

Bently Nevada Service Manual

60M100-00

1. Description

Part Number: 60M100-00

3. Product Information

Part Number: 60M100-00

Model: Bently Nevada Wind Condition Monitor

Manufacturer: Bently Nevada

Condition: New & Original in Factory Packing

Factory Warranty: 12 Months

60M100-00 Ordering Information

60M100-00: Bently Nevada Wind Condition Monitor

Approvals: 00= Standard

Specifications

Electrical

Input Power Min: 18 Vdc Max: 36 Vdc

Current Max: 1.7 A

Inrush

Current

Max: 2.7 A, less than 5 ms

Module

Inputs

Max: 12 dynamic signals and 2 Keyphasor

signals

Dynamic

Range

110 dB @ fs = 102.4 ksps

Signal/Noise

Ratio

110 dB @ fs = 102.4 ksps

A/D

Conversion

Sigma-Delta 24 bits nominal

Bandwidth 0 to 40 kHz

Outputs

Two

Independent

Ethernet ports

Net A: 10/100 BaseT

Network DHCP Port

Net B: 10/100 BaseT

Local Static IP Port

Buffered

Signal

Outputs

Two 15 pin DSUB connector

550 ohm output impedance

LEDs

POWER LED Indicates when a proper power

input is present

OK LED Indicates when the system is

functioning properly.

Danger LED Indicates an Danger Alarm

condition

Alert LED Indicates an Alert condition

Kph 1 OK

LED

Indicates that Keyphasor signal

1 is triggering.

Kph 2 OK

LED

Indicates that Keyphasor signal

2 is triggering.

NetA Indicates that Network A has a

valid link

TX/RX A Indicates that network traffic is
flowing on Network A

Net B Indicates that Network B has a
valid link

TX/RX B Indicates that network traffic is
flowing on Network B

Accuracy

Direct pk or rms Within $\pm 0.5\%$ of full-scale
typical, $\pm 1.1\%$ worst case

Bias $+0.4\text{ V} / -0.8\text{ V}$ typical
 $+0.8\text{ V} / -1.34\text{ V}$ worst case.

Rotor, Mesh and
Fault

Frequencies

$\pm 6.7\%$ typical, $\pm 9.7\%$ worst
case

Bearing

Frequencies

$\pm 6.7\%$ typical, $\pm 9.7\%$ worst
case

Tower Sway $\pm 0.16\text{ m/s}^2$
(0.016 g) typical
 $\pm 0.23\text{ m/s}^2$
(0.023 g) worst
case

Kurtosis $\pm 1\%$ 50 Hz to 10,000 Hz
 $\pm 3\%$ 1 Hz to 49.9 Hz

Generator

Electrical Noise

$\pm 1\%$ 50 Hz to 10,000 Hz
 $\pm 3\%$ 1 Hz to 49.9 Hz

Crest Factor Within $\pm 0.5\%$ of full-scale
typical, $\pm 1.1\%$ worst case

-Minimum

Amplitude for
Crest Factor,
Skewness, and
Kurtosis
measurements

0.6 m/s^2
(0.06 g)

Alarming

Modes Modes are determined from
generator power: Mode 1: 25% to
40% power
Mode 2: > 40% to 55% power
Mode 3: > 55% to 70% power
Mode 4: > 70% to 85% power
Mode 5: > 85% power

Setpoints 2 levels: Warning and Alarm

Time Delay 300 seconds (fixed) for all
measurements

Latching All alarm statuses are latching

Dynamic Data

Asynchronous

Waveform

8192 samples, 320 ms

Synchronous

Waveform

8192 samples: 4 revolutions,

2048 samples/rev

8 revolutions, 1024

samples/rev

16 revolutions, 512

samples/rev

32 revolutions, 256

samples/rev

64 revolutions, 128

samples/rev

Spectrums

-Main

Bearing

8 revolutions, 1024

samples/rev

3200 lines Sync Enveloped

-Gearbox

Stages

3200 lines Sync Enveloped

3200 lines Sync High Res

Number of revolutions and

samples per revolution vary

based on the selected asset.

-Generator

Inboard /

Outboard

64 revolutions, 128

samples/rev

3200 lines Sync Enveloped

3200 lines Sync High Res

-Tower Sway 15.625 Hz, 200 lines

Anti-Alias -80 dB minimum

Update Rate 30 seconds

Historical Data

Storage Rate

4 hours

Data Storage 2 weeks (typical, no alarms)

Keyphasor Signal Inputs

Speed

Range

1 to 120,000 rpm;

limited to 2,000 rpm for wind

turbines

Speed

Resolution

1 to 100 rpm ± 0.1 rpm

100 to 2000 rpm ± 1 rpm

Gap ± 8.2 mV typical

± 22.3 mV worst case

Supported Transducers

Acceleration

Channels

TurningPoint TP100

Accelerometer

Keyphasor

Channels

Turck Ni8-M18T-AP6X7M,

externally powered

Bently Prox Probes

Oil Particle

Sensors

GasTOPs Macom

Proximity

Channel (for

Shaft Crack

Detection)

Bently Prox Probe 3300 XL

11mm

Environmental

Operating

Temperature

Range

-40 C to +70 C

(-40 F to 158 F)

Storage

Temperature

Range

-45 C to +85 C

(-49 F to 185 F)

Relative

Humidity

0% to 95% non-condensing

operating and storage

Pollution

Degree

Pollution Degree 2 (working

voltage < 30 Vrms or 60 Vdc)

Physical

Dimensions 8.88 X 5.89 X 2.17 inches

(225 X 150 X 55 mm)

Weight 1.4 kg (3 lbs)

Mounting DIN rail msounting

