

PRINCIPLE

The SE series operating principle is simple. A unit is usually located through a bin wall at the top, middle or low level of a bin. During normal operation (no material present) a synchronous motor rotates the paddle at 1 RPM. When this paddle rotation is impeded by material, surrounding the paddle, motor will stall and cause the Micro-switch to change state. (indicating an alarm or control)

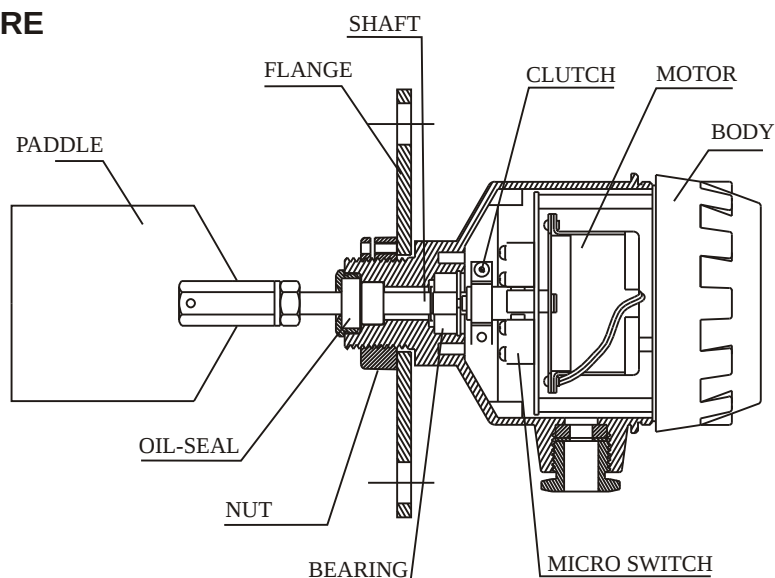
APPLICATIONS

Suitable for powdery producing & processing industries such as plastic, chemical, medical, forage, cement and fertilizer powders.

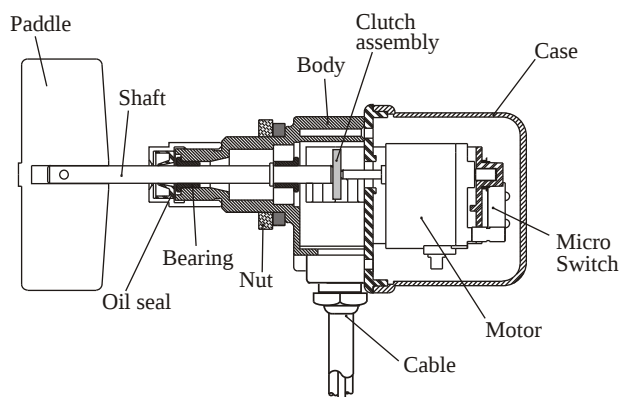
FEATURES

- Airtight sealing device, outdoor application is available.
- Unique sealing ring design, it can perform good dust protection to avoid the dust permeate into housing body along with the shaft.
- The torque force is adjustable.
- The performance of torsion is stable and reliable.
- If the rotary paddle bears an extra overload, the motor will be appeared slide to prevent the inside mechanism damaged.
- It is rationally designed, the inside mechanisms are easily tore down for checking, maintenance and replacement. It doesn't necessary to remove the complete set from the tank.
- Very suitable for small tank and material of low density

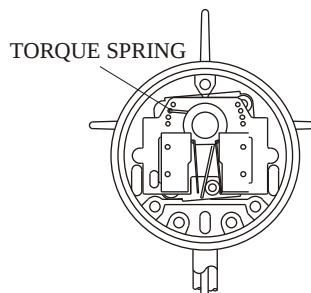
STRUCTURE



STANDARD TYPE



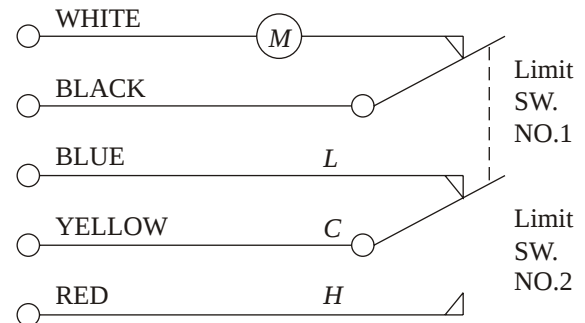
MINI TYPE



WORKING PRINCIPLE & TORQUE ADJUSTING

CONTROL SWITCH DEVICES WORKING PRINCIPLE

1. When the synchronous motor is turning. It means that material isn't touching the paddles, the (C.L) stands for "terminal point connected".
2. When material is touching the paddles, (C.L) stands for "cut-off", (C.H) stands for "connected" the synchronous motor's current is to be cut off.
3. When the material drops away from the paddles, the synchronous motor runs again and the terminal point is connected, (C.L) show that the cycle has begun again.

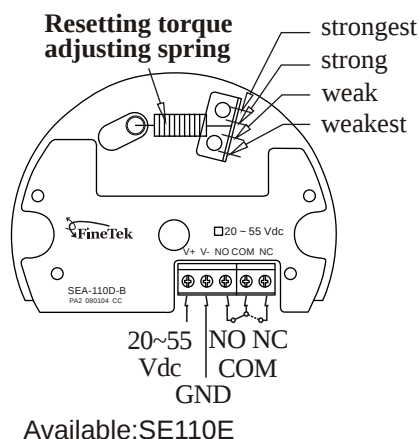
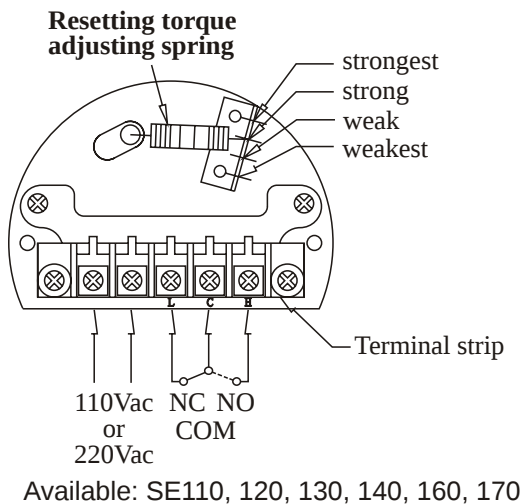


