

Process displays

For current and voltage

PA419



Features

- Voltage input TRMS-AC/DC up to 600 V
- Current input AC/DC 1 A, 5 A and shunt (precision resistor) 60 or 100 mV
- With 2 or 4 limits
- Display range can be linearised
- Min, Max, Hold functions
- Analog output 4...20 mA or 0...10 V
- Interface RS232 or RS485
- LED display, 5-digits, 3 colors
- DIN housing 96 x 48 mm

PA419 - Process display

Technical data - electrical ratings

Voltage supply	85...265 VAC (50/60 Hz) or 100...300 VDC 21...53 VAC (50/60 Hz) or 10.5...70 VDC
Power consumption	8 W
Display	LED, 7 segments, 3 colors - red, green, amber (with 100 unit stickers for front)
Number of digits	5-digits + activity indicator
Digit height	14 mm
Display range	-19999...19999 ("-OuEr" or "OuEr" to signal overflow)
Display refresh	50 ms
Function	Digital display of 1 analog measured value, With Min/Max memory
A/D transformer	Principle $\Sigma\Delta$ Resolution 16 bit Measuring rate 20/s Temp. coeffic. 100 ppm/°C
Analog input	Current or voltage input
Programmable parameters	Measuring range Display intensity Display color Display range can be linearised Decimal point Relay outputs with time delay or hysteresis Analog output
Limits	Without, 2, 4
Control inputs	3 inputs NPN, max. 40 V (20 mA)
Control functions	15 programmable functionalities
Data memory	>10 years in EEPROM
Outputs electronic	Optocoupler PNP (optional)
Outputs relay	2x change-over contact, floating, or 4x normally open

Part number

PA419. AX01

Voltage supply

- 4 85...265 VAC and 100...300 VDC
- 5 21...53 VAC and 10.5...70 VDC

Relay outputs / Analog output

- 0 Without outputs
- 1 Two relay outputs
- 2 Four relay outputs
- 3 Four electronic outputs PNP
- 5 Analog output 4...20 mA
- 6 Two relay outputs and analog output 4...20 mA
- 7 Four relay outputs and analog output 4...20 mA
- 8 Four electronic outputs PNP and analog output 4...20 mA
- A Analog output 0...10 V
- B Two relay outputs and analog output 0...10 V
- C Four relay outputs and analog output 0...10 V
- D Four electronic outputs PNP and analog output 0...10 V

Interface

- 0 Without interface
- 1 RS485
- 2 RS232

Accessories

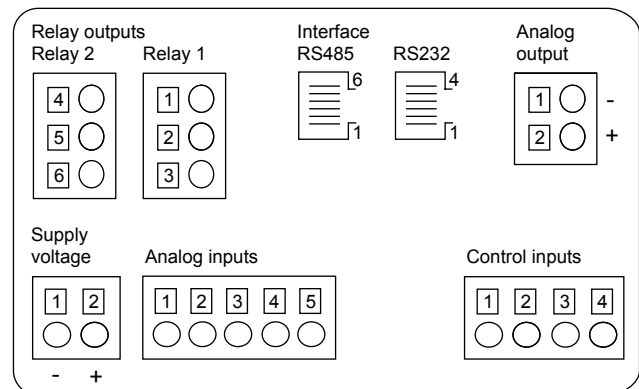
Mounting accessories

ZPA4.001 Accessory for DIN rail mounting (ZPA4.001)

Technical data - mechanical design

Ambient temperature	-10...+60 °C
Storage temperature	-25...+85 °C
Relative humidity	95 % non-condensing
Connection	Spring-loaded terminal connector, detachable
Core cross-section	1 mm ² (Grid 5.08) 2.5 mm ² (Grid 7.62)
Protection DIN EN 60529	IP 65 (face)
Operation / keypad	Membrane with softkeys
Housing type	Built-in housing
Dimensions W x H x L	96 x 48 x 96 mm
Cutout dimensions	92 x 45 mm (+0.3)
Mounting depth	83 mm
Mounting type	Front panel installation by clip frame
Weight approx.	160 g
Material	Housing: Polycarbonate, UL 94V-0

Connection diagram



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Inputs and outputs

Analog input VDC

Range	Resolution	Accuracy	Input resistance
2 V	0.1 mV	0.05 % ±0.3 mV	100 kΩ
20 V	1 mV	0.05 % ±3 mV	1 MΩ
200 V	10 mV	0.05 % ±30 mV	1 MΩ
600 V	0.1 V	0.05 % ±0.3 V	1 MΩ

Analog input VAC - TRMS

Range	Resolution	Accuracy	Input resistance
2 V	0.1 mV	0.3 % ±0.3 mV	75 kΩ
20 V	1 mV	0.3 % ±3 mV	850 kΩ
200 V	10 mV	0.3 % ±30 mV	850 kΩ
600 V	0.1 V	0.3 % ±0.3 V	850 kΩ

