

# SUBMERSIBLE MOTOR ENGINEERING



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## RECOMMENDED PROTECTION SETTINGS FOR SUBMERSIBLE MOTORS

**23/7/15**

**Maximum Motor Winding Temperature for water filled motor – 80 deg.C.**

**Maximum Current Unbalance – 5%.**

**Maximum Overload current above nameplate current + 5%. (We recommend that the overload is set to 5% above the actual current measured when the motor is commissioned. If the current increases the motor will trip which will alert the operator to the fact that something has changed).**

**Current Underload – 10% below current during commissioning. This may need to be increased depending on how the motor is operated. (We believe that the operator should be alerted when the load changes).**

**Over Voltage – 10%.**

**Under Voltage – 10%.**

**Voltage Unbalance – 2%.**

**SME recommend that ALL water filled motors should have at least one PT100 installed in the motor. From experience we know that the hottest spot in most water filled motors is in the end winding on the Drive End. If a PT100 is installed and connected to a display/protection unit the operator can monitor the actual temperature in the motor. There are a lot of variables that effect the winding temperature, such as current unbalance, load, ambient water temperature, etc. and it is impossible to predict exactly what the winding temperature will be in operation. Provided the winding temperature is below 80 deg. C. the operator can be confident that the motor will operate reliably even if there are problems with the site conditions.**

***SUBMERSIBLE ELECTRIC MOTORS -  
DESIGN, MANUFACTURE, SALES & SERVICE***