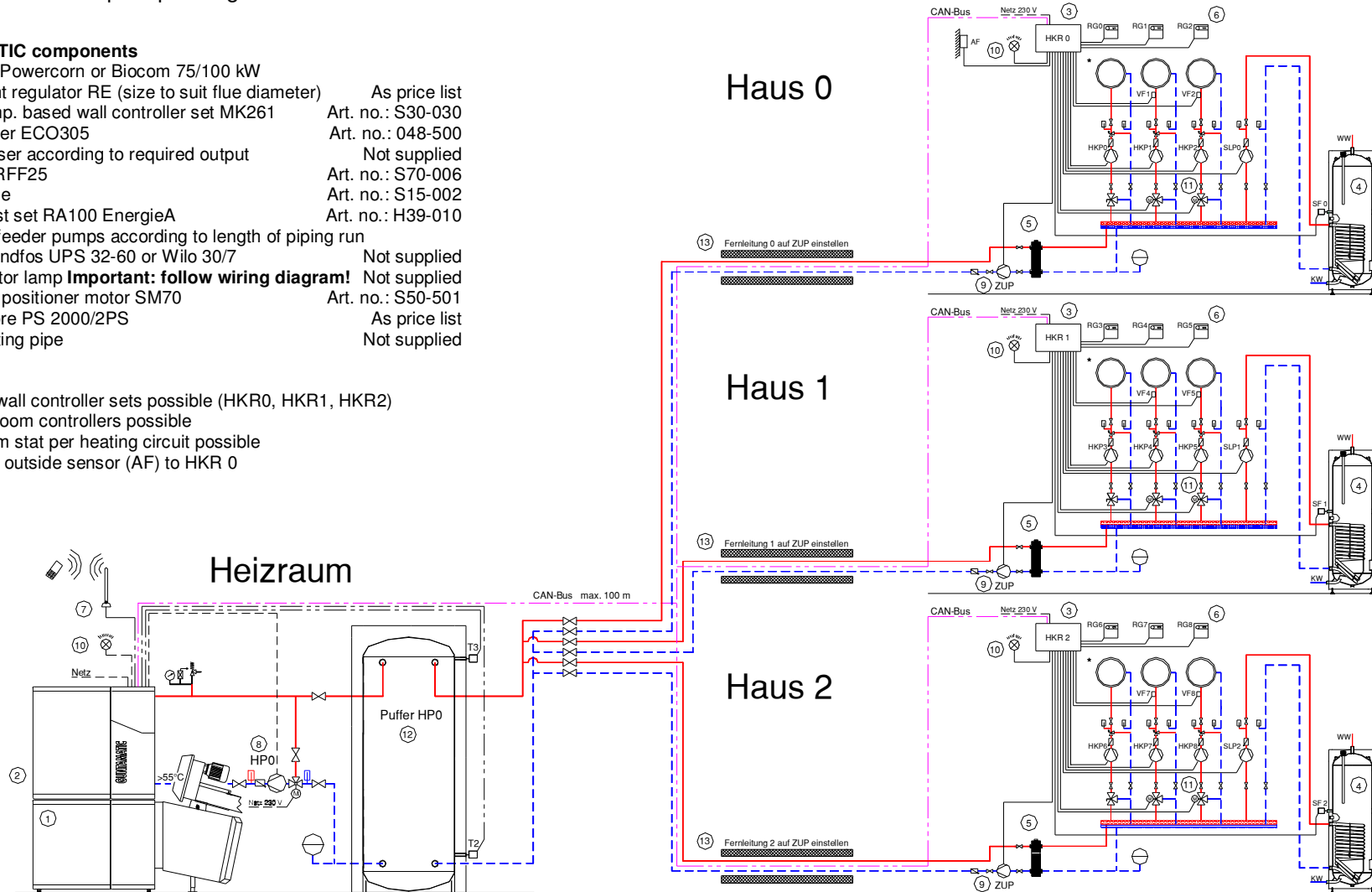
1. Powerchip, Powercorn or Biocom 75/100 kW
2. Flue draught regulator RE (size to suit flue diameter) As price list
3. Outside temp. based wall controller set MK261 Art. no.: S30-030
4. DHW cylinder ECO305 Art. no.: 048-500
5. Flow equaliser according to required output Not supplied
6. Room stat RFF25 Art. no.: S70-006
7. GSM module Art. no.: S15-002
8. Return boost set RA100 EnergieA Art. no.: H39-010
9. Dimension feeder pumps according to length of piping run  
e.g. Grundfos UPS 32-60 or Wilo 30/7 Not supplied
10. Fault indicator lamp **Important: follow wiring diagram!** Not supplied
11. Mixer valve positioner motor SM70 Art. no.: S50-501
12. Thermal store PS 2000/2PS As price list
13. District heating pipe Not supplied

max. 3 MK261 wall controller sets possible (HKR0, HKR1, HKR2)

max. 3 RS100 room controllers possible

one RFF25 room stat per heating circuit possible

Always connect outside sensor (AF) to HKR 0



**System supplying a maximum of 3 properties** (suitable for POWERCHIP, BIOCORN and POWERCORN)  
**District heating pipe function TSP** (thermal store pump)  
 Per property – 1 outside-temperature based controller, 1 ECO DHW cylinder, 1 PS thermal store

