Advanced Troubleshooting for Electricians and Systems Integrators #1

Dimmers · https://pixiepartners.com.au/support-docs/advanced-troubleshooting-for-electricians-and-systems-integrators-1/

Support Docs · Advanced troubleshooting

Advanced PIXIE troubleshooting *for electricians and systems integrators.*

As the PIXIE range and the experience around it has grown, a set of practical lessons have emerged that are not always obvious from the training material alone. This guide pulls them into one place: the conditions and combinations that catch experienced installers out, why they catch them out, and the fix on each one.

6 min read Updated May 2026 Audience: Electricians and Systems Integrators Level: Intermediate to advanced

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Step 1

Always do this first.

The first steps to solving a wide range of common issues are simple. Before reaching for hardware-level diagnostics, work through this list. A surprising proportion of field calls clear at this stage.

1

Update the mobile OS

Make sure the phone or tablet running the PIXIE or PIXIE PLUS app is on the latest iOS or Android release.

2

Update the PIXIE apps

Check the App Store or Google Play for an update to the PIXIE and PIXIE PLUS apps. Install the latest version.

3

Update PIXIE firmware

Each PIXIE device on the wall has firmware that is updated through the app. A firmware update resolves a wide range of issues.

4

Power cycle

Drop power at the board for 30 seconds, then restore. Combined with the three updates above, this clears most state-related faults.

Training reminder. The PIXIE training course covers the foundations in detail. Practical experience like the lessons below sits on top of that base. If you are new to PIXIE, start at training.pixiepartners.com.au before this guide.

Step 2

Take care making groups to *maximise functionality.*

Groups and scenes both let you control multiple PIXIE devices at once, but they behave differently under the hood. The distinction matters because the wrong choice can quietly disable dimming on a circuit you expected to dim.

Groups

One message, same state

A Group is a collection of PIXIE devices controlled together by a single network command. One message goes out, and every device in the Group moves to the same state.

- Members can belong to multiple Groups

- Groups can be paired to a Multifunction Controller (powered or battery)
- Best for "all on, all off" or "everything to 50%" scenarios

Scenes

Multiple messages, mixed states

A Scene sends individual messages to each member, allowing different devices to go to different states. A Scene can also include Groups as members.

- Each device in the Scene can have its own target state
- Scenes can be paired to Multifunction Controllers (powered or battery)
- Best for "movie mode", "dinner", "all out" and similar curated states

Critical

If you add a non-dim device to a Group that also contains dimmed devices, the entire Group will default to switching only. The dim functionality across that Group is lost, even on the devices that are capable of dimming.

This is a frequent cause of "the dimmer stopped dimming" calls where the dimmer itself is fine. Audit the Group membership before swapping hardware.

Before building a Group, decide how it will be controlled and which members belong in it. *Group composition drives Group capability.*

Step 3

Dimming LED lamps.

When using low-wattage (less than 10W) filament lamps, LED candles, fancy rounds, G4, G9, GU10, LED MR16 lamps, or E14 / E27 lamp holder types, the dimmer in use is the PIXIE Smart Dimmer `SDD300BTAM`: a trailing-edge dimmer needing Active and switchwire only, no neutral.

Why these lamps behave nothing like the lamps they replaced.

Every LED lamp has a driver inside it. It is not possible to control LED with 240V directly without driver circuitry. The form factor of legacy tungsten lamps and modern LED lamps often makes this easy to forget, but the difference matters: the cap of a GU10 or G9 LED lamp has minuscule space for

circuitry, which constrains dimming capability and performance.

Phase dimming is a question of matching the dimmer's curve to the lamp's driver. Poor drivers give poor performance, no matter how good the dimmer is.

Hardware-damaging fault

PIXIE dimmers are incompatible with IRON CORE drivers. On retrofit applications, check the line for iron core drivers before energising. Connecting a PIXIE dimmer to an iron core driver will damage the dimmer.

Reported field issues and resolutions

All resolutions assume electrical connections, wiring and lamps are without fault.

Flickering at 100%, but at 95% no flickering

Try in order

- Dim to 95%. The PIXIE dimmer has a memory function, so each time the dimmer is turned off it will return to its previous level.
- Try lamps from a different supplier to find a more compatible version.

Flickering at all levels

Try in order

- Install the provided capacitor across LOAD and NEUTRAL. Sometimes this resolves the flicker, sometimes it stops the lamps from working.
- Try lamps from a different supplier to find a more compatible version.

Will not turn off

Try in order

- Install the provided capacitor across LOAD and NEUTRAL. Same caveat applies: it sometimes works, sometimes stops the lamps from working.
- Try lamps from a different supplier to find a more compatible version.

Will not turn on

Try in order

- Install the provided capacitor across LOAD and NEUTRAL. Same caveat applies.
- Try lamps from a different supplier to find a more compatible version.

Have you tried switching only?

If the lamps are low wattage and dimming is not actually needed, the cleanest fix is to swap the dimmer for the PIXIE Smart Switch `SWL600BTAM`. A lot of "this lamp will not dim" calls end here.

What else can I try?

Install an **MMBP** from DIGINET. It is a different type of load bypass device, and its different internal design will sometimes produce a different outcome where the supplied capacitor has not.

