

Monitoring Relays 1-Phase True RMS AC/DC Over or Under Current Types DIB01, PIB01

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DIB01



PIB01

- TRMS AC/DC over or under current monitoring relay
- Current measuring through internal shunt
- Selection of measuring range by DIP-switches
- Measuring ranges from 0.1 mA to 10 A AC/DC
- Adjustable current on relative scale
- Adjustable hysteresis on relative scale
- Adjustable delay function (0.1 to 30 s)
- Programmable latching or inhibit at set level
- Output: 8 A SPDT relay N.D. or N.E. selectable
- For mounting on DIN-rail in accordance with DIN/EN 50 022 (DIB01) or plug-in module (PIB01)
- 22.5 mm Euronorm housing (DIB01) or 36 mm plug-in module (PIB01)
- LED indication for relay, alarm and power supply ON
- Galvanically separated power supply

Product Description

DIB01 and PIB01 are precise TRMS AC/DC over or under current (selectable by DIP-switch) monitoring relays. Direct measuring or through current transformer. Owing to the built-in latch function, the ON-position of the relay output can be maintained. Inhibit function

can be used to avoid relay operation when not desired (maintenance, transitions). The LED's indicate the state of the alarm and the output relay. Through the built-in shunt it is possible to monitor loads up to 10 A AC/DC.

Ordering Key

DIB 01 C B23 5A

Housing _____
 Function _____
 Type _____
 Item number _____
 Output _____
 Power supply _____
 Measuring range _____

Type Selection

Mounting	Output	Measuring range	Supply: 24 to 48 VAC/DC		Supply: 115/230 VAC	
DIN-rail	SPDT	0.1 to 5 mA AC/DC	DIB 01 C D48 5mA	DIB 01 C B23 5mA		
		1 to 50 mA AC/DC	DIB 01 C D48 50mA	DIB 01 C B23 50mA		
		10 to 500 mA AC/DC	DIB 01 C D48 500mA	DIB 01 C B23 500mA		
		0.1 to 5 A AC/DC	DIB 01 C D48 5A	DIB 01 C B23 5A		
		1 to 10 A AC/DC	DIB 01 C D48 10A	DIB 01 C B23 10A		
Plug-in	SPDT	0.1 to 5 mA AC/DC	PIB 01 C D48 5mA	PIB 01 C B23 5mA		
		1 to 50 mA AC/DC	PIB 01 C D48 50mA	PIB 01 C B23 50mA		
		10 to 500 mA AC/DC	PIB 01 C D48 500mA	PIB 01 C B23 500mA		
		0.1 to 5 A AC/DC	PIB 01 C D48 5A	PIB 01 C B23 5A		
		1 to 10 A AC/DC	PIB 01 C D48 10A	PIB 01 C B23 10A		

Input Specifications

Input (current level)	Terminals Y1, Y2	Terminals 5, 7	Measuring ranges (cont.)		Internal resist.	Max. curr.
DIB01			..500mA: 10 to 100 mA AC/DC 20 to 200 mA AC/DC 50 to 500 mA AC/DC Max. current for 1 s	0.5 Ω	700 mA	
PIB01						
Measuring ranges	Internal resist.	Max. curr.	..5A: 0.1 to 1 A AC/DC 0.2 to 2 A AC/DC 0.5 to 5 A AC/DC Max. current for 1 s	0.05 Ω	6 A	
						..10A: 1 to 10 A AC/DC Max. current for 1 s
Direct Selectable by DIP-switch ..5MA: 0.1 to 1 mA AC/DC 0.2 to 2 mA AC/DC 0.5 to 5 mA AC/DC Max. current for 1 s ..50MA: 1 to 10 mA AC/DC 2 to 20 mA AC/DC 5 to 50 mA AC/DC Max. current for 1 s						

Input Specifications (cont.)

Measuring ranges (cont.)

Standard CT (examples)	AAC _{rms}	Max. curr.
TADK2 50 A/5 A	5 to 50 A	60 A
CTD1 150 A/5 A	15 to 150 A	180 A
CTD4 400 A/5 A	40 to 400 A	480 A
TAD12 1000 A/5 A	100 to 1000 A	1200 A
TACO200 6000 A/5 A	600 to 6000 A	7200 A

Note:

The input voltage cannot raise over 300 VAC/DC with respect to ground (PIB01 only)

Contact input

DIB01	Terminals Z1, Y1
PIB01	Terminals 8, 9
Disabled	> 10 kΩ
Enabled	< 500 Ω
Latch disable	> 500 ms

Output Specifications

Output	SPDT relay
Rated insulation voltage	250 VAC
Contact ratings (AgSnO₂)	μ
Resistive loads AC 1	8 A @ 250 VAC
DC 12	5 A @ 24 VDC
Small inductive loads AC 15	2.5 A @ 250 VAC
DC 13	2.5 A @ 24 VDC
Mechanical life	≥ 30 x 10 ⁶ operations
Electrical life	≥ 10 ⁵ operations (at 8 A, 250 V, cos φ = 1)
Operating frequency	≤ 7200 operations/h
Dielectric strength	
Dielectric voltage	≥ 2 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 μs)

Supply Specifications

Power supply

Rated operational voltage through terminals:	
A1, A2 or A3, A2 (DIB01)	
2, 10 or 11, 10 (PIB01)	
D48:	
B23:	

Overvoltage cat. III (IEC 60664, IEC 60038)
24 to 48 VAC/DC ± 15%
45 to 65 Hz, insulated
115/230 VAC ± 15%
45 to 65 Hz, insulated

