Monitoring Relays 1-Phase True RMS AC/DC Over or Under Voltage Types DUB03, PUB03







- TRMS AC/DC over or under voltage monitoring relays
- Selection of measuring range by DIP-switches
- Adjustable voltage on relative scale
- Adjustable hysteresis on relative scale
- Adjustable delay function (0.1 to 30 s)
- Programmable latching at set level
- Output: 8 A SPDT relay N.D. or N.E. selectable
- For mounting on DIN-rail in accordance with DIN/EN/EC 60715 (DUB03) or plug-in module (PUB03)
- 22.5 mm Euronorm housing (DUB03) or 36 mm plug-in module (PUB03)
- LED indication for relay, alarm and power supply ON

Product Description

DUB03 and PUB03 are precise TRMS AC/DC over or under voltage (selectable by DIP-switch) monitoring relays.

Owing to the built-in latch function, the ON-position of the relay output can be maintained.

The LED's indicate the state of the alarm and the output

Ordering Key Housing Function Type Item number Output Power supply

Type Selection

Mounting	Output	Frequency	Supply: 12 to 240V AC/DC	
DIN-rail	SPDT	50 - 400 Hz	DUB 03 C W24	
Plug-in	SPDT	50 - 400 Hz	PUB 03 C W24	

Input Specifications

Input (voltage level) DUB03 PUB03	Terminals A1, A2 Terminals 2, 10 Measure their own power supply		
Measuring ranges Direct Selectable by DIP-switch 24 VAC/DC 48 VAC/DC 115 VAC/DC 240 VAC/DC	Level 10 to 26 V 10 to 53 V 12 to 127 V 24 to 264 V	50 to 110% 20 to 110% 10 to 110% 10 to 110%	
The input voltage cannot raise over 300 VAC/DC with respect to ground (PUB03 only)			

Output Specifications

Output Rated insulation voltage	SPDT relay 250 VAC		
Contact ratings Resistive loads AC 1 DC 12 Small inductive loads AC 15 DC 13	μ 8 A @ 250 VAC 5 A @ 24 VDC 2.5 A @ 250 VAC 2.5 A @ 24 VDC		
Mechanical life	≥ 30 x 10 ⁶ operations		
Electrical life	$\geq 50 \text{ x } 10^3 \text{ operations}$ (at 8 A, 250 V, $\cos \varphi = 1$)		
Dielectric strength Dielectric voltage Rated impulse withstand volt.	≥ 2 kVAC (rms) 4 kV (1.2/50 μs)		

Supply Specifications

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Power supply Rated operational voltage through terminals:	Overvoltage cat. III (IEC 60664, IEC 60038)
A1 and A2 (DUB03) or 2 and 10 (PUB03) Dielectric voltage	12 to 240 V AC/DC +10% -15%; 45 to 440 Hz None
Rated operational power	5 VA



General Specifications

Power ON delay	1 s ± 0.5 s or 6 s ± 0.5 s	Housing		
Reaction time	(input signal variation from -20% to +20% or from	Dimensions	DUB03 PUB03	22.5 x 80 x 99.5 mm 36 x 80 x 94 mm
	+20% to -20% of set value)	Material		PA66 or Noryl
Alarm ON delay	< 100 ms	Weight		Approx. 150 g
Alarm OFF delay	< 100 ms	Screw terminals		
Accuracy	(15 min warm-up time) ± 1000 ppm/°C ± 10% on set value ± 50 ms ± 0.5% on full-scale	Tightening torque		Max. 0.5 Nm
Temperature drift				acc. to IEC 60947
Delay ON alarm		Product standard		EN 60255-6
Repeatability		Approvals		UL
Indication for Power supply ON	LED, green LED, red (flashing 2 Hz during delay time)	CE Marking		L.V. Directive 2006/95/EC
Alarm ON				EMC Directive 2004/108/EC
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Output relay ON	LED, yellow	Immunity		According to EN 60255-26
Environment		Emissions	According to EN 61000-6-2 According to EN 60255-26	
Degree of protection	IP 20	EIIIISSIOIIS		According to EN 60233-20 According to EN 61000-6-3
Pollution degree	2			, local aling to Elv a roca a a
Operating temperature	-20 to 60°C, R.H. < 95%			
Storage temperature	-30 to 80°C, R.H. < 95%			

Mode of Operation

DUB03 and PUB03 mon- It releases when the voltage Example 2 itor both AC and DC over or drops below (or exceeds) the (latch under voltage.

Example 1

(latch function disabled, ND relay)

more than the set delay time. tact isn't necessarily ON.

set level (see hysteresis set- NE relay) ting), or when power supply is interrupted.

Note

measured value exceeds (or age and the relay is set for time. drops below) the set level for undervoltage the output con- The relay releases when

function enabled,

The relay operates and latch- teresis setting). es in operating position when the measured value exceeds If the voltage drops below the (or drops below) the set level The relay operates when the minimum power supply volt- for more than the set delay

power supply is interrupted.

The red LED flashes until the delay time has expired or the measured value has dropped below the set point (see hys-

Function/Range/Level and Time Delay Setting

Adjust the input range setting the DIP switches 1 and 2 as shown below.

Select the desired function setting the DIP switches 3 to 6 as shown below.

To access the DIP switches open the grey plastic cover as shown below.

Selection of level and time delay:

Upper knob:

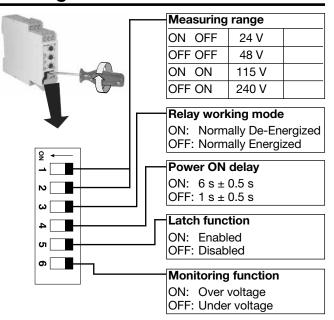
Setting of hysteresis on relative scale: 0 to 30% on set

Centre knob:

Voltage level setting on relative scale: 10 to 110% on full scale.

Lower knob:

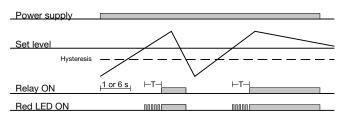
Setting of delay on alarm time on absolute scale (0.1 to 30 s).



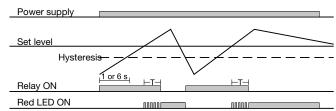


Operation Diagrams

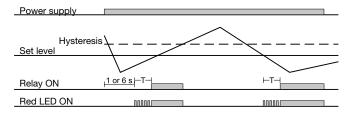
Over voltage - N.D. relay



Over voltage - N.E. relay



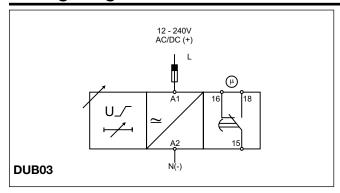
Under voltage - N.D. relay

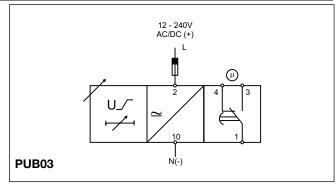


Under voltage - N.E. relay



Wiring Diagrams





Dimensions

