

S350T

User Manual



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1. Features

- 1 Magnetic scale tape measurement system
- 2 Battery life 1 year
- 3 Multi-function LCD display
- 4 Resolution 0.005mm, 0.01mm, 0.1mm, 1mm
- 5 Reading head to tape spacing up to 2.5mm
- 6 Angle measurement can be set installation pitch
- 7 Radius/diameter mode
- 8 The linear scale factor could be settable
- 9 Battery level displays
- 10 Parameter memory
- 11 Position calibration
- 12 Absolute / incremental coordinate conversion
- 13 metric / inch conversion
- 14 Automatically adapt to the installation spacing
- 15 Real-time self-diagnosis

Specification

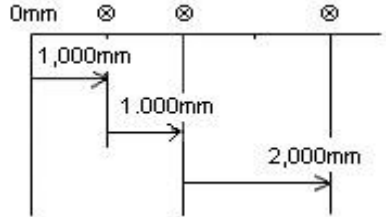
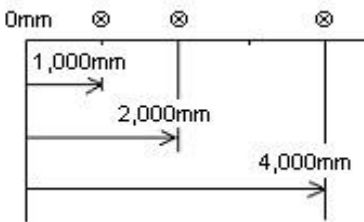
- 1 LCD 8-bit display
- 2 Two No.5 batteries 1.5V DC AA type
- 3 Reading head line length standard 3m
- 4 Operation mode 4 buttons
- 5 Working speed max. 8m/sec
- 6 Reproducibility 0.01mm
- 7 System accuracy (+/-0.025+0.02L) mm

- 8 Working temperature 0°C~+60°C
- 9 Thermal expansion coefficient $\alpha=16 \times 10^{-6}/^{\circ}\text{C}$
- 10 Storage temperature -20 ° C ~ +70 ° C
- 11 Humidity max. 95%RF
- 12 Panel size 96w×48h×47d(mm)
- 13 Hole size 92w × 44h (mm)

ABS/REL operating mode definition

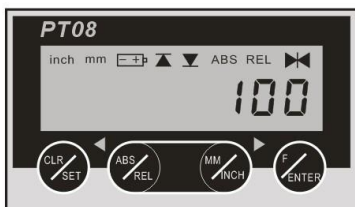
ABS(absolute)


REL(incremental)



2. Panel buttons and LCD display

Panel buttons



Press this button to display symbol .




Switch mm/inch/ angle







Switch absolute/relative position



1. REL mode clear value
2. ABS mode quick calibration.  Symbol (calibration quick key)


LCD display

	Low battery
	The reading head is too close to the ruler
	The reading head is too far away from the ruler
	Enter function/parameter setting (press F button)
ABS	Absolute mode
inch	Display unit: inch
REL	Incremental mode
mm	Display unit: mm
100.00	current position

3. Parameter setting



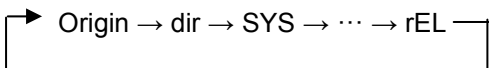
Step 1. Press and hold button

until  symbol is displayed, enter the parameter setting.



Step 2. Press button to choose parameter.

※Note: 1. Each time you press this button, each group of parameters is displayed in sequence.



2. Press button to enter the parameter setting.

Parameter table:

Parameter	Display	Description	Factory-set value	Set value
1	oriGin	Current value calibration	0	
2	dir	Counting direction	dir - -	
3	Off SEtS	Preset tool compensation value	0	
4	AnGuLAr	Angle mode radius value	0	

5	SCALinG	Diameter or radius selection	rAd	
6	Lin Corr	Linear scale factor	1.00000	
7	SPEEd	Working speed setting	3	
8	SEtUP	Adaptive Adjustment of Installation Spacing		
9	SYS	Parameter/button lock and unlock	0000	
10	rEL	Software version		


4. Current value calibration

A. Feature Description: Modify the current value according to the actual working position.

For example: The current value is 100.00mm, and the actual working position should be 200.00mm. The operation steps are as follows:




Step 1. Confirm if it is in ABS (absolute) mode: LCD should display ABS

※Note: 1. Press  button to switch between ABS and REL mode. 2. If doesn't work, it means the button is locked. Please refer to "Parameter/button lock and unlock".





Step 2. a. Quick entry parameter setting:

Press and hold  button until ▼

symbol is displayed. Press and hold  to display the current set value. Or



b. Press and hold  button at first, until  symbol is displayed in the upper right corner of the screen, about 5 sec, enter the parameter setting. The current set value is displayed.



