MODEL-0218B INSTRUCTION MANUAL

≪Safety precautions≫

This indicator has been designed with great attention to safety. However, mishandling may cause personal injury due to a fire or electric shock. Be sure to observe the following precautions to avoid such accidents:

≪Meaning of warning≫

The following warning is attached to the product. Fully understand what it means. Misuse may cause serious accidents such as a loss of life or serious injury due to a fire or electric shock.

≪Alert symbols≫

Mishandling may cause personal injury due to electric shock or pinching or damage to surrounding property.

ELECTRICAL HAZARD

CRUSH HAZARD

ROTATING PART

ROTATING GEAR
KEEP HANDS CLEAR

≪Connecting the ground wire≫

For use of the product, the ground wire must be connected. Connect the ground wire prior to connecting the power plug to the power supply. Disconnect the power plug prior to disconnecting the ground wire.

≪Instantaneous voltage drop≫

This product may fail should instantaneous voltage drop of the power supply due to lightning occur. As a countermeasure against instantaneous voltage drop, it is recommended that an interruptible power supply be used.

≪Request and notice≫

The contents of this manual are subject to change without notice. This manual has been created meticulously, but if you notice errors or omissions, please notify us. The specifications and external view may be altered in the future for improvement of quality.

≪Specifications≫

Specify one when placing an order.

▸Sensor: DC strain gauge type sensor
▸Input signal: 0.5 to 3.5mV/V DC
▸Output signal: 0 to ±10V DC
0 (4) to 20mA (Selected by dip switches)
▸Non-linearity: 0.02%F.S.
▸Relay output: 2 channels, Hi/Lo (Dry contact)
▸Relay capacity
250VAC-0.25A, 125VAC-0.5A, 24VDC-1A

≪Functions≫

▸Peak indication, Hold indication, Key lock (Malfunction prevention)
▸Display zero function
(Activated by key operation on the front panel or external signal)
▸Display speed adjust function (15 times max.)
▸Auto calibration function
▸Relay mode：Hysteresis mode/Range Mode

≪Amplifier specifications≫

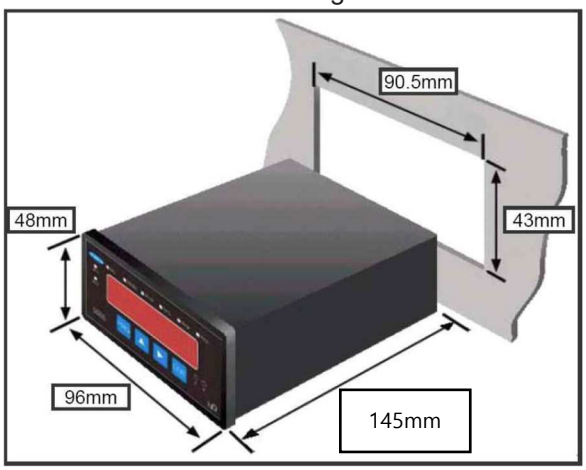
▸Output update： 500 Hz
▸Output adjustment: Adjusted by Zero VR and Span VR
▸Low pass filter: 10Hz, 100Hz, 1kHz, W/B
(Selected by dip switches)

≪Display specifications≫

▸Sampling rate: 15 times/sec.
▸Display range: 99999 to -19999
▸Display character: 7-segment FND
▸Character size: 8W×15H
▸Display digits: 4 digits

≪Use environment, dimensions, etc.≫

▸Operating temperature: 0 – 60℃
▸Storage temperature: -40℃ – 85℃
▸External dimensions: 96W×48H×145D mm
▸Weight: 600g
▸Connection: Screw-type terminal block
▸Installation: Panel mounting



