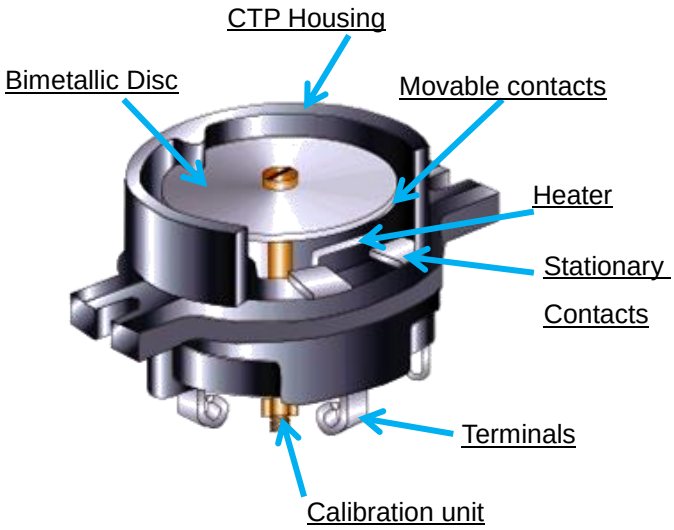
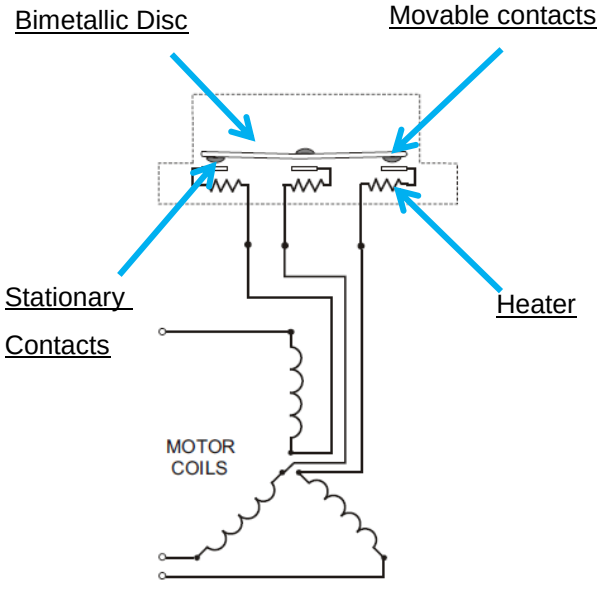
Motor Protectors: Circle Thermal Protector

Circle Thermal Protector (CTP) is a type of auto-resetting motor protection device provided in all the three phase Tsurumi pumps with Direct-on-Line starting. CTP protects the pumps from overheating and cuts the power supply to the pump, when it senses unusual overheating or unusual current being drawn by the pump.

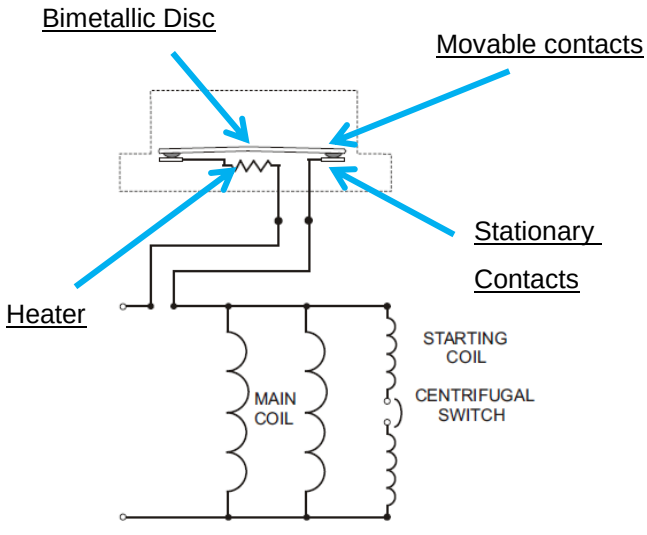
CTP prevents locked rotor operation due to impeller blockage, or rotating parts failure. It also prevents damage to the pumps in case of supple voltage phase imbalance or low voltage conditions, when the current may rise rapidly.



The figure above is an illustration of a CTP showing its major components. The terminals are attached to the motor leads, via which the current flows through the CTP. The bi-metallic disc is the part that deforms and moves to act as a switch. In its normal state the movable contacts attached on the bimetallic discs stays connected with the stationary contacts to keep the circuit closed. However, when a predefined temperature is reached, the CTP is actuated by deformation of the bimetallic discs which breaks the connection between the stationary and the movable contacts. Similarly, when high temperature flows through the CTP, the heater increases the temperature and actuates the CTP. When the temperature of the bimetallic disc drops to reset temperature, it returns to its normal position and resets the CTP allowing the motor to run.



THREE PHASE MOTOR



SINGLE PHASE MOTOR

This is a guide to understand coding of CTP provided with Tsurumi pump. This guide will also allow provide the information regarding the actuating temperature and the reset temperature of the CTP.

KA 314	DA	D	P	00	H
Type	Bimetal Code	Actuating Temperature	Reset Temperature	Heater 00= No Heater	Remarks

Actuating and Reset Temperature		
CODE	°C	°F
A	135	275
B	140	284
C	145	293
D	150	302
F	155	311
G	160	320
I	165	329
J	50	122
K	55	131
L	60	140
M	65	149
N	70	158
O	75	167
P	80	176
Q	85	185
R	90	194
S	95	203
T	100	212
U	105	221
V	110	230
W	115	239
X	120	248
Y	125	257
Z	130	266