

# Bảng thông số sản phẩm

Thông số kỹ thuật



3-phase control relay, Harmony Control Relays, 8A, 2CO, overfrequency and underfrequency, 208~480V AC

RMNF22TB30

## Main

|                            |                                                                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Range Of Product           | Harmony Control Relays                                                                                                                        |
| Relay Type                 | Control relay                                                                                                                                 |
| Product Or Component Type  | NFC control relay                                                                                                                             |
| Network Number Of Phases   | 3 phases                                                                                                                                      |
| Relay Name                 | RMNF22                                                                                                                                        |
| Relay Monitored Parameters | Phase sequence<br>Phase failure detection<br>Overvoltage detection<br>Undervoltage detection<br>Overfrequency and underfrequency<br>Asymmetry |
| Supported Os               | Android                                                                                                                                       |
| Software Version           | V4.4 and above                                                                                                                                |
| App For Product            | Zelio NFC (downloadable from Google Play store)                                                                                               |
| Product Compatibility      | NFC enabled mobile device                                                                                                                     |
| Time Delay Type            | Adjustable 0.1 s...1 min                                                                                                                      |
| Switching Capacity In Va   | 2000 VA                                                                                                                                       |

## Complementary

|                                             |                                                                  |
|---------------------------------------------|------------------------------------------------------------------|
| Nfc Operating Frequency                     | 13.56 MHz                                                        |
| Maximum Rf Power Transmitted                | 0.0002 mW                                                        |
| Reset Time                                  | 1500 ms at maximum voltage                                       |
| Maximum Switching Voltage                   | 250 V AC                                                         |
| Minimum Switching Current                   | 100 mA at 6 V                                                    |
| Maximum Switching Current                   | 8 A AC                                                           |
| Supply Voltage Limits                       | 166.4...576 V AC line to line<br>96...332.4 V AC line to neutral |
| Power Consumption In Va                     | 4 VA at 480 V AC 60 Hz                                           |
| On-Load Factor                              | 100 %                                                            |
| Supply Voltage Frequency                    | 50...60 Hz +/- 10 %                                              |
| Output Contacts                             | 2 C/O                                                            |
| Measurement Range                           | 208...480 V AC                                                   |
| Setting Accuracy Of The Switching Threshold | +/- (1.5 % + 1 V)                                                |

Miễn trừ trách nhiệm: Tài liệu này không đảm bảo thay thế và không được sử dụng để xác định tính phù hợp hoặc độ tin cậy của các sản phẩm này cho các ứng dụng người dùng cụ thể

