

SEX5 ROTARY PADDLE LEVEL SWITCH OPERATION INSTRUCTIONS (EXPLOSION-PROOF TYPE)



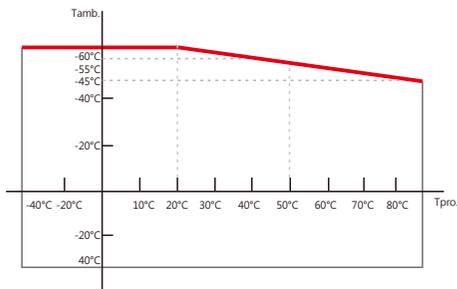
ATEX Ex II 1D/2D Ex ta/tb IIIC T85°C or T100°C
or T150°C or T200°C Da/Db
IECEX Ex ta/tb IIIC T85°C or T100°C or T150°C or T200°C Da/Db
CSA Ex ta/tb IIIC T85°C ...T200°C Da/Db
Zone 20 / Zone 21 AEx ta/tb IIIC T85°C ...T200°C Da/Db
Class II, Division 1, Groups E, F, G, T200°C

Specifications

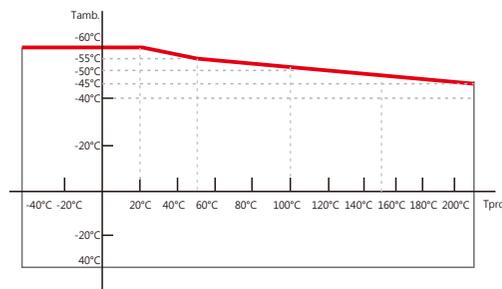
Power supply	(A)110Vac, 50/60Hz (B)220Vac, 50/60Hz (C)240Vac, 50/60Hz (D)24Vac, 50/60Hz (E)24Vdc
Power consumption	3W
Contact capacity	SPDT 5A/250Vac
Display status	Green light: Operation Red light: warning
Protection level	IP67
Standard connection	Teeth: 1"PF Flange: JIS 2-1/2"x5kg/cm ²
Thread specification	1/2"NPT
Wire diameter	16-22AWG
Rotation speed	1 R.P.M/1.2 R.P.M
Specific gravity	0.5g/cm ³
Ambient temp	-40°C ~70°C
Operating temp	Standard: -40°C~85°C, High-temp: -40°C~200°C

Comparison Table

Model	Temp. level	Ambient temp.	Operating temp.
SEX500 (standard type)	T85°C	-40°C~+45°C	-40°C~+85°C
SEX502 (high-temp type)	T100°C	-40°C~+50°C	-40°C~+100°C
	T150°C	-40°C~+45°C	-40°C~+150°C
	T200°C	-40°C~+40°C	-40°C~+200°C



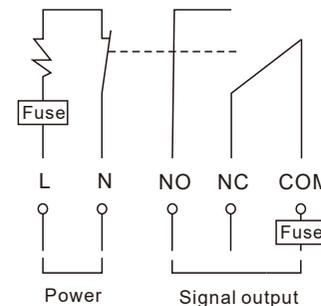
Standard -Ta/Tp temperature curve



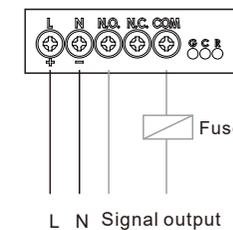
High-temp -Ta/Tp temperature curve

Wiring Instructions

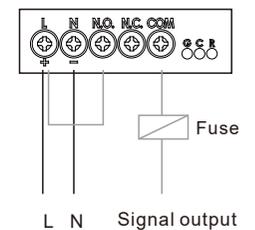
- For the control loop, it is recommended to use a circuit breaker or fuse to ensure the safe operation of the equipment.
- When wiring, insert the cable into the junction box and connect it according to the label on the panel. When connecting, use a slotted screwdriver (Refer to the connection method 1 & 2 in the figure above).
- The cable connector should have explosion-proof certification with ex mark IECEx c, Ex db, eb, ec, nA. Thread type 1/2" NPT (thread outer diameter 21.223mm), suitable for the cable range of 22-16AWG. it must be locked and cannot be adjusted at will.
- The wiring steps are as follows :
 - Unscrew the housing cover.
 - Remove 10cm (4in) of the outer layer of the connecting cable, and 1cm (0.4in) of insulation at the end of the core wire.
 - Insert the cable through the cable threaded joint into the sensor (check the cable outer diameter and which cable threaded joint is suitable for to ensure the sealing effect of the cable threaded joint [IP protection method]. Please use a cable threaded joint that matches the diameter of the cable)
 - Lock the end of the core wire into the terminal according to the wiring diagram.
 - You can check if the wire is locked in the terminal by gently pulling it.
 - Lock the ground terminal of the external cable to the ground screw of the product housing.
 - After closing the housing cover, the electrical connection is completed.



