

Ripple switching for water heating

Orion provides the electricity delivery service in the Christchurch area and uses a ripple signalling system for switching water heaters off and on for both residential and business customers. For most water heaters we require that a ripple controller is fitted as a condition of providing our delivery service¹. This ensures that we can coordinate switching and manage loading levels during periods of peak load on the network, and during both network and grid emergencies to help prevent major outages occurring.

If you are designing or building, we need you to allow for the ripple relay and control wiring in your designs, and leave existing ripple relays in place when modifying buildings.

There is a range of switching options to suit all situations, and provide significant savings on power accounts at the same time. When choosing or changing² options, it's important to ensure that the customer's hot water needs are met. The options are:

- **peak control** - routinely switched off on high loading days for up to four hours during the morning or evening (generally with 4 hours for reheating in between). For business customers with greater hot water demands, the period off is limited to 2 hours with 3 hours provided for reheating.
- **night-only** - heated for 7½ hours over night, then off all day.
- **night with afternoon boost** - combines night heating with a 3 hour daily boost to provide more hot water.
- **nights and weekends** - combines night heating with a 4 hour weekend boost for those with higher weekend demands.
- **emergency control** - provides near continuous water heating and is rarely switched off (and only as a last resort).

It's important to ensure that the water heater is large enough to meet the customer's hot water demands during the time it is off, and that the element is powerful enough to reheat the water during the time it is on.

Night options that are wired with an over-ride switch or boost element must include either emergency or peak controlled interruption on the over-ride or boost circuit.

Want more information? Please refer to the load management section on our website (oriongroup.co.nz) or give us a call on **(03) 363 9898**.

Notes

1. This requirement applies to existing premises with ripple controllers, and to all new residential and business premises with storage electric water heaters of 100 to 500 litres capacity with a heating element of more than 1.2 kW.
2. Some electricity retailers do not offer all options and there's usually a service fee for changing ripple relays and/or retail pricing options.