

# SE37 Series Rotary Paddle Level Switch

## Operation Manual

### WORKING PRINCIPLE

The blade of the rotary paddle level switch uses the shaft to connect with the clutch. When it doesn't sense any material, the motor maintains its normal operation. When the blade comes in contact with a material, the motor stops operation, at the same time, the switch outputs a contact signal to detect the material level.

### FEATURES

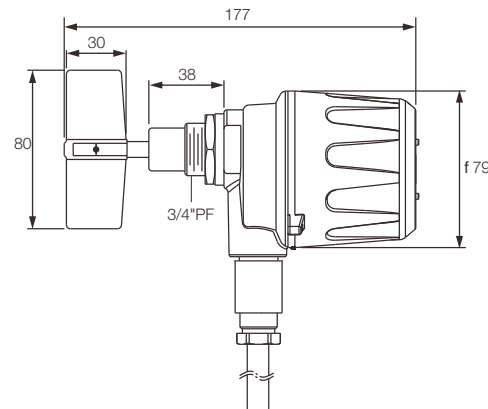
1. The product design has NEPSI dust Ex-proof certification.
2. The new motor protection structure provides the best protection and durability.
3. The design of the hanging motor can reduce the friction with the body, so as to increase its stability.
4. The housing is designed based on ergonomics, which can be easily rotated with small force.
5. The LED indicators on the housing cover allow the personnel to judge the bin status in the darkness conveniently.
6. It can be operated in a working environment with extremely low temperature, with no impact on the functions.
7. Unique oil-seal design can prevent the dust permeating from the axis.
8. Stable and reliable torque can be adjusted by the user.
9. Collapsible blade is available for installation without blade being disassembled.
10. It is light and easy-to-install.
11. It is fully-enclosed and has IP65 protection, which can be used outdoors for a long time.

### SPECIFICATIONS

Working power supply	24/110/220/240Vac 50/60Hz 24Vdc
Output capacity	5A/250Vac, 5A/30Vdc
LED indicators	Green: In operation Red: Stop operation
Operating temp. in ambient air	-40~85 °C
Operating temp. in bin	-40~85 °C
Housing material	Aluminum alloy (ADC-12)
Protection level	IP 65
Mounting	3/4"PF
Rotate speed	1 RPM
Applicable Density	0.3~1 g/cm <sup>3</sup>
Power consumption	Max.1.5 W
Ex-proof level	Dust Ex-proof DIP A20/21 T <sub>A</sub> , T3~T6 IP65

### DIMENSION

(unit:mm)



NEPSI DIP A20/21 T<sub>A</sub>, T3~T6 IP65

### PRECAUTIONS FOR USING THE PRODUCT

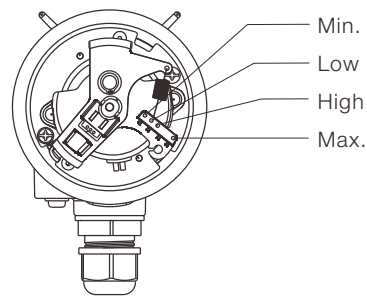
1. The grounding terminal equipped on the housing of the rotary paddle level switch can be used for grounding when mounting.
2. The sensor part of the product may be installed in zone 20, while other parts shall be installed in zone 21 or 22.
3. The operating temperature range in ambient air is -40~85 °C
4. The relationship between the maximum operating temperature in ambient air, the maximum processing medium temperature, and the temperature class of the product is as shown in the table below.

Product type	Temp. class	Max. Ambient Temperature ( °C )	Max. Processing Medium Temperature ( °C )
Standard type	T6	70	80
	T5	85	95
	T4	85	130
	T3	85	130
High-temp type	T6	70	80
	T5	85	95
	T4	85	130
	T3	85	195

※The actual high-temp. endurance of the product is subject to the newest brochure released by the company, which is also based on the Ex-proof certification label.

