

## 10 Error Message

### 10.1 Error Indication during Measurement or Setup

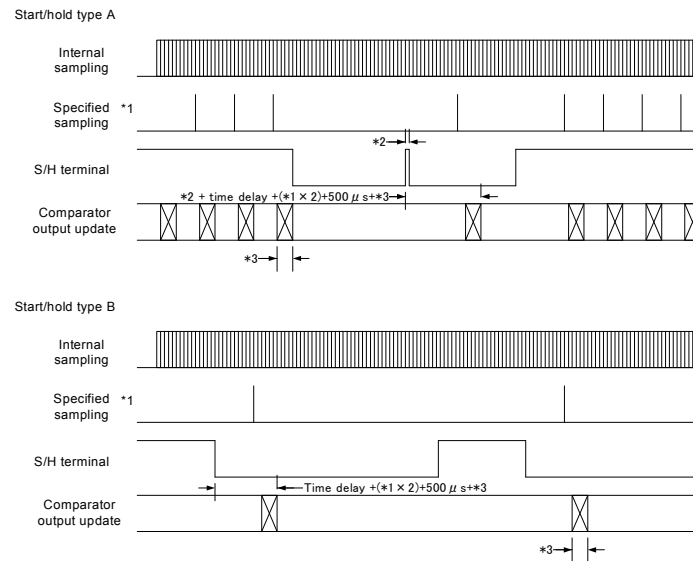
Display	Description
	Indicates that a signal exceeding the measurement range has been applied.
	Indicates that an input signal once exceeded the measurement range, but has returned to the measurable range with the peak hold function activated.
	Indicates that the unit is waiting for an A/D converter input or that power-ON delay time is valid.
	Indicates that each judgment value of comparator data or the size of hysteresis parameters does not meet the conditions.
	Indicates that full-scale input value and off-set input value of scaling data have the same value.
	Indicates that digital limiter HI and digital limiter LO of scaling data have the same value.
	Indicates that analog output HI and analog output LO of scaling data have the same value.
	Linearize data error

### 10.2 Memory Failure Error Indication

Display	Description
	Memory switch area, checksum error of main memory
	Calibration data area, checksum error of main memory
	Memory switch area, checksum error of sub-memory
	Calibration data area, checksum error of sub-memory
	Condition data area, checksum error Press the Mode key for a prolonged time to load the initial values.
	Scaling data area, checksum error (for each pattern) Press the Mode key for a prolonged time to load the initial values of each pattern.
	Comparator data area, checksum error (for each pattern) Press the Mode key for a prolonged time to load the initial values of each pattern.
	Calibration data area, checksum error (for each pattern) Press the Mode key for a prolonged time to load the initial values of each pattern.
	Shift data area, checksum error Press the Mode key for a prolonged time to load the initial values.
	Linearize data area, checksum error Press the Mode key for a prolonged time to load the initial values.

\* Turning power ON with the Enter key and Mode key held down causes all the parameters to return to the initial values (defaults).

## 11 Timing Charts



\*1 Specified sampling  
The sampling speed is determined by the AVG parameter setting of condition data as shown in the table below:

AVG setting	Sampling speed	Sampling cycle	AVG setting	Sampling speed	Sampling cycle
1	1041.65 times/sec	Approx. 960 μs	100	10.4165 times/sec	Approx. 96 ms
2	520.825 times/sec	Approx. 1.92 ms	200	5.20825 times/sec	Approx. 192 ms
4	260.4125 times/sec	Approx. 3.84 ms	400	2.604125 times/sec	Approx. 384 ms
8	130.20625 times/sec	Approx. 7.68 ms	800	1.3020625 times/sec	Approx. 768 ms
10	104.165 times/sec	Approx. 9.6 ms	1000	1.04165 times/sec	Approx. 960 ms
20	52.0825 times/sec	Approx. 19.2 ms	2000	0.520825 times/sec	Approx. 1.92 sec
50	20.833 times/sec	Approx. 48 ms	5000	0.20833 times/sec	Approx. 4.8 sec

\*2 External start signal  
The width of the external start signal must be between 500 μs to a specified sampling cycle. A time delay can be set for the external start using the S/H delay time parameter of the condition data.

\*3 Time delay for alarm output  
Relay output: 10 ms max.  
Photo coupler output: Maximum 200 μs

## 12 Warranty and Service

### 12.1 Warranty

The warranty period of the product is one year from the date of delivery. If a failure occurs during this period that is clearly judged to be caused by a defect ascribable to Asahi Keiki, we will repair the failure or replace any defective parts without charge.

### 12.2 After Sales Service

Under strict quality control measures, this product was manufactured, tested, inspected and shipped. Should a defect in manufacture or workmanship be identified, please return the product to our distributor or directly to us. It would be highly appreciated if you could give a detailed account of the fault and enclose it with the product.

# Instruction Manual for EDI62S Series Digital Strain Gauge Meters

### Caution

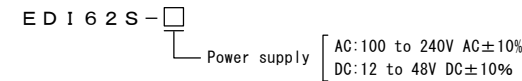
- Applying a voltage or current exceeding its maximum permissible value may cause the unit to be damaged.
- Always use the unit within the specified voltage range; otherwise, it may cause a fire, electric shock or personal/equipment damage.
- For the purpose of functional improvement, the information written herein may be changed without prior notice.
- Information contained herein is considered accurate to the best of our knowledge. If you have any question or comment on the information, please contact us or our distributor.
- Read this manual carefully and thoroughly before starting to operate the unit, and keep the manual available for future reference.

## 1 Before Using the Unit

Thank you for purchasing our quality designed and manufactured EDI62S Series. Before unpacking the unit, check for damages during transportation. If you have noticed any damage, directly contact us or our distributor.

### 1.1 Type Identification

Each model number of the EDI62S series has its general specifications, and the following describes each note and the meaning. Before using the unit, check that the model number and specifications of the delivered unit match those of the product you ordered. For optional units, see the separate instruction Manuals.



### 1.2 Accessories

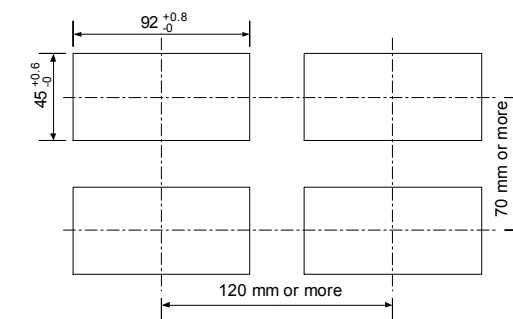
Accessory	Quantity
6-p terminal cover	3 pieces
Mounting band	2 pieces
Unit indication label	1 each

## 2 Mounting Method

### 2.1 Panel Cut Size

Cut the panel to mount the EDI62S series in accordance with the illustration below:

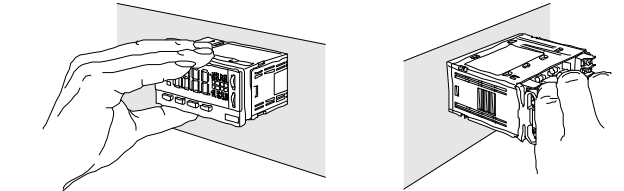
The recommended panel thickness is 0.8 to 5.0mm.



### 2.2 How to Mount the Unit on the Panel

Mount the EDI62S series to the panel in accordance with the illustration below:

- Remove the mounting band and insert the case from the front of the panel.
- Fix the case using the mounting band from the rear of the panel.

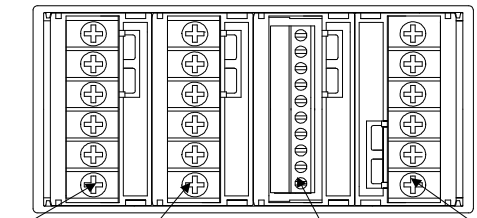


### Caution

- The recommended panel thickness is 0.8 to 5mm.
- Do not install the unit in locations where it is exposed to direct sunlight; where ambient temperature or humidity doesn't meet the requirements below; or where a drastic change in temperature may cause condensation.  
Ambient temperature: 0 to 50°C  
Ambient humidity: 35 to 85%
- Do not install the unit where it is exposed to dust, particles, chemicals harmful to electric components, corrosive gases, etc.
- When this unit is installed inside other equipment, pay attention to the heat radiation and keep the heat inside the equipment 50°C or below.
- Do not install the unit where it is exposed to excessive vibration or shock.
- Install the unit horizontally; otherwise, ventilation will be adversely affected and may result in deterioration.

