

General Purpose Pressure Transmitters Type A-10

WIKAI Datasheet A-10



Applications

- Mechanical engineering
- Machine tools
- Process control and automation
- Hydraulics and Pneumatics
- Pumps and Compressors

Special Features

- Pressure ranges: from 0 ... 15 psi up to 0 ... 10,000 psi
- Non-linearity: $\leq \pm 0.5\%$ BFS ($\leq \pm 0.25\%$ available)
- Signal output: 4-20 mA, 0-10 V, 0-5 V, others available
- Electrical connection: DIN 175301-803 A and C, M12x1, 6 ft. cable, others available
- Pressure connection: 1/4 NPT , 1/2 NPT , SAE #4, others available

Description

The WIKAI A-10 pressure transmitter is precision engineered and manufactured to fit many industrial and OEM pressure measurement applications. The rugged design provides resistance to vibration, shock, wide temperature variations, RFI and other extreme environmental conditions that are typical of industrial and OEM applications.

Performance and reliability is enhanced by the all stainless steel welded measuring cell that eliminates the need for soft sealing materials that may deteriorate over time. The state-of-the-art manufacturing and assembly process increases the long term reliability of the A-10.

Primary applications include process control and automation, hydraulics, pneumatics and machine controls.



Left: A-10 with DIN
Center: A-10 with cable
Right: A-10 with mini DIN

Specifications		Type A-10						
Pressure ranges	15 psi	25 psi	30 psi	50 psi	100 psi	160 psi	200 psi	300 psi
Over pressure safety	30 psi	60 psi	60 psi	100 psi	200 psi	290 psi	400 psi	600 psi
Burst pressure	75 psi	150 psi	150 psi	250 psi	500 psi	500 psi	1,500 psi	1,500 psi
Pressure ranges	500 psi	1,000 psi	1,500 psi	2,000 psi	3,000 psi	5,000 psi	10,000 psi	
Over pressure safety	1,000 psi	1,740 psi	2,900 psi	4,000 psi	6,000 psi	10,000 psi	17,400 psi	
Burst pressure	2,500 psi	7,975 psi	11,600 psi	14,500 psi	17,400 psi	24,650 psi	34,800 psi	
{Absolute pressure: 0 ... 15 psi up to 0 ... 300 psi}.								
Vacuum resistance		Ranges greater than 150 psi						
Fatigue life		10 million load cycles maximum						
Materials								
■ Wetted parts								
» Pressure Connection		316 L						
» Pressure sensor		316 L (as of $\geq 0 \dots 150$ psig are PH 13-8 ss)						
■ Internal transmission fluid		Silicone oil (only with pressure ranges $< 0 \dots 100$ psig and $\leq 0 \dots 300$ psi absolute)						
■ Case		316 L						
Power supply UB	UB in VDC	8 ... 30 (14 ... 30 with signal output 0 ... 10 V)						
Maximum resistive load RA		4 ... 20mA, 2-wire $R_A \leq (U_B - 8V) / 0.02 A$						
		0 ... 10 V, 3-wire $R_A > 10 k$						
		0 ... 5 V, 3-wire $R_A > 5 k$						
		1 ... 5 V, 3-wire $R_A > 5 k$						
		0.5 ... 4.5 V, 3-wire $R_A > 4.5 k$ {Other signal output on request}						
Response time	ms	< 4						
Current consumption	mA	Signal current (max. 25) for current output (max. 8 for voltage output signal)						
Isolation voltage	VDC	500 ¹⁾						
¹⁾ For power supply, use a circuit with energy limitation (EN/UL/IEC 61010-1, section 9.3) with the following maximum values for the current: where UB = 30 V (DC): 5 A. Provide a separate switch for the external power supply. Alternative for North America: The connection may also be made to "Class 2 Circuits" or "Class 2 Power Units" according to CEC (Canadian Electrical Code) or NEC (National Electrical Code).								
Non-linearity	% of span	$\leq \pm 0.5\%$ BFSL according to IEC 61298-2 $\{\leq \pm 0.25 \text{ BFSL}\}$ according to IEC 61298-2						
Accuracy ²⁾	% of span	$\leq \pm 1.0$ (with 0.5% non-linearity) $\{\leq \pm 0.5\}$ (with 0.25% non-linearity) $\{\leq \pm 0.6\}$ (with 0.25% non-linearity and with signal output 0 ... 5 V)						
²⁾ Includes non-linearity, hysteresis, zero point and full scale error accordingly to IEC 61298-2 Calibrated in vertical mounting position with pressure connection facing down								
Zero offset	% of span	≤ 0.15 typ., ≤ 0.4 max. (with non-linearity 0.25%) ≤ 0.5 typ., ≤ 0.8 max. (with non-linearity 0.5%)						
Hysteresis	% of span	≤ 0.16						
Non-repeatability	% of span	≤ 0.1						
Long-term drift	% of span	≤ 0.1 according to IEC 61298-2						
Signal noise	% of span	≤ 0.3						
Permissible temperature of								
■ Medium		32 ... +176 °F {-22 ... +212 °F}			0 ... +80 °C {-30 ... +100 °C}			
■ Ambient		32 ... +176 °F {-22 ... +212 °F}			0 ... +80 °C {-30 ... +100 °C}			
■ Storage		-4 ... +176 °F {-22 ... +212 °F}			-20 ... +80 °C {-30 ... +100 °C}			
Operating temperature range		32 ... +176 °F			0 ... +80 °C			
Temperature error within operating temperature range	% of span	≤ 1.0 typ., ≤ 2.5 max.						

