

Overview

- For voltage ± 10 V or current ± 20 mA
- For thermocouples J,K,T,N,Pt100
- For weight, pressure, torsion, strain
- For potentiometer
- Programmable characteristic curve with 11 control points
- Three control inputs, programmable
- Display stabilization filter
- LED display, 5-digits, 3 colors, programmable
- Tare, Min, Max functions
- With 2 relays and analog output 4...20mA
- DIN housing 96 x 48 mm



Technical data

Technical data - electrical ratings

Voltage supply	21...53 VAC 10.5...70 VDC
Nominal frequency	50 / 60 Hz
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-segment display (with 100 unit stickers for front)
Display color	3 colors - red, green, amber
Number of digits	5-digits + activity indicator
Digit height	14 mm
Display range	-19999...19999 ("OuE" to signal overflow)
Function	Digital display of 1 analog measured value With Min/Max memory and tare function
A/D transformer	Principle $\Sigma\Delta$ Resolution 16 bit Measuring rate 20/s Measuring accuracy $\pm(0.1\% + 3\text{-digit})$ Temp. coeffic. 100 ppm/ $^{\circ}\text{C}$
Analog input	Current, voltage, potentiometer, temperature, strain gauge
Programmable parameters	Analog input Measuring range Display intensity Display color Display range can be linearised Decimal point Relay outputs with time delay or hysteresis
Limits	2
Control inputs	3 programmable Optocoupler inputs logic NPN

Technical data - electrical ratings

Inputs	Current ± 20 mA Voltage ± 10 V Potentiometer max. ± 10 V Strain gauges $\pm 15\text{mV}$, $\pm 30\text{mV}$, $\pm 150\text{mV}$ Temperature sensor Pt100 Thermocouple J, K, T, N
Control functions	15 programmable functionalities
Data memory	>10 years in EEPROM
Analog output	4 ... 20 mA
Outputs relay	2 change-over contact, floating
Standard DIN EN 61010-1	ISO 16750-2 (Electrical loads)
Emitted interference	EN 61000-6-3
Interference immunity	EN 61000-6-2
Approval	CE

Technical data - mechanical design

Operating temperature	-10...+60 $^{\circ}\text{C}$
Storage temperature	-25 ... +80 $^{\circ}\text{C}$
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 EN 60529	IP 65 (face)
Operation / keypad	Membrane with softkeys
Housing type	Built-in housing
Dimensions W x H x L	1/8 DIN 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

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	Thermocouple 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

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

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.

Terminal assignment

Analog inputs

Pin	Assignment
1	n.c.
2	Sensor supply +20 V
3	Sensor supply +8.2 V
4	Sensor supply - / IN-
5	Track B +
6	Track A +
7	n.c.
8	Input 10...300 VAC

Terminal assignment

Analog inputs / strain gauge

Pin	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

Pin	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

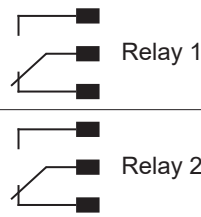
Pin	Assignment
1	Sensor supply -
2	n.c.
3	Potentiometer +
4	n.c.
5	n.c.
6	Potentiometer out
7	n.c.
8	Potentiometer -

Analog output

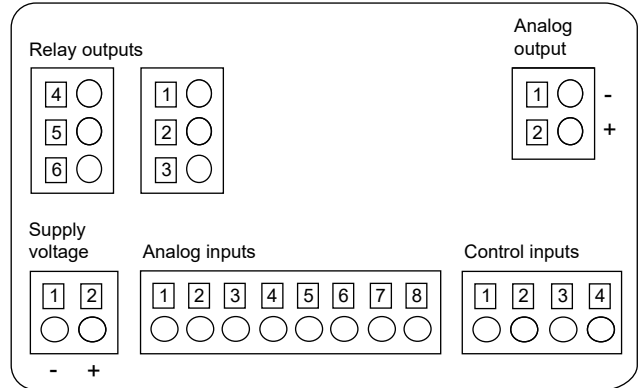
Terminal	Assignment
1	(-) 4...20 mA / 0...10 V
2	(+) 4...20 mA / 0...10 V

Limit outputs / two relays

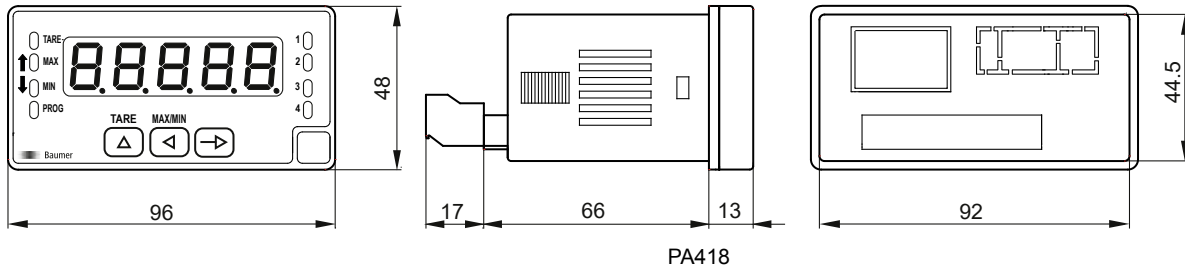
Terminal	Assignment
1	Normally open
2	Changeover
3	Normally closed
4	Normally open
5	Changeover
6	Normally closed



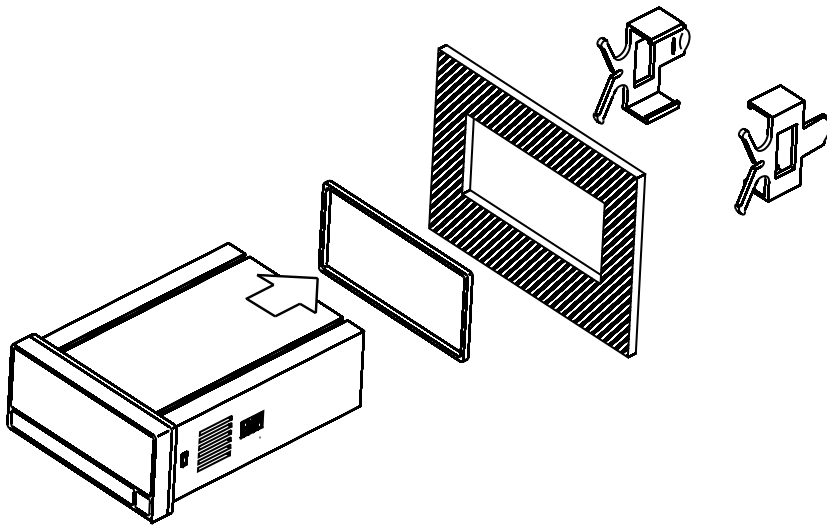
Connection diagram



Dimensions



PA418



Clip frame mounting