## 3 Terminals and Connections

Illustration of the rear

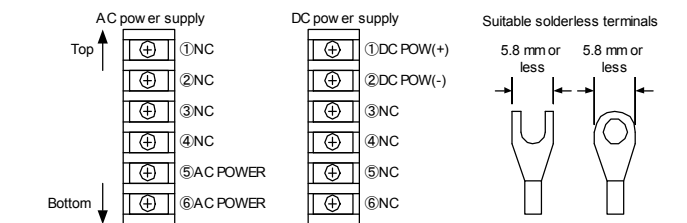


Input unit Comparator output unit Analog output unit Power supply unit

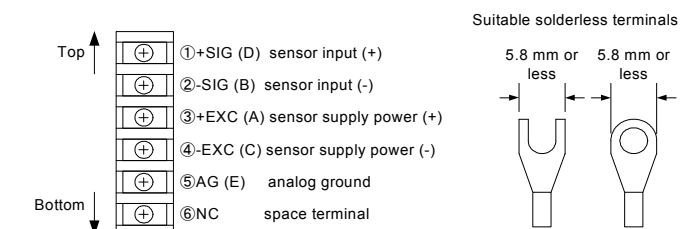
### Caution

Each unit is not replaceable by the customer.

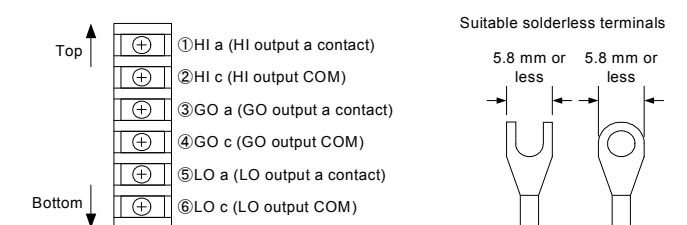
### 3.1 Power supply connections



### 3.2 Input Signal Connections



### 3.3 Comparator Output Connections



**Enerpac Co., Ltd.**  
Customer service

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(ED-34824)



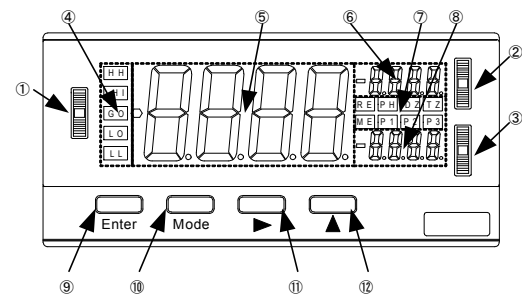
### 3.4 Analog Output connections

Top ↑	① HOLD	Terminal	Function
	② PH	S/H	"Start/hold" control terminal. The "hold" state is turned on when this terminal is at the same potential as the COM terminal or short-circuited.
	③ DZ	PH	"Peak hold" control terminal. The peak hold function is turned on when this terminal is at the same potential as the COM terminal or short-circuited.
	④ R.RESET	DZ	"Digital zero" control terminal. The digital zero function is turned on when this terminal is at the same potential as the COM terminal or short-circuited. This setting is valid only when the external control terminal is selected as the control method for digital zero using condition data.
	⑤ NC	R.RESET	"Relay reset" control terminal. The relay reset function is turned on (only for the meter relay) when this terminal is at the same potential as the COM terminal or short-circuited.
	⑥ NC	COM	External control's common terminals, which are at the same potential as the LO or AG terminal for the input circuit.
	⑦ COM	A.OUT V(+)	Voltage output terminal of analog output.
	⑧ A.OUT V(+)	A.OUT I(+)	Current output terminal of analog output.
	⑨ A.OUT I(+)	A.OUT COM(-)	Common terminal of analog output. Insulated from input LO or AG terminal/external control COM terminal.
Bottom ↓	⑩ A.OUT COM(-)		

## 4 Parameter Settings

### 4.1 Display Unit

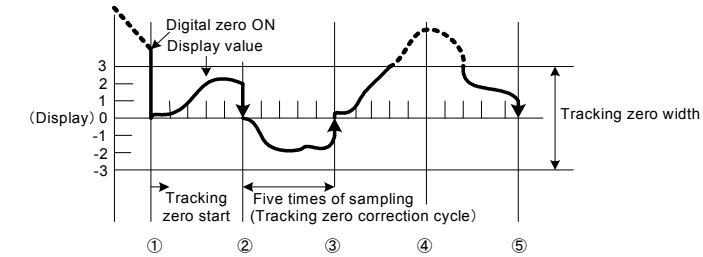
#### Names and major functions



Location	Name	Major function								
①	Jog 1	Menu and value selection at the time of parameter setting; pattern selection when used with Increment.								
②	Jog 2	Changes judgment values when used with the meter relay; sets a current measurement value to a judgment value; switching maximum values, etc. when used without meter relay.								
③	Jog 3	Changes judgment values when used with the meter relay; sets a current measurement value to a judgment value; switching maximum values, etc. when used without meter relay.								
④	Judgment monitor	Displays results of judgment when used with meter relay.								
⑤	Main monitor	Displays a measured value, menu name or a value at the time of parameter setting.								
⑥	Sub monitor 1	Displays a judgment value when used with meter relay; displays a maximum value, etc. when used without meter relay.								
⑦	Function monitor	RE Illuminates when the unit is set to the remote mode via communication function.								
		PH Illuminates when peak hold, valley hold, or peak-valley hold is turned on.								
		DZ Illuminates when Digital Zero is turned on.								
		TZ Illuminates when Tracking Zero is turned on.								
		ME Illuminates when Digital Zero Backup is turned on.								
		P 1	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Pattern 7	Pattern 8
		P 2	P 1	ON	OFF	ON	OFF	ON	OFF	ON
		P 3	P 2	OFF	ON	OFF	ON	OFF	ON	ON
			P 3	OFF	OFF	OFF	ON	ON	ON	ON
		⑧	Sub monitor 2	Displays a judgment value when used with meter relay; displays a maximum value, etc. when used without meter relay.						
⑨	Enter	Switches to the parameter setting mode.								
⑩	Mode	Changes modes at the time of parameter setting; switches to the memory mode at the time of normal measurements (when this button is pushed and held.)								
⑪	Shift	Selects digits at the time of parameter setting; DZ control at the time of normal measurements.								
⑫	Increment	Changes values at the time of parameter setting; pattern selection at the time of normal measurements (when this button is pushed and held); special operations								

#### Setting example

Tracking zero correction time 5 ( It corrects it every five times of sampling.)  
 Tracking zero correction width 3 ( Correction value 3digit)  
 \* It becomes basic sampling (about 960μs)× averaging times with sampling.  
 When the average frequency is 50 in this example, it becomes a correction of each about 240ms (about 960μs×50 times ×5).



- Digital zero ON. ( The display is Zero.)
- The display vanishes to the correction at the fifth times of sampling because of 3 digit or less the display.
- It doesn't correct it because it comes off from the correction value.
- The display vanishes to the correction because of 3digit or less it.

## 8 Output Functions

### 8.1 Comparison Output Function

The series allows tow judgment values of HI, LO to be set up with respect to the measured value (indicated value) and the judgment result to be output by relay contact output. For the contact rating, etc., see the output specifications.

### 8.2 Analog Output Function

The series can output an analog signal with respect to the indicated value. There are four types of outputs: 0 to 1V, 0 to 10V, 1 to 5V, and 4 to 20mA, which can be selected using condition data. Also, any scaling can be applied.

## 9 Specifications and External Dimensions

### 9.1 Input Specifications

Sensor power	Zero adjusting range	Span adjusting range	Measurement range	Error (23°C ±5°C;35 to 85%)
5V	-1 to +1mV/V	1 to +3mV/V	-4 to +4mV/V	±(0.1% of FS +2digit)
10V				

Sampling rate : Maximum approx.1000 times/second  
 Minimum input sensitivity : 0.5 μV/digit (Sensor power : 5V), 1 μV/digit (Sensor power : 10V)  
 Sensor power : 5V DC ±5% 60mA, 10V DC ±5% 30mA  
 \*The error is applied when the sampling rate is 20 times/second or less.

