Vaisala Nomad® 2 Wind Resource Data Logger

/V The Wind Industry’s Most Flexible Data Logger

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, ±0.02% accuracy

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

### 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

### 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 ±5mV, 25 ppm/°C, 250 mA max

12V TRANSUDER 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

### Serial Ports

- 3 independent RS232C serial ports, up to 115 kBaud

### 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<sup>®</sup> 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 (±0.1°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 timestamped 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 |

**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

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.