Specifications

Type A-10

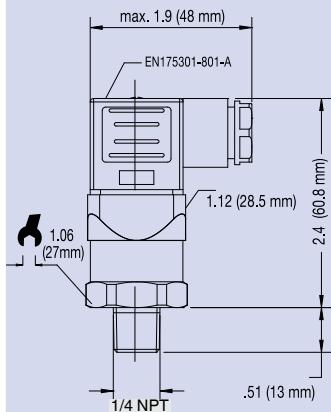
Approvals		UL, CSA, GOST
RoHS-conformity		Yes
CE-conformity		
■ Pressure equipment directive		97/23/EC
■ EMC directive		2004/108/EEC (Group 1, Class B) and immunity according to EN 61 326
Shock resistance	g	500 according to IEC 60068-2-27 (mechanical shock)
Vibration resistance	g	10 according to IEC 60068-2-6 (vibration under resonance)
Wiring protection		
■ Overvoltage protection	VDC	32; 36 with 4 ... 20 mA
■ Short-circuit protection		Sig+ to UB-
■ Reverse polarity protection		UB+ to UB-
Test reference conditions		According to IEC 61298-1
■ Relative humidity	%	45 ... 75
■ Temperature	%	59 ... 77 °F (15 ... 25 °C)
■ Atmospheric Pressure	KPa	86 ... 106 (25.4...31.3 inhg)
Weight	oz.	Approx. 2.8 oz. (80 g)

{ } Items in curved brackets are optional extras for additional price.

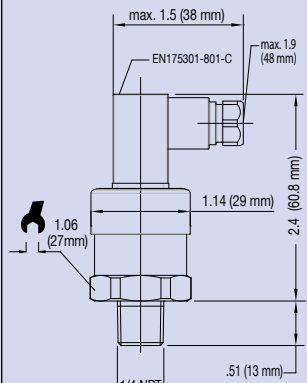
Dimensions in inches (mm)

Ingress protection IP per IEC 60529. The ingress protection classes specified only apply while the pressure transmitter is connected with female connectors that provide the equivalent ingress protection.

DIN 175301-803 A
L-connector
conductor outer diameter
.24" to .32"
IP 65
Order Code: AG

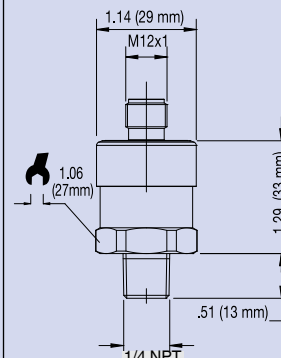


DIN 175301-803 C
L-connector
conductor outer diameter
.18" to .24"
IP 65
Order Code: CG

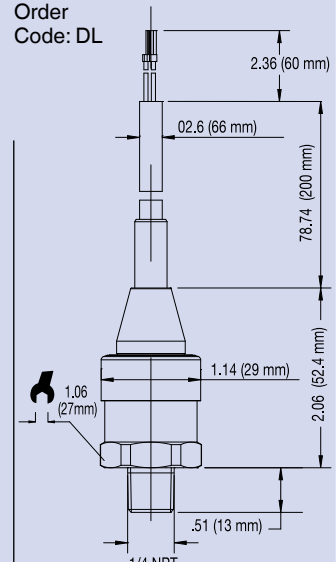


M 12x1, 4 pin
IP 67
AG

Order Code: M4



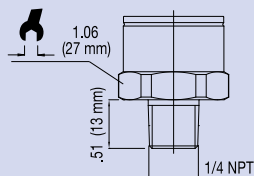
Cable with free ends,
conductor cross section .013 in²,
conductor outer diameter .26",
PUR cable - unshielded, IP 67
Order
Code: DL



