

Process displays

For standard signals, strain gauge

PA450



PA450 - Process display

Features

- Two analog inputs with calculation function (e.g. total, difference, ratio, etc.)
- Inputs: Voltage ± 1 , ± 5 , ± 10 V / current ± 20 mA / strain gauge / potentiometer
- Totaliser
- Programmable characteristic curve with 14 control points
- Min, Max, Tare functions
- 4 programmable control inputs
- Analog output 4...20 mA or 0...10 V
- Interface RS232 or RS485
- DIN housing 96 x 48 mm

Technical data - electrical ratings

Voltage supply	24/115/230 VAC ± 10 % (50/60 Hz)
Power consumption	15 VA, 10 W
Sensor supply	5 V or 10 V / max. 120 mA 24 VDC ± 25 % / max. 30 mA
Display	LED, 7-segment display (with 100 unit stickers for front)
Number of digits	5-digits, red, measured value display 2- and 6-digits, green, Min/Max/ Tare + activity indicator
Digit height	14 mm (red) 10 mm (green)
Display range	-99999...99999 ("oUFLo" to signal overflow)
Display refresh	100 ms
Function	Digital display of 2 analog measured values, With Min/ Max memory and tare function, Totaliser
A/D transformer	Principle $\Sigma\Delta$ Resolution 16 bit Measuring rate 100/s Measuring accuracy $\pm(0.1$ % +2-digit) Temp. coeffic. 100 ppm/ $^{\circ}$ C
Analog input	Current, voltage, potentiometer, strain gauge
Programmable parameters	Measuring range Display range can be linearised Decimal point Relay or electronic outputs with time delay or hysteresis Analog output Analog input Control inputs
Limits	Without, 2, 4

Technical data - electrical ratings

Control inputs	4 inputs NPN, max. 40 V (20 mA)
Control functions	25 programmable functions
Data memory	>10 years in EEPROM
Outputs electronic	Optocoupler PNP (optional)
Analog output	Current or voltage
Outputs relay	2x change-over contact, floating, or 4x normally open
Interfaces	RS232, RS485
Profiles	ASCII, ISO1745, Modbus RTU
Transmission rate	=19.2 kBaud
Standard	Protection class II
DIN EN 61010-1	Overvoltage category II Pollution degree 2
Emitted interference	DIN EN 61000-6-3
Interference immunity	DIN EN 61000-6-2

Process displays

For standard signals, strain gauge

PA450

Part number

PA450. **AX01**

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 24 VAC 3 115 VAC 4 230 VAC | <p><u>Voltage supply</u></p> |
| <ul style="list-style-type: none"> 0 Without outputs 1 Two relay outputs 2 Four relay outputs 3 Four electronic outputs PNP 5 Analog output 4...20 mA / 0...10 V 6 Two relay outputs and analog output 4...20 mA / 0...10 V 7 Four relay outputs and analog output 4...20 mA / 0...10 V 8 Four electronic outputs PNP and analog output 4...20 mA / 0...10 V | <p><u>Relay outputs / Analog output</u></p> |
| <ul style="list-style-type: none"> 0 Without interface 1 RS485 2 RS232 | <p><u>Interface</u></p> |

Accessories

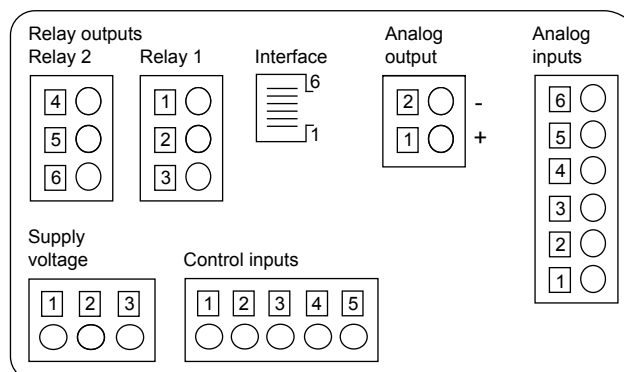
Mounting accessories

ZPA4.002 Accessory for DIN rail mounting (ZPA4.002)

