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 ± 0.5% of full-scale typical, ± 1.1% worst case

Bias +0.4 V / -0.8 V typical +0.8 V / -1.34 V worst case.

Rotor, Mesh and Fault Frequencies

± 6.7% typical, ± 9.7% worst case

Bearing Frequencies

± 6.7% typical, ± 9.7% worst case

Tower Sway ± 0.16 m/s2 (0.016 g) typical

± 0.23 m/s2 (0.023 g) worst case

Kurtosis ± 1% 50 Hz to 10,000 Hz

± 3% 1 Hz to 49.9 Hz

Generator Electrical Noise

± 1% 50 Hz to 10,000 Hz

± 3% 1 Hz to 49.9 Hz

Crest Factor Within ± 0.5% of full-scale typical, ± 1.1% worst case

–Minimum Amplitude for Crest Factor, Skewness, and Kurtosis measurements

0.6 m/s2 (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