### 9.2 General Specifications

Display : Main display : Red/green 7-segment display (character height : approx. 20 mm)  
 Sub display : Red 7-segment display (character height : approx. 6 mm)

Display range : -9999 to 9999

Operational temperature : 0 to 50°C 35 to 85%RH

Storage temperature : -10 to 70 °C, 60%RH or less

Power supply : AC PS  
 100 to 240V AC ±10%  
 DC PS  
 12 to 48V DC ±10%

Power consumption : AC PS  
 Maximum load : Approx. 8VA at 100V AC  
 DC PS  
 Maximum load : Approx. 7W at 24V DC

External dimension : 48mm (H) x 96mm (W) x 99.5mm

Weight : Approx. 450g

Withstand voltage : AC PS  
 PS-input, output : 1500V AC, 1 minute  
 Input-output : 500V DC, 1 minute  
 Output-output : 500V DC, 1 minute  
 Case-PS, input, output : 1500V AC, 1 minute  
 DC PS  
 PS-input, output : 500V DC, 1 minute  
 Input-output : 500V DC, 1 minute  
 Output-output : 500V DC, 1 minute  
 Case-PS, input, output : 1500V AC, 1 minute

Insulation resistance : AC PS  
 Among the above terminals : 500V DC 100MΩ or more  
 DC PS  
 Among the above terminals : 500V DC 100MΩ or more

#### Caution

The PS voltage must be applied or shut down at once (not gradually). Take at least a 10-second interval between a shutdown and startup.

## 9.3 Output Specifications

### 9.3.1 Comparison Output

Conditions for comparison	Judgment result
Indicated value > Upper limit judgment value	HI
Lower limit judgment value ≤ Indicated value ≤ Upper limit judgment value	GO
Lower limit judgment value > Indicated value	LO

Judgment value setup range : -9999 to +9999

Hysteresis : Can be set in the range of 1 to 999 digits for each judgment value

Operating speed : Depends on the sampling rate

Relay contact output

Contact quantity : Relay contact ×3

Contact rating : 250V AC 2A, 30V DC 2A

Photo coupler output

Output quantity : Photo coupler ×3

Contact rating : Output rating;Sink current 20mA max. Voltage applied 30V max.  
 Output saturation voltage: 1.2V or less at 20mA

### 9.3.2 Analog Output (PWM)

Output type	Load resistance	Accuracy	Response speed	Ripple
0 to 1V	10kΩ or more	±(0.5% of FS)	Approx. 0.5 second	50mVp-p
0 to 10V				
1 to 5V				
4 to 20mA	550Ω or less			25mVp-p

Conversion system : PWM conversion

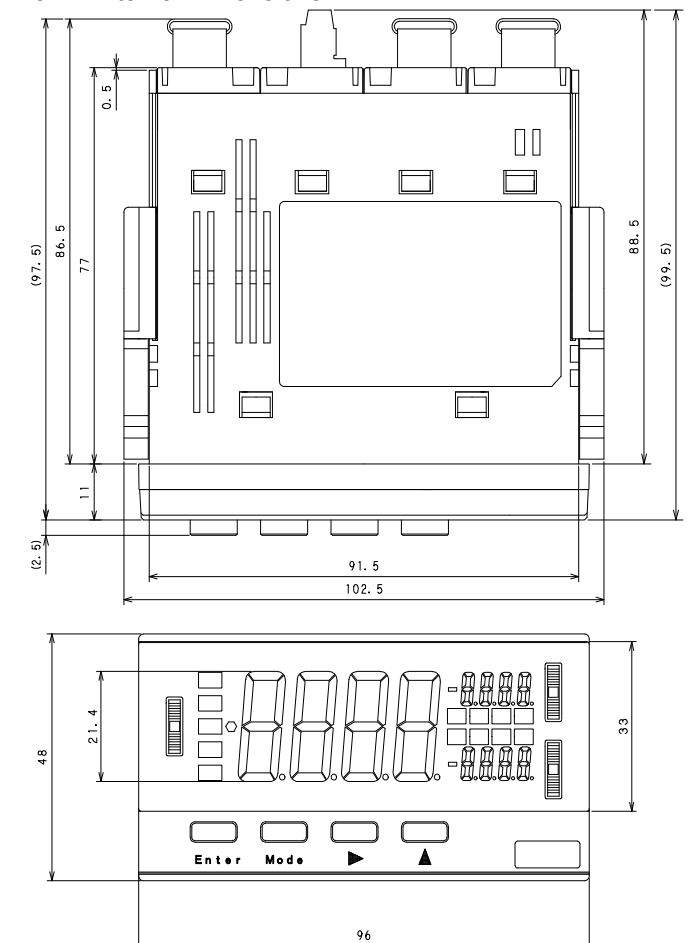
Resolution : Maximum equivalent to 14 bits  
 (I depend on output indication setting.)

Scaling : Digital scaling

#### Caution

(1) Analog output circuits and external control circuits are insulated. (withstand voltage 500V DC, one minute)  
 (2) COM terminals of external control circuits and LO terminals of input circuits have the same electric potential at direct current.

## 9.4 External Dimensions

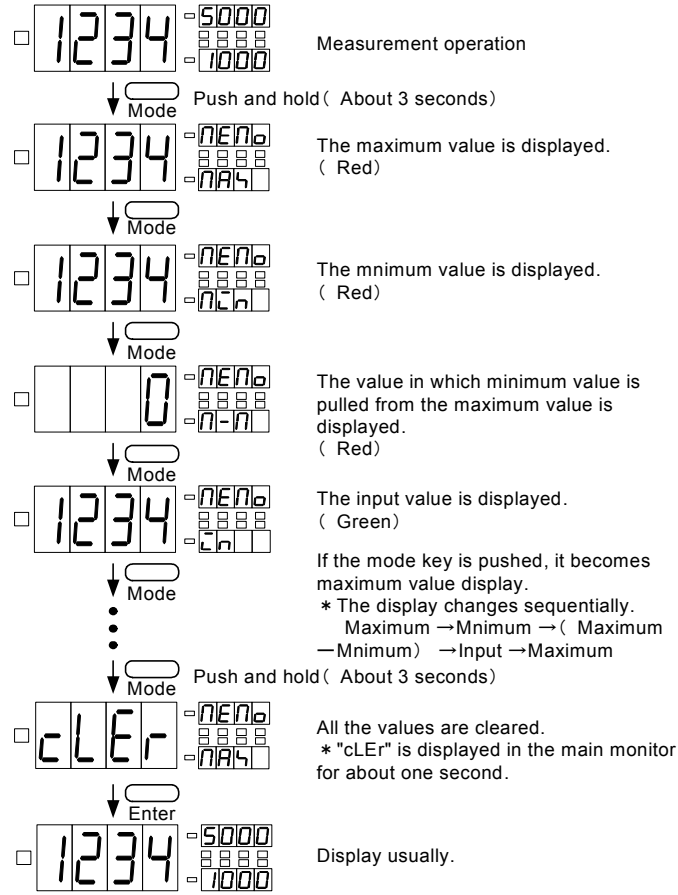


## 6 Memory Mode

It is possible to display maximum value, minimum value, (maximum value - minimum value) and input value on the main monitor. Long pressing the Mode Key results in displaying the maximum value. Press the Enter Key to return to normal display.

Measured maximum value, minimum value and (maximum value - minimum value) are always stored in memory (with the power turned on) and these data values are cleared by long pressing the Mode Key. In addition, each of these maximum value, minimum value and (maximum value - minimum value) is displayed in red, while the input value is displayed in green.

### Operation Method



## 7 Each Control Functions

### 7.1 About Each Control Function

If any optional unit is installed, the Start/Hold, digital zero, peak hold and pattern select control functions can be used. In addition, the digital zero and pattern select functions can be controlled through front key operation.

Internal circuit : Pull-up at approx. 5V (resistance value : approx. 10kΩ)

Control signal HI level : 4.2 to 5V with respect to terminal COM

Control signal HI level : 0 to 0.4V with respect to terminal COM

\* Caution : The COM terminal of the external control circuit and the LO terminal of the input circuit have the same potential in terms of direct current.

### 7.2 Start / Hold Function

The Start/Hold function holds the display at any timing, which can be set in type A or type B using condition data. Type A is the free run mode, in which you short the S/H terminal with terminal COM or make these terminals have the same potential from the free-run status to hold the indicated value and comparison judgment value. Type B is the one-shot mode. In this mode, you short the S/H terminal with terminal COM or make these terminals have the same potential from a hold status to output the indicated value and comparison judgment value once. For this, see the timing chart below.

### 7.3 Digital Zero Function

The Digital Zero function is used to set the displayed value to zero at any timing and then display deviation from that point. Additionally, the Digital Zero function is activated or deactivated by terminal control or through front key operation.

\* Terminal control or front key operation is selected (set) by using condition data. If the optional unit is not installed, only the front key operation becomes valid.

Front key control : The display at that time is assumed to be 0 by pushing the shift key for about three seconds. Digital zero functions are released again by pushing the shift key for three seconds.

Terminal control : The display at that time is assumed to be 0 by making it to the terminal DZ, the terminal COM short-circuit or this potential. 0 digital functions are released by opening the terminal DZ.

