



Three-Phase Motors

APPLICATION

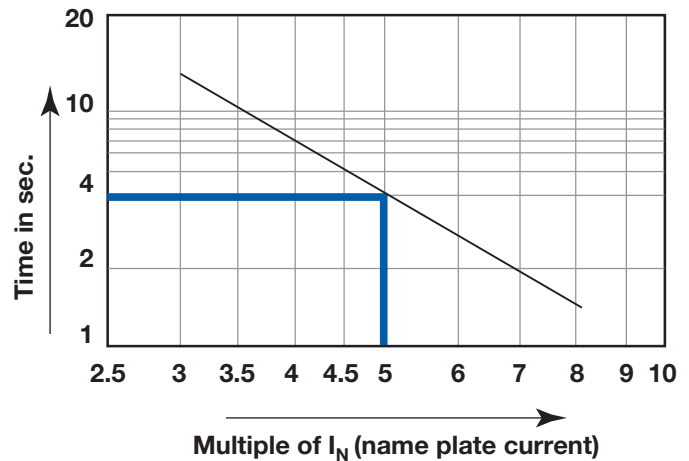
Overload Protection of Three-Phase Submersible Motors

Motor Protection, Selection of Thermal Overload Relays

Characteristics of submersible motors differ from standard motors and special overload protection is required. In order to provide sufficient protection against overload and locked rotor, the relay has to be of the following characteristic:

- Conform to European standards e.g. VDE providing trip time <math>< 10\text{ sec.}</math> at 500% I_N (name plate current) based on cold bimetal
- Protection against single phasing
- Must trip at 120% I_N (name plate current)
- Temperature compensated to avoid nuisance tripping

The specific information can be obtained directly from the manufacturer's catalog. They are available from a Current/Time curve as shown on the right.



Overload setting, DOL and $Y\Delta$ start

For DOL, max. at full current I_N shown on nameplate.

For $Y\Delta$, relay must be incorporated in the delta circuit for adequate protection on Y start and set at $I_N \times 0.58$.

Recommended setting for all applications is the measured current value at duty point.

Setting $> I_N$ is not allowed.