# Product datasheet

Specifications



## Harmony, NFC 3-phase monitoring relay, 8 A, 2CO, multifunction, 208… 480 V AC

Local distributor code:

407812228 RMNF22TB30

**EAN Code: 3606489591120**

## Main

| | |
|---|---|
| **Range of product** | Harmony Control Relays |
| **Relay type** | NFC control relay |
| **Relay name** | RMNF22 |
| **Relay monitored parameters** | Phase sequence<br>Phase failure detection<br>Overvoltage detection<br>Undervoltage detection<br>Overfrequency and underfrequency<br>Asymmetry |
| **Control type** | Without Diagnostic button |
| **Software designation** | Ecostruxure Industrial Device (downloadable from Google Play store or Apple Store) |
| **Product compatibility** | NFC enabled mobile device |

## Complementary

| | |
|---|---|
| **[Us] rated supply voltage** | 208...480 V AC 50/60 Hz, non self-powered<br>120...277 V AC 50/60 Hz, non self-powered |
| **Supply voltage limits** | 166.4…576 V AC line to line<br>96…332.4 V AC line to neutral |
| **Supply frequency** | 50...60 Hz +/- 10 % |
| **Power consumption in VA** | 4 VA at 480 V AC 60 Hz |
| **Immunity to microbreaks** | 10 ms less than or equal |
| **Measurement range** | 208...480 V AC |
| **Maximum measuring cycle** | 150 ms measurement cycle as true rms value |
| **Threshold adjustment voltage** | 2...20 % of Un selected |
| **Hysteresis** | 3 % fixed of at nominal voltage for phase failure detection |
| **Adjustment of asymmetry threshold** | 2...20 % of Un selected |
| **Repeat accuracy** | +/- 0.5 % for input and measurement circuit<br>+/- 3 % for time delay |
| **Measurement error** | +/- 0.05 %/°C with temperature variation<br>+/- 0.05 %/Hz with frequency variation |
| **Time delay type** | Adjustable 0.1 s...60 min Tt- time delay upon fault |
| **Setting accuracy of time delay** | +/- 3 % for 10 s...60 min time delay range<br>+/- 300 ms for 0...10 s time delay range |
| **Reset time** | 1500 ms at maximum rated voltage |
| **Response time** | <= 300 ms (in the event of a fault) |
| **Power on Delay** | 650 ms |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

| | |
|---|---|
| **Output contacts** | 2 C/O |
| **nominal output current** | 8 A |
| **Maximum switching voltage** | 250 V AC |
| **Switching capacity in VA** | 2000 VA |
| **Minimum switching current** | 10 mA at 12 V DC |
| **Maximum switching current** | 8 A AC |
| **Electrical durability** | 100000 cycles |
| **Mechanical durability** | 10000000 cycles |
| **Utilisation category** | AC-15 250 V AC 3 A conforming to IEC 60947-5-1<br>DC-13 24 V DC 2 A conforming to IEC 60947-5-1<br>AC-1 250 V AC 8 A conforming to IEC 60947-4-1<br>DC-1 24 V DC 5 A conforming to IEC 60947-4-1 |
| **NFC operating frequency** | 13.56 MHz |
| **Maximum RF power transmitted** | 0.0002 mW |
| **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 |
| **Operating system** | Androidversion >= V7.0<br>IOSversion >= V14.5 |

