



Life expectancy of Schneider electrical distribution products.

Schneider is the foremost expert in the development of electrical distribution products and systems. We invest a large percentage of our turnover in research and development to produce new products to anticipate the growing demands of our customers. It is necessary to anticipate these needs so that we may have the products on the market when the need is recognised.

This policy inevitably means that we will regularly introduce new ranges of products and will replace ranges that no longer meet the needs of the market. These changes are very often necessary to keep up with the changes in national and international standards. In addition, external factors such as environmental legislation restricting or prohibiting certain materials or processes have a major influence on the products and their production.

Our strong position in the market means that when product ranges are replaced we recognise that there are a large number of such products in service and likely to remain so for a number of years. Positive action is taken to ensure that these products can be supported in service with all the necessary spare parts and service.

It is Schneider's policy to support such products by maintaining spare parts and product support for a period of ten years from the time that the range is superseded. This period would not apply if there were a new or existing product that is an exact form fit allowing full interchangeability. In particular instances, where the installed base requires special consideration, this period may be varied.

Inevitably there will come a time when it is more economical to replace the complete product rather than to keep the existing product in service. Product development usually means that the replacement has an improved performance.

Electrical distribution systems tend to be passive systems, distributing electrical power to the various loads of a building or other installation. Only when circuits are overloaded or when faults occur is the protection equipment called upon to operate and protect against fire and other damage.

During the life of distribution equipment there will be a need to add circuits or otherwise modify the equipment. Additional circuit breakers may be required. The user assumes that these components are available from a distributor or manufacturer. If the original equipment is more than 10 years old there is a chance that the components are no longer available. One solution is to change the circuits around to achieve the required configuration. There is a limit to the number of times such changes can be made.

Consideration needs to be given to changing distribution equipment when the component breakers are no longer readily available or their cost becomes disproportionately high.

Changes upstream to distribution equipment may have an effect on the prospective short circuit current at the incoming terminals. It will be necessary to check that the equipment is suitable for the new duty.

Circuit breakers are designed to protect against overloads and short circuit faults. The relevant product standard specifies the tests that they must be capable of passing. In cases of short circuit the circuit must be examined to determine the magnitude of the fault current. If the fault current is at or near to the rated breaking capacity of the breaker it may be put back into service but should be replaced as soon as possible.

A breaker will be capable of withstanding a number of low-level faults without damage. Any internal damage to the breaker will show up as a tendency to trip at a current below its rated current. In such circumstances the breaker should be replaced, the circuit examined for faults and the breaker checked for correct application.

All circuit breakers have a design switching endurance. For example a 100A moulded case breaker has a declared life of 50,000 mechanical on-off operations or 30,000 operations at full load. It is most unlikely that a breaker will be operated at a fraction of this number of operations in its lifetime unless it is in a very special application. Switching a breaker twice a day for 40 years equates to 29,200 operations.

There are components in distribution equipment that can be considered as active components. Many lighting circuits contain contactors that will be regularly switched on load. When suitably sized for the load the switching duty can be up to 200,000 operations. At 20 times per day this is equivalent to 27 year's life.

Schneider Electric Projects & Services

Our involvement need not end at product supply. We can continue to provide full support throughout the lifecycle of your installation, helping to ensure that it remains reliable, efficient and cost-effective. In order to provide assistance in prolonging the life expectancy we can provide additional services such as;

- ✓ Service contracts - bespoke contracts to provide reactive and routine maintenance, including technical support (24/365).
- ✓ Extended product warranties.
- ✓ Spares and managed spares contracts - flexible options for stocking spare parts enable efficient and fast delivery at minimum cost.
- ✓ Repair and refurbish faulty or ageing equipment.
- ✓ Equipment upgrade in line with the latest technological advances to increase reliability and performance of the system.

Summary

The life expectancy of electrical equipment is affected by many factors. So as a general statement we can state that panelboard and its encapsulated chassis useful life is dependent upon the following factors:

- 1) the environment in which it is installed,
- 2) the manner in which it has been used (it must be used in the manner in which it was designed to be used),
- 3) the degree of maintenance provided, and
- 4) the number of operations the devices installed have experienced.

We undersign, Schneider Electric, declare that, the life expectancy of our L.V. Switchboard could be in excess of 30 years in normal service conditions as per AS/NZS 61439.1 clause 7.1.

The occurrence of faults is generally unpredictable and this is a major input to the decision to replace equipment. Equally, on-going modifications in an installation will require additional components. The availability of these parts and their price will influence the decision to modify or replace equipment or individual components.

It is assumed that all equipment is installed and maintained by competent personnel in accordance with the appropriate statutory regulations and codes of practice. e.g. Wiring Rules, AS/NZS 3000 etc.