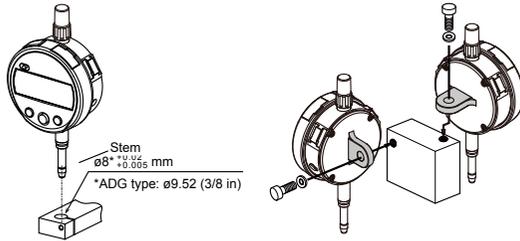


3. Setup

1) Mounting to a stand, jig, etc.

NOTICE

- Whenever possible, avoid fixing the stem directly with a set screw, etc.
- The spindle may not be able to move smoothly if the screw is tightened with a tightening torque of 150 cN•m or more to secure the stem.



Tips

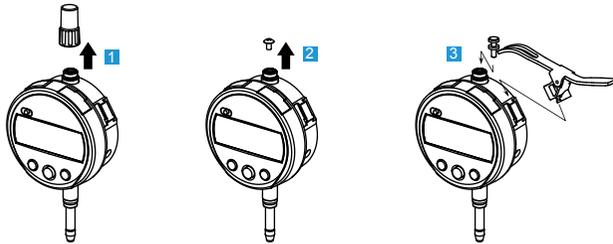
When mounting the product to a stand or jig, use the stem or lug on the back. If using the stem, use a slotted holder with a $\varnothing 8$ mm or $\varnothing 9.52$ mm hole with G7 (+0.005 mm to +0.02 mm).

2) Mounting the lifting lever

[Options: Part No. 21EZA198 (mm), part No. 21EZA199 (in)]

NOTICE

- Using the product while the stop screw is not secured firmly may damage internal components or the workpiece.
- If not mounting a stop screw, always mount the original screw on the spindle top end. Otherwise internal components or the workpiece may be damaged.



- 1 Rotate the cap counterclockwise to remove it from the product.
- 2 Fix the spindle, using pliers padded with a rag, etc., so that it does not turn, and then remove the screw (M2.5 or No.4-48UNF) at the top end of the spindle.
- 3 Mount the stop screw supplied with the lifting lever and, with the lever tip caught by the stop screw, mount the lifting lever on the lifting lever mount (dovetail).

Tips

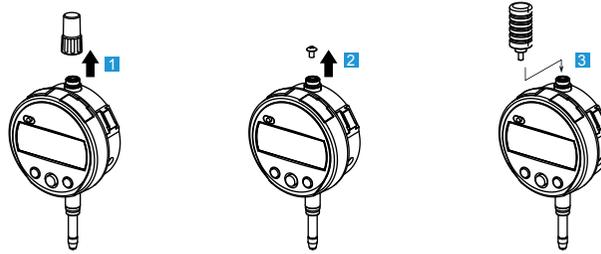
Store the removed screw and cap to prevent loss.

3) Mounting the lifting knob

[Options: Part No. 21EZA105 (mm), part No. 21EZA150 (in)]

NOTICE

- Using the product while the lifting knob is not secured firmly may damage internal components or the workpiece.
- If not mounting a lifting knob, always mount the original screw on the spindle top end. Otherwise internal components or the workpiece may be damaged.



- 1 Rotate the cap counterclockwise to remove it from the product.
- 2 Fix the spindle, using pliers padded with a rag, etc., so that it does not turn, and then remove the screw (M2.5 or No.4-48UNF) at the top end of the spindle.
- 3 Mount the lifting knob on the top end of the spindle.

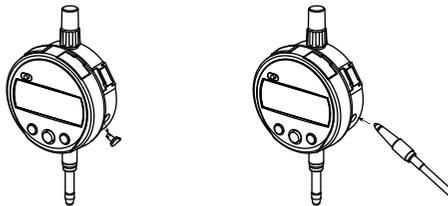
Tips

Store the removed screw and cap to prevent loss.

4) Mounting the release (Optional part No. 540774)

NOTICE

- Always mount the rubber cap if a release is not mounted.
- The rubber cap is a screw-in type.
- The product may be damaged if an item other than the release is inserted or if excessive force is applied.
- Raising or lowering the spindle while the release is not secured firmly may damage the internal components.



- 1 Remove the rubber cap from the release mounting hole.
- 2 Screw the release firmly into the hole.

Tips

Store the removed screw and rubber cap to prevent loss.

5) Contact point replacement

NOTICE

When replacing the contact point, turn the contact point while fixing the spindle. Otherwise, the product may be damaged.

