Product Overview

VCL-5010-F is ruggedized firewall equipment with advanced next generation features that may be installed to secure critical infrastructure such as utilities, sub-stations, smart-grid distribution systems, airports and railways as well as IT Networks of financial institutions such as banks and corporate networks.

VCL-5010-F is password protected with capabilities that meet and exceed NERC as well as all mandatory requirements of password protection and control as provided in the GR-815-CORE-2 specifications.

Interfaces:

6 x 100/1000Base-T Interface (RJ45)	Any 6 interfaces are usable. May be selectively configured either as a WAN interface or LAN Interface.
6 x SFP 1G Optical Interface (SFP)	
4 x 10/100/1000Base-T RJ-45 (Shared Mode)	
1 x 10/100Base-T RJ-45 (LAN)	
2 x 10/100Base-T RJ-45 Electrical (LAN)	
1 x RS-232 (V.24)	
1 x RS-485	

Firewall and Security:

- Ruggedized, IEC-61850-3 compliant firewall
- Fanless, High-reliability hardware
- Suitable for installation in sub-stations, SCADA and industrial networks / harsh environments
- Secure Boot
- Firewall Security:
  – Inclusion Policy - Access Control based upon White List IP addresses, MAC address and IP Domain
  – Exclusion Policy - Access Control based on Black-List Continuous monitoring of the TLS connection to nullify MitM attacks.
- Non-volatile Access Log with capability to "fingerprint" all successful and failed log-in attempts and keep a log of the IP addresses of all successful and failed logins / login attempts.
- Resistance to Denial of Service (DoS) Attack
- SSH (Secure Access Control) with encrypted password protection.
- VCL-5010-F offers a wide range of VPN technologies ranging from modern SSL VPN's to IPsec. Site-to-Site and road warrior setups are possible and with the integrated OpenVPN client exporter, the client can be configured within minutes.

Firewall - Features and Capabilities:

- Deep Packet Inspection (DPI)
- Point-to-Point Data encryption between two terminals
- Point-to-Multipoint - Data encryption / VPNs between multiple RTU Terminals and the IEC 60870-5-104, DNP server(s), MODBUS and C37.118 PMU data between substations & Load Dispatch Centres / SCADA Management and Rail Traffic Control Centres.
- Per-frame/packet authentication
- Firewall
  – Port based, MAC based, IP Address based
  – IP Domain based
- Whitelist and blacklist options
  – Allows traffic based on user configured rules
- Traffic Shaper
- Two-factor Authentication with time-based OTP for secure access
- Forward Caching Proxy (transparent) with Blacklist support
- Virtual Private Network (OpenVPN site to site and remote VPN client support)
- IPSec Site to Site Tunnels
- Encryption Algorithms: AES-128, AES-256
- Auth Digest Algorithm: SHA512 (512 bit)
- High Availability & Hardware Ethernet Failover using VCL-Safecomm-E
- Intrusion Detection and Prevention
- Built-in reporting and monitoring tools including real-time graphs
- Network Flow Monitoring
- DNS Server, DNS Forwarder, Dynamic DNS
- DHCP Server and Relay
- Stateful inspection firewall
- Granular control over state table
- 802.1Q VLAN support
- Infrastructure neutral
- Transparent to network and applications
- Easy installation and management
- LDAP user authentication support
- Export logs locally or on a server.

Typical VCL-5010-F Deployments:

- Utilities - Power, Oil and Gas, SCADA Installations.
- Industrial Applications.
- Campus IP Networks, for all types of data, voice and video over IP applications
- MPLS meshed-networks
- Metro Ethernet and VPLS networks
- Cloud applications

Technical Specifications:

Integrated Storage Drive	16GB High Performance SATA Drive
Additional Storage Options	M.2 SATA - 256GB, 512GB, 1TB SSD
Power Supply	Dual (1+1) Redundant Power Inputs * (Power Supply Options)
Indicators and Alarms	- 2 x Power Supplies - 1 x System Alarm Inputs - 1 x Dry Contact Alarm Relay (NO/NC)
Processor	Quad Core up to 2.5 Ghz
DDR	4GB
Performance	Ruggedized Fanless System
MTBF (hours)	101292
IP Level Protection	IP20
Power Consumption @ 48VDC	12 Watts
Power Consumption @ 80~240, 50/60Hz VAC	18 Watts

Environmental:

Operating Temperature	-4°F ~ 149°F (-20°C ~ 55°C)
Storage Temperature	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	10%~95% relative humidity, non-condensing
Storage Humidity	10%~95% @40°C; non-condensing

Other Regulatory Compliances:

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

CE Compliance:

- Low Voltage Directive 2014/35/EU (standard 48V DC Version)
- Electromagnetic Compatibility 2014/30/EU

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 61000-4-3 (Radiated Immunity)	IEC 61000-4-8	
IEC 61000-4-2	IEC 61000-4-11	Telcordia
IEC 61000-4-4	GR-1089 Surge and Power Contact	

Physical Dimension:

- 19 Inch, 1.5U High Rack Mount
- D x W x H: 260mm x 477mm x 67mm
- Net Weight: 5.0 Kgs
- Gross Weight: 10.7 Kgs

Ordering Information:

Part #	Description
VCL-5010-F	VCL-5010-R, Ruggedized Industrial Firewall 19 Inch 1.5U High Rack Mount - Graphical User Interface (GUI) - Installation Kit: System Core Cables Add *Power supply options

* 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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