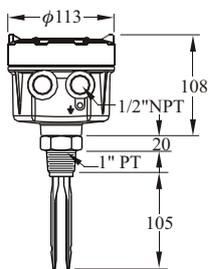
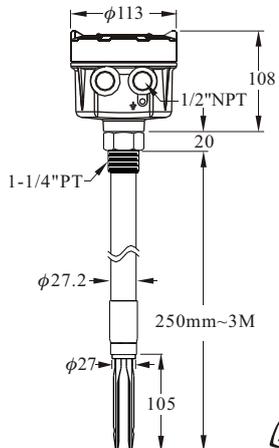
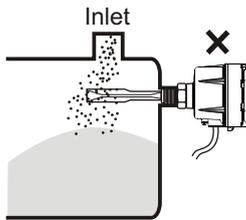


SPECIFICATION

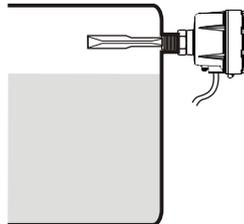
Dimensions (Unit:mm)	 <div style="text-align: right;">   </div>	 <div style="text-align: right;">   </div>
Model No.	SC1740 【 Standard Type 】	SC1741 【 Tuning Fork Ultra Extension Type 】
Level Sensor Housing	Aluminum / NEPSI Ex d IIC T3~T6 /  II 2G Ex d IIB T4	
Probe Construction	316L	
Mounting	1"PT	1-1/4"PT
Conduit	1/2"NPT × 2	
Max. Vertical load on rod.	177in.Lbs(20Nm)	
Operating Pressure.	-1~600PSI (40BAR)	
Power Supply	20~250,50/60Hz Vac/Vdc	
Power Consumption	10VA	
Operating Temp. In Ambient Air	-40°C~60°C	
Operating Temp. In Bin	-40°C~130°C	
Signal Output	Relay, SPDT, 3A/250Vac/ 28Vdc, 1 set or 2 set SSR(MOSFET) 400mA/60 Vac/ Vdc, 1 set or 2 set	
Min. material density sensed	Solid: ≥0.07g/cm ³ , Liquid: ≥0.7g/cm ³	
Time Delay	0.6 Second / Operate; 1~3 Seconds / Reset	
Vibrating Frequency.	350~370Hz	
Selectable Fail-safe	Hi./ Lo.	
Selectable Sensitivity	Hi./ Lo.	

INSTALLATION FOR TUNING FORK

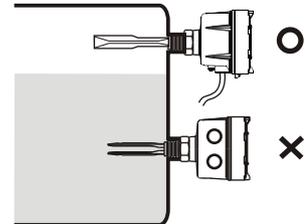
1. Can be applied for high viscosity fluid and power
Do not install near around material inlet.



2. Wiring port faces downward recommended.

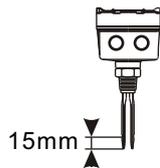


3. Consistence of the wiring port direction and always in downward direction for multi-tuning fork installation.

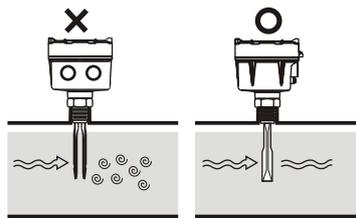


Vertical Installation:

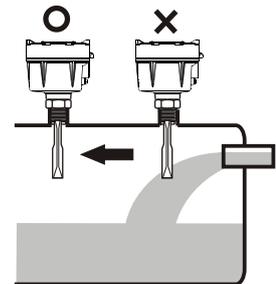
1. Depends on the sensitivity tuning, user should note the switching point is triggered around 15mm from the tip of fork.



3. Consistence of the wiring port direction for multi-tuning fork installation

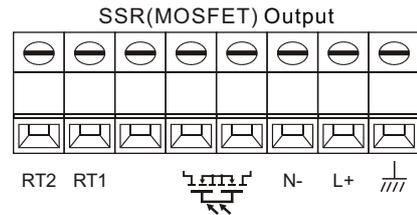
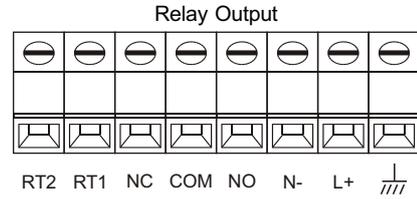
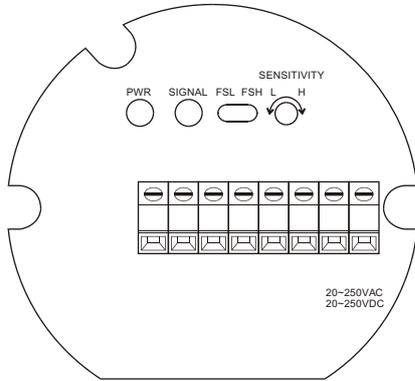