Step 3. Press  or  button


to move the digit and press



 button to change the value. After

entering the number, press




 to complete the setting and return to the operation interface.

B. How to load new settings




Step 1. Confirm if it is in ABS (absolute) mode: LCD should display ABS.




※Note: 1. Press  button once to switch ABS/REL


2. If doesn't work, it means the button is locked. Please refer to "[Parameter/button lock and unlock](#)".



Step 2. Press and hold  button,

until  symbol is displayed, then press



 button, the new calibration value will be displayed.

C. Error action exclusion:



a. "Origin" or other English words appear on the main screen:



Press button to display the exclusion methods.



b. "0" or other value appears on the main



screen and flashes: first press



then press button.



c. "0.00°" appears on the main screen,





press button.

5. Counting direction setting

Feature Description: Change the current counting direction.


For example: The current PT08 shows 100.00mm, and when the reading head moves to the right, the value decreases (for example, 99.68mm is displayed). If you want the value to increase, change it as follows:






Step 1. Press and hold  button, until  symbol is displayed in the upper right corner of the screen, about 5 sec, enter the parameter setting.

※Note: Press  or  button, appears different parameter.



Step 2. Press  button, "dir" is displayed on the screen. (Choose +- direction parameter)

Step 3. Press  button, to display the currently set direction.

Press  or  button to change the currently set direction.

Step 4. Press  button to complete setting.



Step 5. Press button, to enter the parameter setting interface.

※Note: After setting, if you need to correct the origin value, refer to “Current Value Calibration” and set it again.


6. Resolution setting


Feature Description: The resolution of PT08 can be set to 1mm/0.1mm/0.01mm/0.005mm. The steps are as follows:

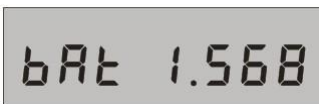


Step 1. Press  button until 

symbol is displayed, then press  button immediately.

※Note: Don't lose  button, if the screen displays "origin", and

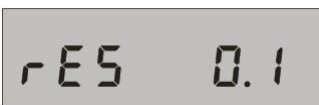
press  button at the same time, the screen will return to the original interface.



Step 2. When the battery performance (bAt 1.568) appears on the screen, press

 and  button at the same

time to enter the resolution setting.



Step 3. Press  button, select resolution. The order is as follows:

→ rES 0.005 → rES 0.01 → rES 0.1 → rES 1



Step 4. Press  to complete setting.

※Note: Please confirm that the screen resolution is correct.



7. Preset tool compensation value

A. Feature Description: Tool compensation function, applied to tool reference point compensation or workpiece 45° compensation or gear rack compensation.

For example: Preset tool compensation 20mm, factory-set value is without tool compensation, set as follows:



enter the parameter setting.

Step 1. Press and hold  button, until  symbol is displayed in the upper right corner of the screen, about 5 sec,




Step 2. Press  button, until the screen displays "OFFSEtS".



Step 3. Press  button, enter the parameter setting.



Step 4. Press  button, the current compensation value is displayed. (flashing)



Step 5. Press



button, choose +/-

or set value. Press



button to move the digit.

Step 6. After confirming the screen value, press



button to return to the select interface.

Step 7. After setting is complete, press twice



button to return to the operating interface.

B. Load the preset tool compensation



Step 1. Press



button, until the symbol is displayed.

Step 2. Press



button to load the preset tool compensation value.

※Note: If the screen displays “origin”, press



button to return to the operating surface.



8. SPEED SETTINGS

A. Feature Description: Depending on the actual application, there are 6 speed options available for PT08, which are SPEED 0, SPEED 1...SPEED 5. The lower the speed, the longer the battery life, see the following table:


Parameter	SPEED 0	SPEED 1	SPEED 2	SPEED 3	SPEED 4	SPEED 5
Speed (m/sec)	0.2	0.4	0.8	1.6	3.2	8.3
Battery life (years)	2.7	2.5	2.2	1.8	1.4	0.9

B. Operating steps:



Step 1. Press and hold  button until  symbol is displayed in the upper right corner of the screen, about 5 sec, enter the parameter setting. The display shows “origin”.



Step 2. Press  button for 4 times, the screen displays “SPEEd”.



Step 3. Press button to display



the original parameters. (SPEEd 3) Press button to switch the speed parameter.



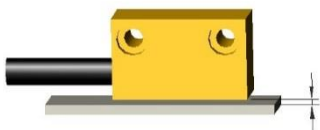
Step 4. If the screen displays the parameter you want, press button, the screen displays “SPPEd”.



Step 5. Press button to return to the operating interface.