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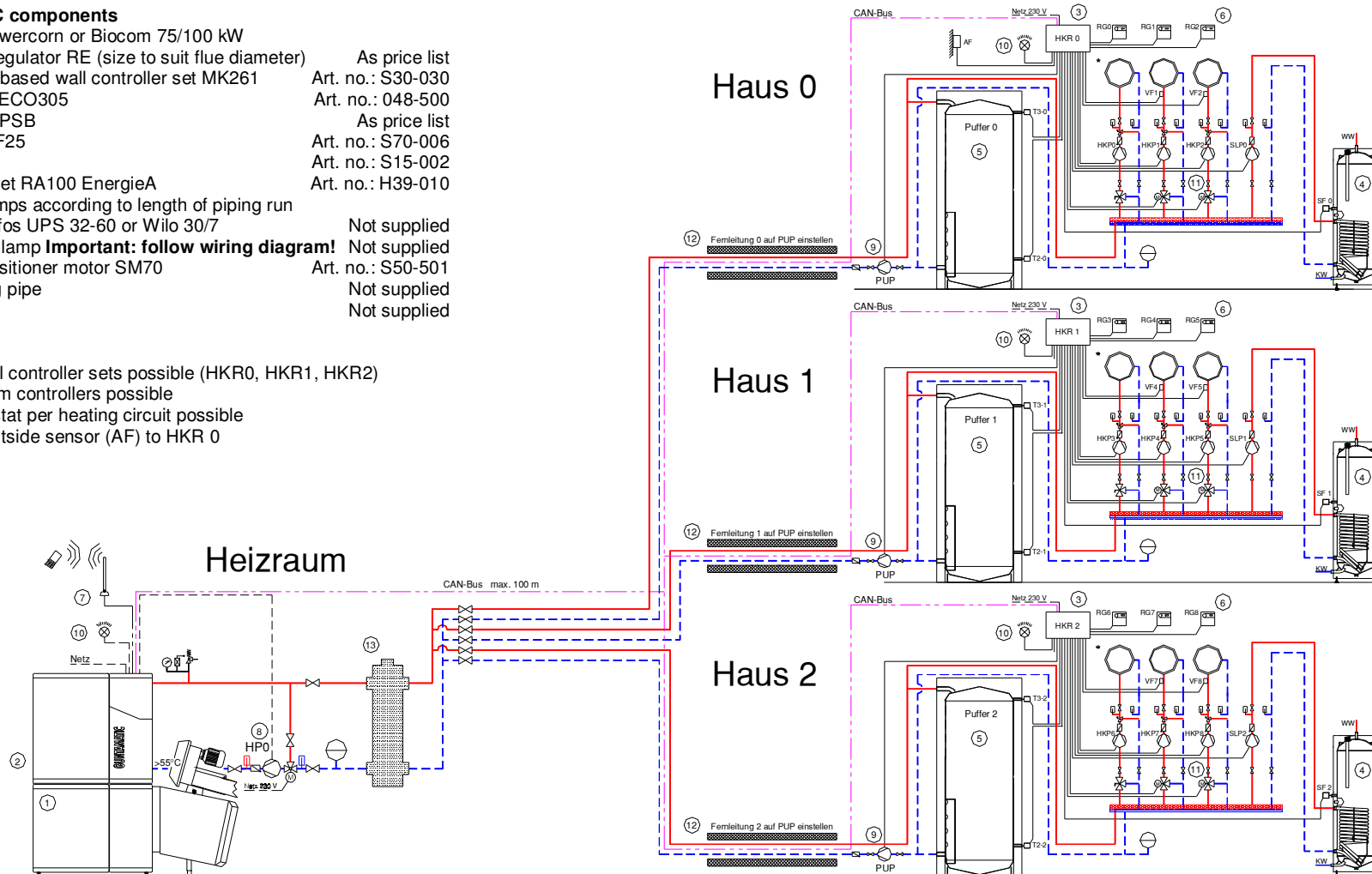
## Diagram no. PH-15-2

Electrical connections as per operating and installation instructions

### GUNTAMATIC components

- |  |                   |
|--|-------------------|
| 1. Powerchip, Powercorn or Biocorn 75/100 kW   |                   |
| 2. Flue draught regulator RE (size to suit flue diameter)                                    | As price list     |
| 3. Outside temp. based wall controller set MK261   | Art. no.: S30-030 |
| 4. DHW cylinder ECO305   | Art. no.: 048-500 |
| 5. Thermal store PSB   | As price list     |
| 6. Room stat RFF25   | Art. no.: S70-006 |
| 7. GSM module  | Art. no.: S15-002 |
| 8. Return boost set RA100 EnergieA   | Art. no.: H39-010 |
| 9. Dimension pumps according to length of piping run<br>e.g. Grundfos UPS 32-60 or Wilo 30/7 | Not supplied      |
| 10. Fault indicator lamp <b>Important: follow wiring diagram!</b>                            | Not supplied      |
| 11. Mixer valve positioner motor SM70  | Art. no.: S50-501 |
| 12. District heating pipe  | Not supplied      |
| 13. Flow equaliser   | Not supplied      |

max. 3 MK261 wall controller sets possible (HKR0, HKR1, HKR2)  
 max. 3 RS100 room controllers possible  
 one RFF25 room stat per heating circuit possible  
 Always connect outside sensor (AF) to HKR 0



**Sequential boiler control system (boiler cascade system) for maximum of 4 boilers**  
(suitable for POWERCHIP, BIOCORN and POWERCORN)

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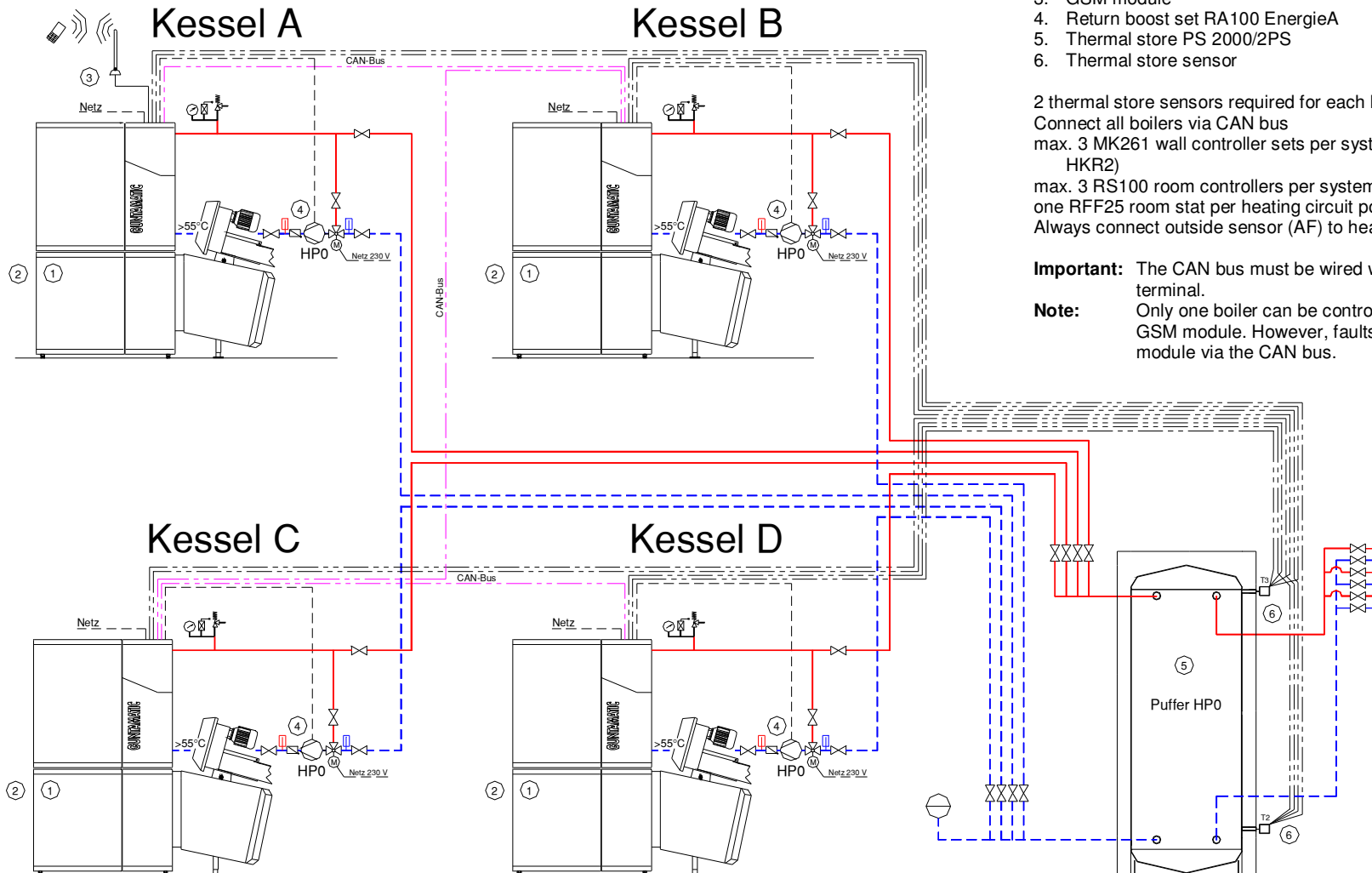
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# GUNTAMATIC