3. Do not install near material inlet.



TERMINAL / SENSITIVITY ADJUSTMENT (SPDT TYPE)

SC1400X, SC1410X, SC1420X, SC1540X, SC1600X, SC1740X, SC1741X



Terminal Function

- L+, N-: Power Supply
- NC, COM, No: Relay Output
- RT1, RT2: Remote-Test
- \perp : Ground Connection
- \perp : SSR(MOSFET) Output

Fail-Safe High / Low Protection

FSH (Fail-Safe High) Protection:

Switch to FSH mode.

Normal Status: The signal lamp is on. It means that the tuning fork switch does not sense the material and the relay is conductive.

Failure: When the power shuts down, the signal lamp is off. It means that the tuning fork switch is voided and the relay is not conductive.

FSL (Fail-Safe Low) Protection:

Switch to FSL mode.

Normal Status: The signal lamp is on. The tuning fork switch senses the material and the relay is conductive.

Failure: When the power shuts down, the signal lamp is off. The tuning fork switch is voided and the relay is not conductive.

Level	FSL		FSH	
Contact Form				
Indication				
Status	Fail	Normal	Normal	Fail

Panel Function

- PWR: Power Supply (Green Light)
- SIGNAL: Output Indication (Red Light)
- FSH: Power On. The signal lamp is on and the relay is conductive. While the tuning fork switch senses the material, the signal lamp is off and relay is not conductive.
- FSL: Power On. The signal lamp is off and the relay is not conductive. While the tuning fork switch senses the material, the signal lamp is on and relay is conductive.
- SENSITIVITY L: Low Sensitivity
- SENSITIVITY H: High Sensitivity

Sensitivity Adjustment

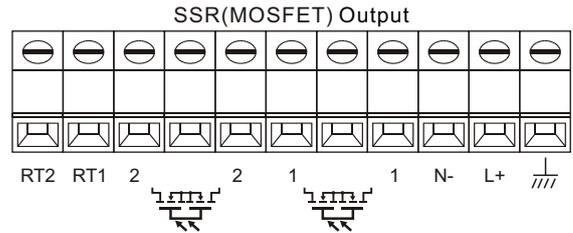
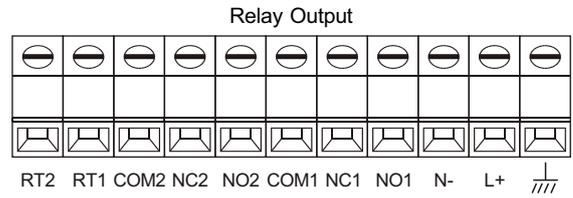
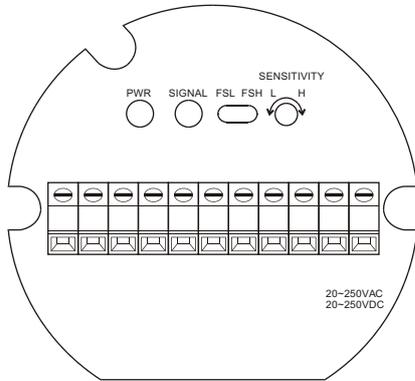
The SENSITIVITY is located on the right side of the panel. The user is able to do the minor adjustment by the screw driver. If it turns to H position clockwise, the sensitivity increases; if it turns to L position anti-clockwise, the sensitivity decreases. The sensitivity is originally set at max. value. The switching point is at 15mm from tip of tuning fork switch.

The switching point position will be changed by the sensitivity value. If the sensitivity adjusts to lower value, the switching point position is moving backward; if the sensitivity adjusts to high value, the switching point position is moving forward. The changing range of switching point is about 60mm.

For example, if the switching point needs to be moved backward by 30mm, the user needs to adjust SENSITIVITY anti-clockwise by 10 turns. In general case, it is no need for sensitivity adjustment.

