



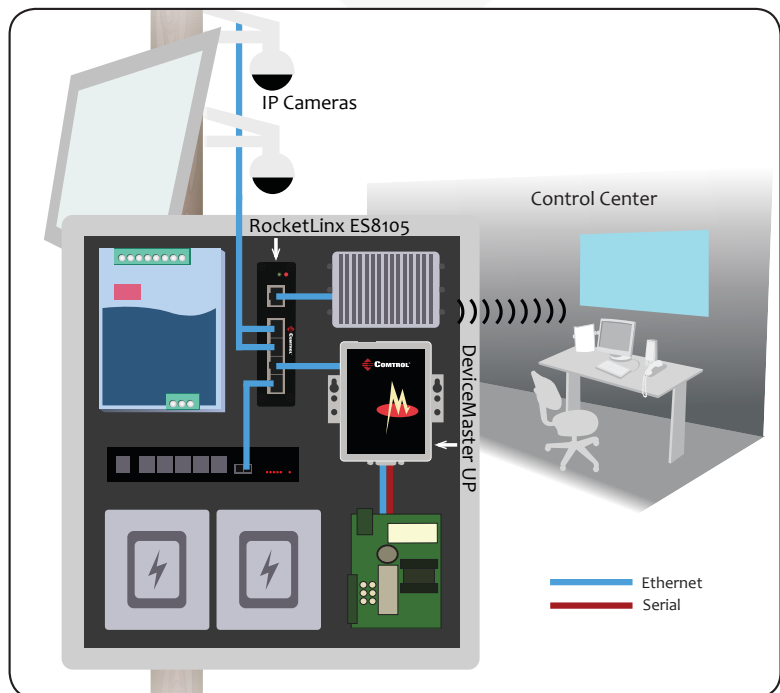
ENERGY SUBSTATION SURVEILLANCE & POWER MONITORING

With rising value of scrap metal and struggling economies throughout the world, theft of copper and other materials is on the rise. Surveillance is increasing at energy substations, power plants and other critical infrastructure locations in attempt to deter thieves from cashing in stolen copper wiring, aluminum doors and other materials at scrap yards or metal melting facilities.

Control and a few other companies have collaborated to create a solar-powered security system to monitor critical infrastructure around the world. The system is responsible for monitoring the power grid and establishing surveillance to prevent material theft and protect critical operations. As seen in the diagram, security cameras in each location record live feed from the grounds to send via Ethernet to Control's RocketLinX ES8105 industrial Ethernet switch. The data travels via Ethernet to a wireless bridge, which communicates the data to a remote control center network.

In order for this system to operate efficiently, more equipment is needed. Also connected to the ES8105 Ethernet switch is a network console device. This device is responsible for auto-rebooting the other devices and monitoring temperature and current draw. A UPS (universal power supply) card plays an integral role in the system, as it is connected to the power grid and provides different voltages of power to all of the devices inside of the cabinet. A solar panel installed close to the system equipment box supplies power to the system, though the main power source comes from the power grid. If there are any unexpected power surges or outages, the UPS card regulates the power to protect the equipment and prevent the surveillance system from failing. Batteries in the system box are charged via the UPS card as backup power supply if the power grid goes down. The UPS card also records power monitoring data which is sent via Modbus RTU to Control's DeviceMaster UP and eventually to the control center network.

With rugged housings that operate in temperatures from -20° to 70°C, the RocketLinX ES8105 and DeviceMaster UP are used in this system to handle harsh weather conditions and withstand power surges. With both managed and unmanaged models available, the RocketLinX ES series of switches provide cost-effective networking solutions delivering the industry's best rugged Ethernet switch technologies. The DeviceMaster UP provides EtherNet/IP, Modbus/TCP, Modbus RTU/ASCII, and PROFINET connectivity to a wide variety of devices, and its many unique features offer connectivity options and flexibility not provided by other gateway products.



Continued on back

RocketLinx™ ES8105

Part Number: 32025-8



KEY FEATURES AND BENEFITS

- Compact industrial Fast Ethernet switch
- Five - 10/100BASE-TX ports
- 3.2Gbps Switch Fabric
- AC or DC power input (18 to 32VDC or 18 to 27VAC)
- DIN rail or wall-mount installation
- -25° to +70° C extended operating temperature for extreme environments
- Alarm relay output for port event notifications
- Aluminum metal case with IP31 grade protection for drip-proof and dustproof protection
- Supports 1.5KV Hi-Pot isolation protection
- Plug-and-play
- UL listed

DeviceMaster® UP 1-Port VDC Modbus

Part Number: 99501-2



KEY FEATURES AND BENEFITS

- DIN rail mounting and screw terminal power connections
- Highly flexible and unique Modbus functionality
- Multiple Modbus master and slave types
- Raw/ASCII Serial and Ethernet device support
- Variable power input eliminates need for power converters
- Dual Ethernet ports for daisy chaining network connections between multiple units
- RoHS 2 compliant under CE
- Wide operating temperature (-37° to +74°C) for harsh environments



Warranty Information
Control offers a 30-day satisfaction guarantee and 5-year limited warranty.

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