Ziasiot

# Digital Pressure Indicator

# Operating Instructions

**Z900 / Z800 / Z600**

**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!

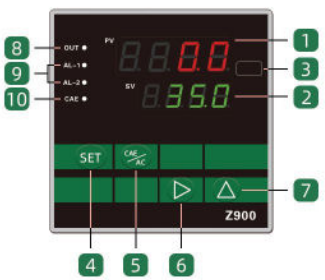
### Power Safety:

- 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. SET Key: Setting parameter's values, moving between menus and parameters.
5. Key: Applying the 80% Shunt Calibration and Resetting Zero Point
6. Key: Switching between digits
7. Key: Increasing/changing the parameter's value
8. OUT: OUT Relay Status LED
9. AL-1/2: Alarms Status LED
10. CAE: 80% Internal Shunt Calibration Status LED

### Notes:

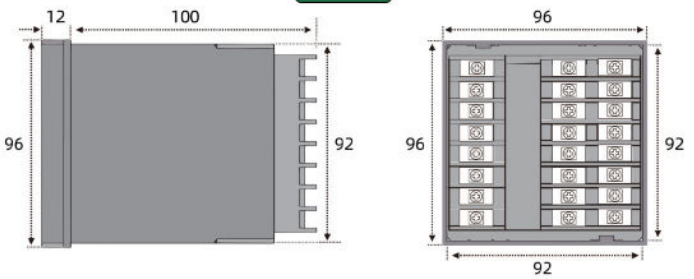
- The AL-3 and AL-4 LEDs are not present on the display.
- Relay statuses are indicated by LEDs.

## Installation Guidelines

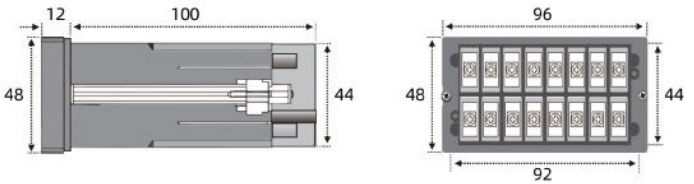
Please read the following instructions for dimensions and cut-out:

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

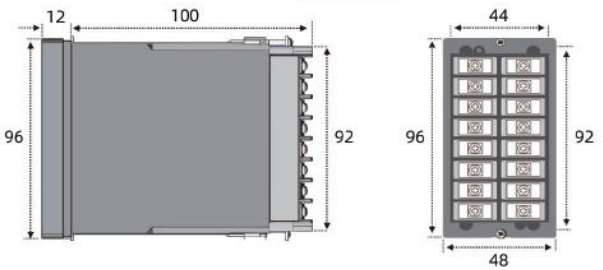
**Z900**




**Z600**




**Z800**




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:

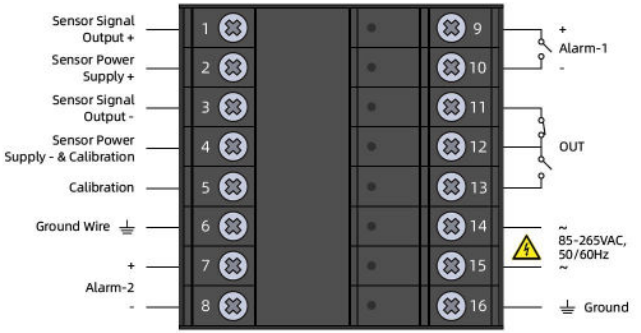
- Operating temperature: 0°C to 55°C
- Humidity range: < 80% non-condensing

### 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 current output. The indicator outputs pressure as a 4-20mA signal on the Alarm-2 current loop, with 4mA at zero pressure and 20mA at full pressure range. Set the full pressure range at ED value in the configuration section.

For a 0-20mA output, set dL = 0mA and dH = 20mA in the configuration section. A 0-10V output is achieved using a 500Ω resistor in the 0-20mA loop.

If the instrument is purchased with RS-485 output, 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 | 600 |
| 48mm x 96mm | 800 |
| 96mm x 96mm | 900 |

| Power Supply | |
|---|---|
| 85 ~ 265 VAC | V1 |
| 24 VDC | V2 |

| Pressure Range [1] | |
|---|---|
| X[2] MPa | MX |

| 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 |

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

1) Pressure range 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.

Back to the original display state.

Press SET key once to enter Set Control Menu.

**Note:**
All pressure-related values in this indicator are based on MPa (Megapascal) unless the device was purchased with the Bar unit.

1

Enter the OUT relay value, then press set key.

2

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

## Factory Settings

Original display state.

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

3

Press CAE/AC key to set the zero point [3] and go to next menu.

4

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

5

In this step, CAE LED (80% shunt cal) turns on. If PV≈SV, press CAE [4] to calibrate & proceed. If PV=0 or PV-SV gap is large, see troubleshooting.

6

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

7

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

8

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

9

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

10

Enter the lower limit of signal retransmission.

11

Enter the upper limit of signal retransmission.

12

Enter the desired reaction speed, then press SET key.

13

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

14

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

15

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. |

| ID | Symbol | Value | Function Explanation |
|---|---|---|---|
| 3 | AC [3] | 0 | Setting the "zero point" of the full scale. |
| 4 | Ed | 070.0 | Setting the "span point" of the sensor's pressure range. |
| 5 | CAE [4] | 80% FS | Enabling 80% shunt calibration, used for signal demarcation. |
| 6 | ESCL | 0 | Referring to the calibration of zero & full span. (Do not adjust!) |
| 7 | AL-1 | LJ | Normally Close |
| | | HJ | Normally Open |
| 8 | HC | 0~100 | Setting "Hysteresis" value of Alarm-1. |
| 9 | AL-2 | I | Current signal |
| | | LJ | Normally Close (Not activated for Zx-...-H3/4/5) |
| | | HJ | Normally Open (Not activated for Zx-...-H3/4/5) |
| 10 | dL | 04 | Signal retransmission lower limit. |
| 11 | dH | 20 | Signal retransmission upper limit. |
| 12 | gl | 23 | Reaction speed -The larger the number, the slower the reaction. |

| | | | |
|---|---|---|---|
| 13 | dot | 000.0 | Decimal point position |
| 14 | COdE | ---- | Not Adjustable! |
| 15 | LOCK | 0 | No lock! |
| | | 1 | "Factory settings" menu is locked. |
| | | 2 | "Set Control" menu is locked. |

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

4) 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.
- **"CAE" function activated, but PV displays 0:** Check if calibration wires are properly connected.
**or PV shows 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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