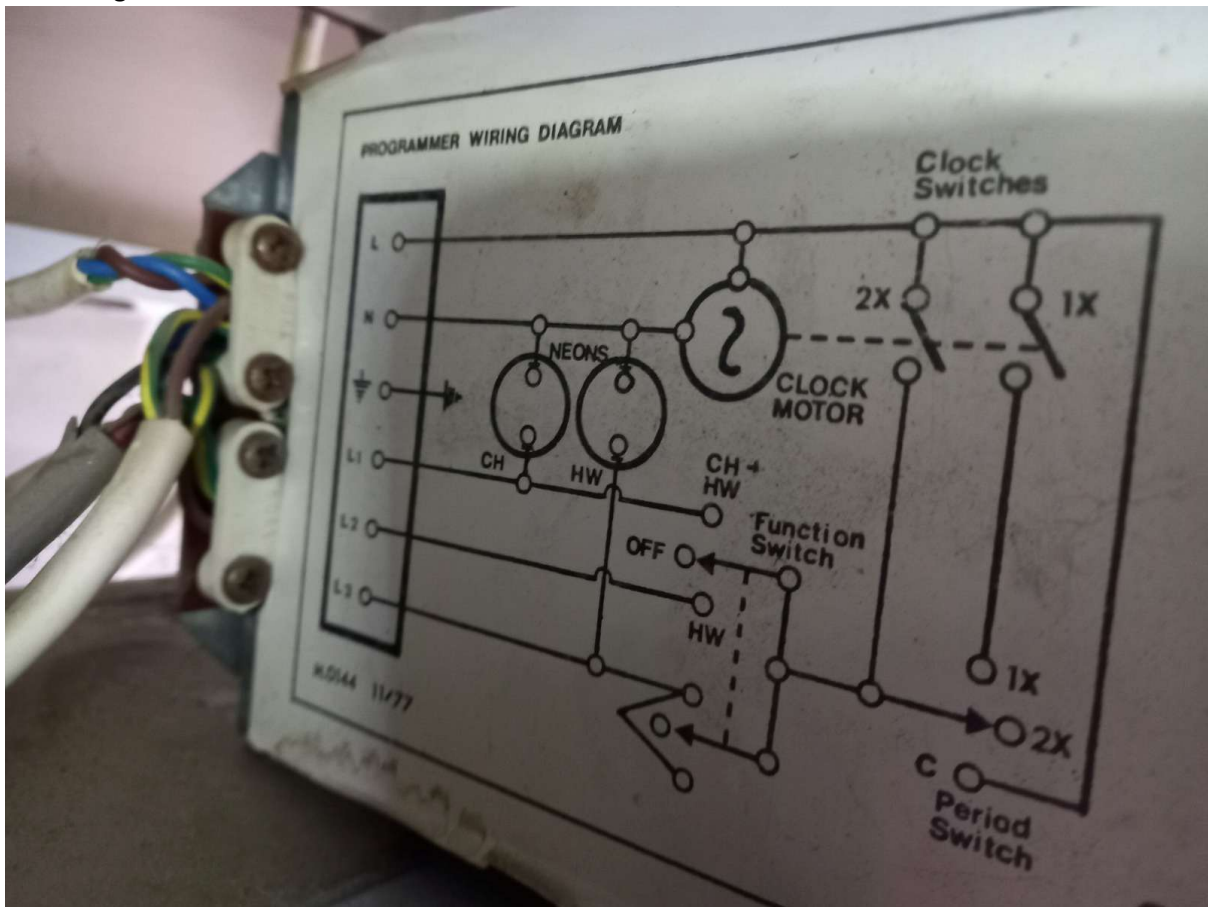


# Boiler wiring.

Old wiring.

