






# Level Application Notes

 Level	<p style="text-align: right;">Endress+Hauser </p> <h2 style="text-align: center;">Level Application Notes</h2> <h3 style="text-align: center;">Capacitance - Blockage Control in Funnels</h3>
<p>CS 1032</p> <p>12/02/2004 Christoph Rompf Slide 7</p>	<h3>High Temp Capacitive Probe – Point level Measurement</h3> <ul style="list-style-type: none"><li>■ Probes:<ul style="list-style-type: none"><li>■ TSP012656 (thread)</li><li>■ TSP012892 (flange)</li><li>■ active build up compensation</li></ul></li><li>■ Installation<ul style="list-style-type: none"><li>■ thrust plate cooler at clinker breaker</li><li>■ temperatures:<ul style="list-style-type: none"><li>from: 1830°F (1000°C)</li><li>to: 570°F (300°C)</li></ul></li></ul></li></ul> <div style="display: flex; justify-content: space-around;"></div>

**Robust capacitive limit switch for goars bulk solids at high temperatures. Optional with active build up compensation for reliable measurement.**

#### Company Profile

Producer of cement in Malaysia

#### Application

Blockage control with capacitance high temperature robe TSP012892 in a thrust plate cooler.

The thrust plate cooler breaks up the clinker and cools it down, from temperatures above 1830°F (1000°C) to app. 570°F (300°C) for further processes. Depending on the length of a thrust plate cooler it has several funnels. Each funnel is equipped with one TSP 12656 probe. The probe has to be very robust for these extreme conditions.

#### Measurement technology

It can be either used a TSP012656 with a thread or a TSP012892 flange mounted. Both capacitance probes are robust enough to fulfill these extreme requirements. Due to the ceramic construction high temperatures can be handled.

The probes include an electronic insert which has to be wired to an additional Nivotester with a relay output.

#### Experience

E+H is market leader with capacitance probes in this sector. No other competitor has such a robust, high temperature probe which can be used in such applications. The design looks old fashioned but it still works fine and solves the problem.

#### Instrument description

Capacitance Level Measurement

- High Temperature Probe TSP 012892

- Partially insulated rod and rope probes with ceramic part-insulation and screening

Especially for use with materials which tend to form build-up on the silo roof or walls. These probes are designed for very rugged conditions and withstand high pressures and temperatures as well as sudden changes in temperature.

One particular advantage is their insensitivity to build-up. The steel pipe on the basic element acts as a screen and forms an inactive zone preventing material build-up close to the threaded boss from affecting the measurement.

The capacitance high temperature probe TSP012656 is the heavy duty version of the TSP012892.