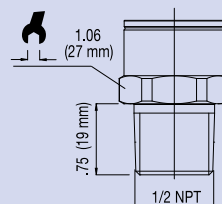
For tapped holes and welding sockets please see Technical Information IN 00.14 for download at www.wika.de

Pressure connections

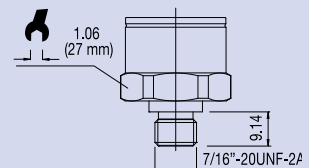
1/4 NPT Male
Order Code: NB



1/2 NPT Male
Order Code: ND

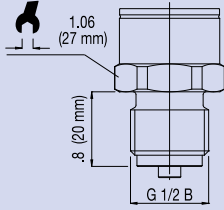


7/16 - 20 UNF
O-ring boss
Order Code: MV

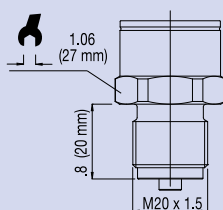


Pressure connections

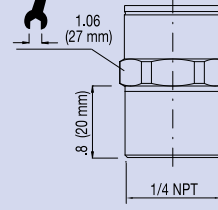
G 1/2 B
Order Code: GD



M20 x 1.5
with sealing ring
Order Code: MI

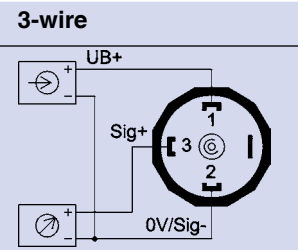
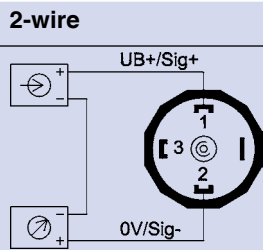


1/4" NPT female
Order Code: NP

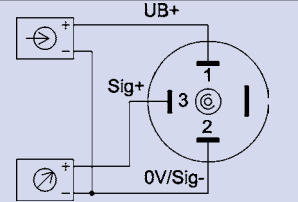
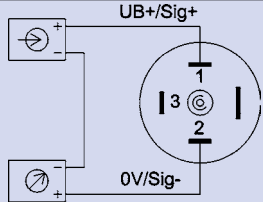


Electrical connections

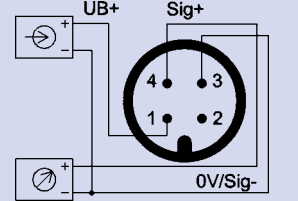
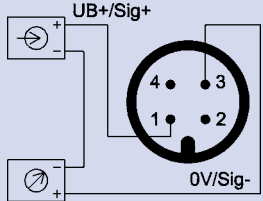
DIN 175301-803 A
L-connector
IP 65



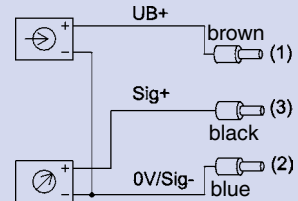
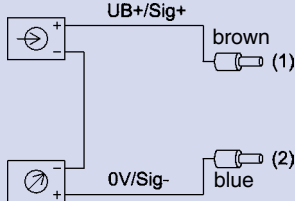
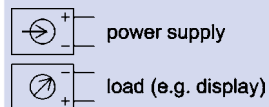
DIN 175301-803 C
L-connector
IP 65



M 12x1, 4-pin
without angle socket or
female cable connectors
IP 67



Cable with free ends
IP 67



Specifications and dimensions given in this datasheet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



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Digital indicator for panel mounting Model DI25, with multi-function input

WIKA data sheet AC 80.02

Applications

- Plant construction
- Machine tools
- Plastics technology and processing
- Ventilation and air-conditioning
- General industrial applications

Special features

- Multi-function input for current and voltage signals as well as thermocouples and resistance thermometers
- Ingress protection IP 66 (front panel)
- Two or three freely programmable alarm outputs as standard (depending on the instrument version)
- 4 ... 20 mA analogue output signal as standard
- HOLD function



Digital indicator model DI25

Description

The model DI25 digital indicator is a multi-function, competitively-priced instrument for a wide variety of measuring tasks.

The multi-function input has 18 different input configurations, which can be selected via the rear connections and also by selection of the appropriate input signal within the instrument configuration.

