Product information FWS-141, FWA-141　　　　　　　　　　　　**FOOD**

Ultrasonic flow switch FWS-141, FWA-141

Application

· Monitoring of flowing liquids in pipes
· Rough measurement of flow rates and flow volume
· Suitable for media with turbidity ≥1 NTU and particle size >50 μm
  e.g.: drinking water, juice (unfiltered), milk, emulsions, CIP-media

Application examples

· Flow monitoring in pipes from DN 25, e.g. for dry-run protection or monitoring of filters or valves
· Because of its very short reaction time and independence from temperature fluctuations and conductivity, the device is ideally suited for monitoring flow rates in CIP processes

Hygienic design/Process connection

· Hygienic process connection with CLEANadapt
· Conforming to 3-A Sanitary Standard for versions with DIRECTadapt
· All wetted materials are FDA-conform
· Sensor is made entirely of stainless steel, sensor tip of PEEK material
· Complete overview of process connections: see order code
· The Anderson-Negele CLEANadapt system offers a flow-optimized, hygienic and easily sterilizable installation solution for sensors.

Features

· CIP/SIP cleaning up to 143 °C
· Ultrasonic Doppler principle
· Not influenced by temperature fluctuations and conductivity
· Very short reaction time
· Medium temperature up to 140 °C (optional high temperature version)
· Freely programmable setpoint
· Optional: with analog or frequency output (switchable)
· Indicator switching output with LED

Options/Accessories

· Integrated indicator module (AZM) with window in cap
· Electrical connection with M12 plug connector
· Cable ex factory for M12 plug connector

Functional principle

A transmitter (1) sends ultrasound waves into the flowing medium. The ultrasound waves impinge on particles (2), such as sediments, dirt particles or air bubbles, that are moving in the direction of flow. These particles reflect the waves. The receiver now detects the reflected frequency, which has a slight shift because the wavelength was changed by the forward motion of the reflecting particle. The frequency difference between the sent and received frequencies is a measure of the speed of the particle and thus also of the flow rate.

Authorizations

FDA   3A 74-06

FWS-141/M12, FWA-141/M12

Indicator module AZM

Schematic drawing

Send　　　　　　Receive

$v \sim \Delta f = f_1 - f_2$