≪Front panel≫

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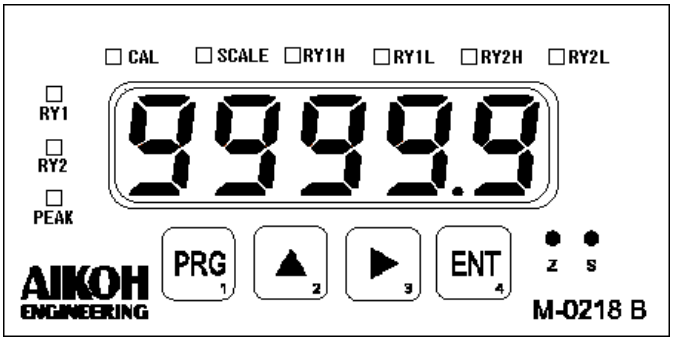


Names and functions:

1 PRG ①: Program mode select/set value check key

2 ▲②: Value input key
Flashing figure changed (0, 1, 2, 3, …)

3 ▶③: Shift key. Moves input position/decimal point.

4 ENT ④: Enter key. Accepts set value.

5 Z: Analog output zero point adjust variable resistor (VR)

6 S: Analog output span fine adjust variable resistor (VR)
(Rough adjust VR provided on the rear panel)
※ An erroneous adjustment preventing seal attached to 5 and 6. If adjustment is required, remove it.

7 RY1: Lights up when Relay 1 operates.

8 RY2: Lights up when Relay 2 operates.

9 PEAK: Lights up in Peak mode.

10 CAL: Lights up when calibration value (rated output) is shown/set.

11 SCALE: Lights up when rated capacity is shown/set.

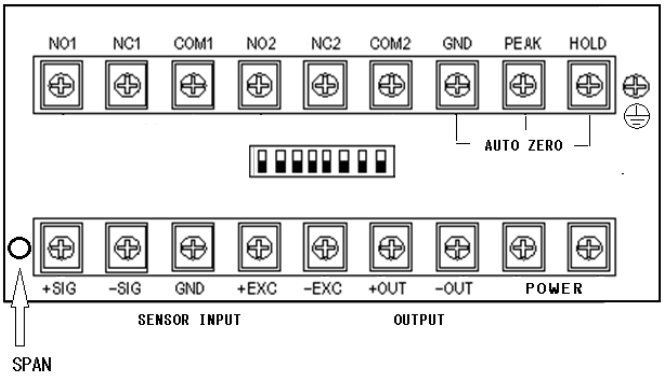
12 RY1H: Lights up when Relay 1 (High) operates/value is input.

13 RY1L: Lights up when Relay (Low) operates/value is input.

14 RY2H: Lights up when Relay 2 (High) operates/value is input.

15 RY2L: Lights up when Relay 2 (Low) operates/value is input.

≪Rear panel≫



▸POWER: AC power connection

▸OUTPUT: Analog output terminals

▸SENSOR INPUT: Connect sensor signal lines.
+SIG: Green (D) -SIG: Blue (B) GND：Yellow (E)
+EXC: Red (A) -EXC: White (C)

【MODEL-CK・VCV series】
+SIG: Red (D) -SIG: Black (B) GND：Yellow (E)
+EXC: White (A) -EXC: Green (C)

▸GND: Connect sensor signal shield wire.

▸COM1・NO1・NC1: Connect Relay 1.

▸COM2・NO2・NC2: Connect Relay 2.

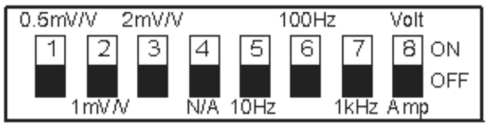
▸PEAK+ GND: Peak signal input terminals

▸HOLD+ GND: Hold signal input terminals

▸PEAK+ HOLD+ GND: External auto zero signal input terminals

▸SPAN: Analog output rough adjust variable resistor (Fine adjust VR provided on the front panel)

≪Dip switch setting≫



▸1 – 3: Determine an approximate value of the sensor calibration value (rated output) by a combination of dip switches. (See table below.)

