

# Frequency control

## → Frequency control relay - 35 mm

- Controls frequency variations on 50 or 60 Hz AC networks
- Controls its own supply voltage, connected between phase and neutral
- Over and underfrequency with two independent relay outputs
- Selectable latching (memory) function
- LED status indication



HHZ

### Part numbers

Type	Function	Nominal voltage (V)	Code
HHZ	50 or 60 Hz over and underfrequency	120 → 277 V ~	84872501

### Product adaptations



- Customisable colours and labels
- Fixed threshold in the generic measurement range
- Fixed or adjustable time delay
- Adjustable fixed hysteresis

### Accessories

Description	Code
Removable sealable cover for 35 mm casing	84800001

## General characteristics

### Supply

Supply voltage Un	120 → 277 V ~
Voltage supply tolerance	-15% / +10%
Operating range	102 → 308 V ~
~ supply voltage frequency	50/60 Hz ± 15%
Galvanic isolation of power supply/measurement	No
Power consumption at Un	6 VA in ~
Immunity from micro power cuts	10 ms

### Inputs and measuring circuit

Measurement ranges	40 → 70 Hz
Max. measuring cycle time	200 ms/True RMS measurement
Adjustment of upper threshold	-2, +0, +2, +4, +6, +8, +10 Hz
Adjustment of lower threshold	+2, -0, -2, -4, -6, -8, -10 Hz
Fixed hysteresis	0.3 Hz
Display precision	±10% of full scale
Repetition accuracy with constant parameters	± 0.5%
Measuring error with voltage drift	< ± 1% across the whole range
Measuring error with temperature drift	± 0.05% / °C

### Timing

Delay on threshold crossing	0.1 → 10 s (0, +10%)
Display precision	±10% of full scale
Repetition accuracy with constant parameters	± 0.5%
Reset time	2 s
Delay on pick-up	500 ms

### Output

Type of output	2 single pole changeover relay
Type of contacts	No cadmium
Maximum breaking voltage	250 V ~
Max. breaking current	5 A ~
Min. breaking current	10 mA / 5 V ---
Electrical life (number of operations)	1 x 10 <sup>4</sup>
Breaking capacity (resistive)	1250 VA ~
Maximum rate	360 operations/hour at full load
Operating categories acc. to IEC 60947-5-1	AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14
Mechanical life (operations)	30 x 10 <sup>6</sup>

### Insulation

Nominal insulation voltage IEC 60664-1	400 V
Insulation coordination (IEC 60664-1 / 60255-5)	Overvoltage category III: degree of pollution 3
Rated impulse withstand voltage IEC 60664-1/60255-5	4 kV (1.2 / 50 μs)
Dielectric strength IEC 60664-1/60255-5	2 kV ~ 50 Hz 1 min.
Insulation resistance IEC 60664-1 / 60255-5	> 500 MΩ / 500 V ---

### General characteristics

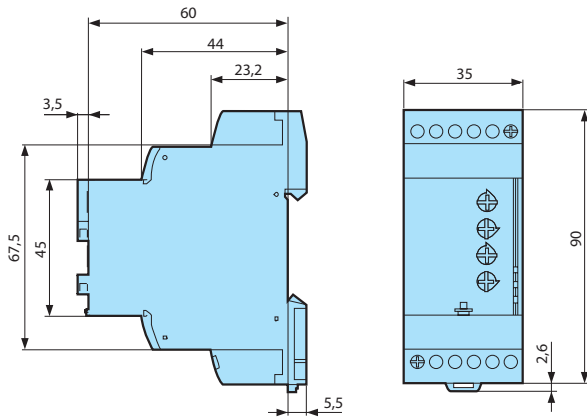
Display power supply	Green LED
Display relay	2 x yellow LEDs - These LEDs flash during the threshold time delay
Casing	35 mm
Mounting	On 35 mm symmetrical DIN rail, IEC/EN 60715
Mounting position	All positions
Material: enclosure plastic type VO to UL94 standard	Incandescent wire test according to IEC 60695-2-11 & NF EN 60695-2-11
Protection (IEC 60529)	Terminal block: IP20 Casing: IP30
Weight	100 g
Connecting capacity IEC 60947-1	Rigid: 1 x 4 <sup>2</sup> - 2 x 2.5 <sup>2</sup> mm <sup>2</sup> 1 x 11 AWG - 2 x 14 AWG Flexible with ferrules: 1 x 2.5 <sup>2</sup> - 2 x 1.5 <sup>2</sup> mm <sup>2</sup> 1 x 14 AWG - 2 x 16 AWG
Max. tightening torques IEC 60947-1	0.6 → 1Nm / 5.3 → 8.8 Lbf.In
Operating temperature IEC 60068-2	-20 → +50°C
Storage temperature IEC 60068-2	-40 → +70°C
Humidity IEC 60068-2-30	2 x 24 hr cycle 95% RH max. without condensation 55°C
Vibrations according to IEC/EN60068-2-6	10 → 150 Hz, A = 0.035 mm
Shocks IEC 60068-2-6	5 g

### Standards

Marking	CE (LVD) 73/23/EEC - EMC 89/336/EEC
Product standard	NF EN 60255-6 / IEC 60255-6 / UL 508 / CSA C22.2 N°14
Electromagnetic compatibility	Immunity EN 61000-6-2/IEC 61000-6-2 Emission EN 61000-6-4/EN 61000-6-3 IEC 61000-6-4/IEC 61000-6-3 Emission EN 55022 class B
Certifications	UL, CSA, GL pending
Conformity with environmental directives	RoHS, WEEE

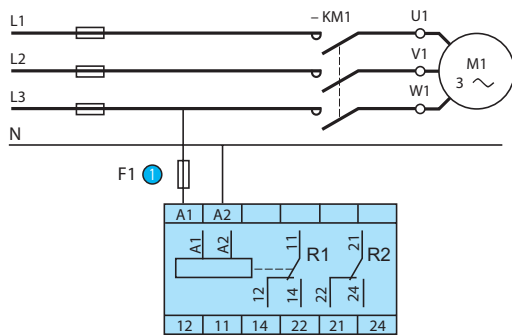
## Dimensions (mm)

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## Connections

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① 1 A fast-blow fuse or cut-out