mindman Linear Position Sensor RLZ Series CE

For your safety, please read the following before using.

① Suggest to connect, install, and set up by professional technicians.
② Avoid to use magnetically conductive components in working environment.
③ Avoid piston and magnet of cylinder spin to cause inaccurate.
④ Do not use corrosive or flammable gas or liquid with this product.
⑤ Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
⑥ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
⑦ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
⑧ Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
⑨ Sensors at end-of-life must be disposed of in accordance with E-Waste regulations of the country/region, NOT disposed of with regular garbage.

A. SPECIFICATIONS

MODEL		RLZ-□040
Measuring Range		40 mm, ± 1 mm
Power Supply Voltage		15 ~ 30 V DC, Ripple (P-P) ≤ 10 %
Current Consumption		≤ 15 mA (with no load)
Displacement Resolution ※1		0.001 mm
Linearity Error ※1		± 0.2 mm @ 25 ℃
Repeatability ※1		± 0.01 mm @ 25 ℃
Sampling Time		≤ 0.3 ms
Analog Voltage Output ※2		Voltage Output : 0 ~ 10 V Min. Load Impedance : 2 KΩ Linearity : ± 0.05 % F.S. @ 25 °C Sensitivity : 0.25 mV/μm
Analog Current Output ※2		Current Output : 4 ~ 20 mA Max. Load Impedance : 500 Ω Linearity : ± 0.05 % F.S. @ 25 °C Sensitivity : 0.4 μA/μm
Magnetic Field Strength ※1※3		20 ~ 200 Gauss
Environment	Enclosure	IP69 IEC 60529
	Ambient Temp. Range	Operation : 0 ~ 50 °C, Storage : -10 ~ 60 °C (No condensation or freezing)
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)
	Shock ※4	30 G
	Vibration ※5	10 G
Lead Wire		Ø2.9 PUR - 26 AWG (0.15mm²) - 3 cores
Weight (With 2 meter lead wire)		Approx. 33 g (RLZ-C040) ; Approx. 37 g (RLZ-T040)
Protection Circuit		Power Source Reverse polarity, Surge Suppression

NOTE
※ 1. Measuring standard target : Ø15.5 × Ø8 × 5t (The movement of anisotropy rubber magnet and piston are from same direction.)
※ 2. Only one of analog output can be selected while setting.
※ 3. The difference of magnetism, environment, and interference of magnetic field can cause the deviation of measurement.
※ 4. Sin wave / X , Y , Z 3 directions / 3 times each direction / 11 ms each time.
※ 5. Double amplitude 1.5 mm or 10 G / 10 Hz ~ 55 Hz ~ 10 Hz (Sweep 1 min) / X, Y, Z 3 directions / 2 hours each time.

B. ORDERING INFORMATION

R L Z - C 0 4 0 - 2 M

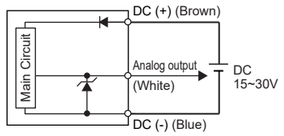
Cylinder Type
C : C slot
T : T slot

Measuring Range
040 : 40 mm

Cable Length / Connector
2M : L = 2000mm
QD : With M8 3Pin male connector

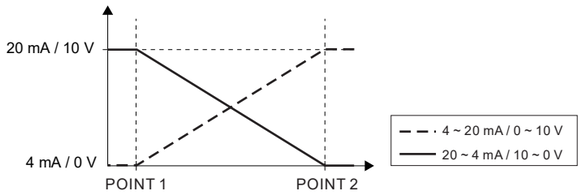
C. OUTPUT CIRCUIT WIRING DIAGRAMS

Analog Output (0 ~ 10 V / 4 ~ 20 mA)



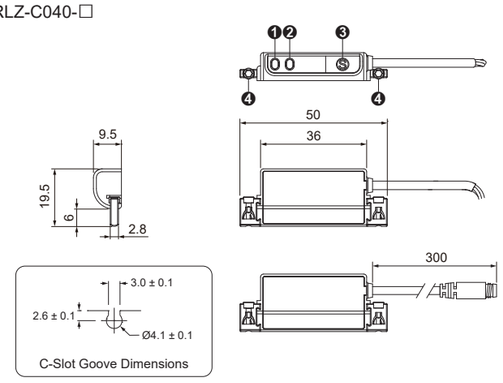
D. ANALOG OUTPUT FUNCTION

- Analog voltage / current output can be switched.
- Analog output can be inverted.