TERMINAL / SENSITIVITY ADJUSTMENT (DPDT TYPE)

SC1400X, SC1410X, SC1420X, SC1540X, SC1600X, SC1740X, SC1741X



Terminal Function

- L+, N-: Power Supply
- NC1, COM1, NO1: Relay Output
- NC2, COM2, NO2: Relay Output
- RT1, RT2: Remote-Test
- : Ground Connection
- : 1st SSR(MOSFET) Output
- : 2nd SSR(MOSFET) Output

Fail-Safe High / Low Protection

FSH (Fail-Safe High) Protection:

Switch to FSH mode.

Normal Status: The signal lamp is on. It means that the tuning fork switch does not sense the material and the relay is conductive.

Failure: When the power shuts down, the signal lamp is off. It means that the tuning fork switch is voided and the relay is not conductive.

FSL (Fail-Safe Low) Protection:

Switch to FSL mode.

Normal Status: The signal lamp is on. The tuning fork switch senses the material and the relay is conductive.

Failure: When the power shuts down, the signal lamp is off. The tuning fork switch is voided and the relay is not conductive.

Level	FSL		FSH	
Contact Form				
Indication				
Status	Fail	Normal	Normal	Fail

Panel Function

- PWR: Power Supply (Green Light)
- SIGNAL: Output Indication (Red Light)
- FSH: Power On. The signal lamp is on and the relay is conductive. While the tuning fork switch senses the material, the signal lamp is off and relay is not conductive.
- FSL: Power On. The signal lamp is off and the relay is not conductive. While the tuning fork switch senses the material, the signal lamp is on and relay is conductive.
- SENSITIVITY L: Low Sensitivity
- SENSITIVITY H: High Sensitivity

Sensitivity Adjustment

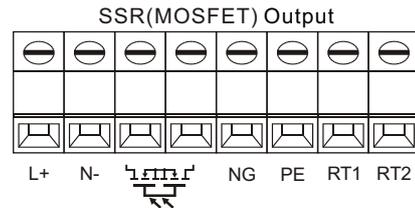
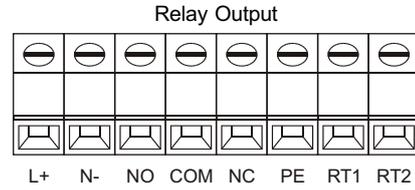
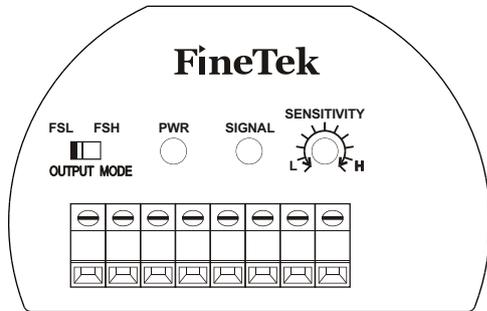
The SENSITIVITY is located on the right side of the panel. The user is able to do the minor adjustment by the screw driver. If it turns to H position clockwise, the sensitivity increases; if it turns to L position anti-clockwise, the sensitivity decreases. The sensitivity is originally set at max. value. The switching point is at 15mm from tip of tuning fork switch.

The switching point position will be changed by the sensitivity value. If the sensitivity adjusts to lower value, the switching point position is moving backward; if the sensitivity adjusts to high value, the switching point position is moving forward. The changing range of switching point is about 60mm.

For example, if the switching point needs to be moved backward by 30mm, the user needs to adjust SENSITIVITY anti-clockwise by 10 turns. In general case, it is no need for sensitivity adjustment.

TERMINAL / SENSITIVITY ADJUSTMENT (MULTI-FUNCTION TYPE)

SC3400X, SC3410X, SC3420X, SC3450X



Terminal Function

- L+, N-: Power Supply
- NC, COM, No: Relay Output
- RT1, RT2: Remote-Test
- \perp : Ground Connection
- : SSR(MOSFET) Output

Fail-Safe High / Low Protection

FSH (Fail-Safe High) Protection:

Switch to FSH mode.

Normal Status: The signal lamp is on. It means that the tuning fork switch does not sense the material and the relay is conductive.

Failure: When the power shuts down, the signal lamp is off. It means that the tuning fork switch is voided and the relay is not conductive.