# Environment

| | |
|---|---|
| **Electromagnetic compatibility** | Immunity for industrial environments conforming to IEC 61000-6-2<br>Surge immunity test - test level: 2 kV level 4 (differential mode) conforming to IEC 61000-4-5<br>Immunity for residential, commercial and light-industrial environments conforming to IEC 61000-6-1<br>Emission standard for industrial environments conforming to IEC 61000-6-4<br>Surge immunity test - test level: 4 kV level 4 (common mode) conforming to IEC 61000-4-5 |
| **Standards** | EN/IEC 60255-1 |
| **Product certifications** | CE<br>UL<br>CSA<br>CCC<br>EAC<br>RCM<br>UKCA |
| **Marking** | WEEE<br>China RoHS<br>ROHS |
| **Directives** | 2014/30/EU - electromagnetic compatibility<br>2014/35/EU - low voltage directive<br>2014/53/EU - radio equipment directive |
| **Ambient air temperature for storage** | -40…70 °C<br>-40…70 °C |
| **Ambient air temperature for operation** | -30…60 °C<br>-30…60 °C |
| **Relative humidity** | 93…97 % at 25…55 °C conforming to IEC 60068-2-30<br>at 25…55 °C |
| **Vibration resistance** | 0.075 mm (f= 10…58.1 Hz) not in operation conforming to IEC 60068-2-6<br>1 gn (f= 58.1…150 Hz) not in operation conforming to IEC 60068-2-6<br>0.035 mm (f= 10…60.1 Hz) in operation conforming to IEC 60068-2-6<br>0.5 gn (f= 60.1…150 Hz) in operation conforming to IEC 60068-2-6 |
| **Shock resistance** | 15 gn (duration = 11 ms) for not in operation conforming to IEC 60068-2-27<br>5 gn (duration = 11 ms) for in operation conforming to IEC 60068-2-27 |

| | |
|---|---|
| **IP degree of protection** | IP20 (terminals) conforming to IEC 60529<br>IP40 (housing) conforming to IEC 60529<br>IP40 (front panel) conforming to IEC 60529 |
| **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 |
| **Dielectric test voltage** | 2.5 kV, 1 min AC 50 Hz conforming to IEC 60255-27 |
| **[Uimp] rated impulse withstand voltage** | 4 kV conforming to IEC 60664-1 |
| **Insulation resistance** | > 100 MOhm at 500 V DC conforming to IEC 60255-27 |
| **[Ui] rated insulation voltage** | 400 V conforming to IEC 60664-1 |
| **Operating position** | Any position without derating |
| **Connections - terminals** | Screw terminals, 2 x 0.5...2 x 2.5 mm² (20 AWG...14 AWG) solid without cable end<br>Screw terminals, 2 x 0.2...2 x 1.5 mm² (24 AWG...16 AWG) flexible with cable end<br>Screw terminals, 1 x 0.5...1 x 4 mm² (20 AWG...12 AWG) solid without cable end<br>Screw terminals, 1 x 0.2...1 x 2.5 mm² (24 AWG...14 AWG) flexible with cable end |
| **Tightening torque** | 0.6…1 N.m conforming to IEC 60947-1<br>0.6…1.006 N.m |
| **Housing material** | Polycarbonate |
| **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 asymmentry failure triggered |
| **Mounting support** | 35 mm symmetrical DIN rail conforming to IEC 60715 |
| **Reliability data** | MTTF = 128.5 years |
| **Height** | 90 mm<br>88.9 mm |
| **Width** | 22.5 mm<br>22.9 mm |
| **Depth** | 99 mm<br>99.06 mm |
| **Net weight** | 0.125 kg<br>0.13 kg |

# Packing Units

| | |
|---|---|
| **Unit Type of Package 1** | PCE |
| **Number of Units in Package 1** | 1 |
| **Package 1 Height** | 3.000 cm |
| **Package 1 Width** | 10.000 cm |
| **Package 1 Length** | 10.800 cm |
| **Package 1 Weight** | 138.000 g |
| **Unit Type of Package 2** | S02 |
| **Number of Units in Package 2** | 36 |
| **Package 2 Height** | 15.000 cm |

| | |
|---|---|
| **Package 2 Width** | 30.000 cm |
| **Package 2 Length** | 40.000 cm |
| **Package 2 Weight** | 5.578 kg |
| **Unit Type of Package 3** | P06 |
| **Number of Units in Package 3** | 576 |
| **Package 3 Height** | 75.000 cm |
| **Package 3 Width** | 60.000 cm |
| **Package 3 Length** | 80.000 cm |
| **Package 3 Weight** | 98.000 kg |