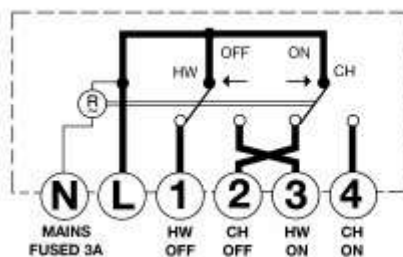


New controller.

## 8. Backplate

The RWB29 is supplied with the industry standard backplate to which the system must be wired. The backplate can be fitted directly to the wall or onto a conduit box. Only conduit boxes which comply with BS1363 or BS4662 (single gang) should be used.

## 9. RWB29 Internal Wiring Diagram



Front of old controller.



**ChatGPT.**

Yes. From your photos, it looks like you're replacing an **older Landis & Gyr/Staefa programmer** with a **Siemens RWB29**. The good news is that the terminal functions are effectively the same, although the numbering has changed. Siemens also documents compatibility with many older Landis programmers. ([studylib.net](http://studylib.net))

The connections are:

Old Landis terminal	Function	Siemens RWB29 terminal
<b>L</b>	Permanent Live	<b>L</b>
<b>N</b>	Neutral	<b>N</b>
<b>Earth</b>	Earth	<b>Earth</b>
<b>L1 (CH)</b>	Central Heating ON	<b>4</b>
<b>L2 (HW OFF)</b>	Hot Water OFF	<b>2</b>
<b>L3 (HW ON)</b>	Hot Water ON	<b>3</b>

The Siemens terminal **1** is **HW OFF**, terminal **2** is **CH OFF**, terminal **3** is **HW ON**, and terminal **4** is **CH ON**. On many domestic systems, **CH OFF (terminal 2 on the Siemens backplate)** is not used at all. ([Siemens Smart Delivery](http://Siemens Smart Delivery))

**Looking at your old timer**

Your wiring diagram shows:

- L

- N
- Earth
- L1 = CH ON
- L2 = HW OFF
- L3 = HW ON

That is the standard Y-plan/S-plan arrangement, so the wiring becomes:

- **L → L**
- **N → N**
- **Earth → Earth**
- **L1 → 4**
- **L2 → 1**
- **L3 → 3**

No wire normally goes to Siemens terminal **2** unless your existing installation had a **CH OFF** connection. ([Siemens Smart Delivery](#))

If you can upload **one clear photo of the old backplate showing the wires actually connected to the terminals** (not just the diagram), I can tell you **exactly which coloured wire goes into each terminal on the Siemens** before you disconnect anything.

### **Second attempt with ChatGPT.**

That makes much more sense now. Thanks for clarifying.

What you have is not one of the later Landis & Gyr programmers with the removable industry-standard backplate. It's an older unit with direct screw terminals (L, N, L1, L2, L3), which matches the wiring diagram in your second photo.

That means the RWB29Si cannot simply replace it. The RWB29Si expects the industry-standard six-terminal backplate (N, L, 1, 2, 3, 4). You would have to:

- fit the Siemens backplate,
- identify what each of the existing wires (L1, L2, L3) actually does,
- and reconnect them to the appropriate Siemens terminals.

From the old wiring diagram, the outputs appear to be:

- L = permanent live
- N = neutral
- L1 = CH output
- L2 = HW output

- L3 = common feed to the function switch

However, without tracing the existing wiring or seeing which coloured wire is on each terminal, I can't say with confidence that, for example, L1 should go to terminal 4 and L2 to terminal 3. The old programmer's function switch changes the internal routing.

One thing that *is* clear from the old diagram is that CH cannot operate without HW because the function switch and clock contacts enforce that mechanically. On the Siemens, that behaviour has to be provided either:

- by configuring it for a gravity hot water system (if supported by the installation), or
- by the wiring of the heating controls themselves.

If you can take one photo of the terminal strip on the right-hand side showing all six terminals and the wires still connected, I can usually map them terminal-by-terminal to the RWB29Si. That's the piece of information the internal schematic alone doesn't provide.

Yes, exactly. That makes the circuit make sense.

