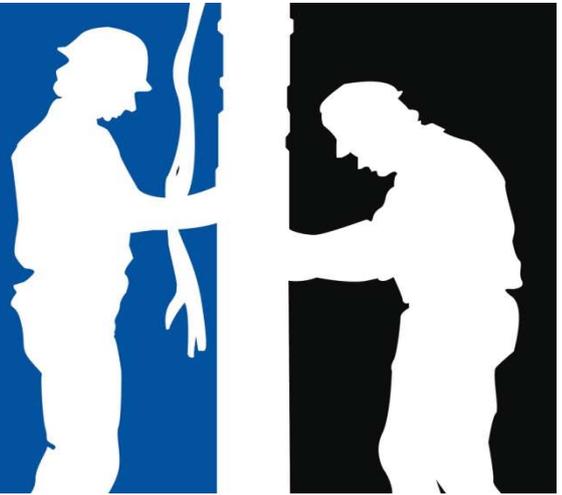


FRANKLIN AID



Franklin Electric



Franklin Application/Installation Data *Europe*

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In this and coming editions of the Franklin AID we want to refresh the knowledge of the correct motor protection.

Overload Protection of 3 Phase Submersible Motors

The characteristics of submersible motors are different from standard, above ground motors. Submersible motors require special overload protection.

In order to properly protect a three-phase submersible motor, ambient-compensated, quick trip overload protection must be used. Most common devices are adjustable overload protectors, as long as they are ambient-compensated and quick-trip.

Franklin Electric's Submonitor and VFD units provide a similar protection.

Ambient compensated:

Ambient-compensated overload protection must be used to maintain protection in both, high and low air temperature areas. Three-phase pump panels are typically suitable for indoor and outdoor applications within temperatures of -10°C to 50°C (+14°F to +122°F).

IMPORTANT: Pump panels should never be mounted in direct sunlight or high temperature locations, as this will cause unnecessary tripping of overload protectors.

A ventilated enclosure, preferably painted white to reflect heat, is recommended for outdoor high temperature locations. Additionally a sunroof should be installed.

Quick-Trip: If the motor is stalled or the rotor shaft cannot turn, the overload protector must trip quickly to protect the motor's windings. We specify that the overload must trip within max. 10 seconds with 500% normal current I_N (Class 10).

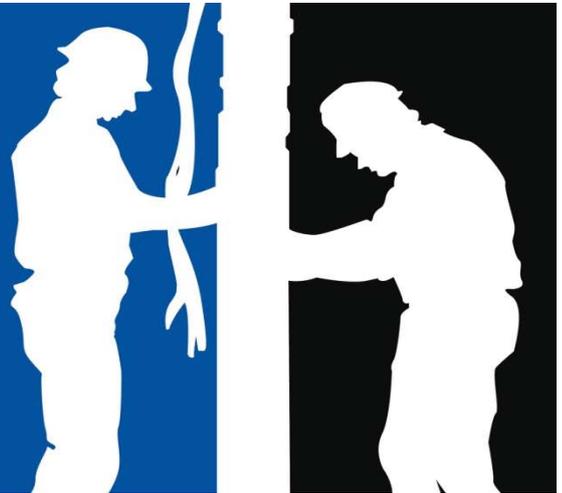
Since there are standard trip overload units in the market with different trip times (for example 20 seconds) it is important to verify that **Quick trip overload protection devices are being used.**

Devices shall comply with EN 60947-4-1 (VDE 0660 T. 102)

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Recommendations for the overload setting:

1. Overload protection units must be selected to carry at least equal or higher Amps than the desired nominal Amps (I_N) of the submersible motor.
2. Before first start of the pump-set the tripping point must be set to nominal Amps (I_N) of the submersible motor. Values can be found in the motor name plate or in Franklin Electric's documentations.
3. The overload protection must be reset/adjusted (close to duty point), if the motor (pump-set) shows lower amps than I_N in operation. This helps to have a more sensitive protection.
4. Setting the overload trip point above nominal Amps (I_N) of the submersible motor may result in overloaded/overheated windings.

The next Franklin Electric AID will focus on different overload protection devices and the recommended wiring/placing of an overload protection in the electric wiring system.

SEMINARS IN THE FRANKLIN *TECH* TRAINING CENTER 2014

In 2014 we will also provide seminars specifically tailored to your needs. Please register by email: field-service@franklin-electric.de or by telephone: +49 (0)6571 105 – 0.