Rated Output	Dip SW	Set Value
0.5050 mV/V or below	1	0.5 mV/V
0.5051 – 1.0100 mV/V	2	1.0 mV/V
1.0101 – 1.5150 mV/V	1+2	1.5 mV/V
1.5151 – 2.0200 mV/V	3	2.0 mV/V
2.0201 – 2.5250 mV/V	1+3	2.5 mV/V
2.5251 – 3.0300 mV/V	2+3	3.0 mV/V
3.0301 mV/V or over	1+2+3	3.5 mV/V

▸4: Unusable.

▸5 – 7: Determine low pass filter (10H/Z, 100H/Z, 1000H/Z)
Be sure to select one.

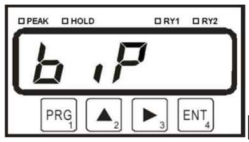
▸8: Analog output selection (ON → Voltage output, OFF → Current output)

≪Function (program) setting≫

※The number of times of pressing the PRG key is the number counted stating with the initial status when the power is turned on. This may be different from actual setting.

※After changing a function, be sure to press the ENT key to accept the set value.

1. Change the display.
2. Press and hold the PRG key for 1 sec. to set the display mode. Operate the ▲ to select.



【+/- shown】

【+ side only shown】

3. Set the CAL (calibration) value.

Press the PRG key twice to set the CAL mode. Operate the ▲ key/▶ key to enter a value. To register a new load cell, check the rated output shown on the load cell test report.

※ Set the dip switches ① to ③ on the rear panel in advance.

4. Scale setting

Press the PRG key 3 times to set the SCALE (rated capacity) mode. Operate the ▲ key/▶ key to enter a value. To register a new load cell, check the rated capacity shown on the load cell test report.

5. Auto calibration (AUTO CAL)

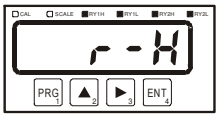
Press the PRG key 4 times to set the AUTO CAL mode. Apply a test load (weight, etc.) on the load cell and enter the applied test load by operating the ▲ key/▶ key. When the ENT key is pressed, force calibration can be conducted automatically.

※ When the settings of 2, 3 and 4 are changed, the force value may not be indicated accurately. When force calibration (adjustment) is required, it is recommended that you request Aikoh for such calibration.

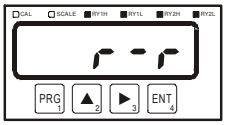
6. Relay setting

Press the PRG key 5 to 6 (7 to 8) times to set the RELAY 1 (2) H/L input mode. Set the RY1 (2) H (upper limit) High and set RY1 (2) L (lower limit) Low.

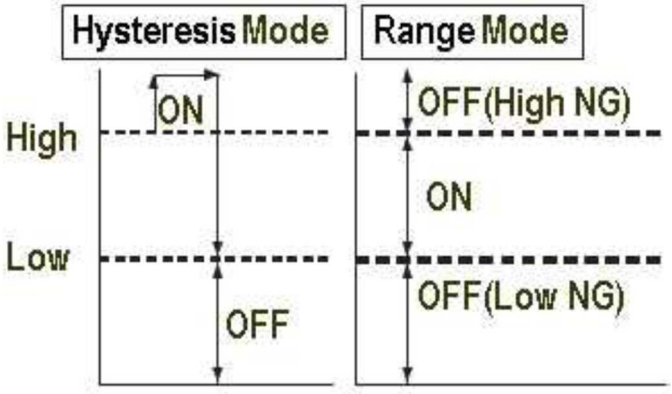
Press the PRG key 9 times to set the Relay action mode. Operate the ▲ key to select.



In the “r-H” (Hysteresis mode), the relay operates to prevent chattering phenomenon at off.



In the “r-r (Range mode), the relay turns on and off at the values set in the relay input mode.



7. Display speed setting

Press the PRG key 10 times to set the display speed mode. Operate the ▲ key to select a speed; 1, 2, 5, 10 and 15 times per second.

