# Product datasheet

Specifications




## NFC 3-phase monitoring relay, 8 A, 2CO, multifunction, 208…480 V 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 |
| **App for product** | Ecostruxure Industrial Device (downloadable from Google Play store or Apple Store) |
| **Product compatibility** | NFC enabled mobile device |
| **Time delay type** | Adjustable 0.1 s...1 min Tt- time delay upon fault |
| **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) |
| **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 |

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

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

| | |
|---|---|
| **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>0.6…1.0 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 asymmentry 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 |
| **Operating system** | Androidversion >= V7.0<br>IOSversion >= V14.5 |
| **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** | Voltage dips and interruptions immunity test - test level: 70 % (25/30 cycles) conforming to IEC 61000-4-11<br>Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2<br>Radiated radio-frequency electromagnetic field immunity test - test level: 10 V/m level 3 conforming to IEC 61000-4-3<br>Immunity for industrial environments conforming to IEC 61000-6-2<br>1 MHz damped oscillating wave - test level: 2.5 kV CM, 1 kV DM criteria B conforming to IEC 61000-4-18<br>Voltage dips and interruptions immunity test - test level: 0 % (0.5...25 cycles) conforming to IEC 61000-4-11<br>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<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>Voltage dips and interruptions immunity test - test level: 40 % (10/12 cycles) conforming to IEC 61000-4-11<br>Voltage interruptions - test level: 0 % criteria C (250/300 cycles) conforming to IEC 61000-4-29<br>Electrical fast transient/burst immunity test - test level: 4 kV criteria B (direct) conforming to IEC 61000-4-4<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<br>Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2<br>Conducted RF disturbances level 3 conforming to IEC 61000-4-6 |
| **Standards** | IEC 60255-1 |
| **Product certifications** | CE<br>UL<br>CSA<br>CCC<br>EAC<br>RCM |
| **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 |
| **Ambient air temperature for operation** | -20…60 °C |
| **Relative humidity** | 93…97 % at 25…55 °C conforming to IEC 60068-2-30 |
| **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…58.1 Hz) in operation conforming to IEC 60068-2-6<br>0.5 gn (f= 58.1…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 |

## 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 |

## 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 |
| Environmental Disclosure | Product Environmental Profile |

## Use Better

### Materials and Substances

| | |
|---|---|
| Packaging made with recycled cardboard | Yes |
| Packaging without single use plastic | Yes |
| EU RoHS Directive | Pro-active compliance (Product out of EU RoHS legal scope) |
| SCIP Number | 5e3fdf99-611b-4d07-ad17-6eba84ab488b |
| REACh Regulation | REACh Declaration |