In this way it is possible to connect both transmitters with current or voltage signals and resistance thermometers or thermocouples to the same instrument.

The measured values can be retransmitted for further processing via an analogue output signal (4 ... 20 mA).

The basic version of the DI25 indicator features three alarm outputs. Instruments with the optional DC 24 V transmitter power supply have two alarm outputs available.

With the high ingress protection of the front panel (IP 66), the DI25 digital indicator can also be used under extreme operating conditions.

All configuration and programming can be carried out through the front-panel keys.

Display

Principle

7-segment LED

Actual value display (PV display)

4-digit, red, character size 16 mm

Set value display (SV display)

4-digit, green, character size 10 mm

Indication range

-1999 ... 9999

Input

Number and type

1 x multi-function input

Input configuration

Selectable via terminal connections and menu-driven programming

Measuring time

250 ms

Analogue output

Output signal

4 ... 20 mA, load \leq 500 Ω

Accuracy

± 0.3 % of the output span

Transmitter power supply (option)

DC 24 V ± 3 V, max 30 mA

Voltage supply

Power supply

Selectable power supply

AC 100 ... 240 V (permissible voltage: AC 85 ... 264 V), 50/60 Hz

AC/DC 24 V (permissible voltage: AC/DC 20 ... 28 V), 50/60 Hz

Power consumption

approx. 10 VA

Electrical connection

Screw terminals

Switching output

Number and type

Selectable switching outputs

2 switch contacts (relays)

3 switch contacts (relays)

Instruments with integrated transmitter power supply do not feature the alarm output 2.

Alarm types of switching outputs

- High alarm
- High alarm with standby
- Low alarm
- Low alarm with standby
- High-Low alarm (only for switch contact 3)

Switch behaviour

Normally closed or normally open, can be set via keyboard

Load capacity

AC 230 V, 3 A (resistive load)

HOLD function

Selectable: Instantaneous/minimum or maximum value

Activation of the HOLD function via connection terminals

Case

Material

Polycarbonate, black

Ingress protection (per IEC 60529/EN 60529)

