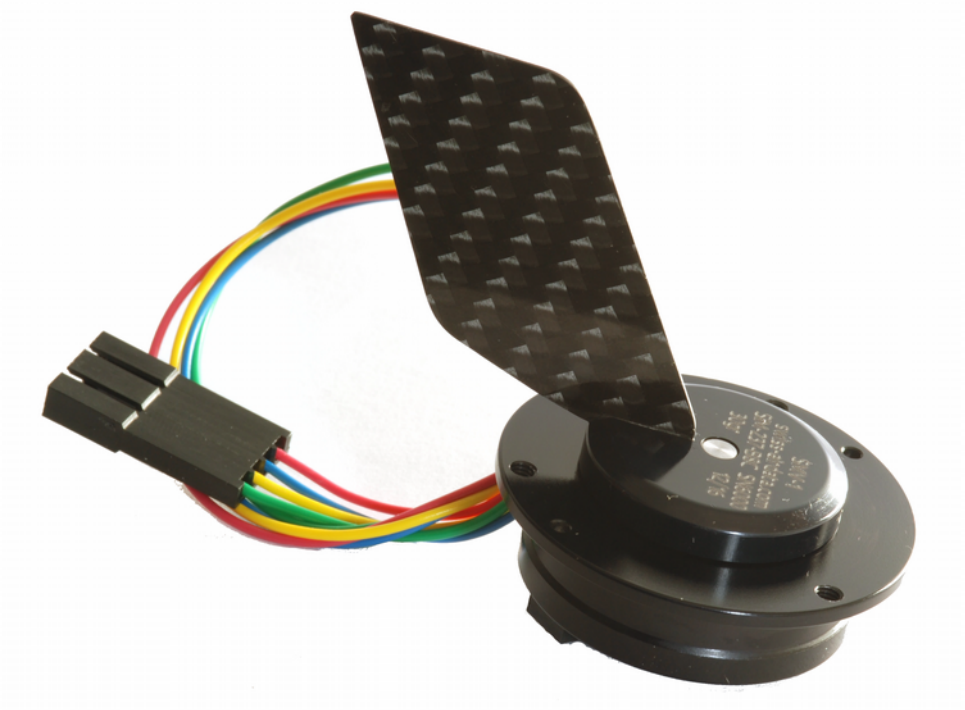
Swiss Air Data System

Simtec Buergel AG

Smart Miniature Vane SMV-1

The Smart Miniature Vane SMV-1 is a fully integrated wind-vane probe to measure angle of attack (AoA), angle of side-slip (AoS) and other airflow angles. The SMV-1 is the optimal solution if precise airflow information is needed on unmanned aircraft (UAV), remotely piloted aircraft (RPA) and other flight vehicles. The probe provides calibrated absolute angular data on the RS-485 data interface.



– Small size and small mass, only 0.030kg

– Best solution for UAVs, RPAs and other flight vehicles

– RS-485 data interface

– 9-32 VDC Power Input

– Accuracy better than ±0.2°

– Fully calibrated (geometrically calibrated and aerodynamically tested in wind-tunnel)

– 360° free mechanical rotation

– Suitable for aerospace, automotive, wind energy, wind-tunnel and research applications

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Specifications

Supply Voltage	9 .. 32VDC
Supply Current	28mA
Output Data	Absolute Angle in Degree (±180°)
Output Rate	up to 100 Hz (configurable)
Electrical Connection	1: Power VDC 2: Power Ground 3: RS-485 A+ 4: RS-485 B–
Data Interface	RS-485, half-duplex, 115'200 baud, 8N1
Resolution	14 bit (~0.025°)
Mechanical Travel	360°
Materials	Aviation Grade Aluminum, Carbon Fibre
Operating Temp.	-40°C .. +80°C
Mass	~0.030 kg (30 gr.)

Function

Angular data is provided via the RS-485 data interface. A software is available to display the angular data and to configure the vane. The following parameters can be set by the user:

– Data update rate (0.5, 1, 2, 4, 5, 10, 20, 25, 50 and 100 Hz)
– AoA or AoS label output
– Left and right installation
– Master or slave (slave operation allows to operate a second vane on the same RS-485 interface)
– Zero point

Data Format

The SMV-1 device outputs the measured flow-angles at the preset frequency rate. The flow-angles are prepended by an 'A' (for alfa/AoA device) or a 'B' (for a beta/AoS device) followed by the flow-angle in centi-degrees (100c°=1.00°) and a final carriage return. The range is ±180°.

[A|B]±nnnnn↵	A|B: ±nnnnn: ↵:	AoA or AoS ±18000c° = ±180° Carriage Return
A+120↵	+1.20°	(AoA)
A-15020↵	-150.20°	(AoA)
B+8156↵	+81.56°	(AoS)

Warnings

Before applying power to the SMV-1 make sure that the wiring is correct. Applying power to the RS-485 pins will destroy the RS-485 transceiver and other internal electronics immediately.

Pin 1:	9-32VDC	red wire
Pin 2:	Ground	blue wire
Pin 3:	RS-485 A/Sig+	yellow wire
Pin 4:	RS-485 B/Sig-	green wire

Price, Availability and Lead Time

Call factory for details.

Contact Information

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