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Process displays

For standard signals, temperature, strain gauge

PA418



PA418 - Process display

Features

- **Inputs: Voltage ±10 V / current ±20 mA / thermo sensors J,K,T,Pt100 / strain gauge / potentiometer**
- **Programmable characteristic curve with 11 control points**
- **Three programmable control inputs**
- **Min, Max, Tare functions**
- **Display stabilization filter**
- **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**

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
Sensor supply	5 V ±0.5 V / max. 60 mA 10 V ±0.5 V / max. 60 mA 24 VDC ±5 V / 60 mA
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 ("OuE" to signal overflow)
Display refresh	50 ms (current, voltage, strain gauge) 100 ms (thermocouple J,K,T) 250 ms (temperature Pt100)
Function	Digital display of 1 analog measured value With Min/Max memory and tare function
A/D transformer	Principle ∑Δ Resolution 16 bit Measuring rate 20/s Measuring accuracy ±(0.1 % +3-digit) Temp. coeffic. 100 ppm/°C
Analog input	Current, voltage, potentiometer, temperature, strain gauge

Technical data - electrical ratings

Programmable parameters	Analog input Measuring range Display intensity Display color Display range can be linearised Decimal point Relay outputs with time delay or hysteresis
Control inputs	3 inputs PNP, max. 40 V (20 mA)
Control functions	15 programmable functionalities
Data memory	>10 years in EEPROM
Outputs electronic	Optocoupler
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 DIN EN 61010-1	Protection class II Overvoltage category II Pollution degree 2
Emitted interference	DIN EN 61000-6-3
Interference immunity	DIN EN 61000-6-2

Subject to modification in technic and design. Errors and omissions excepted.

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Part number

PA418. [ ][ ][ ] **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

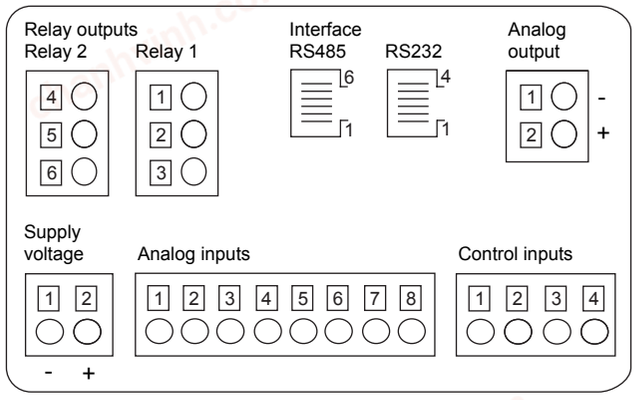
Connectors and cables

ZPA4.102	Cable RS232, RJ9 - SUB-D 9, 2 m
ZPA4.104	Cable RS485, RJ11 - RJ11, 2 m

Technical data - mechanical design

Ambient temperature	-10...+60 °C
Storing temperature	-25...+85 °C
Relative humidity	95 % non-condensing
Connection	Sping-lodaded terminal connector, detachable
Core cross-section	1 mm² (Grid 5.08) 2.5 mm² (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)
Installation depth	83 mm
Mounting	Front panel installation by clip frame
Weight approx.	160 g
Material	Housing: Polycarbonate, UL 94V-0

Connection diagram



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3/7/2012

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Inputs and outputs

Analog input

Input	Range	Resolution	Specification
Current	±20 mA	10 µA	Input resistance 12 Ω
Voltage	±10 V	0.5 mV	Input resistance 1 MΩ
Potentiometer voltage*	Max. ±10 V		Input resistance 1 MΩ
Strain gaug	±15 mV, ±30 mV, ±150 mV	1 µV	Input resistance 100 MΩ
Temperature Pt100	Offset programmable -9.9...99 °C Measuring current <1 mA	1 or 0.1 °C/°F	Line resistance max. 40 Ω
Thermocouple J,K,T	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

Temperature	Thermocouple J	Thermocouple K	Thermcouple T	Pt100
Degrees Celsius	-50...+850 °C	-50...+1250 °C	-200...+400 °C	-100...+800 °C
Degrees Fahrenheit	-58...+1562 °F	-58...+2282 °F	-328...+752 °F	-148...+1472 °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 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

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Terminal assignment

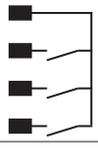
Inputs

Voltage supply

Terminal	Assignment
1	Supply voltage -
2	Supply voltage +

Control inputs

Terminal	Assignment
1	Common
2	Tare*
3	Reset Tare*
4	Hold*



* Default; more functionality assignment options in programming level.