TORQUE ADJUSTING MECHANISM

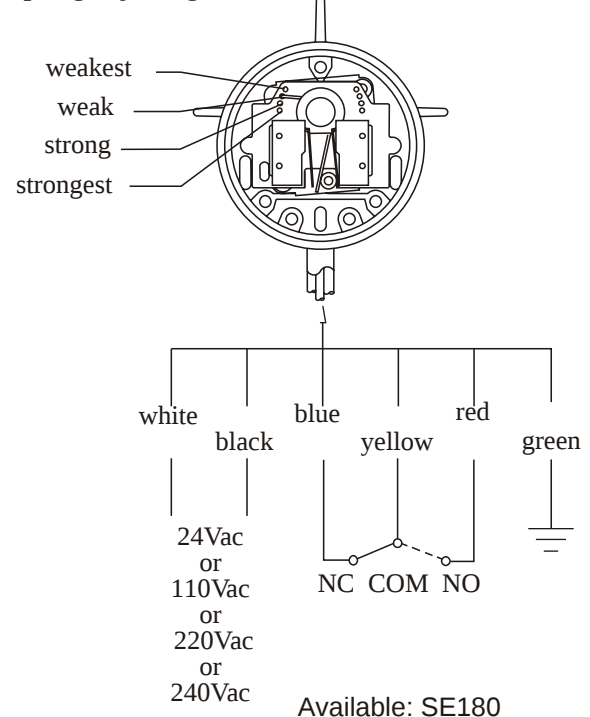
The torque spring is applied to adjust the shaft output torque force, which is set at "weak" position at factory side, it is adjustable as per customer side target measuring material S.G. (special gravity), if the measured material with higher S.G., please try to release it to more stronger spring force position step until you found the proper orientation. The paddle sensitivity will

be interacted by more weaker, otherwise, the low S.G. material will release torque spring to the weakest position, which will cause the paddle performance to be more sensitive.

- Do not tamper with the spring as it may cause the Rotary Paddle to be malfunction.



spring adjusting hole



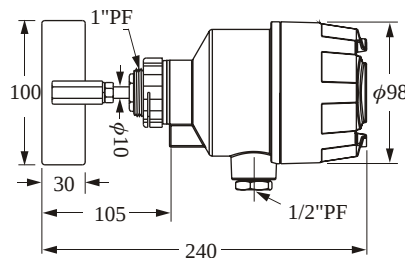
STANDARD SPECIFICATION

- **Power source** : (A)110Vac,(B)220Vac,(C)240Vac,
(D)24Vac,(E)24Vdc, 50/60Hz
- **Power consumption** : 3W, 11W(DC24V)
- **Contact capacity** : SPDT, 5A/250Vac
- **Rotary speed** : 1 R.P.M.
- **Insulation test voltage** : 2500V
- **Torque** : 0.5 ~1.0 kg-cm
- **Connect** : 1"PF screw or JIS 2-1/2" × 5kg/cm² flange
- **Protection/ material** : IP65 / ADC-12
- **Conduit** : 1/2"PF
- **Specific gravity** : 0.5g/cm³ (30Lb/ft³)

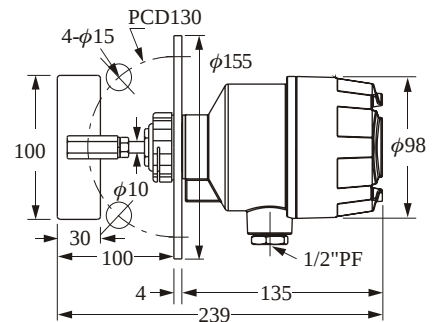
Order No. SE110A/B/C/D/E SCREW TYPE

- Horizontal mounting
- Temp. (-20°C ~ 70°C)
- Weight: 1.2 kg

SE110A/B/C/D/E



SE111A/B/C/D/E



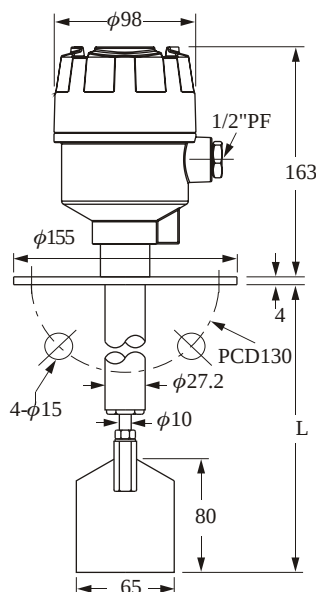
Order No. SE111A/B/C/D/E FLANGE TYPE

- Horizontal mounting
- Temp. (-20°C ~ 70°C)
- Weight: 1.7 kg

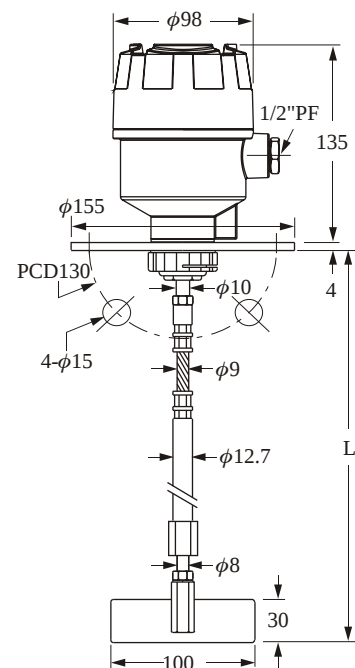
Order No. SE120A/B/C/D/E SHAFT PROTECTIVE TUBE TYPE

