# PRODUCT SPECIFICATION

Inductive Displacement Sensor
User Manual

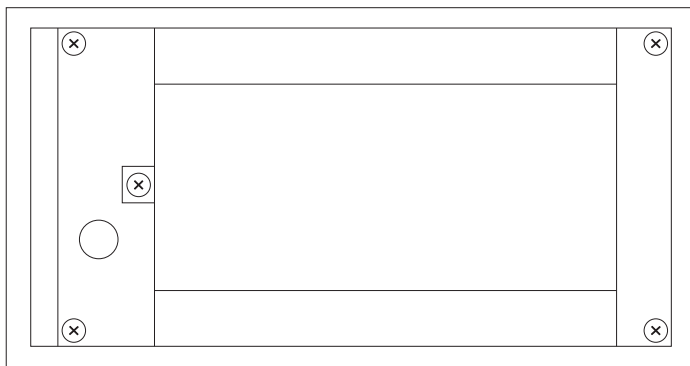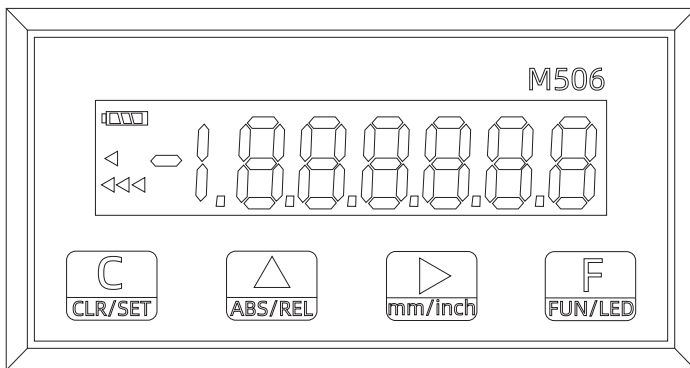# CATALOGUE

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# 1. Installation Instructions

- When installing this product, if the deviation is too large, it will affect the accuracy of use, and even cannot be used

- Do not use the device in situations where corrosion, acid, alkali, or direct sunlight exceed environmental requirements. Otherwise, faults may occur

- The bending radius of the reading head wire must be greater than 25mm

- The equipment should be installed away from circuit breakers, relays, motor capacitors, brakes, clutches, frequency converters, etc. At least 0.5m

- The cable direction must be separated from the power line to reduce string noise

# 2. Product size/button description

## 2.1 Digital display meter/sensor inch map
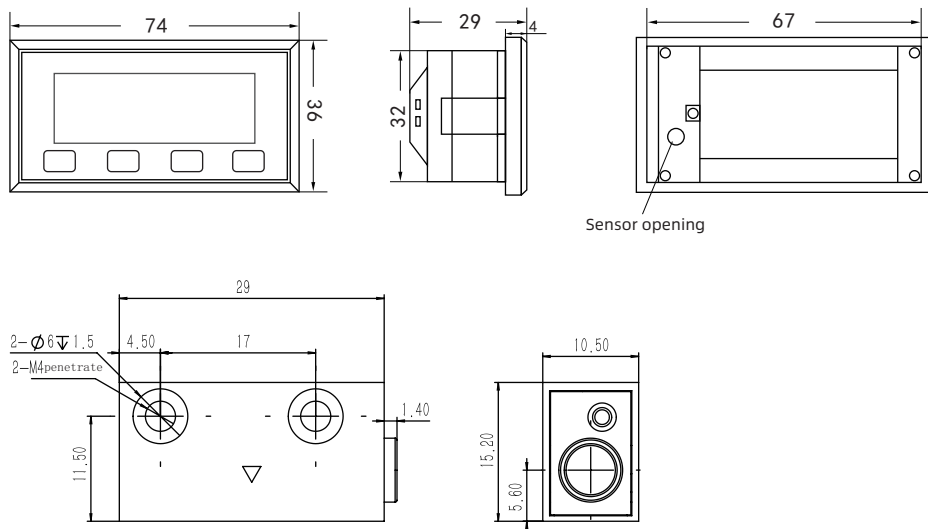


Sensor opening

## 2.2Key description

| | escape | | Parameter key |
|---|---|---|---|
| **C** CLR/SET | Clear or exit when premode | ▲ ABS/REL | Modify the current displayed parameters |
| **F** FUN/LED | Menu key Confirm key Press and hold to enter the menu. Press and hold to confirm parameters | ▶ mm/inch | Menu switch key Menu toggle or parameter displacement |

