



Datasheet QP654-TMP

Thermal Massflow Probe for accurate (slurry) flow measurement

Principle

Thermal Conductivity

Description

Model TMP is designed to be installed in process lines and to measure thermal physical properties (TPP's), like temperature and thermal conductivity. In the QA03 or QA04 analyzer, the TPP's are compared with the density and temperature information from the density measurement and then related to the flow velocity of the slurry.



The Arenal ultrasonic probes are fit to be applied in flows up to 7 to 10 m/s. The ceramic sensor is made from one of the toughest materials on earth: Sintered Silicon Carbide (SSiC) and zirconium oxide (ZrO₂). They are much more wear resistant compared to all other ceramics. Secondly the thermal and physical properties of SSiC are perfect for the applications in most demanding chemical and abrasive applications.

It appears that after correction of the (slurry) density, the flow measurement is between 0 and 1 m/s much more accurate and between 1 and 7 m/s as accurate as magnetic flowmeters, while the cost prices of this small sensor is only 25% of the full mass flow analyzer.

Features

- The probe does not erode, it is chemical and wear resistant
- Very stable and accurate measurement
- Suits all (mixed) chemicals and slurries in any concentration
- For low temperature slurries, up to 55 degC
- For full and half full pipes, open channel probes available

Specification

- SSiC ceramic sensing element in ZrO₂ ceramic housing
- Double o-rings
- Fixed cable connection
- Suits density from 0 up to 3000 g/l
- Suits temperatures up to 55 degC
- Suits flow up to 7 (10) m/s
- Accuracy: 0,5% within 0-4 m/s; repeatability: 0,01 m/s

Connectivity

- Fixed cable to transmitter QT65

Mounting

- Weldolet or wafer cell, preferred pipe locations:
>5xD after last obstruction and 3xD before the next
Horizontal pipe: Clock position is best on 4:30 pm (or 7:30 pm)

Engineering specifications

Make: Arenal PCS BV, The Netherlands
Advanced Thermal Massflow Probe for (aggressive) chemicals and slurries
Material sensor: Sintered Silicon Carbide
Material housing: ZrO₂ and SS316
Temperature range 0-55 degC
Fixing: Weldolet or wafer cell

Product variations

QP653-TMP-DIV-SIC-SS316-LT-XXX-ASSY-A
Model SPC is used for insitu applications in open channels

QP654-TMP-SPC
Model SPC is used for inline applications in spool pieces

QP654-TMP-WFC
Model WFC is used for inline applications in wafer cells

Dimensions

L=70 mm, diameter:36 mm
Cable: 35 cm

Nice to know

The zirconiumoxide is a 3D printed part

