Zelio Control – Monitoring & Control Relays
Multifunction 3-phase supply control relays
RM35TF

RM35TF30

Presentation

The RM35TF30 control relay monitors the following on 3-phase supplies:

Functions	RM35TF30
Sequence of phases L1, L2, and L3	
Phase loss	
Overvoltage and undervoltage in window mode	
Asymmetry	

■ Function performed
■ Function not performed

These control relays:
■ Accept different nominal 3-phase voltages: 220…480 V ∿
■ Monitor their own power supply measured as a true rms value
■ Are designed for clip-on mounting on a ⊔ rail

They feature:
■ A sealable cover to help protect the settings
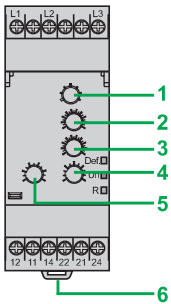■ A control status indicator LED

Applications

■ Control for connection of moving equipment (site equipment, agricultural equipment, refrigerated trucks)
■ Control against reverse motor operation (lifting, handling, elevators, escalators, etc.)
■ Control of sensitive 3-phase supplies
■ Emergency power supply switching in abnormal conditions

RM35TF

Def. *Yellow LED: indicates fault present status (on for asymmetry, flashing for overvoltage, and undervoltage)*

Un *Green LED: indicates that supply to the product is on*

R *Yellow LED: indicates relay output status*

Description
RM35TF

1 Voltage range selector switch (220, 380, 400, 415, 440, and 480 V ∿)

2 Overvoltage setting potentiometer **>U**

3 Undervoltage setting potentiometer **<U**

4 Asymmetry threshold setting potentiometer **Asy**

5 Time delay adjustment potentiometer **Tt**

6 Spring for clip-on mounting on 35 mm/*1.38 in.* ⊔ rail

Operating principle

3-phase supply control relay RM35TF30 monitors:
■ Correct sequence of phases L1, L2, and L3
■ Phase loss
■ Undervoltage and overvoltage in window mode

Function Diagram

☐ Output 11-14, 21-24 open
■ Output 11-14, 21-24 closed

| Un		220 V	380, 400, 415, 440 V	480 V
Voltage threshold (%)	<	- 12…- 2	- 20…- 2	- 20…- 2
	>	+ 2…+ 20	+ 2…+ 20	+ 2…+ 10

■ Asymmetry from 5…15% of the supply voltage Un
■ LED indication for relay output status and fault detection (except phase disconnection)
■ Voltage switch operation:
☐ Set the switch to the 3-phase supply voltage Un.
☐ The position of this switch is only taken into account on energization of the device.
☐ If the switch position is changed while the device is operating, all the LEDs flash, but the product continues to operate normally with the voltage selected at the time of energization preceding the change of position.
☐ If the switch is returned to the original position selected prior to the last energization, the LEDs return to their normal state.

Schneider Electric

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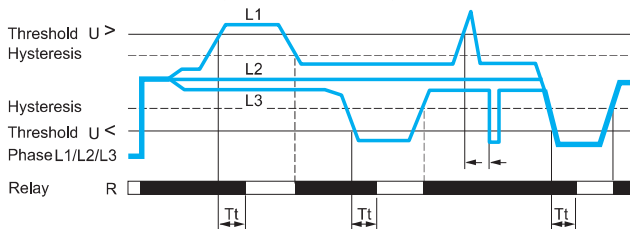## Operating principle (continued)

RM35TF

Phase + Overvoltage + Undervoltage in window mode

- □ Sequence of phases L1, L2, and L3
- □ Phase loss
- □ Asymmetry
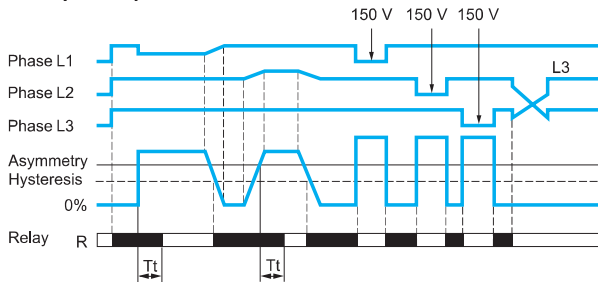
- □ Control of overvoltage and undervoltage in window mode. **<U<**

The relay monitors:
- □ correct sequence of the three phases
- □ phase loss of at least one of the three phases (U measured < 150 V)
- □ asymmetry, adjustable from 5 to 15% of Un
- □ the undervoltage, adjustable from - 2…- 20% of Un (- 2…- 12% in the range 3 x 220 V $\sim$)
- □ the overvoltage, adjustable from + 2…+ 20% of Un (+ 2…+ 10% in the range 3 x 480 V $\sim$ due to the maximum voltage 528 V $\sim$)

■ If a sequencing or phase loss fault is detected, the relay opens instantly.

■ If an asymmetry or voltage fault is detected, the relay opens at the end of the time delay set by the user.

■ On energization of the device with a detected measured fault, the relay stays open.

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

Reference

RM35TF30

Function	Rated 3-phase supply voltage	Output	Reference	Weight
	V			**kg/*lb***
■ Phase sequence ■ Phase loss ■ Asymmetry ■ Undervoltage and overvoltage in window mode	220…480 $\sim$	2 CO 5 A	**RM35TF30**	0.130/ *0.287*