Ziasiot

Digital Pressure & Temperature Indicator

Operating Instructions

Z901 / Z801 / Z601

Series

Safety Warnings

Electrical Shock Hazard:

- Disconnect all power supply connections to the device before performing any maintenance or installation tasks.
- Avoid contact with leads and terminals while the device is powered, as high voltages may be present, resulting in severe electrical hazards!

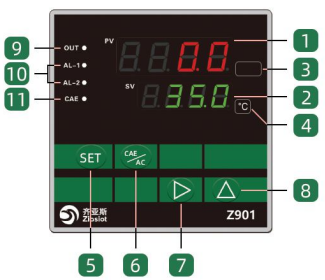
Power Safety:

- The instrument must not be installed in flammable or explosive environments unless suitable safety interfaces are in place.
- If used in applications where failure can cause harm, connect the device to auxiliary alarm equipment to warn operators of faults.
- Supply lines should be separated from input and output wiring to avoid interference.

EMI Considerations:

- Do not install the device near high-frequency generators, arc welders, or motors without using appropriate power filters because of Electromagnetic Interference (EMI).

Front Panel Identification



1. PV: Present Value
2. SV: Setting Value
3. Pressure Unit Label
4. Temperature Unit Label
5. SET Key: Setting parameter's values, moving between menus and parameters.
6. CAE/AC Key: Applying the 80% Shunt Calibration and Resetting Zero Point.
7. Key: Switching between digits
8. Key: Increasing/changing the parameter's value
9. OUT: OUT Relay Status LED
10. AL-1/2: Alarms Status LED
11. CAE: 80% Internal Shunt Calibration Status LED

Notes:

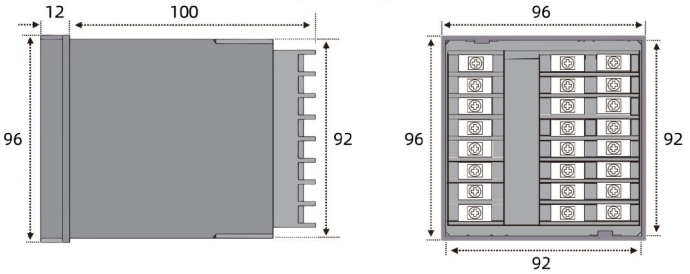
- The AL-3 and AL-4 LEDs are not present on the display.
- Relay statuses are indicated by LEDs.

Installation Guidelines

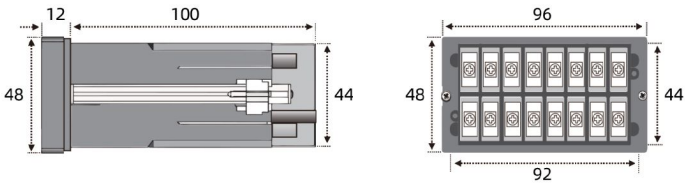
Please read the following instructions for dimensions and cut-out:

Ensure panel cut-out dimensions match the specified size for secure mounting.

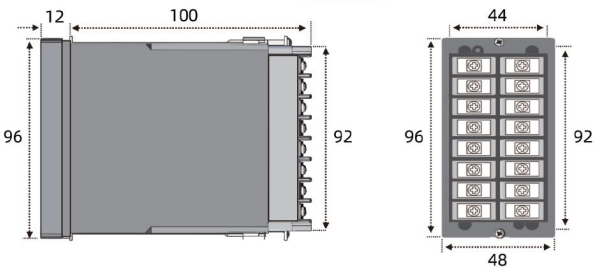
Z901



Z601



Z801



Please read the following instructions for installation:

Mounting Requirement:

- Install in a rigid control panel that allows proper ventilation.
- Avoid placing the unit near heat sources, moisture, or corrosive gases.
- For IP66 sealing, make sure the gasket is properly compressed against the panel.