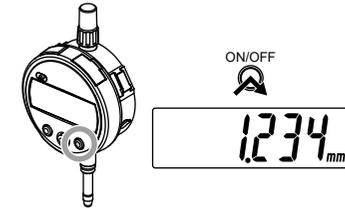


Mount and remove the contact point with a rag and 2 pairs of pliers (one for fixing the spindle) as shown in the figure.

Tips

- Changing the contact point may cause changes in external dimensions and measurement force, or restrictions on measurement directions.
- Errors due to the contact point (perpendicularity of flat contact point, center runout of roller contact point, etc.) are added to the measurement accuracy.
- Various contact points are available as options. Refer to the Mitutoyo MEASURING INSTRUMENTS CATALOG for details.

4. Power ON/OFF

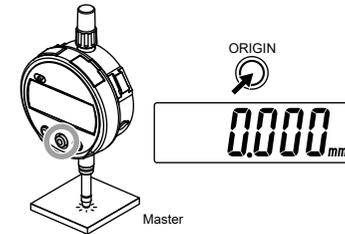


- 1 Press the [ON/OFF] key to turn the product on and off.

Tips

- If the power does not turn on even when the [ON/OFF] key is pressed, the battery may be dead. Replace the battery.
- Although the spindle may feel heavy at the bottom dead center when using for the first time, this can be resolved by pushing the spindle up once.
- Even after the power is turned off, the reference point set and counting direction will be retained.

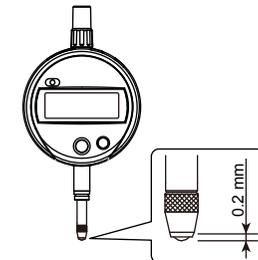
5. ORIGIN Setting (Reference Point Setting)



- 1 Move the spindle to the point to be set as the reference point, and then press the [ORIGIN] key for 1 second or more.
⇒ The indicated value becomes zero and the reference point (ORIGIN) is set.

Tips

- Place the contact point on the workpiece several times to verify that the measured value is stable.
- This product does not guarantee stable repeatability within 0.2 mm from the bottom dead center (when the spindle is completely extended). When performing reference point setting, be sure to lift the spindle at least 0.2 mm above the bottom dead center.



- A rubber damper is attached to this product to soften the spindle impact. Although the indicated value may not be stable at the bottom dead center due to the elasticity of the damper, this is not a malfunction.

6. Measurement Method

1) Measurement



- Gradually and lightly place the contact point on the workpiece in the same orientation and conditions as for reference point setting, and then read the indicated value.

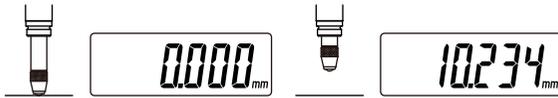
Tips

If the contact point strikes the workpiece to be measured hard, the workpiece may deform and measurement results may be affected.

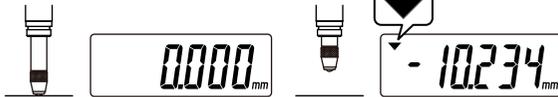
2) Switching counting direction

The counting direction can be changed by pressing the [+/-] key. If the product is set to negative counting when the spindle is pushed in, [▼] is shown on the top left of the display.

• Positive count

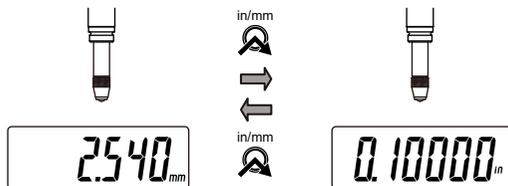


• Negative count



3) Switching units

Press the [in/mm] key to switch the unit between in (inches) and mm (millimeters).



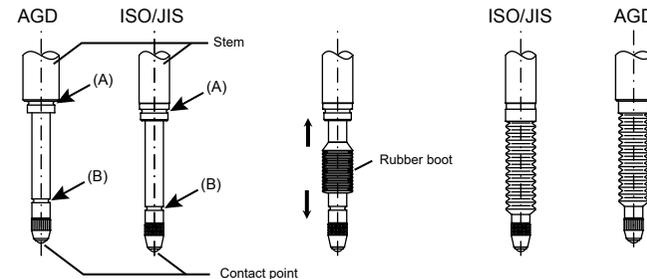
7. Precautions after Use

- When cleaning, wipe this product with a soft cloth moistened with diluted neutral detergent. Do not use an organic solvent such as thinner, which may cause the product to deform or malfunction.
- Do not lubricate the spindle with lubricating oil, etc.
- If the product is to be out of use for 3 months or more, remove the battery before storage. Liquid leakage from the battery may damage the product.
- Do not store the product in a place with a high temperature or humidity, or a lot of dust or oil mist.