- Horizontal /Vertical mounting
- Temp. (-20°C ~ 70°C)
- Weight: 1.2 kg
- The whole section from flange to paddle are made of SUS 304
- Standard Length (option):
L--250mm (2.2 kg)
L--500mm (2.5 kg)
L--750mm (2.8 kg)
- Special length is made by order

SE120A/B/C/D/E



SE130A/B/C/D/E



Order No. SE130A/B/C/D/E SHAFT LENGTH ADJUSTABLE TYPE

- Vertical mounting
- Temp. (-20°C ~ 70°C)
- Standard Length (option):
L-- 450 ~650mm (2.5 kg)
L-- 660 ~1000mm (2.8 kg)
L-- 760 ~1200mm (3.0 kg)
- Special length is made by order

STANDARD SPECIFICATION

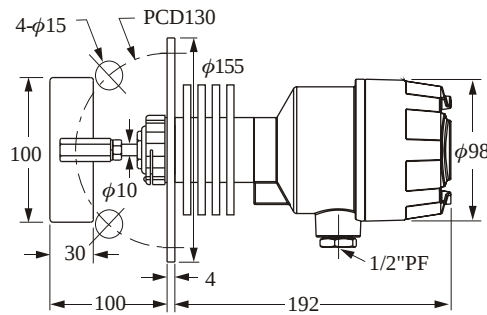
- **Power source** : (A)110Vac,(B)220Vac,(C)240Vac,
(D)24Vac,(E)24Vdc, 50/60Hz
- **Power consumption** : 3W, 11W(DC24V)
- **Contact capacity** : SPDT, 5A/250Vac
- **Rotary speed** : 1 R.P.M.
- **Insulation test voltage** : 2500V

- **Torque** : 0.5 ~1.0 kg-cm
- **Connect** : 1"PF screw or JIS 2-1/2" × 5kg/cm² flange
- **Protection/ material** : IP65 / ADC-12
- **Conduit** : 1/2"PF
- **Specific gravity** : 0.5g/cm³ (30Lb/ft³)

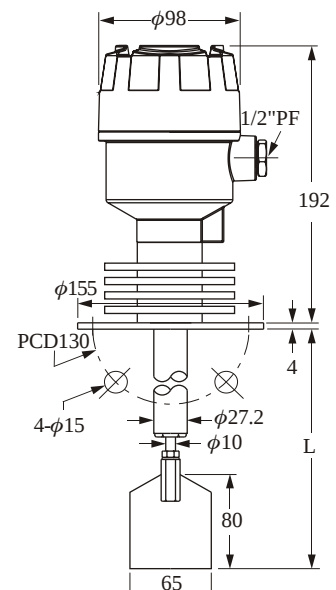
Order No. SE140A/B/C/D/E HI-TEMP TYPE

- Horizontal mounting
- Temp. (-20°C ~ 200°C)
- Weight: 2.1 kg

SE140A/B/C/D/E



SE141A/B/C/D/E



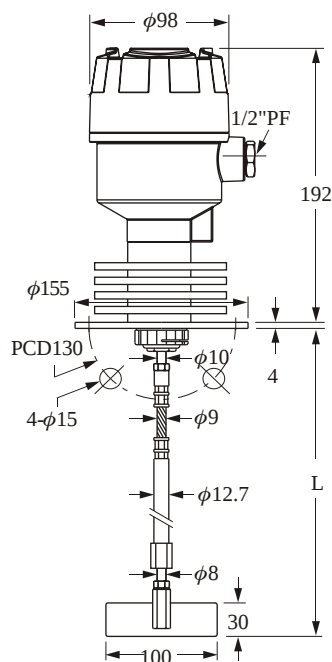
Order No. SE141A/B/C/D/E HI-TEMP SHAFT PROTECTIVE TUBE TYPE

- Horizontal /Vertical mounting
- Temp. (-20°C ~ 200°C)
- The whole section from flange to paddle are made of SUS 304
- Standard Length (option):
L--250mm (2.6 kg)
L--500mm (2.9 kg)
L--750mm (3.2 kg)
- Special length is made by order

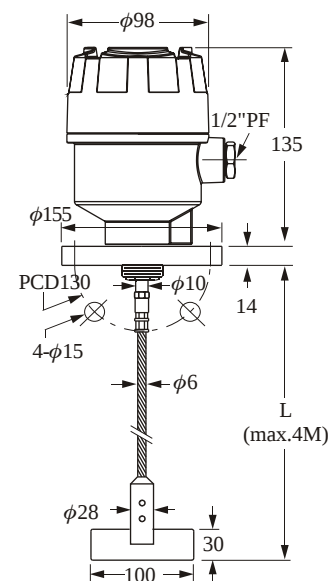
Order No. SE146A/B/C/D/E HI-TEMP SHAFT LENGTH ADJUSTABLE TYPE

- Vertical mounting
- Temp. (-20°C ~ 200°C)
- Standard Length (option):
L-- 450 ~650mm (3 kg)
L-- 660 ~1000mm (3.3 kg)
L-- 760 ~1200mm (3.5 kg)
- Special length is made by order

SE146A/B/C/D/E



SE160A/B/C/D/E



Order No. SE160A/B/C/D/E CABLE WIRE TYPE

- Vertical mounting
- Temp. (-20°C ~ 70°C)
- Standard Length (option):
L-- 450mm (2.5 kg)
L-- 650mm (2.8 kg)
L-- 750mm (3 kg)
- Special length is made by order