5. When the rotary paddle level switch is installed in the inflammable dust environment, the cable inlet must be equipped with the cable inletting device or blocking piece that is certified by the legal inspection institution and meets the requirements of GB12476.1 (IEC 61241-1), with an Ex-proof level of DIPA21, a thread specification of 1/2"NPT and housing protection level of IP65. That is required when it is used in an explosive hazardous place.
6. During installation and maintenance of the product, one must strictly adhere to the rule that "it should not be opened in an inflammable dust environment".
7. The user shall not change the product parts. Instead, the user shall work with the product manufacturer to resolve the fault encountered in the operation, so as to prevent damage.
8. During the product installation, use and maintenance, the user shall also strictly follow the user's manual and the following standards: GB50257 Electrical Equipment Construction, Inspection and Acceptance Standards in an Explosive and Fire Hazardous Environment in Electrical Equipment Installation Engineering, GB12476.2 (IEC 61241-14) Part 2 of Using Electrical Equipment in an Inflammable Dust Environment: Selecting Model and Installation, GB15577 Dust Ex-proof Safety Regulations.

TORQUE ADJUSTMENT

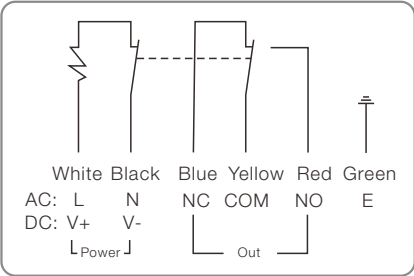


The torque force can be adjusted according to the specific gravity of the targeted materials to be measured. When the specific gravity of the material is too low (the paddle still rotates when in contact with the material), adjust the torque spring to hook on to the weaker hole, thereby increasing the sensitivity. Refer to the Panel Diagram.

If the torque of paddle is insufficient (the paddle does not rotate when not in contact with the material), adjust the torque spring to hook on to the stronger hole, thereby decreasing the sensitivity.

※Note! Do not tamper with the spring torque as it may cause the Rotary Paddle to malfunction.duct, so as to prevent wrong operation.

WIRING DIAGRAM



DAILY MAINTENANCE

- 1. Inspect whether the rotating axis and blade are bended, deformed or damaged.
- 2. Inspect whether the connection between the rotating axis and blade is loosened.
- 3. Regularly clean the material and remove stains on the blade and rotating axis.

INSTALLATION INSTRUCTIONS

- 1. For horizontal installation, the switch can be mounted with a horizontal angle of 15°~20°, so as to reduce the material impact.
- 2. The conduit must face downward, and the bolt used to fix the cable must be fastened.
- 3. Side mounting is recommended for this product.
- 4. Please take note of the warning “Open cover after the power is cut” during field installation and maintenance.
- 5. The installation field should not contain the gas that is corrosive to the aluminum alloy.
- 6. The maximum temperature of the tested medium shall not exceed that labeled on the product.

TROUBLE SHOOTING

Abnormal condition	Cause	Solution
The material covers the paddle, indicating that the material does not exist.	The specific gravity of the material is too low, the torque is too large.	Adjust the torque spring hook to the weaker hole position.
	The flow of material at the mounted location is too fast.	Change the mounted location or use another model.
	The mounting location cannot make contact with material because of the angle of repose.	Change to the use of SE130/SE146 Adjustable Shaft Type.
	The device is not powered or the wiring is disconnected.	Repair the wiring and turn on power.
	Un-matching Voltage will lead to insufficient power and motor not rotating.	Correct the matching Voltage shown on the model specification.
	Fastening pin is not inserted or is not folded back, the blades fall off.	Mount the blade, insert the fastening pin and fold the end back.
	Internal shaft parts or motor assembly is damaged.	Contact your local business representative.
The material left the paddle, indicating that the material has arrived.	The paddle torque is too low to rotate.	Adjust the torque spring hook to a stronger hole position.
	The paddle or shaft is deformed by impact.	Replace with good spare parts and install baffle for protection.
	Material bridging, covers a wide range of peddle.	Order customized protective tube type extended into the tank wall length.
	The paddles are blocked or wound by foreign objects, such as filter bags.	Remove obstacles.
	The shaft is stuck with foreign objects in the housing, such as wire.	Remove obstacles and restore the installation.
	The switch contact has reached the limit of service life with poor contact.	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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