FSL (Fail-Safe Low) Protection:

Switch to FSL mode.

Normal Status: The signal lamp is on. The tuning fork switch senses the material and the relay is conductive.

Failure: When the power shuts down, the signal lamp is off. The tuning fork switch is voided and the relay is not conductive.

Level	FSL		FSH	
Contact Form				
Indication				
Status	Fail	Normal	Normal	Fail

Panel Function

- PWR: Power Supply (Green Light)
- SIGNAL: Output Indication (Red Light)
- FSH: Power On. The signal lamp is on and the relay is conductive. While the tuning fork switch senses the material, the signal lamp is off and relay is not conductive.
- FSL: Power On. The signal lamp is off and the relay is not conductive. While the tuning fork switch senses the material, the signal lamp is on and relay is conductive.
- SENSITIVITY L: Low Sensitivity
- SENSITIVITY H: High Sensitivity

Sensitivity Adjustment

The SENSITIVITY is located on the right side of the panel. The user is able to do the minor adjustment by the screw driver. If it turns to H position clockwise, the sensitivity increases; if it turns to L position anti-clockwise, the sensitivity decreases. The sensitivity is originally set at max. value. The switching point is at 15mm from tip of tuning fork switch.

The switching point position will be changed by the sensitivity value. If the sensitivity adjusts to lower value, the switching point position is moving backward; if the sensitivity adjusts to high value, the switching point position is moving forward. The changing range of switching point is about 60mm.

For example, if the switching point needs to be moved backward by 30mm, the user needs to adjust SENSITIVITY anti-clockwise by 10 turns. In general case, it is no need for sensitivity adjustment.

WIRING DIAGRAM DETAILS

SC240X (Two wires) wiring

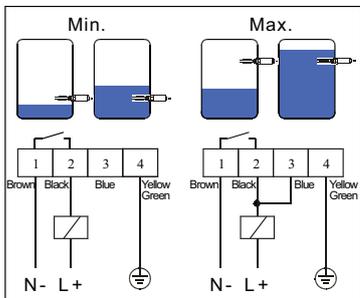
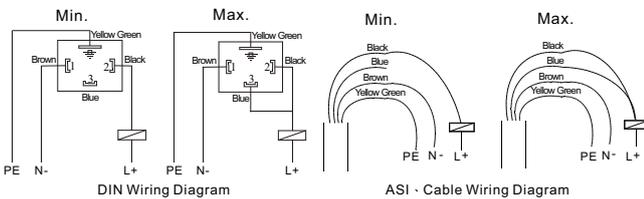


Figure 1 Two wires wiring



Wiring

Power can be AC/DC switching. Two wires are connected with terminals (L+/N-) as in Figure 1.

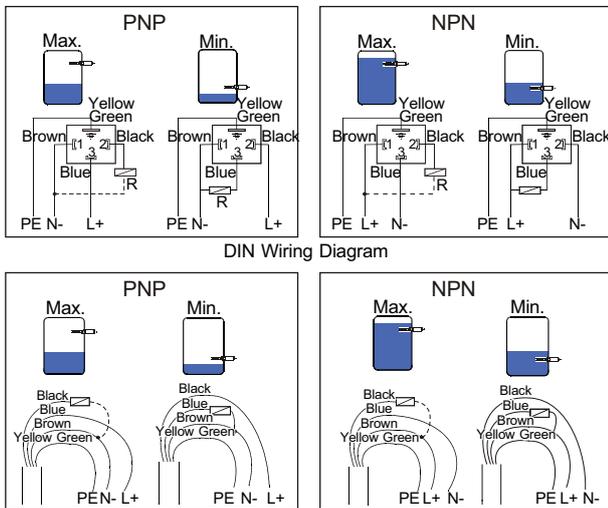
Low (Min.) Mode:

Pin 1 (Brown) is connected to N-. Pin 2 (Black) is connected to L+ with relay. Pin 4 (Yellow Green) connects to tank ground.

High (Max.) mode:

Pin 1 (Brown) is connected to N-. Pin 3 is connected to pin 2 (Black) to L+ with Relay. Pin 4 (Yellow Green) connects to tank ground.

SC240X (Two wires) wiring



DIN Wiring Diagram

ASI Cable Wiring Diagram

Figure 2 PNP / NPN Output Wiring Diagram

Wiring

Power supply is for DC only. Output is PNP / NPN. Please see Figure 2.

