

Monitoring Relays

1-Phase True RMS AC Over or Under Current

Type DIB01 100A

CARLO GAVAZZI



- TRMS AC over or under current monitoring relay
- Current measuring through built-in current transformer
- Selection of measuring range by DIP-switches
- Measuring ranges from 2 A to 100 A AC
- 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
- 22.5 mm Euronorm housing
- LED indication for relay, alarm and power supply ON
- Galvanically separated power supply

Product Description

DIB01 is a precise TRMS AC over or under current (selectable by DIP-switch) monitoring relay. 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 current transformer it is possible to monitor loads up to 100 A AC.

Ordering Key

DIB 01 C M24 100A

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

Type Selection

Mounting	Output	Measuring range	Supply: 24 VDC and 24 to 240 VAC
DIN-rail	SPDT	2 to 100 A AC	DIB 01 C M24 100A

Input Specifications

Input (current level) DIB01 100A	Built-in current transformer
Measuring ranges Selectable by DIP-switch	Max current
2 to 20 A AC	120 A
5 to 50 A AC	120 A
10 to 100 A AC	120 A
Max. current for 30 s	250 A
Max. current for 1 s	2000 A

Contact input DIB01 Disabled Enabled Latch disable	Terminals A1, Y1 Open < 10 kΩ > 500 ms
---	---

Supply Specifications

Power supply Rated operational voltage through terminals: A1, A2	Overvoltage cat. III (IEC 60664, IEC 60038) 24 VDC - 15% +10% 24 to 240 VAC ± 15% 45 to 65 Hz
Dielectric voltage Supply to input Supply to output Input to output	4 kV 4 kV 4 kV
Rated operational power DC AC	1 W 1 W / 35 VA

Output Specifications

Output Rated insulation voltage	SPDT relay 250 VAC
Contact ratings (AgSnO₂) 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	≥ 10 ⁵ operations (at 8 A, 250 V, cos φ = 1)
Operating frequency	≤ 7200 operations/h
Dielectric strength Dielectric voltage Rated impulse withstand volt.	≥ 2 kVAC (rms) 4 kV (1.2/50 μs)

General Specifications

Power ON delay	1 s \pm 0.5 s or 6 s \pm 0.5 s
Reaction time	
Alarm ON delay	< 100 ms
Alarm OFF delay	< 100 ms
Accuracy	(15 min warm-up time)
Temperature drift	\pm 500 ppm/°C
Delay ON alarm	\pm 10% on set value \pm 50 ms
Repeatability	\pm 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
Operating temperature	-20 to 60°C, R.H. < 95%
Storage temperature	-30 to 80°C, R.H. < 95%

Housing	
Dimensions	22.5 x 80 x 99.5 mm
Material	PA66 or Noryl
Weight	Approx. 155 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

Mode of Operation

DIB01 monitors AC over or under current through an internal current transformer.

Example 1

(connection between terminals A1, Y1 - latching function enabled - Relay ND)
The relay operates and latches in operating position when the measured value exceeds (or drops below)

the set level for more than the set delay time. Provided that the current has dropped below (or has exceeded) the set point (see hysteresis setting), the relay releases when the interconnection between terminals A1, Y1 is interrupted or the power supply is interrupted as well. The red LED flashes until the delay time has expired.

Example 2

(no connection between terminals A1, Y1 - latch function disabled - Relay ND)
The relay operates when the measured value exceeds (or drops below) the set level for more than the set delay time. It releases when the current drops below (or exceeds) the set level (see hysteresis setting) or when

power supply is interrupted.

Note

When the inhibit contact is opened, if the input signal is already in alarm position, the delay time needs to elapse before relay activation.

Function/Range/Level and Time Delay Setting

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

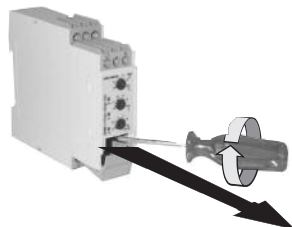
Select the desired function setting DIP switches 3 to 6 as shown below.