Dielectric voltage

Supply to input	
Supply to output	
Input to output	

DC supply AC supply

2 kV	4 kV
4 kV	4 kV
4 kV	4 kV

Rated operational power

AC	4 VA
DC	0.8 W

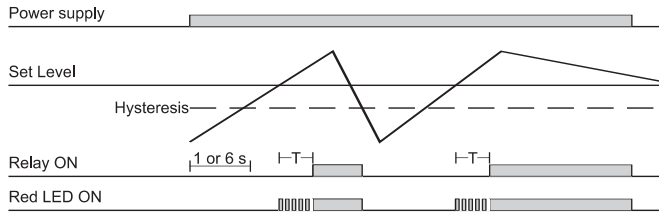
General Specifications

Power ON delay	1 s ± 0.5 s or 6 s ± 0.5 s
Reaction time	(input signal variation from -20% to +20% or from +20% to -20% of set value)
Alarm ON delay	< 100 ms
Alarm OFF delay	< 100 ms
Accuracy	(15 min warm-up time)
Temperature drift	± 1000 ppm/°C
Delay ON alarm	± 10% on set value ± 50 ms
Repeatability	± 0.5% on full-scale
Indication for	
Power supply ON	LED, green
Alarm ON	LED, red (flashing 2 Hz during delay time)
Output relay ON	LED, yellow
Environment	(EN 60529)
Degree of protection	IP 20
Pollution degree	3 (DIB01), 2 (PIB01)
Operating temperature	-20 to 60°C, R.H. < 95%
Storage temperature	-30 to 80°C, R.H. < 95%

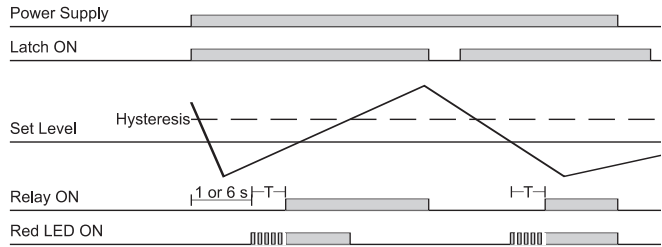
Housing		
Dimensions	DIB01 PIB01	22.5 x 80 x 99.5 mm 36 x 80 x 94 mm
Material		PA66 or Noryl
Weight		Approx. 150 g
Screw terminals		
Tightening torque		Max. 0.5 Nm acc. to IEC 60947
Product standard		EN 60255-6
Approvals		UL, CSA
CE Marking		L.V. Directive 2006/95/EC EMC Directive 2004/108/EC
EMC		
Immunity		According to EN 60255-26 According to EN 61000-6-2
Emissions		According to EN 60255-26 According to EN 61000-6-3

Operation Diagrams

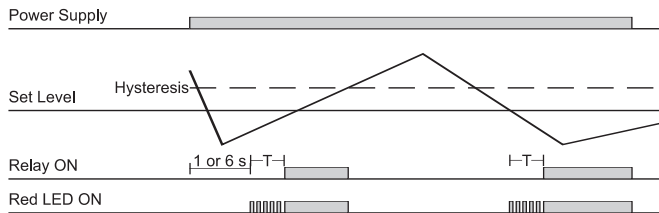
Over current - N.D. relay



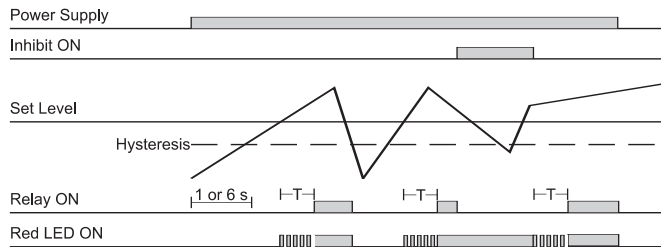
Under current - Latch function - N.D. relay



Under current - N.D. relay

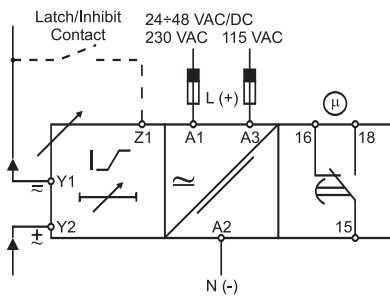


Over current - Inhibit function - N.D. relay

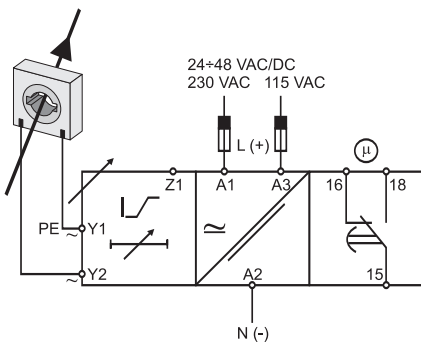


Wiring Diagrams

Example 1

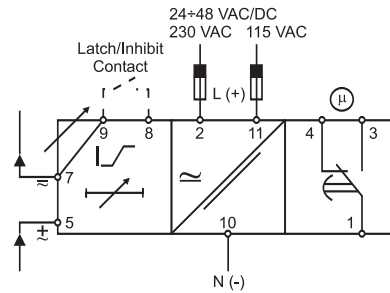


Example 2

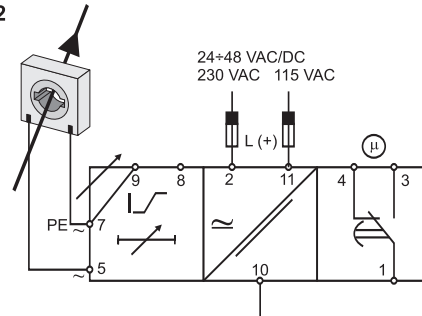


DIB01

Example 1



Example 2



PIB01

Dimensions

