



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Monitoring Relays

1-Phase AC/DC Over Voltage - AC Over Current

Types DUA01, PUA01

CARLO GAVAZZI



DUA01



PUA01

- AC/DC over voltage monitoring relay
- Selection of measuring range by DIP-switches
- Measuring ranges: 2 to 20 VAC/DC, 5 to 50 VAC/DC, 20 to 200 VAC/DC, 50 to 500 VAC/DC, 0.4 to 4 V_p AC
- Adjustable voltage limit on relative scale
- Adjustable hysteresis
- Programmable latching at set level
- Output: 8 A SPDT relay normally de-energized
- For mounting on DIN-rail in accordance with DIN/EN 50 022 (DUA01) or plug-in module (PUA01)
- 22.5 mm Euronorm housing (DUA01) or 36 mm plug-in module (PUA01)
- LED indication for relay and power supply ON
- Galvanically separated power supply

Product Description

DUA01 and PUA01 are precise AC/DC over voltage monitoring relays. They can also be used as 1-phase or 3-phase over current monitoring relays when connected with MI or MP current

transformers. Owing to the built-in latch function, the ON-position of the relay output can be maintained. The red LED indicates the alarm status.

Ordering Key **DUA 01 C B23 500V**

Housing	_____
Function	_____
Type	_____
Item number	_____
Output	_____
Power supply	_____
Range	_____

Type Selection

Mounting	Output	Supply: 24 to 48 VAC/DC	Supply: 115/230 VAC
DIN-rail	SPDT	DUA 01 C D48 500V	DUA 01 C B23 500V
Plug-in	SPDT	PUA 01 C D48 500V	PUA 01 C B23 500V

Input Specifications

Input (voltage level)	Terminals Y1, Y2	
DUA01	Terminals 5, 7	
PUA01		
Measuring ranges	Int. resist.	Max. volt.
Direct		
Selectable by DIP-switches		
2 to 20 VAC/DC	> 500 kΩ	600 V
5 to 50 VAC/DC	> 500 kΩ	600 V
20 to 200 VAC/DC	> 500 kΩ	600 V
50 to 500 VAC/DC	> 500 kΩ	600 V
0.4 to 4 V _p AC	> 500 kΩ	600 V
Max. voltage for 1 s		1000 V
MI and MP CT ranges	AAC rms	Max. curr.
1-ph.: 3-ph.:		
MI 5 MP 3005	0.5 to 5 A	20 AAC
MI 20 MP 3020	2 to 20 A	50 AAC
MI 100 MP 3100	10 to 100 A	250 AAC
MI 500 MP 3500	50 to 500 A	750 AAC
Note:	The input voltage cannot raise over 300 VAC/DC with respect to ground (PUA01 only)	
Contact input	Terminals Z1, Y1	
DUA01	Terminals 8, 9	
PUA01		
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 Rated operational voltage through terminals: A1, A2 or A3, A2 (DUA01) 2, 10 or 11, 10 (PUA01)	Overvoltage cat. III (IEC 60664, IEC 60038)	
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	2 W	

General Specifications

Reaction time Alarm ON delay	< 100 ms (voltage rising from -20% to +20% set value)
Alarm OFF delay	< 300 ms (voltage decreasing from +20% to -20% set value)

Mode of Operation

DUA01 and PUA01 monitor both AC and DC over voltage. When connected with MI or MP current transformer (using the 0.4 - 4 V_p range) they can monitor 1-phase or 3-phase AC currents up to 500 A.

Example 1

(connection between terminals Z1, Y1 or 8, 9 - latch function enabled)

The relay operates and latches in operating position when the measured value exceeds the set level. Provided that the voltage has dropped min. 4% below the set point (see hysteresis), the relay releases when the interconnection between terminals Z1, Y1 or 8, 9 is interrupted or the power supply is interrupted as well.

Example 2 (MI CT)

(no connection between terminals Z1, Y1 or 8, 9)

The relay operates when the current flowing through the CT exceeds the set level. It releases when the current drops min. 4% below the set level (see hysteresis) or when power supply is interrupted.

Example 3 (MP CT)

(no connection between terminals Z1, Y1 or 8, 9 - latch function disabled)

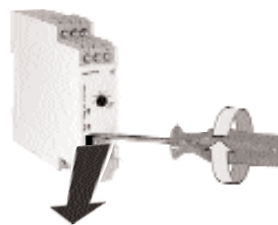
The relay operates when the maximum current flowing through the CT exceeds the set level. It releases when the maximum current drops min. 4% below the set level (see hysteresis) or when power supply is interrupted.

