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


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)
DIB01 — Terminals Y1, Y2
PIB01 — Terminals 5, 7

Measuring ranges Direct, Selectable by DIP-switch		**Internal resist.**	**Max. curr.**
..5MA:	0.1 to 1 mA AC/DC	50 Ω	50 mA
	0.2 to 2 mA AC/DC	50 Ω	50 mA
	0.5 to 5 mA AC/DC	50 Ω	50 mA
	Max. current for 1 s		100 mA
..50MA:	1 to 10 mA AC/DC	5 Ω	150 mA
	2 to 20 mA AC/DC	5 Ω	150 mA
	5 to 50 mA AC/DC	5 Ω	150 mA
	Max. current for 1 s		500 mA

Measuring ranges (cont.)

		Internal resist.	**Max. curr.**
..500MA:	10 to 100 mA AC/DC	0.5 Ω	700 mA
	20 to 200 mA AC/DC	0.5 Ω	700 mA
	50 to 500 mA AC/DC	0.5 Ω	700 mA
	Max. current for 1 s		1.4 A
..5A:	0.1 to 1 A AC/DC	0.05 Ω	6 A
	0.2 to 2 A AC/DC	0.05 Ω	6 A
	0.5 to 5 A AC/DC	0.05 Ω	6 A
	Max. current for 1 s		15 A
..10A:	1 to 10 A AC/DC	3 mΩ	11 A
	Max. current for 1 s		50 A

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 ($AgSnO_2$)		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		Overvoltage cat. III (IEC 60664, IEC 60038)
Rated operational voltage through terminals:		
A1, A2 or A3, A2	(DIB01)	
2, 10 or 11, 10	(PIB01)	
	D48:	24 to 48 VAC/DC ± 15% 45 to 65 Hz, insulated
	B23:	115/230 VAC ± 15% 45 to 65 Hz, insulated

Dielectric voltage	**DC supply**	**AC supply**
Supply to input	2 kV	4 kV
Supply to output	4 kV	4 kV
Input to output	4 kV	4 kV
Rated operational power		
AC	4 VA	
DC	0.8 W	

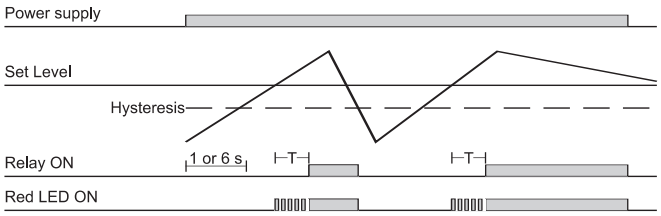
General Specifications

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%

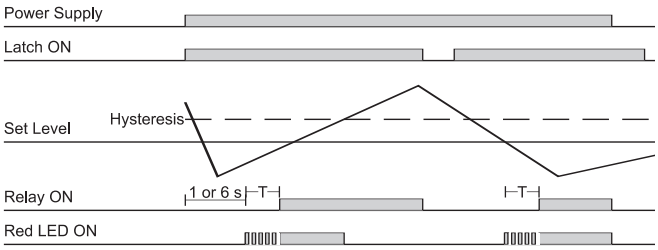
Housing		
Dimensions	DIB01	22.5 x 80 x 99.5 mm
	PIB01	36 x 80 x 94 mm
Material		PA66 or Noryl
Weight		Approx. 150 g
Screw terminals		
Tightening torque		Max. 0.5 Nm acc. to IEC 60947
Product standard		EN 60255-6
Approvals		UL, CSA
CE Marking		L.V. Directive 2006/95/EC EMC Directive 2004/108/EC
EMC		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

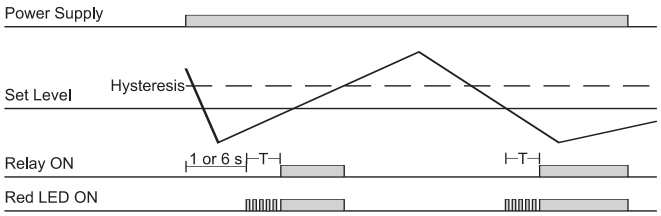
Over current - N.D. relay



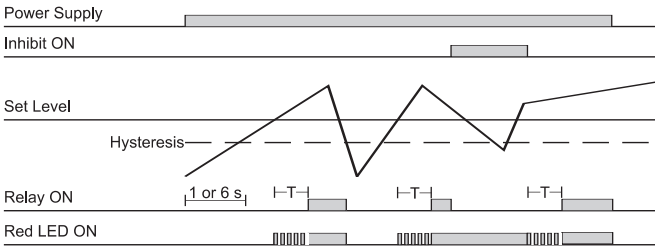
Under current - Latch function - N.D. relay



Under current - N.D. relay

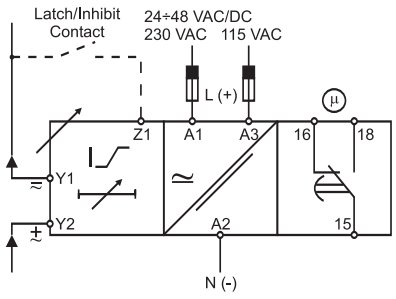


Over current - Inhibit function - N.D. relay

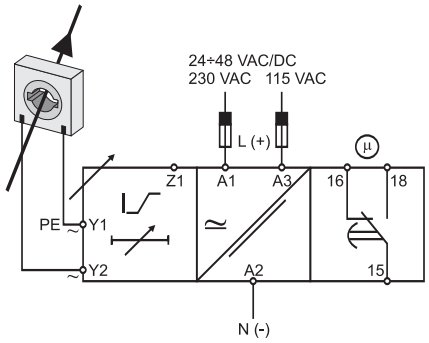


Wiring Diagrams

Example 1

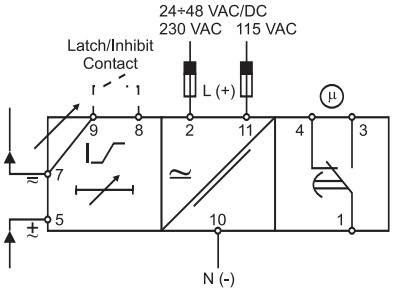


Example 2

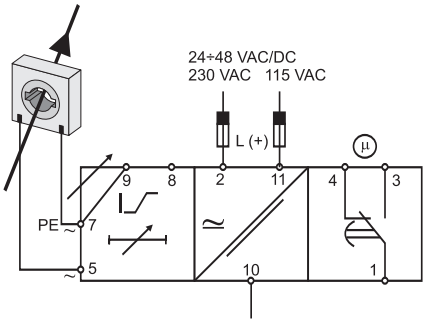


DIB01

Example 1



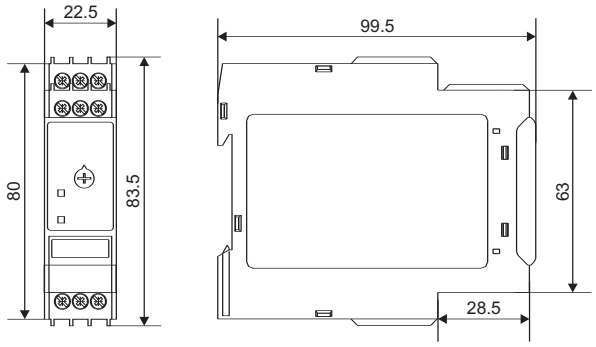
Example 2



PIB01

Dimensions

DIN-rail



Plug-in