Product Overview

VCL-MX-XW, Industrial Grade Ethernet, IEC 61850-3 complied Sub-Station Hardened Switch, is a flexible Ethernet Switch that is packaged in a 1U high, 19-inch rack-mountable shelf that can be installed in harsh environments. It requires no external fans or forced air cooling.

It offers a wide choice of 1+1 redundant power supply options which include 24V DC, -48V DC, 110-125V DC, 110V AC and 240V AC.

- **10 Port Sub-Station Hardened Switch**
- **User Side: 8 Fast Ethernet Ports:** 8 x 10BaseT / 100BaseT / 100BaseFX full-duplex User Ethernet ports. All 8 User-side Ports - are individually configurable as either 10/100BaseT Electrical or 100BaseFX Optical ports, as required.
- **Uplink / Network Side:** 2 Gigabit Ethernet Ports: 1000BaseSX / LX Optical or 10/100/1000BaseT Electrical. Both Uplink / Network Ports - user configurable to either 1000Base Optical or 10/100/1000BaseT Electrical.
- It is a fully managed Switch that offers 1+1 Ethernet link redundancy and QoS by implementing IEEE802.1p, 802.1Q and Differentiated Services (Diffserv) and packet priority classification protocols for traffic management and optimization.

Overview and Highlights

- Sub-Station Hardened Managed Switch designed to operate in rugged environments even in extreme (-40°C to +70°C) temperature conditions.
- Does not require any external fans or forced air cooling.
- Uplink / Network Ports: 2 User Selectable Gigabit Ethernet Fiber / Copper ports.
- Downlink / User Side Ports: 8 Fiber / 8 Copper Fast Ethernet ports - the user may select any 8 ports - 10Mbps/100Mbps BaseT or 100BaseFX in any configuration.

Key Feature

- Sub-Station Hardened Design
- IEC 61850-3 and IEEE 1613 complied
- -40 C to +70 C operating temperature
- 1+1 redundant power supply
- Wide DC and AC voltage operating range
  - 24V DC to 72V DC,
  - 90V DC to 250V DC,
  - 85V AC to 240V AC.

Ethernet Port Features

- 8 x 10BaseT / 100BaseT / 100BaseFX full-duplex User Ethernet ports.
- All 8 User-side Ports - user configurable to either 10/100BaseT Electrical or 100BaseFX Optical ports.
- All 8 User-side Copper Ethernet Ports - Auto-negotiation, auto-MDI/MDIX.
- 2 Uplink / Network Ports (1000Base Optical) full-duplex Gigabit Ethernet ports.
- 2 Uplink / Network Ports (10/100/1000BaseT) full-duplex Ethernet ports.
- Ethernet packet forwarding at wire-speed, non-blocking.
- User programmable bandwidth rate control on a per port basis (Ingress / Egress Rate Limiting).
- Flow Control.
- Reliable Store-and-Forward operation with data integrity checking.
- Support s up to 1632 Byte Frames.
- 1+1 Ethernet Link Protection.
- Supports VLAN and IEEE802.1Q VLAN tagging for Management Port.
- IEEE802.1p, 802.1Q and Differential Services (DS) QoS
- NTP Client for automatic time updation.

Management Features

- RS232 serial console port.
- USB console port.
- In-band Ethernet (Telnet and TFTP) management.
- Reset Switch.
- Power LEDs.
- Real Time Clock (RTC).
- Automatic updating of RTC time standalone card - RTC shall update itself at user defined intervals from an NTP Server the user shall define the IP address of the NTP server).
- Supports command line interface with predictive command completion.
- Supports IEEE802.1x security.
- Password Protection.
- SNMP V2 Traps.

Power Supply Options

- Dual Redundant (AC + DC).
- 1+1 DC (-24V) power (18 to 40V DC).
- 1+1 DC (-48V) power (40 to 72V DC).
- 1+1 DC 110-125V power (90 to 135V DC).
- 1+1 AC power (100 to 240V AC, 50/60 Hz).
- AC or DC.
- EMI/EMC compliant.

External Alarms

- Dry Contact Relay.

CE Compliance:

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility 2014/30/EU

Other Regulatory Compliances:

- RoHS
- CE Marking
- Complies with FCC Part 68 and EMC FCC Part 15
- Telcordia GR-1089 Surge and Power Contact

EMI, EMC, Surge Withstand and other Compliances

EN 50081-2	EN 50082-2	IEC 60068-2-29
IEC 61000-4-6 (Conducted Immunity)	IEC 60068-2-6	IEC 60068-2-2
IEC 60068-2-78	IEC 60068-2-1	IEC 60068-2-14
CISPR 32 / EN55032 Class A (Conducted Emission and Radiated Emission)		
IS 9000 (Part II Sec. 1-4, Part III Sec. 1-5, Part IV, Part 14 Sec. 1-3)		
IEC 60870-2-1	IEC 61000-4-5	IEC 61000-4-8
IEC 61000-4-3 (Radiated Immunity)	IEC 61000-4-11	IEC 61000-4-2
IEC 61000-4-4		

Ordering Information:

Part #	Description
VCL-MX-XW-2139-xxxx*	VCL-MX-XW, Industrial Grade Switch (IEC 61850-3 compliant) 19-inch 1U High Rack Mount version Supports : – 8 x Fast Ethernet (FE) User Ports – 8 x Electrical Ethernet Ports [RJ45 (F)] OR – 8 x Optical Ethernet Ports [SFP based - without SFP] – 2 x Gigabit Ethernet Network Ports – 2 x Electrical Ethernet Ports [RJ45 (F)] OR – 2 x Optical Ethernet Ports [SFP based - without SFP] – Management : SNMP, Telnet (RJ45 (F) Port), Serial Port (USB, DB-9 COM), EMS, Graphical User Interface (GUI) – Installation Kit : System Core Cables, Mounting Hardware, Documentation, User Manual

* Power Supply Options:

AC088~265R	2 x 88~265V AC Power Supply Input [1+1 Redundant Power Supply]
DC012~060R	2 x 12~60V DC Power Supply Input [1+1 Redundant Power Supply]
DC080~150R	2 x 80~150V DC Power Supply Input [1+1 Redundant Power Supply]
DC125~373R	2 x 125~373V DC Power Supply Input [1+1 Redundant Power Supply]

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