Wiring diagram



Connection method 1



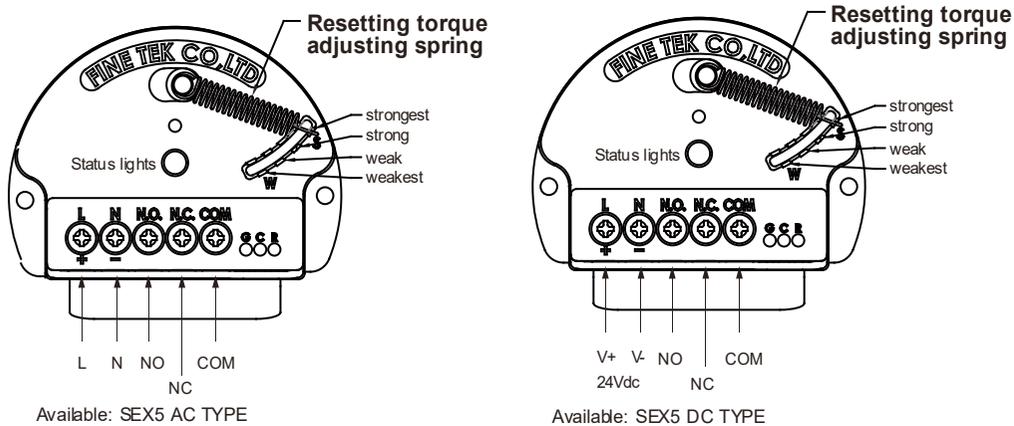
Connection method 2

Torque Adjustment

Users can adjust the torque according to the measured object's specific gravity. The method is as follows:

1. Open the junction box cover and remove the torsion spring from the hook hole. Be sure to lock the box cover after the hook is hung to the needed target hole.
 2. When the material's specific gravity is too low (the blade still turns after touching the material), the torsion spring can be changed to a weaker hook hole, thereby increasing the sensitivity.
 3. If the blade's resistance is unable (turning or stopping suddenly), change the torsion spring to a strong hook hole to reduce the sensitivity.
- ※ Attention! Do not arbitrarily change the torque spring during use to avoid malfunctioning.

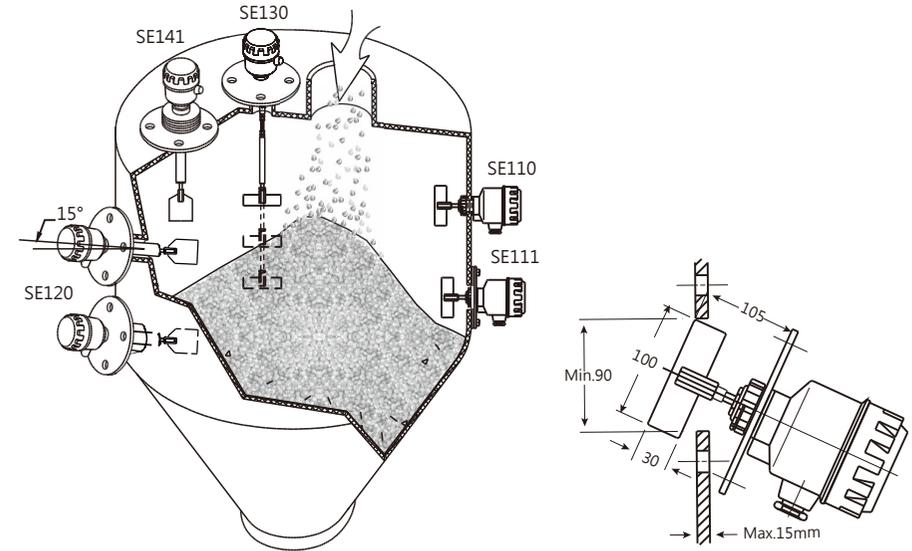
Panel Description



Installation Precautions

1. When safe to install, the switch can be installed at an angle of 15°~20° to reduce the impact of the material.
2. The wiring thread must be facing down, and the cable fixing screw must be tightly locked.
3. If the tank is equipped with a bridge breaker or vibration damper, please choose our SA140 series products.
4. Always comply with the warning "Open the lid only after power is off."
5. At the installation site, there should be no gas that can corrode the aluminum alloy.
6. The max temp of the medium should not exceed the temp indicated on the product label.
7. The cover has external grounding screws and should be grounded for installation and use.
8. Precautions must be taken to wipe the product to ensure that no static electricity will occur, and a damp cloth must be used to clean it.