STANDARD SPECIFICATION

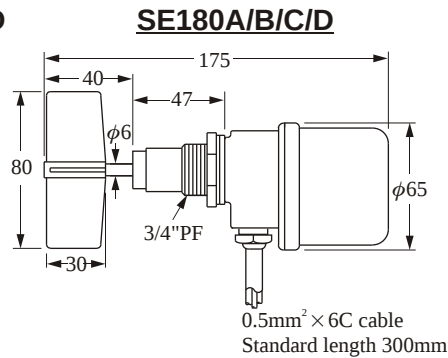
- **Power source** : (A)110Vac,(B)220Vac,(C)240Vac,
(D)24Vac, 50/60Hz
- **Power consumption** : 1.5W
- **Contact capacity** : 3A/250Vac
- **Rotary speed** : 1 R.P.M.
- **Protection/ material** : IP65 / PC

- **Temp.** : -20°C ~ 70°C
- **Cable length** : 30cm (available for custom length)
- **Torque** : 30 ~100 g-cm
- **Specific gravity** : 0.3g/cm³ (20Lb/ft³)

Order No. SE180A/B/C/D

CROSS-LIKE 4
BLADE PADDLE

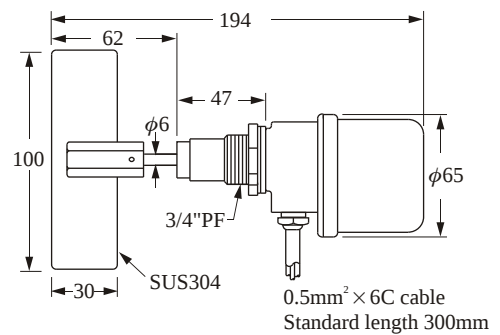
- Horizontal mounting
- Weight : 0.42 kg



Order No. SE180□CRI

RECTANGLE 100×30
SUS304 PADDLE

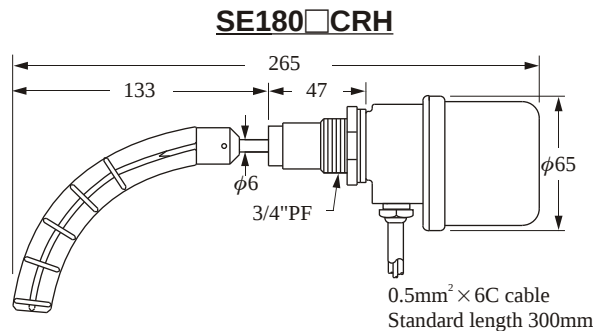
- Horizontal mounting
- Weight : 0.48 kg



Order No. SE180□CRH

SCIMITAR TYPE
PADDLE

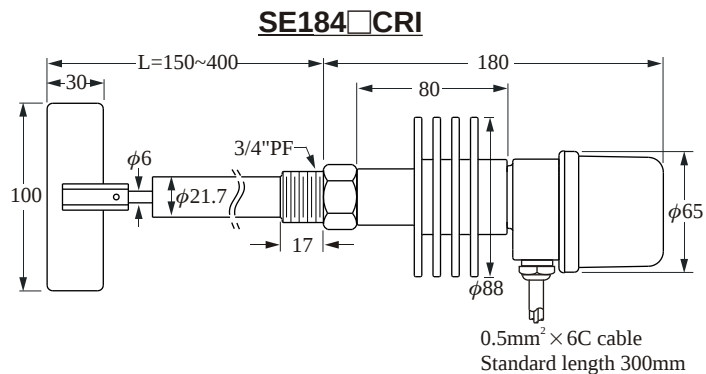
- Horizontal mounting
- Weight : 0.42 kg



Order No. SE184□CRI

HI-TEMP TYPE
SUS304 PADDLE

- Horizontal / Vertical mounting
- Temp. Max: 200°C



STANDARD SPECIFICATION

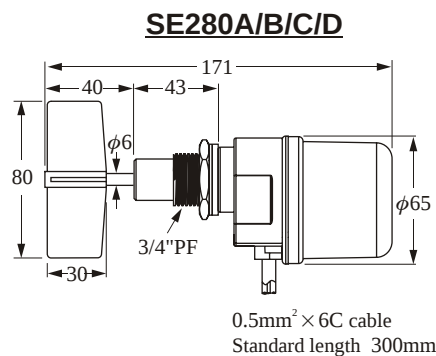
- **Power source** : (A)110Vac,(B)220Vac,(C)240Vac,
(D)24Vac, 50/60Hz
- **Power consumption** : 1.5W
- **Contact capacity** : 3A/250Vac
- **Rotary speed** : 1 R.P.M.
- **Protection/ material** : IP65 / PC

- **Temp.** : -20°C ~ 70°C
- **Cable length** : 30cm (available for custom length)
- **Torque** : 30 ~100 g-cm
- **Specific gravity** : 0.3g/cm³ (20Lb/ft³)

Order No. SE280A/B/C/D

CROSS-LIKE 4
BLADE PADDLE

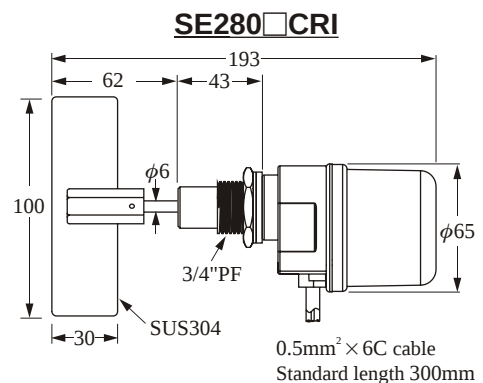
- Horizontal mounting
- Weight : 0.42 kg



Order No. SE280□CRI

RECTANGLE 100×30
SUS304 PADDLE

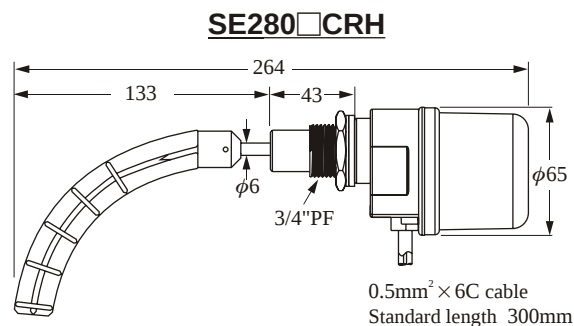
- Horizontal mounting
- Weight : 0.48 kg