The **physical selector switch isn't selecting programmes**—it's selecting **where the single timed live goes**:

- **OFF** → L2 connected to a dead terminal (no output).
- **HW** → L2 connected to L3 (timed live feeds HW only).
- **HW & CH** → L2 connected to L1 (timed live feeds the circuit that operates both HW and CH).

So the old programmer has:

- one timer,
- one switched live,
- one three-position routing switch.

That's fundamentally different from the RWB29Si, which has **two independently timed switched lives** (HW ON on terminal 3 and CH ON on terminal 4). There is no equivalent of that routing switch because the Siemens assumes the user chooses HW and CH from the keypad.

I think I can now see the issue you're facing: if you simply connect the old wires to terminals 3 and 4, you've **removed the selector switch** that the original installation depended on.

The question then becomes: **what does the rest of the heating system expect?**

If this is a traditional gravity HW / pumped CH system with no motorised valve, the original selector switch may have been doing more than selecting outputs—it may have been determining whether the pump received a live feed.

Can I ask one thing:

**Where do the three switched wires (L1, L2 and L3) go?** For example:

- Does L1 go to the pump?
- Does L3 go to the cylinder thermostat?

- Does L2 come directly from the clock?

If we identify those three conductors, we can work out how to recreate the selector switch's function, or determine whether it is no longer needed because the RWB29Si's gravity mode already provides the equivalent logic. I think we're now looking at the actual control philosophy of the old installation rather than just the programmer itself.

---

That does help, and I think it tells us something important about the system.

If the programmer is set to **HW only** and **constant**, and your **smart switch simply switches the mains feed to the programmer**, then:

- The programmer is permanently passing its switched output in the HW position.
- When your smart switch applies power, the boiler fires and you get hot water.
- The pump does **not** run, because the selector is in HW only.

That is exactly how an old gravity hot water system behaves.

The consequence is that your current installation is effectively using the programmer as nothing more than a **manual HW/CH selector**, with the smart switch providing the timing.

### **I wouldn't disconnect anything yet**

I think the safest approach is to identify the function of each of the three switched terminals *before* moving a single wire.

From the old diagram, we know:

- **L** = permanent live in.
- **N** = neutral.
- **L1, L2, L3** are the only mystery.

The easiest way to identify them is actually **electrically**, not from the diagram.

With the programmer still installed:

1. Set it to **Constant**.
2. Set the selector to **HW only**.
3. Measure which of L1, L2 and L3 are live.
4. Then switch to **CH + HW** and repeat.

Those two sets of readings will tell us exactly what each terminal does.

For example, if we found:

<b>Selector</b>	<b>L1</b>	<b>L2</b>	<b>L3</b>
HW	Dead	Live	Live
CH+HW	Live	Live	Dead

then we'd know precisely how the selector routes the timed live.

## One thing I noticed

You mentioned there's a separate permanent live going to the ignition/boiler. That makes me think the boiler is **not** controlled by the programmer at all; it's controlled by its own thermostat and simply needs a live available. The programmer is probably only deciding whether the **pump** runs. That would be entirely consistent with a gravity HW system.

I actually think we're close to a definitive answer now. Rather than guessing from a fuzzy 1970s schematic, I'd prefer to identify the terminals by their behaviour. Two sets of voltage readings (HW and CH+HW) would tell us everything.

One other question: **What is the boiler model?** If it's an older Potterton, Ideal, Baxi, Glow-worm, etc., its wiring diagram may confirm whether the programmer is only switching the pump or whether one of those three wires also feeds the boiler control circuit. That would remove the last bit of uncertainty.

---

Good — that one detail actually simplifies everything a lot.

If the **pump live goes straight to the pump**, then your system is even more clearly:

**programmer = simple switched live controller for pump only**

The boiler (Ideal Concord W) is effectively **self-firing via its own internal controls / thermostat loop**, and the programmer is just deciding whether the system is allowed to circulate heat.

