



**Main**

Range of product	Harmony Control Relays
Product or component type	Frequency control relay
Relay type	Frequency control relays
Relay name	RM35HZ21FM
Relay monitored parameters	Overfrequency and underfrequency 50 or 60 Hz
Time delay type	Adjustable 0.1...10 s, +/- 10 % on crossing the threshold
Switching capacity in VA	1250 VA
Minimum switching current	10 mA at 5 V DC
Maximum power consumption in VA	6 VA AC
Measurement range	40...70 Hz frequency
Utilisation category	AC-12 conforming to IEC 60947-5-1 AC-13 conforming to IEC 60947-5-1 AC-14 conforming to IEC 60947-5-1 AC-15 conforming to IEC 60947-5-1 DC-12 conforming to IEC 60947-5-1 DC-13 conforming to IEC 60947-5-1 DC-14 conforming to IEC 60947-5-1

**Complementary**

Reset time	2000 ms time delay
Maximum switching voltage	250 V AC/DC
[Us] rated supply voltage	120...277 V AC
[Us] rated supply voltage	120...277 V AC
Supply voltage limits	102...308 V AC
Control circuit frequency	40...70 Hz
Width	35 mm
Output contacts	1 C/O + 1 C/O
Contacts material	Cadmium free
Nominal output current	5 A
Maximum input frequency	70 Hz
Maximum measuring cycle	200 ms measurement cycle as true rms value
Delay at power up	0.5 s
Hysteresis	0.3 % fixed
Measurement accuracy	+/- 10 % of the full scale value in input +/- 10 % of the full scale value in time delay
Repeat accuracy	+/- 0.5 % for input and measurement circuit +/- 0.5 % for time delay
Measurement error	+/- 0.05 %/°C with temperature variation < +/- 1 % over the whole range with voltage variation
Threshold setting	-2...10 Hz -10...2 Hz
Marking	CE : 73/23/EEC CE : EMC 89/336/EEC
Overvoltage category	III conforming to IEC 60664-1

Insulation resistance	> 500 MΩ at 500 V DC between supply and relay output conforming to IEC 60255-5 > 500 MΩ at 500 V DC between measurement and relay output conforming to IEC 60664-1 > 1 MΩ at 500 V DC between supply and measurement conforming to IEC 60255-5 > 500 MΩ at 500 V DC between supply and relay output conforming to IEC 60664-1 > 500 MΩ at 500 V DC between measurement and relay output conforming to IEC 60255-5 > 1 MΩ at 500 V DC between supply and measurement conforming to IEC 60664-1
[Ui] rated insulation voltage	400 V conforming to IEC 60664-1
Operating voltage tolerance	- 15 % + 10 % Un
Supply frequency	50/60 Hz +/- 10 %
Insulation	No galvanic insulation between supply and measurement
Operating position	Any position without derating
Connections - terminals	Screw terminals, 1 x 0.5...1 x 4 mm <sup>2</sup> (AWG 20...AWG 11) solid without cable end Screw terminals, 2 x 0.5...2 x 2.5 mm <sup>2</sup> (AWG 20...AWG 14) solid without cable end Screw terminals, 1 x 0.2...1 x 2.5 mm <sup>2</sup> (AWG 24...AWG 12) flexible with cable end Screw terminals, 2 x 0.2...2 x 1.5 mm <sup>2</sup> (AWG 24...AWG 16) flexible with cable end
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Local signalling	1 LED green for power ON 1 LED yellow for correct frequency (high R1) 1 LED yellow for correct frequency (low R2)
Mounting support	35 mm symmetrical DIN rail conforming to EN/IEC 60715
Electrical durability	100000 cycles
Mechanical durability	30000000 cycles
Operating rate	<= 360 operations/hour full load