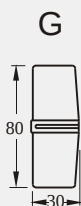
Order No. SE280□CRH

SCIMITAR TYPE
PADDLE

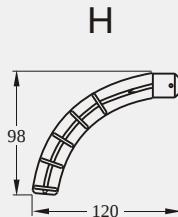
- Horizontal mounting
- Weight : 0.42 kg



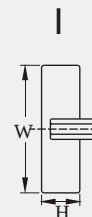
■ Paddle Introduction (Mini)



(G) Cross type paddle
material: PC



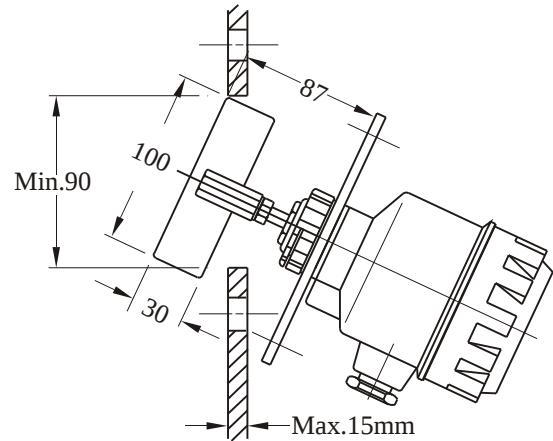
(H) Scimitar type paddle, directly
screwed through 3/4\"/>



(I) 100x30 (WxH)
Material: SUS304

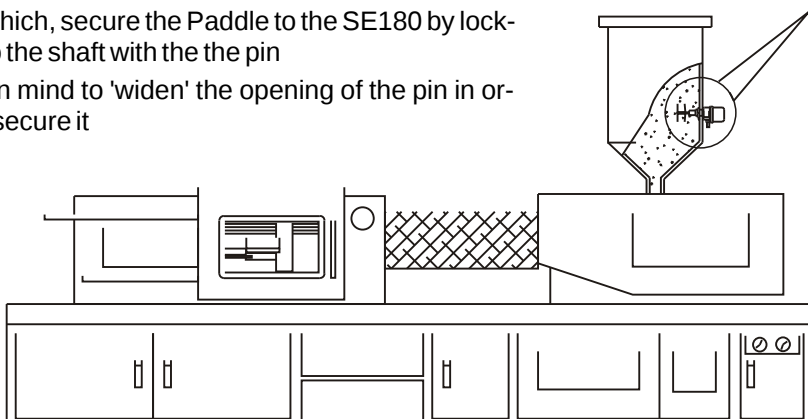
EXAMPLES OF MOUNTING TO TANK

The scimitar paddle penetrate through 3/4"PF inlet directly like illustrated drawing, then screw tightly.

