

Viking Series

20x10/100/1000Base-T Ports, MIL-DTL-38999, L2+ Managed Ethernet Switch, 28VDC

20x10/100/1000Base-T Ports

FEATURES

- 20x triple-speed (10/100/1000 Mbps) copper Ethernet ports
- Copper cable link distances up to 100 Meters (EIA/TIA Cat-5E)
- Operating temperature range from -40°C to +85°C
- Full duplex flow control per IEEE Std 802.3X and half duplex back pressure, symmetric and asymmetric
- Shock, vibration and immersion resistant per MIL-STD-810
- Olive drab cadmium plating meets stringent corrosion resistance specifications
- Aluminum connectors and housings are strong, durable and light weight
- Auto sensing of half or full duplex operation
- 802.1Q VLAN switch with 32K MACs and 4K VLANs
- Push, pop, and translate ingress/egress
- Policing with storm control and MC/BC protection
- Hierarchical quality of service (QoS)

APPLICATIONS

Viking series 1000Base-T Ethernet switches enable high speed network communications in harsh environments.

The MIL-DTL-38999 series III shells provide sealed interfaces that are water-tight to MIL-STD-810 when mated.



L2+ managed Ethernet Switch

DESCRIPTION

Viking series VS506-BMWN L2 managed Ethernet switches consist of 20x 10/100/1000Base-T ports with Autonegotiation and Auto MDI / MDIX circuitry into a wall or floor mounted assembly.

The external copper cable interfaces of the Viking series VS506-BMWN Ethernet switch are 2xD38999/25-35 Series III connectors with 10x IEEE-802.3U compliant Gigabit Ethernet ports in each connector plus the power supply and ground connections.

Viking VS506-BMWN series Ethernet switches are vibration isolated, environmentally hardened components designed for use in harsh environment applications.

- Sealed against liquid and solid contaminants
- Shock and vibration resistant

ORDERING INFORMATION

Application	Part Number
20x10/100/1000Base-T / 28VDC / L2+	VS506-BMWN
See Appendix A1 for more part number options	

Viking Ethernet Switch, D38999, 28VDC
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POWER

Standard	Feature	Minimum	Typical	Maximum	Unit
MIL-STD-1275D / 704F	Supply Voltage	+12.0	28.0	+36.0	VDC
	Current		1300	1400	mA
	Power Consumption		36.4	39.2	W

EMI / EMC

Standard	Method	Feature	Minimum	Maximum	Unit
MIL-STD-461F	CS101	Conducted Susceptibility, Power Leads	30	150	KHz
	CE102	Conducted Emissions, Power Leads	10	10000	KHz
	RE102	Radiated Emissions, Electric Field	0.01	18,000	MHz
	RS103	Radiated Susceptibility, Electric Field	30	18,000	MHz

RELIABILITY

Standard	Method	Feature	Maximum	Unit
HDBK-217F	Parts Count	MTBF	TBD	Hours
		FITS	TBD	10 ⁹ Hours

SAFETY

Standard	Feature	Condition	Notes
FDA / CDRH / IEC-825-1	Eye Safety	Class 1	No Safety Interlocks Required

ENVIRONMENTAL

Standard	Method	Feature	Minimum	Maximum	Notes
MIL-STD-810G	501, 502	Storage Temperature	-55	+100	°C
	501, 502	Operating Temperature	-40	+85	°C
	514	Random Vibration	10	2000	Hz
	516	Operating Shock		40.0g	11mS
	507.5	Humidity - Non Condensing		95% RH	40 °C
	500	Operational Altitude		3,962	M
	500	Storage Altitude		12,192	M
	510.4	Blowing Sand and Dust		10	g/M ³

MATERIALS

Item	Detail	Notes
Chassis and Connectors	T-6061 Aluminum Alloy	
Chassis Finish	OD-CD, NI or ZN-NI	
PCB	Conformal Coating	
Weight	<70.0oz. / 2.0Kg	

