

RACO Motor Heating Circuit



- No Special Motor Required
- Field Adjustable
- Retrofit on existing Installation Possible
- Inexpensive Solution
- Easy to Install

ACTUATOR MOTOR HEATER

Introduction

Under very cold or high humidity environmental conditions heating of actuator components may be required to avoid the formation of water condensation on electrical components or the risk of freezing of movable parts. The below described solution combines the standard operational forward/ reverse functionality with a standstill motor heating circuit. Hereby a reduced frequency setpoint signal is enabled in the VFD to generate, via the volt/frequency curve relationship, a low level output voltage to the motor. To prevent the motor from turning, only two phases of the motor are connected during stand still heating. Dependent on the physical motor size, ambient conditions and desired minimum motor temperature, the required power consumption can range from 30W up to 200W during stand still



Electrical Design

A variable frequency drive (VFD) is utilized to provide the power connection between the power source and the actuator motor. Typically the extend and retract speed of the actuator is set to a fixed output frequency, 60 Hz, which will provide three phase full line voltage to the motor. The direction of the actuator movement is controlled by programmable binary input signals, forward, reverse and stop. An additional input signal is utilized to enable the stand still heating of the motor. heating.

As required by the user, the motor heating circuit can be turned on and off via a selector switch. The design is very flexible and takes full advantage of all other VFD functions:

> Soft Start Variable actuator speed Overload protection Actuator Thrust Limiting Dynamic Braking

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