### 7.4 Peak hold Function

The peak hold function is used to hold maximum value (peak hold), minimum value (valley hold), and (maximum value - minimum value) (peak valley hold) and generate the output corresponding to each of these values. In addition, maximum value (peak value), minimum value (valley hold) or (maximum value - minimum value) (peak valley hold) is selected (set) by using condition data. Both types of peak hold function are available: Type A and Type B. Type A is of the progressing type which activates the peak hold function with the PH terminal shorted with the COM terminal or the PH and COM terminals set to the same potential to display each of these measured peak values (PH/VH/PVH). Each peak value is cleared with the PH terminal opened. On the other hand, Type B is of the result type which conducts measurement while the PH terminal is shorted with the COM terminal or the PH and COM terminals are set to the same potential to display, by opening the PH terminal is shorted with the COM terminal or these terminals are set to the same potential.

\* If the displayed value overflows during peak hold measurement, no overflow display can be released as far as that display is not returned to normal display once.

### 7.5 Pattern Select Function

The pattern select function is used to store scaling data and comparator data up to 8 patterns and be able to set any pattern to be used. Pattern select control selects the number of patterns which can be used by the pattern select setting in condition data. In addition, I operate the control of the pattern select function with front key.

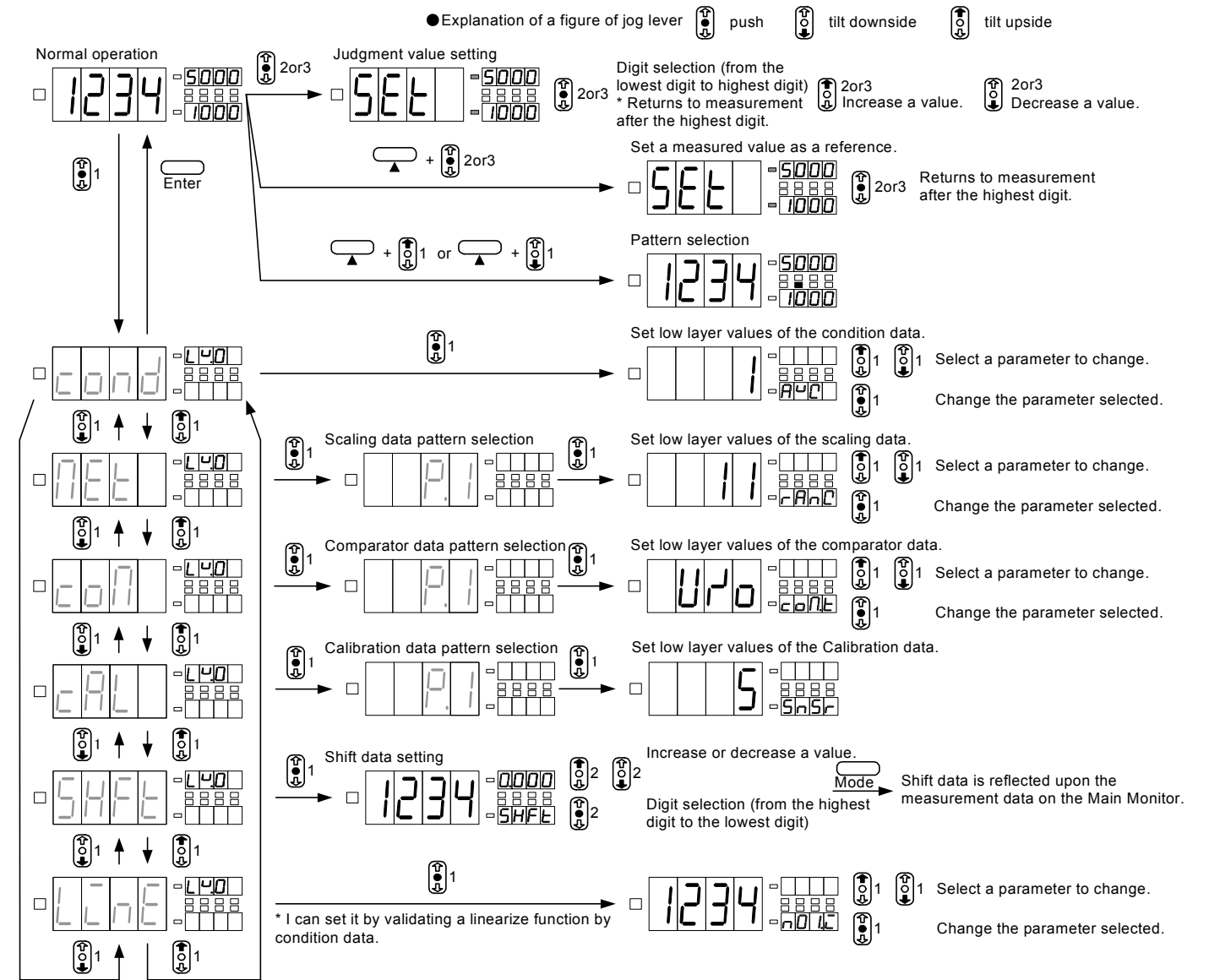
Front key control : The pattern can be switched from P-1 to maximum P-8 by pushing the increment key for about three seconds.

Function monitor	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Pattern 7	Pattern 8
P1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
P2	OFF	ON	ON	OFF	OFF	ON	ON	ON
P3	OFF	OFF	OFF	OFF	ON	ON	ON	ON

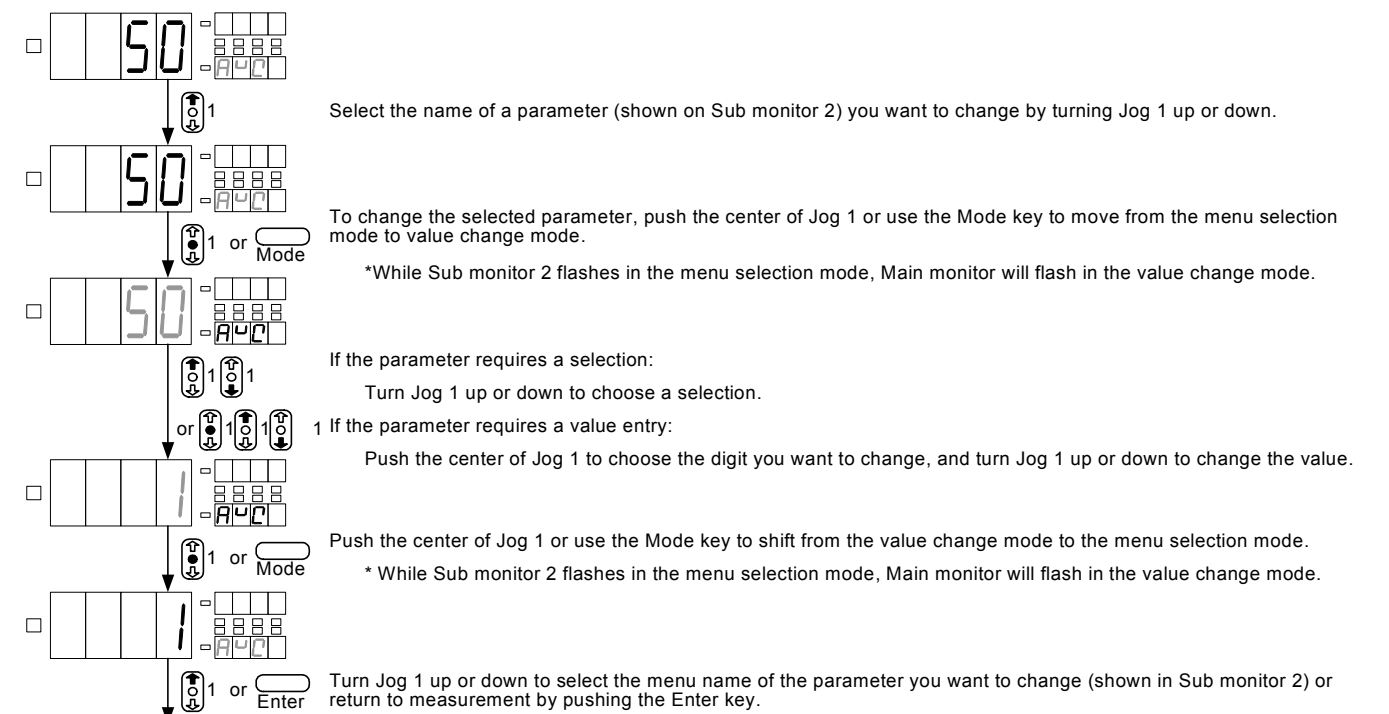
### 7.6 Tracking Zero Function

The tracking zero function is used to internally and digitally conduct the automatic correction of a zero-point shift. This function starts functioning from the time when the digital zero function is activated.

