

Viking Series

10x1000Base-T

Ports, MIL-DTL-38999, L2 Managed Ethernet Switch, 28VDC



L2 Managed D38999 10 Gigabit Ethernet Switch

FEATURES

- 10x 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 +70°C
- Full duplex flow control per IEEE Std 802.3X and half duplex back pressure, symmetric and asymmetric
- Shock, vibration and immersion resistant per RTCA/DO-160G
- 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 10/100/1000Base-T Ethernet switches enable high speed network communications in harsh environments.

The MIL-DTL-38999, Series III shells provides sealed interfaces that are water-tight to MIL-STD-810 when mated.

DESCRIPTION

Viking series 10 Ethernet switches consist of 10x10/100/1000Base-T port integrated into a wall or floor mounted assembly.

The external copper cable interface of the Viking series 10/100/1000Base-T Ethernet switch is a D38999/25-35 Series III connector with 10x IEEE-802.3U compliant Gigabit Ethernet ports plus the power supply, CLI and ground connections.

Viking series Ethernet switches are vibration isolate environmentally hardened components designed for use in harsh environment applications.

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

MIL-STD-461F, DO-160G and MIL-STD-704A compliant, test data available upon request.

ORDERING INFORMATION

Application	Part Number
10x10/100/1000Base-T	VS448-BiWN-Q
See Appendix A2 for more part number options	

ABSOLUTE MAXIMUM RATINGS

Absolute maximum limits mean that no catastrophic damage will occur if the product is subjected to these ratings for short periods, provided each limiting parameter is in isolation and all other parameters have values within the performance specification. It should not be assumed that limiting values of more than one parameter can be applied to the product at the same time.

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Storage Temperature	T_s	-55		+100	°C

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Temperature	T_A	-40		+70	°C
Supply Voltage	V_{CC}	+12.0	28.0	+36.0	V
Power Supply Noise (p-p)	N_p			200	mV

MATERIALS

Item	Detail	Notes
Shell and housing	T-6061 Aluminum Alloy	
Plating	OD-CD, NI or ZN-NI	
Insert	Thermoplastic	
Interfacial Seal	Elastomer	
Weight	35.2oz. / 997.90Gr.	

ELECTRICAL PERFORMANCE SPECIFICATIONS T_A = Operating Temperature Range

Parameter	Symbol	Typical	Maximum	Unit
Power Supply Current @ 28VDC	P_I	700	850	mA
Power	P	19.6	21.0	W