8. Errors and Troubleshooting

Error Display	Causes and Countermeasures
Battery voltage decrease mark  1234 mm	Battery is depleted. Replace with a new battery.
Sensor contamination detection error Err E	A sudden change in temperature may create condensation on the detector, or it may be contaminated by other sources. Turn the power off and allow the product to adapt to the temperature for about 2 hours. If it does not recover after adapting to the temperature, repair is required: consult with your dealer or agent or with our sales office.
Hardware error Err H	This error indicates a hardware abnormality. Repair is necessary when the error is generated. Please contact our sales office.
ABS synthesis error 123E mm	Although this may occur during high-speed spindle movement, there is no effect on measurement. Use the product as is. If it occurs while the spindle is not moving, the internal sensor has failed. In this case, repair is required: consult with your dealer or agent or with our sales office.

9. Rubber Boot Replacement (ID-S112PX, ID-112PXB)



- Remove the old rubber boot and wipe away dust or oil from the stem groove (A) and spindle groove (B) with alcohol, etc.
- Put the rubber boot on the spindle so that the rubber boot end with the larger bore is on the stem side, and then set the rubber boot in between the stem and the contact point.
- Lightly apply a small amount of room temperature curing silicone adhesive to grooves (A) and (B). At this time, be careful not to apply silicone adhesive to the spindle sliding surface.
- Pinch the top end of the rubber boot with a tool such as flat tip tweezers and fit it into stem groove (A).
- Attach the bottom end of the rubber boot to spindle groove (B) by pressing manually.
- Wipe away excess adhesive with a clean cloth.

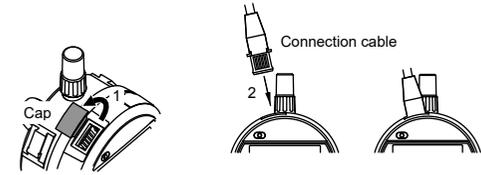
10. Output Function

NOTICE

For use with a Mitutoyo linear gage counter (EC-101D, EG-101D, EH-102D) connected, set the linear gage counter "SDP input WAIT setting" to "No WAIT" before use. If used with other settings, an error will be displayed on the linear gage counter.

1) Externally outputting the displayed value

The displayed value can be output to a device supporting Digimatic output format by connecting the product and the external device with a connection cable (option). The product can be connected to an optional external display, external printer, PC, etc.

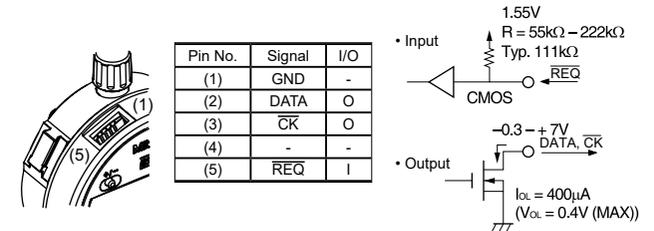


- Press the [ON/OFF] key to turn off the product.
- Connect the product and the external device.
 - Remove the cap of the output connector of the product.
 - Connect the product and the external device with a connection cable.

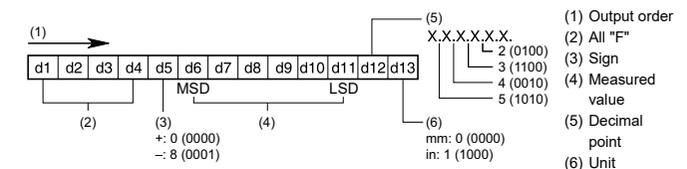
Tips

- 2 types of connection cables (options), No. 905338 (1 m) and No. 905409 (2 m), are available for this product.
- When connecting a connection cable, pay attention to the connector direction as you insert it.
- Store the removed cap to prevent loss.
- Always install the cap if a connection cable is not used.

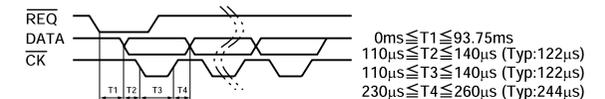
2) Output connector



3) Output data format



4) Timing chart



11. Specifications

■ Individual specifications

Model *1	ID-S1012X, ID-S1012XB	ID-S112X, ID-S112XB	ID-S112PX, ID-S112PXB
Code No. *1	543-781, 543-781B	543-790, 534-790B	543-794, 543-794B
Measurement range	12.7 mm		
Resolution	0.01 mm	0.001 mm	
Error of indication for the total measuring range MPE _E *2	0.02 mm	0.003 mm	
Hysteresis MPE _H *2	0.02 mm	0.002 mm	
Repeatability MPE _R *2	0.01 mm	0.002 mm	
Stem diameter	ø8 mm		
Contact point	Carbide (joint screw M2.5 x 0.45), part No. 901312 (provided as standard)		
Measurement force MPL	1.5 N or less	2.5 N or less	
Measurement direction	All directions		
Protection level *3	IP42 equivalent *4		IP53 equivalent *4
Battery life *5	Continuous operation approx. 20,000 hours	Continuous operation approx. 18,000 hours	