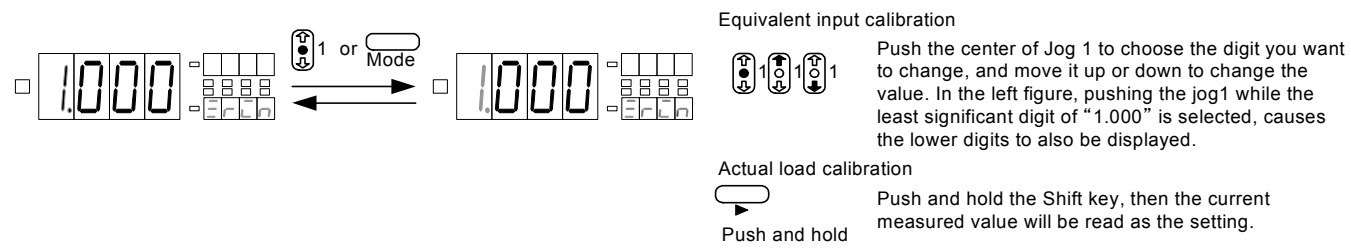
### Operation procedure diagram (Jog lever : Operation of front switch combination)



### How to set a low layer value (Condition data / scaling data / comparator data / Calibration data)



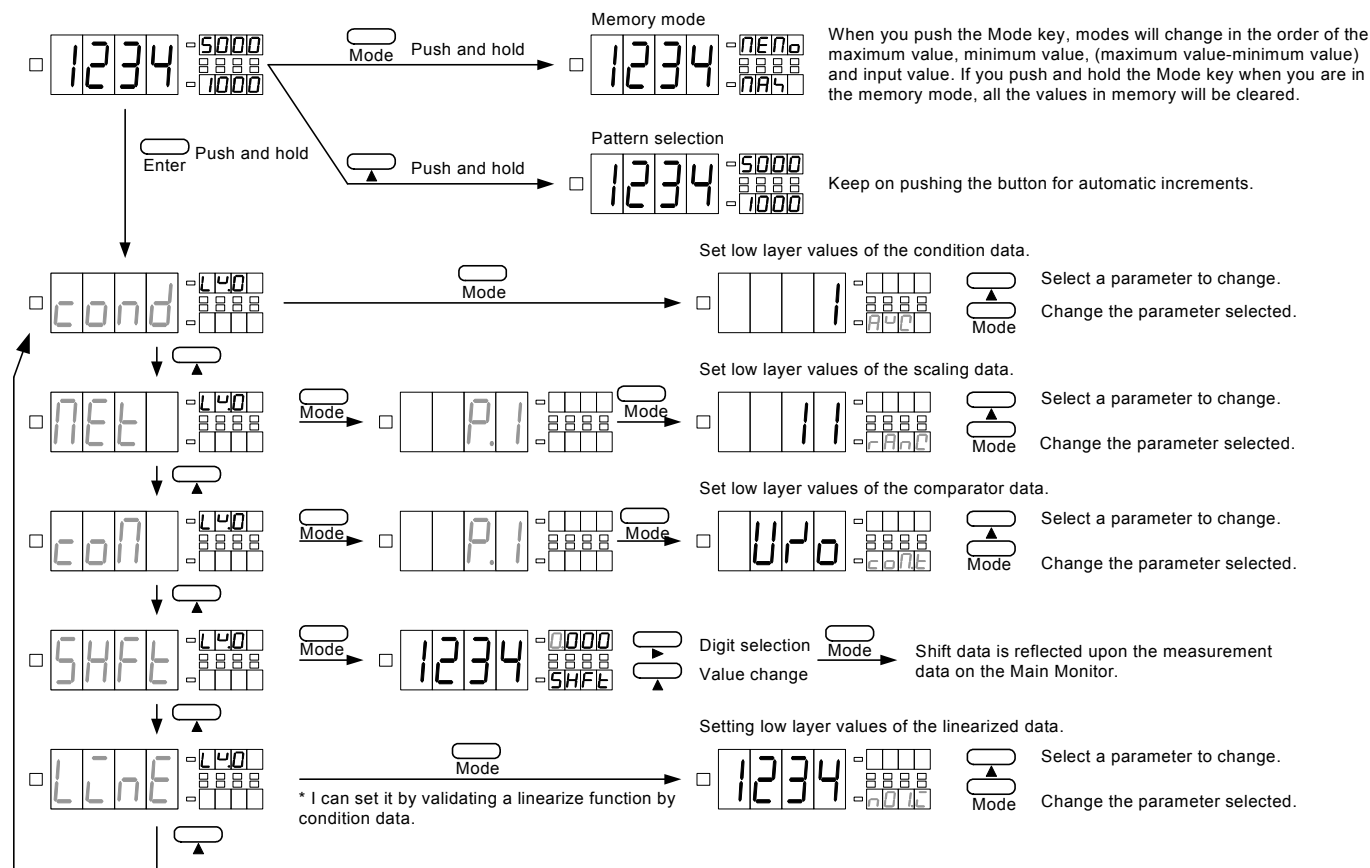
How to calibrate the zero input (ZRIN) value and the span input (SPIN) value using an actual load or the equivalent input



**Caution**

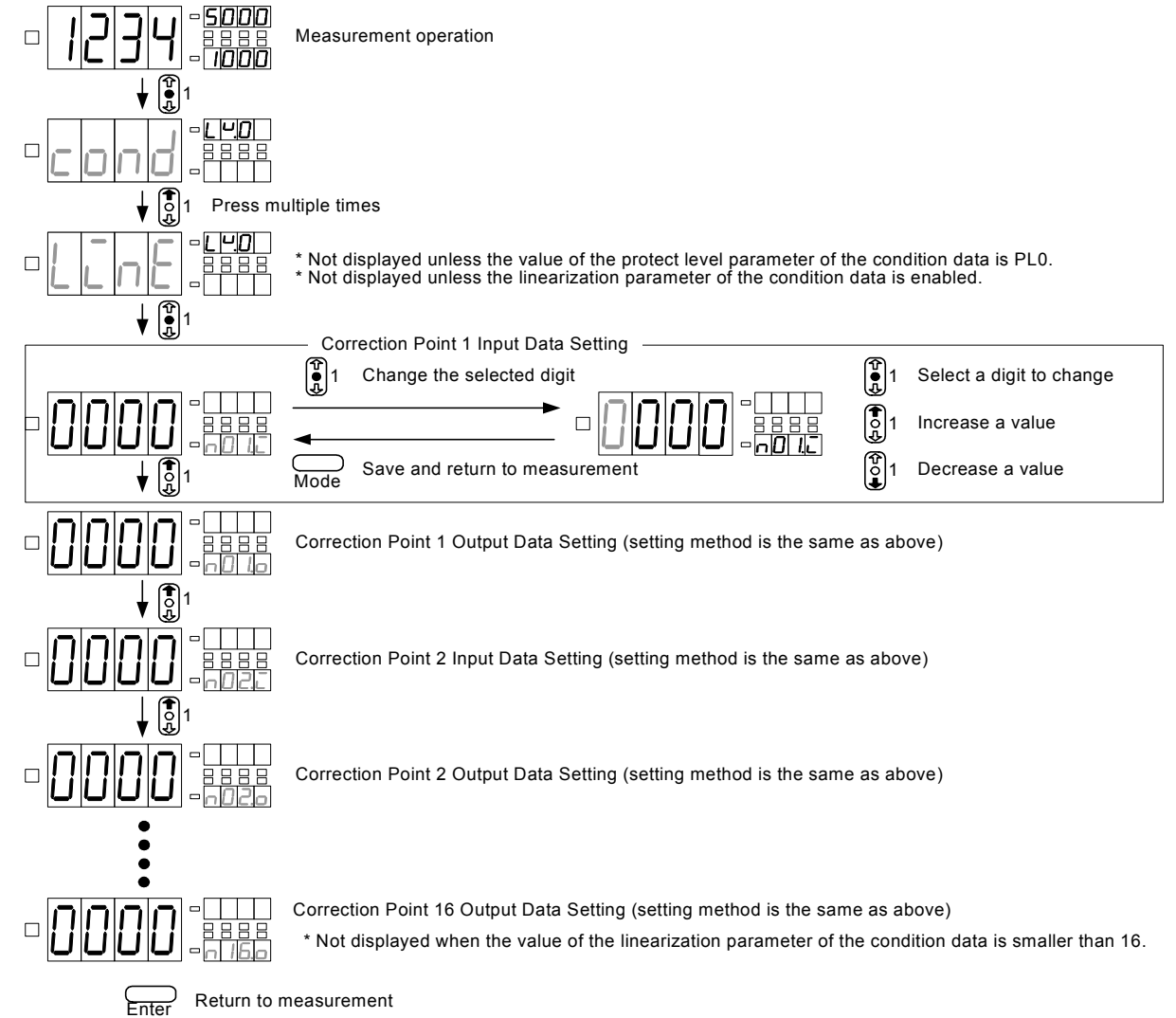
\* Comparator judgment values can be set not only from Jog 2 and Jog 3 but also from the low layers of the comparator data.