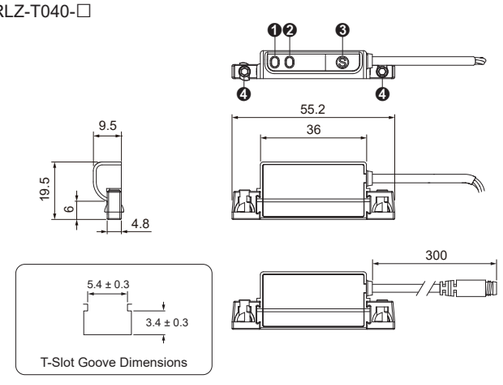


E. DIMENSIONS

◎ RLZ-C040-□



◎ RLZ-T040-□



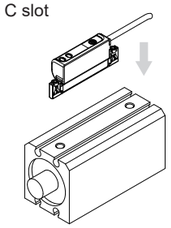
No.	Content
❶	Mode Indicator
❷	Information Indicator
❸	Setting button
❹	Mounting screw, Hexagon wrench (2.0 mm)

QD PINOUT

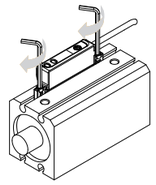
Unit : mm

F. INSTALLATION

◎ C slot

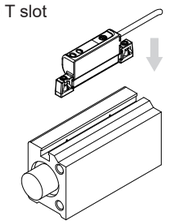


① Insert the sensor.

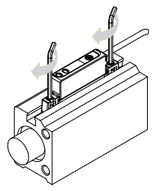


② Move the sensor to the required position, then tighten the screw by hexagon wrench 2.0 mm with tightening torque 0.2 ~ 0.4 Nm.

◎ T slot



① Insert the sensor.

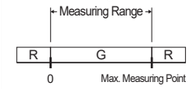


② Move the sensor to the required position, then tighten the screw by hexagon wrench 2.0 mm with tightening torque 0.2 ~ 0.4 Nm.

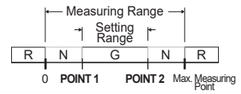
G. LED INDICATOR DESCRIPTION

Mode	Mode Indicator	Information Indicator	Description
Measuring Mode	N	G	Within the setting range
		N	Within the measuring range, but outside the setting range.
		R	Outside the measuring range
Setting Mode	(R/B)	N	Setting mode
Measuring Range Setting	B	B	POINT 1 setting
		G	POINT 2 setting
		R	Not available to set the measuring range.
Analog Output Setting	R	G	Analog voltage output mode
		B	Analog current output mode
Invert Analog Output Setting	G	G	Analog output setting (0 ~ 10 V / 4 ~ 20 mA)
		B	Analog output setting (10 ~ 0 V / 20 ~ 4 mA)
Restore Factory Setting	R	R	Enter restore factory mode
		G	Turn on restore factory function
Data Saving	W	W	Do not power off during data saving.