Examples of On-Site Installation Methods



※ Example of the Size of Storage Tank for Installation

Using SE110 as an example, the method of installing directly on the tank wall is shown in the figure below. Insert one end of the blade into the tank's hole at 35 degrees, then wait for the other end of the blade to pass through the tank wall and slowly turn.

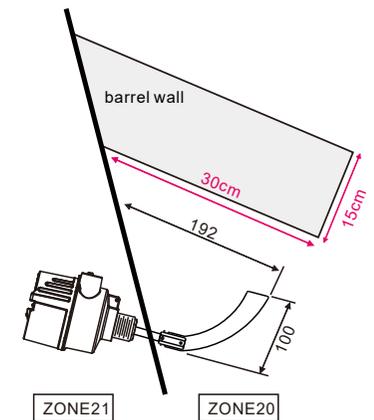
Guard Board Installation Instructions

It is recommended to use the guard board when the product is installed near the inlet and material impact cannot be avoided.

Example: When the blade is sickle-shaped, it is recommended that the width of the guard board be 1.5x the rotation range of the blade. The length of the guard board should be at least 1.5x the length of the guide rod plus the blade, effectively blocking the probability of impact on the blades on both sides.

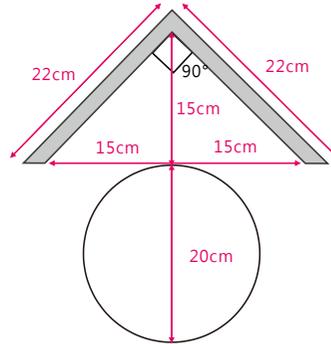
The length of the guard board:
 $19.2 \times 1.5 = 28.8 \text{ cm} \approx 30 \text{ cm}$

※ The resistance rotation and guard board must be 15~20° horizontally downwards.



Installation Precautions

- ※ The length of both sides of the guard board is at least 22cm and must be 90cm vertical
- ※ The position of the guard board and the resistance rotation must be close, otherwise the length needs to be lengthened.



Daily Maintenance

1. Check if the shaft or blade is bent, deformed, or damaged.
2. Check that the connection between the shaft and blade is firm.
3. Regularly remove materials & pollutants from the blade and shaft.

Common Malfunctions And Troubleshooting

Problem	Reason	Solutions
The material does not cover the blade, indicating that the material does not exist.	The specific gravity of the material is too low, or the torque is too large.	Adjust the torsion spring hook to a weaker hole.
	The material is flowing too fast at the installation location.	Change the installation location or switch to another model.
	The installation location is at a rest angle; therefore the material does not touch the blade.	Switch to SE130 shaft length adjustable type.
	The equipment has no power, or the wiring fell off.	Repair the wire, turn the power on.
	The voltage is not high enough, the power is insufficient, or there is no rotation.	Check the power supply, and use the correct type.
	The opening tip is not inserted or folded back, or the blade fell off	Install the blade, plug in the open tip, and fold the tail end back.
	Damage to internal transmission parts or motor components.	Contact your local business representative.
The material leaves the blade, indicating that the material has arrived.	The blade torque is too low to turn.	Adjust the torsion spring hook to a stronger hole position.
	The blade or drive shaft is deformed by impact.	Replace the intact spare parts and install a protective guard board.
	Material covers a wide range.	Customize a protection tube type; lengthen and extend into the barrel wall.
	The blade is blocked or entangled by foreign objects, such as filter bags, ropes, etc.	Clear obstacles.
	Foreign objects in the junction box are stuck on the shaft, such as the wire.	Clear obstacles and restart the installation.
	The switch contact reaches the life limit, or the contact is poor.	Contact your local business representative

- ※ If the failure is not listed or cannot be resolved, please contact your local business representative.



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