



Data Sheet

G59 Testing & Commissioning



Power Care



The connection of any form of generator device to run 'in parallel' or 'synchronised' with the mains electrical utility grid has certain regulations that must be complied with. These regulations are commonly known as the 'G59' requirements, and would apply to Combined Heat & Power units, and Generators being used for peak-logging, or grid parallel use.

The electricity grid operators (known as DNO - District Network Operators), refer to these units as 'embedded' generators, because they are embedded within the electricity grid, as opposed to being at the source of the national grid such as a power station. At shentonggroup our team of trained and experienced engineers can perform this service for you, giving you piece of mind and certified approval.

Why is G59 Protection Needed? The main reason is to prevent the embedded generator from sending electricity out onto the national grid in a dangerous manner:- For example, let's say that a cable out in the street has been broken. The electricity network operator attend to repair it. They go to the nearest substation and isolate the cable to make it safe to work on. However, in a nearby building is an embedded generator, which suddenly starts up, and begins feeding electricity down the *other end* of the broken cable, making it live. The repair crew would have no knowledge of this and so would be placed in a potentially fatal situation. The G59 relay protective device, in simple terms prevents this situation by automatically disconnecting the embedded generator from the mains.

What does the G59 Device Actually Do? A G59 compliant Mains Protection Relay is an electronic monitoring device which looks at the quality and stability of the mains electricity. It is programmed to certain fixed parameters dictated by the DNO, these typically include voltage, frequency, ROCOF (rate of change), phase angle and so on. Should any of these areas go outside the programmed limits, then the relay will cause a protective device such as an MCCB or other type of circuit breaker to open, thereby instantly disconnecting the generator from the grid.

Some Common Myths:

"I don't need G59 Protection unless I intend to export power to the grid" **Wrong.** If you have any form of generator where the output is connected to the electrical systems in your building, and thus to the grid, you must protect it with a G59 relay device.

"The supplier of my generator is responsible to apply for the G59 Approval" **Wrong.** At shentonggroup we provide this service to our clients, however, this is done *on your behalf*. The legal duty of care to gain G59 approval before setting an embedded generator to work rests with the building occupier. In cases where the occupier is a tenant, then it's usually whoever the MPAN number of the electricity meter is registered to, has the duty of care.

"I can apply for my G59 Approval after I've installed the generator" **You could, but this is very unwise!** You certainly must not operate the generator until G59 approval has been granted, protection devices fitted, tested, and signed off.

"The government says the DNO must always approve of my application" **Wrong.** Whilst there is a culture from government, & throughout industry, to encourage the use of embedded generation, the DNO does not guarantee to approve your application. In certain (rare) circumstances it could be rejected, so it's prudent to make the application first.

Standard Features

- Testing of three and single phase Generation and Interconnection Relays
- Combined with a single phase Current injection set, allows relay tests which require three phase voltage
- Can be used as a complete single phase unit in voltage, current, and phase as outputs are reversible (V, I, j)
- Nationwide availability
- Single or multi systems tested
- Offered as a stand alone service or part of a complete project management package

Distributor:



In line with our policy of continuous development, we reserve the right to change specification without notice.