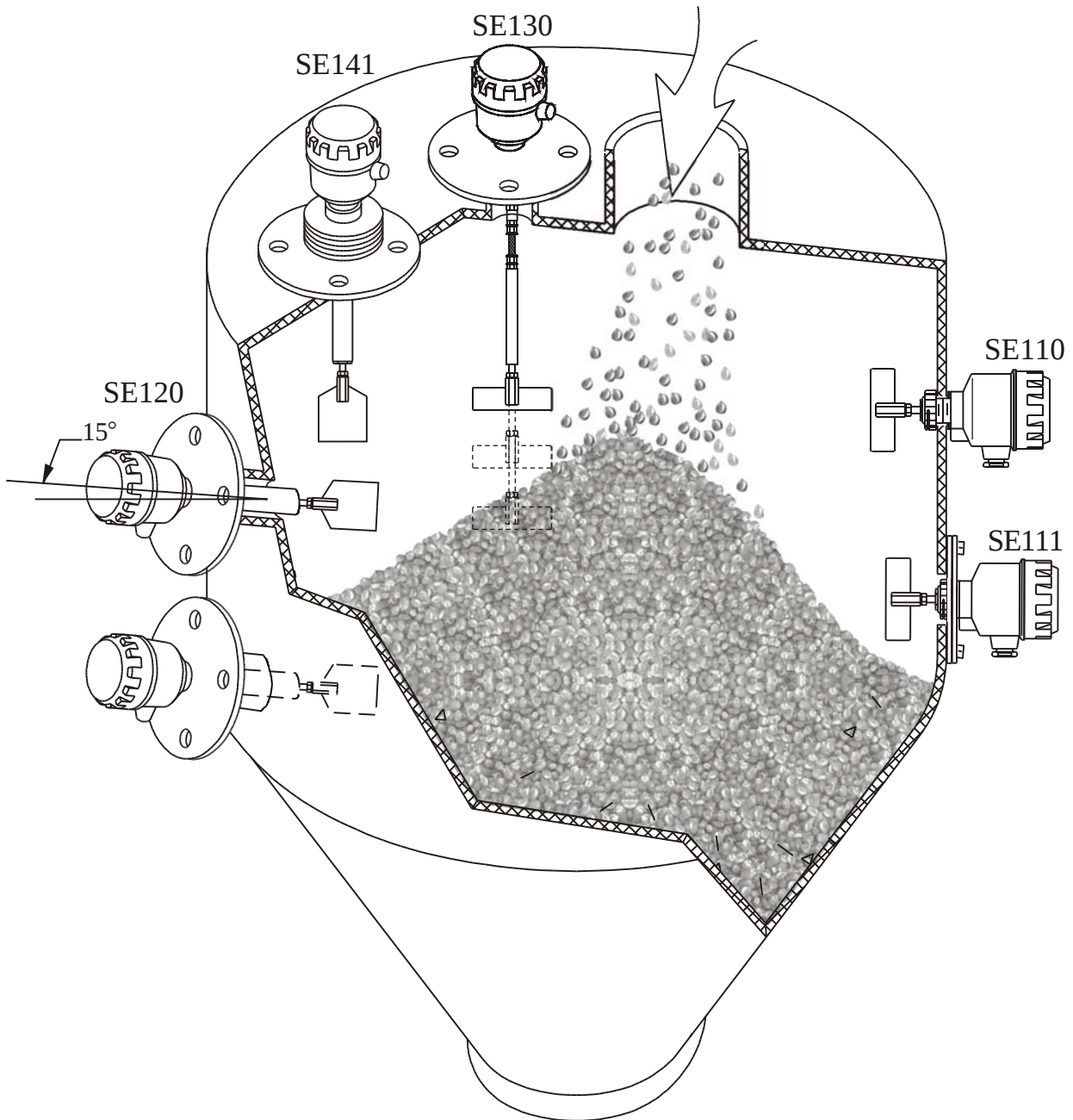


Steps to Install the Injection Molding Machine

-
- Technical drawing of a door handle assembly. The drawing shows a cross-section of the handle and the internal mechanism. The handle is a lever type, and the internal mechanism includes a lock cylinder and a lever. The drawing is labeled with 'A' and 'B' to indicate different parts of the assembly.



EXAMPLE



INSTALLATION NOTICES

1. Please side mount the sensor by inclined 15°~20° to decrease the material inflowing impact.
2. For High Temperature application whereby the temperature inside the tank is more than 70°C
Please use SE14□ Series.
3. SE110~SE140 on 1" connection pipe inlet, please apply scimitar type to screw directly.
4. SE130, SE146 family items are with flexible and extensible shaft.
5. Please ensure that the Cable Gland point downwards and the nut must be fastened to secure the device.

ORDER INFORMATION

Order No. SE ()

ORDER NO.

11□ : Standard type 14□ : Hi-temp type 28□ : Mini type
 120 : Shaft protective tube type 160 : Cable wire type
 130 : Shaft length adjustable type 18□ : Mini type

VOLTAGE

A : 110Vac B : 220Vac C : 240Vac D : 24Vac
 E : 24Vdc(SE11□/120/130/14□/160) 50/60Hz

MOUNTING

Size for flange or screw		Pressure range or other
C: 3/4"	I : 4"	M: 5kg/cm ²
D: 1"	J : 5"	N: 10kg/cm ²
E: 1-1/2"	K: 6"	O: 150 Lbs
F: 2"	S: Others	P: 300 Lbs
G: 2-1/2"	3: 1-1/4"	Q: PT
H: 3"		R: PF (G)
		T : BSP
		U: NPT
		S: Others

* SE110~SE160 series:
 The size of connecting screw is 1".

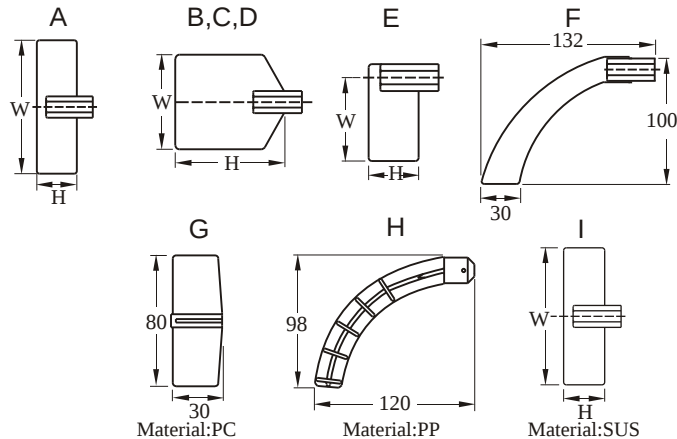
PADDLE SHAPES

SE110~SE170

A : 100 × 30 (W × H)
 B : 65 × 80 (W × H)
 C : 65 × 120 (W × H)
 D : 80 × 80 (W × H)
 E : 50 × 30 (W × H)
 F : Scimitar
 S : others - : None

SE180 (Mini paddle type)

G : Cross type paddle
 H : Scimitar type paddle
 I : 100x30 (WxH)



LENGTH (mm)

0500: 50cm (01~50)
1000: 100cm (51~100)
1500: 150cm (101~150)
 ※ 50cm per Unit

SE110~170 L: The distance from flange to paddle.
 Se180 L: Length of cable.
 The total length of item will be allowed a tolerance to ± 6mm.

* Order Notice

- Please make sure the Voltage 24Vac, 110Vac, 220Vac or 240Vac, 50/60 Hz.
- Please make sure the side or top mounting.
- Please make sure the material specific gravity (S.G.) value.
- Please make sure whether any bridge block or vibrating motor installed onto the tank wall.
 Please try to apply our item SA140 capacitance level sensor.
- Please make sure the rotary paddle size is available to enter into the flange inlet.

ENCLOSURE EXPLOSION PROOF

NEPSI PROOF No. GYJ06237 Ex d IIC T3~T6
PTB PROOF No. 05 ATEX 1029 Ex II 2G EEx d IIB T3~T6
Ex II 2D IP65 T3~T6

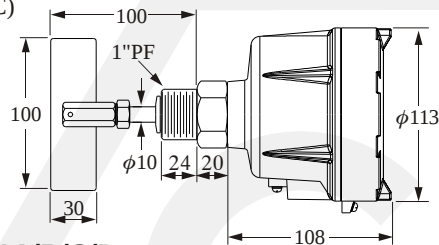
- Power source : (A)110Vac, (B)220Vac, (C)240Vac, 50/60Hz
- Power consumption : 3W
- Contact capacity : SPDT, 3A/250Vac
- Rotary speed : 1 R.P.M.
- Insulation test voltage : AC 1500V×1minute
- Torque : 0.5 ~1.0 kg-cm