PNP wiring :

High(Max.) Mode:

Pin 1(Brown) connects to N-. Pin 3 (Blue) connects to L+. To output, it is pin 2. (Black) connects to N- with relay. Pin 4 (Yellow Green) connects to tank ground.

Low(Min.)Mode:

Pin 1 (Brown) connects to N-. Pin 2 (Black) connects to L+. To output, Pin 3 (Blue) connects to N- with relay. Pin 4 (Yellow Green) should contact to tank ground.

NPN wiring :

High(Max.) Mode:

Pin 1 (Brown) connects to L+. Pin 3 (Blue) connects to N-. To output, Pin 2 (Black) connects to L+ with relay. Pin 4(Yellow Green) should contact to tank ground.

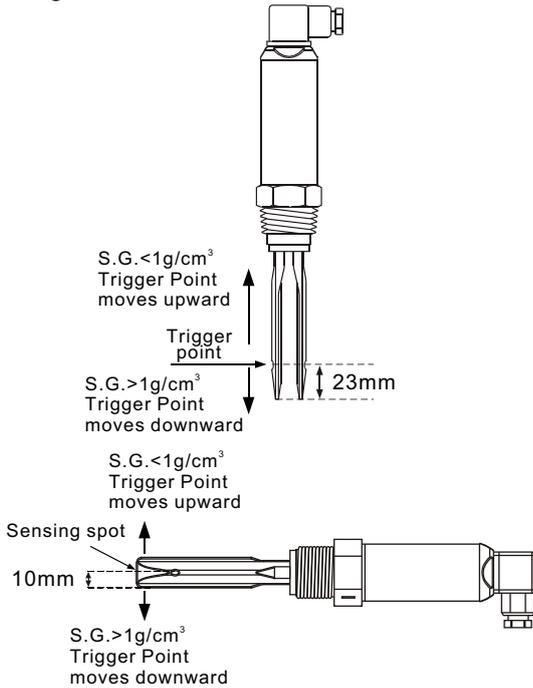
Low(Min.)Mode:

Pin1 (Brown) connects to L+. Pin 2 (Black) connects to N-. To output Pin 3 (Blue) connects to L+ with relay. Pin 4 (Yellow Green) should contact to tank ground.

TUNING AND INDICATION DETAILS

Fork Trigger Point

SC2409 fork trigger point is shown as Figure 3 below. The testing medium is water (S.G.=1 g/cm³), and its trigger point is about 23mm from the fork tip. If testing medium with S.G (specific gravity) lower than 1g/cm³ (water), the trigger point would increase. Similarly, the trigger point will downward while the S.G is large than water.



Output Status for Relay

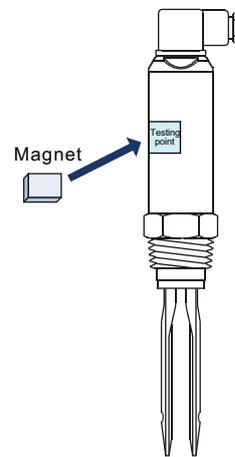
Low (Min.) Mode: Tuning fork switch will be active after 3 seconds while power on. Relay is on NO status and red LED indication is off. When tuning fork is covered by testing medium, the vibration will stop and relay becomes NC status. Red LED indication then is on.

High(Max.) Mode: Tuning fork switch will be active after 3 seconds while the power on. Relay is on NC status and red LED indication is on. When tuning fork covered by testing medium, the vibration stops and relay becomes NO status. Red LED indication is on.

	Min. Mode		Max. Mode	
Level				
Contactless electronic switch	Switch open	Switch closed	Switch closed	Switch open
Red LED				

Magnetic Test

After the switch has installed and power tested, magnetic switch can be performed accordingly. Output status will switch from status of NO. to NC. or NC to NO. and red LED would indicate the vibration status by on / off. When magnet is pulled away from the housing, red LED would return as default while fork continues to vibrate. By this verification, user can confirm the wiring and function are correct or not.



Output Status for PNP / NPN Transistor

Low(Min.) Mode : Tuning fork switch will be active after 3 seconds while power on. Output transistor is on NO status and red LED indication is off. When tuning fork covered by testing medium, vibration will stop and output transistor becomes NC status. Red LED indication is on.