Environmental Conditions:

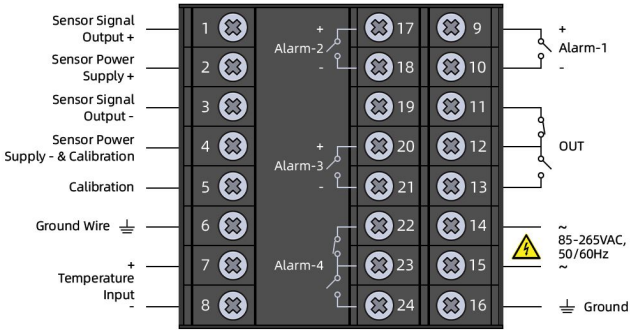
- Operating temperature: 0°C to 55°C
- Humidity range: < 80% non-condensing

Cautions:

- Use a dry cloth to clean the device. Avoid solvents or abrasive materials that may damage the casing.
- Operate within the specified temperature and humidity range to ensure device longevity. Avoid environments with high dust or corrosive gases.
- Internal components are sensitive to electrostatic discharge (ESD). Handle circuit boards with care.

Electrical Connection

Please check the following diagram and explanations for the correct electrical connection:



Alarm-2 is only dedicated to the retransmission current output. The indicator outputs pressure as a 4-20mA signal on the Alarm-2 current loop, with 4mA set at the dL value and 20mA set at the dH value. Configure dL and dH in the configuration section.

If the instrument is purchased with RS-485 output, configuration must be done via Alarm-3 (for RS485 settings, please refer to dedicated operating manual).

Caution: Ensure that the operating voltage specified on the housing label matches the power supply voltage before connecting to the Power Input.

Wiring Cautions:

- Dangerous voltages may be present at input terminals. Ensure proper insulation of wiring.
- Use only copper conductors except for thermocouple inputs.
- All connections must mechanically be secured to prevent loose wiring from causing electrical hazards. Check for loose connections or damaged wiring during inspections.
- Use screened cables for analog and retransmission connections; ground shielding at one point only.

Ordering Guide

Z [ ] [ ] [ ] [ ] [ ] [ ] [ ]

Instrument Type	
96mm x 48mm	601
48mm x 96mm	801
96mm x 96mm	901

Power Supply	
85 ~ 265 VAC	V1
24 VDC	V2

Pressure Range 1)	
X2) MPa	MX

Signal Input	
1.5mV/V	S1
2mV/V	S2
3.33mV/V	S3
4-20mA	S4
0-10Vdc	S5
0-5Vdc	S6

Signal Output	
2-way relay output (standard)	H1
2-way relay output + 1-way relay output	H2
2-way relay output + 4-20mA signal	H3
2-way relay output + 0-10Vdc signal	H4
2-way relay output + 0-5Vdc signal	H5
2-way relay output + RS485 communication	H6
2-way relay output + RS232 communication	H7

Temperature Input 3)	
None	Blank
K type	K
E type	E
J type	J

1, 3) Pressure range and temperature input type can be adjusted further on the instrument.
2) X refers to the pressure range full scale.
For example: M70 = 70 MPa

Configuration

Please follow the configuration sequence below to ensure reliable operation.
This indicator has two menus:

- **Set Control:** Specifies the relay and alarm values.
- **Factory Settings:** Defines functions and calibration procedure.

Set Control

Original display state.

3

Enter the Alarm-3 value, then press set key.

Press SET key once to enter Set Control Menu.

4

Enter the Alarm-4 value, then press set key.

1

Enter the OUT relay value, then press set key.

Back to the original display state.

2

Enter the Alarm-1 value, then press set key.

Note:
All pressure-related values in this indicator are based on MPa (Megapascal) unless the device was purchased with the Bar unit. The default temperature unit is degrees Celsius.

Factory Settings

Original display state.

Hold SET key for 3 sec to enter Factory Settings Menu.

5

Press CAE/AC key to set the zero point [4] and go to next menu

6

Use right and up keys to set pressure range value, press the set key.

7

In this step, CAE LED (80% shunt cal) turns on. If PV≈SV, press CAE [5] to calibrate & proceed. If PV=0 or PV-SV gap is large, see troubleshooting.

8

Do not adjust! Press SET key to go to next menu.

9

Select the AL-1 mode, then press SET key.

10

Enter the Hysteresis value of AL-1, then press SET key.

11

Select "I" as AL-2 mode, then press SET key.

12

Enter the lower range value over which retransmission signal is scaled.

13

Enter the upper range value over which retransmission signal is scaled.

14

Do not adjust! Press SET key to go to next menu.

15

Do not adjust! Press SET key to go to next menu.

16

Select the AL-4 mode, then press SET key.

17

Enter the Hysteresis value of AL-4, then press SET key.

18

Enter the desired reaction speed, then press SET key.

19

Switch between digits to specify the decimal point, then press SET key.