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## ★ Key precautions

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(1)Simultaneously press [C]+ [F]key， You can set the table to "0" at any point on the magnetic strip, if If the initial value is set, it is displayed as the initial value

$$\boxed{\frac{C}{\text{CLR/SET}}} + \boxed{\frac{F}{\text{FUN/LED}}} \longrightarrow \boxed{0.0}$$

(2)On the home screen, tap [F]key， The home screen will be backlit and automatically turned off after one second
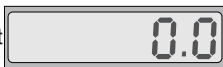
`0.0` Backlight Effect    `0.0` Effect After Closing

# 3. Product features

## 3.1Product advantage

- 7 bit LCD display, more suitable for long travel equipment
- High contrast backlight, clear and eye-catching
- Low power consumption, no external power supply（two built-in # 5 batteries）
- Repeatability is up to ±0.01mm
- Initial value reset function, set to "0", that is, clear zero
- Optional mm mm/ inch inch

## 3.2 Specifications/Performance

| Electrical performance | | Mechanical property | |
|---|---|---|---|
| System accuracy | $\pm$（0.05+0.02*L）mm   L Unit: m | Overall dimension | 74*36*32mm |
| repeatability | Max.±0.01mm | Opening size | 67*32mm |
| Resolution | 0.01、0.1、1 | Read head length | acquiesce1m（Customizable） |
| Display range | –1999999 ~ 1999999 | Read head gap | Max1.5mm Recommended1.0mm |
| Current consumption | ≤ 600μA | Moving speed | Max3m/s |
| Electric source | Two number five batteries | Matching magnetic ruler | MS50 |

| Operating temperature | –10 ~ +60℃ | Waterproof class | Digital display meter IP40, reading head IP65 |
|---|---|---|---|
| Storage temperature | –20 ~ +70℃ | weight | Max97g (Tape reading head) |

# 3.3 Panel Description

| Display content | | Display content | |
|---|---|---|---|
| ▭▬ Low battery indicator reminder | | E07 | Low battery |
| NULL mm mode | | E09 | The self-timing reader is too close to the magnetic strip |
| ◄ Inch mode (center arrow) | | E10 | The self-timing reader is too far away from the magnetic strip |
| ◄ Angle mode (down arrow) | | E11 | Self-correcting timeout |

# 3.4 Menu Description

| ID | Display content | argument | Default value | remark |
|---|---|---|---|---|
| P01 | **Initial value** | -199999~199999 | **0** | Set the input value to the current initial value, Quick access through C+F |
| P02 | **Measurement direction** | 0: positive  1: reverse | **0** | Change direction of measurement |
| P03 | **self-correcting** | go | — | The recommended speed is less than 100mm/s Running at low and constant speed, jump s traight back to P03 |
| P05 | **LCD backlight Automatic closing** | 0 ~ 3 | — | — |
| P10 | **Unit of measurement** | 0: mm mode 1: inch mode 2: Angle mode | **0** | PD state Input password: 7 Default mm mode |
| P11 | **Proportional coefficient** | 1.00000 ~ 2.99999 | **1.00000** | Linear correction Displayed value = measured true value * Scale coefficient |
| P12 | **Disc diameter** | 0.01 ~ 999.99 | **500.00** | The diameter of the disk affixed to the magnetic strip should be combined with the thickness of the magnetic strip on both sides, and the measurement Angle should not exceed 360° |
| P13 | **Resolution** | 0.01、0.1、1 | **0.1** | Length mode unit: mm Angle mode unit: ° |
| P15 | **reserve** | | | |
| P20 | **Factory recovery** | Yes | **Yes** | factory data reset |
| P25 | **reserve** | | | |

# 4. Description of the system function menu

## 4.1 Setting the Initial Value (Function code P01)

| ID | Display content | argument | Default value | remark |
|----|----------------|----------|---------------|--------|
| P01 | **Initial value** | -199999~199999 | **0** | Set the input value to the current initial value, Quick access through C+F |

`o0000.0` Positive number    `-0000.0` Negative

**Current display value** `   27.8` **, To set the initial value, do as follows:**

1.Tap and hold [F FUN/LED] P01 is displayed on the menu page，Press down [F FUN/LED] Enter Settings，
Press down [▶] Move to the appropriate digit，Press down [▲ ABS/REL] Adjusted value，
Press down [F FUN/LED] Confirm initial value

[F FUN/LED] → `P01` → [F FUN/LED] → `o0000.0`    Continue to set the initial value as follows:

Such as：The start value is set to 100mm

`o0000.0` → [▶ mm/inch] → [▲ ABS/REL] → `o01 00.0` → [F FUN/LED] → `100`

## 4.2 Setting Measurement Direction (Function code P02)

| ID | Display content | argument | Default value | remark |
|----|----------------|----------|---------------|--------|
| P02 | **Measurement direction** | 0：positive  1：reverse | **0** | Change direction of measurement |