**Diagram no. PH-16-2**

Electrical connections as per operating and installation instructions



**GUNTAMATIC components**

- |   |                   |
|---|-------------------|
| 1. Powerchip, Powercorn or Biocom 75/100 kW               |                   |
| 2. Flue draught regulator RE (size to suit flue diameter) | As price list     |
| 3. GSM module   | Art. no.: S15-002 |
| 4. Return boost set RA100 EnergieA                        | Art. no.: H39-010 |
| 5. Thermal store PS 2000/2PS                              | As price list     |
| 6. Thermal store sensor                                   | Art. no.: S70-003 |

2 thermal store sensors required for each boiler

Connect all boilers via CAN bus

max. 3 MK261 wall controller sets per system possible (HKR0, HKR1, HKR2)

max. 3 RS100 room controllers per system possible

one RFF25 room stat per heating circuit possible

Always connect outside sensor (AF) to heating circuit controller 0 (HKR 0)

**Important:** The CAN bus must be wired without connecting the + terminal.

**Note:** Only one boiler can be controlled/queried remotely via the GSM module. However, faults are forwarded to the GSM module via the CAN bus.

**Heating circuit installation:**

Diagram PH-13-2  
with charging pump (LAP) and thermal store

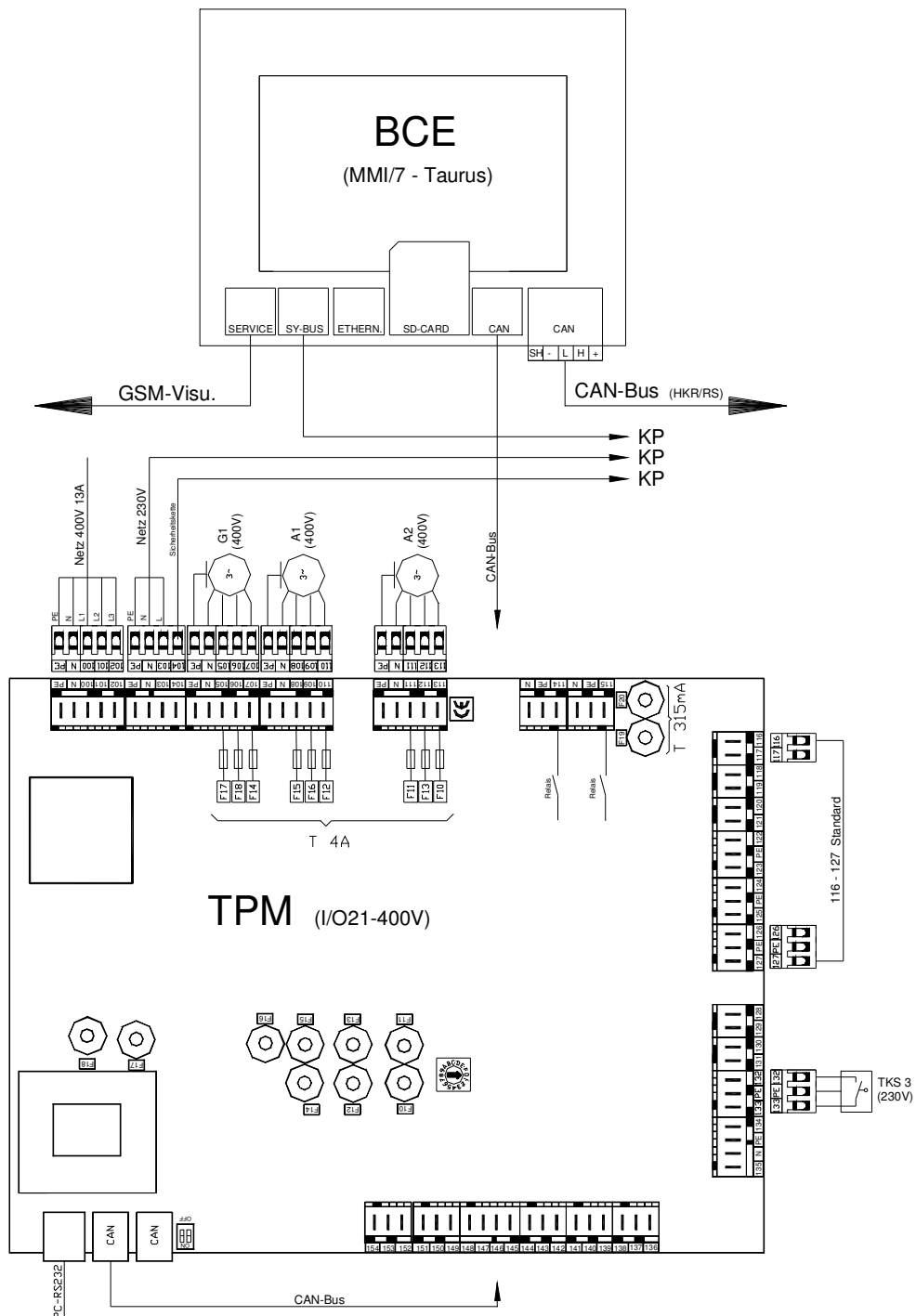
Diagram PH-14-2  
with feeder pump (ZUP) and without thermal store