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Setting Accuracy Of Time Delay              | +/- 3 % for 10 s...60 min time delay range<br>+/- 300 ms for 0...10 s time delay range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Hysteresis                                  | 3 % of fixed for phase failure detection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Alarm Threshold                             | 166...576 V adjustable overvoltage and undervoltage detection (line to line)<br>96...332 V adjustable overvoltage and undervoltage detection (line to neutral)<br>5...150 V adjustable asymmetry<br>45...66 Hz adjustable overfrequency or underfrequency                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Run-Up Delay At Power-Up Max                | 650 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Maximum Measuring Cycle                     | 150 ms measurement cycle as true rms value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Threshold Adjustment Voltage                | 2...20 % of Un selected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Adjustment Of Asymmetry Threshold           | 2...20 % of Un selected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Repeat Accuracy                             | +/- 0.5 % for input circuit<br>+/- 3 % for time delay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Setting Accuracy Of The Switching Threshold | +/- (1.5 % + 1 V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Measurement Error                           | < 0.05 %/Hz with frequency variation<br>< 0.05 %/°C with temperature variation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Response Time                               | <= 300 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Insulation Resistance                       | > 100 MOhm at 500 V DC conforming to IEC 60255-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| [Ui] Rated Insulation Voltage               | 400 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| [Uimp] Rated Impulse Withstand Voltage      | 4 kV during 1.2/50 µs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dielectric Test Voltage                     | 2.5 kV, 1 min AC 50 Hz conforming to IEC 60255-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mounting Position                           | Any position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Connections - Terminals                     | Screw terminals, 2 x 0.5...2 x 2.5 mm² (AWG 20...AWG 14) solid without cable end<br>Screw terminals, 2 x 0.5...2 x 1.5 mm² (AWG 20...AWG 16) flexible with cable end<br>Screw terminals, 1 x 0.5...1 x 3.3 mm² (AWG 20...AWG 12) solid without cable end<br>Screw terminals, 1 x 0.5...1 x 2.5 mm² (AWG 20...AWG 14) flexible with cable end                                                                                                                                                                                                                                                                                                                                                                               |
| Tightening Torque                           | 0.6...1 N.m conforming to IEC 60947-1<br>0.60...0.99 N.m conforming to IEC 60947-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Housing Material                            | Self-extinguishing plastic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Local Signalling                            | LED Un: (steady), green for power ON<br>LED R1: (steady), amber for relay energised<br>LED R1: (blinking), amber for timing in progress<br>LED R2: (steady), amber for relay energised<br>LED R2: (blinking), amber for timing in progress<br>LED PL: (steady), red for alarm phase failure triggered<br>LED PS: (blinking), red for alarm phase sequence failure triggered<br>LED UV: (steady), red for alarm undervoltage failure triggered<br>LED OV: (blinking), red for alarm overvoltage failure triggered<br>LED UF: (steady), red for alarm underfrequency failure triggered<br>LED OF: (blinking), red for alarm overfrequency failure triggered<br>LED ASYM: (steady), red for alarm asymmetry failure triggered |
| Mounting Support                            | 35 mm DIN rail conforming to IEC 60715                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Electrical Durability                       | 100000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Mechanical Durability                       | 10000000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Utilisation Category                        | AC-15 conforming to IEC 60947-5-1<br>DC-13 conforming to IEC 60947-5-1<br>AC-1 conforming to IEC 60947-4-1<br>DC-1 conforming to IEC 60947-4-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| [Ith] Conventional Free Air Thermal Current | 8 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| [Un] Rated Nominal Voltage                  | 208...480 V AC 50/60 Hz, non self-powered<br>120...277 V AC 50/60 Hz, non self-powered                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Contacts Material                           | Cadmium free                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                               |                     |
|-------------------------------|---------------------|
| Control Type                  | Without test button |
| Width                         | 22.5 mm             |
| Height                        | 90 mm               |
| Depth                         | 99 mm               |
| Contacts Type And Composition | 2 C/O               |
| Net Weight                    | 0.125 kg            |

## Environment

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immunity To Microbreaks               | 10 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Electromagnetic Compatibility         | <p>Voltage dips and interruptions immunity test - test level: 70 % (25/30 cycles) conforming to IEC 61000-4-11</p> <p>Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2</p> <p>Radiated radio-frequency electromagnetic field immunity test - test level: 10 V/m level 3 conforming to IEC 61000-4-3</p> <p>Immunity for industrial environments conforming to IEC 61000-6-2</p> <p>1 MHz damped oscillating wave - test level: 2.5 kV CM, 1 kV DM criteria B conforming to IEC 61000-4-18</p> <p>Voltage dips and interruptions immunity test - test level: 0 % (0.5...25 cycles) conforming to IEC 61000-4-11</p> <p>Magnetic field at power frequency - test level: 30 A/m (continuous)-300 A/m (1-3 s) level 4 conforming to IEC 61000-4-8</p> <p>Surge immunity test - test level: 2 kV level 4 (differential mode) conforming to IEC 61000-4-5</p> <p>Immunity for residential, commercial and light-industrial environments conforming to IEC 61000-6-1</p> <p>Voltage dips and interruptions immunity test - test level: 40 % (10/12 cycles) conforming to IEC 61000-4-11</p> <p>Voltage interruptions - test level: 0 % criteria C (250/300 cycles) conforming to IEC 61000-4-29</p> <p>Electrical fast transient/burst immunity test - test level: 4 kV criteria B (direct) conforming to IEC 61000-4-4</p> <p>Emission standard for industrial environments conforming to IEC 61000-6-4</p> <p>Surge immunity test - test level: 4 kV level 4 (common mode) conforming to IEC 61000-4-5</p> <p>Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2</p> <p>Conducted RF disturbances level 3 conforming to IEC 61000-4-6</p> |
| Standards                             | IEC 60255-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Product Certifications                | <p>CE</p> <p>UL</p> <p>CSA</p> <p>CCC</p> <p>EAC</p> <p>RCM</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Directives                            | <p>2014/30/EU - electromagnetic compatibility</p> <p>2014/35/EU - low voltage directive</p> <p>2014/53/EU - radio equipment directive</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Ambient Air Temperature For Storage   | -40...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Ambient Air Temperature For Operation | -20...60 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Relative Humidity                     | 93...97 % at 25...55 °C conforming to IEC 60068-2-30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Vibration Resistance                  | <p>0.075 mm (f= 10...58.1 Hz) not in operation conforming to IEC 60068-2-6</p> <p>1 gn (f= 58.1...150 Hz) not in operation conforming to IEC 60068-2-6</p> <p>0.035 mm (f= 10...58.1 Hz) in operation conforming to IEC 60068-2-6</p> <p>0.5 gn (f= 58.1...150 Hz) in operation conforming to IEC 60068-2-6</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Shock Resistance                      | <p>15 gn (duration = 11 ms) for not in operation conforming to IEC 60068-2-27</p> <p>5 gn (duration = 11 ms) for in operation conforming to IEC 60068-2-27</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ip Degree Of Protection               | <p>IP20 (terminals) conforming to IEC 60529</p> <p>IP40 (housing) conforming to IEC 60529</p> <p>IP40 (front panel) conforming to IEC 60529</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                      |                                                           |
|----------------------|-----------------------------------------------------------|
| Pollution Degree     | 3 conforming to IEC 60664-1<br>3 conforming to UL 508     |
| Overvoltage Category | III conforming to IEC 60664-1<br>III conforming to UL 508 |

## Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type Of Package 1       | PCE      |
| Number Of Units In Package 1 | 1        |
| Package 1 Height             | 9.6 cm   |
| Package 1 Width              | 2.5 cm   |
| Package 1 Length             | 10.8 cm  |
| Package 1 Weight             | 136.0 g  |
| Unit Type Of Package 2       | S02      |
| Number Of Units In Package 2 | 36       |
| Package 2 Height             | 15 cm    |
| Package 2 Width              | 30 cm    |
| Package 2 Length             | 40 cm    |
| Package 2 Weight             | 5.578 kg |
| Unit Type Of Package 3       | P06      |
| Number Of Units In Package 3 | 576      |
| Package 3 Height             | 75 cm    |
| Package 3 Width              | 60 cm    |
| Package 3 Length             | 80 cm    |
| Package 3 Weight             | 98 kg    |

Bền vững



Nhãn **Green Premium™** là cam kết của Schneider Electric trong việc cung cấp sản phẩm với hiệu suất môi trường tốt nhất. Green Premium cam kết tuân thủ các quy định mới nhất, minh bạch về tác động môi trường, cũng như các sản phẩm tuần hoàn và CO<sub>2</sub> thấp.

**Hướng dẫn đánh giá tính bền vững của sản phẩm** là tài liệu kỹ thuật phổ thông giúp làm rõ các tiêu chuẩn nhãn sinh thái toàn cầu và cách diễn giải việc khai báo môi trường.

[Tìm hiểu thêm về Green Premium >](#)

[Hướng dẫn đánh giá về sự bền vững của sản phẩm >](#)



Minh bạch    RoHS/REACH

## Hiệu suất sức khỏe

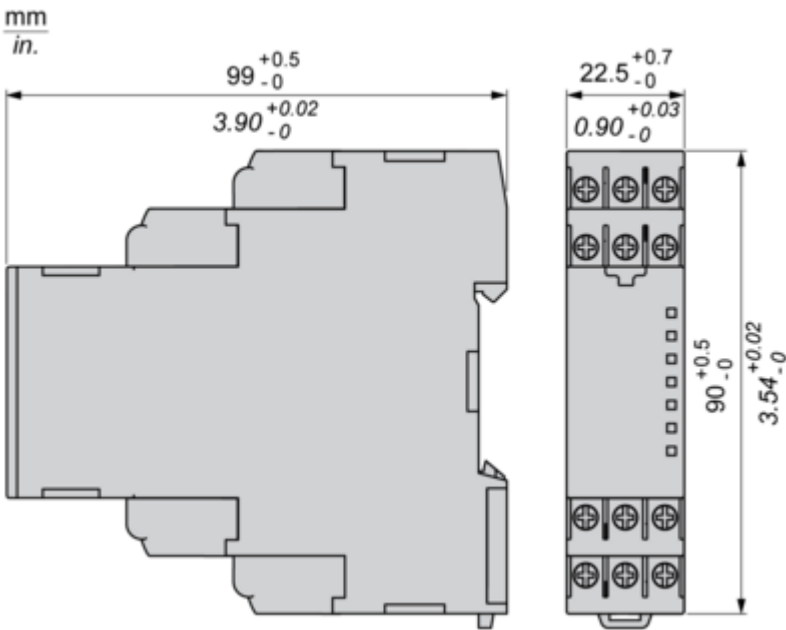
 Mercury Free

 Rohs Exemption Information    [Yes](#)