Model *1	ID-S1012MX, ID-S1012MXB	ID-S112MX, ID-S112MXB	ID-S112PMX, ID-S112PMXB
Code No. *1	543-782, 543-782B	543-791, 534-791B	543-795, 543-795B
Measurement range	12.7 mm/0.5 in		
Resolution	0.01 mm/0.0005 in	0.001 mm/0.00005 in	
Error of indication for the total measuring range MPE _E *2	0.02 mm	0.003 mm	
Hysteresis MPE _H *2	0.02 mm	0.002 mm	
Repeatability MPE _R *2	0.01 mm	0.002 mm	
Stem diameter	ø8 mm		
Contact point	Carbide (joint screw M2.5 x 0.45), part No. 901312 (provided as standard)		
Measurement force MPL	1.5 N or less	2.5 N or less	
Measurement direction	All directions		
Protection level *3	IP42 equivalent *4		IP53 equivalent *4
Battery life *5	Continuous operation approx. 20,000 hours	Continuous operation approx. 18,000 hours	

Model *1	ID-S1012EX, ID-S1012EXB	ID-S112EX, ID-S112EXB	ID-S112TX, ID-S112TXB	ID-S112PEX, ID-S112PEXB
Code No. *1	543-783, 543-783B	543-793, 534-793B	543-792, 534-792B	543-796, 543-796B
Measurement range	0.5 in/12.7 mm			
Resolution	0.0005 in/0.01 mm	0.00005 in/0.001 mm	0.0001 in/0.001 mm	0.00005 in/0.001 mm
Error of indication for the total measuring range MPE _E *2	0.0020 in	0.0002 in		
Hysteresis MPE _H *2	0.0010 in	0.0001 in		
Repeatability MPE _R *2	0.0005 in	0.0001 in		
Stem diameter	3/8 in diameter (ø9.52 mm)			
Contact point	Carbide (joint screw No. 4-48UNF), part No. 21BZB005 (provided as standard)			
Measurement force MPL	1.5 N or less	2.5 N or less		
Measurement direction	All directions			
Protection level *3	IP42 equivalent *4			IP53 equivalent *4
Battery life *5	Continuous operation approx. 20,000 hours	Continuous operation approx. 18,000 hours		

*1: Model numbers ending with "B" are flat back types without lug.

*2: During normal measurement at 20 °C.

*3: The protection level (IP: International Protection) is based on IEC 60529/JIS C 0920.

*4: Values are for factory default conditions.

*5: The battery life varies depending on usage times and conditions. The above values are guidelines.

■ Common specifications

CE Marking	EMC Directive: EN 61326-1 Immunity test requirement: Clause 6.2 Table 2 Emission limit: Class B RoHS Directive: EN IEC 63000
Power	Silver oxide battery SR44 x 1 (part No. 938882)
Scale type	Static capacitive type absolute linear encoder
Response speed	Unlimited (unavailable for scanning measurement)
Data output	Digimatic output
Temperature range	Operating temperature range: 0 °C to 40 °C, storage temperature range: -10 °C to 60 °C
Standard accessory	SR44 (for function verification x 1) • User's Manual warranty, inspection results

12. Accessories (Optional)

- Lifting lever: Part No. 21EZA198 (mm)
- Lifting lever: Part No. 21EZA199 (in)
- Lifting knob: Part No. 21EZA105 (mm)
- Lifting knob: Part No. 21EZA150 (in)
- Release: Part No. 540774
- Connection cable: Part No. 905338 (1 m, flat straight)
- Connection cable: Part No. 905409 (2 m, flat straight)

* For accessories (optional) other than the above, refer to the Mitutoyo MEASURING INSTRUMENTS CATALOG.

13. Off-Site Repairs (Subject to Charge)

Off-site repair (subject to charge) is required in the case of the following malfunctions. Contact your nearest dealer or our sales office.

- Poor spindle operation
- Poor accuracy
- [E] is displayed as the last digit when the spindle is stationary
- Abnormal measured value or LCD trouble
- No recovery from [Err C]
- Power will not turn on

* If the fundamental structural components or multiple components need to be replaced, we reserve the right to decline the repair.