The Thermo Scientific™ Ramsey™ Mercury-Free Tilt Sensor uses advanced technology inside the tilt probe to replicate the same performance found in traditional mercury-based Thermo Scientific™ Ramsey™ Tilt Switches. A combination of opto-electronics and solid state circuitry inside the probe prevents jitter and provides stability not found in the typical non-mercury options.

The precision manufacturing of the tilt probe provides sensing of a 15 degree inclination in a full 360 degrees of direction. Multiple models of the tilt probe are available for applications with a wide variety of materials and environmental conditions (see inside for a description of the available options). All probes have fully encapsulated electronics and come with the necessary mounting hardware.

Features and Benefits
- Rugged, abrasion-resistant tilt probes
- Simple installation
- All probes include mounting hardware
- Solid-state control unit with printed circuit boards
- Control unit is available in the following options
  - Field mount NEMA 4
  - Field mount NEMA 4X
  - DIN mount NEMA 1
- User adjustable time delay to prevent false alarms
- LED status lights — no bulbs to change
- cCSAus and ATEX approved versions suitable for hazardous area applications

Now available in a non-mercury version, these sensors provide you with the stability, sensitivity and performance you have come to expect from the traditional mercury-based Thermo Scientific™ Ramsey™ Tilt Switches.
Ramsey Mercury-Free Tilt Sensor Controls

The sensor consists of a control unit and a tilt probe. Due to the nature of the stabilizing electronics, tilt probes cannot be used without a controller.

Ramsey Mercury-Free Tilt Sensor Probes

- **Standard 1 in. Nickel Plated Cast Ductile Iron Probe**
  - 20-59-NM
  - 21-59-NM

- **1 in. Light Weight Plastic Probe**
  - 20-55-NM-P

- **1 in. Stainless Steel Probe**
  - 20-54-NM-SS
  - 21-54-NM-SS

- **2 in. Heavy Weight Probe**
  - 20-52-NM
  - 21-52-NM

Field Mount Control (IP65/NEMA 4)

- 20-35-NM-F
- 21-35-NM-F-CSA
- 21-35-NM-F-ATEX

DIN Mount Control (IP20/NEMA 1)

- 20-35-NM-DIN

Field Mount Control (SST IP65/NEMA 4X)

- 20-35-NM-F-4X
- 21-35-NM-F-CSA-4X
Tilt Sensor Probe Models

Typical Industry Applications

High Level

High Pile

Low Level

Plugged Chute

Material Flow
# Thermo Scientific Ramsey Mercury-Free Tilt Sensors

## Tilt Sensor Probe General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>All models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Rating</td>
<td>-40°C (-4°F) to +50°C (+122°F)</td>
</tr>
<tr>
<td>Protection</td>
<td>All models IP67 (NEMA 4x)</td>
</tr>
<tr>
<td>Mounting Hardware</td>
<td>All models Hanger and two S-hooks included</td>
</tr>
<tr>
<td>Certifications</td>
<td>All models, cCSAus, CE</td>
</tr>
</tbody>
</table>

### Hazardous Area Certifications

- 21-59-NM / 21-54-NM / 21-52-NM
- ATEX Zone 20/21 and cCSAus Class I, Div 1 & 2, Groups A, B, C & D and Class II, Div 1 & 2, Group E, F & G, CE

## Tilt Sensor Probe General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>All models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>115/230 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Alarm Contact Rating</td>
<td>20-35-NM-DIN (1) NO — 2 Amp @ 115/230 VAC or 3 Amp @ 24 VDC</td>
</tr>
<tr>
<td></td>
<td>All other models (2) SPDT — 6 Amp @ 115/230 VAC or 6 Amp @ 30 VDC non-inductive</td>
</tr>
<tr>
<td>Fault Contact Rating</td>
<td>All models (1) NO — rated for 2 Amp @ 115/230 VAC @ 24 VDC</td>
</tr>
<tr>
<td>Time Delay</td>
<td>All models, 1, 2, 4, or 6 seconds selectable by jumpers</td>
</tr>
<tr>
<td>Temperature Rating</td>
<td>-40°C (-4°F) to +50°C (+122°F)</td>
</tr>
<tr>
<td>Protection</td>
<td>20-35-NM-DIN (1) NO — rated for 2 Amp @ 115/230 VAC @ 24 VDC</td>
</tr>
<tr>
<td>Certifications</td>
<td>All 20-35 models cCSAus, CE</td>
</tr>
</tbody>
</table>

### Hazardous Area Certifications

- 21-35-NM-F-CSA / 21-35-NM-F-CSA-4X
- ATEX Zone 22, CE
- cCSAus Class I, Div 2, Groups A, B, C & D and Class II, Div 1 & 2 Group E, F & G, CE

## DIN Mount Control Dimensions

![DIN Mount Control Dimensions](image)

### Field Mount Control Dimensions

![Field Mount Control Dimensions](image)