

Rotary Paddle Silo Sensor



The SEVEN Rotary Paddle Silo Level Sensor is used for level detection in silos, tanks, and bunkers containing solid materials like powder or granules. The shaft length and paddle type can be selected according to the physical properties of the solid material to be measured.

The motor shaft, along with the paddle at its end, rotates freely when there is no solid material at the paddle level inside the silo, tank, or bunker. As the solid material level increases during filling, it compresses the rotating paddle, causing the step motor to lose power, and the warning light turns on. This indicates that the solid material level has reached the designated point. When the solid material level decreases and no longer presses the paddle, it begins to rotate again, and the warning light starts flashing again.

The Warning Light operates in 3 different modes;

- **Flashing Mode:** The sensor is working. The paddle is turning.
- **Always On:** The sensor is working. The paddle is not turning because the silo is full.
- **Always Off:** The sensor is not working. There is no power connection.

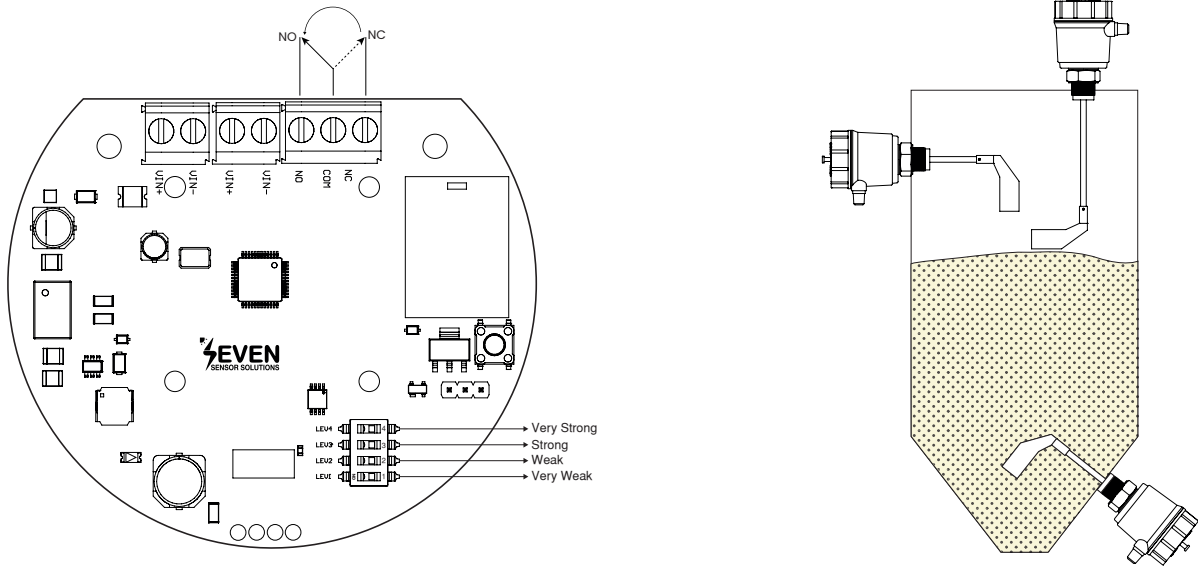
Benefits and Features

- Torque Selection According to Material
- Horizontal and Vertical Mounting
- Robust Enclosure
- Long Lifetime with Step Motor
- Status Monitoring with Warning Light
- 2 Power Supply Inputs
- Thermal Protection Option / Longer Shaft Option
- SEVEN Customer Support
- 1 Year Warranty

Technical Specifications

Sensor Type	Rotary Paddle
Power Supply	18 ... 30 VDC
Plunge Length	15 cm (longer shaft option)
Rotation Speed	4 r.p.m.
Torque Value	Level 1: 0,04 Newton-Meter Level 2: 0,06 Newton-Meter Level 3: 0,11 Newton-Meter Level 4: 0,17 Newton-Meter
Output	Relay Output ON / OFF Control DC max. 125V/10A
Power Consumption	Level 1: 50 mA @24VDC Level 2: 70 mA @24VDC Level 3: 160 mA @24VDC Level 4: 330 mA @24VDC
Operating Temperature Range	-40°C ... + 65°C
Operating Humidity Range	0 ... 100 %RH
Dimensions	131 x 103 x 347 mm (L x W x H)
Weight	800 gr
House Material	Polyamide + Fiberglass
Shaft / Paddle Material	Chrome
Origin	TÜRKİYE

Working Principle



The motor Works when there is no solid object at the paddle level. COM-NC connection is active.