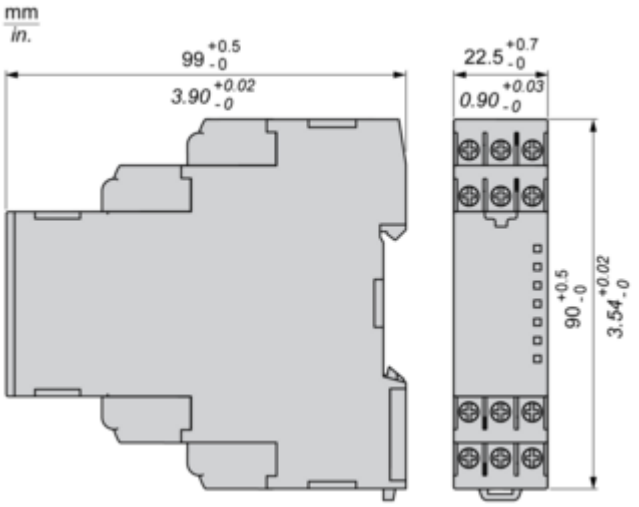
## Use Again

### 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

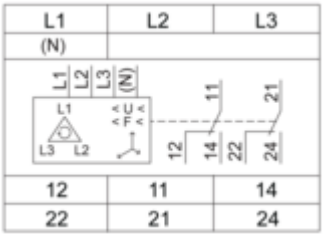
## Mounting and Clearance

### Rail Mounting



## Connections and Schema

### 3-Phase Control Relay

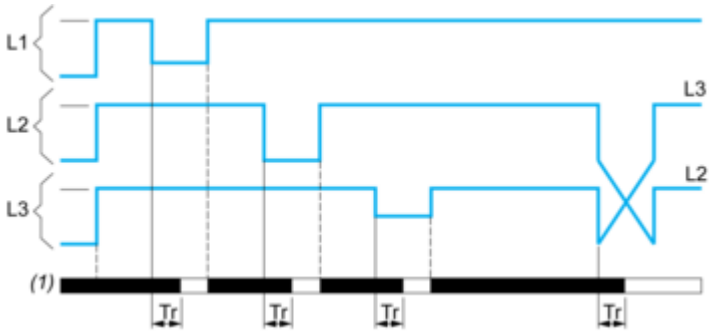



**L1, L2, L3, (N) :** Supply to be monitored (with or without neutral)
**12, 11, 14 :** 1st C/O contact of output relay
**22, 21, 24 :** 2nd C/O contact of output relay

Technical Description

## Function Diagrams

### Phase Loss and Phase Sequence

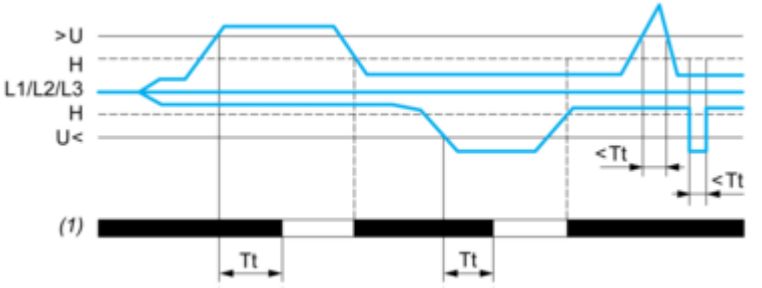



**Tr :** Response after crossing of threshold (< 300ms)
**L1, L2, L3 :** Phases of the supply voltage monitored
**Alarm status:**

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

**(1) :** Alarm

### Overvoltage & Undervoltage

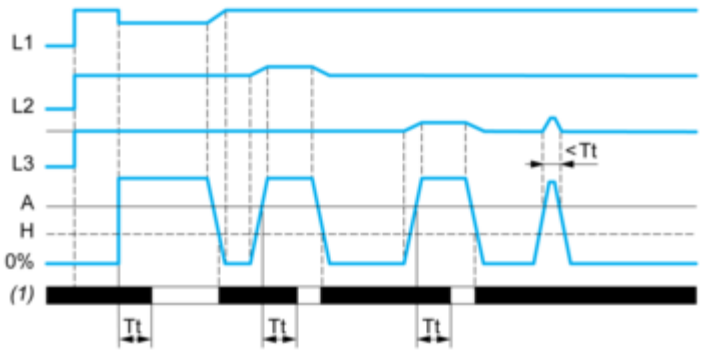



**>U :** Overvoltage threshold
**H :** Hysteresis
**U< :** Undervoltage threshold
**L1, L2, L3 :** Phases of the supply voltage monitored
**Tt :** Time delay after crossing of threshold (adjustable on app)
**Alarm status:**

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

**(1) :** Alarm

### Asymmetry

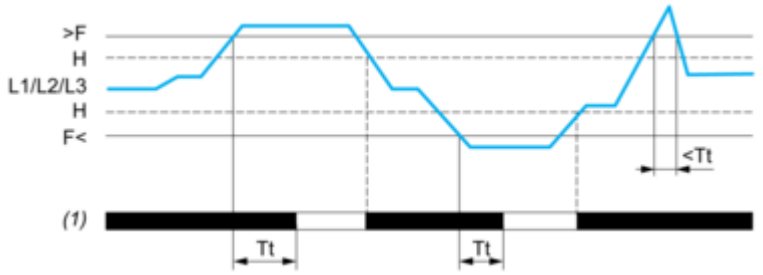



**L1, L2, L3 :** Phases of the supply voltage monitored
**A :** Asymmetry threshold (adjustable from 5...150V of the nominal supply voltage)
**H :** Hysteresis
**Tt :** Time delay after crossing of threshold (adjustable on app)
**Alarm status:**