Default Setting

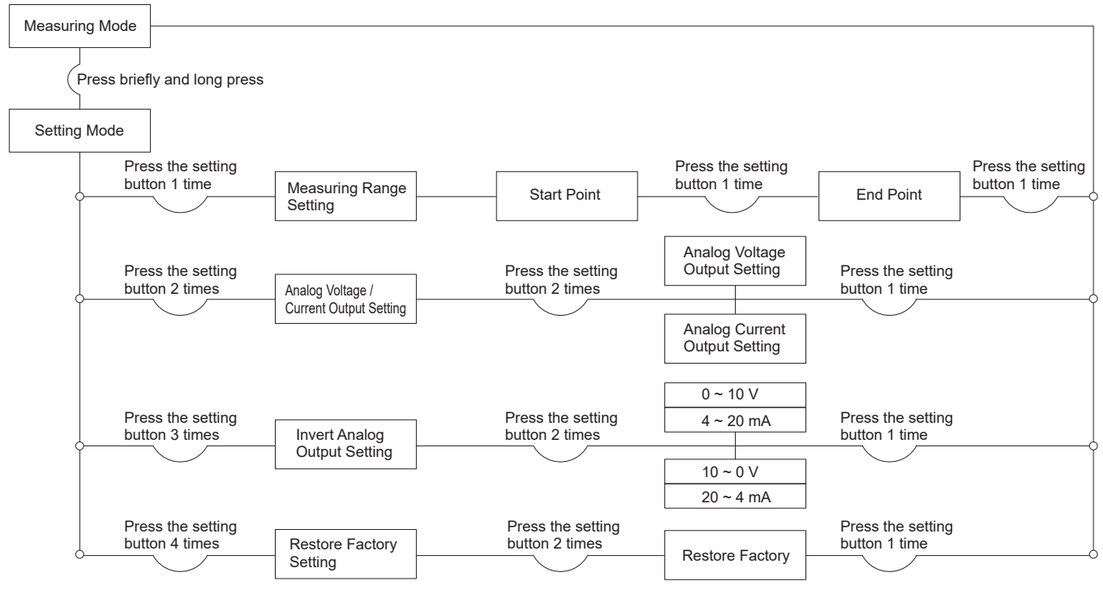


Resetting



※ N : LED off , G : Green , B : Blue , R : Red , W : White , ○ : LED flashing , (R/B) : Red / Blue alternatly flash

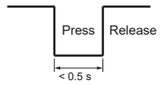
H. OPERATING PROCEDURES



I. OPERATION DEFINITION

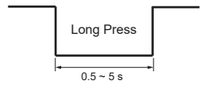
This sensor uses capacitive setting button Ⓢ which is based on press times and press period to operate.

• Press Ⓢ 1 time
(press < 0.5 s) : confirm / save

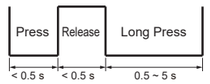


• Press Ⓢ 2 times
(press / release < 0.5 s) : switch the options

• Long press Ⓢ 0.5 ~ 5 s : cancel



• Press briefly Ⓢ and long press Ⓢ : enter setting mode

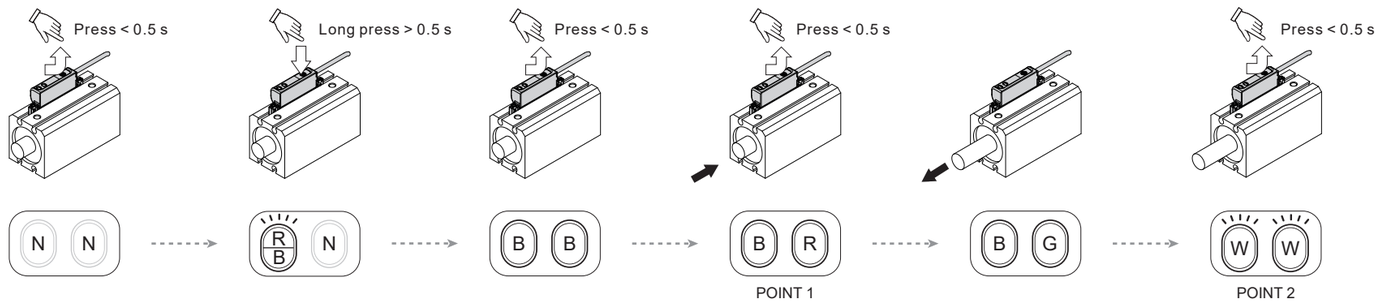


J. OPERATION INSTRUCTION - FOUR KINDS OF SETTING MODE

1. Measuring Range Setting

Step 1 : Press briefly and long press Ⓢ until red and blue lights flash alternately to enter setting mode.
Step 2 : Press Ⓢ 1 times, then blue mode/information indicators light up to enter measuring range setting.
Step 3 : Push the piston to the POINT 1 of the measuring range, then press Ⓢ 1 time to complete POINT 1.
Red information indicator lights up. (※1.2)
Step 4 : Push the piston to the POINT 2 of the measuring range, then press Ⓢ 1 time to complete POINT 2.
Step 5 : White mode/information indicators flash after complete setting.

Note ※1、In below cases, measuring points cannot be set.
1.1、Outside the measuring range. Red information indicator lights up.
1.2、The distance of start point and end point is less than 1 mm. Red information indicator lights up.
※2、The default setting is the maximum measuring range.
※3、After 60 seconds of inactivity, the product returns to measuring mode automatically.
※4、Reset the measuring range by repeating Step 1 to Step 5.



