

**Hubbell Wiring Device-Kellems**  
**inSIGHT Data Monitoring**  
 E-Learning Script

Section	Voiceover	Notes
<b>Opening</b>	<p>The inSIGHT Data Monitoring family of products provide wireless monitoring of several key performance indicators throughout your facility or production process. Through a powerful wireless mesh network, these devices continually communicate real-time data readings on power usage, current consumption, electrical device temperature, and voltage for immediate trouble shooting and predictive analysis directly at the point of use.</p>	
<b>Learning Objectives</b>	<p>This module will help you:</p> <ul style="list-style-type: none"> <li>• Understand how the inSIGHT Data Monitoring system works and the types of indicators it is capable of tracking</li> <li>• Explore the different types of devices available in this family of products</li> <li>• Identify the types of applications these devices would be typically deployed in and discuss the unique benefits they provide to each.</li> </ul>	
<b>Using the Module</b>	<p>You'll control the pace of the module by using the navigation buttons at the bottom of the screen. Use the button in the upper right to adjust the size of the presentation.</p> <p>You can view your progress through the module by checking the progress bar at the bottom.</p> <p>Reinforcement questions are provided throughout the course. At the end of the module, we'll provide an opportunity to test your understanding with a short quiz.</p> <p>The Resources section provides links to additional information you can access in the future.</p>	
<b>Overview of InsightData Monitoring Family</b>	<p>Data collection and analysis in today's markets are increasingly important to ensuring efficiency, uptime and quality. For any Industrial facility or data center owner, the ability to predict costly downtime before it happens is critical to maintaining productivity. Hubbell's line of Intelligent Data Monitoring devices provide data for analysis while helping to predict potential changes within any process, directly at the point of use. Important power and environmental data that's collected and analyzed ranges from utility grade billable current metering, to internal device temperature and even humidity.</p>	
<b>How inSIGHT Data Monitoring</b>	<p>The inSIGHT family of products evolved from Hubbell's initial</p>	

<p><b>Works.</b></p>	<p>goal of building a smart pin &amp; sleeve device that could independently communicate adverse conditions predictive of equipment or process failure. Containing the monitoring technology within the body of a 60 Amp pin &amp; sleeve device allowed easy, if not transparent installation of these devices. Hubbell then expanded the line with additional products ranging from ethernet gateways, to smart power cables, to circuit and environmental monitors, to powerful analytics software capable of text or email alerts. These devices constantly capture real-time data readings on power usage, current consumption, equipment temperature, voltage, and even humidity.</p> <p>Acting as individual nodes in a wireless mesh network, each monitoring device also acts as a link passing on collected data to other devices within 30 meters until the data reaches the Ethernet gateway, which in turn delivers the data through a hard wired ethernet connection to the end users front end dashboard for analysis and reporting.</p>	
<p><b>Reinforcement Question</b></p>	<p>Devices within the mesh network need to be within how many meters of one another?</p> <p>A. 20 B. 30 C. 40</p>	<p>B</p>
<p><b>Ethernet Gateway Devices and network functionality</b></p>	<p>Hubbell's Ethernet Gateway collects data from the wireless mesh network of devices and then transmits that data directly to the user's front-end dashboard via a hard ethernet connection for visual and historical analysis. Each gateway can accept up to 150 monitoring devices which interlink at a maximum distance of 30 meters from node to node.</p> <p>If there is a line of sight issue between nodes within the network such as a wall, the device will transmit data to the next closest monitoring node. If a node fails, the next closest node within 30 meters immediately takes over the transmission load, creating a "self healing" network of devices.</p> <p>If there are any areas in the network that are beyond the 30 meters of necessary device proximity, an additional ethernet gateway can be added at these points to restore the devices access to the network.</p> <p>Hubbell's Ethernet Gateways accept most mainstream protocols such as EMX, Modbus TCP/IP, SNMP, EtherNet/IP™, MTConnect®, and our implementation team can write custom protocols per customer needs.</p>	