**Current display value** `   39.8` **, To set the positive and negative directions, do as follows:**

1.Tap and hold [F FUN/LED] Enter the menu page， Press down [▶ mm/inch] Select function code P02， **sisco**

Press down [F FUN/LED] Enter Settings， Press down [▲ ABS/REL] Change the measurement direction code，

Press down [F FUN/LED] Confirm measurement direction， Press down [C CLR/SET] If you exit, the setting is complete

[F FUN/LED] → | *P01* | → [▶ mm/inch] → | *P02* | → [F FUN/LED] → | *0* |

Continue to set the measurement direction as follows:

## Such as： Set the inverse measurement mode (Function code: 1)

| *0* | → [▲ ABS/REL] → | *1* | → [F FUN/LED] → | *P02* | → [C CLR/SET] → | *- 39.8* |

# 4.3 Set self-calibration (function code P03)

| ID | Display content | argument | Default value | remark |
|----|-----------------|----------|---------------|--------|
| P03 | **self-correcting** | go | — | The recommended speed is less than 100mm/s Running at low and constant speed, jump straight back to P03 |

## Self-calibrate operation Settings as follows:

1.Tap and hold [F FUN/LED] Enter the menu page， Press down [▶ mm/inch] Select function code P03，

Press down [F FUN/LED] Enter Settings， Appear | *9o* |， Move the read head， When the self-calibration is complete, it will automatically jump back to the menu P03 page

[F FUN/LED] → | *P01* | → [▶ mm/inch] → | *P03* | → [F FUN/LED] → | *9o* | → | *9o----* | → | *P03* |

< 100mm/s

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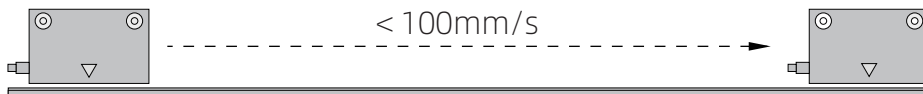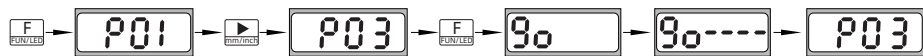
# 4.4 Set LED backlight (Function code P05)

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| ID | Display content | argument | Default value | remark |
|----|-----------------|----------|---------------|--------|
| P05 | **LCD backlight Automatic closing** | 0 ~ 3 | — | — |

## LCD backlight function setting, the steps are as follows:

1.Tap and hold [F FUN/LED] Enter the menu page， Press down [▶ mm/inch] Select function code P05，
Press down [F FUN/LED] Enter Settings， Press down [▲ ABS/REL] Change parameter， Press down [F] verify

[F FUN/LED] → 𝗣𝗢𝟭 → [▶ mm/inch] → 𝗣𝗢𝟱 → [F FUN/LED] → 𝟬

Continue to set the LCD backlight to turn off automatically, as follows:
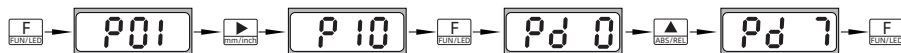
Such as： LCD backlight auto off is set to 3

𝟬 → [▲ ABS/REL] → 𝟯 → [F FUN/LED] → 𝗣𝗢𝟱 → [C CLR/SET]

# 4.5 Setting the Unit of Measurement (Function code P10)

| ID | Display content | argument | Default value | remark |
|----|-----------------|----------|---------------|--------|
| P10 | **Unit of measurement** | 0: mm mode<br>1: inch mode<br>2: Angle mode | **0** | PD state Input password: 7<br>Default mm mode |

## Current display value ⟨ 39.8 ⟩ ， To set the unit of measurement, do as follows:

1.Tap and hold [F FUN/LED] Enter the menu page， Press down [▶ mm/inch] Select function code P10，
Press down [F FUN/LED] Enter PD state， Press down [▲ ABS/REL] Select password "7"， Press down [F FUN/LED] Enter
parameter setting

[F FUN/LED] → 𝗣𝗢𝟭 → [▶ mm/inch] → 𝗣 𝟭𝟬 → [F FUN/LED] → 𝗣𝗱 𝟬 → [▲ ABS/REL] → 𝗣𝗱 𝟳 → [F FUN/LED]

Continue to set the unit of measurement as follows:

Such as： Set inch mode (Function code: 1)

