

WAT12 Analog Wind Transmitter



The WAT12 is designed to convert the wind speed and direction data measured into two analog current loop signals.

The Vaisala Wind Transmitter WAT12 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 either Vaisala Wind Set WA15 or Vaisala Wind Set WA25 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.

User selectable loop current

The loop current is selectable of, e.g., 4 ... 20 mA, 0 ... 10 mA, and 1 ... 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. 12 ... 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.

Optional heating power

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 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 (+39.2 °F).

Features/Benefits

- Converts the digital data supplied by the Vaisala Wind Set 15 and the Vaisala Wind Set 25 into two industry standard analog current loops; one for speed, the other for direction
- Selectable loop current
- Suitable for nearly any input type
- Wide range of input power
- provides the sensors with a throughput for optional heating power.

Technical Data

Digital-to-analog current loop converter for Vaisala wind sensors

Signal input from sensors

Wind direction	6-bit parallel GRAY code (optionally 7 bits)
Wind speed	Pulse frequency 0 ... 750 Hz

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 (jumper selectable)	0 ... 5 mA; 1 ... 5 mA 0 ... 10 mA; 2 ... 10 mA 0 ... 20 mA; 4 ... 20 mA
Max. loop resistance (incl. cable resistance + receiver's input resistance)	1800 ohm for 5 mA loop 900 ohm for 10 mA loop 450 ohm for 20 mA loop

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)

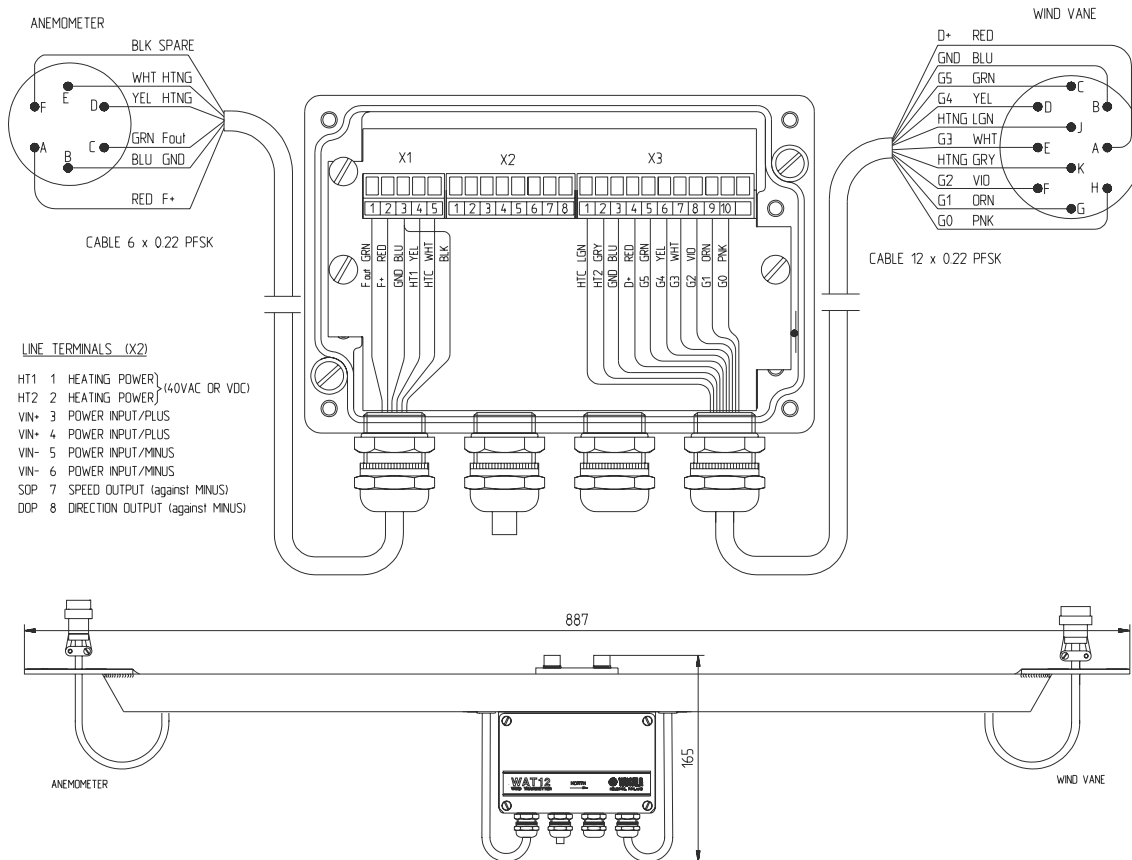
General

Input operating power	12 ... 28 VDC, 30 mA
Output sensor power	
On-board regulated to	10.7 VDC typically
Temperature range operating	-55 ... +55 °C (-67 ... +131 °F)
storage	-60 ... +70 °C (-76 ... +158 °F)
Humidity	0 ... 100 %RH
Material	
Cross arm	AI anodized
Junction box	AI painted grey

Complies with EMC standard EN 61326-1:1997 + Am1:1998 + Am2:2001; Generic Environment

Dimensions

PC board	114 × 69 mm ²
Junction box	125 (w) × 80 (h) × 57 (d) mm
Cross arm length	800 mm
Mounting	to a Ø 60 mm pole mast
Weight	1.5 kg



Specifications subject to change without prior notice.
©Vaisala Oyj