## Chứng nhận & Tiêu chuẩn

|                          |                                                                                                                             |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Reach Regulation         | <a href="#">REACH Declaration</a>                                                                                           |
| Eu Rohs Directive        | Pro-active compliance (Product out of EU RoHS legal scope)                                                                  |
| China Rohs Regulation    | <a href="#">China RoHS declaration</a>                                                                                      |
| Environmental Disclosure | <a href="#">Product Environmental Profile</a>                                                                               |
| Weee                     | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |
| Circularity Profile      | <a href="#">End of Life Information</a>                                                                                     |

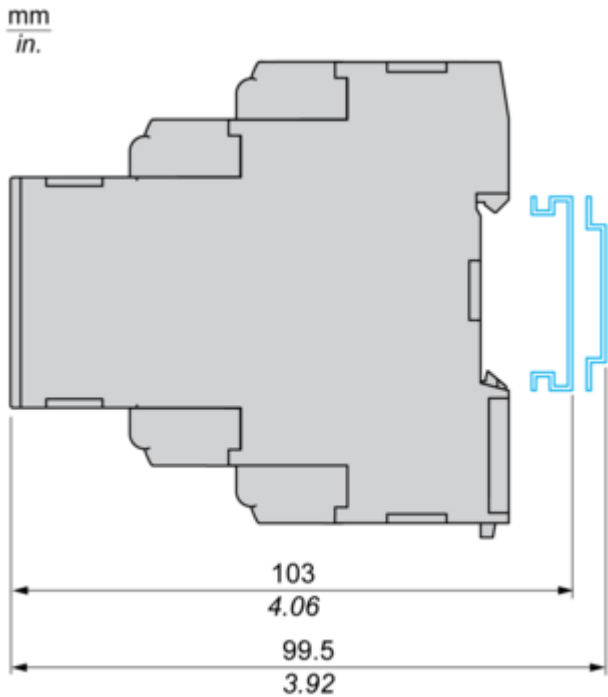
Dimensions



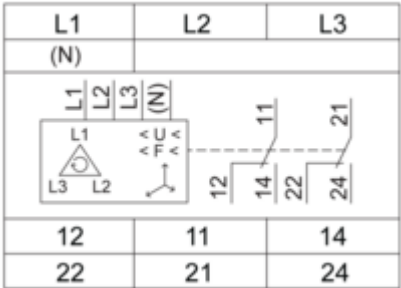
Mounting and Clearance

Mounting and Clearance

Rail Mounting



3-Phase Control Relay

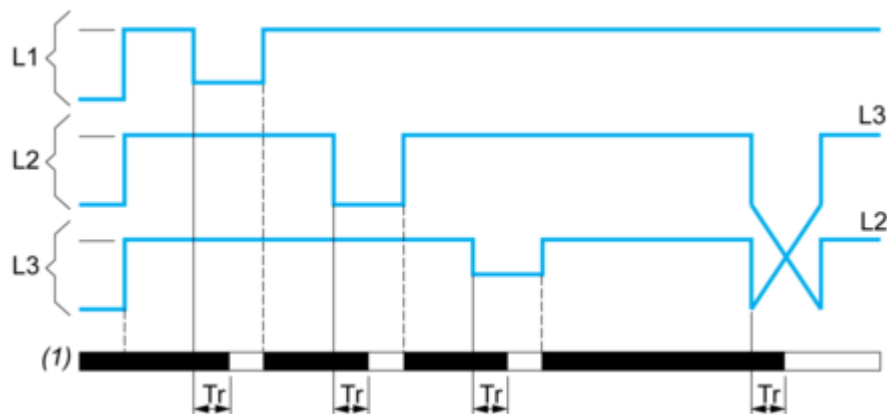


L1, L2, L3, (N) : Supply to be monitored (with or without neutral)  
12, 11, 14 : 1st C/O contact of output relay  
22, 21, 24 : 2nd C/O contact of output relay



