45,0 mm   75,0 mm   100,0 mm

**MAINS FREQUENCY
& VOLTAGE
MONITORING RELAY**
Type: UFWA

FEATURES

- **Adjustable version with individual under- and overvoltage settings and under- and overfrequency settings**

- **Function setting with dipswitch**

- **Ceramic resenator controlled reference**

- **Time delay - on and off - individually adjustable**

- **One unit for three mains voltages**

- **LEDs indicate the state of the frequency**

- **LED indicates the state of input**

- **LED indicates the state of relay**

- **LEDs indicate the timing function**

Description:
The combined voltage and frequency relays are designed for applications where a voltage and/or a frequency needs to be monitored. UFWA are combined over- and under voltage and frequency relays.
The relay can by means of dipswitches and trimmers be set to work as:
1) an under voltage and frequency relay
2) an over voltage and frequency relay
3) a frequency relay only
4) or as an under and over voltage and frequency relay

Operation:
When the supply voltage is applied, the - power up reset - period begins. If the nominal voltage and/or frequency is applied to the input, the internal relay pulls in the end of the reset period.
If the input voltage/frequency exceeds the adjusted upper or lower limits the relay drops out.
If the input voltage/frequency comes between the lower limit plus the differential and the upper limit minus the differential, the relay pulls in.
The voltage differential is fixed 2 % of the nominal input voltage.
The frequency differential is fixed 10 % of tripping deviation.
As under voltage relay only, the relay remains energized for input voltages exceeding the upper limit.
As over voltage relay only, the relay remains energized for input voltage under the lower limit.
As frequency relay only, the relay remains energized for input frequencies within the lower and upper limits.
As under and over and frequency relay, the relay remains energized for voltage and frequency within the limits.

Application:
To monitor mains voltages and frequencies. To protect electrical and electronic equipment from damage because of over- or under voltage. On special request, the relay can be modified to monitor higher or lower frequencies.

CONNECTION DIAGRAM
Rail mounting
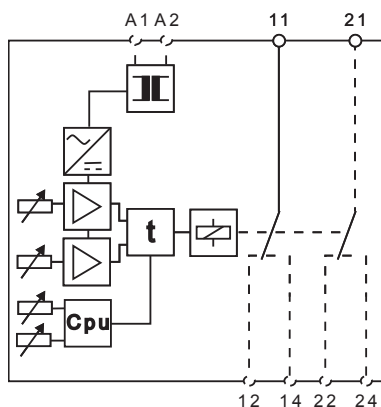
PROGRAMMABLE FEATURES

VOLTAGE SETTING				
TYPE 110 V	TYPE 230 V	TYPE 400 V	TYPE 460 V	
100 V	220 V	380 V	440 V	
110 V	230 V	400 V	440 V	
115 V	240 V	415 V	480 V	

ACTUATOR ■

FUNCTION

LOWER AND UPPER LIMIT

LOWER LIMIT

UPPER LIMIT

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SPECIFICATIONS

INPUT

Phase to phase voltage	Type B110: 100, 110 and 115
Selectable by dipswitch	Type B230: 220, 230 and 240
	Type B400: 380, 400 and 415
	Type B460: 440, 460 and 480
Adjustable range	0 ± 20 %
Differential	2 % of U_N

Frequency unit

Differential	Fixed approx. 10 % of tripping deviation.
Ref. deviation	± 0.5 %
Ref. temp. dependence	± 0.3 % (-20 to 80°C)
Response time	max 200 msec.

PERFORMANCE PARAMETERS

TIMING

Time range during run	Separate On and Off delay
	0 - 10 sec. adjustable
Response time	Approx. 200 msec.

ELECTRICAL

Temp. dependency	Typ. ± 0.02 % / °C
Supply dependency	Typ. ± 0.01 % / % ΔU

OUTPUT

	Relay, 2 C/O
Contact rating	6 A, 250 VAC, 1250 W
Mechanical life	30 million operations

SUPPLY

	AC voltage direct from input
AC supply range	110 V (From 99 to 140 V)
with transformer	230 V (From 198 to 264 V)
Standard voltage	400 V (From 342 to 484 V)
	460 V (From 393 to 557 V)
AC frequency range	45 to 440 Hz
Power consumption	4 VA, 2 W

GENERAL

Temperature range	- 25 °C to + 55 °C ambient	
Humidity	Up to 90 % RH non-condensing	
Dielectric test voltage	Coil to relay contacts	4000 VAC
	Pole to pole (45 mm.)	2500 VAC
Weight	0.22 kg	

CE

	International Standards
EMC directive 89/336:	EN50081 - Emission
	EN50082 - Immunity
Low voltage directive 73/23:	EN60255 - Electrical Relays

ORDERING INFORMATION

EXAMPLE: UFWA   F5 10 B 230 A A4 C

TYPE
Mains frequency & voltage control relay   UFWA

FREQUENCY
Center frequency 50Hz	F5
Center frequency 60Hz	F6
frequency range ± 0,4-2%	02
frequency range ± 1-5%	05
frequency range ± 2-10%	10
frequency range ± 4-20%	20

SUPPLY
AC with transformer	B
100, 110 and 115	110
220, 230 and 240	230
380, 400 and 415	400
440, 460 and 480	460

ADJUSTMENT
Trimpot and dipswitch adj.	A

HOUSING
Rail mounting	A

SIZE
45 mm.	4

CODE
Code end	C
Extended Code	E

We reserve the right to make changes for product improvement.