



Limit value relay with indicator

for direct and alternating current as well as
direct and alternating voltage
1 or 2 limit values

Type:
GMA



Application

The electronic limit value relay GMA is used for monitoring the alternating or direct current as well as the alternating or direct voltage. The alternating current parameters are measured as TrueRMS value with arbitrary waveform. The measured value or the limit values are indicated in a 2-digit LCD display.

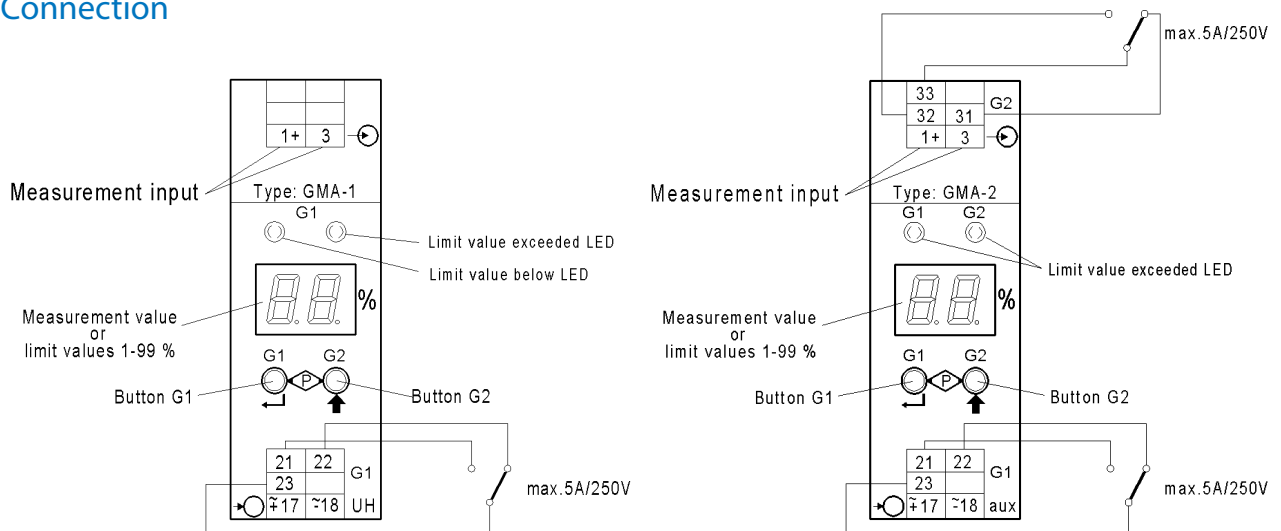


Function

The limit values are adjustable in 1% intervals using pushbuttons on the front panel. Hysteresis, switch on or switch off delay, closed-circuit/open-circuit principle and min/max principle may also be set via the pushbuttons. If limit values are exceeded, this is indicated by LEDs. The limit value relay is installed in a 22.5 mm wide housing and designed for snap-on fastening on top hat rail. An auxiliary voltage is required.



Connection



Types and variants

Input	GMA-1	DC
	(1 limit value)	AC + DC True RMS
	GMA-2	DC
	(2 limit values)	AC + DC True RMS
Surcharges	Auxiliary voltage other than 230 V AC:	
	24 V DC	
	6-30 V AC + DC	
	36-265 V AC + DC	
	110 V AC	



Technical data

Input	Input variables	direct current or direct voltage, alternating current or alternating voltage, the quantities are measured as true RMS value (up to crest factor 4) with arbitrary waveform in the range of DC and AC 40 - 1000 Hz			
	Limit value adjustment	0-99 %, adjustable in 1 % intervalls			
	Indicators	2 digit LED display for measuring values 0-99 % of full scale 2 red LEDs for limit value violation			
	Accuracy	± 1 %			
	Test voltage	4 kV between measuring input and relay contact			
	Switching characteristic	Switching accuracy	± 1 % of full scale		
Hysteresis		adjustable from 0-10 % of full scale			
Circuit time		< 400 ms for 10 % limit value exceedance			
Switching delay		adjustable range 0-99 s			
Relay contacts		1 (GMA-1) or 2 (GMA-2) changeover contacts			
Contact rating		max. 5 AAC, max. 250 V AC, 1250 VA			
Temperature range		-15 °C to +20 °C to +30 °C to +55 °C			
Temperature influence		< 0,1 % at 10 K			
Overload capacity		voltage 10-fold, max. 2000 V, current 10-fold up to 20 mA, 2-fold for above			
Standards		EMC	DIN EN 61326		
	Mechanical strength	DIN EN 61 010 part 1			
	Electrical safety	DIN EN 61 010 part 1, housing insulated, protection class II, measuring category CAT III for voltages up to 300 V (phase to neutral) as well as measuring category CAT II for rated voltages above 300 V to 600 V (phase to neutral)			
Auxiliary voltage		230 V AC ± 15 %, 45-65 Hz, 2 VA			
	Options	<ul style="list-style-type: none"> ● 110 V AC ± 15 %, 45-65 Hz, 2 ● 24 V DC - 15 % to + 25 %, 2,5 W ● 6-30 V AC + DC, 2 VA ● 36-265 V AC + DC, 2 VA 			
Dimensions	Housing	Housing A (22,5 mm wide), page A1			
Weight		200 g			
Measuring ranges	Alternating current AC+DC True RMS	adjustable	from	to	internal resistance
		10 A	0,1 A	9,9 A	0,006 Ω
		5 A	0,05 A	4,95 A	0,012 Ω
		1 A	0,01 A	0,99 A	0,06 Ω
		100 mA	1 mA	99 mA	0,6 Ω
	Alternating voltage AC+DC True RMS	10 mA	0,1 mA	9,9 mA	6 Ω
		500 V	5 V	495 V	1 M Ω
		100 V	1 V	99 V	1 M Ω
		10 V	0,1 V	9,9 V	100 M Ω
		1 V	0,01 V	0,99 V	10 M Ω
	Direct current DC	10 A	0,1 A	9,9 A	0,006 Ω
		1 A	0,01 A	0,99 A	0,06 Ω
		100 mA	1 mA	99 mA	0,6 Ω
		10 mA	0,1 mA	9,9 mA	6 Ω
		20 mA	0,2 mA	19,8 mA	3 Ω
		4-20 mA	4 mA	19,84 mA	3 Ω
		Direct voltage DC	500 V	5 V	495 V
	100 V		1 V	99 V	1 M Ω
	10 V		0,1 V	9,9 V	100 k Ω
	1 V		0,01 V	0,99 V	10 k Ω
100 mV	1 mV		99 mV	1 k Ω	
60 mV	0,6 mV		59,4 mV	1 k Ω	
Installation	Fastening	Snap-on fastening on top hat rail 35 mm acc. to DIN EN 60 715			
	Electrical connection	Screw terminal max. 4 mm ²			