

Process displays

For standard signals, temperature, strain gauge

PA430



PA430 - Process display

Features

- Inputs: Voltage ± 1 , ± 10 V / current ± 1 , ± 20 mA / thermocouples J,K,T,R,S,E,Pt100 / strain gauge / potentiometer
- Totaliser, batch counter
- Volume calculation functions
- Programmable characteristic curve with 30 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	1 s (programmable) 60 ms (programmable) 250 ms (programmable)
Function	Digital display of 1 analog measured value, With Min/ Max memory and tare function, Volume calculation functions, Totaliser and batch counter
A/D transformer	Principle $\Sigma\Delta$ Resolution 24 bit Measuring rate 18/s Measuring accuracy $\pm(0.1$ % +2-digit) Temp. coeffic. 100 ppm/ $^{\circ}$ C
Analog input	Current, voltage, potentiometer, temperature, strain gauge

Technical data - electrical ratings

Programmable parameters	Measuring range Display range can be linearised Decimal point Relay or electronic outputs with time delay or hysteresis Analog output Analog input Volume calculation Control inputs
Limits	Without, 2, 4
Control inputs	4 inputs NPN, max. 40 V (20 mA)
Control functions	36 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

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Part number

PA430. **AX01**

- | | |
|--|---|
| <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 auto; width: 20px;"></div> | <p><u>Voltage supply</u></p> <p>1 24 VAC</p> <p>3 115 VAC</p> <p>4 230 VAC</p> <p><u>Relay outputs / Analog output</u></p> <p>0 Without outputs</p> <p>1 Two relay outputs</p> <p>2 Four relay outputs</p> <p>3 Four electronic outputs PNP</p> <p>5 Analog output 4...20 mA / 0...10 V</p> <p>6 Two relay outputs and analog output 4...20 mA / 0...10 V</p> <p>7 Four relay outputs and analog output 4...20 mA / 0...10 V</p> <p>8 Four electronic outputs PNP and analog output 4...20 mA / 0...10 V</p> <p><u>Interface</u></p> <p>0 Without interface</p> <p>1 RS485</p> <p>2 RS232</p> |
|--|---|

Accessories

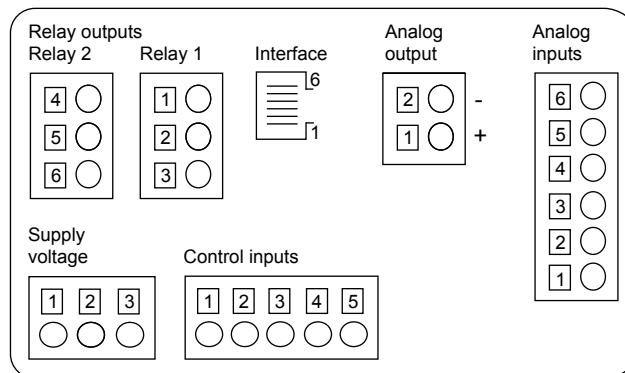
Mounting accessories

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

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 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



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Inputs and outputs

Analog input

Input	Range	Resolution	Specification
Current	±1 mA / ±20 mA	0.1 µA	Input resistance 15 Ω
Voltage	±1 V / ±10 V	0.1 mV	Input resistance 1 MΩ
Potentiometer voltage*	Max. ±10 V		Input resistance 1 MΩ
Strain gauge	±15 mV, ±30 mV, ±150 mV, ±300 mV	1 µV	Input resistance 100 MΩ
Temperature Pt100	Measuring current <1 mA (Pt100) Offset programmable -9.9...99 °C	1 or 0.1 °C/°F	Line resistance max. 40 Ω
Thermocouple	cold junction compensation -10...+60 °C Offset programmable -9.9...99 °C	1 or 0.1 °C/°F	

*Minimum potentiometer value: 200 Ω

Temperature range thermo sensor

Thermo sensor	Degrees Celsius	Accuracy	Degrees Fahrenheit	Accuracy
Thermocouple J	-50...+800 °C	0.4 °C	-58...+1472 °F	0.4 °F
Thermocouple K	-50...+1200 °C	0.4 °C	-58...+2192 °F	0.4 °F
Thermocouple T	-150...+400 °C	0.4 °C	-302...+752 °F	0.4 °F
Thermocouple R	-50...+1700 °C	0.5 °C	-58...+3092 °F	0.5 °F
Thermocouple S	-50...+1700 °C	0.5 °C	-58...+3092 °F	0.5 °F
Thermocouple E	-50...+1000 °C	0.4 °C	-58...+1832 °F	0.4 °F
Pt100	-100...+800 °C	0.2 °C	-148...+1472 °F	0.2 °F

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 open	250 VAC / 50 VDC	0.2 A	30 VA / 6 W

Electronic outputs

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

Analog output

Output	Range	Resolution	Load resistor
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

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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	n.c.
2	Voltage input +
3	Current / voltage -
4	Current input +
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 / Pt100 / thermocouple

Terminal	Assignment Pt100	Thermocouple
1	Pt100	Thermocouple +
2	n.c.	n.c.
3	Pt100	Thermocouple -
4	n.c.	n.c.
5	Pt100 Common	n.c.
6	n.c.	n.c.

Analog inputs / potentiometer

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

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Terminal assignment

Outputs

Analog output

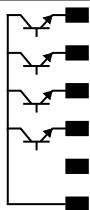
Terminal	Assignment
1	(+) 4...20 mA / 0...10 V
2	(-) 4...20 mA / 0...10 V

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	–	–

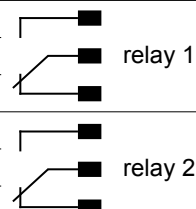
Limit outputs / electronic PNP outputs

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



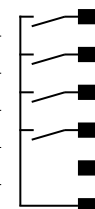
Limit outputs / two relays

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



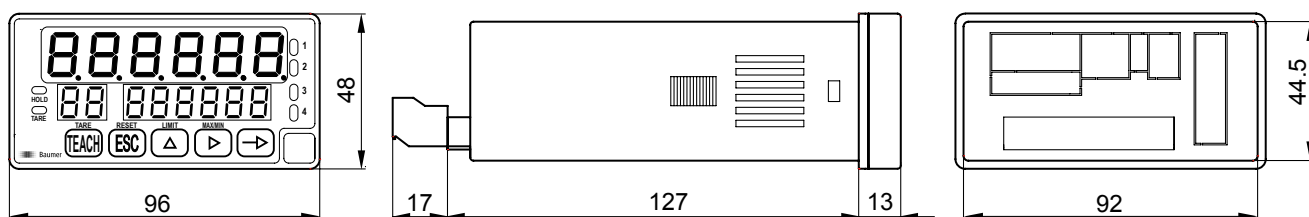
Limit outputs / four relays

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



Dimensions

PA430 - without clip frame



PA430 - clip frame mounting