Function Diagrams

Phase Loss and Phase Sequence

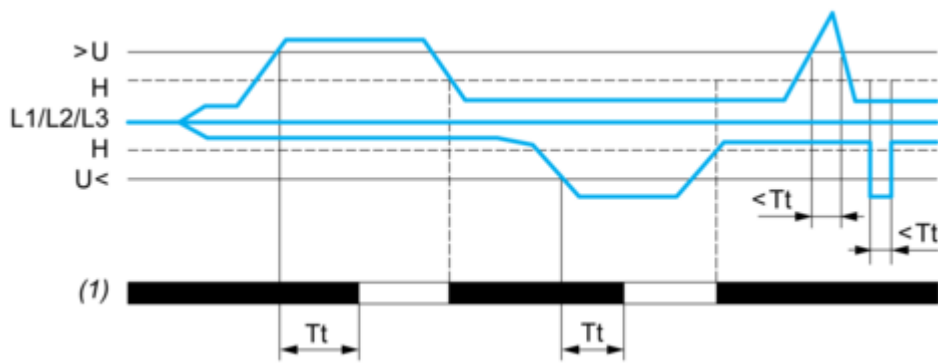


Tr : Response after crossing of threshold (< 300ms)  
L1, L2, L3 : Phases of the supply voltage monitored  
Alarm status:

- White color: Alarm triggered
- Black color: Alarm not triggered

(1) : Alarm

Overvoltage & Undervoltage

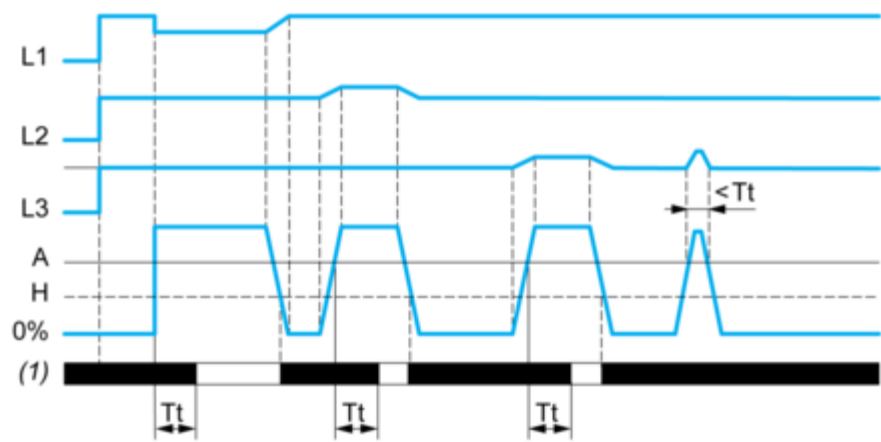


>U : Overvoltage threshold  
H : Hysteresis  
U< : Undervoltage threshold  
L1, L2, L3 : Phases of the supply voltage monitored  
Tt : Time delay after crossing of threshold (adjustable on app)  
Alarm status:

- White color : Alarm triggered
- Black color : Alarm not triggered

(1) : Alarm

Asymmetry

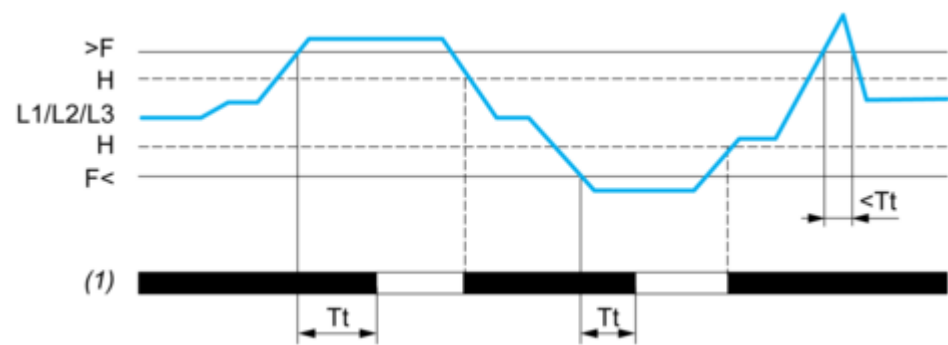


L1, L2, L3 : Phases of the supply voltage monitored  
A : Asymmetry threshold (adjustable from 5...150V of the nominal supply voltage)  
H : Hysteresis  
Tt : Time delay after crossing of threshold (adjustable on app)  
Alarm status:

- White color : Alarm triggered
- Black color : Alarm not triggered

(1) : Alarm

Over Frequency & Under Frequency



>F : Over frequency threshold  
H : Hysteresis  
F< : Under frequency threshold  
L1, L2, L3 : Line frequency  
Tt : Time delay after crossing of threshold (adjustable on app)  
Alarm status:

- White color : Alarm triggered
- Black color : Alarm not triggered

(1) : Alarm