



**Benefits:**

- Decreases threat surface to reduce risk of penetration
- Ensures safe, reliable, expected operation
- Reduces the risk of non-compliance
- Achilles-certified real-time operating control

**Features:**

- Secure version of VxWorks® \* RTOS 6.8, supporting Secure Shell (SSH) communication encryption
- Enables authenticated user access
- Password manager compliant with NERC/CIP requirements
- Tool and protocol updates
- GAP™ security block updates
- Footprint update management
- Embedded firewall enforces security at the control

**MicroNet™ Plus CPU5200**  
**Cyber Security**

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# MicroNet Plus CPU 5200 Cyber Security

## Meet NERC/CIP requirements with updated Woodward hardware! \*\*

Upgrade your Woodward MicroNet™ Plus CPU's and RTN's to assist in meeting CIP (Critical Infrastructure Protection) requirements mandated by NERC (North American Electric Reliability Corporation) to protect bulk energy supplies.

\* VxWorks is a trademark of Wind River Systems, Inc.

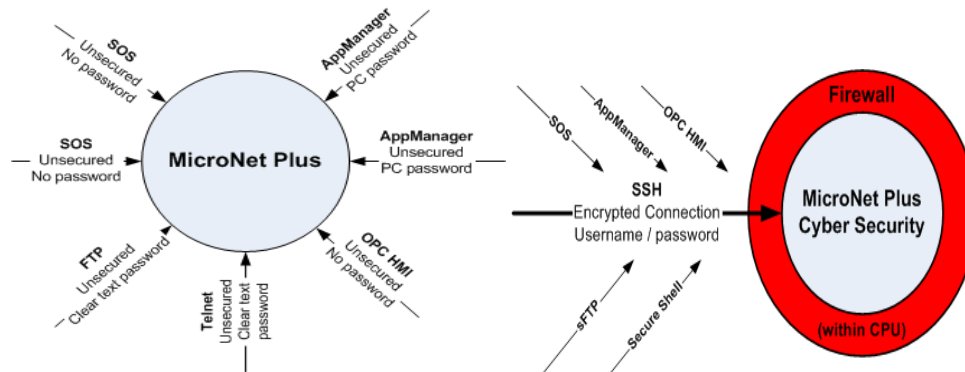
## Upgrade Your MicroNet Plus

MicroNet Plus – Original (part number 5466-1035)

- Unsecure Communications
  - ▶ Protocol sniffing possible
- Static passwords
- Clear text passwords
- Many open ports
- Footprint updates possible

MicroNet Plus – Cyber-Secure (part numbers on reverse side)

- Communications encrypted
- Password authentication and enforcement (at control)
- Single port open for Secure Shell (SSH)
- Connections other than SSH possible but not secure
- Footprint updates through secure connections



\*\* **Security** is the prevention of illegal or unwanted penetration, intentional or unintentional interference with the proper and intended operation, or inappropriate access to confidential information in industrial automation and control systems.

Woodward has launched hardware and software updates to address many CIP requirements; however, complete NERC/CIP compliance involves more than the controls and is dependent on plant infrastructure and procedures. The physical security remains the user's responsibility.

## Cyber Security Upgrade Paths

	Upgrade Path Summary	CPU	Coder	Application	Modules and Chassis
<b>MicroNet Plus</b>	Simple – CPU upgrade and apps update	Factory upgrade to CPU5200-CS	Upgrade to latest	Security Updates Required	No changes expected
<b>MicroNet Simplex</b>	Requires CPU5200, possible module updates	Requires CPU5200-CS	Upgrade to latest	Security Updates Required	Review older modules for compatibility
<b>MicroNet TMR</b>	Future (must utilize CPU5200 TMR architecture)	Factory Upgrade to CPU5200-CS	Upgrade to latest	Security Updates Required	Review older modules for compatibility
<b>Atlas-II</b>	Future	Factory Upgrade to CS version	Upgrade to latest	Security Updates Required	No changes expected
<b>NetCon</b>	Requires upgrade to MicroNet Plus	MicroNet Plus upgrade may use same application logic, some re-use of modules possible if desired			
<b>AtlasPC</b>	Not Possible	MicroNet Plus or Atlas-II (future) upgrade required			

## Upgrade Considerations

- Cyber-ready units—part numbers 5466-1045 (CPU) & 5466-1046 (RTN)—support Coder 6.0 but don't include license
- Cyber license activation required for 5466-1045 & -1046 to be Cyber Enabled: License part number 8928-5222
- Cyber-enabled part numbers 5466-1145 (CPU) and 5466-1146 (RTN)—supports Coder 6.0 and includes license
  - Flat rate upgrade charge for CPU and RTN factory hardware and firmware upgrades (5466-1035 or -1045 Rev F or later modules)
  - Flat rate repair charge for CPU and RTN hardware replacement (5466-1035 or 1045 Rev New to E modules)
  - GAP application changes to migrate to new coder (6.0) and implement security features
  - HMI application upgrade must be considered (iFix 3.5 to 5.1)
  - Communication protocol updates (move to OPC)
  - Computer hardware and operating system versions may need upgrade (Windows XP to Windows 7)
  - May require communications strategy or overall IT networking/infrastructure changes
  - Cyber-secure hardware without user license may be purchased, license can be added at a later date

We appreciate your comments about the content of our publications.

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