Vaisala Nomad® 3 Data Logger

Vaisala Nomad 3 Data Logger

Features and Benefits

- Rugged design, built for reliable operation in any environment
- Flexible – you choose the sensors, power supplies and communication options
- Easy to use
- Economical choice to reduce system costs
- Supports best practices for measurement campaigns

Overview

The Vaisala Nomad 3 Data Logger has been designed specifically for the energy industry by weather experts who understand your application and data requirements. Simple, flexible, and economical, the Nomad 3 helps you complete your campaigns on time and on budget.

Redesigned from the ground up, the Nomad 3 is rugged, easier to use, and more lightweight than its predecessor. The Nomad 3 allows you to connect all market-leading sensors without any hardware modifications, and is easy to install. It works with modern communications networks and meets all industry standards and requirements.

Simple, Secure and Easy to Use

The Nomad 3 Data Logger is ready to use when it arrives to your site. The unit is lightweight, easy to mount and wire, and can be configured using the on-line or desktop enabled Nomad 3 Toolbox.

Secure data is of utmost importance and Vaisala has designed the Nomad 3 with the option to enable encryption for added data security, while allowing easy access to the user. Data can be secured with public/private key cryptography to ensure maximum protection. Removing worry means you can focus on your data, and get the best analysis possible.

Flexible and Economical

The Nomad 3 works with all market-leading wind and solar sensors. This flexibility means you can choose the configuration that works best for your application. The Nomad 3 is an economical choice when budget is a factor in your decision-making. It has low power consumption, smaller data file sizes to reduce transmission costs, and optional remote access capability so you need fewer field visits.

The Nomad 3 is also flexible when it comes to communications and data options. Data can be stored in the logger, emailed daily, sent by ftp, or sent using Vaisala's SkyServe Data Service.

Technical Features and Specifications

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
  1-second count integration/sampling

12 ANALOG SINGLE-ENDED/6 ANALOG DIFFERENTIAL INPUTS
  Configurable range of 0 to 2.5V or 5V
  14-bit analog to digital conversion
  1-second sampling
  Direct interface to potentiometer wind vanes, 10k thermistors, and analog-output transducers

FAULT DETECTION
  Wiring error, low voltage error

POWER INPUT
  Input via Nomad 3 Power Enclosure or external supply

Outputs

2.5V+ EXCITATION
  2.5V+ smart-switched excitation for energy-conserving measurement of potentiometers and thermistors
  Nominal 140mA at 25°C

12V TRANSDUCER POWER
  12V+ smart-switched transducer power output distributed to input terminal blocks for energy-conserving operation of electronic transducers
  User configurable warm-up time to assure accurate readings.
  Nominal 550mA each bus at 25°C

Surge Protection

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

Power Supply

NOMINAL 12V POWER
  10–16V DC input from external primary or rechargeable batteries in external Power Enclosure, external DC power supply, or regulated solar panel

SOLAR
  Optional solar charging regulator/controller in external enclosure with 10 or 20W solar panel

User Interface

LOCAL DISPLAY
  4 x 20 alphanumeric character display, bright OLED display, visible in all light conditions

KEYPAD
  8-key custom sealed membrane keypad with intuitive graphical user interface

REMOTE INTERFACE
  Full display, configuration, data transfer, and firmware upgradable by USB flash drive port or modem connection via SkyServe

STATUS LIGHT
  LED indicates safe-to-disconnect status of USB flash drive port

Input and Data Processing

WIND SPEED
  Slope & offset scaling for counter inputs

WIND DIRECTION
  Modulo 360° and true vector processing
  Deadband correction

TEMPERATURE
  Thermistor linearization of device accuracy (±0.1°C)

MATH FUNCTIONS
  Average, standard deviation, 3-second gust (wind speed), maximum, minimum, total, cycles, sample value, and vector averaging for wind direction and standard deviation

RECORDING INTERVALS
  10 minute records for all inputs and math functions
  User-enabled 1 minute average data

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Technical Features and Specifications

Data Management

MEDIA
Industrial rated 1 GB uSD card provides on-board data storage

ENCRYPTION
User enabled data encryption with public/private key cryptography

TRANSFER
Files transferable by FTP connection or e-mail attachments

ETHERNET PORT
Communications port for upgradeable SCADA applications

USB PORT
USB flash drive connection for setup file uploads and data downloads

Physical

OPERATING TEMP
–40° to 70°C

TIME KEEPING
Automatic GPS, cell modem (internet) time corrections keeps time base accurate to ±5 seconds in normal operation
Backed up by Lithium coin cell battery (10 year life)

WIRING & CABLING
11 five position, 0.15" (3.81mm) pluggable screw terminals
6 seven position, 0.15" (3.81mm) pluggable screw terminals
Signal, ground, and excitation/switched/unswitched power distributed to each terminal block

ENCLOSURE
Integrated polycarbonate, IP65/NEMA 4 waterproof instrument enclosure
M63 multi-gland for environmentally sealed sensor connections
PG21 gland for antenna, power, and GPS cables
310 x 240 x 125 mm, 3 kg
Surface, truss-tower, or tube-tower mounting
Single no-tools padlockable twist hasp closure

Included Accessories

Miniature ESD Screwdriver
2GB USB flash drive
Wet-erase marker for sensor configuration records

Available Options

GSM 2G modem with standard antenna
Yagi antenna for boosted cell coverage with additional lightning protection
Separate Power Enclosure system, including solar charge regulator and 12V lead acid battery with optional 10 or 20W solar panel kits

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For more information, visit
www.vaisala.com/energy

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