## 7 Electrical wiring diagram

### 7.1 Control panel/Router module

PH-07-01-00-00-01-IAEN

- Service** = Connection socket
- SY-BUS** = Connection socket/cable connection betw. BCE and boiler PCB
- Ethern.** = Connection socket (inactive)
- SD-Card** = Slot for SD memory card
- CAN** = Connection socket for CAN bus
- CAN-Bus** = Cable connection between BCE, TPM, HCC or digital room controller
- GSM/Visu** = Facility for connecting a GSM module
- KP** = Boiler circuit board
- TPM** = Router module
- G1** = Output for drive motor G1 (stoker)
- A1** = Output for drive motor A1 (fuel outfeed)
- A2** = Output for drive motor A2 (feeder auger)
- TKS 3** = Overfill cover monitor (feeder auger)



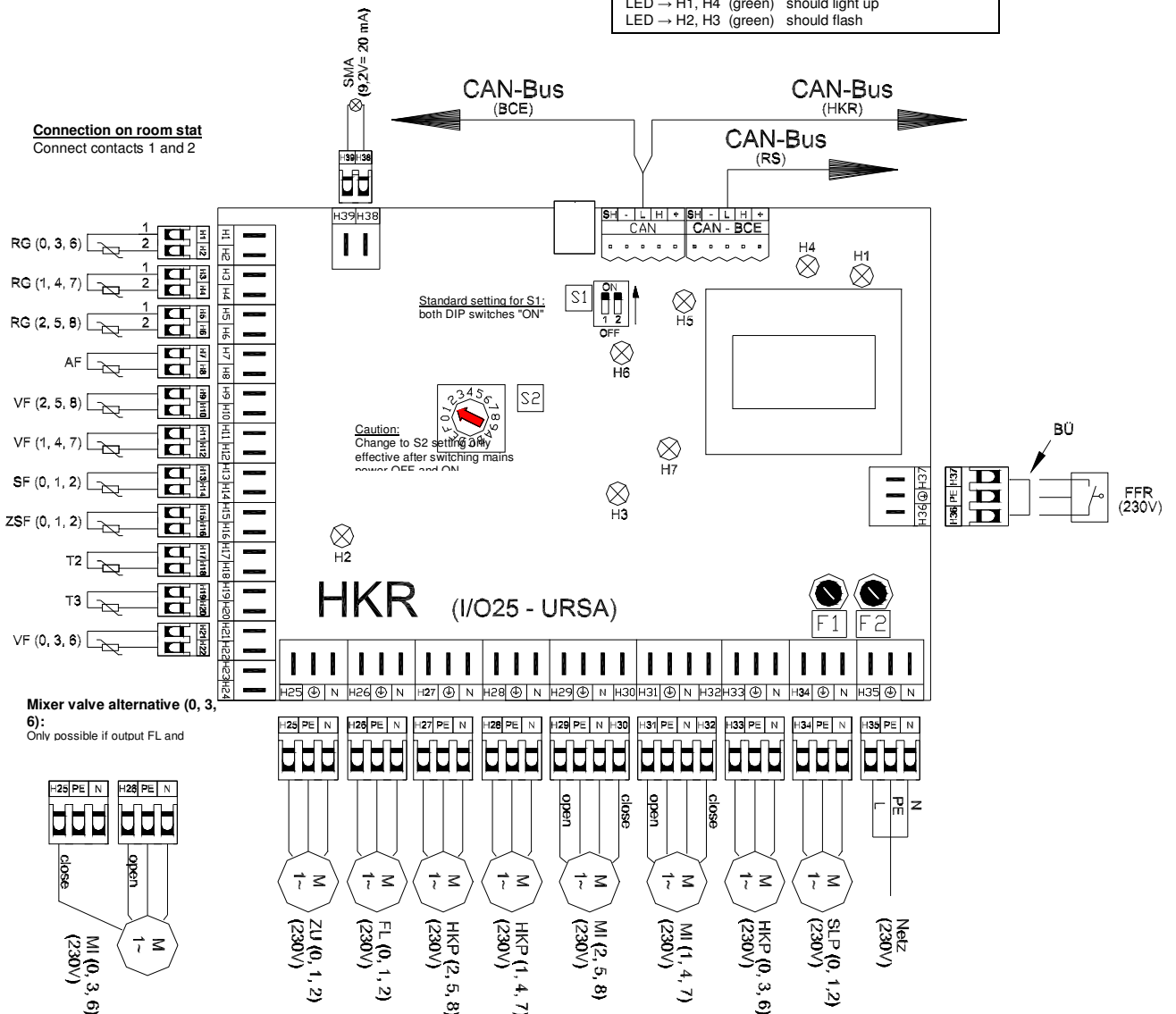
## 7.2 Wall controller set MK261 (use only flexible cables for wiring)

PH-07-02-00-00-01-IAEN

- |                            |  |  |
|----------------------------|--|--|
| <b>RG 0-8</b>              | = Analogue room stat input for HC 0-8                        | Connector: H1/H2 – H3/H4 - H5/H6         |
| <b>AF</b>                  | = <b>Connect only if not connected on boiler PCB</b>         | Connector: H7/H8                         |
| <b>VF 1, 2, 4, 5, 7, 8</b> | = Flow sensor input for heating circuit 1, 2, 4, 5, 7, 8     | Connector: H9/H10 - H11/H12              |
| <b>SF 0-3</b>              | = Cylinder sensor input for DHW cylinder 0, 1, 2             | Connector: H13/H14                       |
| <b>ZSF 0-2</b>             | = Supplementary cylinder sensor input                        | Connector: H15/H16                       |
| <b>T2</b>                  | = Thermal store bottom sensor input                          | Connector: H17/H18                       |
| <b>T3</b>                  | = Thermal store top sensor input                             | Connector: H19/H20                       |
| <b>VF 0, 3, 6</b>          | = Flow temperature sensor input for heating circuits 0, 3, 6 | Connector: H21/H22                       |
| <b>ZU 0, 1, 2</b>          | = Output programmable as ext. burner or DHW cylinder         | Connector: H25/PE/N                      |
| <b>FL 0, 1, 2</b>          | = Output for district heating pipe pump                      | Connector: H26/PE/N                      |
| <b>HKP 0-8</b>             | = Output for heating circuit pump 0-8                        | Connector: H27/PE/N (H28/PE/N, H33/PE/N) |
| <b>Mi 1, 2, 4, 5, 7, 8</b> | = Output for mixer valve 1, 2, 4, 5, 7, 8                    | Connector: H29/PE/N/H30 (H31/PE/N/H32)   |
| <b>SLP 0-3</b>             | = Output for cylinder charging pump 0, 1, 2                  | Connector: H34/PE/N                      |
| <b>Netz</b>                | = Power supply input (230VAC)                                | Connector: H35/PE/N                      |
| <b>FFR</b>                 | = District heating pipe enabling switch                      | Connector: H36/PE/H37                    |
| <b>SMA</b>                 | = Output for fault signal (9.2V= 20mA)                       | Connector: H38/H39                       |
| <b>RS</b>                  | = Output for digital room controller                         | Connector: CAN-BCE                       |