## Logistical informations

| | |
|---|---|
| **Country of origin** | ID |

## Contractual warranty

| | |
|---|---|
| **Warranty (in months)** | 18 |

## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

### Environmental footprint

| | |
|---|---|
| Total lifecycle Carbon footprint | **58 kg CO2 eq.** |
| Carbon footprint of the manufacturing phase [A1 to A3] | **3 kg CO2 eq.** |
| Carbon footprint of the distribution phase [A4] | **0 kg CO2 eq.** |
| Carbon footprint of the installation phase [A5] | **0 kg CO2 eq.** |
| Carbon footprint of the use phase [B2, B3, B4, B6] | **55 kg CO2 eq.** |
| Carbon footprint of the end-of-life phase [C1 to C4] | **0.1 kg CO2 eq.** |
| Environmental Disclosure | Product Environmental Profile |

## Use Better

### Materials and Substances

| | |
|---|---|
| Packaging made with recycled cardboard | **Yes** |
| Packaging without single use plastic | **Yes** |
| SCIP Number | **5e3fdf99-611b-4d07-ad17-6eba84ab488b** |
| EU RoHS Directive | Compliant By Exemption |
| REACh Regulation | Reference contains Substances of Very High Concern above the threshold |

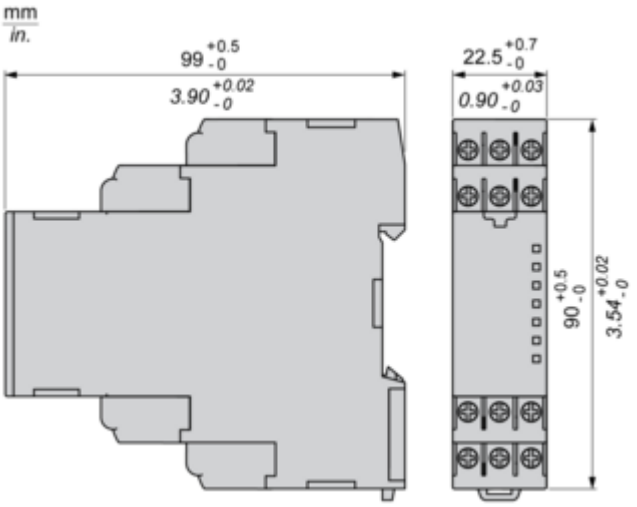
## Use Again

### Repack and remanufacture

| | |
|---|---|
| End of life manual availability | End of Life Information |
| Take-back | **No** |
| WEEE Label | **The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins** |

Dimensions Drawings

**Dimensions**



Mounting and Clearance

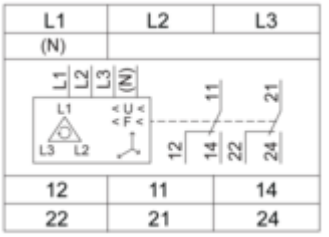
## Mounting and Clearance

### Rail Mounting



## Connections and Schema

### 3-Phase Control Relay

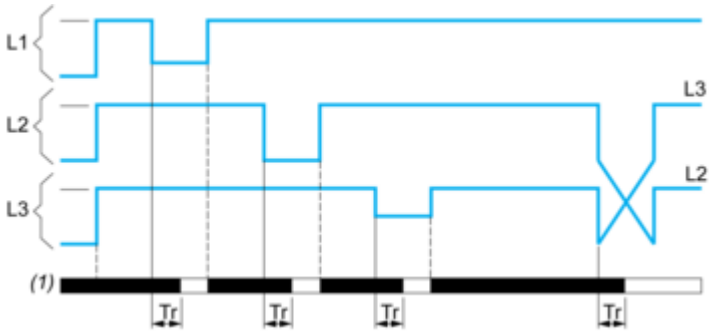



**L1, L2, L3, (N) :** Supply to be monitored (with or without neutral)
**12, 11, 14 :** 1st C/O contact of output relay
**22, 21, 24 :** 2nd C/O contact of output relay