Operation procedure diagram (Operation only with front switch)



5.7 Linearization Data Setting Examples

Operation Method



\* Linearization data setting function

Linearization data can be used as a function to set 2, 4, 8, or 16 linearity correction points.

Input data are displayed when the linearization function is OFF. The value to be displayed in response to the input data is output data. For each linearity correction point, input and output data must be set.

For example, when the linearization function is OFF, and you wish to change the displayed value on the meter from 0 - 1000 to 0 - 1200, set N01.I (Correction Point 1 Input Data) and N01.O (Correction Point 1 Output Data) to 0, N02.I (Correction Point 2 Input Data) to 1000, and N02.O (Correction Point 2 Output Data) to 1200.

In this case, the line between Correction Points 1 and 2 behaves according to the linearity correction setting. When the value of the input data exceeds that at Correction Point 2, the behavior of the output data is no longer affected by the setting (the value of the output data changes from 1200 to 1001). When more than two correction points are set, the behavior of a line connecting two sequential correction points is different from that of the next two in sequence.

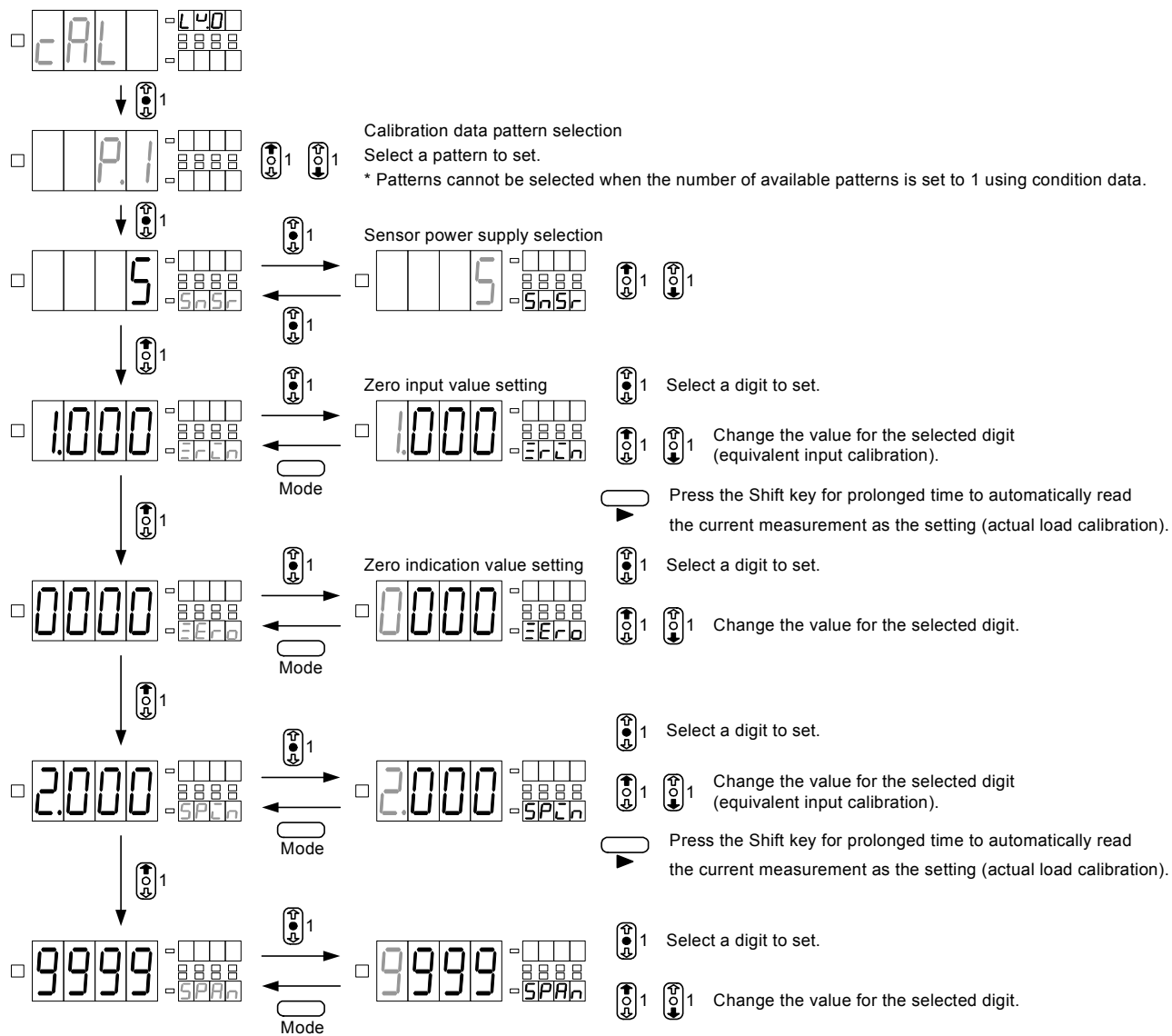
\* Conditions for setting linearization data

To set linearization data, the value of the input data at one correction point must be larger than that at the previous one.

N01.I < N02.I < N03.I < N04.I < N05.I < N06.I < N07.I < N08.I < N09.I < N10.I < N11.I < N12.I < N13.I < N14.I < N15.I < N16.I

5.6 Calibration Data Setting Examples

Operation Method

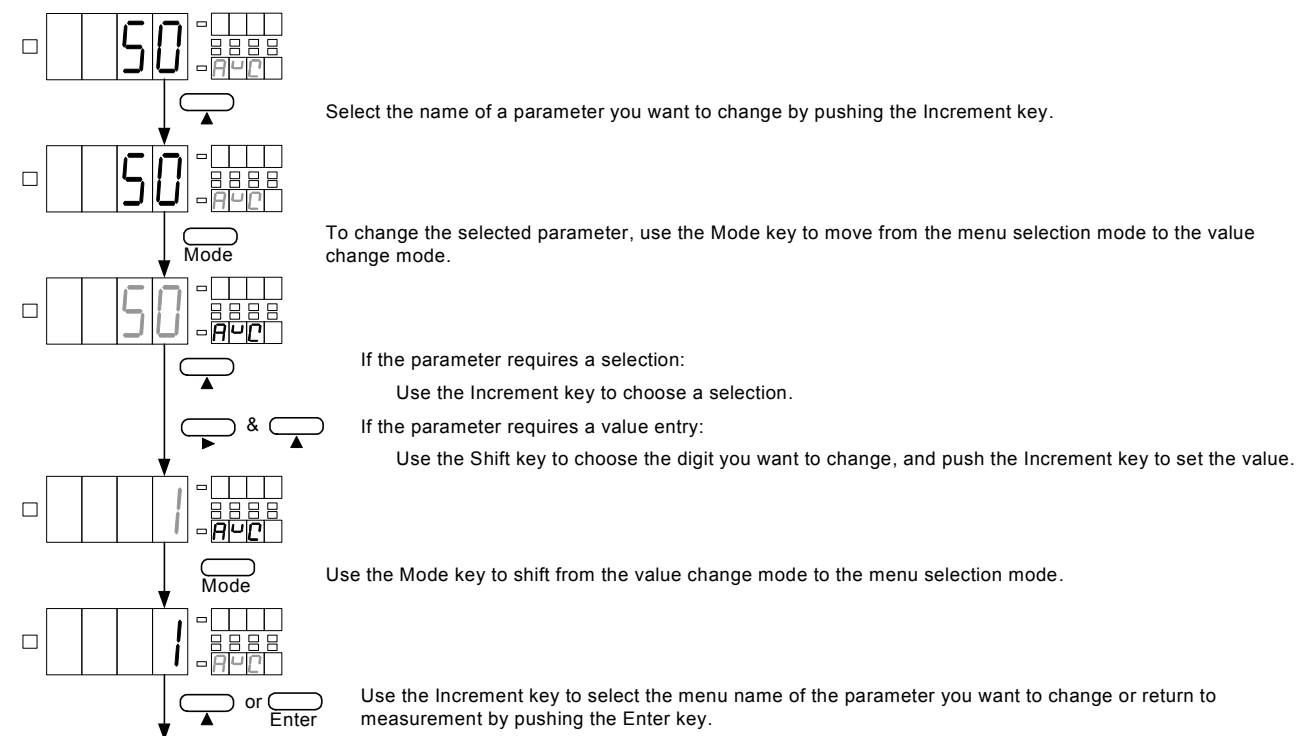


\* The EDI62S series does not add the zero input value to the span input value. Namely, the gradient and offset values for  $y=ax+b$  are obtained as follows:

