

**Thermistor Protection Relay  
with reset latch (non-volatile) and  
monitoring of short circuits in  
sensors**

## Description

The Z1MN is a thermal overload relay in accordance with DIN EN 44 081 for PTC-thermistors. It is designed for direct temperature monitoring on motors and machinery, including hazardous locations.

- 22.5 mm Z-80 Housing, DIN-Rail Mounting
- 1 Measuring Circuit
- 2 LED Indicators:
  - Mains Indication ( $U_B$ )
  - Status / Over-Temperature
- Reset Switch
- Relay Output: 2 C/O
- Failsafe Principle

## Special Features

- Reset latch through bipolar output relay:
  - non-volatile
  - fast-energising
- Reset after over-temperature through built-in or external switch, only when  $U_B$  supply is on

- Classification:



## Order Reference

**Z1MO/220 V~**

Operating Voltage  $U_B$   
Reset Latch (non volatile)

Z-80 Range  
Thermistor Protection Relay

## Operation

Operating Voltage  $U_B$  = on

On-position,  $\vartheta < NRT$  (3 k $\Omega$ ):

- output relay switches to operating condition after ca. 200 ms
- LED status indicator = on

Over-temperature,  $\vartheta > NRT$ :

- after  $\approx 100$  ms the output relay switches to rest condition

Reset,  $\vartheta < R_{Output}$  (1.5 k $\Omega$ ):

Reset (only when supply = on) through:

- Reset Button
X1 - X2 - Close
(eg. external reset switch)

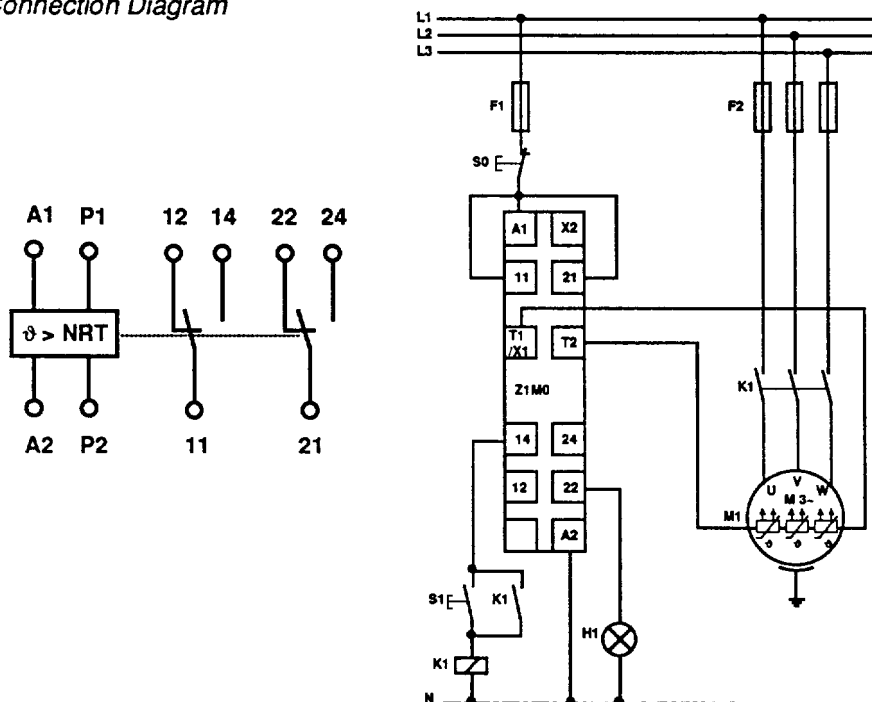
## Rest Condition

- Contact 11-12/21-22 = closed
- Contact 11-14/21-24 = open
- LED indicator = off

## Operating Condition

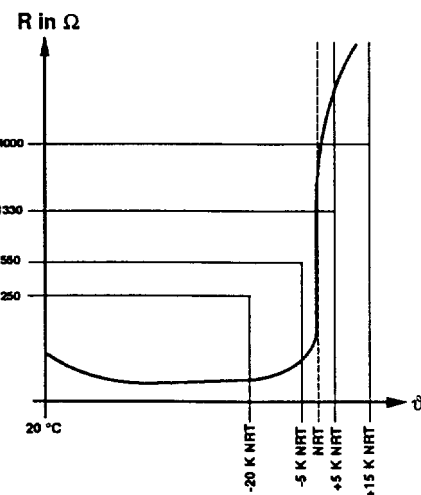
- Contact 11-12/21-22 = open
- Contact 11-14/21-24 = closed
- LED indicator = on

## Connection Diagram



## Technical Details, Z1MO (for general technical details see appendix)

Operating Voltage $U_B$	24, 42, 48, 110, 120, 127, 220, 240 V~; 24 V=
Power Consumption	$U_B \leq 2VA/2W$ , 50VA/W during fault signal
Switch-off Resistance $R_{off}$	$\geq 3 k\Omega \pm 20\%$ with $U_B$ incl. tolerances
Switch-on Resistance $R_{on}$	$< 1.5 k\Omega$ with $U_B$ incl. tolerances
Operating Temperature $T_a$	-15 to 55°C
Fault Signal/Storage Reaction Time	$\leq 100$ ms
Reaction Time when $U_B$ supply is on	$\leq 200$ ms
Recovery Time	$\leq 100$ ms
Relay Contacts	2 C/O AgCdO
Switching Capability	250 V~/0.1-5 A/1100 VA ( $\cos \varphi 1$ ) 250 V~/0.1-1 A/250 W (spark suppress)
Maximum Switching Current	8 A~
Contact Fuse Protection (VDE 0660 Pt.2)	6 A quick acting/slow acting



Typical cycle  $R(\vartheta)$  of PTC-thermistors for thermistor protection in accordance with DIN 44 081.