

## Radiator Probe



Easy to use design for radiator total pressure and mass flow measurements



Stainless steel



One-piece, robust design



Low flow disturbance

Radiator Probe	
<b>Geometry</b>	Special radiator design for minimal blockage
<b>Pressure ports</b>	Total and static
<b>Material</b>	Stainless steel
<b>Measurement</b>	Total pressure, mass flow
<b>Acquisition Hardware</b>	Pressure scanner separately available
<b>Temperature Range</b>	Up to 230°C (450°F)

*Tabelle 1 General Data*

The Vectoflow radiator probes offer an easy way to equip a radiator with probes to measure total pressure and mass flow distribution through a radiator. The radiator probe simultaneously measures the total and a reference static pressure of the flow. Several probes distributed over a radiator can measure the partial mass flow through the assigned section of the radiator, allowing to determine the uniformity of the flow.

The probe is easy to use, as it can be mounted onto the radiator and placed precisely in front of the cooling tubes, minimizing blockage effects. This way, the radiator does not have to be significantly modified or damaged, and the probes can be removed and reused afterwards.

## Design

Currently, we developed two standard designs of the radiator probes. The probes are produced by additive manufacturing, allowing great flexibility in design, size, and material choice. The probe design is not fixed and can be customized to individual requirements on request.

The probe head is of Kiel type to ensure the best possible measurement of the total pressure in a wide range (up to  $\pm 30^\circ$ ) of incident flow angles of attack.



*Figure 1 Radiator designs (two standard configurations)*

An example of the frontal application of a single probe is shown in **Fehler! Verweisquelle konnte nicht gefunden werden.**



*Figure 2 Probe (S\_KPS\_qxpj) mounted on radiator.*

The application from behind is recommended for the exact determination of the mass flow with high incidence flow through the radiator.



*Figure 3 Probe (S\_KPS\_bujh36) mounted on radiator.*

### **Calibration**

For exact mass flow measurements, it is necessary to calibrate the probes with respect to the mass flow mounted on the radiator. Please get in touch with Vectoflow for further details.