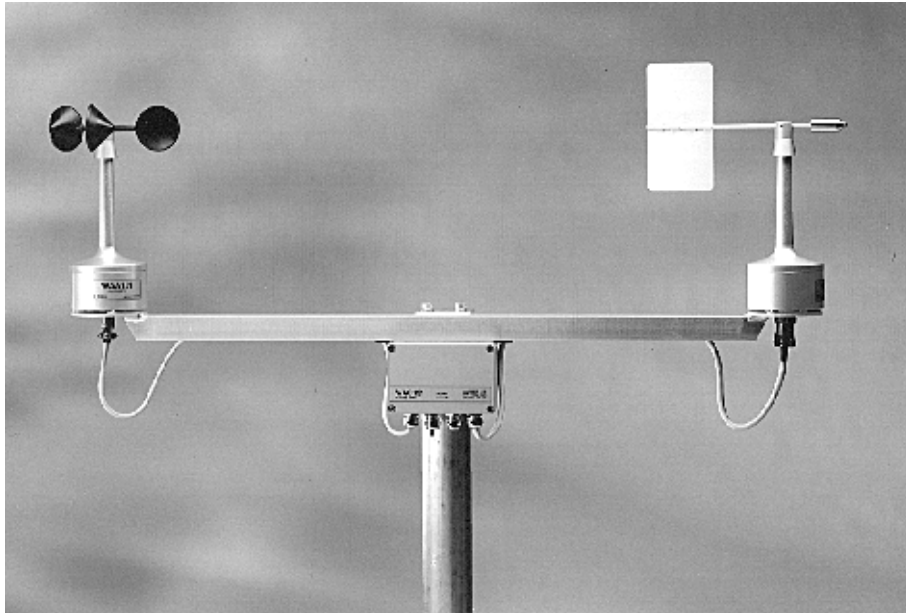


Vaisala WAT12 Wind Transmitter



The WAT12 Wind Transmitter is an economic solution to a standard interface between Vaisala's wind sensors and analog panel meters, chart recorders, digital LCD or LED displays, data loggers, computers with analog inputs, etc. The transmitter converts the wind speed and direction data measured by the WAA151 Anemometer and the WAV151 Wind Vane into two analog current loop signals, respectively. The power to the sensors is also supplied through the WAT12 unit.

The WAT12 consists of a PC board unit in a junction box and a cross arm for mounting the wind sensors. A 4-wire cable for the wind speed and direction signals and power supply is needed between the transmitter and the receiving end.

The loop current is selectable of, e.g., 4-to-20 mA, 0-to-10 mA, and 1-to-5 mA. The loops are supplied by high-side drivers with a return to the signal & power ground; thus nearly any input type can be driven.

The transmitter accepts a wide range of input power, i.e. from 12 to 28 VDC. With 5 mA loop current selected, the total current consumed is less than 40 mA (including the sensors and the loop current), hence making it possible to remotely supply the operating power from a distance of several kilometers, even through private or leased telephone lines.

The WAT12 also provides the sensors for throughput of optional heating power. The heating power connection, if required, calls for an extra pair of wires. Since the heating elements, standardly included in the WAA and WAV sensors, typically consume some 500 mA, the heating power is most conveniently supplied from a local power source. A thermostat switch is optionally available for automatic connection of heating power below +4 °C.

TECHNICAL INFORMATION

Type	Digital-to-analog current loop converter for Vaisala's wind sensors
Dimensions	
PCboard	114 × 69 mm ²
Junction box	125 (w) × 80 (h) × 57 (d) mm
Cross arm length	800 mm
Temperature range	operating -55 ... +55 °C storage -60 ... +70 °C
Humidity	0 ... 100 % RH
Signal input from sensors	
Wind direction	6-bit parallel GRAY code (optionally 7 bits)
Wind speed	Pulse frequency 0 ... 750 Hz
Input operating power	12 ... 28 VDC, 30 mA
Output sensor power	
On-board regulated to	10.7 VDC typically
Output signals	
Two analog current loops, one for direction, one for speed. High-side drivers; the loops return to the common signal & power ground. Loop driving voltage 10 V typ.	

Output accuracy	Better than 1 % of full scale
Loop current options	0–5 mA; 1–5 mA (jumper selectable)
	0–10 mA; 2–10 mA 0–20 mA; 4–20 mA
Max. loop resistance	1800 ohm for 5 mA loop 900 ohm for 10 mA loop 450 ohm for 20 mA loop (incl. cable resistance + receiver's input resistance)
Full scale options (jumper selectable)	
For direction	0 – 360°/0 – 540°
For speed	0 – 51.2 m/s / 0 – 76.8 m/s
Signal cable	4 wires minimum (Vin+, Vin–, DOP, SOP)
Mounting	to a Ø 60 mm pole mast
Weight	1.5 kg
Material	Cross arm AI anodized Junction box AI painted grey

