Cup Anemometer
PVC Housing, Rotor of black painted Stainless Steel
Type DWS-V-DAC13

- **Anemometer with opto-electronic detection**
- **Measuring range: 2 to 30 m/s**
- **PNP and NPN open collector outputs in the same unit**
- **Current source outputs**
- **10 to 28 VDC supply voltage**
- **All inputs and outputs are protected against reverse polarity and transients**
- **High ESD protection**
- **Built-in heater**
- **Dust sealing**

Product Description

DWS-V-DAC13 is a cup anemometer designed for measuring air speed in a wide variety of applications, including wind turbines, buildings, cranes, weather stations, green-houses, etc.
The product contains both PNP- and NPN open collector outputs, in which a fixed current is switched proportionally to the air speed at the rate of 10 pulses per m/s.
A built-in self-regulated heater reduces the risk of glazing. The heater is supplied separately, which makes it possible to control the heating.
The DWS-V-DAC13 is equipped with a specially designed protection mechanism, which protects the bearings and the electronic parts against dirt and humidity.
The body of the sensor is made of black PVC, and the rotor is produced in stainless steel.

Ordering Key

DWS-V-DAC13

Type
Air velocity
Digital output
(Future subtypes)
Cable Version
Standard cable length in full metres[*)]

[*)] can be specified by customer

Specifications

Rated operational voltage	
U_B	12 to 24 VDC
U_C	10 to 28 VDC
Supply current (without heater)	Approx. 20 mA (all outputs off)
Measuring range	1.5 to 30 m/s
Operating range	≤ 75 m/s
Accuracy	≤ 3 m/s: ±0.5 m/s ≥ 3 m/s: ±10%

Output Specifications

Signal output	
NPN Open Collector constant current sink	Square wave 12.5 mA ± 2mA
PNP Open Collector constant current source	Square wave 12.5 mA ± 2mA
Output frequency	10 Hz per m/s
Output power	≤ 250 mW
Load supply voltage	Min. 10 VDC Max. 28 VDC
Voltage drop	Typ. 4.9 VDC

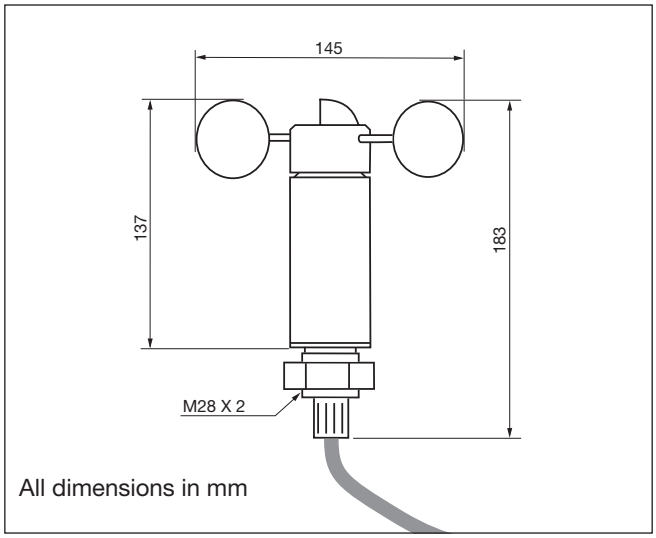
General Specifications

Dimensions	
Rotor diameter	145 mm
Thread	External thread: M28 x 2 with one nut
Materials	
Body	Black PVC
Rotor	Stainless steel (AISI 303), black painted
Bearings	Instrument ball bearings, stainless steel
Cable	13 m shielded grey PVC, 6 x 0.25 mm^2
Rotor/housing tightening	Dust labyrinth
Environment	
Degree of protection	IP54
Ambient humidity	0 to 100% RH
Climatic protection	Against high humidity, salt and dust
Ambient temperature	
Operating temperature	-20 to 60°C (-4 to +140°F)
Storage temperature	-20 to 60°C (-4 to +140°F)
Heating system	> -20°C (> -4°F)
Heater	PTC-element
Supply voltage	12 to 24 VAC/DC on separate wires

General Specifications (cont.)