Fuse assignment for wall controller		
F1	T 0.63A	Power supply for electronics
F2	T 6.30A	HKP 0, HKP 1, HKP 2, MI 1, MI 2, SLP 0

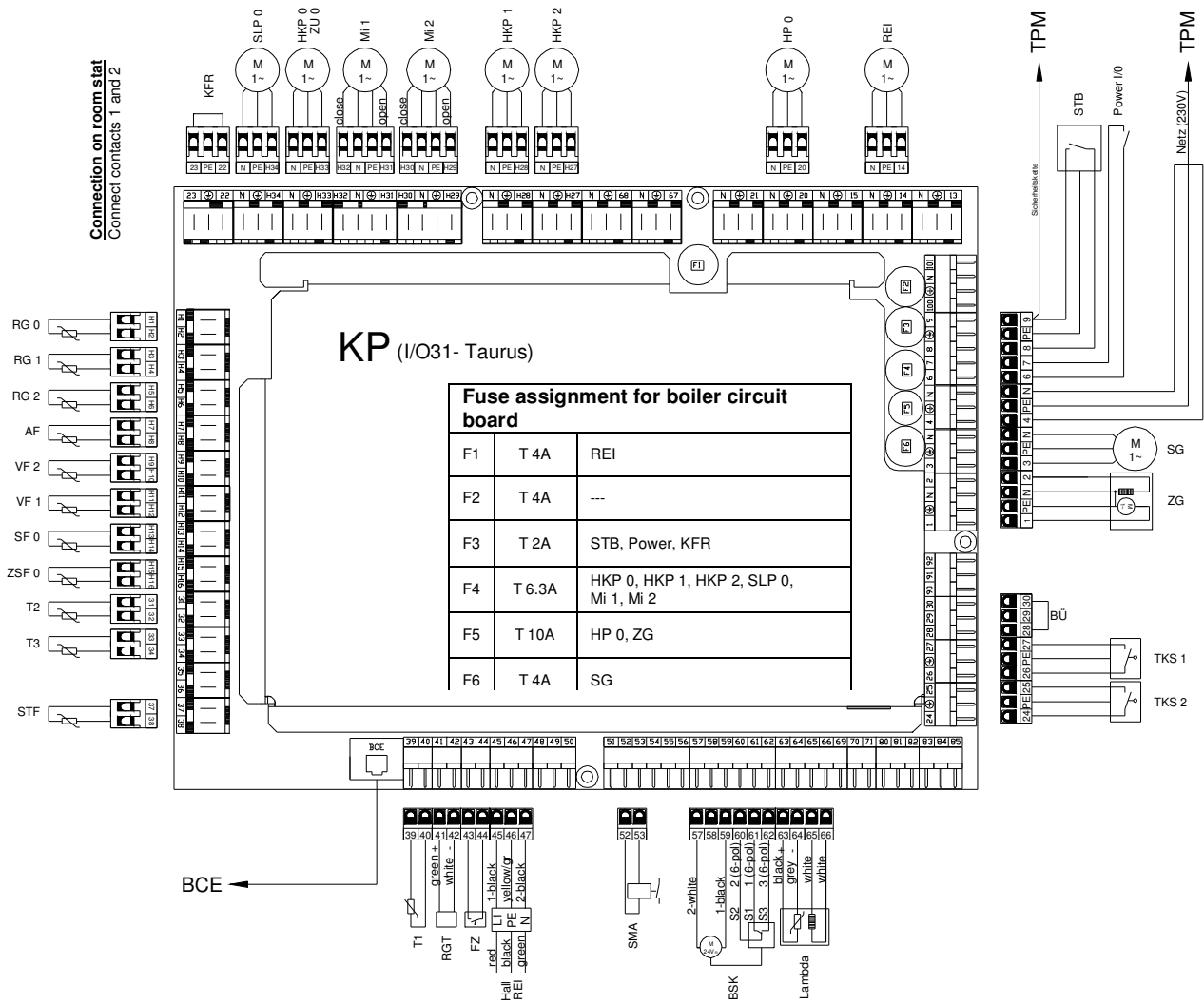
Function of LEDs
Controller on, CAN bus cable correctly connected: LED → H5 (green) should light up LED → H6, H7 (orange) should flash
Mains power and fuse F1 are OK LED → H1, H4 (green) should light up LED → H2, H3 (green) should flash



### 7.3 Boiler circuit board (use only flexible cables for wiring)

PH-07-03-00-00-01-IAEN

- |                     |  |  |
|---------------------|--|--|
| <b>RG 0 (1, 2)</b>  | = Analogue room stat input for HC 0 (1, 2)                   | Connector: H1/H2 (H3/H4, H5/H6)          |
| <b>AF</b>           | = Outside sensor input                                       | Connector: H7/H8                         |
| <b>VF 2 (1)</b>     | = Flow temperature sensor input for heating circuit 2 (1)    | Connector: H9/H10 (H11/H12)              |
| <b>SF 0</b>         | = Cylinder sensor input for DHW cylinder 0                   | Connector: H13/H14                       |
| <b>ZSF 0</b>        | = Supplementary cylinder sensor input (output HK 0 as DHW)   | Connector: H15/H16                       |
| <b>T1</b>           | = Boiler sensor input  | Connector: 39/40                         |
| <b>T2</b>           | = Thermal store bottom sensor input                          | Connector: 31/32                         |
| <b>T3</b>           | = Thermal store top sensor input                             | Connector: 33/34                         |
| <b>STF</b>          | = Stoker sensor input (stoker temperature monitor)           | Connector: 37/38                         |
| <b>RGT</b>          | = Flue gas temp. sensor input (ensure correct polarity)      | Connector: 41/42                         |
| <b>FZ</b>           | = Fill level switch input (fire box monitor)                 | Connector: 43/44                         |
| <b>Hall REI</b>     | = Hall-effect sensor input from drive motor REI              | Connector: 45/46/47                      |
| <b>SMA</b>          | = Output for fault signal (24VDC 200mA)                      | Connector: 52/53                         |
| <b>BKS</b>          | = Fire safety flap output                                    | Connector: 57/58/59/60/61/62             |
| <b>Lambda</b>       | = Oxygen sensor input  | Connector: 63/64/65/66                   |
| <b>TKS 2</b>        | = Input for door switch 2 (overflow cover)                   | Connector: 24/PE/25                      |
| <b>TKS 1</b>        | = Input for door switch 1 (firebox door/ash box)             | Connector: 26/PE/27                      |
| <b>ZG</b>           | = Ignition fan output (1=Fan, 2=Igniter)                     | Connector: 1/PE/N/2                      |
| <b>SG</b>           | = Flue draught fan output                                    | Connector: 3/PE/N                        |
| <b>Netz</b>         | = Power supply input (230VAC)                                | Connector: 4/PE/N                        |
| <b>Power I/O</b>    | = Power switch input/output                                  | Connector: 6/7                           |
| <b>STB</b>          | = STL input/output   | Connector: 8/PE/9                        |
| <b>REI</b>          | = Output for drive motor for stepped grate and grate cleaner | Connector: 14/PE/N                       |
| <b>HP 0</b>         | = Programmable special output                                | Connector: 20/PE/N                       |
| <b>KFR</b>          | = Boiler enabling switch input                               | Connector: 22/PE/23                      |
| <b>HKP 2 (1, 0)</b> | = Output for heating circuit pump 2 (1, 0)                   | Connector: H27/PE/N (H28/PE/N, H33/PE/N) |
| <b>ZU 0</b>         | = Programmable as 2nd DHW cylinder or ext. burner            | Connector: H33/PE/N                      |
| <b>Mi 2 (1)</b>     | = Output for mixer valve 2 (1)                               | Connector: H29/PE/N/H30 (H31/PE/N/H32)   |
| <b>SLP 0</b>        | = Output for cylinder charging pump 0                        | Connector: H34/PE/N                      |





