

# SE3 Series Rotary Paddle Point Level Sensor

## Operation Manual

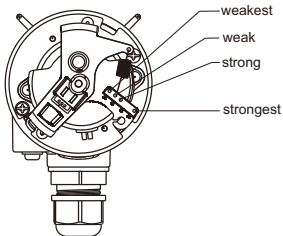
### Operating Principle

The SE3 series is a compact rotary paddle point level sensor that uses a robust synchronous drive motor to rotate a stainless steel shaft at approximately 1 rpm. A paddle actuating mechanism is attached to the stainless steel shaft inside of the bin or hopper that the SE3 is mounted on. A clutch mechanism is also a key component with the SE3 assembly. With the target material not present at the units paddle inside the bin, the paddle will rotate freely and the internal switch output will be in its starting position and the internal LED will illuminate Green indicating that the paddle is rotating free of material. When material is in contact with the paddle inside the bin or hopper the clutch will disengage, the switch output changes state, the motor power is disconnected internally and the Red LED illuminates indicating material presence.

### Specifications

Ambient temp.	-40°F to +185°F (-40°C to +85°C)
Storage temp.	-40°F to +185°F (-40°C to +85°C)
Process temp.	Standard: -40°F to +185°F (-40°C to +85°C) High temp. type: -40°F to +392°F (-40°C to +200°C)
Housing material	Diecast Aluminum (powder coated)
Protection	NEMA 4X / IP65
Connection	3/4" NPT
Conduit entrance	1/2" G
Connection Type	3/4" PF
Paddle speed	1 RPM
Supply voltage	24Vac, 110 Vac, 220 Vac, 240 Vac 50/60Hz, 24Vdc
Output rating	One Microswitch SPDT, 5A @ 250Vac/30Vdc
Power consumption	Max. 1.5 W
Bulk density	18~62 lbs/ft <sup>3</sup> (0.3~1g/cm <sup>3</sup> )
Sensitivity	Adjustable Torque: Weakest, Weak, Strong, Strongest
LED Indication	Material Absent – Green, Material Present – Red

### Sensitivity Adjustment

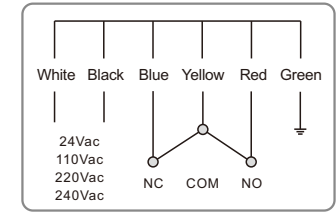


- The sensitivity spring needs to be set appropriately and is to be set according to the bulk density of the material to be sensed. The spring position marked as Strongest is recommended for heavy materials and represents to lowest possible sensitivity setting for the SE3 unit. On the contrary the spring position marked as Weakest is recommended for light or low bulk density materials and represents the highest degree of sensitivity for the SE3. The sensitivity spring position and paddle selection work together to determine the effective sensitivity of the SE3 unit.
- Adjustment method: Remove the cover of the SE3 rotary paddle point level sensor to have easy access to the sensitivity spring for adjustment. If adjustment is desired, carefully disconnect the sensitivity spring from its current location in the adjustment bar (Weakest, Weak, Strong and Strongest) and reposition/reattach it to desired position in the adjustment bar. Note that the factory default position is Weak. This should suit a large number of applications.
- Do not attempt to replace sensitivity spring at random. if needed please order replacement spring from Aplus FineTek Sensor, Inc.

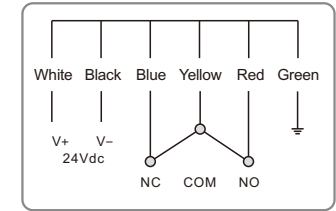
### Installation

- NEVER open cover before disconnecting power.
- Be aware of internal bin temperatures, ambient air temperatures and ensure installation will be within the SE3 unit specifications.
- Do not install the SE3 unit where it will be in the direct flow of incoming material.
- Install a protective baffle above the SE3 inside the bin if it might be impacted by falling heavy material.
- For side mount installations the SE3 should be positioned at a 15~20° downward direction if possible. This ideal orientation will help shed falling material.
- Keep corrosive vapors away from powder coated diecast aluminum housing and connection.
- Install the SE3 with conduit entrance pointing down and tight, NEVER in an upward direction, so as to eliminate the possibility of moisture ingress into enclosure from the conduit system or falling rain.
- Do not install on bin or hopper with industrial vibrator, use different level sensor technology and locate away from bin vibrator.

### Wiring



AC type



DC type

### Maintenance

- Periodic inspection to ensure proper operation and that the shaft and paddle are not damaged.
- Ensure the paddle is firmly attached to the SRP shaft using the provided cotter pin
- Periodically remove material build-up from paddle and shaft if any exists.

### Trouble Shooting

Problem	Possible Cause	Solution
The paddle and shaft rotate but there is no signal output	<ol style="list-style-type: none"> <li>Paddle selected is not correct based on material density, particle size and flow characteristics</li> <li>Sensitivity spring not properly set</li> <li>Failed microswitch</li> </ol>	<p>Check operation by hand to ensure output is changing state. Replace if not operating properly .</p> <p>Review material density, particle size, flow properties and sensitivity spring setting and adjust as needed.</p>
Paddle or SE3 shaft are damaged	<ol style="list-style-type: none"> <li>Review installation location to ensure material flow is NOT impacting on the paddle/shaft.</li> <li>Review material bulk density and particle size</li> </ol>	<p>Install baffle above unit to protect from falling material, repair unit or replace.</p> <p>Relocate to eliminate problem and repair or replace unit.</p>

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