3S-SLS-RP

Rotary Paddle Silo Level Sensor

Rotary Paddle Silo Level 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 can be viewed through the transparent cover and 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
- Thermal Protection Option / Longer Shaft Option
- SEVEN Customer Support
- 1-Year Warranty

Technical Specifications

Sensor Type	Rotary Paddle
Power Supply	18 ... 30 VDC
Shaft Length	15 cm (longer shaft option)
Rotation Speed	8 r.p.m.
Torque Value	Level 1: 0.11 Newton-Meter Level 2: 0.13 Newton-Meter Level 3: 0.16 Newton-Meter Level 4: 0.21 Newton-Meter
Output	Relay Output ON / OFF Control DC 24V / 1A
Power Consumption	Level 1: 60 mA @24VDC Level 2: 80 mA @24VDC Level 3: 110 mA @24VDC Level 4: 170 mA @24VDC
Operating Temperature Range	-40°C ... + 65°C
Operating Humidity Range	0 ... 100 %RH
Dimensions	134 mm x 103 mm x 388 mm (L x W x H)
Weight	1,2 kg
Housing Material	Polyamide + Fiberglass
Shaft / Paddle Material	Chrome
Origin	TÜRKİYE

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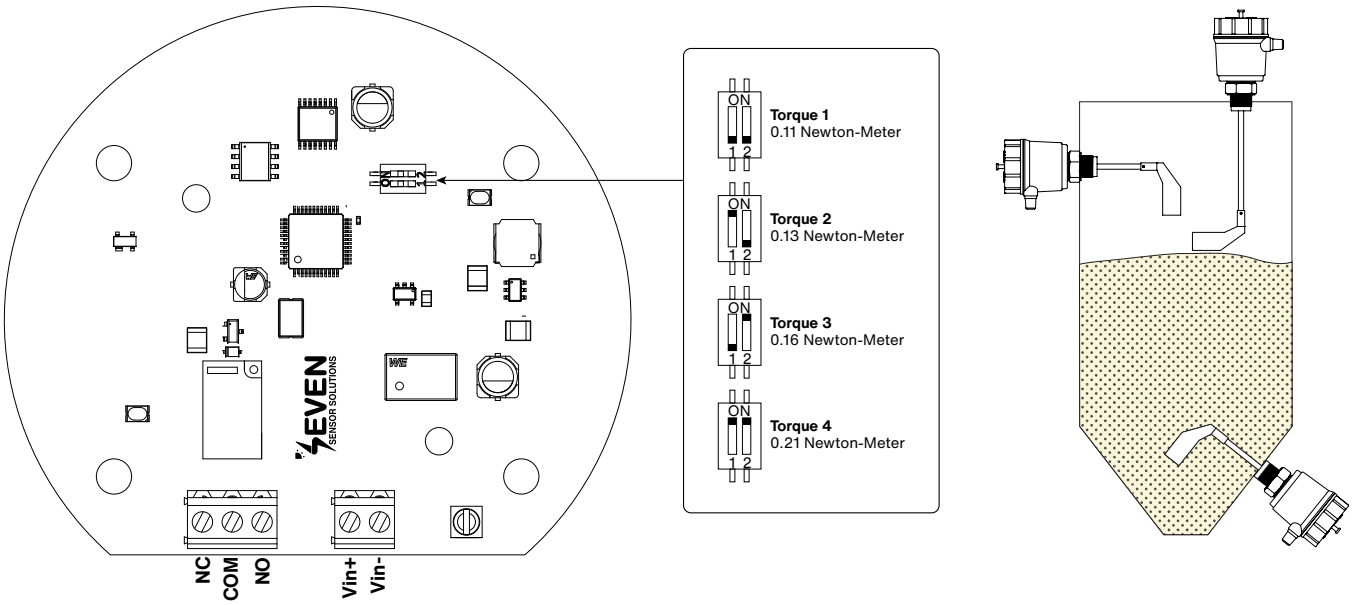
Working Principle



When viewed from the front, the connector on the device shows the connection points as diagrammed.

The motor rotates the paddle when no solid material is present at the paddle level, and the COM–NC connection is active.

Although the motor remains active, the paddle stops rotating, and the COM–NO connection is activated.

The paddle resumes movement once the level of solid compressing it decreases, and the COM–NC connection becomes 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 via two switches as indicated in the table.

Note: *Voltages above 30V may damage the electronic board.*

Note: *It is strongly recommended to connect the device to the ground terminal within the terminal block to prevent electromagnetic interference (EMI) and minimize the risk of electrostatic discharge (ESD).*

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.

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Technical Drawings

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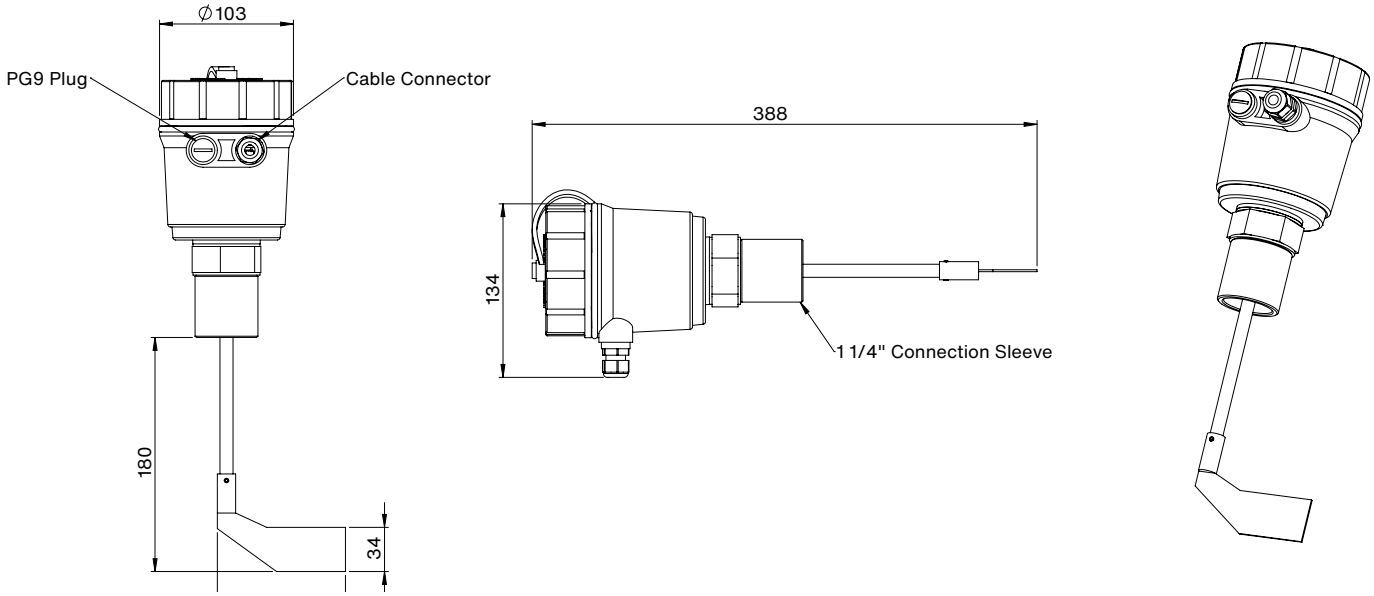

Note: All dimensions are in “mm”.

*SEVEN has the right to make modifications on this documentation without notice.

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