

# Zelio Control - Monitoring & Control Relays

Temperature control relays for elevator machine rooms and 3-phase supplies

RM35ATL, RM35ATR, and RM35ATW



RM35AT●0MW

## Presentation

Measurement and control relays RM35ATL0MW, RM35ATR5MW and RM35ATW5MW are designed for monitoring the temperature in elevator machine rooms, in compliance with directive EN81.

Functions	RM35ATL0MW	RM35ATR5MW	RM35ATW5MW
Overtemperature (34...46 °C)			
Undertemperature (-1...11 °C)			
Phase sequence			
Phase loss			

- Function performed
- Function not performed

These control relays allow:

- PT100 input
- Adjustable control around 5 °C and 40 °C
- Independent adjustment of high and low thresholds
- Possibility of integrated phase control
- Clip-on mounting on a  $\bar{\text{U}}$  rail

They feature:

- A sealable cover to help protect the settings
- A control status indicator LED

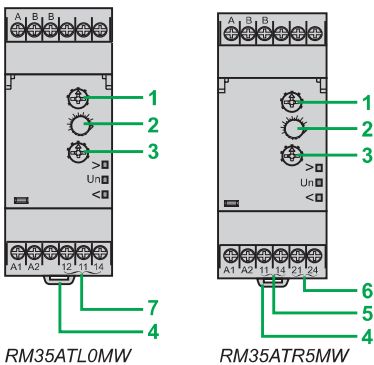
## Applications

- Temperature control for elevator machine rooms

## Description

### RM35ATL0MW, RM35ATR5MW

- 1 High temperature threshold setting potentiometer  $\theta >$
- 2 Potentiometer for adjustment of time delay on crossing of temperature threshold  $T_t$
- 3 Low temperature threshold setting potentiometer  $\theta <$
- 4 Spring for clip-on mounting on 35 mm/1.38 in.  $\bar{\text{U}}$  rail
- 5 High temperature threshold contact (11-14)
- 6 Low temperature threshold contact (21-24)
- 7 High and low temperature threshold contacts



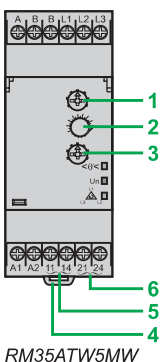
RM35ATL0MW

RM35ATR5MW

- > Yellow LED: indicates relay output status (high temperature threshold)
- Un Green LED: indicates that supply to the product is on
- < Yellow LED: indicates relay output status (low temperature threshold)

### RM35ATW5MW

- 1 High temperature threshold setting potentiometer  $\theta >$
- 2 Potentiometer for adjustment of time delay on crossing of temperature threshold  $T_t$
- 3 Low temperature threshold setting potentiometer  $\theta <$
- 4 Spring for clip-on mounting on 35 mm/1.38 in.  $\bar{\text{U}}$  rail
- 5 Temperature relay contact (11-14)
- 6 Phase relay contact (21-44)



RM35ATW5MW

- < $\theta$ > Yellow LED: indicates temperature relay output status **R1**
- Un Green LED: indicates that supply to the product is on
- $\bar{\text{U}}$  Yellow LED: indicates phase relay output status **R2**

## Operating principle

Temperature control relays for elevator machine rooms are designed to monitor the stated temperature between 5 °C and 40 °C in compliance with directive EN81.

### Function Diagram

- Power supply off
- Power supply on
- Output 11-14, 21-24 open
- Output 11-14, 21-24 closed

# Zelio Control - Monitoring & Control Relays

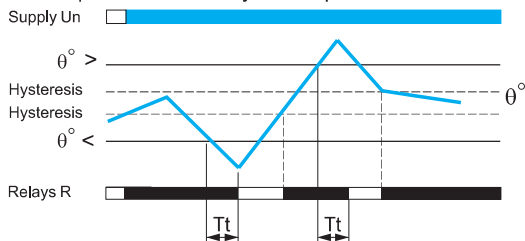
Temperature control relays for elevator machine rooms and 3-phase supplies  
RM35ATL, RM35ATR, and RM35ATW

## Operating principle (continued)

### RM35ATL0MW

#### Temperature control by PT100 probe

Temperature control by PT100 probe



After a delay on pick-up after energization, and for as long as the temperature monitored by the PT100 probe remains between the two thresholds set on the front panel, the output relay is closed and the yellow LEDs are on.

When the temperature crosses one of the threshold settings on the front panel (high or low threshold), the time delay set on the front panel ( $T_t$ ) is activated. The yellow LED corresponding to the threshold crossed (low or high) flashes.