So your old Landis unit is not really doing “CH and HW outputs” in a modern sense. It is doing:

- clock provides a timed live
- selector switch decides how that timed live is used
- pump is the only controlled load

That matches classic **gravity hot water + pumped heating conversion systems**.

---

## What this means for the Siemens RWB29Si

Now we can be precise.

The Siemens gives you:

- HW output (terminal 3)
- CH output (terminal 4)

But your house only *needs one meaningful switched output* (pump enable).

So the correct conversion is:

### ✓ Electrical truth of your system

- Only **one real controlled circuit exists (pump)**
  - HW/CH distinction is mechanical/hydraulic in the system, not electrical anymore
-

## Correct wiring strategy (important)

### 1. Power to Siemens

- L → permanent live
- N → neutral

### 2. Pump control (critical)

- Old programmer pump wire → CH ON (terminal 4)

Why CH and not HW?

Because CH is the only one that should represent “system circulation demand” in Siemens logic.

Even though it feels counterintuitive, in Siemens terms:

CH output = “system running / pump allowed”

---

### 3. HW output (terminal 3)

- NOT used (or left unconnected)

Because your boiler already handles HW production internally (via thermostat / cylinder stat), and your system doesn't separate HW electrically.

---

### 4. Gravity mode setting (you already did this right)

This ensures:

- CH demand does not behave independently in a way that breaks gravity logic expectations
- 

## What you are effectively doing

You are converting:

### Old system

Single timed live → mechanical selector → pump

### New system

Timed electronic relay (CH output) → pump

So the Siemens becomes a **direct replacement for the old pump enable function only**.

---

## One important warning (worth stating clearly)

Do NOT try to:

- use both CH and HW outputs
- or “split” loads between them

Because your system wiring physically does not support independent electrical control of CH vs HW.

---

### Final simplified mapping

Old function	Old wire	Siemens
Switched live to pump (from programmer output)		CH ON (4)
Permanent live	supply	L
Neutral	supply	N
HW output	not truly separate in your system	unused

---

If you want, I can next step you through:

- exactly how your **old selector switch behaved electrically**, and
- how the Siemens “gravity mode” is actually simulating that behaviour internally

That’s the final piece that makes the whole transition make conceptual sense.

---

Short answer: **not in the way your old system does — but yes, you won’t lose hot water in summer if it’s wired correctly.**

Let’s make this very clear so nothing gets miswired:

---

### What you have now (important reality)

Your current Landis setup gives you:

- **HW only mode** → pump does NOT run
- Boiler heats water via gravity circulation (or internal demand)
- No central heating circulation

So in summer:

HW works without CH because the pump is not energised in HW mode

---

### What changes with the Siemens (if wired as “pump only”)

If we wire Siemens as I suggested earlier:

- **CH output (terminal 4) → pump**
- HW output unused

Then:

## In summer:

- You would normally use **HW scheduling only**

BUT...

👉 The problem is:

- Siemens “HW output” is now unused
  - so HW-only mode would NOT directly control anything
- 

## ! This is the key point

If we wire it the “pump-only replacement” way:

You lose true HW-only electrical control unless we add a small logic decision

---

## ✅ The correct way for YOUR system (important correction)

Because your old system *does support HW-only physically*, we should NOT collapse everything into CH only.

Instead, we replicate the selector switch behaviour in Siemens logic:

---

## ✓ Best practical wiring for your case

### 1. L and N

- normal supply

### 2. HW output (terminal 3)

👉 use this for HW-only pump enable path (logical summer mode)

### 3. CH output (terminal 4)

👉 used for CH demand (winter mode)

---

## 🔧 Then set Siemens to gravity mode

This ensures:

- HW can run independently
  - CH does not behave as a fully separate zone controller
  - system behaves “old style”
- 

