Electricity Distribution

NGED Standardisation of Fusing to 80A

Standardisation of fusing

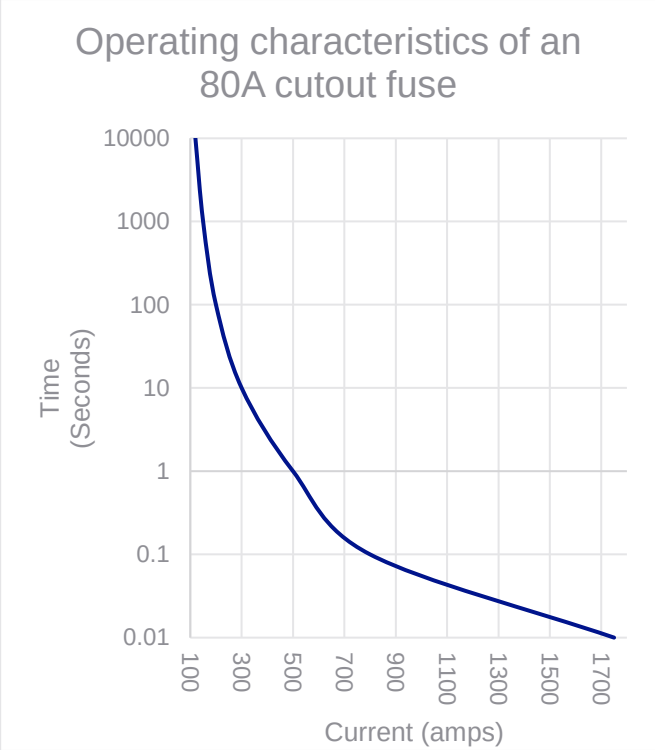
National Grid Electricity Distribution (NGED) has made the decision to standardise the fuse installed within domestic style cutouts to 80A.

Historically domestic and small commercial connections that have been provided to customers may have incorporated a cutout fused at 100A. This was deemed acceptable where the installation was terminated within an area where the temperature was less than 20°C during the peak demand period and where the earth fault loop impedance was no greater than 0.38 ohms. Although the fuse had a nominal rating of 100 amps, customers would seldom consume a power level near the maximum permitted and would typically have a much lower load.

However, with the inclusion of low carbon technology where the load profile is moving from 'cyclic' to 'sustained' and where the peak power consumption has moved from the winter to any season. NGED has made the decision to reduce the fuse size installed within domestic style cutouts to ensure that the current flow is restricted to within the thermal capacity of the installed equipment.

How will this affect installations?

Although NGED is not going to offer connections incorporating a fuse of 100A within domestic style cutouts, a customer should see no difference with the short term capacity made available with a supply provided through an 80A fuse. This is because an 80A fuse is capable of permitting the flow of up to 100A for up to four hours.



The characteristics of an 80A fuse can be seen above.

Why has NGED made this change?

The change has been brought about due to concerns that a 100A fuse will permit a greater current flow than that of equipment ratings (DNO, suppliers equipment and consumers tails) and that the Distribution Network Operator fuse should not be used by the customer as the primary method of

limiting the demand within an installation. The primary function of the fuse is to disconnect the premises in the event of a fault occurring between the DNO and customers apparatus.

What if a customer / installer requests a 100A fuse?

NGED will provide a connection incorporating an 80A fuse because there is sufficient diversity within the installation to not operate the fuse for a loading condition.

When will this change come into force and will NGED honour existing schemes?

The change to policy will be implemented on 1st June 2023. Where a connection has been designed prior to this date, the connection may incorporate 100A fuse/s where the connection complies with the relevant design requirements. Any connection utilising a domestic style cutout that is requoted after the above date will incorporate up to an 80A fuse.

What if a customer requests a capacity greater than 23kVA (100A)?

Where a customer requires a connection with a capacity greater than 23kVA, the connection will be provided via a three phase asset where the phases are fused at 60A. Split phase connections may incorporate 80A fuses.

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Asset replacement

When work is taking place on domestic style cutouts (replacement or maintenance), where 100A fuses are found after the implementation date of this document, these fuses will be replaced with 80A fuses.

Concerns with grading of protection

NGED has determined that there is little risk of the policy change impacting on the grading between DNO and customer equipment. A fault within a domestic premises will primarily be disconnected by lower rated customer owned circuit breakers which are protecting individual circuits.

Upgrading to 80A

Where existing customers have a supply which is not sufficiently capable of providing 80A / 18.4kVA and where the request for an increased demand is due to the inclusion of low carbon technology, NGED will upgrade the fuse or service conductors at no cost to the customer. Existing cutouts may have the fuse increased to 80A where the supplying cable and earth fault loop impedance are deemed to be suitable (i.e. $\leq$ 0.52 ohms). *This may exclude multiple occupancy buildings.*

Definitions

Cyclic – Where the maximum demand of a connection is only seen for short periods of time within a 24 hour period and where there is sufficient time between peak demands for equipment to return to the ambient temperature.

Sustained – Where the demand of a connection is more prolonged and where there is insufficient time between peak demands to ensure that equipment returns to the ambient temperature.