Analog inputs / process

Terminal	Assignment
1	Sensor supply -
2	Sensor supply +24 V
3	Sensor supply +5 V / +10 V
4	n.c.
5	Current input +
6	Voltage input +
7	n.c.
8	Current / voltage -

Analog inputs / strain gauge

Terminal	Assignment
1	Sensor supply -
2	n.c.
3	Sensor supply +5 V / +10 V
4	n.c.
5	n.c.
6	n.c.
7	Input mV +
8	Input mV -

Analog inputs / Pt100 / thermocouple J,K,T

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

Analog inputs / potentiometer

Terminal	Assignment
1	Sensor supply -
2	n.c.
3	Potentiometer +
4	n.c.
5	n.c.
6	Potentiometer out
7	n.c.
8	Potentiometer -

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Terminal assignment

Outputs

Analog output

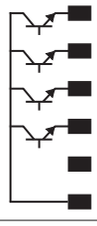
Terminal	Assignment
1	(-) 4...20 mA / 0...10 V
2	(+) 4...20 mA / 0...10 V

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	–	–

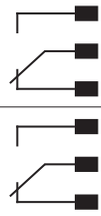
Limit outputs / electronic PNP outputs

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



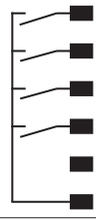
Limit outputs / two relays

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



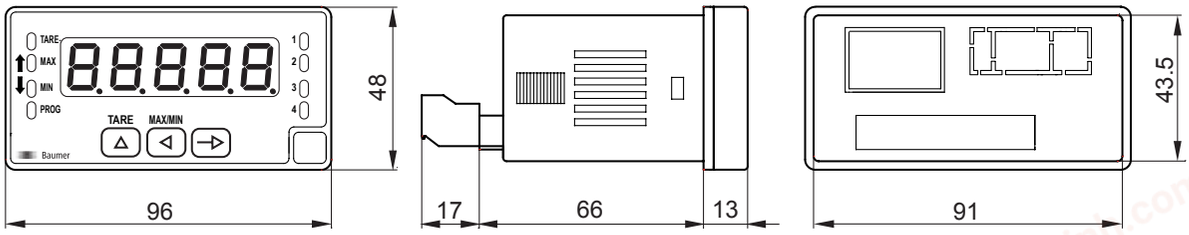
Limit outputs / four relays

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

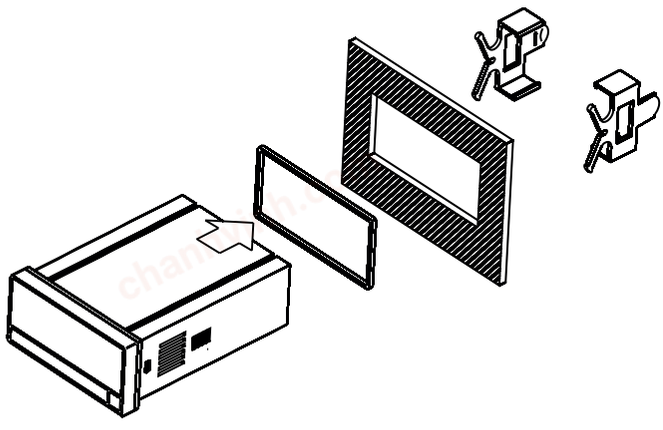


Dimensions

PA418 - without clip frame



PA418 - clip frame mounting



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