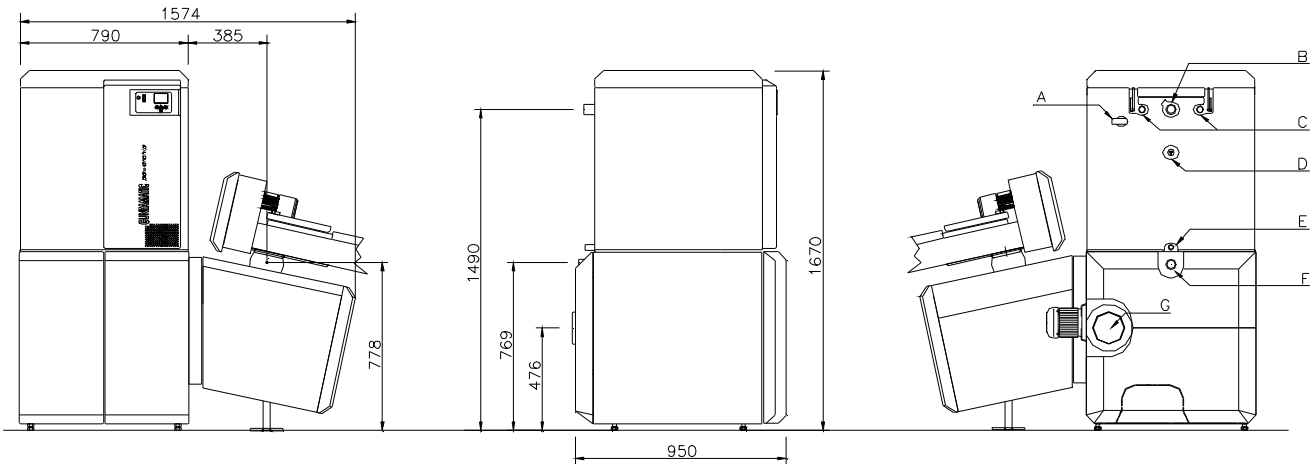




## 8 Technical data

### 8.1 POWERCHIP 30/50

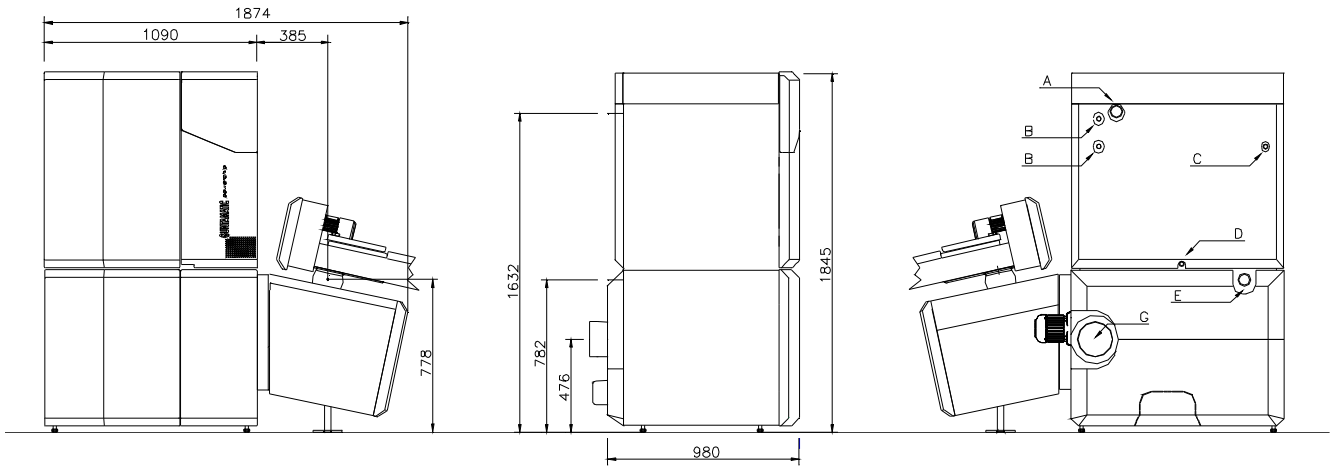
PH-08-01-00-00-01-IAEN



Type	POWERCHIP 20/30	POWERCHIP 40/50	
Fuel	Woodchips G30 Pellets 6mm Grain fuel (supplementary equipment reqd.)	Woodchips G30 Pellets 6mm Grain fuel (supplementary equipment reqd.)	ÖNORM M7133 ÖNORM M7135 ÖNORM M7139
Boiler output	Woodchips 7-30 Pellets 7-30 Grain fuel 7-25	Woodchips 12-50 Pellets 12-50 Grain fuel 7-25	kW kW kW
Required flue draught	0.15	0.15	mbar
Boiler temperature	60-80 (grain)	60-80 (grain)	°C
Return temperature	>40 (grain 55)	>40 (grain 55)	°C
Return boost	Pump (RA60 with thermal store)	Pump (RA60 with thermal store)	
Water capacity	128	147	litres
Operating pressure	max. 3	max. 3	litres
Water system resistance	Through-flow rate 1290 Water temp. 38.5 Differential pressure 11.2	Through-flow rate 4257 --- Differential pressure 24.7	kg/h °C
Water system resistance	Through-flow rate 2570 Water temp. 38.7 Differential pressure 19.6	Through-flow rate 2128 --- Differential pressure 6.2	kg/h °C
Ash pan, grate	60	60	litres
Ash pan, "heat exchanger"	12	12	litres
A	Temp.-relief heat exch. sensor	Temp.-relief heat exch. sensor	
B	Return, 1¼"	Return, 1¼"	
C	Temp.-relief heat exchanger	Temp.-relief heat exchanger	
D	STL, boiler sensor	STL, boiler sensor	
E	Drain, ½"	Drain, ½"	
F	Flow, 1¼"	Flow, 1¼"	
G	Flue connecting pipe dia. 150	Flue connecting pipe dia. 150	mm
Overall weight (w/o stoker unit)	550	550	kg
Weight of bottom box	340	340	kg
Weight of heat exchanger	180	180	kg
Weight of stoker unit	75	75	kg
Weight of drive unit	55	55	kg
Temperature-relief heat exchanger	Yes	Yes	