Front: IP 66

Rear: IP 00

Dimensions

96 x 48 x 110 mm

Weight

approx. 300 g

Mounting

Screw type mounting brackets for wall thicknesses from 1 to 15 mm

Permissible ambient conditions

Operating temperature

0 ... 50 °C

Storage temperature

-20 ... +50 °C

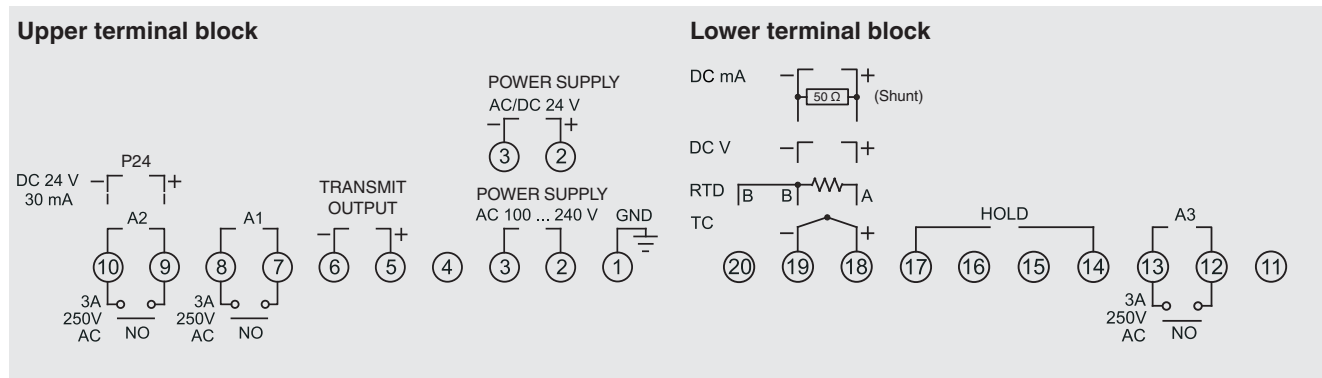
Relative humidity

35 ... 85 % r. h. annual mean without condensation

Accuracy/measuring errors of the input signals

Input signals	Measuring span		Measuring error in % of the span	
			Standard	Exception
Current signals				
0 ... 20 mA	-1999 ... +9999		±0.2 % ±1 digit	-
4 ... 20 mA	-1999 ... +9999		±0.2 % ±1 digit	-
Voltage signals				
0 ... 1 V	-1999 ... +9999		±0.2 % ±1 digit	-
0 ... 5 V	-1999 ... +9999		±0.2 % ±1 digit	-
1 ... 5 V	-1999 ... +9999		±0.2 % ±1 digit	-
0 ... 10 V	-1999 ... +9999		±0.2 % ±1 digit	-
Thermocouples				
Type K, NiCr-Ni	-200 ... +1,370 °C	-320 ... +2,500 °F	±0.2 % ±1 digit	≤ 0 °C: ±0.4 % ±1 digit
	-199.9 ... +400.0 °C	-199.9 ... +750.0 °F	±2 K	≤ 0 °C: ±0.4 % ±1 digit
Type J, Fe-CuNi	-200 ... +1,000 °C	-320 ... +1,800 °F	±0.2 % ±1 digit	≤ 0 °C: ±0.4 % ±1 digit
Type R, PtRh-Pt	0 ... 1,760 °C	0 ... 3,200 °F	±0.2 % ±1 digit	≤ 200 °C: ±6 K
Type S, PtRh-Pt	0 ... 1,760 °C	0 ... 3,200 °F	±0.2 % ±1 digit	≤ 200 °C: ±6 K
Type B, PtRh-PtRh	0 ... 1,820 °C	0 ... 3,300 °F	±0.2 % ±1 digit	≤ 300 °C: without details
Type E, NiCr-CuNi	-200 ... +800 °C	-320 ... +1,500 °F	±0.2 % ±1 digit	≤ 0 °C: ±0.4 % ±1 digit
Type T, Cu-CuNi	-199.9 ... +400.0 °C	-199.9 ... +750.0 °F	±2 K	≤ 0 °C: ±0.4 % ±1 digit
Type N, NiCrSi-NiSi	-200 ... +1,300 °C	-320 ... +2,300 °F	±0.2 % ±1 digit	≤ 0 °C: ±0.4 % ±1 digit
Type PL-II	0 ... 1,390 °C	0 ... 2,500 °F	±0.2 % ±1 digit	-
Type C (W/Re5-26)	0 ... 2,315 °C	0 ... 4,200 °F	±0.2 % ±1 digit	-
Resistance thermometer				
Pt100 (3-wire)	-200 ... +850 °C	-300 ... +1,500 °F	±0.1 % ±1 digit	-
	-199.9 ... +850.0 °C	-199.9 ... +999.9 °F	±0.1 % ±1 digit	-
JPT 100 (3-wire)	-200 ... +500 °C	-300 ... +900 °F	±0.1 % ±1 digit	-
	-199.9 ... +500.0 °C	-199.9 ... +900.0 °F	±1 K	-

Terminal assignment



Terminal	Case labelling	Significance
1	GND	Ground
2	AC 100 ... 240 V	Power supply
3	AC/DC 24 V (+)	
3	AC 100 ... 240 V	Power supply
4	AC/DC 24 V (-)	
4		Not connected
5	TRANSMIT OUTPUT +	Analogue output signal
6	TRANSMIT OUTPUT -	
7	A1	Alarm output 1; AC 250 V, 3 A
8	A1	
9	A2	Alarm output 2; AC 250 V, 3 A
10	A2	
9	P24 (+)	{Positive transmitter power supply U+, DC 24 V, 30 mA}
10	P24 (-)	{Negative transmitter power supply U-, DC 24 V, 30 mA}
11		Not connected
12	A3	Alarm output 3; AC 250 V, 3 A
13	A3	
14	HOLD	HOLD function
15		Not connected
16		Not connected
17	HOLD	HOLD function
18	+	Input signal TC, DC V and DC mA (with shunt)
18	A	Input signal RTD
19	-	Input signal TC, DC V and DC mA (with shunt)
19	B	Input signal RTD
20	B	Input signal RTD

Items in curved brackets are optional extras for an additional price.