9. Adaptive Adjustment of Installation Spacing


A. Feature Description: To ensure the measurement accuracy, perform the “Setup” function after each installation.



Step 1. First attach the reading head to the tape and fix the head and the tape (recommended: about 1mm distance).

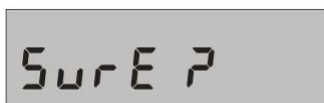


Step 2. Press and hold button

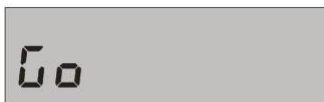
until  symbol is displayed in the upper right corner of the screen, that is, enter the parameter setting.



Step 3. Press and hold button until the screen shows “SetuP”.



Step 4. Press button to enter Parameter setting.



Step 5. Press button, to start the distance adjustment.



Step 6. Move the head at the slowest speed. (about 14 seconds to complete the 120mm distance).




Step 7. When finished, the PT08 screen will flash and automatically return to the operation interface.

Note: Please refer to “Current Value Calibration” immediately.

B. Abnormal handling



a. If the main screen appears “Sensor” and  symbol flashes.


Reason: The reading head is too close to the tape.

Disposal: Please bigger the distance between the reading heads and



then press button twice, in the same way as step 6.



b. If the main screen appears “Sensor” and the  symbol flashes.

Reason: The head is too far from the tape.

Disposal: Please smaller the distance between the reading heads and



then press button twice, in the same way as step 6.



c. If it moves for a long time, and the main screen keep showing "Go" or "Go -" or "Go _"

Reason: The head is too far from the tape or the mechanical flatness is not flat enough.

Disposal: Improve mechanical flatness or close the head space.





d. If you want to interrupt or eliminate the wrong action during the process, you can

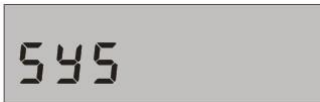
press  button to return to the operating interface.


10. Parameter/button lock and unlock

Feature Description: choose to lock any button or parameter, in order to avoid operating mistakes. The steps are as follows:



Step 1. Press and hold  button, until  symbol appears on PT08, that is, enter the parameter setting.



Step 2. Press and hold  button, until "SYS" is displayed.



Step 3. Press  button, (Value flashes)

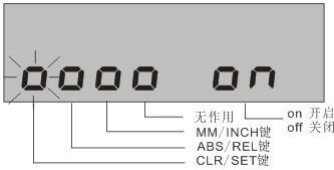
Step 4. Enter the password: 2201, press




button, set the value and press



button to move the value.






Step 5. Please confirm the password on

the screen and press  button to enter the parameter setting.

Step 6. Press  button to set on/off.




Step 7. Press  button to select the parameter.

Step 8. After setting is complete, press  button or  button, select "End SYS".



complete.

Step 9. Press  button, "SYS" will be displayed, that means setting is



Step 10. Press  button, return to the operating interface.

lock and unlock of other features

Parameter	Display	Description	Factory-set value	Set value
1	dir	Counting direction	On	
2	0rG	Current value calibration	On	
3	0FS	Preset tool compensation value	On	
4	AnG	Angle mode radius value	On	
5	SCA	Diameter or radius selection	On	
6	COr	Linear scale factor	On	
7	SEt	Adaptive Adjustment of Installation Spacing	On	
8	dEG	Angle mode	On	
9	SPd	Working speed setting	On	

11. Error Information or abnormal exclusion

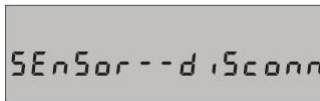


A. The screen appears “no tAPE”

Possible cause: The reading head leaves the magnetic scale tape.

Exclusion methods:

- a. Check if the distance between the reading head and the magnetic scale tape is too far. Refer to “[Adaptive Adjustment of Installation Spacing](#)”.
- b. Whether the reading head has exceeded the stroke
- c. Whether the magnetic scale tape is off d. Refer to “[Installation Introduction](#)”

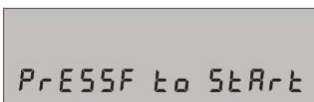


B. The screen appears “SEnSor - -

disconn” Possible cause: There is no signal in the reading head.

Exclusion methods:

- a. Check the 8pin connector installation (behind the PT08 back panel)
- b. Reading head disconnection (need to change the new reading head with line)
- c. Remove the battery and wait for about 10 seconds before loading it.