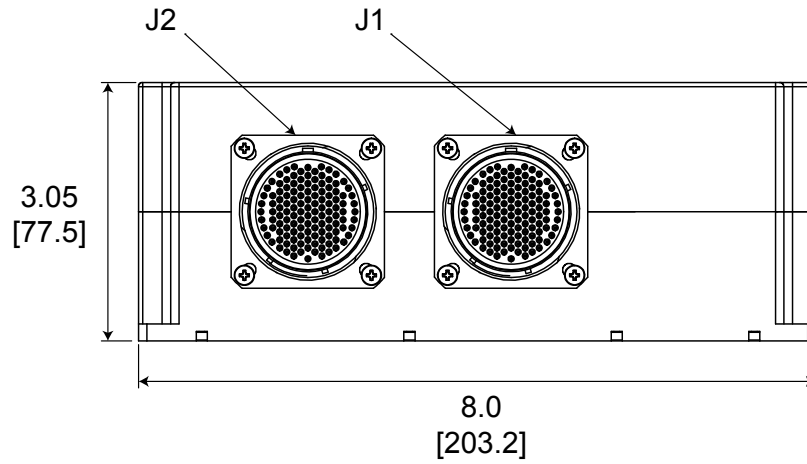
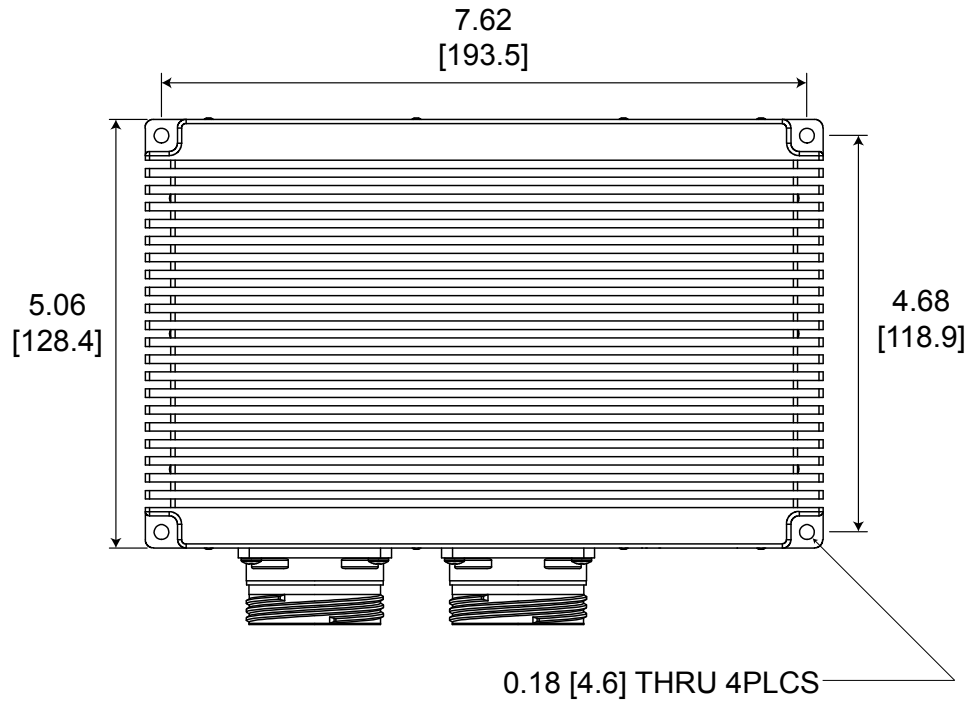
Ethernet Switch Management Features

PERFORMANCE	PARAMETER
Port Speeds	Wire-speed switching on all ports
Maximum Transmission Unit (MTU)	Up to 9600 bytes
MANAGEMENT AND MONITORING	PARAMETER
Management Port Access	(CLI) over Serial; Web Browser, HTTP / HTTPS
Simple Network Management Protocol	SNMP v1 / v2 / v3
DHCP Client	DHCP Port-Based Allocation
IEEE 802.1AB-2005 Link Layer Discovery – LLDP	LLDP defined by IEEE 802.1AB
L2 SWITCHING	PARAMETER
MAC Addresses – Static / Auto MAC addr. Learning/Ageing	Up to 32K Addresses
QoS: Quality of Service Classification/Prioritization of Data	Number of active traffic classes (1, 2, 4 or 8)
VLAN: Virtual Local Area Network Segmentation	Up to 4K VLAN's
Internet Group Management Protocol	IGMPv2 snooping
Port Mirroring	Ingress and Egress mirroring
Link Aggregation	Static or LACP
Storm Control for UC, BC and Unknown	Policer for flooded unicast, multicast and broadcast frames
Random Early Discard (RED)	Weighted Random Early Detection
Spanning Tree Protocol	RSTP & STP
STP Loop prevention	Loop Guard
IEEE-802.1ad Provider Bridge	Native or Translated VLAN
SECURITY	PARAMETER
Port-Based 802.1X	Port access control based on IEEE802.1X
MAC-Based Authentication	MD5 authentication against RADIUS server
Web & CLI Authentication	User Authorization Levels for CLI and Web management
ACLs for filtering/policing/port copy	Access Control Lists for filtering, policing or port copy

