

Alfa Laval Rotacheck Sensor

Cleaning validation

Introduction

The Alfa Laval Rotacheck Sensor is a cleaning validation instrument that provides verification of the Alfa Laval Rotary Jet Head tank-cleaning devices. It is highly accurate at detecting the sweep and impact of the cleaning media released by the rotary jet head, thereby providing tank cleaning quality assurance. This device is suitable also when there is higher pressure during Cleaning-in-Place (CIP) in the tank.

Application

The Rotacheck Sensor is designed for use in a tank-cleaning system that uses rotary jet heads and where the tank is pressurized during CIP and where validation of hygienic operation is required across the dairy, food, beverage, brewery and pharmaceutical industries.

Benefits

- Validation of 360° repeatable cleaning pattern
- Verification of tank cleaning coverage
- Highly accurate detection of the jet sweep and impact
- Improved product quality

Standard design

The Alfa Laval Rotacheck Sensor consists of a stainless steel IP67-rated casing, sensor, diaphragm, welding adaptor, and cable for relay connection. As standard ATEX-certified version is for use in potentially explosive areas. The sensor complies with Category 1/2 requirements for installation in zones 0/1 and 20/21. The relay complies with Category 2 requirements for installation in zone 1/21.

Working principle

The sensor of the Alfa Laval Rotacheck Sensor detects the sweep and impact of fluid jets released as the rotary jet head performs its cleaning cycle. The system is appropriate wherever rotary jet heads are employed in cleaning tanks and where the tank is pressurized during CIP. The signal generated by the system can be audible, visual or integrated into the customer's process control specification.

Based on the geared operation of the cleaning device and signals recording the impact force from the jets, the sensor verifies hygienic operation of the rotary jet heads, taking into account any backpressure in the tanks.



The hygienic Rotacheck sensor is precisely installed to detect the sweep and impact of fluid jets released as the rotary jet head performs its cleaning cycle. From the geared operation of the cleaning device, and by receiving the impact force from the jets, the sensor provides verification of hygienic operation. Any back pressure in the tanks is accounted for.

Certificates

3.1 certificate



Cleaning Pattern

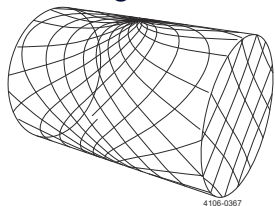


Figure 1. First cycle

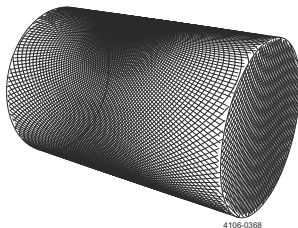


Figure 2. Full pattern

Figure 1 and figure 2 shows the cleaning pattern achieved by a Toftejorg rotary jet head. Rotacheck Sensor enables the user to automatically confirm that this operation has taken place on individual tank cleaning cycles.

TECHNICAL DATA

Pressure

Pressure:	0.1 - 2 bar (1.5 - 29 PSI)
Max. overload pressure:	15 bar (217 PSI)

Electrical Data

Max. repetition frequency:	For sensor function 2 Hz
Duration of electrical pulse:	Min. 1.0 sec.
Relay connection, electric:	2 m (6 ft) or 10 m (32.8 ft) cable, Ø6 mm (0.24 inch), PVC, 2 x 0.75 mm ²
Electromagnetic Noise:	Tested and approved according to EU EMC directive

Temperature

Operating temperature:	-20 to 85 °C (-4 °C to 185 °F)
Temperature on diaphragm:	Max. medium 140 °C (284 °F)

Mounting:



NOTE! 4" clamp connection only! (Not suitable for 3" clamp connection)

Enclosure:	IP 67
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PHYSICAL DATA

Materials

Sensor and diaphragm 1.4404 (316L)

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