

Application Information - Thermistor Protection Relays Provide additional motor protection and should be used to supplement a conventional current sensing overload relay.

LT3S thermistor protection units continuously monitor the temperature of the machines to be protected (motors, generators, etc.) by means of PTC thermistor probes embedded in the machine windings.

If the nominal operating temperature of the probes is reached, they convert the rapid increase in resistance into a switching function which can be used to switch off the machine or signal a fault (see "Thermistor probes" below).

Accidental breaks in the supply circuits of the thermistors are also detected.

Electromagnetic compatibility

Conforming to "Electromagnetic compatibility" directive, draft standard EN 500.82.2

Resistance to electrostatic discharge (conforming to IEC 1000-4-2)

Level 3

Resistance to fast transients (conforming to IEC 1000-4-4)

Level 3

Susceptibility to electromagnetic fields (conforming to IEC 1000-4-3)

Level 3

Surge resistance 1.2/50 - 8/20 (conforming to IEC 1000-4-5)

Level 4

Immunity to microbreaks and voltage drops (IEC 1000-4-11)

Suitable for use with variable speed controllers

Thermistor probes

Thermistor protection relays provide additional motor protection and should be used to supplement a conventional current sensing overload relay.

Range of most commonly used PTC thermistor probes: from 90 to 160 °C, in steps of 10 °C.
Curve $R = f(\theta)$, characteristic of a PTC thermistor probe is defined by standard IEC 34-11.

The choice of PTC thermistor probe to be incorporated in the motor winding depends on the insulation class, the type of motor and the most suitable location for the probe. This choice is usually made by the motor manufacturer or the motor rewinder, who have all the necessary information

Application example

Insulation class of rotating machines conforming to IEC 34-11-2 (S1 duty)	NOT Nominal operating temperature °C	Temperature at which rapid increase in resistance occurs Probes used for	
		Alarm °C	Fault °C
A	100	100	110
B	110	110	120
E	120	120	130
F	140	140	150
H	160	160	170

LT3 Protection Relays
Thermistor Protection

Thermistor Protection To Monitor The Temperature of Motor Windings,
Transformer Laminations etc..



LT3SE00M



LT3SA00M



LT3SM00M

Protection Relays (without fault memory).

Units with automatic reset with thermistor short-circuit detection				
Voltage		Output contact	Part Number	Weight kg
$\sim$ 50/60 Hz	115 VAC	N/C	LT3SE00F	0.220
	230 VAC	N/C	LT3SE00M	0.220
$\equiv$	24 VDC	N/C	LT3SE00BD	0.220

Units with automatic reset with thermistor short-circuit detection
On front face : fault and voltage signalling indicator.

Voltage		Output contact	Part Number	Weight kg
$\sim$ 50/60 Hz	115/230 V	N/C + N/O	LT3SA00M	0.220
	24/48 V	N/C + N/O	LT3SA00ED	0.220
$\sim$ 50/60 Hz or $\equiv$	24...230 V	2 C/O	LT3SA00MW	0.220

Protection units (with fault memory)

Note: Thermistor protection relays provide additional motor protection and should be used to supplement a conventional current sensing overload relay.

Units with manual reset with thermistor short-circuit detection.

On front face :
- fault and voltage signalling LED,
- Test and Reset button.

Voltage		Output contact	Part Number	Weight kg
$\sim$ 50/60 Hz	400 V	N/C + N/O	LT3SM00V	0.220
	24/48 V	N/C + N/O	LT3SM00E	0.220
	115/230 V	N/C + N/O	LT3SM00M	0.220
$\equiv$	24/48 VAC	N/C + N/O	LT3SM00ED	0.220
$\sim$ 50/60 Hz or $\equiv$	24...230 VAC	2 C/O	LT3SM00MW	0.220

