

GE Energy

# Essential Insight.mesh<sup>\*</sup> Advantage Package

Wireless Condition Monitoring Solution



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## Wireless Condition Monitoring Solution

GE Energy's Bently Nevada\* Essential Insight.mesh wireless condition monitoring solution provides an innovative wireless program that gives you everything you need to set up a comprehensive wireless network—with many sites going from start of deployment to data collection in two days. The Essential Insight.mesh Advantage Package delivers value right out of the box, with wireless condition monitoring for essential assets in your balance-of-plant. It contains all of the hardware necessary to deploy 16 dynamic points of wireless monitoring throughout your plant.

The Advantage Package is scalable, allowing expansion from an initial 16 dynamic points up to thousands of points deployed throughout your site. This enables you to design the exact network of points you need to improve plant reliability. This rapid deployment and flexibility is provided by a sensor mesh solution that is enabled through the Essential Insight.mesh wSIM\*node. The wSIM supports four input ports that can be any combination of vibration transducers or thermocouples.



### Dynamic Waveform Data

The Advantage Package and its dynamic waveforms—paired with the powerful diagnostic capability in System 1\* software, Decision Support and Knowledge<sup>3</sup> (or KN<sup>3</sup> for Knowledge Cubed)—provides unparalleled diagnostic capabilities that allow you to detect hundreds of anomalies. Dynamic waveform data can also be used with System 1 applications to provide insight into what is failing within a machine train. The dynamic waveform data obtained from the Essential Insight.mesh solution can be used to identify faults in a variety of essential assets, including pumps, motors, and fans.

Another advantage of this package is that you can configure collection rates in order to gather data at a frequency rate that will best meet your machinery diagnostic needs. Ranging from daily for dynamic waveforms for general long-term trending to every few hours for static data transmissions, the Essential Insight.mesh solution can provide you all the data you need for vibration analysis and predictive maintenance.

The overall solution provides:

- Early notification of bearing failures and other machinery faults via software alarms
- Compatibility with System 1 software RulePaks, enabling users to design and configure algorithms to detect anomalies in processes and assets, and then generate actionable recommendations
- Complete vibration, spectrum, and trend plots necessary for temperature and vibration analysis



## Benefits

The Essential Insight.mesh solution helps you to:

- Improve maintenance planning to reduce outage time and duration unplanned outages
- Optimize equipment usage by managing equipment life and personnel
- Enhance machine availability through data quality and analysis from the proven Bently Nevada condition monitoring solutions
- Eliminate complex wiring and required outages for wireless condition monitoring installations
- Increase plant reliability with an easy-to-install, scalable solution

## Quick Access to Asset Health Information

The Bently Nevada Essential Insight.mesh wireless solution enables plant employees to spend more time managing assets based on information from process data and reliability information—instead of spending time making data collection rounds. This gives your plant personnel a key advantage by minimizing the amount of time that maintenance staff needs to spend gathering information and trying to identify where an issue is occurring. System 1 empowers the engineering team to immediately initiate corrective actions by knowing where best to focus their efforts before more serious problems develop.

## Everything You Need

The Advantage Package delivers everything you need to wirelessly extend your System 1 version 6.5 SP2 (or newer) condition monitoring system:

The Advantage Package includes:

- The Manager Gateway (802.15.4, 2.4 GHz) to manage the network and serve as the gateway between the wireless and wired network
- Sixteen sensors (thermocouples and/or vibration transducers)
- Sensor mounting hardware
- Sixteen dynamic point licenses in System 1 for dynamic waveform data
- Essential Insight.mesh network license
- Four wSIM sensors, one repeater, and vibration sensor cables

## Simple to Deploy

Deployment of our Essential Insight.mesh solution is easy. The wireless network is self-forming through our innovative mesh network technology. This means that once commissioned, wSIM nodes automatically form the mesh network, without any additional steps. The network is also self-healing, so if a signal path is interrupted, the mesh ensures alternate signal transmission paths and automatically adds the interrupted path as soon as it becomes available again. This keeps your system interconnected and communicating with System 1 software at all times.

Deployment requires only a few simple steps:

1. Commission the nodes to the Manager Gateway
2. Attach the wSIM nodes to your machines
3. Connect the Ethernet wireless gateway to System 1 enterprise
4. Confirm the network recognizes nodes
5. Reap the value of monitoring your assets

## Technology Support

The Advantage Package has been designed with all levels of support in mind. To ensure that your team gains insight and understanding, we have included two days of onsite technical direction that will cover building and configuring wireless points in the System 1 software. A Bently Nevada expert will provide comprehensive guidance on product deployment best practices. Additionally, each Advantage Package comes with a Silver-level Technical Service Agreement, which provides unlimited remote tech support.



Essential Insight.mesh Advantage Package Contents	Quantity	Part Numbers
<b>Advantage Package</b>		<b>185300-02</b>
Essential Insight.mesh network license	1	n/a
System 1 point license upgrade to add 16 static wireless points	1	n/a
Manager Gateway with power and mounting option	1	-BB-CC
wSIM, battery powered with mounting option	4	-DD
Repeater with mounting option	1	-DD
Thermocouples <sup>(1,2)</sup> and/or vibration sensors <sup>(1,2)</sup> (2001xx)	16	EE-FF-GG-HH
Configuration and technical direction services	2 days	

Table 1

Footnote

(1) Order 16 thermocouples (TCs) or 16 vibration sensors (Vibs), or eight TCs and eight Vibs. TCs and Vibs delivered are 200125 TC or TC connector, 200150 Vib, 200155 Vib, 200157 Vib. For additional ordering information, please see Thermocouple Data Sheet 149558, Accelerometer Data Sheet 164986, and Essential Insight.mesh Data Sheet GE#185 301-01.

(2) Includes associated cabling, connectors, and mountings.

(3) This can only be ordered for an existing Essential Insight.mesh network license.

Essential Insight.mesh Advantage Package Contents	Quantity	Part Numbers
<b>Advantage Expansion kit<sup>(3)</sup></b>		<b>185300-04-00-00</b>
System 1 license upgrade for 16 static wireless points	1	n/a
wSIM, battery powered with mounting option	4	-DD
Repeater with mounting option	1	-DD
Thermocouples <sup>(1,2)</sup> and/or vibration sensors <sup>(1,2)</sup> (2001xx)	16	EE-FF-GG-HH
Full Services <ul style="list-style-type: none"> <li>• Solution design</li> <li>• Configuration</li> <li>• Technical direction</li> <li>• Installation</li> <li>• Training</li> </ul>		Quote

Table 2

Improve your overall plant reliability by extending Bently Nevada Essential Insight.mesh wireless condition monitoring into your balance-of-plant. Visit [ge-energy.com/bentlywireless](http://ge-energy.com/bentlywireless) for more information today!

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