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

**(1) :** Alarm

### Over Frequency & Under Frequency



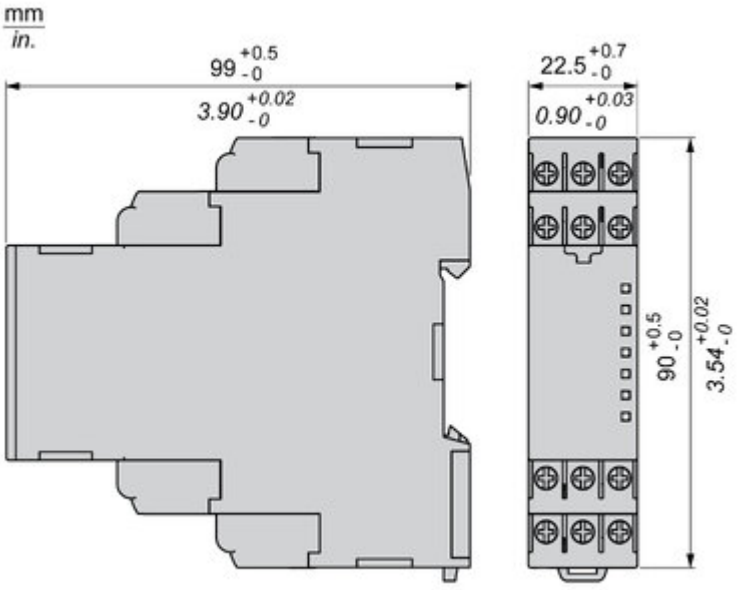

**>F :** Over frequency threshold
**H :** Hysteresis
**F< :** Under frequency threshold
**L1, L2, L3 :** Line frequency
**Tt :** Time delay after crossing of threshold (adjustable on app)
**Alarm status:**