Technical data - mechanical design

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 127 mm
Cutout dimensions	92 x 45 mm (+0.3)
Mounting depth	150 mm
Mounting type	Front panel installation by clip frame
Weight approx.	600 g
Material	Housing: Polycarbonate, UL 94V-0

Connection diagram



Process displays

For standard signals, strain gauge

PA450

Inputs and outputs

Analog input

Input	Range	Resolution	Specification
Current	$\pm 1 \text{ mA} / \pm 20 \text{ mA}$	$0.1 \text{ }\mu\text{A}$	Input resistance $15 \text{ }\Omega$
Voltage	$\pm 1 \text{ V} / \pm 10 \text{ V}$	0.1 mV	Input resistance $1 \text{ M}\Omega$
Potentiometer voltage*	Max. 2.2 V		Input resistance $10 \text{ M}\Omega$
Strain gauge	$\pm 15 \text{ mV}, \pm 30 \text{ mV}, \pm 150 \text{ mV}, \pm 300 \text{ mV}$	$1 \text{ }\mu\text{V}$	Input resistance $100 \text{ M}\Omega$

*Minimum potentiometer value: $200 \text{ }\Omega$

Relay outputs

Relay	Switching voltage max.	Switching current max.	Switching performance max.
2x changeover	$250 \text{ VAC} / 110 \text{ VDC}$	1 A	$150 \text{ VA} / 30 \text{ W}$
4x normally open	$250 \text{ VAC} / 50 \text{ VDC}$	0.2 A	$30 \text{ VA} / 6 \text{ W}$

Electronic outputs

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

Analog output

Output	Range	Resolution	Load resistor
Current	$4 \dots 20 \text{ mA}$	13 bit	Max. $500 \text{ }\Omega$
Voltage	$0 \dots 10 \text{ V}$	13 bit	Min. $10 \text{ k}\Omega$

Scaling configurable relating to value display, accuracy $\pm 0.1 \text{ }\%$, transformation 20/s

Terminal assignment

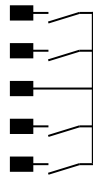
Inputs

Supply voltage

Terminal	Assignment
1	Supply voltage
2	Ground
3	Supply voltage

Control inputs

Terminal	Assignment
1	Reset*
2	Hold*
3	Common
4	Tare*
5	Min - Max*



* Default; more functionality assignment options in programming level.

Analog inputs / process

Terminal	Assignment
1	(+) 0...1 V, mV and mA / IN2
2	(+) 0...5 V and 0...10 V
3	Common (-)
4	(+) mA / IN1
5	Sensor supply +
6	Sensor supply -

Analog inputs / strain gauge

Terminal	Assignment
1	mV + (max. 300 mV)
2	n.c.
3	mV -
4	n.c.
5	Sensor supply +
6	Sensor supply -

Analog inputs / potentiometer

Terminal	Assignment
1	Potentiometer Out
2	n.c.
3	Potentiometer -
4	n.c.
5	Potentiometer + / Sensor supply +
6	Sensor supply -

Process displays

For standard signals, strain gauge

PA450

Terminal assignment

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

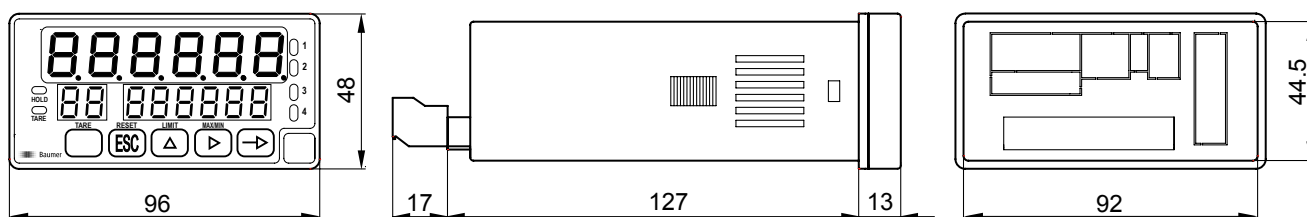
Limit outputs / four relays

Terminal Assignment

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

Dimensions

PA450 - without clip frame



PA450 - clip frame mounting