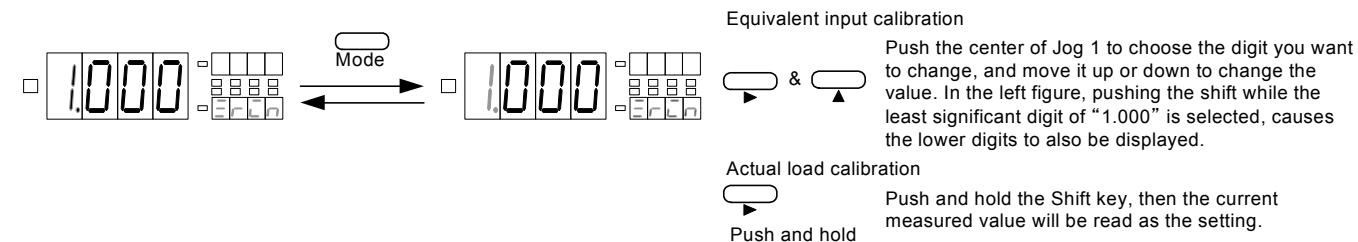
$$\text{Gradient (a)} = \frac{\text{SPAN} - \text{ZERO}}{\text{SPIN} - \text{ZRIN}}$$

$$\text{Offset (b)} = \frac{\text{SPAN} - \text{ZERO} \times \text{ZRIN}}{\text{SPIN} - \text{ZRIN}} - \text{ZERO}$$

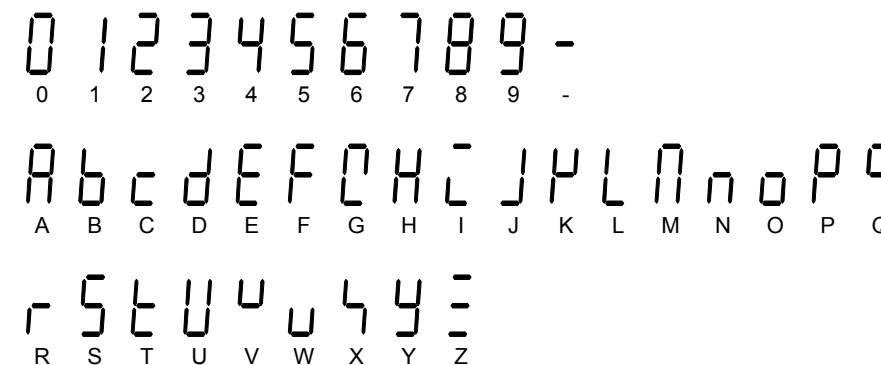
How to set a low layer value (Condition data/scaling data/comparator data)



How to calibrate the zero input (ZRIN) value and the span input (SPIN) value using an actual load or the equivalent input



4.2 Numeric and Character Indications



4.3 Protection Levels

Each parameter of the EDI62S has an individual protection level, and by setting the protection level of the condition data, you can set an access level. (For the protect level of each parameter, see the P.L. column of the tables in Section 4.4.) The higher the protection level is, the less the number of settable parameters will be. If you set the protection level to the strictest LV3, you can change the protection level only, and all the other parameters may not be changed. (No comparator judgment value can be changed using the jog switches in this case.)

**\*The protection level set at the time of shipment is LV1. (Settings of display colors, scaling and judgment-related values only are available.)**

### 4.4 List of the Parameters

The parameters for the process signal measurement unit can be roughly divided into three types: condition data which deal with basic functions including sampling time; scaling data which control measurement including input range; comparator data which deal with comparator output; and calibration data which relating to calibration with a sensor.

#### 4.4.1 Condition Data

Menu indication	Parameter name	Initial value	P.L.	Setting range or alternatives	Major setting purpose and remarks
AVG (AVG)	Average times	50	0	1/2/4/8/10/20/50 / 100/200/400/800 / 1000/2000/5000	Conversion rate (average times of internal sampling; sampling time: approx. 1ms) is selected.
MAV (MAV)	Average times of movements	1	0	1/2/4/8/16/32	Selects the average times of movements. Filtering effects: Small<1(OFF)-2-4-8-16-32>Big
S.W.D (S.W.D)	Step wide	1	0	1/2/5/10	Selects the range of display changes to maintain image display consistency. (If this parameter is set to 5, the lowest digit will display either 0 or 5 only).
CLRT (CLR.T)	Display color type	AUTO	1	AUTO/MANU	Selects automatic (red in the HI or LO mode or green in the GO mode) or manual setting for display color type.
HLCL (HL.CL)	HI display color	rEd	1	rEd/GrEn	Selects red or green as display color at the time of HI judgment. *Only when CLR.T is MANU.
GOCL (GO.CL)	GO display color	GrEn	1	rEd/GrEn	Selects red or green as display color at the time of GO judgment. *Only when CLR.T is MANU.
LOCL (LO.CL)	LO display color	rEd	1	rEd/GrEn	Selects red or green as display color at the time of LO judgment. *Only when CLR.T is MANU.
BLNK (BLNK)	Display blank level	oFF	0	oFF/L1/L2/L3/on	Selects the display brightness. <bright OFF-LV1-LV2-LV3-ON >turned off
J.S.W (J.S.W)	Jog SW	on	0	on/oFF	Selects whether the jog SW is used or not.
P.V.H (PV.H)	PH Selection	PH	0	PH/vH/vH	Selects a type that operates when the PH function is turned on (peak hold/valley hold/peak-valley hold).
DZ.B.U (DZ.B.U)	DZ backup	oFF	0	oFF/on	Selects whether the digital zero value is backed up or not at the time when the unit is turned off.
P.S (P.S)	P.SEL	1	0	1/2/4/8	Selects the number of patterns available for the pattern selection function.
LINE (LINE)	Linearize	oFF	0	oFF/2/4/8/16	Selects whether the linearize function is enabled/disabled and sets the number of correction points.
TR.T (TR.T)	TZ time	000	0	000 ~ 999	Selects whether the tracking zero function is enabled/disabled and sets the correction time (setup value/conversion rate).
TR.W (TR.W)	TZ correction range	01	0	01 ~ 99	Selects the correction range of the tracking zero function. *Only when TR.T is set to a value other than 000.
P.ON (P.ON)	Power on delay time	0	0	0 ~ 9	Selects the time between the startup and actual start of measurements (setup value x 1 second).
P.R.O (P.R.O)	Protection level	L41	3	L40/L41/L42/L43	Selects the protection level to prevent operation mistakes. High< LV3-LV2-LV1-LV0 >Low
U.NO. (U.NO.)	Unit number indication	oFF	0	oFF/on	Selects whether the code of a unit mounted at the time of startup is displayed or not.
S/H.T (S/H.T)	Start/hold type	A	0	A/b	Selects an operation type of start/hold (A: free run; B: one shot).
S/H.D (S/H.D)	S/H delay time	0	0	0000 ~ 9999	Selects the delay time at the time of startup (setup value x 1 ms).
P.V.H (PV.H)	PH type	A	0	A/b	Selects an operation type of peak hold (A: real-time display; B: results display).
DZ.C (DZ.C)	DZ control	Su	0	Su/TERn	Selects a control method of Digital Zero (SW: front key; TERM: external control terminal).

#### 4.4.2 Scaling Data

Menu indication	Parameter name	Initial value	P.L.	Setting range or alternatives	Major setting purpose and remarks
DLHI (DLHI)	Digital limiter HI	9999	0	-9999 ~ 9999	Selects the upper limit of the displayable range. (Any value equal to or exceeding the digital limiter HI setting will not be updated and kept at the setup value.)
DLLO (DLLO)	Digital limiter LO	-9999	0	-9999 ~ 9999	Selects the lower limit of the displayable range. (Any value equal to or below the digital limiter LO setting will not be updated and kept at the setup value.)
A.O.U.T (A.O.U.T)	Analog output type	0-1	1	0-1/0-10/1-5/4-20	Selects an analog output range.
A.O.H.I (A.O.H.I)	Analog output HI	9999	1	-9999 ~ 9999	Selects the relationship between indications and analog outputs.
A.O.L.O (A.O.L.O)	Analog output LO	0	1	-9999 ~ 9999	Selects the relationship between indications and analog outputs.
DP (DP)	Decimal point	...	2	Each digit can be set independently	Selects the position of the decimal point.