20

Do not adjust! Press SET key to go to next menu.

21

Select the type of thermocouple, then press SET key.

22

Set the temperature deviation value, then press SET key.

23

Select the required temperature unit for indication, then press SET key.

24

Select the required locking level, then press SET key.

Hold SET key for 3 sec to save the settings.

Back to the original display state.

Functions Explanation

ID	Symbol	Value	Function Explanation
1	OUT	0 ~ 9999	The value at which the OUT relay is activated.
2	AL-1	0 ~ 9999	The value at which the Alarm-1 relay is activated.
3	AL-3	0 ~ 9999	The value at which the Alarm-3 relay is activated.
4	AL-4	0 ~ 9999	The value at which the Alarm-4 relay is activated.

ID	Symbol	Value	Function Explanation
5	AC [4]	0	Setting the "zero point" of the full scale.
6	Ed	070.0	Setting the "span point" of the sensor's pressure range.
7	CAE [5]	80% FS	Enabling 80% shunt calibration, used for signal demarcation.
8	ESCL	0	Referring to the calibration of zero & full span. (Do not adjust!)
9	AL-1	PLJ	Pressure - Normally Close
		PHJ	Pressure - Normally Open
		P - I	Pressure - Analog Output (Not available)
		°CLJ	Temperature - Normally Close
		°CHJ	Temperature - Normally Open
		°C - I	Temperature - Analog Output (Not available)
10	HC	0~100	Setting "Hysteresis" value of Alarm-1.
11	AL-2	PLJ	Pressure - Normally Close (Not activated for Zx-...-H3/4/5)
		PHJ	Pressure - Normally Open (Not activated for Zx-...-H3/4/5)
		P - I	Pressure - Analog Output
		°CLJ	Temperature - Normally Close (Not activated for Zx-...-H3/4/5)
		°CHJ	Temperature - Normally Open (Not activated for Zx-...-H3/4/5)
		°C - I	Temperature - Analog Output (Not available)
12	dL	0	The lower range limit over which the analog signal is scaled.
13	dH	70	The upper range limit over which the analog signal is scaled.
14	AL-3	PLJ, PHJ	(Do not adjust!)
15	HC	0~100	(Do not adjust!)
16	AL-4	PLJ	Pressure - Normally Close
		PHJ	Pressure - Normally Open
		°CLJ	Temperature - Normally Close
		°CHJ	Temperature - Normally Open
17	HC	0~100	Setting "Hysteresis" value of Alarm-4.
18	gl	23	Reaction speed -The larger the number, the slower the reaction.
19	dot	000.0	Decimal point position
20	COdE	----	Not Adjustable!
21	SYS	J	Setting of temperature sensor input type; J, E, N, T, K
22	SC	0	Setting of temperature deviation value.
23	CF	°C	Setting of temperature display unit; °C, °F
24	LOCK	0	No lock!
		1	"Factory settings" menu is locked.
		2	"Set Control" menu is locked.

4) To calibrate the zero point, allow the sensor to reach the process temperature, ensure no pressure is applied, and then perform the calibration.

5) The CAE function generates an electrical output that mimics the response to an applied pressure. It is used to verify that the instrument correctly accepts the signal range.

Cautions:

- Do not adjust the Span Potentiometer with 80% calibration activated. The signal generated by CAE function is a fixed voltage added to the Zero Output. It is not influenced by Span potentiometer adjustments!

Troubleshooting Common Issues:

- **"L L L L" appears on the PV display:** check if the sensor wires are connected properly.
- **"OPEN" appears on the SV display:** check if the thermocouple wires are connected properly.
- **"CAE" function activated, but PV displays 0:** Check if calibration wires are properly connected, **or PV displays an incorrect high value (not 80% of the pressure range):** The calibration wires may be misconnected, or the pressure range set in "ED" is incorrect.
- **Unable to access the "SET Control" menu:** Check the "Lock" parameter in "Factory Settings" to see if the menu is locked. If the value is 2, access is restricted.
- **When holding down "SET" Key, Only "Lock" appears instead of "Factory Settings" parameters:** The menu may be locked. Verify the "Lock" parameter in "Factory Settings"–if set to 1, access is restricted.

Cautions:

- Unauthorized users must not access configuration settings–use "Lock" parameter.
- Calibration procedures should be performed only by trained personnel.
- Always refer to the technical support before attempting repairs.

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