Technical Description

## Function Diagrams

### Phase Loss and Phase Sequence

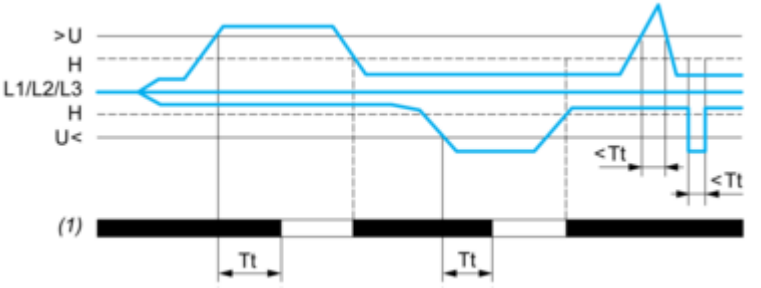



**Tr :** Response after crossing of threshold (< 300ms)
**L1, L2, L3 :** Phases of the supply voltage monitored
**Alarm status:**

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

**(1) :** Alarm

### Overvoltage & Undervoltage

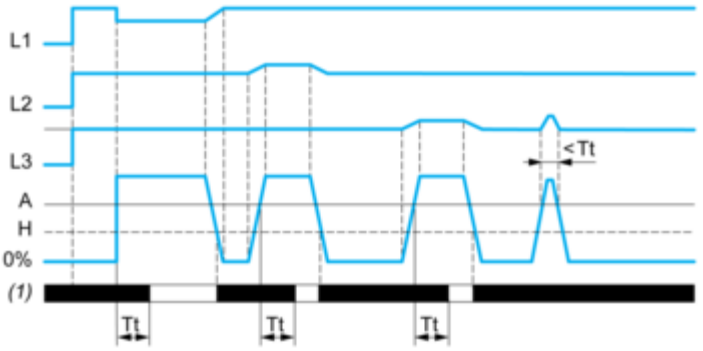



**>U :** Overvoltage threshold
**H :** Hysteresis
**U< :** Undervoltage threshold
**L1, L2, L3 :** Phases of the supply voltage monitored
**Tt :** Time delay after crossing of threshold (adjustable on app)
**Alarm status:**

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

**(1) :** Alarm

### Asymmetry

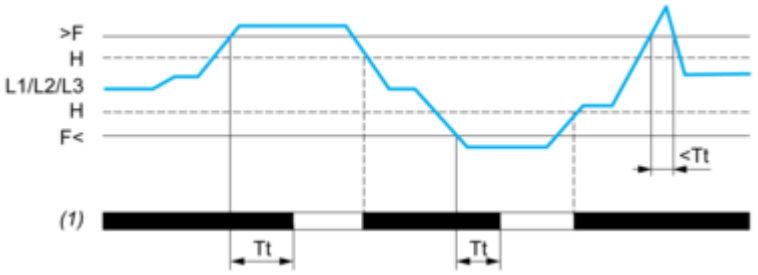



**L1, L2, L3 :** Phases of the supply voltage monitored
**A :** Asymmetry threshold (adjustable from 5...150V of the nominal supply voltage)
**H :** Hysteresis
**Tt :** Time delay after crossing of threshold (adjustable on app)
**Alarm status:**