High(Max.) Mode: Tuning fork switch will be active after 3 seconds while power on. Output transistor is on NC status and red LED indication is on. When tuning fork covered by testing medium, vibration will stop and output transistor becomes NO status. Red LED indication is off.

	Min. Mode		Max. Mode	
Level				
PNP/ NPN Output	Switch open	Switch closed	Switch closed	Switch open
Red LED				

ORDER INFORMATION

SC () ()

ORDER NO.

- 3400: Multi-Function Tuning Fork Standard Type
- 3410: Multi-Function Tuning Fork Extension Type
- 3420: Multi-Function Tuning Fork Ultra Extension Type
- 3440: Multi-Function Tuning Fork Corrosion Proof Type
- 3450: Multi-Function Tuning Fork Sanitary Type
- 1400: Tuning Fork Standard Type
- 1410: Tuning Fork Extension Type
- 1420: Tuning Fork Ultra Extension Type
- 1540: Tuning Fork Corrosion Proof Type
- 1600: Tuning Fork Sanitary Type
- 1740: Explosion Proof Tuning Fork Standard Type
- 1741: Explosion Proof Tuning Fork Ultra Extension Type

POWER & OUTPUT MODULE

- 20~250Vac/ Vdc, 50/60Hz R: Relay O/P-EuroType
 N: SSR(MOSFET) EuroType
 Q: Relay O/P x 2 -EuroType
 M: SSR(MOSFET) x 2 -EuroType

※ Multion Funtion version can choose R ∙ N only

MATERIAL (Wetted Part)

- 0: SUS304 6: SUS316 L: SUS316L

CONNECTION

Dimension	Specification
D---1"(25A)	M---5kg/cm ² Y---PN 25
3---1-1/4"(32A)	N---10kg/cm ² Z---PN 40
E---1-1/2"(40A)	O---150 Lbs S---others
F---2"(50A)	P---300 Lbs 9---Sanitary
G---2-1/2"(65A)	Q---PT
H---3"(80A)	R---PF(G)
I---4"(100A)	T---BSP
J---5"(125A)	U---NPT
K---6"(150A)	W---PN 10
S---others	X---PN 16

LENGTH (L) (UNIT: mm)

0500: below 500mm

1000: 501~1000mm

1500: 1001~1500mm

∴

※ 500mm per Unit

※ Use English letter as first code for probe length over 10m.
 A150 represents 15m, A200 represents 20m

BEFORE YOU ORDER

1. Please affirm the voltage.
2. Please affirm the mounting positions.
3. Please affirm the material specific gravity (S.G.) value.
4. Please affirm whether any bridge block or vibrating motor are attached onto the silo wall.

Tolerance of the total product length is ±5mm

Characteristics, specifications and dimensions are subject to change without notice.

Please contact your nearest distributing office for further information.

ORDER INFORMATION

SC 0 (T) -

ORDER NO. _____

24: 100mm

POWER & OUTPUT MODULE _____

0: 20~250Vac / Vdc 2 wire Contactless electronic switch.
 1: 12~55 Vdc 3 wire PNP/ NPN Output.

MATERIAL (Wetted Part) _____

0: SUS304 6: SUS316 L: SUS316L

MODEL _____

0: Standard

(High temp. 150°C) _____

ELECTRICAL CONNECTION _____

A: ASI(180°) B: CABLE(90°) C: CABLE D: Valve plug DIN43650

CONNECTION _____

Dimension	Specification	
D---1"(25A)	M---5kg/cm ²	X---PN16
E---1-1/2"(40A)	N---10kg/cm ²	Y---PN25
F---2"(50A)	O---150 Lbs	Z---PN40
G---2-1/2"(65A)	P---300 Lbs	S---Special
H---3"(80A)	Q---PT	
I---4"(100A)	R---PF(G)	
J---5"(125A)	T---BSP	
K---6"(150A)	U---NPT	
S---Special	W---PN10	

BEFORE YOU ORDER

1. Please affirm the voltage.
2. Please affirm the mounting positions.
3. Please affirm the material specific gravity (S.G.) value.
4. Please affirm whether any bridge block or vibrating motor are attached onto the silo wall.

Tolerance of the total product length is ±5mm
 Characteristics, specifications and dimensions are subject to change without notice.
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