RTD Resistance thermometers
 TC Thermocouples
 DC mA Current signals
 DC V Voltage signals

CE conformity

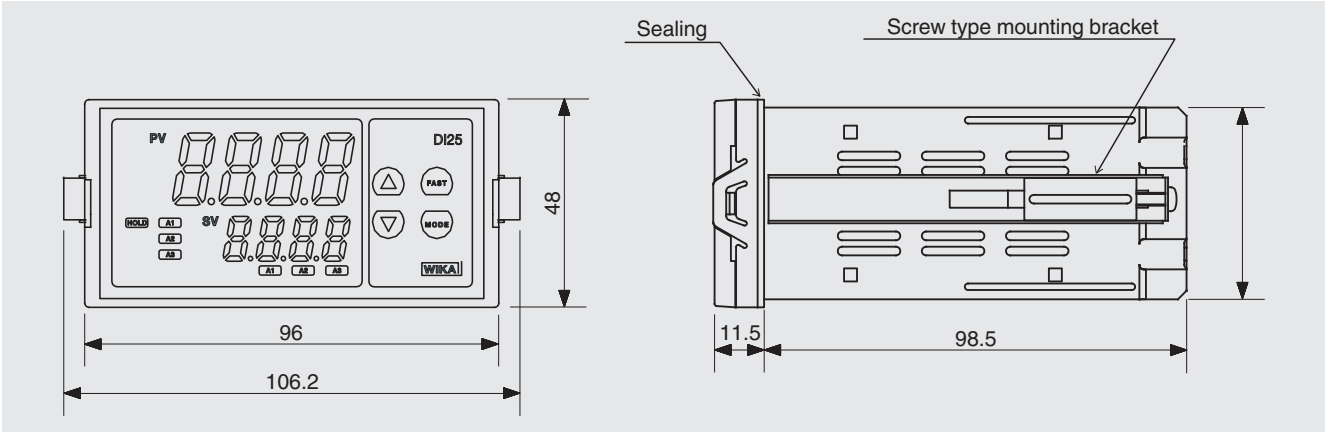
EMC directive

2004/108/EC, EN 61326 emission (group 1, class A) and interference immunity (industrial application)

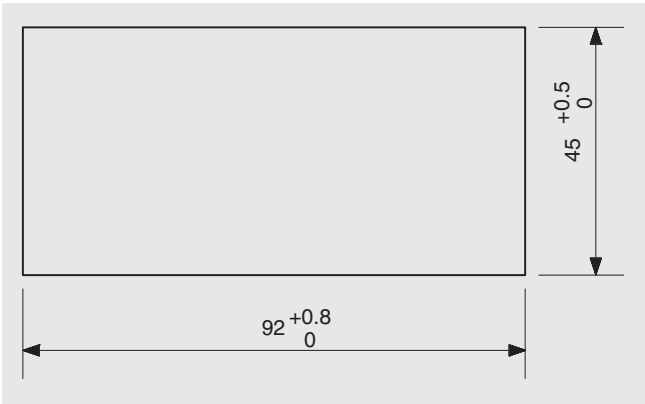
Low voltage directive

2006/95/EC, EN 61010-1

Dimensions in mm



Panel cutout in mm



Order no.

Power supply	Transmitter power supply	Order no.
AC 100 ... 240 V	-	7148465
	DC 24 V	7148482
AC/DC 24 V	-	7394245
	DC 24 V	7394270

Scope of delivery

- Digital indicator model DI25
- Precision measurement shunt resistor (50 Ω)
- Sealing
- Mounting screws
- Operating instructions

Accessories

Description	Order no.
Precision measurement shunt resistor (50 Ω)	2087604

Ordering information

To order the described product the order number is sufficient. Other options require additional specification.

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The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.



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Digital Indicator for Panel Mounting

Model A RB

WIKA Data Sheet AC

Applications

- Process and plant engineering
- Machine tools
- Test benches
- Level measurement
- General industrial applications

Special Features

- Indication range
- Input signals mA mA V selectable
- Output signals mA mA V
selectable
- Integrated power supply DC V for transmitter
- Hold function MIN and MAX memory



Digital Indicator Model A RB

Description

The digital indicator A RB has been specially designed to display values measured by electronic transmitters such as pressure transmitters or temperature transmitters. The rear of the instrument features detachable screw terminals for the input signals mA and Volt as well as for the analogue outputs mA and Volt.

The indicator can be programmed via splash water protected keys at the front side of the instrument. Clear and simple messages on the LED display guide the user through all configurable parameters step by step.

Alarm contacts

Optionally the indicator can be fitted with alarm contacts. The switching hysteresis of each of these freely programmable alarm contacts can be individually adjusted. The

relay switching contacts are galvanically separated. Depending on the setting of the hysteresis above or below the switching value, the microprocessor recognises the selected switching function MIN or MAX.

RS interface

An optional RS interface is available for digital processing of the display value. The interface protocol is included in the operating instructions.