Step 4

Other challenges: *inrush on capacitive loads.*

Every driver inside every LED lamp has an inrush current on startup. The intuition that two lamps draw twice the inrush of one lamp is wrong, and it is the source of a lot of repeat dimmer failures.

On the switchwire of a dimmer, *1 + 1 does not equal 2.* More capacitive devices on the same circuit multiply the inrush, they do not simply add it.
When inrush is repeatedly too high, the dimmer takes damage. There is only so much space inside a dimmer to build in protection for poor drivers with high inrush and low power factor, and over time that protection runs out.

The classic offenders are pendants and chandeliers with a lot of small LED lamps. In those cases, install a **SAL SILC1235BTP** inrush suppression device on the dimmer output, before the lamps. It is a passive inline puck-style device with no programming or setup required.

Important caveat
The SILC1235BTP does not help with dimming performance or flickering. Its only job is to protect the dimmer from inrush damage on capacitive load combinations. For flicker or dim quality issues, see the previous section.

Step 5

Switching contactors for larger loads.

For switching contactors, the right PIXIE device is the **PIXIE Dual Relay Controller**, `PC206DR/R/BTAM`. It is purpose-built for this job, in a way the Smart Switch is not.

PC206DR/R/BTAM at a glance

- Two 6A (resistive) **latching** relays
- No minimum load requirement for activation
- Built-in memory: holds state through a blackout and returns to prior state when power is restored
- 24/7 scheduling built in
- Acts as a Bluetooth Mesh booster for the PIXIE mesh
- Full control via the apps and PIXIE Touch Panel, with independent control of each relay

On-wall control: two options

Once the PC206DR is in place, there are two ways to give the homeowner physical control at the wall.

Option 1

Wirelessly pair any PIXIE Multifunction Controller

Pair any PIXIE Multifunction Controller (powered or battery) to control one or both relays together. No additional cabling required between the wall plate and the PC206DR.

Option 2

Mechanical bell press wired to BP inputs

Install a mechanical bell press mech on the wall plate (the **SAL SBP10L** is recommended) and cable from the switch to the BP inputs on the PC206DR, volt-free, for direct relay control.

Using a bell press allows system messages to also operate the relays. The wired path and the wireless path coexist.

Image slot

PC206DR/R/BTAM wiring diagram (Figure 2): Active / Neutral / Load / Active / Load terminals across the top, with two optional bell-press inputs shown below. Insert the wiring diagram from the installation manual here.

Why not the SWL600BTAM?

The Smart Switch `SWL600BTAM` can technically switch a contactor, but it carries hidden costs.

Use this

PIXIE Dual Relay Controller (PC206DR/R/BTAM)

- Latching relays, no minimum load required
- State retained through blackout via memory function
- Two independent relays from one device
- Doubles as a Bluetooth Mesh booster
- No load bypass devices, no capacitor stack, no future deterioration

Avoid for contactor work

Smart Switch (SWL600BTAM)

- Has a minimum load requirement
- Most contactors need one or more capacitors across load and neutral for the internal relay to stay latched
- Required capacitor count varies by contactor: it is install-by-install, not predictable
- Capacitors deteriorate over time, so the switch may stop latching reliably in the future
- Net result: more cost, more risk, less robustness

For contactor switching, the most robust option is the PIXIE Dual Relay Controller. *Choose the tool built for the job.*

Step 6

Switching multiple constant voltage LED drivers *on the SWL600BTAM or STS600BTAM.*

This applies to garden lights, pool lights, heated towel rails with transformers, LED strips being switched only, and any application where multiple constant voltage drivers share a single switchwire. The single biggest predictor of long-term reliability here is the quality of the drivers themselves.

First: pick the best driver the project can carry.

Use the highest-quality constant voltage LED driver the budget will accommodate. The two numbers that matter on the spec sheet are below.

Power factor (PF)
> 0.70 minimum
> 0.95 preferred
Higher PF means cleaner load on the switch and less stress over time.
In-rush current
< 24 A
The threshold above which damage becomes likely on repeated switching.
Reality check
Most constant voltage drivers sold in Australia today do not meet these thresholds in our field experience. Treat driver selection as a deliberate decision, not a default.

Preferred brands for best performance

Meanwell SAL FC PLUTO range

SAL FC PLUTO drivers are listed at sal.net.au/search?q=pluto+fc.

Then: account for inrush, as on dimmers.

The same inrush behaviour applies on switches as it does on dimmers. Each driver has its own startup inrush, and multiple drivers on a single switchwire multiply the inrush rather than add it.

Again: *1 + 1 does not equal 2.* More drivers on the switchwire multiply the inrush. Repeated high inrush damages the switch over time.

For these installs, install a **SAL SILC1235BTP** inrush suppression device on the switch output before the lamps. Same passive inline puck, same no-programming installation as in the dimmer case earlier.

Sharpen the *diagnostic toolkit.*

This guide sits alongside the other practical references in the Partners library. Use these next when a job has a specific failure mode that warrants a deeper look.

Reliability Fixing intermittent PIXIE behaviour Updates, Bluetooth Mesh gaps and Gateway placement Multiway control 2-way and 3-way control with PIXIE Straps method vs Multifunction Controller method Training PIXIE online training course The foundation course these advanced lessons sit on top of Support hub All PIXIE support docs and FAQs Index of every support article and walkthrough