- Connect : 1"PF screw or flange 1"~6"
2-1/2" × 5kg/cm² (std.)
- Enclosure material : AL Alloy, ADC-12
- Enclosure Protection : Ex d IIC T4~T6
- Conduit : 1/2" (std.) or 3/4"NPT
- Specific gravity : 0.5g/cm³ (30Lb/ft³)

Order No. SE170A/B/C/D

EXPLOSION PROOF SCREW TYPE

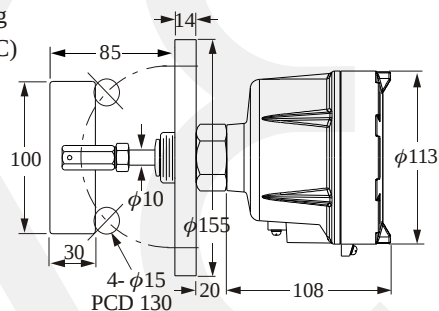
- Horizontal mounting
- Temp. (-20°C ~ 70°C)



Order No. SE171A/B/C/D

EXPLOSION PROOF FLANGE TYPE

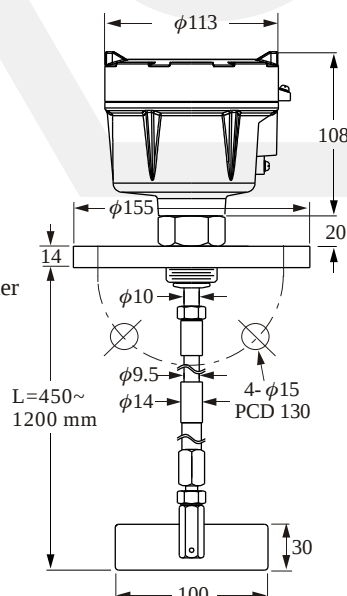
- Horizontal mounting
- Temp. (-20°C ~ 70°C)



Order No. SE173A/B/C/D

EXPLOSION PROOF SHAFT LENGTH ADJUSTABLE TYPE

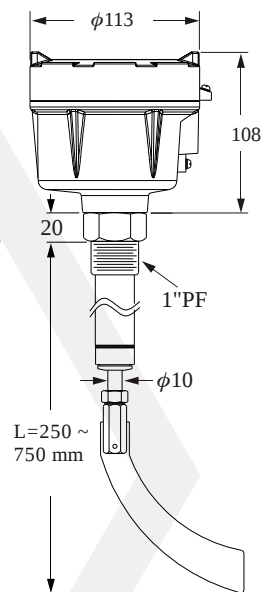
- Vertical mounting
- Temp. (-20°C ~ 70°C)
- Standard Length (option):
L-- 450 ~650mm
L-- 660 ~1000mm
L-- 760 ~1200mm
- Special length is made by order



Order No. SE172A/B/C/D

EXPLOSION PROOF SHAFT PROTECTIVE TUBE TYPE

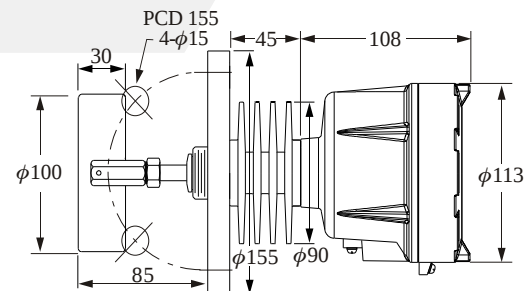
- Horizontal /Vertical mounting
- Temp. (-20°C ~ 70°C)
- Standard Length (option):
L-- 250mm
L-- 500mm
L-- 750mm
- Special length is made by order



Order No. SE174A/B/C/D

EXPLOSION PROOF HI-TEMP TYPE

- Horizontal mounting
- Temp. (-20°C ~ 200°C)



ENCLOSURE EXPLOSION PROOF

NEPSI PROOF No. GYJ06237 Ex d IIC T3~T6
PTB PROOF No. 05 ATEX 1029 Ⓜ II 2G EEx d IIB T3~T6
Ⓜ II 2D IP65 T3~T6

Order No. SE175A/B/C/D EXPLOSION PROOF HI-TEMP SHAFT PROTECTIVE TUBE TYPE

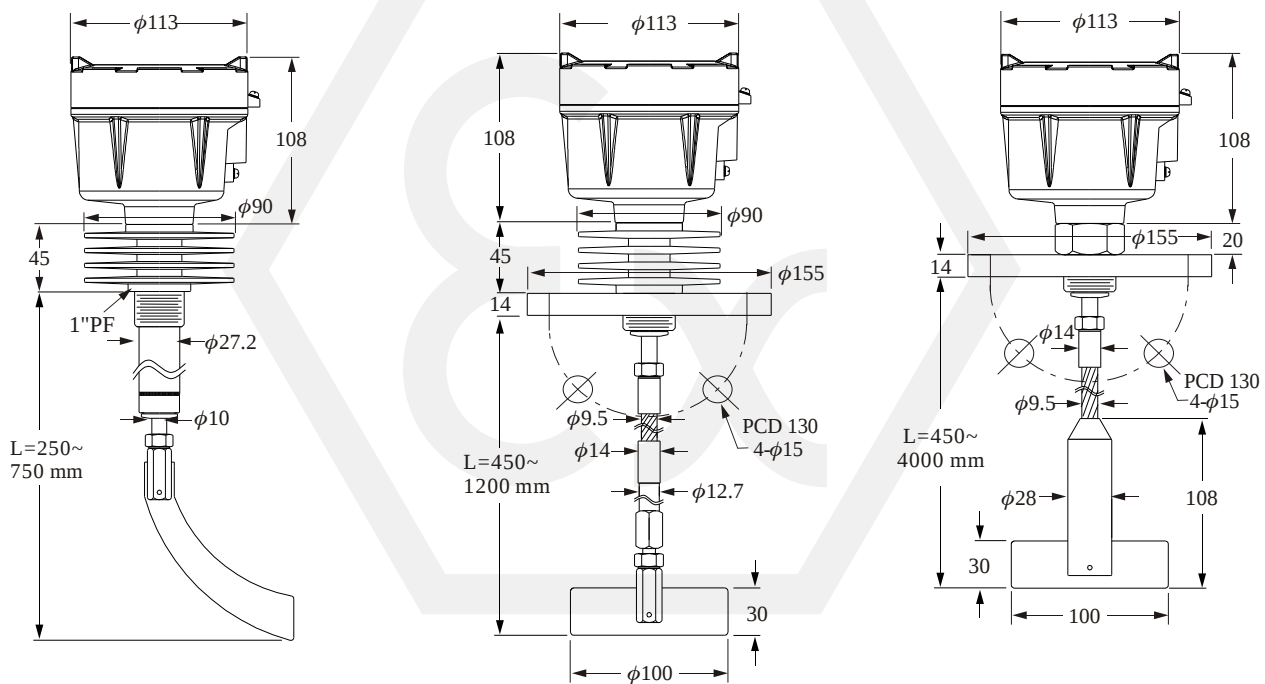
- Horizontal /Vertical mounting
- Temp. (-20°C ~ 200°C)
- Special length is made by order