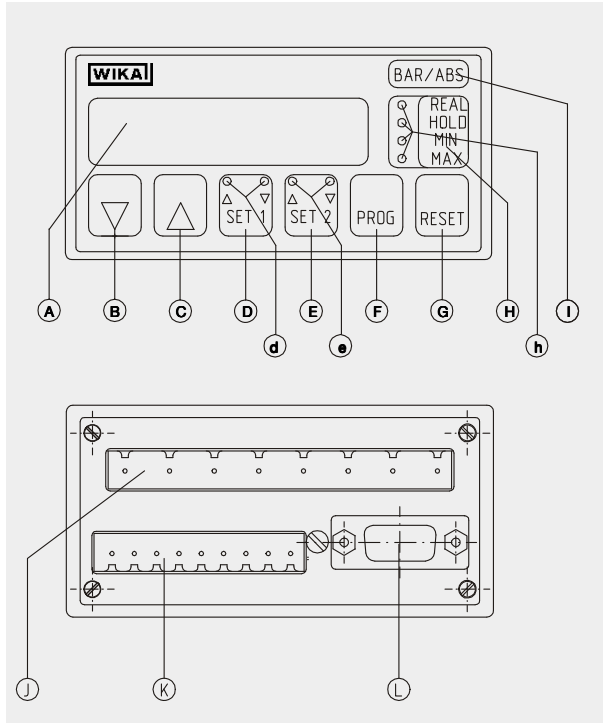
Damping

In the case of fast changing display values which might for example be caused by pressure pulsations, the display, the alarm contacts, the MIN and MAX memory or the analogue output as well as any combination about this can be damped to reach a more steady display value.

Specification	Model A RB
Display	
Design	Segment LED red digit
Size of digits	mm
Indication range	
Accuracy	± of span ± digit
Measuring rate	measurements s damping selectable in ms steps up to max s
Error messages	E A/D converter overflow E Display overflow measured value exceeds maximum possible display value E Input signal is below the minimum signal value or exceeds the maximum signal value
Scaling adjustment	Menu driven initial value and final value free adjustable between and ; Adjustable decimal point
Signal input	Selectable as mA mA V
Analogue output	Selectable as mA mA V
Response time	ms
{Serial interface}	RS
Transmitter supply	DC V ± max mA galvanically isolated short circuit proof for approx minutes
{Alarm contacts}	
Number	independently settable
Function	MAX MIN alarm adjustable by setting of the switch on and switch off value
Switching point	Adjustable over the complete indication range
Hysteresis	Adjustable over the complete indication range
Accuracy	True value by means of digital control
Contacts	potential free relay change over contact for each alarm contact
Load	AC V A with resistive load; AC V A with $\cos \varphi =$
HOLD memory	Displayed value is fix measurement and control of MIN and MAX values as well as alarm contacts goes on in the background
MIN MAX memory	Two separately working memories for MIN and MAX values; Individual or common reset enabled by pressing the RESET key; Unlimited data storage by digital memory
Power supply	AC V Hz ± or AC V Hz ± changeable by means of internal jumper
Power consumption	Max VA
Electrical connection	Detachable screw terminals
Max wire cross section	mm
Permissible ambient temperature	°C °C
CE Conformity	Conformity in accordance with EWG Interference emission per EN Interference compatibility per EN For cable lengths of > m shielded cables are to be used
Case	According to IEC
Material	PC ABS Blend black
Ingress protection	Front IP ; Back IP according to IEC EN
Mass	Approx g
Mounting	Removable screw elements for a wall thickness up to mm

{ } Items in curved brackets are optional extras for additional price

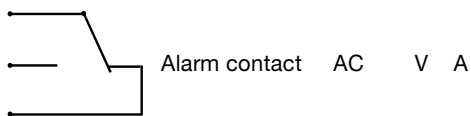
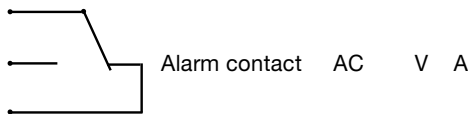
Control and connection elements



- A LED display
- B Decrease value button
- C Increase value button
- D Check set alarm contact no
- d ▲ LED = MAX alarm contact
▼ LED = MIN alarm contact
- E Check set alarm contact no
- e ▲ LED = MAX alarm contact
▼ LED = MIN alarm contact
- F Select programming mode continue with programming
- G Reset of MIN MAX memory or abort programming
- H Select display mode
- h REAL LED = actual value
HOLD LED = hold value
MIN LED = minimum value
MAX LED = maximum value
- I Pocket window for unit label
- J Screw terminal for power supply and alarm contacts
- K Screw terminal for input signal analogue output and transmitter supply
- L Sub D plug for RS interface optional