<b>Reinforcement Question</b>	<p>the Hubbell Data Monitoring Ethernet Gateway can communicate with which of the following protocols?</p> <ul style="list-style-type: none"> <li>A. EMX</li> <li>B. Modbus TCP/IP</li> <li>C. SNMP</li> <li>D. All the above</li> </ul>	D
<b>Power Cables</b>	<p>Hubbell's Smart Power monitoring cables provide quick plug and play monitoring directly at point of use and communicate on the same wireless mesh network as the Intelligent Pin and Sleeve devices. The pre-wired monitor transmits power usage directly to a central Gateway without the need for complicated system configuration. Power cable assemblies configured with Twist-Lock and Pin and Sleeve plugs and connectors are available in standard amperage and voltage configurations, both single and 3 phase, typically utilized in most Industrial and Data Center facilities.</p>	
<b>Reinforcement Question</b>	<p>the Hubbell Smart Power monitors communicate on the same network as the Intelligent Pin and Sleeve Devices.</p> <p>True False</p>	True
<b>Circuit Monitors</b>	<p>Hubbell's Circuit Monitors add enhanced monitoring capability at the breaker panel by taking power data readings for both outgoing and incoming current at the panel. Having precise knowledge of power usage per branch circuit gives a facility accurate data as to where power inefficiencies or disparities exist within an industrial environment, or predictive analysis as to impending equipment failure. In a commercial building environment, such data allows property owners to accurately monitor and manage per tenant power usage. In Data centers, these devices are effective at managing power consumption and thereby overall system health.</p> <p>These devices provide a means to monitor single and three phase circuits in pre configured enclosure kits from 38 - 480amps . Installation of this system is easy, as split core current transformers can connect to existing circuits without the need to disconnect power. This real time monitor can help analyze power consumption, balanced loads, cost allocation, and historical trends.</p>	

<b>Reinforcement Question</b>	Hubbell's circuit monitors do not require power to be disconnected during installation	True
<b>Environmental Monitors</b>	<p>Hubbell's Environmental Monitors add another layer of monitoring capability by measuring environmental factors such as humidity and temperature. These devices are essential in environments with highly sensitive equipment such as server racks in data centers, or in equipment cabinets within automated manufacturing environments.</p> <p>Each environmental monitor can accommodate up to six external temperature probes 1 to 4 meters in length. Relative humidity sensing, internal to the device, is also available in this Hubbell model. These monitors are part of the same wireless mesh network and communicate directly with the Hubbell Gateway.</p>	
<b>Reinforcement Question</b>	<p>the Hubbell Environmental monitor will accept up to how many external temperature probes?</p> <p>A. 10 B. 5 C. 6 D. 1</p>	C
<b>Front end Software</b>	<p>The final component of the Hubbell Data Monitoring system is the front-end software which analyzes and presents the data to the end-user. This software is provided and serviced by Hubbell's third-party partner Pocket Power, and its capabilities include:</p> <ul style="list-style-type: none"> <li>• The ability to report real-time device status for a variety of programmable data thresholds</li> <li>• The ability to create historical graphing of data for long- or short-term analysis</li> <li>• The ability to customize time periods in which data can be viewed, whether it's by the month, day, or hour.</li> <li>• The ability to send real-time alerts via e-mail or text message alerts if programmed thresholds have been exceeded.</li> </ul> <p>Additionally, the Hubbell Monitoring system can be integrated into any customer supplied software, either cloud based or locally installed.</p>	
<b>Reinforcement Question</b>	<p>The Hubbell Data Monitoring system front-end software can send text alerts when data exceeds set thresholds.</p> <p>True False</p>	True
<b>Summary</b>	The Hubbell Insight Data Monitoring family of software and devices represents a powerful new system which puts industrial plant managers, commercial building owners and data center	

	<p>managers in complete control of their facilities. With the collection of important real time data from key devices and locations within a facility or process, the Insight Data Monitoring System is a virtual guardian of your organization, saving you process downtime, and ensuring equipment longevity.</p>	
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