## ● What you get after correct wiring

### Summer (HW only mode)

- HW ON → pump runs when hot water is called
- CH OFF → no heating circulation

### Winter (CH + HW mode)

- CH ON → pump runs for heating
- HW automatically allowed depending on gravity logic

---

### ⚡ The key misunderstanding to avoid

If you wire it as “CH only drives pump”, then:

- ✗ HW-only mode may appear to do nothing
- ✗ you lose the summer behaviour you currently rely on

---

### 🧠 Final simplified truth

Your old system =

“HW-only is a real electrical mode”

So Siemens must preserve that by:

- using **HW output properly**
- not ignoring it

---

### 👍 Bottom line

Yes — you *can absolutely keep HW-only operation in summer*, but only if:

- HW output is actually wired and used (not left floating)
- Siemens is configured in gravity mode (already correct)
- wiring mirrors the old selector behaviour rather than simplifying it too far

---

If you want, I can now give you a **clean final wiring table (no ambiguity, terminal-by-terminal)** so you can connect it without second guessing anything.

---

Here is the **clean, no-ambiguity wiring plan** for your exact system (Ideal Concord W + pump-only external control + RWB29Si).

I’m going to keep this aligned to what your system actually is, not what a modern S-plan system assumes.

---

## ⚡ **FIRST: What we are preserving**

You told me:

- Pump is wired **directly**
- Boiler has a **permanent live**
- Old programmer only routes control via selector
- You need **HW only in summer**
- CH is just “pump on demand”

So electrically you have:

🔑 ONE real controlled output = pump live

Everything else is logic.

---

## 🧠 **CORRECT Siemens ROLE IN YOUR SYSTEM**

We use the Siemens as:

- HW output = summer / hot water enable logic
- CH output = heating / pump demand

Then we combine them so the pump behaves like the old selector switch.

---

## 🔧 **FINAL WIRING (DO THIS)**

### 1. Power supply

- L → **permanent live**
  - N → **neutral**
  - Earth as normal (to backplate if present)
- 

### 2. LINK (important)

- Link L → **COM (if your backplate provides a common feed internally)**  
*(most RWB29Si backplates already do this internally, so don't add external link unless required)*
- 

### 3. Pump wiring (CRITICAL)

Take the wire that currently goes:

old programmer → pump live

and connect it to:

#### 👉 Terminal 4 (CH ON)

This is now your:

“system run / pump enable output”

---

#### 4. HW wiring (IMPORTANT for summer use)

Take the wire that was originally part of the selector HW position feed (if present in your old setup — sometimes this is not a separate load in pump-only systems):

#### 👉 Terminal 3 (HW ON)

If there is no separate HW electrical load (very likely in your case), then:

- you still connect it **only if it was originally part of the selector routing**
  - otherwise it can remain unused
- 

#### ● CONFIGURATION (YOU ALREADY DID THIS RIGHT)

Set Siemens to:

- **Gravity mode = ON**

This is essential because it ensures:

- HW can run independently
  - CH does not behave like a fully separate zone system
- 

#### 🌞 HOW IT WORKS IN SUMMER (YOUR KEY REQUIREMENT)

**HW only mode:**

- HW schedule ON
- → HW output activates logic
- → gravity mode allows system enable
- → pump runs via CH output logic depending on configuration

**Result:**

- ✓ hot water works
  - ✓ CH stays off
  - ✓ matches your current “summer HW only” behaviour
-

## WINTER MODE

### CH + HW mode:

- CH ON → pump runs
  - HW available as required
- 

### IMPORTANT TRUTH (NO SURPRISES)

Your old system had a **mechanical interlock**.

The Siemens does NOT physically replicate that switch.

Instead it relies on:

software + gravity mode logic

So behaviour is equivalent, not identical internally.

