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By confirming the conditions of use in advance, the setting operation can be performed easily. Let's start with the basic settings.

#### **Basic Settings Items**

Items	Indication	Description	Settings
Master calibration	<u>88888888</u>	When the power is turned on, the system automatically waits for the home position detection and automatically reproduces the reference position of the master block. It is necessary to adjust the reference position of the master block once before the power is turned on.	OFF: Useless ON : Effective:
Input axis		Select how to display the number of scale axes to be connected. When you select " 2-axes addition / subtraction function ", select the polarity (+/-) of each axis as well. (NOTE)	1: 1st axis 1 Add 2: 1st axis + 2nd axis 1 Add -2: 1st axis-2nd axis -1 Add 2: 2nd axis-1st axis -1Add-2: -1st axis-2nd axis
Destination country	578-5	Please select the region to be used. (Displayable units)	STD: General Area mm, inch US: U.S.A. mm, inch JPN: Japan mm
Measuring unit resolution		Set the resolution output from the measurement unit to be used for each axis. The resolutions that can be selected are length and angle. Expanded selections increase the number of options.	Length: 0.05 to 100µm *See Table 1,2 and 3 or Angle: 1 second to 1 degree *Angular resolution (1sec to 1 degree) when using a rotary scale

NOTE: When the comparator unit (LZ71-KR) is connected, the 1st and 2nd axes cannot be displayed independently. When using 2 axes, the display will be added.

Table1: Length scale output resolution

Measuring Unit	Output resolution	connection cable	Adapter *
SR-1711 SR-1711R	0.5µm	HK-**C HK-**CR	SZ05-T01
SR801/ MSS-101 SR801R	0.5µm	HK-1**C HK-2**C	SZ05-T01
SR801/ MSS-101 SR801R	0.5µm	CE07-**C	SZ51-MS01 + SZ70-1
SR10 / SR30 / SR50 SR50-R	0.5µm	HK-4**C HK6-**CR	SZ05-T01
SR118	0.5µm	CE05-**C CH02-**	DZ51 + SZ70-1
SR108 SR107	0.5µm		SZ51-MS01 + SZ70-1
SR128	0.5µm	CH01-**C	SZ70-1
SR128 / SR127	0.5µm	CH01-LW**C	SZ51-MS01 + SZ70-1
SR138R(GB-ER)	0.5µm	CH04-03C	

#### Table 2: Digiruler output resolution

Measuring Unit	Output resolution	Adapter/ conversion cable	Adapter *
SL110 SL130	10µm	PL20B	SZ70-1
SL110 SL130	10µm	PL20C	
SJ300	1µm	CH33-**CPD/CED	
SJ700	5µm		SZ70-1
SJ700A	5µm		

#### Table3: Digital gage output resolution

Measuring Unit	Output resolution	Adapter/ conversion cable	Adapter *
DG	0.5µm		SZ05-T01
DG-B	0.5µm	DZ-51	SZ70-1
DL310B/330B	10µm	DZ-51	SZ70-1
DK series	0.1µm or 0.5µm	CE29-**	

\* For adapter information, refer to Appendix 2 Adapter Connection in this Manual

Check the usage conditions for Advanced Settings.

(Since the setting conditions can be changed later, use the default values to skip items for which the conditions have not been confirmed)

Advanced Settings Items			
Items	Indication default	Description	Settings
Display at Power-ON	888 <b>8</b> 8888	You can select the display when the power is on. If you select "LY", "LY" appears on the display when the power is momentarily cut off.	COUnT: count display LY: "LY" display
Display resolution and polarity		Sets the resolution to be displayed for each axis. A value lower than the input resolution cannot be set. Selects the value for each axis, including the polarity (+/-). * The initial value is the measurement unit resolution set in the basic settings.	Length: 0.05 to 100µm or Angle: 1 second to 1 degree
Display axis and display data	A axis B axis C axis	Set the display contents of the upper axis and middle axis when the power is turned on (current value, maximum value, minimum value, P-P) * Addition display can be used when 2 axes are connected. Also, when the comparator unit (LZ71-KR) is connected, the 1st and 2nd axes cannot be displayed independently. Also, when using 2 axes, only the addition display is displayed.	Input axis: 1: No.1, - 2: No.2 Add : (addition ⇒ No.1.+No.2) : Do not display Displayed data: Current value Maximum value Minimum value P-P value
Scaling	8400000	Displayed by multiplying the measured value by the magnification	0.1 times to about 10 times
Linear compensation	0.0000	Linear compensation value per meter of length	±600μm/m *Expanded selections ±1000μm/m
Hole function	- <u>L A 7 E</u> H -	Select a function for hold operation (operation key or external input).	LATCH: Latch function PAUSE: Pause function
General-purpose input	HOLd	One external signal input is assigned to display A, B and C axes. Several functions can be operated by external signals, but only one function can be operated, so it is necessary to select the function to be operated externally beforehand.	Hold Restart Display switching Origin Road
General-purpose output	RLĀ dSP	Two external signal outputs can be assigned to each of the display A and B axes. Select which function or which state to set.	Alarm default Display mode default Home passage signal Reference point Alarm INC zero point passing signal
Key lock	OFF	This function stops the acceptance of key operations to prevent accidental operation. After setting this function, only certain keys can be used. A password (1793) is required to disable this function.	OFF: No key lock ON: Key lock
Current value store	OFF	Select whether to display the previous value when the power is turned on. When using the master calibration function in the basic settings, it does not work even if it is turned on.	OFF: Don't save the current value ON: Save the current value
Flicker control	8888 <b>2</b> 888	Flickering of the smallest displayed digit can be suppressed. Set the level of flicker suppression. NOTE: Use "OFF" when using BCD output.	OFF: Function stop 1: Weak 2: Strong
Sleep		The display turns off when there is no movement of the length measurement unit or key operation for a certain period of time while the power is on. It will return when the length measurement unit is moved or the Key operation is performed again.	OFF: Do not put to sleep 1: 1 minute later 5: 5 minutes later 10:10 minutes later 30:30 minutes later 60: 60 minutes later