## Environment

Immunity to microbreaks	10 ms
Electromagnetic compatibility	Emission standard for industrial environments conforming to EN/IEC 61000-6-4 Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3 Immunity for industrial environments conforming to NF EN/IEC 61000-6-2
Standards	IEC 60255-6 NF EN 60255-6
Product certifications	GL UL CSA C-Tick GOST
Ambient air temperature for storage	-40...70 °C
Ambient air temperature for operation	-20...50 °C
Relative humidity	95 % at 55 °C conforming to IEC 60068-2-30
Vibration resistance	0.35 mm (f= 5...57.6 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1 1 gn (f= 57.6...150 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1
Shock resistance	15 gn for 11 ms conforming to IEC 60255-21-1
IP degree of protection	IP20 (terminals) conforming to IEC 60529 IP30 (casing) conforming to IEC 60529
Pollution degree	3 conforming to IEC 60664-1
Dielectric test voltage	2 kV AC 50 Hz
Non-dissipating shock wave	4 kV

## Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Weight	125 g
Package 1 Height	4.6 cm
Package 1 width	8 cm

Package 1 Length	9.7 cm
Unit Type of Package 2	S03
Number of Units in Package 2	48
Package 2 Weight	6.57 kg
Package 2 Height	30 cm
Package 2 width	30 cm
Package 2 Length	40 cm

### Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	 <a href="#">REACH Declaration</a>
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)  <a href="#">EU RoHS Declaration</a>
Mercury free	Yes
RoHS exemption information	 <a href="#">Yes</a>
China RoHS Regulation	 <a href="#">China RoHS Declaration</a>
Environmental Disclosure	 <a href="#">Product Environmental Profile</a>
Circularity Profile	 <a href="#">End Of Life Information</a>

### Contractual warranty

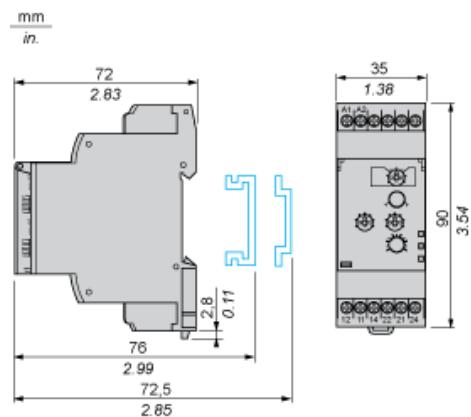
Warranty	18 months
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Frequency Control Relay

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Dimensions and Mounting

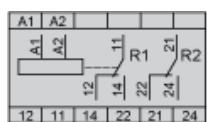


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### Frequency Control Relay

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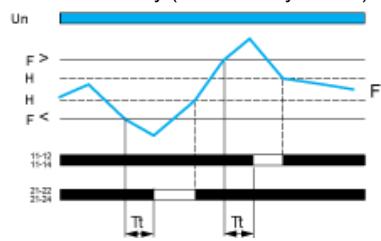
#### Wiring Diagram



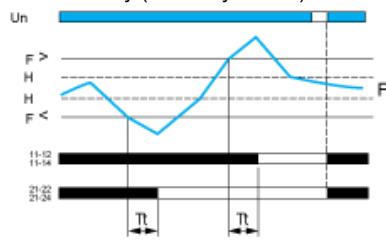
## Function Diagrams

### Over-Frequency and Under-Frequency Control on 50 Hz or 60 Hz Supplies

Without memory ("No Memory" mode)



With memory ("Memory" mode)



### Legend

$T_t$  Time delay after crossing of threshold from 0.1 s to 10 s

$U_n$  Supply voltage

$F$  Monitored frequency

$H$  Hysteresis

$F >$  Over-frequency threshold

$F <$  Under-frequency threshold

11-12, 11-14 R1 output relay connections

21-22, 21-24 R2 output relay connections

Relay status: black color = energized.

NOTE: In "Memory" mode, the relay opens after the time delay and stays in that position when crossing of the threshold is detected. The power supply voltage must be switched off to reset the product.