𝟬 → [▲ ABS/REL] → 𝟭 → [F FUN/LED] → 𝗣 𝟭𝟬 → [C CLR/SET] → 39.8

# 4.6 Set the scale factor (function code P11)   sisco

| ID | Display content | argument | Default value | remark |
|----|----------------|----------|---------------|--------|
| P11 | **Proportional coefficient** | 1.00000 ~ 2.99999 | **1.00000** | Linear correction<br>Displayed value = measured true value * Scale coefficient |

## Proportional coefficient function setting, the steps are as follows:

1.Tap and hold 🄵 Enter the menu page， Press down ▶ Select function code P11 , Press down 🄵 Enter PD state， Press down ▲ Select password "7"， Press down 🄵 Enter parameter setting

$$P01 \rightarrow P11 \rightarrow Pd\ 0 \rightarrow Pd\ 7 \rightarrow$$
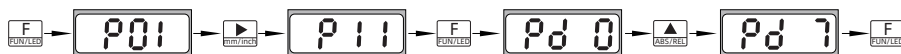


Continue to set the proportional coefficient value as follows:

Such as： The true value of the scale coefficient is 70mm, I need to change the scale coefficient to 2.00000, and the display value is equal to 140mm
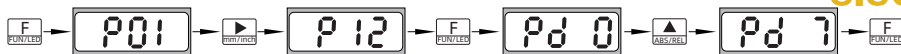


$$1.00000 \rightarrow 2.00000 \rightarrow P11 \rightarrow 140.0$$

# 4.7 Set disc diameter (function code P12)

| ID | Display content | argument | Default value | remark |
|----|----------------|----------|---------------|--------|
| P12 | **Disc diameter** | 0.01 ~ 999.99 | **500.00** | The diameter of the disk affixed to the magnetic strip should be combined with the thickness of the magnetic strip on both sides, and the measurement Angle should not exceed 360° |

## To set the disc diameter, the steps are as follows:

1.Tap and hold 🄵 Enter the menu page， Press down ▶ Select function code P12 , Press down 🄵 Enter PD state， Press down ▲ Select password "7"， Press down 🄵 Enter parameter setting

| F FUN/LED | → | P01 | → | ▶ mm/inch | → | P 12 | → | F FUN/LED | → | Pd 0 | → | ▲ ABS/REL | → | Pd 7 | → | F FUN/LED |

**Continue to set the disk diameter value as follows:**

Such as: The diameter of my disc is 200mm and the thickness of the magnetic strip is 1.6mm. The disc diameter of the digital display meter should be set to: 200+2*1.6=203.2mm

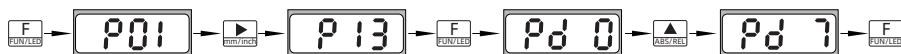| 500.00 | → | ▶ mm/inch | → | ▲ ABS/REL | → | 203.20 | → | F FUN/LED | → | P 12 | → | C CLR/SET |

remark: Setting of disc diameter: It is only necessary to set when the magnetic strip is attached to the disc for Angle measurement.

# 4.8 Set resolution (function code P13)

| ID | Display content | argument | Default value | remark |
|----|-----------------|----------|---------------|--------|
| P13 | **Resolution** | 0.01、0.1、1 | **0.1** | Length mode unit: mm<br>Angle mode unit: ° |

**Current display value** ⎢ 27.8 ⎢ , **To change the resolution, do as follows:**

1.Tap and hold F FUN/LED Enter the menu page, Press down ▶ mm/inch Select function code P13, Press down F FUN/LED Enter PD state, Press down ▲ ABS/REL Select password "7", Press down F FUN/LED Enter parameter setting

| F FUN/LED | → | P01 | → | ▶ mm/inch | → | P 13 | → | F FUN/LED | → | Pd 0 | → | ▲ ABS/REL | → | Pd 7 | → | F FUN/LED |

**Continue to set the resolution value as follows:**

Such as: Set the display resolution to 0.01

| 0.1 | → | ▲ ABS/REL | → | 0.01 | → | F FUN/LED | → | P 13 | → | C CLR/SET | → | 27.80 |
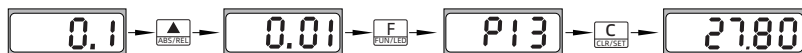
# 4.9 Restore factory Settings (Function code P20)

| ID | Display content | argument | Default value | remark |
|----|----------------|----------|---------------|--------|
| P20 | **Factory recovery** | Yes | **Yes** | factory data reset |

## Restore factory Settings as follows:

1.Tap and hold ⬚ Enter the menu page，Press down ⬚ Select function code P20，
Press down ⬚ Enter PD state，Press down ⬚ Select password "7"，Press down ⬚ The factory
Settings are restored，Appear ⬚ **YES** ,Press down ⬚ After confirmation, it will automatically
jump back to the menu，ready-to-set