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Ask the expert:

FRENCH ELECTRICAL INSTALLATIONS

By James Latter

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This article appeared in French Property News, Autumn 2002

One of the favourite opening comments of our local electrician used to be *Oh, la la, la la!* This would be followed by the words *quelle catastrophe!* or *quelle misère!* True, our farmer predecessor had split the tri-phase wiring into separate circuits, was running his grille off a light socket and had his shower next to the granary disjoncteur with no protection. We knew it was going to be expensive but at least we didn't need to do it all at once. Safety must come before convenience.

If you have moved into your house and the disjoncteur trips out every time you switch on the kettle it could be because you are connected to a tri-phase supply. The majority of French properties purchased by British buyers tend to be in rural locations and many are constructed around a building which, sometime in its life, had an agricultural function. A powerful tri-phase supply would have been necessary to drive farm machinery and appliances and this is what you might expect to find in most older properties in need of renovation. Modern domestic appliances are designed for use at 220 volts and therefore a monophase (single-phase) supply is normal. A larger property with one or two outbuildings (*gîtes*) and a (heated) pool will draw a higher current and a tri-phase (three-phase) supply, which is then split into separate monophase circuits to individual buildings, is appropriate for such a property.

EDF offers a range of domestic supply/power tariffs from 3kW (lighting, fridge, TV, etc) to 36kW. The average three-bedroom house which does not use electric heating can comfortably manage on 9kw and this would include a 250 litre electric water heater (monophase) and toaster, kettle and microwave etc. An 18w single phase supply is recommended for an 'all electric' house. A typical problem that can arise with tri-phase is when the water heater (250+ litres) is switched on. If a kettle or toaster, etc, is then switched on using one of the other phases the current drawn by the water heater (perhaps 3kW) is not balanced and an overload causes the disjoncteur to trip out. Even if you upgrade the tariff to a 12 kva, the problem will persist - death to hard drives if you happen to be using your PC at the time.

If yours is a secondary home, if you do not heat by electricity, and if you tend not to occupy it in the coldest winter months, the 'Tempo' tariff is probably your most economic solution. You will pay a market rate - top price for the 20 days of extreme cold and low price during the longer summer days. If you are in residence and a 'red' day is imminent (you are warned by a monitor), you have the choice of putting another log on the fire and not doing the washing etc., or paying the higher rate. The other economy measure is to have a split tariff of *Heures Creuses,* i.e., night and sometimes midday, and *Heures Pleines*. Your *tableau*

d'électricité fuse board can be configured to then switch on the immersion heater, washing machine, etc., from 2230hrs – 0630hrs. (times vary regionally).

I recently surveyed a house in the Quercy where there were two separate supplies - one to each end of the building. The owner explained that he had never got round to rewiring after he bought the adjacent property and knocked through to enlarge his house. This explained why half the wiring was old, waxed and cloth-covered and the light switches had porcelain knobs to turn (turn off the lights); all potentially dangerous. He took great pride in explaining that one end (workshop/garage, scullery, etc.) was never used in the evenings - and ran on 3kva for bedroom lighting, and the other end was heated by the wood-burning stove. Toasters and kettles had evidently not come into his life so perhaps he had a point. He was paying two *abonnements* but was enjoying his thriftiness! Most post-60's electrical installations are properly wired though the fuse boxes tend to be obsolete or below standard. Current normes require RCD protection iaw NF C 15-100.

Wiring in France has to be in the form of radial circuits, that is where each "leg" is taken back to the fuse box individually. You can run 8 lights or 8 socket outlets off a radial circuit. Ring mains (as used in the UK) are not permitted. In a property where most of the wiring is adequate and only one or two rooms, e.g. kitchen and bathroom, are being refitted, only those radials needs rewiring. Don't forget to incorporate a differential switch or 'RCD' *(interrupteur différentiel)* to the fuse board for kitchen and bathroom appliances. The regulations stipulate one 25A 30mA RCD for up to 35m2 surface habitable, one 40A 30mA RCD for between 35m2 and 100m2. S.hab. and two 40A 30mA RCDs for up to 100m2 *surface habitable*.

Older French properties are notorious for being badly earthed - if at all. Copper earthing rods of 2 metres are the norm and should be wired to the *Barrette de Répartition* (removable connector to permit resistance of earth to be measured). If the ground is rocky, earthing plates are recommended. These need to be set in a trench to a minimum depth of 1 metre. EDF have a useful web site for those wanting to know more about their services such as offre renovation, which can include a finance package. Go to www.edf.fr, where much of it can be read in English. Legrand and Hager, two of France's leading electrical material suppliers, sell tableaux électriques in pre-arranged units according to the size of installation.

The unknown quality of the electrical installation in the house you are about to buy should be one of the most important factors in your deliberations. Your life could depend on it. An independent appraisal of this by your surveyor as part of a pre-purchase survey will provide you with a deeper insight into the extent of renovation required and probable cost, not to mention any inherent dangers from unprotected wiring. Anyone contemplating letting their property will soon need to be au norme and conform to forthcoming regulations.

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