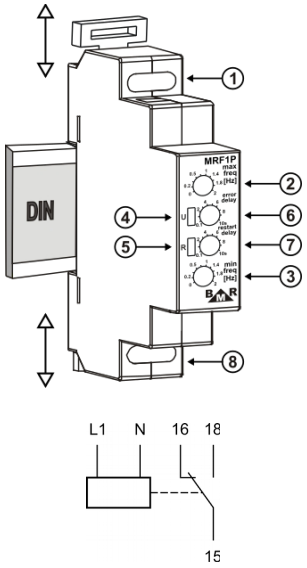
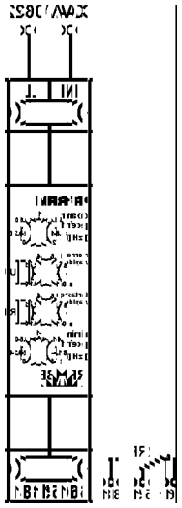
MRF1P

version 1.2

Single-phase frequency relay

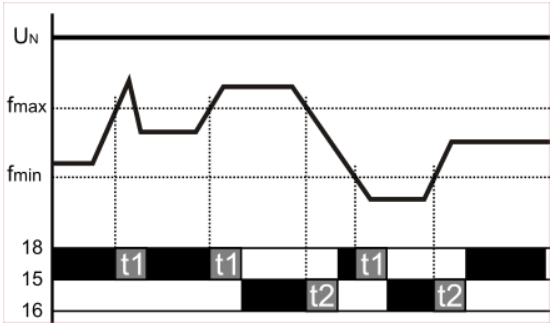
1. Description

Device is designed for network frequency control. Relay has one output double-throw contact 5 A.

Terminal description	Terminal placement	Connection diagram
❶ Supply / control voltage ❷ Frequency upper limit setting (max frequency) ❸ Frequency lower limit setting (min frequency) ❹ Power supply indication ❺ Device status indication ❻ Time delay for fault condition **t1** setting ❼ Re-connection time **t2** setting ❽ Output contacts		

2. Functions

After supply voltage applying the green LED turns on. If measured frequency is in the set limits, re-connection timer (**t2**) is started. It is indicated by yellow LED short blinking. After passing the time **t2** for re-connection, output relay will close and yellow LED turns on. If the frequency goes out of set limits, the time delay for fault condition (**t1**) will be timed. It is indicated by yellow LED short dimmed blinking. After passing the time **t1** the output relay will open and yellow LED, in case that frequency is over the upper limit, is symmetrically blinking with period of 0.5 second. In case that frequency is under the lower limit yellow LED is off. Immediately after frequency returns back to the requested limit, re-connection timer will start and and after passing the time **t2** output relay close and yellow LED turns on.



Note

Setting of upper or lower frequency limit to value 0 disables this function. It means that only lower or upper limit is controlled. If both limits will be set on 0, relay will not control frequency and it is disabled.

3. Signalization

U – ON (green)	Presence of supply voltage.
U – OFF (green)	Supply voltage is not present or wrong polarity.
R – ON (yellow)	Frequency is correct and in the set limits. Contact No. 15-18 is closed.
R – Off (yellow)	Failure status. Frequency is under the set lower limit. Contact No. 15-16 is closed.
R – flash 0.5s (yellow)	Failure status. Frequency is over the set upper limit. Contact No. 15-16 is closed.
R – flash long ON (yellow)	Timer of fault condition t1 is active.
R – flash long OFF (yellow)	Timer of re-connection delay t2 is active.

4. Technical features

Parameter	Value
Supply terminals	L1, N
Supply voltage	230 VAC (+10%, -15%)
Power consumption	Max. 1.5 VA
Supply voltage indication	green LED
Output indication	yellow LED
Nominal frequency	50 Hz (+/- 10 Hz)
Measuring range	40 ... 70Hz
Hysteresis	Fix 0.2 Hz
Measuring period	200 ms
Frequency control limits (adjustable)	+/-2 Hz (value 0 disable function)
Fault condition time (adjustable)	0.1 ... 10 second
Re-connection delay time (adjustable)	0.1 ... 10 second
Output parameters	
Number and type of contacts	1x changeover
Nominal current	5A
Switching power	max. AC 1000 VA
Trigger current	30 A
Nominal voltage / max. switching voltage	250 VAC / 440 VAC
Mechanical lifetime	3×10^6
Electrical lifetime	1.5×10^5 250 VAC, 5 A
Others	
Working temperature	-20°C ... +55°C
Storage temperature	-40°C ... +70°C
Working position	any
Mounting	IEC 60715 (DIN 35)
Protection degree	IP 40 on panel / IP 20 terminals
Electrical strength	4 kV
Conductor rigid and flexible	0.2 … 2.5 mm^2
Weight	85 g
Dimensions	90 x 18 x 65 mm
Standards	IEC 60255-6, IEC 61010

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