At the end of the time delay, if the temperature is still outside the threshold setting, the output relay opens and the yellow LED corresponding to the threshold crossed goes out. The output relay closes instantly (within the response time on disappearance of a fault) when the temperature returns within the window of the two threshold settings on the front panel, plus the fixed hysteresis.

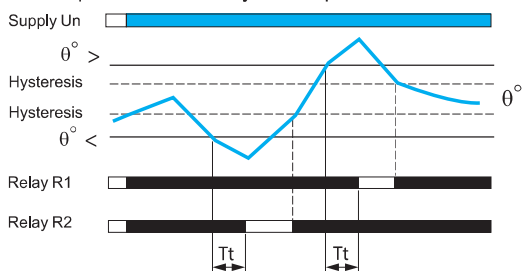
If the PT100 probe is incorrectly wired (missing or short-circuited) the relay is open and the 3 LEDs flash.

**Note:**  $T_t$ : time delay after crossing of the temperature threshold (adjustable on front panel)

### RM35ATR5MW

#### Temperature control by PT100 probe

Temperature control by PT100 probe



After a delay on pick-up after energization, and for as long as the temperature monitored by the PT100 probe remains between the two threshold settings on the front panel, the output relays are closed and their yellow LEDs are on.

When the temperature crosses one of the threshold settings on the front panel (high or low threshold), the time delay set on the front panel ( $T_t$ ) is activated. The yellow LED corresponding to the threshold crossed (low or high), flashes.

At the end of the time delay, if the temperature is still outside one of the threshold settings, the corresponding output relay opens and the yellow LED corresponding to the threshold crossed goes out.

The output relay closes instantly (response time on disappearance of a fault) when the temperature returns within the window of the two threshold settings on the front panel, plus (or minus) the fixed hysteresis.

If the PT100 probe is incorrectly wired (missing or short-circuited) the relays are open and the 3 LEDs flash.

**Note:**  $T_t$ : time delay after crossing of the temperature threshold (adjustable on front panel)

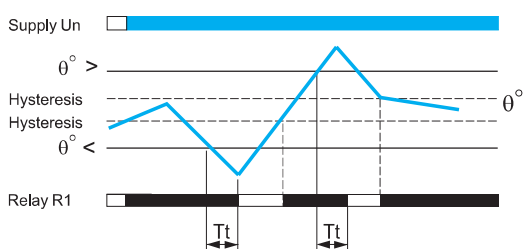
### RM35ATW5MW

#### Temperature and phase control

Temperature control by PT100 probe

Sequence of phases L1, L2, and L3

Phase loss



After a delay on pick-up after energization, and for as long as the temperature monitored by the PT100 probe remains between the two threshold settings on the front panel, the temperature relay R1 is closed.

When the temperature crosses one of the threshold settings on the front panel (high or low threshold), the time delay set on the front panel ( $T_t$ ) is activated. The yellow temperature LED flashes. At the end of the time delay, if the temperature is still outside the threshold setting, the output relay R1 opens and the yellow LED goes out.

The output relay R1 closes instantly when the temperature returns to within the window of the two threshold settings on the front panel, plus or minus the fixed hysteresis.

The device also monitors the correct sequence of phases L1, L2, and L3 of the 3-phase supply and total phase loss, even in the case of phase regeneration (< 70%).

After a delay on pick-up after energization, and for as long as phase presence and phase sequence are correct, relay R2 and the "phase" LED are On. When a fault appears, the "phase" relay opens and the "phase" LED instantly goes out (response time on appearance of a fault).

When the fault disappears, the phase control relay and LED are activated (response time on disappearance of a fault).

If the PT100 probe is incorrectly wired (missing or short-circuited) relay R1 is open and LED R1 flashes.

**Note:**  $T_t$ : time delay after crossing of the temperature threshold (adjustable on front panel)

## References



RM35ATL0MW



RM35ATR5MW

Function	Supply voltage	3-phase control	Output	Reference	Weight
	V	V			kg/lb
■ Overtemperature: 34...46 °C	24...240	—	1 CO	RM35ATL0MW	0.130/ 0.287
■ Undertemperature -1...11 °C	~		5 A		
			—	RM35ATR5MW	0.130/ 0.287
			2 NO 5 A		
■ Overtemperature: 34...46 °C	24...240	208...480	2 NO	RM35ATW5MW	0.130/ 0.287
■ Undertemperature -1...11 °C	~	~	5 A		
■ Phase sequence					
■ Phase loss					