General Specifications (cont.)

Accuracy Temperature drift Repeatability	(15 min warm-up time) ± 1000 ppm/°C ± 0.5% on full-scale	
Indication for Power supply ON Output relay ON	LED, green LED, red	
Environment Degree of protection Pollution degree Operating temperature Storage temperature	(EN 60529) IP 20 3 (DUA01), 2 (PUA01) -20 to 60°C, R.H. < 95% -30 to 80°C, R.H. < 95%	
Housing Dimensions	DUA01 PUA01	22.5 x 80 x 99.5 mm 36 x 80 x 94 mm PA66 or Noryl
Material		
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	

Range - Level Setting

Adjust the measuring range setting the DIP switches 1 to 4 as shown below. To access the DIP switches open the grey plastic cover using a screwdriver as shown below.



Measuring range

OFF ON OFF OFF	0.4 to 4 V _p
ON OFF OFF OFF	2 to 20 VAC/DC
OFF OFF OFF OFF	5 to 50 VAC/DC
ON OFF ON OFF	20 to 200 VAC/DC
ON OFF OFF ON	50 to 500 VAC/DC

Centre knob:

Setting of voltage on relative scale: from 10 to 110% of the full-scale value.

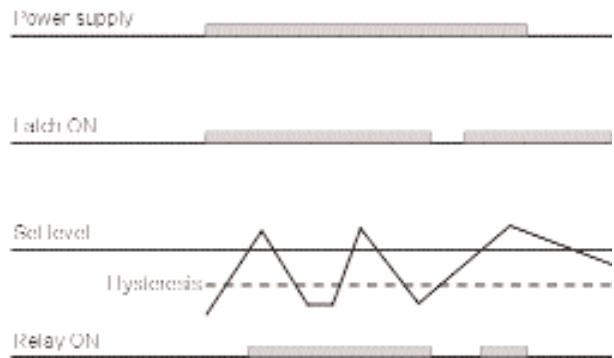
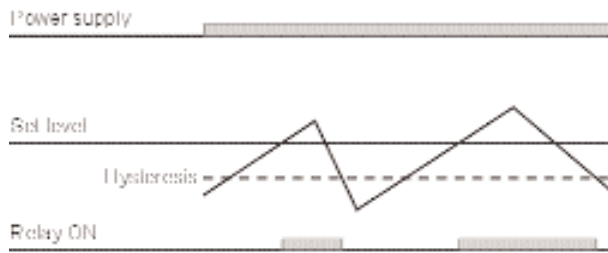
Hysteresis:

Approx. 4% of set value, it can be extended by inserting a resistor between terminals Z1, Y1 or 8, 9.