Power supply	400V/13A	400V/13A	

8.2 POWERCHIP 75/100

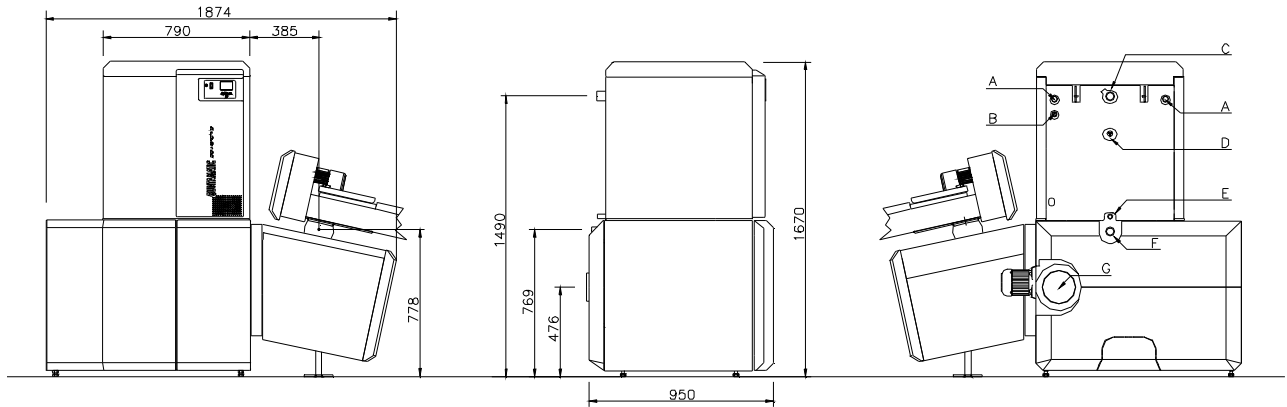
PH-08-02-00-00-01-IAEN



Type	POWERCHIP 75	POWERCHIP 100	
Fuel	Woodchips G30 Pellets 6mm Grain fuel (supplementary equipment reqd.)	Woodchips G30 Pellets 6mm Grain fuel (supplementary equipment reqd.)	ÖNORM M7133 ÖNORM M7135 ÖNORM M7139
Boiler output	Woodchips 22-75 Pellets 22-75 Grain fuel 21-70 (with additive)	Woodchips 22-100 Pellets 22-100 Grain fuel 21-70 (with additive)	kW kW kW
Required flue draught	0.15	0.20	mbar
Boiler temperature	60-80 (grain 70-80)	60-80 (grain 70-80)	°C
Return temperature	>45 (grain 55)	>45 (grain 55)	°C
Return boost	Pump (RA with thermal store)	Pump (RA with thermal store)	
Water capacity	256	256	litres
Operating pressure	max. 3	max. 3	litres
Water system resistance Temperature difference 20 K	Through-flow rate 4240 Water temp. 24.2 Differential pressure 2.5	Through-flow rate 4240 Water temp. 24.2 Differential pressure 2.5	kg/h °C
Water system resistance Temperature difference 10 K	Through-flow rate 8490 Water temp. 24.2 Differential pressure 6.2	Through-flow rate 8490 Water temp. 24.2 Differential pressure 6.2	kg/h °C
Ash pan, grate	80	80	litres
Ash pan, "heat exchanger"	12	12	litres
A	Flow, 2"	Flow, 2"	
B	Temp.-relief heat exchanger	Temp.-relief heat exchanger	
C	Supplementary sleeve, 1/2"	Supplementary sleeve, 1/2"	
D	Drain	Drain	
E	Return, 2"	Return, 2"	
G	Flue connecting pipe dia. 180	Flue connecting pipe dia. 180	mm
Overall weight (w/o stoker unit)	865	865	kg
Weight of bottom box	430	430	kg
Weight of heat exchanger	405	405	kg
Weight of stoker unit	75	75	kg
Temperature-relief heat exchanger	Yes	Yes	
Power supply	400V/13A	400V/13A	