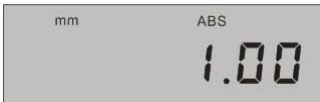
C. The screen appears “PrESSF to start Setup”

Possible cause: bad signal in the reading head

Exclusion methods:



- a. Press button once
- b. Refer to "Adaptive Adjustment of Installation Spacing"
- c. The wire is pressed, resulting in loose contact.
- d. Replace the reading head and cable

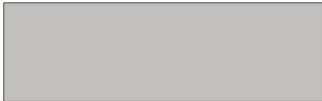


D. When moving the reading head, the screen only appears bounce of about 0~1.00mm.

Possible cause: bad signal in the reading head

Exclusion methods:

- a. The head is disconnected or has poor contact
- b. The reading head is bumped or damaged
- c. Renew the head and cable



E. The screen is not displayed at all.

Possible cause: The dry battery has no power.

Exclusion method:

Replace the battery (refer to "How to replace the battery")



F. The screen appears  symbol

Possible cause: Battery is low.

Exclusion methods:

- a. Replace the battery:

- b. Please replace the battery as soon as possible, PT08 may be unable to memorize data due to power failure or cause dimensions error
- c. See page 29 for how to replace the battery.



G. The screen appears to be slightly bright or flickering.

Possible cause: Indicates that the battery power is low

Exclusion methods:

- a. A new battery must be replaced
- b. Refer to "[how to replace the battery](#)"
- c. Failure to replace may result in dimensional error



H. "Origin" or other English words appear on the screen.

Possible cause: The parameter has been entered.

Exclusion method:





Press button.



I. "0" or other values appear on the screen and flash.

Possible cause: The parameter setting has been entered.

Exclusion methods:


Press  button at first, and then  button.



J. "0.00°" appears on the screen and there is no value.

Possible cause: entered the angle mode

Exclusion methods:

Press the  button to switch between mm/inch/angle.

12. How to replace the battery

The PT08 is used in parallel with two No. 5 batteries. When the symbol



appears on the LCD, it means that the battery is low. You need to replace the battery.

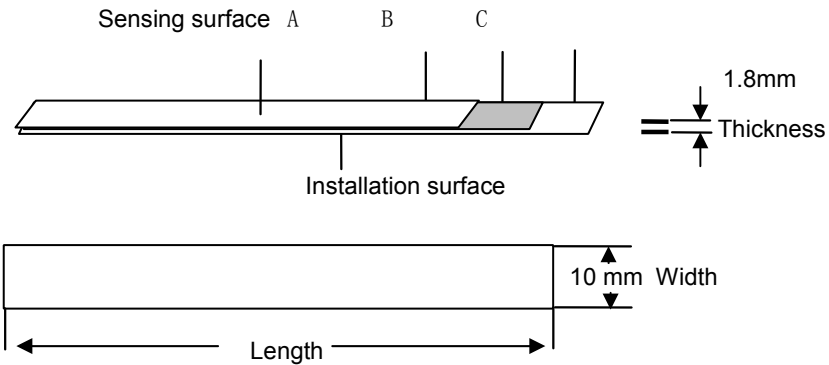
It is recommended to change the battery one by one. Do not remove 2 batteries at the same time. Avoid that the original setting data will disappear due to power failure when the two old batteries are removed at the same. (Only the current values will disappear, not the other set values)

※ Note:

1. If the data is missing (current value), please refer to “Current Value Calibration”.
2. Battery specifications: Two No.5 batteries 1.5V DC AA type.

13. Installation introduction

The magnetic tape consists of three parts:



A. To ensure the flexibility of installation and transportation, it should also be a magnetized steel strip. After installation, the part is attached to the surface of the magnetic tape to protect the tape from damage.

B. Scale part of highly flexible magnetic tape.

C. The non-magnetic mounting surface strip (C) makes the tape (B) free from external magnetic perturbation and avoids minor damage during installation. Part (B) and (C) have been attached at the factory. Please peel off the (C) double-sided tape on the machine mounting slot during actual installation.

D. The three-layer tape has a combined height of 1.8 mm and a width of 10 mm.

Pay attention to the surface of the machine when installing:

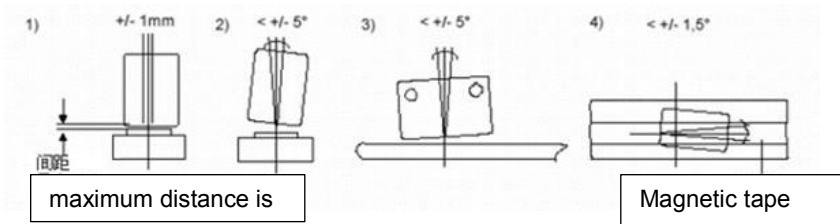
- Pasted surface: The tape needs to be attached to the surface of a clean, flat and dry machine. The best solvent for cleaning the machine is 50% alcohol.
- Pasting: Stable pasting is directly dependent on good surface contact.
- Pasting temperature: The best pasting temperature is 21 °C to 38°C. Avoid sticking when the surface temperature is below 10°C, because in this case, the adhesive becomes hard and it is difficult to ensure the sticking effect. After proper pasting, even the stability below 0 °C can be guaranteed. The final effect of the paste generally surface 72 hours after the paste at 21 °C.

