

Using Imaging Technology to Identify and Track Product Parts

By using information data matrices and Cognex industrial identification products, manufacturers can keep track of product inventory and improve quality control during assembly processes.

In electronic manufacturing, individual components have barcode labels for product identification and inventory tracking. As electronic components get smaller and smaller, there is less and less room for bar codes on these tiny parts. Today's quality control processes also require even more information to be included on each part, including lot code, vendor ID, product number, and serial number. 2D data matrix ID codes allow for much more information to be printed on a small area, and 2D data matrix labels can be more easily attached to or printed directly onto small electronic components. Some 2D data matrices can be as small as 1mm x 1mm, so matrix readers have to be able to resolve these small data matrices in order to accurately track parts.

How Do ID Matrices Benefit Manufacturers?

Informational data matrices provide several functions to a manufacturing operation. The primary function of these data matrices is to provide component identification. When a component's data matrix is scanned prior to installation into a part assembly, its identification can be verified, resulting in fewer assembly mistakes. Secondly, these data matrices also provide inventory information to the manufacturer. The manufacturer can track how many of each component type are in inventory, where each component is within the manufacturing process, and alert purchasing when a threshold count floor is reached.

Cognex Inventory Identification and Tracking Systems

Cognex produces a variety of part identification and inventory tracking products that can meet the needs of both small scale product development shops and high-volume manufacturing plants. All of Cognex's ID products are image-based, providing high reliability reading of 1D and 2D codes. Cognex ID products can resolve everything from the easiest to read codes to the most difficult codes directly-marked on metal, glass, ceramic, and plastic parts.

DataMan hand-held readers Hand-held DataMan readers are available in several configurations for both 1D barcodes and 2D ID matrices of various sizes, corded and wireless models, and even Bluetooth connections to intelligent base stations. All of the Cognex hand-held DataMan readers feature housings that protect the reader from electrostatic discharge (ESD). The DataMan® 7500 Series Readers and Verifiers include features to meet the requirements of the US Department of Defense UID Program.

DataMan fixed readers Cognex's DataMan fixed readers are the world's smallest high-performance industrial ID readers. The DataMan fixed readers can read both 1D and 2D codes, Industrial Ethernet for real time tracking, image download, data transfer and effortless plant integration; and integrated lighting. Options are available for high speed code reading and IDMax® software for interpreting difficult-to-read codes.

InSight fixed readers - Cognex InSight fixed-mount ID readers integrate lighting, camera, ID software, processor and communications into an industrial-grade design to provide unmatched code reading performance. All of the InSight fixed mount readers incorporate IDMax software for interpreting difficult-to-read codes. The digital acquisition system, DSP architecture, and reading algorithms allow the InSight fixed mount readers to produce continuously high read rates in both direct part mark and label-based identification applications.

Cognex readers can be integrated into existing inventory control systems with a minimal amount of reconfiguration. These readers are extremely reliable, allowing manufacturers to minimize misidentification of parts and maintain control over their inventory.