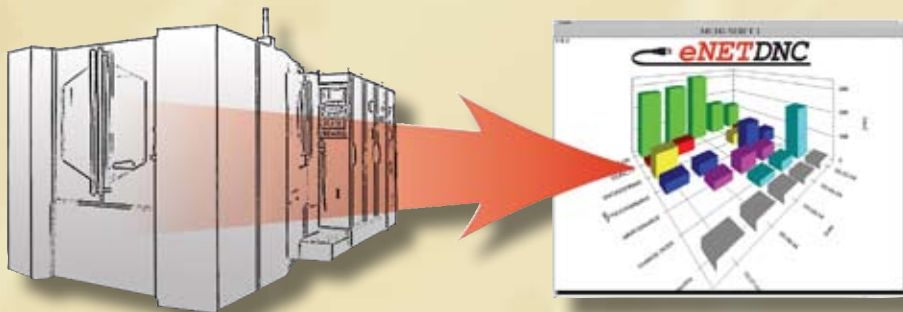


Better Data! Better Decisions!

Machine Monitoring from eNETDNC



The eNETDNC machine monitoring system has the ability to collect data directly from the CNC machine. Based on this information the system determines the machine status and reports data real time throughout the organization. The Machine Monitoring Dashboard displays the status of each machine on the shop floor. This allows managers to react to problems as they occur rather than attempting to diagnose and explain problems based on post production reports. The flexibility of the Machine Monitoring system will help create focus on the non-productive time and track the causes. In today's competitive manufacturing environment Machine Monitoring provides management with a new tool to analyze and improve their operations.

For many companies the concept of communicating CNC files between programming and shop floor machine controls has long been accomplished using a DNC system. Distributive numerical control (DNC) is technology that has been utilized to enhance the productivity of machine shops worldwide. However, PortCNC has introduced eNETDNC, which arms companies with a new tool to improve productivity and machine utilization. True Machine Monitoring is now available using the eNETDNC system.

Machine	Status	Part Number	Count	Last Cycle	Current Cycle	Time
556	Cycle Off	2201104003G	67	02:22:57		02:23:12
557	Set-Up	2004808524A	0	00:00:00		01:22:44
558	Cycle On	2000805573F	17	00:02:10		00:02:00
559	Cycle Off	4061110202J	408	00:03:19		00:03:12
560	Maintenance	989972564E	22	00:00:00		00:05:29
561	Cycle On	237888920A	919	00:01:12		00:01:08

eNETDNC Machine Monitoring Dashboard displays real-time machine status.

The machine monitoring system has the ability to monitor controller-generated data. Based on this information the system determines the machine status. Either the machine is active and running production parts, it is in the set-up mode or the machine is idle. If the machine is idle operators are required to report why the machine is idle. This portion of the monitoring system allows companies to configure the system to track data most relevant to their operation. The flexibility of the eNET system will help create focus on the nonproduction time and track the causes.

The Machine Monitoring Dashboard displays real time status of each machine on the shop floor. This allows managers to react to problems as they occur rather than attempting to diagnose and explain problems based on post production reports. Machine Monitoring is also a perfect solution for companies that are Overall Equipment Effectiveness (OEE). The system can be configured to calculate and report machine or department specific OEE data automatically.

The monitoring set-up screen allows companies to select items critical to their operations. One example would be waiting for support activities. Whether it is quality, engineering or other activities we all know that too often machines wait for support personnel. The eNET system will allow companies to quantify the amount of time being lost, investigate the reason for the losses and finally put solutions in place that will eliminate these problems in the future.

The machine-monitoring feature provides instant status of any CNC machine in the shop and allows for collection of real-time production data directly from the machine controls. Using the DNC connection to the machine tool and a special monitoring board, the eNET system is able to monitor the CNC control activity and provide production relevant information about the machine operation.

Machine monitoring also creates accountability in labor reporting. A longtime enemy of production planning is the accuracy of labor reporting. Because the machine monitoring system can determine the exact number of machine cycles that have been run, the system can also determine exactly how many pieces the machine made. While the monitoring system cannot determine the number of pieces that were made scrap it does give management a starting point to

“Machine Monitoring provides management with a new tool to analyze and improve their operations.”

reference. Too often material for 500 pieces worth of material has been issued to the floor and only 450 pieces were reported in the data collection system. Machine Monitoring closes the loop in labor reporting.

By monitoring when the spindle is running and how many times the program cycle started, management is able to gain valuable information into machine utilization. This information is independent of the shop floor data entry and use of the machine monitoring system is sure to increase the integrity of your manufacturing data.

The machine monitoring option in eNETDNC allows management to determine which data is important to their operations. The system can be configured to collect a variety of information including downtime related to set-up, maintenance, first piece inspection and quality issues. If the machine is equipped with a bar feed system operators can be paged when stock is low. Cycle times, machine loads and part counts can all be reviewed remotely using the Machine Monitoring feature and your existing network.

The graphical display allows for easy review of data. For more sophisticated data analysis the information can be uploaded into Microsoft Excel or similar products. Finally, data collected via the machine monitoring system can be used directly with your shop management software package again increasing the accuracy of your manufacturing data. Machine Monitoring provides management with a new tool to analyze and improve their operations.



Using eNETDNC Machine Monitoring companies can measure and track the following information:

- Spindle on time
 - True cycle time
 - Accurate part counts
 - Set-up time
 - Machine downtime due to quality, engineering or material issues
 - Preventative maintenance Time
 - Tool breakage
 - Unscheduled maintenance time
 - Overall equipment effectiveness (OEE)
-