- 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

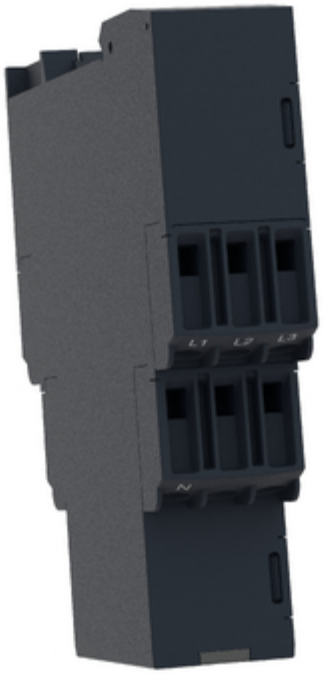
**(1) :** Alarm

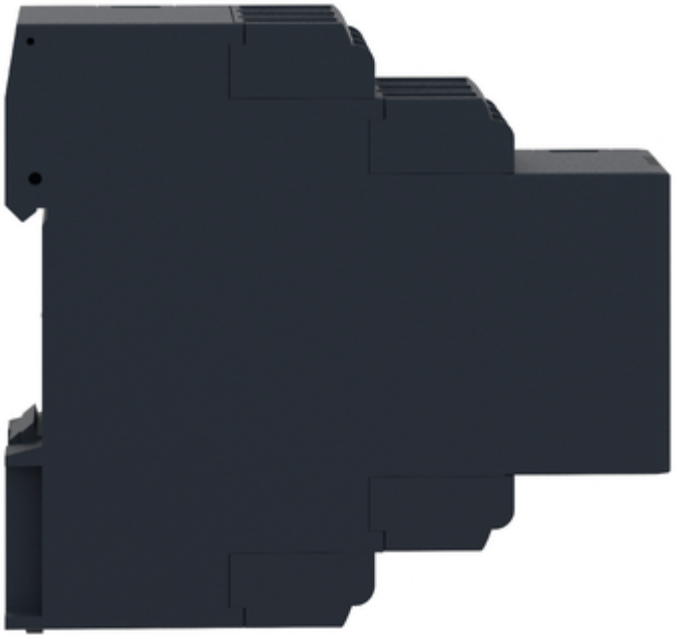
Image of product / Alternate images

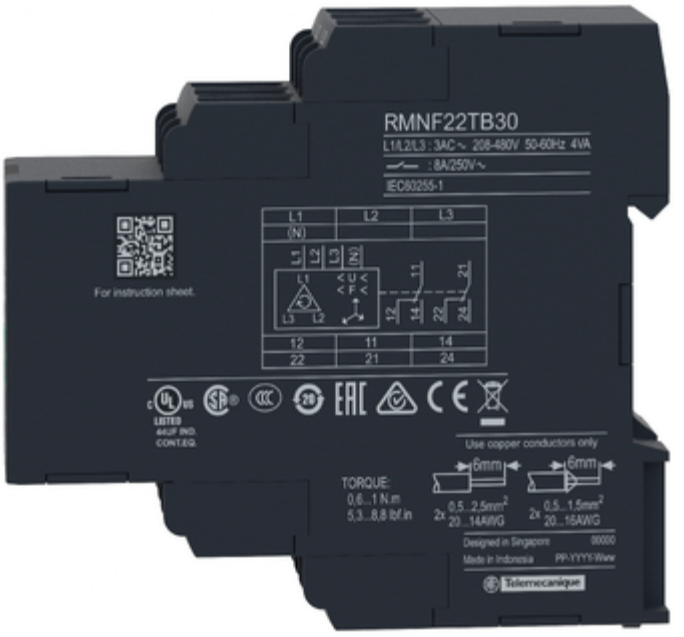
**Alternative**







L1
L2
L3
N




RMNF22TB30
L1/L2/L3 : 3AC ~ 208-480V 50-60Hz 4VA
: 8A/250V~
IEC60255-1
For instruction sheet.
L1
L2
L3
(N)
12
11
14
22
21
24
Use copper conductors only
6mm
6mm
TORQUE:
0,6...1 N.m
5,3...8,8 lbf.in
2x 0,5...2,5mm²
20...14AWG
2x 0,5...1,5mm²
20...16AWG
Designed in Singapore
Made in Indonesia
PP-YYYY-Www
Telemecanique