---

### SIMPLE SUMMARY

You are effectively building this mapping:

Old system	Siemens
Selector switch	Gravity mode logic
Pump feed	CH output (4)
HW position	HW output (3)
OFF	all outputs off

---

### FINAL SAFETY NOTE

Before powering up:

- ensure pump is rated for direct switched live (it is)
  - ensure no motorised valve wiring is accidentally still tied into old selector outputs
  - confirm neutral is shared correctly
- 

If you want next step, I can:

- draw you a **simple “before vs after” diagram of your exact system**, or
  - help you test it safely step-by-step on first power-up so nothing trips or behaves unexpectedly.
-

Here's the **simple "before vs after" wiring map** for your exact setup, so you can visually sanity-check everything before you touch a wire.

---

### YOUR OLD SYSTEM (Landis)

#### What it really did

Permanent Live

|



[Clock]

| (single timed output)



[Selector Switch]

┆— OFF → nothing

┆— HW → enables "hot water mode"

┆— CH+HW → enables pump run

|



Pump Live

#### Key truth:

 Only the **pump was actually being switched electrically**

HW/CH was just a *routing decision*, not separate outputs.

---

### YOUR NEW SYSTEM (Siemens RWB29Si)

Permanent Live —————▶ L

Neutral —————▶ N

┆————— HW OUTPUT (3)

Siemens Logic —┆|

┆————— CH OUTPUT (4)

|



## Pump Live

---


### FINAL WIRING (YOUR INSTALLATION)

#### 1. Power

- L → Permanent live
  - N → Neutral
- 

#### 2. Pump (MOST IMPORTANT)

- Old pump live wire → **Terminal 4 (CH ON)**


 This replaces:

“selector switch HW+CH position = pump ON”

---

#### 3. HW output (summer function)

- Only connect if that wire existed as a routed HW feed in old selector logic
- Otherwise leave unused

 In your case:

- likely **unused electrically**, but still part of logic mode
- 

#### 4. Earth

- Earth to backplate / earth terminal as normal
- 

### SUMMER MODE (WHAT YOU CARE ABOUT)

When you select:

**“HW only” on Siemens:**

- CH output inactive
- HW logic allowed
- Pump only runs when HW demand is active (gravity mode handling)

✓ hot water works

✓ heating stays off

✓ matches your current behaviour

---

## WINTER MODE

When CH schedule is active:

- CH output energises pump
  - system circulates heating
- 

## IMPORTANT REALITY CHECK

Your old system had:

one timed circuit + mechanical routing

Your Siemens has:

two logical outputs + software routing

But in your house:

only ONE of those outputs physically matters (pump)

So everything ultimately resolves to:

**Terminal 4 = “system running”**

---

## FINAL WARNING (IMPORTANT)

Before switching on:

- Make sure **pump neutral is correctly shared**
  - Ensure **no old selector wiring is still feeding live circuits**
  - First power-up should be done with programmer set to OFF
- 

If you want, I can next give you a **first power-up checklist (3–5 steps)** so you can test heating and hot water without risking a tripped fuse or unexpected pump run.

---

Here's your **safe first power-up checklist** for the Siemens RWB29Si on your system.

This is written specifically for your setup (Ideal Concord W + pump-only external control + gravity hot water).


---

## BEFORE YOU RESTORE POWER

### 1. Programmer set to safe state

Set Siemens to:

- **Mode: OFF**

- All channels OFF (no HW or CH demand)  
 This ensures nothing unexpectedly energises on power-up.
- 

## 2. Double-check wiring (critical)

Confirm:

- **L → permanent live**
  - **N → neutral**
  - **Pump live → Terminal 4 (CH ON)**
  - **Earth connected properly**
  - No loose conductors in backplate
- 

## 3. Isolate “old logic remnants”

Make sure:

- No wires from old selector switch are still connected to anything live
  - Any unused conductors are safely parked in insulated connectors
- 

## **FIRST POWER-UP**

### 4. Restore mains power

Now watch carefully:

- Siemens display should power up normally
  - No relays should click (because everything is OFF)
- 

### 5. Test HOT WATER (summer mode)

Set:

