

Vaisala Nomad[®] 2 Wind Resource Data Logger

/ The Wind Industry's Most Flexible Data Logger

SECONDWIND
by Vaisala



Vaisala Nomad 2 Wind Resource Data Logger is a flexible data logger specifically designed for the wind industry.

Field Proven and Flexible

The Vaisala Nomad 2 logger offers advanced functionality and simplified installation while reducing system costs. The Nomad 2 can be used with all market-leading wind sensors, and has more sensor inputs to connect up to 12 anemometers and 8 analog devices. It easily connects to SCADA systems and other Modbus-enabled networks and servers to integrate data into your operations.

Remote Communications Options

With the Nomad 2 Wind Data Logger, you can choose from three different communications options: the SkyServe secure web portal; cellular communications; or satellite communications.

Vaisala SkyServe[®] is the most flexible, powerful communication option for Nomad 2. SkyServe uses cellular or satellite communications to record and graph your wind data daily on a secure web portal. In addition to the communications and archiving functions, Vaisala SkyServe[®] allows you to analyze and archive wind data from one or dozens of Nomad-equipped towers and/or Triton[®] SoDAR systems on one secure wind data portal. You may compare data at different heights or from different locations, keep track of all your assets on one screen, and export data for analysis by your own software, including Windographer. You can also save data files in the same format you may be used to receiving by email.

Other communications options for Nomad 2 include CDMA and GSM cellular modem packages and Globalstar and Iridium satellite modem packages.

Benefits of Vaisala Nomad 2

- More sensor choices - use Nomad 2 with all market-leading wind sensors
- More sensor inputs - connect up to 12 anemometers and 8 analog devices
- Field friendly features simplify installation and maintenance
- Smart power management extends battery life and optional solar packages are available as well
- Remote communications options offer you many ways to access your data
- Easily connect to SCADA systems and other Modbus-enabled networks and servers

Technical Data

Sensor Inputs

12 COUNTER INPUTS

Configurable for AC & pulse anemometers, other frequency-output devices, and high/low digital or relay state signaling
Frequency range DC to 2 kHz
High display resolution with low frequency anemometers
Input high/low threshold configurable for 0V or 3V
Configurable filtering for low frequency devices
1-second count integration, $\pm 0.02\%$ accuracy

8 ANALOG INPUTS

Configurable range of 0 to 2.5V or 5V
12-bit analog to digital conversion
1-second sampling, $\pm 0.02\%$ accuracy
Direct interface to potentiometer wind vanes, 10k thermistors, and analog-output transducers

FAULT DETECTION

Feedback input from 2.5V+ excitation output for wiring and device fault detection

INTERNAL TEMPERATURE

1-second sampling, $\pm 2^\circ\text{C}$ accuracy

POWER SUPPLIES

Measurement of two 9V batteries and 12V power

Outputs

2.5V+ EXCITATION

2.5V+ smart-switched excitation distributed to all input terminal blocks for energy-conserving measurement of potentiometers and thermistors
Calibrated to $\pm 5\text{mV}$, 25 ppm/ $^\circ\text{C}$, 250 mA max

12V TRANSDUCER POWER

12V+ smart-switched transducer power output distributed to all input terminal blocks for energy-conserving operation of electronic transducers
1 Amp maximum

12V MODEM POWER

12V+ configurable switched modem power output for energy-conserving operation of cellular & other modems
1 Amp maximum

RELAY OUTPUT

For de-icing or other control applications
SPST dry contact, 1 Amp maximum, AC or DC
Modbus-controlled

ESD Protection

All inputs, outputs, and serial port signaling transient and fault protected
No additional lightning protection needed

Power Supply

9 VOLT BATTERIES

2 parallel standard 9V batteries in sliding receptacles
Up to 6 months operation with alkaline, up to one year with lithium (-40°C) batteries that have no shipping restrictions

12 VOLT POWER

12V (10 –18V DC) input for internal primary or rechargeable batteries, external DC power supply, or regulated solar panel
Two-screw removable internal mounting for lead-acid batteries for higher power transducer, controls, and communication gear, standard sizes up to 20 AH, extreme environment sizes up to 8 AH