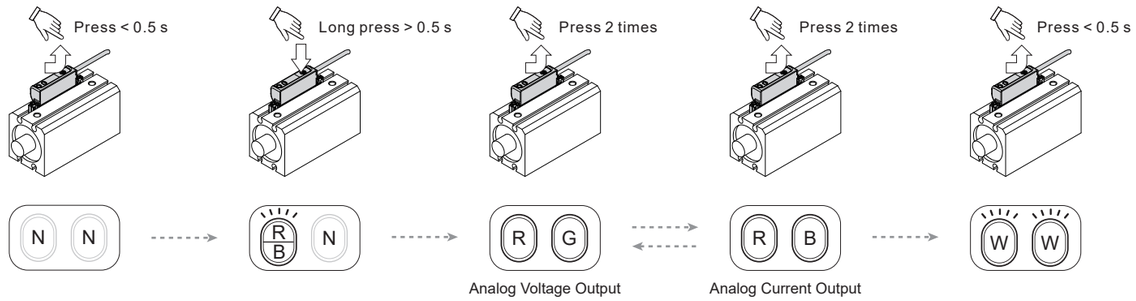
LED Indicator Description

N	: LED off
B	: Blue
G	: Green
R	: Red
W	: White
R / B	: Red / Blue alternating flashing
	: LED flashing

2. Analog Voltage / Current Output Setting

Step 1 : Press briefly and long press Ⓢ until red and blue lights flash alternately to enter setting mode.
Step 2 : Press Ⓢ 2 times, then red mode indicator lights up to enter analog voltage / current output setting.
Step 3 : Press Ⓢ 2 times for switching analog voltage output or analog current output.
Green information indicator : analog voltage output
Blue information indicator : analog current output
Step 4 : Press Ⓢ 1 time to complete analog voltage / current output setting.
Step 5 : White mode/information indicators flash after complete setting.

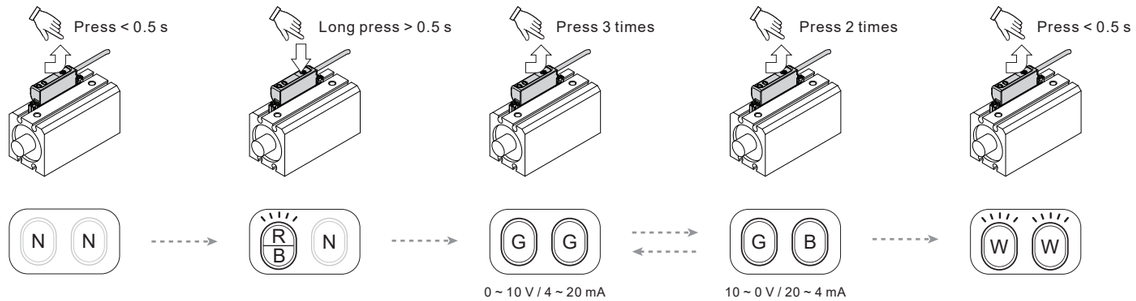
Note ※1、After 30 seconds of inactivity, the product returns to measuring mode automatically.
※2、Switch analog output again by repeating Step 1 to Step 5.



3. Invert Analog Output Setting

Step 1 : Press briefly and long press Ⓢ until red and blue lights flash alternately to enter setting mode.
Step 2 : Press Ⓢ 3 times, then green mode indicator lights up to enter invert analog output setting.
Step 3 : Press Ⓢ 2 times for inverting analog output value.
Green information indicator : analog output 4 ~ 20 mA / 0 ~ 10 V.
Blue information indicator : analog output 20 ~ 4 mA / 10 ~ 0 V.
Step 4 : Press Ⓢ 1 time to complete invert analog output setting.
Step 5 : White mode/information indicators flash after complete setting.

Note ※1、After 30 seconds of inactivity, the product returns to measuring mode automatically.
※2、Switch analog output again by repeating Step 1 to Step 5.



4. Restore Factory Setting

Step 1 : Press briefly and long press Ⓢ until red and blue lights flash alternately to enter setting mode.
Step 2 : Press Ⓢ 4 times, then red mode indicator flashes to enter restore factory setting.
Step 3 : Press Ⓢ 2 times, then red mode indicator and green information indicator flash to turn on restore factory function.
Step 4 : Press Ⓢ 1 time to restore factory setting value.
Step 5 : White mode/information indicators flash after complete setting.

Note ※1、Return to measuring mode if operate wrongly.
※2、After 30 seconds of inactivity, the product returns to measuring mode automatically.
※3、Switch analog output again by repeating Step 1 to Step 5.