

RM35HZ21FM

frequency control relay RM35-HZ - range 40..70 Hz



Main

Range of product	Zelio Control
Product or component type	Modular measurement and control relays
Relay type	Frequency control relays
Relay name	RM35HZ21FM
Relay monitored parameters	Overfrequency and underfrequency 50 or 60 Hz
Time delay	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
Power consumption in VA	<= 6 VA AC
Measurement range	40...70 Hz frequency
Electrical connection	1 conductor cable 0.2...2.5 mm ² AWG24...AWG12 flexible cable with cable end conforming to IEC 60947-1 1 conductor cable 0.5...4 mm ² AWG20...AWG11 solid cable without cable end conforming to IEC 60947-1 2 conductors cable 0.2...1.5 mm ² AWG24...AWG16 flexible cable with cable end conforming to IEC 60947-1 2 conductors cable 0.5...2.5 mm ² AWG20...AWG14 solid cable without cable end conforming to IEC 60947-1
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 for time delay
Maximum switching voltage	250 V AC/DC
[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
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 time delay +/- 10 % of the full scale value in input
Repeat accuracy	+/- 0.5 % for input and measurement circuit +/- 0.5 % for time delay

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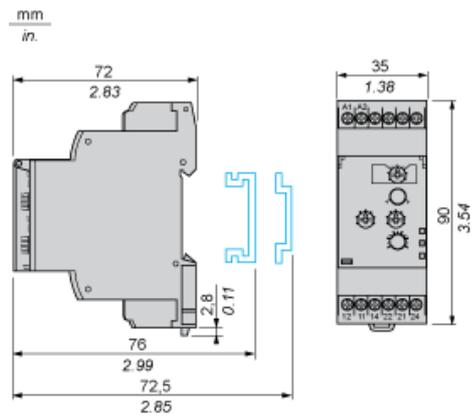
Measurement error	+/- 0.05 %/°C with temperature variation < +/- 1 % over the whole range with voltage variation
Threshold setting	-10...2 Hz -2...10 Hz
Marking	CE : 73/23/EEC CE : EMC 89/336/EEC
Overvoltage category	III conforming to IEC 60664-1
Insulation resistance	> 500 MOhm at 500 V DC conforming to IEC 60255-5 > 500 MOhm at 500 V DC 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
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 under 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	CSA C-Tick GL GOST UL
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, 1 min
Non-dissipating shock wave	4 kV
RoHS EUR status	Compliant
RoHS EUR conformity date	0701

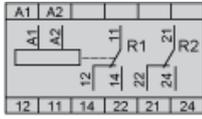
Frequency Control Relay

Dimensions and Mounting



Frequency Control Relay

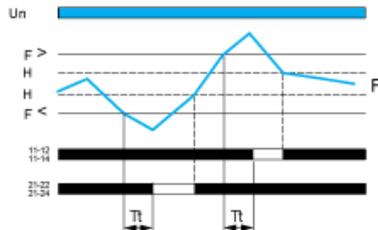
Wiring Diagram



Function Diagrams

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

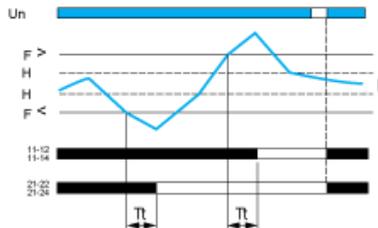
Without memory ("No Memory" mode)



- Tt Time delay after crossing of threshold (adjustable on front panel) from 0.1 s to 10 s
- Un Supply voltage
- F Monitored frequency
- H Hysteresis (fixed at 0.3 Hz)
- F> Over-frequency threshold (set by means of a switch)
- F< Under-frequency threshold (set by means of a switch)
- 11-12R1 output relay connections (refer to Connections and Schema)
- 11-14
- 21-22R2 output relay connections (refer to Connections and Schema)
- 21-24

Relay status: black color = energized.

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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.