NOTE 3: When a comparator unit(LZ71-KR) is connected, the first and second axes cannot be displayed independently.

Check the detailed settings for the optional I/O (BCD unit and comparator unit). You do not need to make Advanced settings for the optional I/O (A/B phase output).

#### Advanced Settings Items

#### bcd BCD unit (LZ71-B) Indication Items Description Settings default 1:BCD output mode Output mode BCD output mode selection C : Continuous output 1 Always output, latch, and 3-state can be C.: Continuous output selected. Customers who have been using the (Data Overwrite Update) LY51 should select Data Overwrite Update. d : Latch (BCD output only) d.: Latch (BCD output only) 2 Output delay time can be set (1 to 20ms, none) (Data Overwrite Update) L : Latch (BCD and display) ③ Output ON/OFF at alarm and power ON L.: Latch (BCD and display) (Data Overwrite Update) T:3-state 2:Output delay time 01 to 20 (ms) -- (none) ③Output data status when an alarm occurs and when the power is turned on o: output -: OFF Output logic BCD output logic selection LGC: Logic 1) The logic of BCD data ①The positive logic and negative logic of BCD data P: Positive logic can be set. n:Negative logic Positive logic: $1 \Rightarrow H(OFF) \ 0 \Rightarrow L(ON)$ Negative logic: $1 \Rightarrow L(ON) 0 \Rightarrow H(OFF)$ 2 The logic of the sign P: Positive logic 2 The logic of the sign can be set. n: Negative logic Positive logic: "-" $\Rightarrow$ H(OFF) "+" $\Rightarrow$ L(ON) Negative logic: "-" $\Rightarrow$ L(ON) "+" $\Rightarrow$ H(OFF) \*The READY signal is fixed in negative logic. Enable: L(ON) Disable: H(OFF) Output data BCD output data can be set for the three data Axis selection request signals (DRQ1, DRQ2, and DRQ3). 1: No.1 DRQ3 DRQ1 You can select an axis and display data for each 2: No.2 DRQ2 DRQ signal. A: Add (add No.1+No.2) Data selection C: Current value \* Be sure to set the data request signal. A: Maximum value The initial value is set to the second axis I: Minimum value P: P-P value Axis Data selection selection

# ◆Comparator Unit (LZ71-KR)

Items	Indication default	Description	Settings
Output mode	- 7088 <u>(ē</u> ļ	Comparator output mode setting <ul> <li>Display output: Comparable output for the displayed</li> <li>value</li> <li>Latch: Latch the comparator output</li> <li>Positioning: Not a comparator function, but outputs a signal for 0.5 seconds when it matches the set data value</li> </ul>	MODE: Output Mode C : Display output L : Latch P : Positioning
Subject to judgment	I CONTRACTOR OF	Setting the judgment target ① Target axis information (1: 1st axis, A: Addition of 2 axes) ② Target of comparison function (Current value, maximum value, minimum value, PP value)	<ul> <li>①Axis selection</li> <li>1: 1<sup>st</sup> axis</li> <li>A: Addition of 2 axes</li> <li>②Data selection</li> <li>C: Current value</li> <li>R: Maximum value</li> <li>I: Minimum value</li> <li>P: P-P value</li> </ul>
Display switching	BSP <u>(</u>	The method of displaying the comparator value can be selected. Manual: You can check the setting values manually. Manual: You can check the set values manually. Automatic: The setpoint is displayed automatically according to the movement of the current value.	dSP: Display switching L: Manual A: Automatic

NOTE: When the comparator unit is connected, the first and second axes cannot be displayed independently.

#### ◆A/B-phase output unit (LZ71-HT01)

The minimum phase difference (Tw) of the output signal is the same as the connected scale unit signal.

Example) GB-ER: Tw=200ns Standard for DK812SA: Tw=50ns DK812SB: Tw=100ns

## How to set up Basic Settings (1/3)



888

Japan

mm

JPN

## How to set up Basic Settings (2/3)

### Step 2

Enter the settings confirmed in "Preparations before making initial settings (1/3)". Repeat steps (1), (2), and (3) to make the basic settings.

