

## ENGINEERING DATA SHEET

<i>Thermal Cut Outs</i>		
<b>Date</b>	<b>Supersedes</b>	<b>No.</b>
<b>04/01/99</b>	<b>10/01/69</b>	<b>11E</b>

### 1. Operation

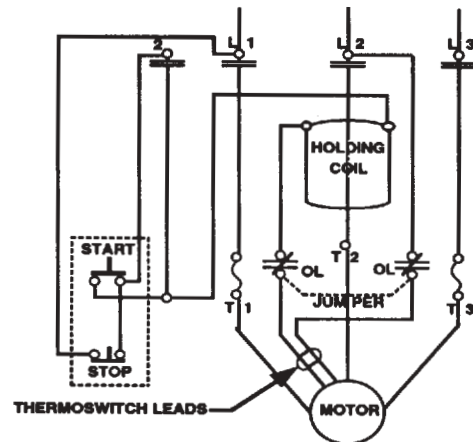
Unless otherwise specified, all Chempumps are fitted with thermal cut-outs. The thermal cut out (TCO), a thermal-sensing device which is wired into the holding coils of the magnetic starter, protects the motor windings against excessive heat build-up. The switch opens and closes at pre-set temperatures. Various temperature limits are available depending on the process conditions or electrical classification.

For maximum thermal cut out contact life, it is recommended that the 115 volt holding coil circuit be used where possible and that the holding coil current be kept to a minimum. Maximum holding coil currents are as follows:

115 volt	3.1 amps
230 volt	1.6 amps
460 volt	0.8 amps
575 volt	0.6 amps

### 2. Installation

The thermal cut out, a metallic device, is wrapped in insulation tape and then mounted on the front end of the motor windings where winding temperatures are highest. It is to be wired in series with the holding coil in the starter box by removing a jumper as shown.



### 3. Protection

The thermal cut out takes the motor out of the line when winding temperatures become excessive. This device, in addition to properly-sized heaters in the starter, will give adequate motor protection. The heaters cut out the motor when amp draw exceeds prescribed limits.

To protect the windings against extremely fast temperature rises, such as a locked rotor condition, quick-trip type heaters are recommended for installation in the starter. The thermal cut out, although it is a thermal sensing device as noted above, does not respond to these fast temperature rises as quickly as the quick-trip type heaters react to the resultant excessive amp draw.