When the amount of solid increases, the paddle can't rotate and the motor's energy is disconnected. COM-NO connection is active.

The motor restarts when the level of solid compressing the paddle decreases. COM - NC connection is active.

The torque setting is used to adjust the power of the motor inside the sensor. The torque setting can be changed according to the physical properties of the material filled into the silo, tank or bunker. In order to adjust the torque setting, the switch on the electronic board must be used.

The motor power is determined with reference to the highest open level. If the LEV3 button is on, no matter if LEV1 and LEV2 buttons are on or off, the motor power is set to LEV3. However, if the LEV4 button is turned on, the motor power will be according to LEV4.

When all the buttons on the torque adjustment module are in the off position, or only the LEV1 button is on, the sensor automatically operates at LEV1 torque.

There are 2 power inputs on the electronic board. One of the two inputs can be preferred according to the field conditions.

Voltages above 30V may damage the electronic board.

Accessories

Extension Shaft

The distance between the sensor box and the paddle can be increased with the extension shaft. It is used in vertical installations.



Thermal Protection Apparatus

Thermal Protection Apparatus is used to insulate the shaft between the paddle and the sensor box, which is in contact with the hot material in the silo, tank or bunker, with ceramic insulators. In this way, the heat of the hot material is prevented from damaging the sensor.

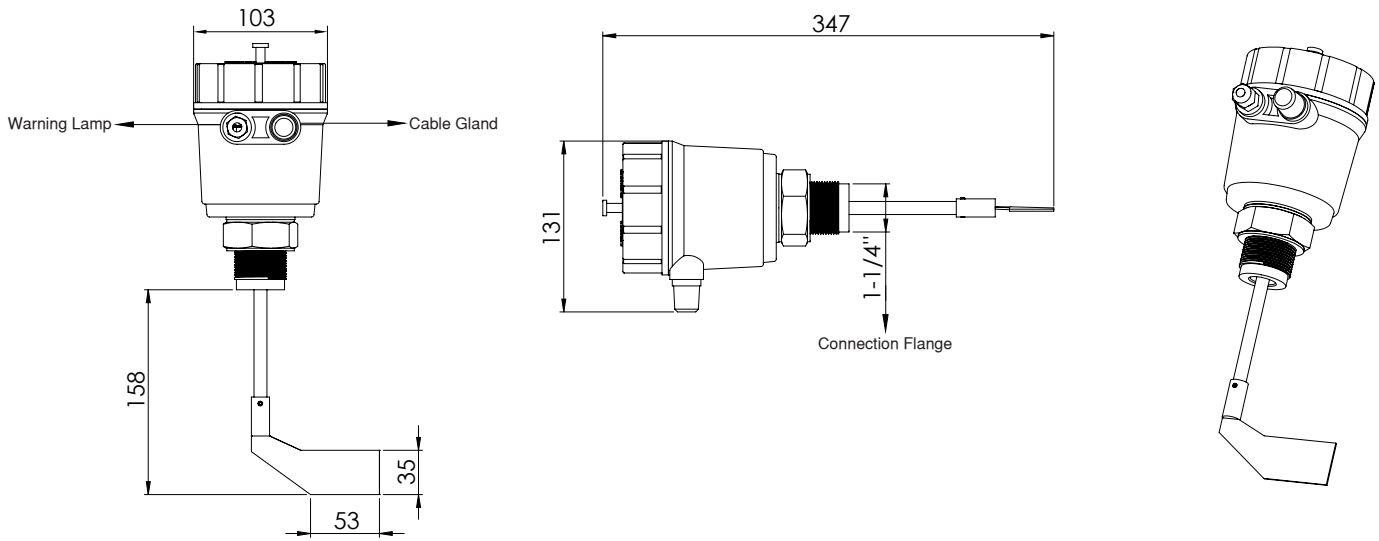


3S-SLS-RP

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Technical Drawings

3S-SLS-RP



Not: All dimensions are in "mm".