Cable:

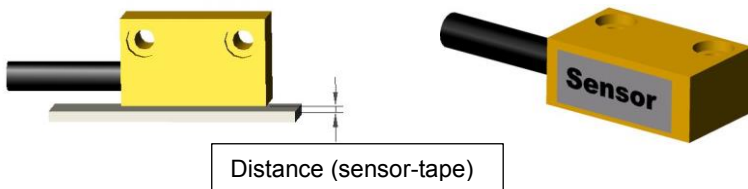
- The bend diameter must be bigger than 50mm.
- Keep away from the motor and the wires and electromagnetic switches which generate the magnetic field.
- If you cannot keep away from the power cord, avoid parallel to the power cord.

Reading head:

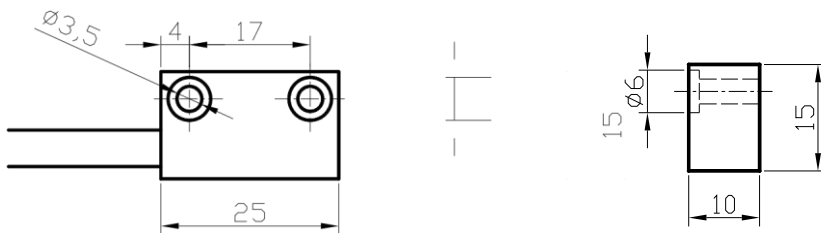
- The error tolerance of the magnetic scale reading head when installing.
- Pay attention to the sensor position when installing the reading head.



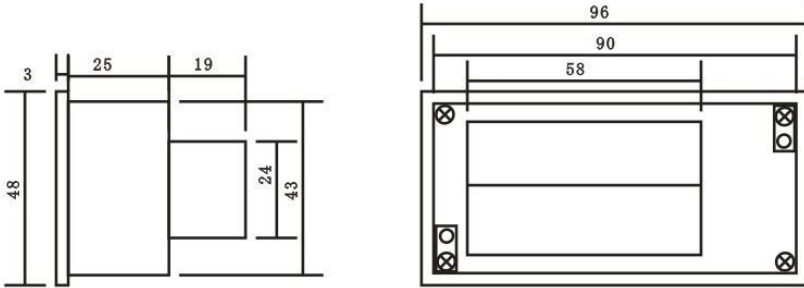
The standard distance between the reading head and the tape is 1mm.



※The word "Sensor" is attached to the tape under the reading head.

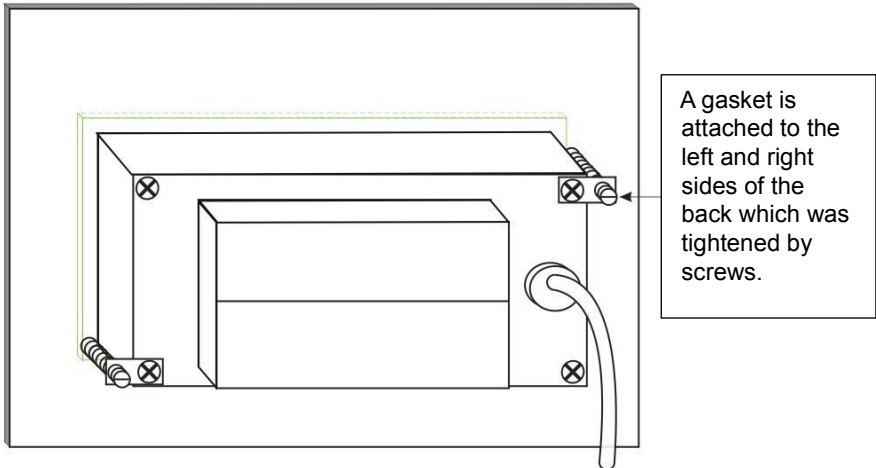


14. PT08 exterior dimensioned drawing



(Unit: mm)

Use the control box panel as an embedded fixed reference picture



※Note: Dimension of holes 92W×44H (mm)