Order No. SE176A/B/C/D EXPLOSION PROOF HI-TEMP SHAFT LENGTH ADJUSTABLE TYPE

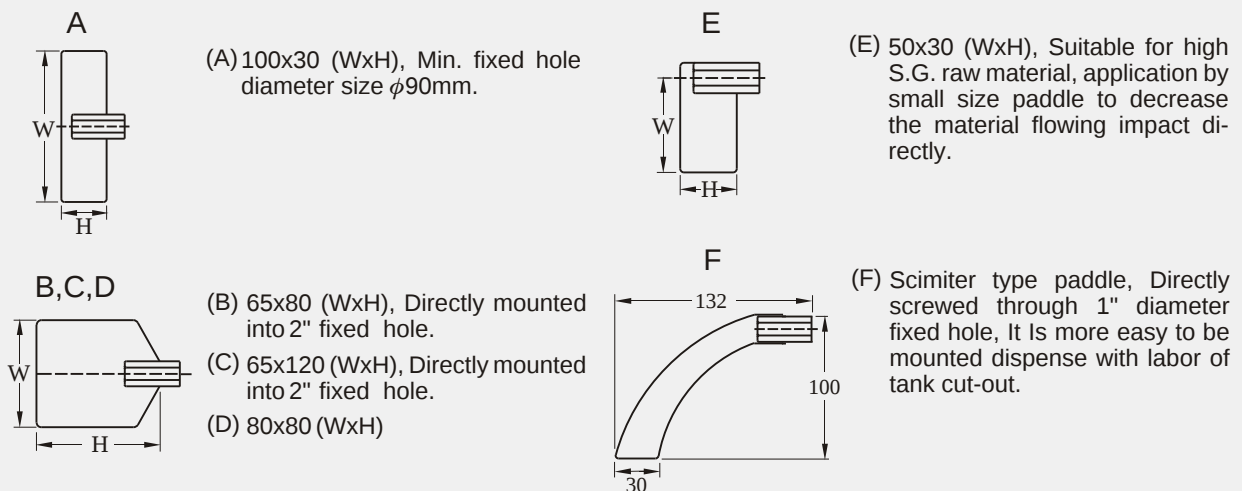
- Vertical mounting
- Temp. (-20°C ~ 200°C)
- Special length is made by order

Order No. SE177A/B/C/D EXPLOSION PROOF CABLE WIRE TYPE

- Vertical mounting
- Temp. (-20°C ~ 200°C)
- Special length is made by order



■ Paddle Introduction (Big)



ORDER INFORMATION

Order No. SE1 ()

ORDER NO.

- 70 : Screw type

71 : Flange type

72 : Shaft protective tube type

73 : Shaft length adjustable type
- 74 : Hi-temp type

75 : Hi-temp shaft protective tube type

76 : Hi-temp shaft length adjustable type

77 : Cable wire type

VOLTAGE

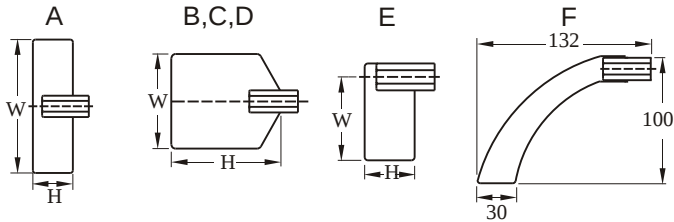
A : 110Vac B : 220Vac C : 240Vac

MOUNTING

Size for flange or screw		Pressure range or other
C : 3/4"	I : 4"	M: 5kg/cm ²
D : 1"	J : 5"	N: 10kg/cm ²
F : 2"	K : 6"	O: 150 Lbs
G : 2-1/2"	S : Others	P : 300 Lbs
H : 3"	3 : 1-1/4"	Q: PT
		R: PF (G)
		T : BSP
		U : NPT
		S : Others

PADDLE SHAPES

- A : 100x30 (WxH)
- B : 65x80 (WxH)
- C : 65x120 (WxH)
- D : 80x80 (WxH)
- E : 50x30 (WxH)
- F : Scimitar
- S : Others



LENGTH (mm)

- 0500: 50cm (01~50)
- 1000: 100cm (51~100)
- 1500: 150cm (101~150)
- ※ 50cm per Unit

The total length of item will be allowed a tolerance to 6mm.

* Order Notice

1. Please make sure the Voltage 24Vac, 110Vac, 220Vac or 240Vac, 50/60 Hz.
2. Please make sure the side or top mounting.
3. Please make sure the material specific gravity (S.G.) value.
4. Please make sure whether any bridge block or vibrating motor installed onto the tank wall.
Please try to apply our item SA140 capacity sensor.
5. Please make sure the rotary paddle size is available to enter into the flange inlet.