SOLAR

Optional on-board solar charging regulator/controller

Serial Ports

3 independent RS232C serial ports, up to 115 kBaud

LOCAL PORT

Direct straight-cable connection to laptop or PC
Standard pinout DB9, DCE

REMOTE PORT

Connects to modem, radio, or asynch network adapter
Auto-wakeup Rx input
Internally connected for SWI-supplied modem options
Field-wireable terminals for customer-installed devices

DEVICE PORT

Connects to and logs from communicating transducers including ultrasonic anemometers
Pollable Modbus RTU for SCADA and other general applications

User Interface

LOCAL DISPLAY

4 x 20 alphanumeric character display, LCD or VFD
Configurable smart-switched power
Automatic temperature-compensating LCD contrast

KEYPAD

7-key sealed membrane keypad

REMOTE INTERFACE

Full display, configuration, data transfer, and firmware upgradability by local port or modem connection to any PC via Vaisala Nomad[®] Desktop software

STATUS LIGHT

Heartbeat LED indicates operational status independent of display

Technical Data

Input and Data Processing

WIND SPEED

Slope & offset scaling, auto-zeroing for counter inputs

WIND DIRECTION

Modulo 360° and true vector processing
Deadband location correction

TEMPERATURE

Thermistor linearization to device accuracy ($\pm 0.1^\circ\text{C}$)

MATH FUNCTIONS

Average, standard deviation, maximum, time of maximum,
minimum, time of minimum, total, cycles, sample value

RECORDING INTERVALS

1 minute, 10 minutes, hourly, or daily in any combination for
all inputs and math functions

Data Storage

MEDIA

Industry/consumer standard Compact Flash, up to 256MB
Read/write-able by any notebook or desktop PC via PCMCIA
adapter or any USB-type Compact Flash adapter
Full -40° to 85°C operation rated devices available

FORMATS

Card directory & file formats are fully Windows™ compatible
Any FAT (PC) formatted Compact Flash card fully usable
Data written to daily files in named monthly subdirectories
Each datum in standard IEEE floating point format, indexed for
positive database ID independent of file name/location
Each datum time-stamped in Universal Time (UT/GMT),
configurable for time zone & daylight savings offsets

TRANSFER

Files transferable by card removal, local serial connection,
remote dial-up connection, or as e-mail attachments

VAISALA SKYSERVE®

Upload data via cell or satellite and view on secure wind
information dashboard. See www.skyserve.net.

Physical

OPERATING TEMP

-40° to 85°C all specifications (Vacuum Fluorescent Display)

LCD TEMPERATURE

LCD operates from -20° to 70°C , storage -30° to 80°C

INTERNAL RT CLOCK

± 1 minute/month accuracy, internet time-server adjustable
Backed up by socketed 2032 Lithium coin cell (10 year life)

WIRE & CABLING

12 six-screw, 0.2" (5mm) cage clamp style terminal blocks
Signal, ground, excitation, switched & unswitched 12V power
distributed to each of 8 terminal blocks
Standard SMA-F bulkhead connector for external antennas
Four 3/4" npt/pg21 knockouts for cable & conduit installation

ENCLOSURE

Integrated waterproof instrument enclosure, wire and cable
junction box, and lockable rain shed
Upper section NEMA4/IP66 (watertight), lower section NEMA3R
(rain tight) or NEMA4 with cable glands
16 ga. steel, 14 ga. mounting flanges, TGIC powdercoated
14 x 12 x 5.5 inches (350 x 300 x 140mm), 20 lbs. (9 kg)
Mini-rack mounting for internal modem options
Swing-out panels for modem and 12V battery access
Surface, truss-tower, or tube-tower mounting
Single no-tools padlockable hasp closure

Available Options

Vacuum Fluorescent Display
GSM/GPRS, CDMA, and AMPS cellular modems
Satellite modems (Iridium or Globalstar)
Landline telephone (POTS) modem
Integrated solar charging systems, including charge regulator, panel,
mounting brackets, and lead-acid batteries

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Through the combined expertise of Vaisala, a global leader in atmospheric observation, and Second Wind, a global leader in remote sensing technology and data services for the wind energy industry, we offer an integrated suite of wind measurement solutions.

VAISALA

Please contact us at
www.vaisala.com/secondwind



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