### 8.3 POWERCORN 50 Special

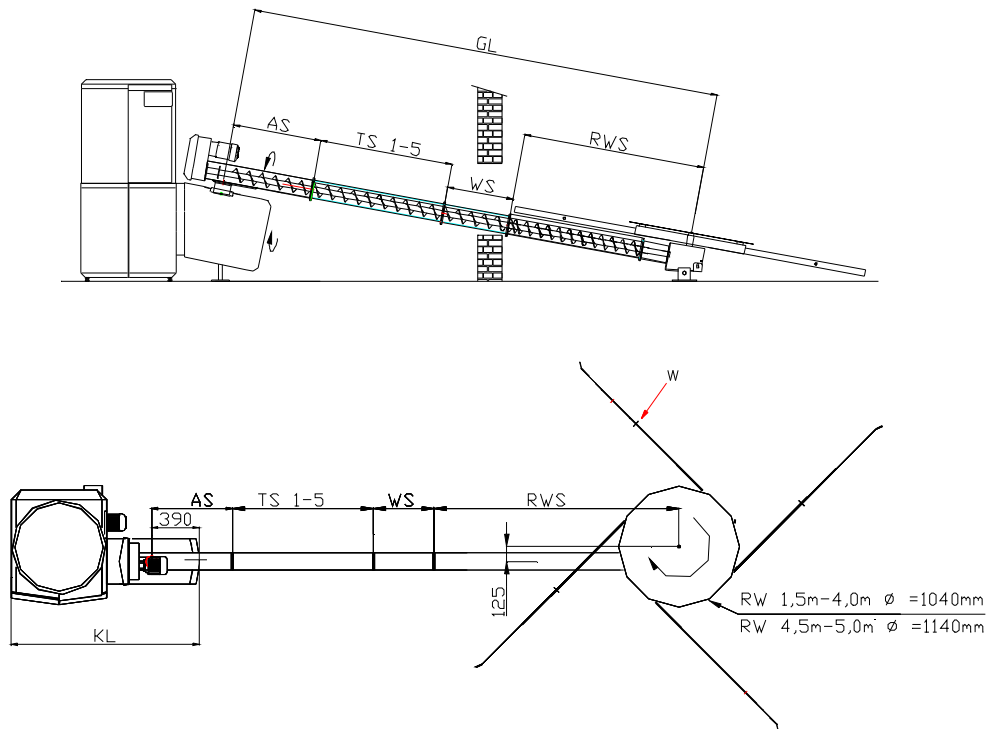
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Type	POWERCORN 50 Special	Special with agitator
Fuel	Woodchips G30 Grain fuel Pellets 6mm	ÖNORM M7133 ÖNORM M7135 ÖNORM M7139
Boiler output	Woodchips 12-50 Grain fuel 12-40 Pellets 12-50	kW kW kW
Required flue draught	0.15	mbar
Boiler temperature	70-80	°C
Return temperature	>55°C	°C
Return boost	Pump (RA60 with thermal store)	
Water capacity	147	litres
Operating pressure	max. 3	bar
Water system resistance	Through-flow rate 2120	kg/h
Temperature difference 20 K	Water temp. 26.0 Differential pressure 6.2	°C
Water system resistance	Through-flow rate 4240	kg/h
Temperature difference 10 K	Water temp. 25.8 Differential pressure 24.7	°C
Ash pan, grate	80	litres
Ash pan, "heat exchanger"	12	litres
A	Temp.-relief heat exchanger	
B	Sensor for temp.-relief heat exch.	
C	Return, 1¼"	
D	STL, boiler sensor	
E	Drain, ½"	
F	Flow, 1¼"	
G	Flue connecting pipe dia. 180	mm
Overall weight (w/o stoker unit)	667	kg
Weight of bottom box	410	kg
Weight of heat exchanger	227	kg
Weight of stoker unit	75	kg
Weight of drive unit	55	kg
Temperature-relief heat exchanger	Yes	
Power supply	400V/13A	

### 8.4 Fuel outfeed agitator

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**Important**

The overall length of the outfeed auger including agitator must not exceed 7 m. The wall exit section (WS) must always be fitted where the auger passes through the wall.

Agitator dia.	AS	WS	RWS	GL	Remarks	Trough	Length
1.5 m agitator	730 mm	550 mm	750 mm	2030 mm	Basic		
2.0 m agitator	730 mm	550 mm	1000 mm	2280 mm	Basic		
2.5 m agitator	730 mm	550 mm	1250 mm	2530 mm	Basic		
3.0 m agitator	730 mm	550 mm	1500 mm	2780 mm	Basic	TS1	220 mm
3.5 m agitator	730 mm	550 mm	1750 mm	3030 mm	Basic	TS2	550 mm
4.0 m agitator	730 mm	550 mm	2000 mm	3280 mm	Basic	TS3	1100 mm
4.5 m agitator	730 mm	550 mm	2250 mm	3530 mm	Basic	TS4	2200 mm
5.0 m agitator	730 mm	550 mm	2500 mm	3780 mm	Basic	TS5	2970 mm



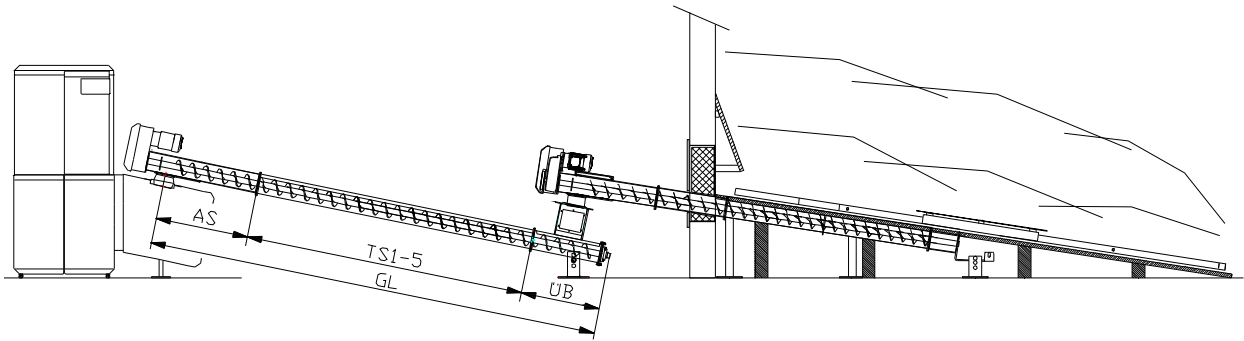
**Important**

Always fit the longest agitator arms opposite one another. The securing screws (W) on the agitator spring arms must not be fully tightened. Fit the agitator arms so that they clear the outfeed auger by approx. 15-20 mm.

Agitator arm	250 cm	225 cm	197 cm	172 cm	147 cm	120 cm	92 cm	64 cm
1.5 m agitator								4 off
2.0 m agitator							2 off	2 off
2.5 m agitator						2 off	2 off	
3.0 m agitator					2 off	2 off		
3.5 m agitator				2 off	1 off	1 off		
4.0 m agitator			2 off	1 off	1 off			
4.5 m agitator		2 off		1 off	1 off			
5.0 m agitator	1 off	1 off		1 off	1 off			

## 8.5 Fuel feeder auger

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	Description	Length	Order number
AS	Fuel outfeed unit for PH 20/30, PH 40/50 or PC 50 Special	730 mm	082-850
AS	Fuel outfeed unit for PH 75 or PH 100	730 mm	085-850
TS1	Auger trough inc. auger	220 mm	082-801
TS2	Auger trough inc. auger	550 mm	082-803
TS3	Auger trough inc. auger	1100 mm	082-805
TS4	Auger trough inc. auger	2200 mm	082-807
TS5	Auger trough inc. auger	2970 mm	082-809
ÜB	Transfer unit inc. auger	630 mm	PH030-9-400-0
GL	<b>The overall length of the feeder auger must not exceed 7 m.</b>		

# GUNTAMATIC

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