Analog input current DC

Range	Resolution	Accuracy	Input resistance
0.2 A	0.01 mA	0.1 % ±0.05 mA	0.75 Ω
1 A	1 mA	0.1 % ±5 mA	0.014 Ω
5 A	1 mA	0.1 % ±5 mA	0.014 Ω
50 mV	0.01 mV	0.1 % ±0.1 mV	1.8 MΩ
60 mV	0.01 mV	0.1 % ±0.1 mV	1.8 MΩ
100 mV	0.01 mV	0.1 % ±0.1 mV	1.8 MΩ

Analog input current AC - TRMS

Range	Resolution	Accuracy	Input resistance
0.2 A	0.01 mA	0.3 % ±0.05 mA	0.75 Ω
1 A	1 mA	0.3 % ±5 mA	0.014 Ω
5 A	1 mA	0.3 % ±5 mA	0.014 Ω
50 mV	0.01 mV	0.3 % ±0.1 mV	1.5 MΩ
60 mV	0.01 mV	0.3 % ±0.1 mV	1.5 MΩ
100 mV	0.01 mV	0.3 % ±0.1 mV	1.5 MΩ

Relay outputs

Relay	Switching voltage max.	Switching current max.	Switching performance max.
2x changeover	250 VAC / 110 VDC	1 A	150 VA / 30 W
4x normally closed	250 VAC / 50 VDC	0.2 A	30 VA / 6 W

Electronic outputs PNP

Outputs	Switching voltage max.	Switching current max.	
PNP	50 VDC	50 mA	

Analog output

Output	Range	Resolution	Load resistance
Current	4...20 mA	13 bit	Max. 500 Ω
Voltage	0...10 V	13 bit	Min. 10 kΩ

Scaling configurable relating to value display. accuracy ±0.1 %. transformation 20/s

Terminal assignment

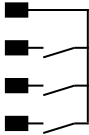
Inputs

Voltage supply

Terminal	Assignment
1	Supply voltage -
2	Supply voltage +

Control inputs

Terminal	Assignment
1	Common
2	Max*
3	Min*
4	Hold*



* Default; more functionality assignment options in programming level.

Analog inputs

Terminal	Assignment
1	Common IN
2	Shunt / 2 V
3	200 mA
4	1 A / 5 A
5	20 V / 200 V / 600 V

Outputs

Analog output

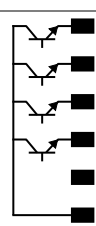
Terminal	Assignment
1	(-) 4...20 mA / 0...10 V
2	(+) 4...20 mA / 0...10 V

Interface

Terminal	Assignment RS232	RS485
1	n.c.	–
2	TxD	n.c.
3	RxD	T,R B
4	GND	T,R A
5	–	GND
6	–	–

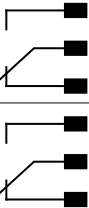
Limit outputs / electronic PNP outputs

Terminal	Assignment
1	Opto-output 1
2	Opto-output 2
3	Opto-output 3
4	Opto-output 4
5	n.c.
6	Max. +50 VDC



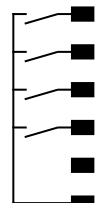
Limit outputs / two relays

Terminal	Assignment
1	Normally open
2	Changeover
3	Normally closed
4	Normally open
5	Changeover
6	Normally closed



Limit outputs / four relays

Terminal	Assignment
1	Normally open 1
2	Normally open 2
3	Normally open 3
4	Normally open 4
5	n.c.
6	Common



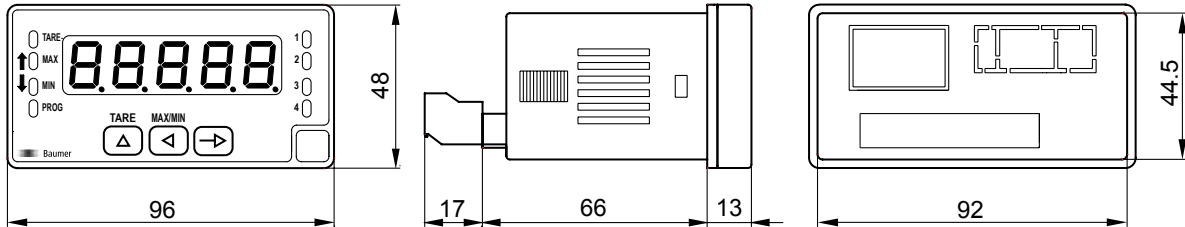
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Dimensions

PA419 - without clip frame



PA419 - clip frame mounting