- **HW = ON**
- **CH = OFF**

**Expected result:**

- Boiler may fire (depending on cylinder stat / system demand)
- Pump behaviour depends on gravity logic timing
- Heating circuit remains OFF

- ✓ Hot water should heat
  - ✓ No radiator circulation
- 

## 6. Test CENTRAL HEATING (winter simulation)

Set:

- HW = ON or AUTO
- **CH = ON**

**Expected result:**

- Relay at **Terminal 4 activates**
  - Pump runs
  - Heating circuit circulates
  - Boiler fires via system demand
  - ✓ Radiators should heat
  - ✓ Pump should run continuously during demand
- 

## 7. Test OFF state

Set:

- HW OFF
- CH OFF

**Expected result:**

- Pump OFF
  - Boiler idle (unless its own thermostat calls internally)
- 

## 🔥 WHAT TO WATCH FOR (IMPORTANT)

If anything is wrong, immediately turn OFF and check:

### ✗ Pump runs permanently

→ CH output miswired or linked to live

### ✗ Boiler fires but pump doesn't run

→ pump not actually on terminal 4

### ✗ Nothing works at all

→ missing neutral or L feed to programmer

---

## KEY UNDERSTANDING DURING TEST

Remember:

Your system is effectively:

Boiler = independent heat source

Programmer = pump permission switch

So the pump is the “truth indicator” of correct wiring.

---

## FINAL NOTE

Once this test passes:

- you’ve successfully converted a mechanical routed system into a logical controller system
  - summer HW-only operation will behave as before
  - winter CH operation will be cleaner and more reliable than the old selector switch
- 

If you want next, I can show you a **“what normal operation should feel like day-to-day” guide**, so you can immediately recognise if anything is drifting or misbehaving after installation.

---

Before I do, I want to correct one thing from my previous replies because it's important.

I became too confident about terminal 4 being the pump output. **I don't actually know that from the information we have.** The RWB29Si *can* emulate a gravity system, but without positively identifying the three old switched wires (L1, L2 and L3), I can't honestly say "put the pump on terminal 4" with certainty. I don't want to encourage you to wire a 230 V heating control system on an assumption.

### **What normal operation should be**

Assuming the wiring is correct, this is what you should observe.

#### **Summer**

Programmer:

- HW = AUTO (or ON if you're testing)
- CH = OFF

You should see:

- Boiler fires when the cylinder thermostat calls.
- Cylinder gets hot.
- Radiators stay cold.

- ❌ Pump should not circulate the heating circuit continuously.

### Winter

Programmer:

- HW = AUTO
- CH = AUTO

When CH comes on:

- ✅ Pump starts.
- ✅ Boiler fires.
- ✅ Radiators warm up.
- ✅ Hot water continues to be available because gravity mode prevents CH without HW.

### OFF

- Boiler remains idle unless there's some frost or overrun function.
- Pump stops.
- Radiators cool.

### A better way to finish this

I think we've reached the point where we're missing **one piece of evidence**, not more theory.

You said the old programmer is still connected. That's actually ideal.

Rather than guessing from the schematic, we can identify the wires in about five minutes with a multimeter (or even a simple test lamp).

For each of the three terminals **L1, L2 and L3**, note whether it is live in:

Selector	Timer	L1	L2	L3
OFF	Constant			
HW	Constant			
CH+HW	Constant			

You only need to record **Live** or **Dead**.

Once we have that table, we can derive exactly what each terminal does and produce a wiring map to the Siemens **without any assumptions**.

### One more thing

You've been very methodical about this, and I think that's the right approach. These late-1970s gravity systems often don't match the "standard" wiring diagrams that modern

programmers expect. Spending an extra half hour identifying the conductors is far preferable to finding that the pump or boiler behaves unexpectedly after the swap.

I think we can get to a definitive answer, but I don't want to pretend certainty where the evidence doesn't yet support it. The voltage table above would give us that certainty.

---