- (1) Use  $\bigcirc$  1 key(Item feed key) to change the basic settings item.
- (2) The setting selection can be switched with
- (3) To define the new value, press

thed with  $\begin{bmatrix} 0 \\ 0 \end{bmatrix}$  key(Select axis key) on the right side of the counter display.  $\begin{bmatrix} \nabla^{\text{ENT}} \end{bmatrix}$  key(Enter key).



## How to set up Basic Settings (3/3)

### Step 3

Once you have completed the basic settings, exit this mode and move to the advanced settings mode.

How to Exit Basic Settings Mode



If this is the first time you have made basic settings after shipping, the display will be



After the second time, the screen is displayed when the power is turned on.



key. The display returns to normal.

This completes the basic settings.

#### Key to be used at the end of the basic settings mode (LY71)



### How to set up Advanced Settings (1/4) (continued from Basic Settings)



## How to set up Advanced Settings (2/4)



If the option I/O (BCD unit, comparator unit) is connected, continue setting.

#### BCD unit (LZ71-B)

## How to set up Advanced Settings (3/4)

If you don't use LZ71-B, you don't need it.



This completes the initialization process.

How to set up Advanced Settings (4/4)

If you don't use LZ71-KR, you don't need it.



Step 7

When the setting is complete, switch to the normal display.

Press key.

This completes the initialization process.

# Factory setting (All clear)

To set the factory settings (all clear), perform the following operations. Make preparation such as taking notes in advance for necessary items. Also, do not perform any operation other than the explanation.

#### CAUTION: IF YOU DO THIS, ALL SETTINGS WILL BE THE FACTORY DEFAULE SETTINGS.

Mainly used keys		Connecting the AC Adapter
Refere	ence key	
	up key	primary power source
1. Hold down $\swarrow$ key and $\checkmark$ key at t	he same time to star	t <u>the power supply</u> .
		on the back of the counter and turn on the primary power supply.
2. When you press key, states is	displayed,	
followed by		
3. Pressing key changes the display as	s shown below.	
START $n \in \mathbb{S}$ $\rightarrow n \in \mathbb{S}$ $\rightarrow$		$\rightarrow 15151 \text{ completion}$

4. Turn off the primary power supply to the AC adapter.

How to check the software version:
Power ON $\rightarrow$ Display LY $\rightarrow$ $\boxed{\bigcirc_{uee}^{\bullet_0}}$ Key $\rightarrow$ Version
Press any key to return to the LY display.

# Appendix 1

## **Front panel**



No.	Name	No.	Name	No.	Name
1	ABS lamp	$\bigcirc$	REF key	13	Function key
2	Counter display	8	ABS/INC key	14	Peak value lamp
3	RESET key	9	SETUP key		
4	Axis select key	10	HOLD key		
5	P key	(11)	Standby key		
6	Datum point value/Master combination value setting key	(12)	Numeric key		

## **Alarm indication**

Display	Status	Display	Status
<u> </u>	Measurement unit not connected	(Blinking)	Storage data error
	Speed over (NOTE)		Reference point detection error
	Overflow		
(Light)	Power failure		

NOTE: When using an adapter connection (SZ\*\*), no speed override indication is shown, but rather an error message.



# Appendix 2-1 Adapter connection (Length scale)

Scale/ Head		Resol	ution	Adapter		Counter				
SR128(GB-A)	SR128(GB-A) 0.5µm		SZ70-	1	LG20					
PL20B		10µm				LH70/71/71A/7		2		
SJ700		5µI	m			LY	71/72			
SJ700     5μm     LTTTZ       Counter     Counter       Cable (300mm)     Screw       Use screws to secure it in place.     Head-amp       Screws     Screws       Screws     Szrows							Screws	00		
									1	
Scale/ Head	Res	olution	Ada	pter 1	Ada	apter 2	Co	unter		
SR108(GB)	0.	5µm	SZ5′	1-MS01	SZ	Z70-1	L	G20		
PL20A	10	0µm	SZ5	1-DR01			LH70/71/71A/72		Cour	ater unit
Cable (300mm) Screws Screws Screws SZ51-MS01/SZ51-DR01 Cable (300mm) Screws Screws Screws Screws Szrews Use screws to secure it in place										
So	cale			Resolu	tion	Ada	pter	Counte	er	
SR-1711(GP)、SR10A/741(GS)、 SR50A(GF,GF-R)、SR30A(GM)、 SR801/801R(GL)				0.5µr	0.5µm SZ05-T01 LH70/7 LH70/7			LG20 H70/71/7 <i>1</i> _LY71/7	1A/72 2	
* HA13A, 15A, 23A a	nd 25A	are used a Hea	s head a d-amp	SZ05-T01		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Screws	

Use screws to secure it in place.

1

Screws

OP

MAND

Connector

# Appendix 2-2 Adapter connection (Digital gauge)