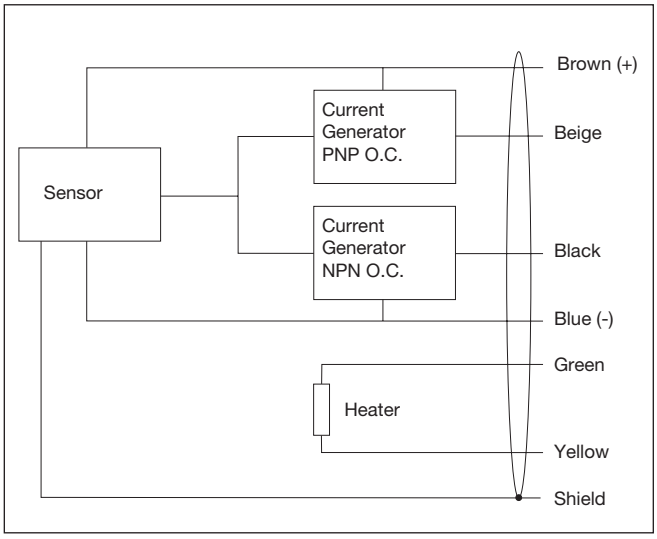
Inrush current	1.5 A
Power consumption	@ -20°C (-4°F): app. 10 W @ +20°C (+68°F): app. 5 W @ +60°C (+140°F): app. 1.5 W
EMC	
IEC 61000-4-2	
Contact discharge	± 4 kV
Air discharge	± 8 kV
IEC 61000-4-3	
Radiated radio-frequency Electromagnetic fields	15 V/m
IEC 61000-4-4	
Fast transients/burst	
Power port, performance B	± 2 kV
Signal port, performance B	± 1 kV
IEC 61000-4-5	
Surge 1.2/50 µs	
Power port, Ri = 2 Ω	500 V
Signal port, Ri = 47 Ω	2000 V
IEC 61000-4-6	
Conducted disturbances induced by radio-frequency fields	12 V_{rms}
Mounting position	Vertical with M28 thread
Weight	1.1 kg incl. 13 m cable and packaging

Dimensions

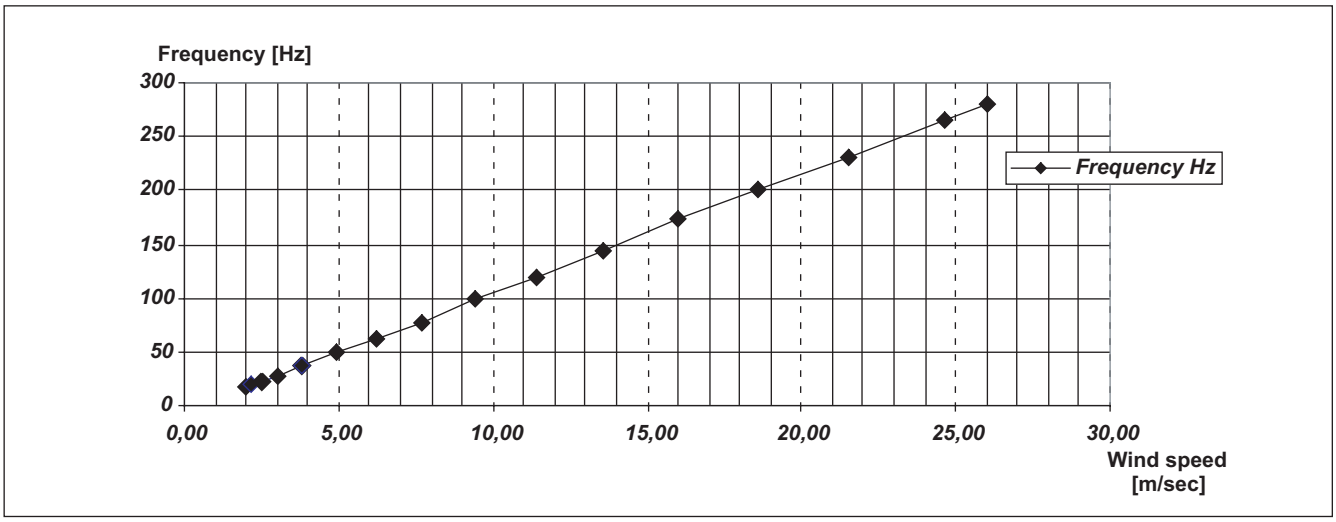


All dimensions in mm

Wiring Diagram



PV output versus wind speed



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