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OUTLINE DRAWING

Dimensions are shown as: inches [mm]



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J1 & J2 / D38999/24xJ35PN ELECTRICAL PIN FUNCTIONS - Continued on next page

J1 Port #	J2 Port #	Pin #	Pin Function	RJ-45 Eq. Pin #	Logic Family
1	11	9	MDA+	1	IEEE-802.3 - 10/100/1000Base-T
		17	MDA-	2	
		10	MDB+	3	
		18	MDB-	6	
		11	MDC+	4	
		19	MDC-	5	
		12	MDD+	7	
		20	MDD-	8	
2	12	25	MDA-	2	
		36	MDA+	1	
		26	MDB-	6	
		37	MDB+	3	
		27	MDC-	5	
		38	MDC+	4	
		28	MDD-	8	
		39	MDD+	7	
3	13	48	MDA+	1	
		59	MDA-	2	
		49	MDB+	3	
		60	MDB-	6	
		50	MDC+	4	
		61	MDC-	5	
		51	MDD+	7	
		62	MDD-	8	
4	14	71	MDA+	1	
		82	MDA-	2	
		72	MDB+	3	
		83	MDB-	6	
		73	MDC+	4	
		84	MDC-	5	
		74	MDD+	7	
		85	MDD-	8	

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J1 & J2 / D38999/24xJ35PN ELECTRICAL PIN FUNCTIONS - Continued on next page

J1 Port #	J2 Port #	Pin #	Pin Function	RJ-45 Eq. Pin #	Logic Family
5	15	94	MDA+	1	IEEE-802.3 - 10/100/1000Base-T
		105	MDA-	2	
		95	MDB+	3	
		106	MDB-	6	
		96	MDC+	4	
		107	MDC-	5	
		97	MDD+	7	
		108	MDD-	8	
6	16	109	MDA+	1	
		117	MDA-	2	
		110	MDB+	3	
		118	MDB-	6	
		111	MDC+	4	
		119	MDC-	5	
		112	MDD+	7	
		120	MDD-	8	
7	17	90	MDA+	1	
		101	MDA-	2	
		91	MDB+	3	
		102	MDB-	6	
		92	MDC+	4	
		103	MDC-	5	
		93	MDD+	7	
		104	MDD-	8	
8	18	66	MDA+	1	
		78	MDA-	2	
		67	MDB+	3	
		79	MDB-	6	
		68	MDC+	4	
		80	MDC-	5	
		69	MDD+	7	
		81	MDD-	8	

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J1 & J2 / D38999/24xJ35PN ELECTRICAL PIN FUNCTIONS - Continued from previous page

J1 Port #	J2 Port #	Pin #	Pin Function	RJ-45 Eq. Pin #	Logic Family
9	19	43	MDA+	1	IEEE-802.3 - 10/100/1000Base-T
		55	MDA-	2	
		44	MDB+	3	
		56	MDB-	6	
		45	MDC+	4	
		57	MDC-	5	
		46	MDD+	7	
		58	MDD-	8	
10	20	21	MDA+	1	IEEE-802.3 - 10/100/1000Base-T
		32	MDA-	2	
		22	MDB+	3	
		33	MDB-	6	
		23	MDC+	4	
		34	MDC-	5	
		24	MDD+	7	
		35	MDD-	8	
J1 Only HTTPS Dedicated Management Port		115	MDA+	1	IEEE-802.3 - 10/100/1000Base-T
		116	MDA-	2	
		122	MDB+	3	
		123	MDB-	6	
		124	MDC+	4	
		125	MDC-	5	
		126	MDD+	7	
		127	MDD-	8	
J1 Only Console Management		113	GND	N/A	N/A
		121	CLI		RS232_IN
		128			RS232_OUT
		100	Reset		Active Low LVTTTL
J1 Only Power Supply		1	Vcc	N/A	N/A
		2			
		3			
		4			
		5	GND		
		6			
		7			
		14			

All other pins are N/C - Factory use only

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APPENDIX A1
PART NUMBER OPTIONS
Twenty 10/100/1000Base-T Ports

VS506 - BM W N

Base Part Number
VS506 = Viking Switch

Configuration
BM = L2 managed 20 Port

Shell Finish
F = NI
W = OD CD / NI
Z = ZN / NI

Shell Polarization
N = N
A = A
B = B
C = C
D = D

Other mounting and interface options are available.
Please consult the Protokraft website for alternate configurations.



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