#### 4.4.3 Comparator Data

Menu indication	Parameter name	Initial value	P.L.	Setting range or alternatives	Major setting purpose and remarks
COM.T (COM.T)	Comparator output type	oPU	1	oPU/Err	Select either [above or below] or error comparator types.
HI-S (HI-S)	HI judgment value	1000	2	-9999 ~ 9999	Selects a HI judgment value. *Only when COM.T is O/U.
LO-S (LO-S)	LO judgment value	500	2	-9999 ~ 9999	Selects a LO judgment value. *Only when COM.T is O/U.
N.V.A.L (N.V.A.L)	Nominal value	5000	2	-9999 ~ 9999	Selects a nominal value. *Only when COM.T is ERR.
ERR1 (ERR1)	Error 1	500	2	000 ~ 1000	Selects an error. *Only when COM.T is ERR.
HI-H (HI-H)	HI hysteresis	0	1	-999 ~ 999	Selects a HI hysteresis value (smaller than the setup value.) *Only when COM.T is O/U.
LO-H (LO-H)	LO hysteresis	0	1	-999 ~ 999	Selects a LO hysteresis value (larger than the setup value.) *Only when COM.T is O/U.
ERR.H (ERR.H)	Error 1 hysteresis	1	1	-999 ~ 999	Selects an error hysteresis (smaller or larger than the setup values.) *Only when COM.T is ERR.
HI-L (HI-L)	HI logic	no	0	no/nc	Selects a HI output logic (N.O.=normally open or N.C.=normally closed) *Output when the power is OFF is always open.
GO-L (GO-L)	GO logic	no	0	no/nc	Selects a GO output logic (N.O.=normally open or N.C.=normally closed) *Output when the power is OFF is always open.
LO-L (LO-L)	LO logic	no	0	no/nc	Selects a LO output logic (N.O.=normally open or N.C.=normally closed) *Output when the power is OFF is always open.

#### 4.4.4 Calibration Data

Menu indication	Parameter name	Initial value	P.L.	Setting range or alternatives	Major setting purpose and remarks
S.N.S.R (SNSR)	Sensor power supply	5	1	5/10	Selects a sensor power supply.
Z.R.I.N (ZRIN)	Zero input value	0	2	-12000 ~ 12000	Sets the relationship between input signals and their indications.
Z.E.R.O (ZERO)	Zero indication	0	2	-9999 ~ 9999	
S.P.I.N (SPIN)	Span input value	2000	2	-30000 ~ 30000	
S.P.A.N (SPAN)	Span indication	9999	2	-9999 ~ 9999	

## 5 Setting Examples and Use Examples

### 5.1 Scaling Data Setting Examples

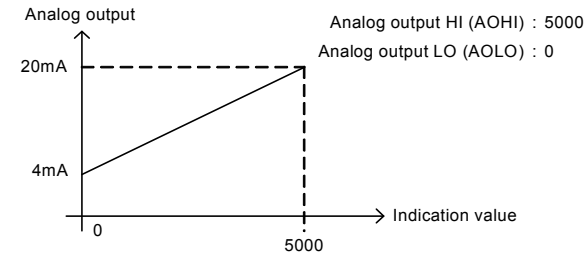
Set digital limiter, analog output and decimal point by 4.4.2 scaling data. Set it in below *NET* of operation procedure diagram. The digital limiter is the function that limits an input value to the relevant set value even if a signal higher than or lower than the indicated value set to DLHI or DLLO respectively is input. The setting condition is DLHI > DLLO, and if this condition is not met, Err5 is caused, returning the display to DLHI.

### 5.2 Analog output Scaling Setting Examples

The analog output sets the output value to the display value.

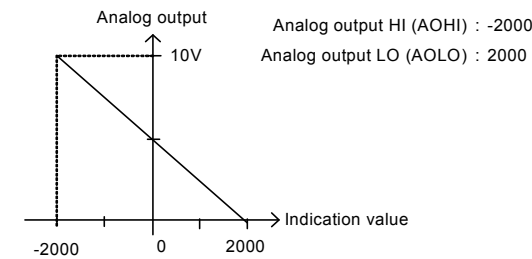
#### Example 1

When the indication varies between 0 to 5000, corresponding analog output values should be 4 to 20mA.



#### Example 2

When the indication varies between 200.0 to -200.0, corresponding analog output values should be 0 to 10V.



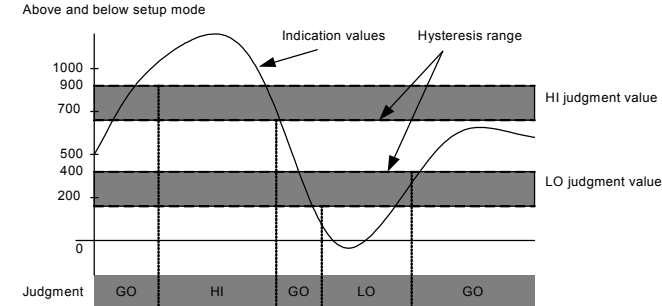
### 5.3 Comparator Data Setting Examples

#### High and Low Judgment Type

The high and low judgment type allows you to directly set judgment values in numerical values, which are checked against the indicated value for judgment. It allows setting of two stages of judgment points: HI and LO.

\* The setting conditions are (HI judgment value - HI hysteresis) > (LO judgment value + LO hysteresis). If any of these conditions is not met, Err0 is caused, returning the display to the HI judgment value setting.

#### Example 1

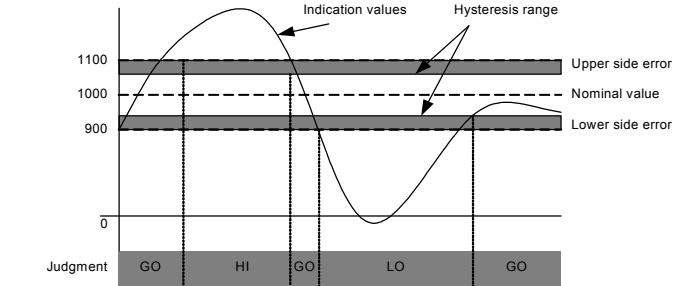


\* The hysteresis is effective either in the range lower than the HI judgment value or that higher than the LO judgment value.

#### Tolerance Judgment Type

The tolerance judgment type allows you to set a nominal value and its tolerances (XX%) to make judgment on the basis of the judgment values calculated from these values within the instrument. You can set one nominal value and one tolerance values. For example, if the nominal value is set to 1000 and tolerances 10% respectively, internal judgment values are 1100 for HI judgment value, 900 for LO judgment value.

#### Example 2



\* Error is to be set as a percentage of the nominal value.  
\* The hysteresis is to be set as an x-th digit of the indication value.  
\* The hysteresis is effective either in the range lower than the upper side error or that higher than the lower side error.

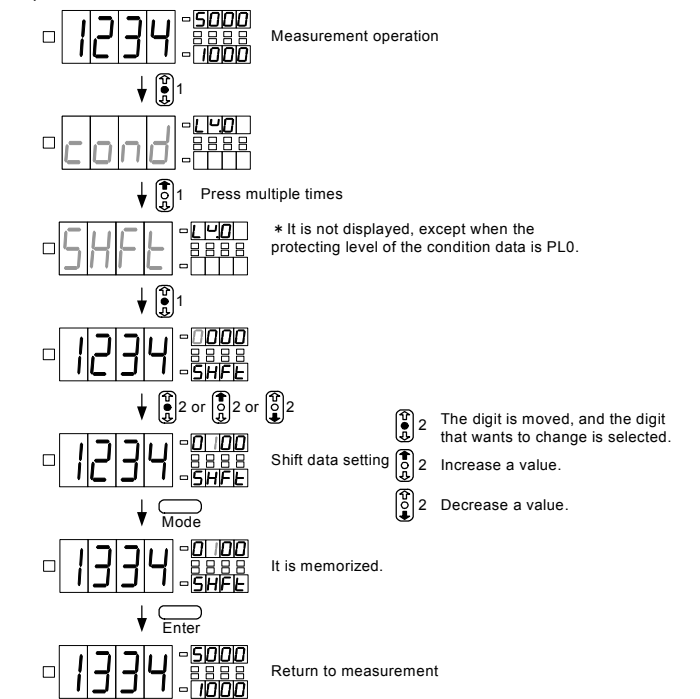
### 5.4 How to Switch the Sensor power

5V DC or 10V DC can select by 4.4.4 Calibration data. Initial value become 5V DC.

### 5.5 Shift Data Setting Examples

The shift function allows you to arbitrarily shift the display without changing the inclination of an input signal. A setting example below shows how to shift the indicated value by 100 digits.

#### Operation Method



\* It is not displayed, except when the protecting level of the condition data is PL0.

The digit is moved, and the digit that wants to change is selected.

Increase a value.

Decrease a value.