No Wires? No Problem!

Wireless DNC from eNETDNC

The eNETDNC wireless solution is based on the standard 802.11g,b wireless Ethernet and can be configured to work with an existing wireless network or as a stand-alone system. The wireless system is flexible; it can be configured to include all of the CNC machines or used in combination with a wired eNETDNC installation. In today's lean manufacturing environment, machine tools are more mobile than they have been in the past. The wireless solution allows manufacturing flexibility without compromising system reliability.

Each CNC machine is connected to the network using a eWireless unit. The eWireless unit converts the RS232 signal from the machine to an Ethernet signal that can be broadcast to the network. The eWireless unit also contains an access point that then facilitates the communication. The wireless option eliminates the cost of running cable to each machine and allows customers to move machines throughout the shop without changing the DNC system. For the machine shop that has the need for both options, a system can be configured to handle both wired and wireless communication methods.

In addition to the RS-232 to Ethernet conversion, the single port eWireless unit provides security thru IP addressing and ensures data quality by performing CRC checking. One of the devices is plugged into the standard RS-232 serial communications port at each CNC. A wireless access point mounted in the ceiling above the shop acts as a communications hub for transmitting NC programs to individual machines on the floor. This device, an Ethernet client bridge, converts Ethernet to RS-232 input. Operators access the DNC system as if it were hardwired to the CNC, with no difference in how the DNC interface functions. All communications are performed using the standard CNC controller. This remote send/receive feature allows the operators to receive and save CNC files without leaving their work area.

The convenience of wireless technology without compromising reliability:

- No need to string wires
- Move machines without moving cables
- No issues with shop interference or noise
- Remote access from machine control
- Encrypted for security
- Built in verification for insured data integrity

eNETDNC

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Machine Monitoring · Wireless DNC · Data Collection

A key piece to solving the wireless puzzle resides in the eNETDNC software running on the DNC server and communicating with the individual machines. Because the eWireless units are designed to specifically work with eNETDNC the configuration of the entire system is simplified, and therefore provides a more reliable connection. The software allows the shop to assign a specific IP address on the DNC server for each of the CNC machine ports. This capability eliminates the need for a separate serial port server. Each machine has a unique DNC configuration allowing machines to communicate at their optimal settings. This unique identity also allows machines to be configured with upload and download directories specific to each machine. These wireless technology without directories are usually located on the server to provide maximum security and regular data back-up.

"The convenience of wireless technology without compromising realiability"
- The eNETDNC Promise

Two other issues often come up when discussing wireless DNC: Security and Interference. The single port eHUB was designed to convert the serial signal prior to transmitting thus allowing the wireless device to encrypt data at the point of transmission. The Ethernet to RS-232 converters then decode the data before the file is passed to the CNC. Because the system uses a radio frequency within a bandwidth recently dedicated to wireless networks, it is immune to interference from other sources. The wireless eHUB has security restrictions limiting the permissible IP addresses it will accept. New machines can be added to the system by simply placing the hardware at the machine and configuring the DNC server to accept communications.

The eNETDNC wireless DNC solution also supports the Machine Monitoring and Data Collection features of the standard wired system. The eNETDNC family of products focuses on providing flexible, secure, reliable and cost-effective solutions to the manufacturing community. The wireless product was designed and manufactured to provide the same outstanding performance our customers expect.

eWireless Unit Mounted on a CNC Machine Control

eNETDNC System Features

- Readily connects to any existing network
- Supports all CNC machine control types including proprietary formats
- The system can be expanded to support an unlimited number of machines
- Able to drip/spoon feed multiple CNC machines simultaneously
- Runs on any current Windows platform
- Uses standard TCP/IP settings
- Industrial grade hardware provides dependable system performance
- Hardware and software design insures data quality is preserved