8. Display step setting

Press the PRG key 11 times to enter the display step set mode. Operate the ▲ key/▶ key to change the value. A value can be set in a range of 0 to 255. The last digit of the value will change at the set value.

”ST.001”・・・・・1, 2, 3, 4, 5・・・

”ST.005”・・・・・5, 10, 15, 20・・・

When “001” is set, the last digit will increase by 1 each and when “005”, by 5 each.

≪Special functions≫

▸Auto zero function:

While pressing the ENT key, press the ▲ key.

▸Peak function:

When the ▲ key is pressed during measurement, the max. value save function will be set. When the ▶ key is pressed, the function will be canceled.

▸Key lock function:

While pressing the ▲ key, press the ▶ key (“Loc” shown). When while pressing the ▲ key, the ▶ key is pressed again, the function will be canceled (“UnLoc” shown)

▸Initialization function (Factory setting)

While pressing the ENT key, turn on the power (“Init” shown). Press the ▲ key (“yes” shown) and then press the ▶ and ENT keys at the same time. After “yes” is shown flashing, release them to complete the initialization procedure.

▸Menu back function:

While pressing the PRG key, press the ▶ key to go to the previous mode.

▸Version indication/Zero clear function:

Press and hold the ENT key for 2 seconds to show the version (“VerS on” shown).

While pressing the ENT key, press the ▶ key (“CLR-0” shown). With the ▶ key pressed, press the ▲ key (Zero clear).

After the version has been shown, while pressing the ENT key, press the ▶ key (year of manufacture shown). Press the ▶ key again (month/day of manufacture shown).

MODEL-0218B Force Calibration Procedure

≪Procedure by use of the rated output≫

Example: Full scale 50 N (newton)
Load cell output: 1.998 mv/v

① Connect the load cell and the indicator.
② Turn on the dip switch No. 3 on the rear panel. (2 mv/v selected)
③ Set the indication to zero. While pressing the ENT key, press the ▲ key.
④ When the PRG key is pressed several times, the SCALE LED will light up and the Scale setting mode will be set.
Using the ▲ key and ▶ key, set the indication at【05000】.
When the ▶ key is pressed several times, only the decimal point will flash. Press the ▲ key to set the indication at【050.00】.
Press the ENT key to register the setting.
⑤ Press the PRG key several times to make only the CAL LED light up. Then the CAL input mode will be set.
⑥ From the load cell test report, enter the rated output 1.998 mv/v.
(Operate the ▲ key and ▶ key to show “1.9980”.)
⑦ Press the ENT key to finish registration.

※Where possible, use a reference weight to verify if the correct value is indicated.

≪Procedure by use of the actual load≫

Example: Full scale 50 N (newton)
Load cell output: 1.998 mv/v

① Connect the load cell and the indicator.
② Turn on the dip switch No. 3 on the rear panel. (2 mv/v selected)
③ Set the indication to zero. While pressing the ENT key, press the ▲ key.
④ When the PRG key is pressed several times, the SCALE LED will light up and the Scale setting mode will be set.
Using the ▲ key and ▶ key, set the indication at【05000】.
When the ▶ key is pressed several times, only the decimal point will flash. Press the ▲ key to set the indication at【050.00】.
Press the ENT key to register the setting.
⑤ Apply a reference weight to the load cell. Here apply 50 N (newton).
⑥ Press the PRG key several times to make both the CAL and SCALE LEDs light up.
Using the ▲ key and ▶ key, set the indication at【050.00】.
⑦ While pressing the ENT key, press the ▶ key to register the setting.
⑧ Remove the weight and make sure that the indication has become【0.00】to complete the procedure.
If it has not become【0.00】, repeat the procedure from step ③.

CAUTION!

When the indicator is returned together with a test report after calibration conducted upon your request, the calibration has been completed. Do not conduct force calibration.

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