Designation of terminals

Screw terminal 'J' power supply and alarm contacts



} AC V Hz or
} AC V Hz

Sub D plug 'L' RS interface optional

RX DATA
TX DATA
GROUND

Screw terminal 'K' input signal analogue output transmitter supply

U in measuring signal voltage
U in measuring signal voltage

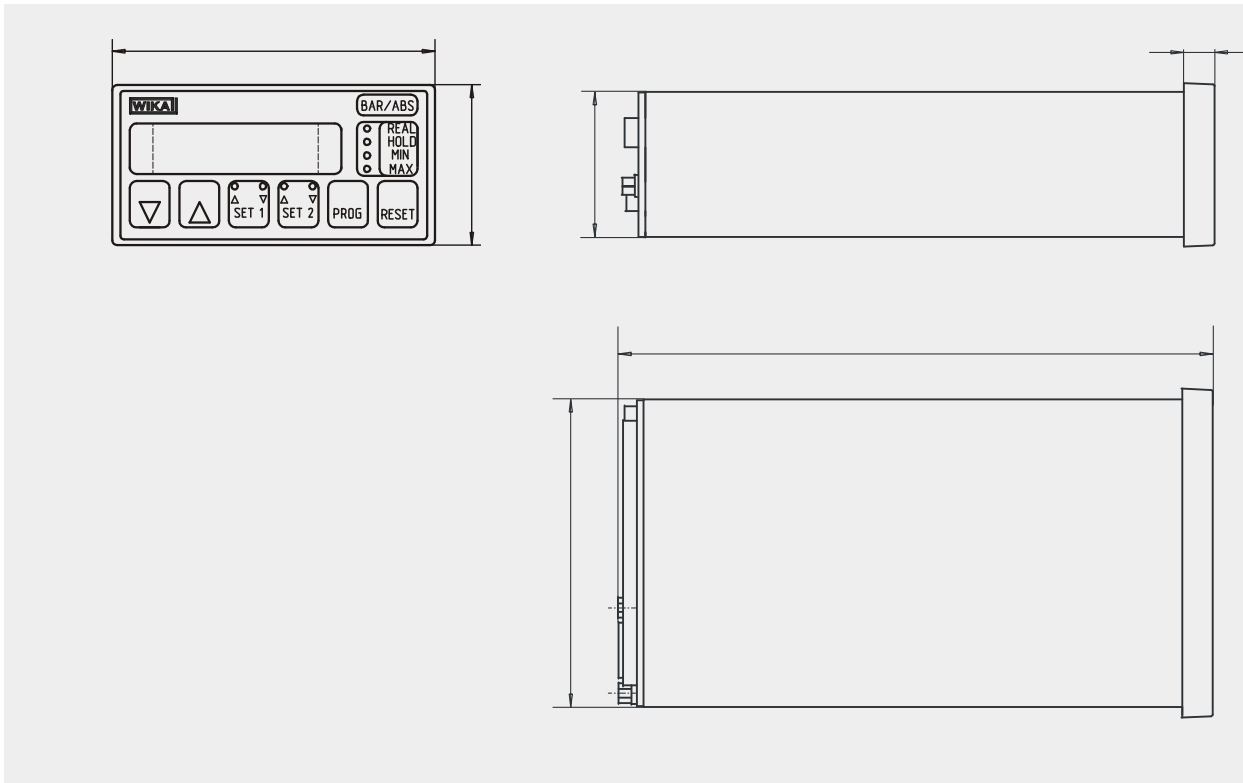
I in measuring signal current
I in measuring signal current

analogue output common ground for current and voltage output signal

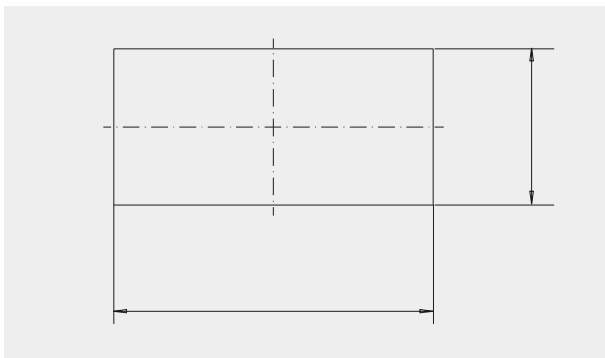
V transmitter supply
GND transmitter supply

analogue output voltage
analogue output current

Dimensions in mm



Panel cutout in mm



Modifications may take place and materials specified may be replaced by others without prior notice
 Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing



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