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

**(1) :** Alarm

Technical Illustration

**Dimensions**



Offer Marketing Illustration

**Product benefits / Features**



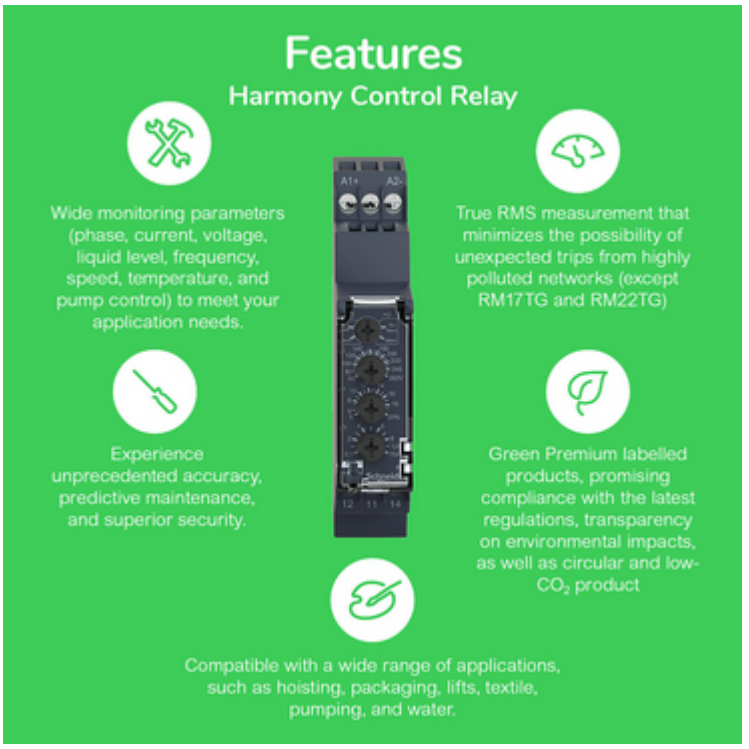
Offer Marketing Illustration

**Product benefits / Features**



Offer Marketing Illustration

**Product benefits / Features**



Offer Marketing Illustration

**Product benefits / Features**

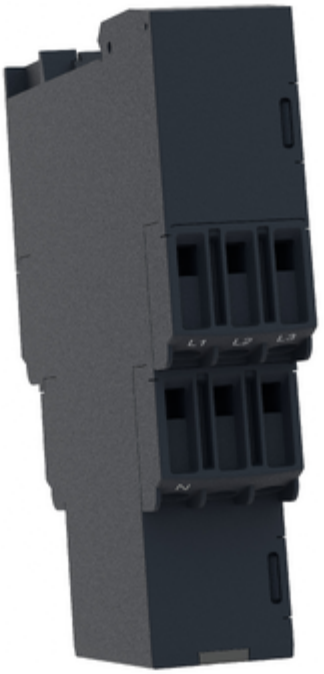


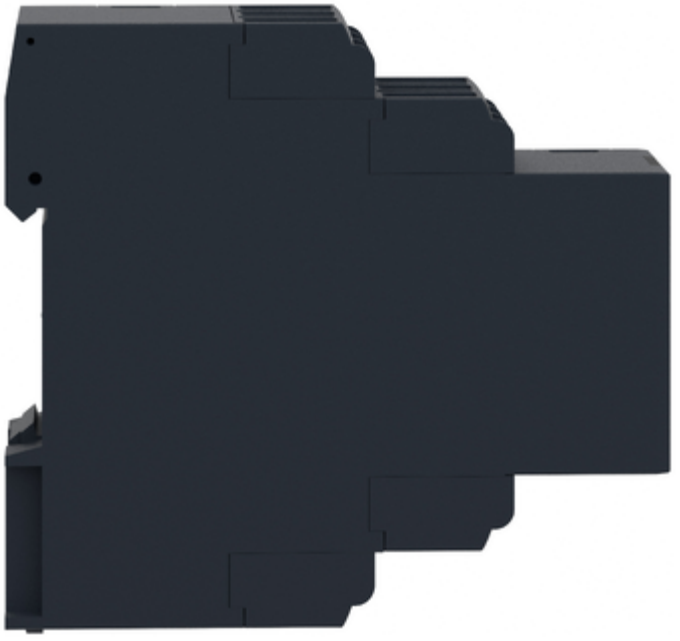
Image of product / Alternate images

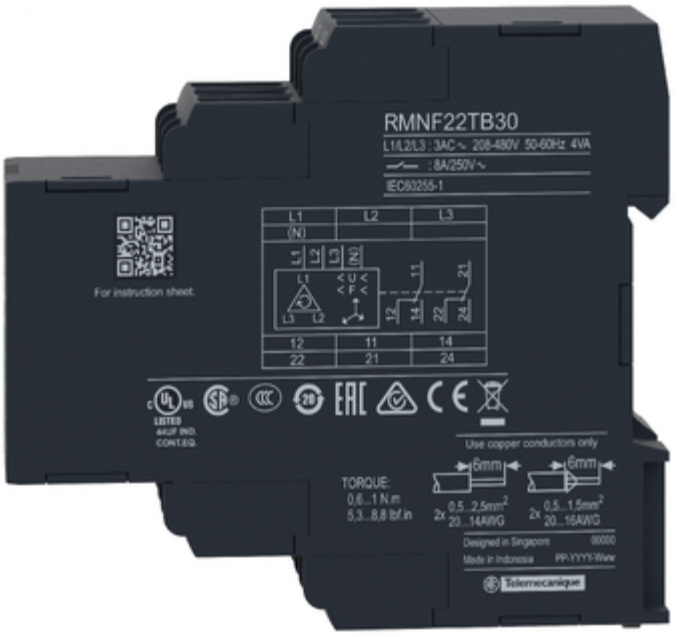
**Alternative**







L1
L2
L3
N




RMNF22TB30
L1L2L3 : 3AC ~ 208-480V 50-60Hz 4VA
: 8A/250V~
IEC60255-1
For instruction sheet.
L1
L2
L3
(N)
12
14
22
24
11
21
12
22
11
21
14
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