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

Selection of level and time delay:

Lower knob:

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



Upper knob:

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

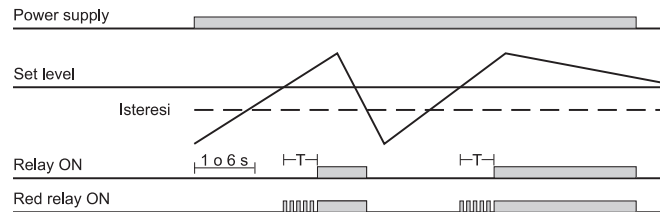
Centre knob:

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

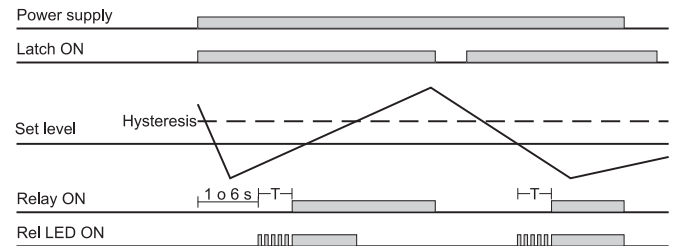
<div> <div>ON</div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> <div>6</div> </div>	Measuring range				
	SW1	ON	ON	OFF	OFF
	SW2	OFF	ON	ON	OFF
		20A	50A	100A	100A
	Relay working mode				
	ON: Normally De-energized OFF: Normally Energized				
	Power ON delay				
	ON: 6 s \pm 0.5 s OFF: 1 s \pm 0.5 s				
	Contact input				
	ON: Latch function enable OFF: Inhibit function enable				
	Monitoring function				
	ON: Over current OFF: Under current				

Operation Diagrams

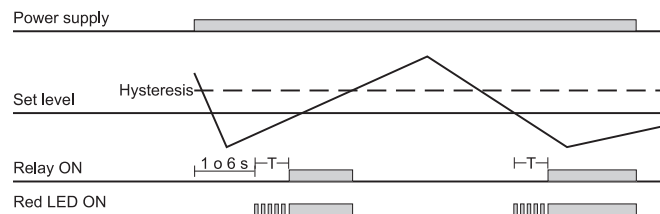
Over current - N.D. relay



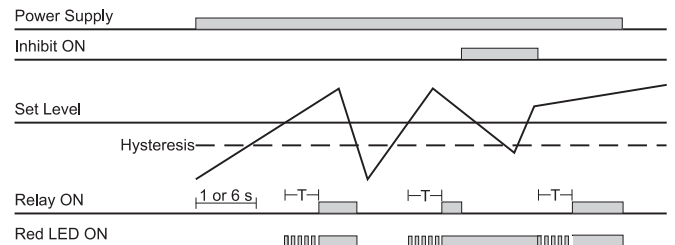
Under current - Latch function - N.D. relay



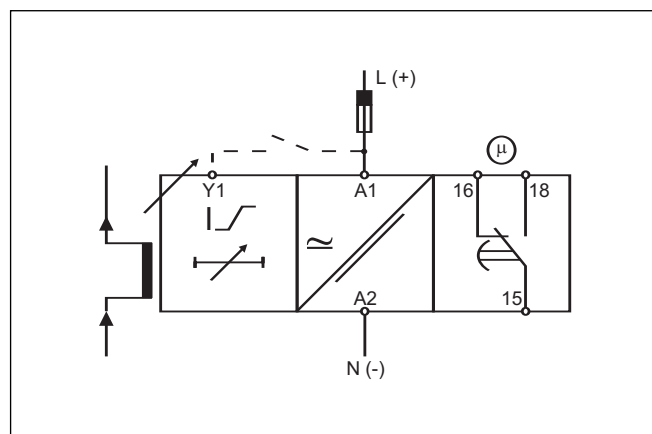
Under current - N.D. relay



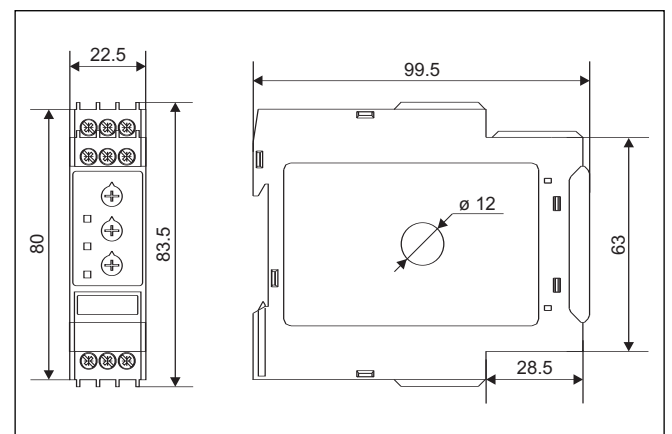
Over current - Inhibit function - N.D. relay



Wiring Diagram



Dimensions



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Carlo Gavazzi:](#)

[DIB01CM24100A](#)