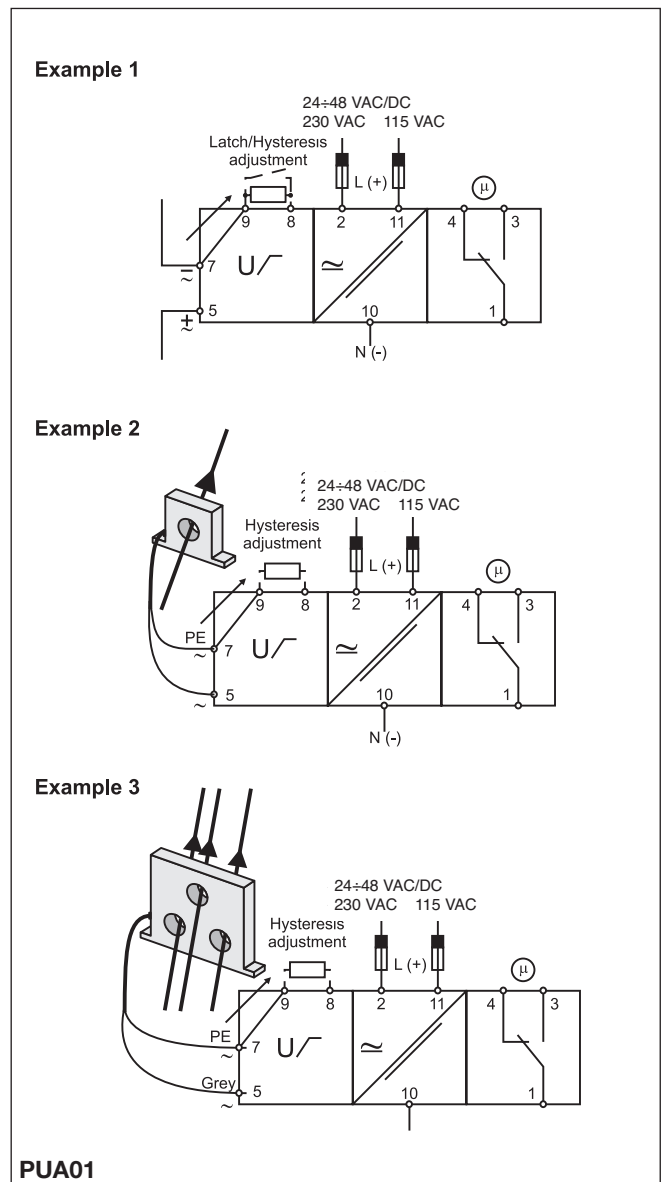
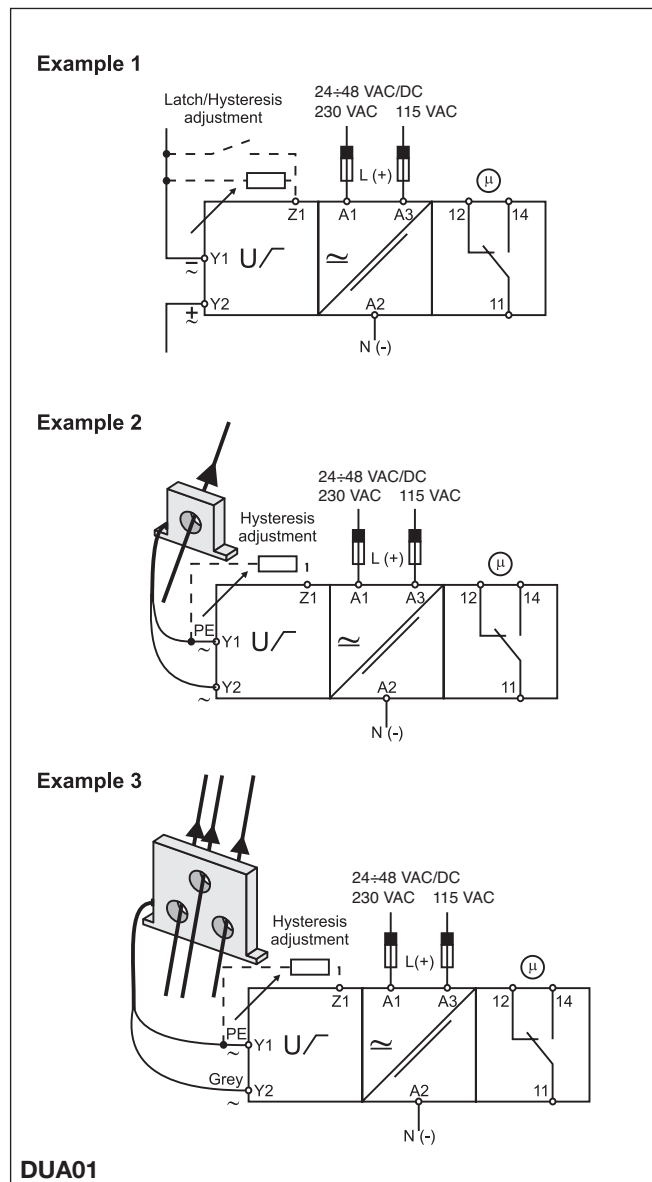
Approx. resistor values:

10%:	180 kΩ
25%:	47 kΩ
50%:	22 kΩ
75%:	15 kΩ
Latch:	< 500 Ω

Operation Diagrams

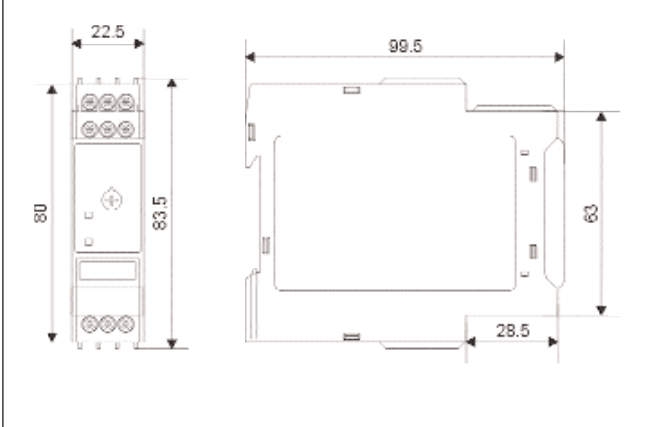


Wiring Diagrams



Dimensions

DIN-rail



Plug-in