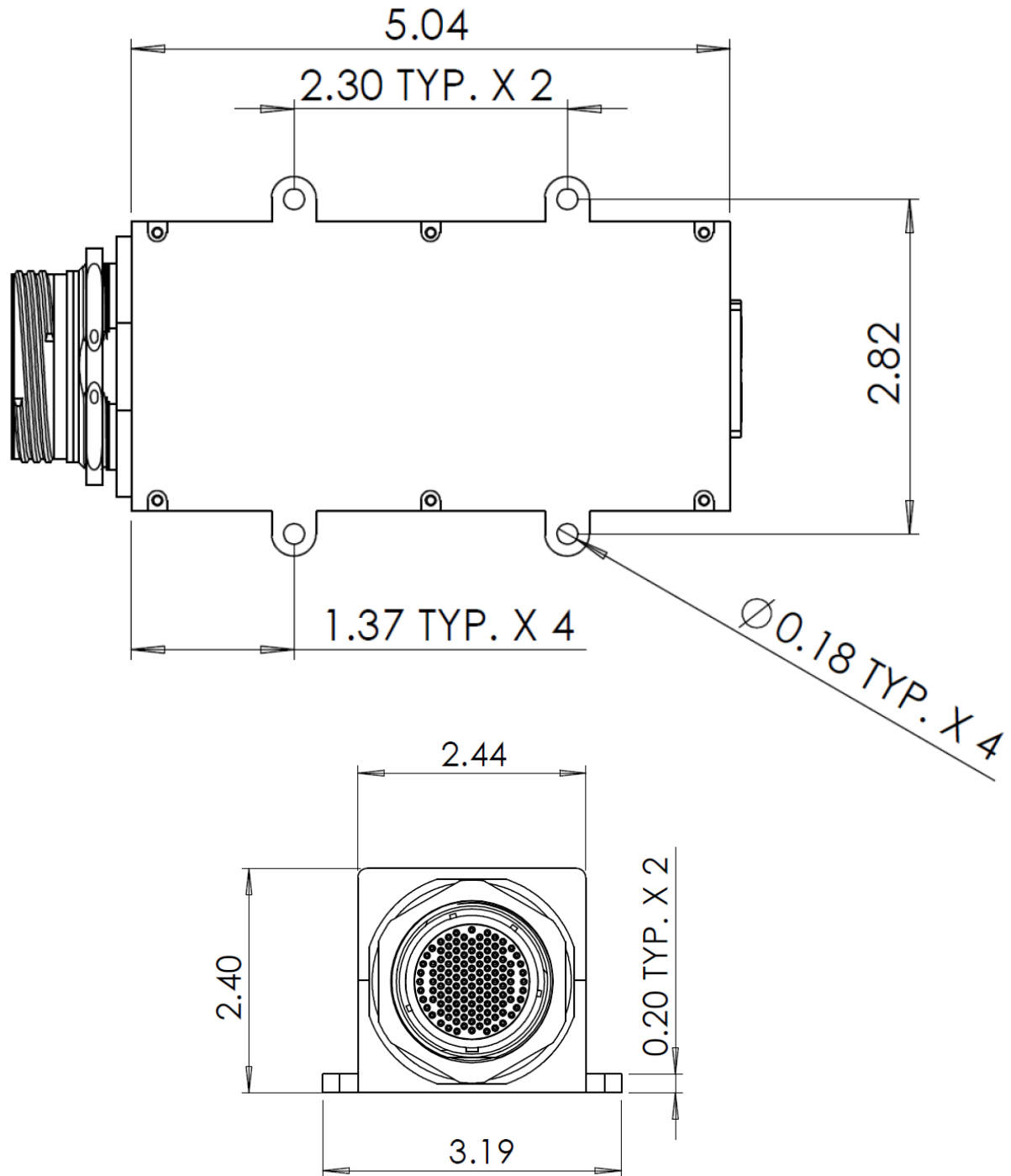
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ITEM	CONDITION	SECTION OF STANDARD	TEST SECTION	CAT.	REQUIRED THRESHOLD	NOTES
			RTCA/DO-	160G		
1	Ground Survival Low Temperature (non-operating)	Section 4	4.5.1	A1	-55°C	
2	Short-time Operating Low Temperature	Section 4	4.5.1	A1	-40°C	
3	Operating Low Temperature	Section 4	4.5.2	A1	-15°C	
4	Operating High Temperature	Section 4	4.5.4	A1	+55°C	
5	Short-time Operating High Temperature	Section 4	4.5.3	A1	+70°C	
6	Ground Survival High Temperature (non-operating)	Section 4	4.5.3	A1	+85°C	
7	Temperature Variation	Section 5	5.3.1	B	minimum rate of 5 °C per minute	
8	Altitude testing	Section 4	4.6.1	C2	Amended from 25,000 ft. to 35,000 ft.	
9	Rapid Decompression	Section 4	4.6.2	A1	8,000 ft. to 35,000 ft. within 15 seconds	
10	Humidity testing	Section 6	6.3.2	B		
11	Operational Shock	Section 7	7.2	B		
12	Crash Safety - Impulse	Section 7	7.3.1	B	20G, sawtooth pulse, 20ms	
13	Crash Safety - Sustained	Section 7	7.3.3	B	9G	
14	Functional (standard) Vibe Test	Section 8	8.5	S	Curve B3	Category S, Curve B3
15	Explosive Atmosphere	Section 9	9.6	E		
16	Lightning Induced	Section 22	22	A2E2		
17	Static Electricity Discharge (ESD)	Section 25	25.5	A	15,000 Volts	
			MIL-STD-	461F		
18	Conducted Emission	CE102	5.5		For Air force, Fixed-wing aircraft	Air Force Applicable tests in Table V "Requirement Matrix" of MIL-STD-461F for Fixed-wing Aircraft
19	Conducted Susceptibility	CS101	5.7		For Air force, Fixed-wing aircraft	
20	Conducted Susceptibility	CS114	5.13		For Air force, Fixed-wing aircraft	
21	Conducted Susceptibility	CS115	5.14		For Air force, Fixed-wing aircraft	
22	Conducted Susceptibility	CS116	5.15		For Air force, Fixed-wing aircraft	
23	Radiated Emission	RE102	5.17		For Air force, Fixed-wing aircraft	
24	Radiated Susceptibility	RS103	5.20		For Air force, Fixed-wing aircraft	
			MIL-STD-	704A, Category B		
25	Power Input	MIL-STD-704A	IAW MIL-HDBK-704-8	B		

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OUTLINE DRAWING

Dimensions are shown as: inches [mm]



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

Port #	Pin #	Function	RJ-45 Eq. Pin #	Logic Family
1	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	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	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	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 / D38999/24xJ35PN ELECTRICAL PIN FUNCTIONS - Continued on next page

Port #	Pin #	Function	RJ-45 Eq. Pin #	Logic Family
5	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	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	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	66	MDA+	1	
	78	MDA-	2	
	67	MDB+	3	
	79	MDB-	6	
	68	MDC+	4	
	80	MDC-	5	
	69	MDD+	7	
	81	MDD-	8	

IEEE-802.3 - 10/100/1000Base-T

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

Port #	Pin #	Function	RJ-45 Eq. Pin #	Logic Family	
9	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	21	MDA+	1		
	32	MDA-	2		
	22	MDB+	3		
	33	MDB-	6		
	23	MDC+	4		
	34	MDC-	5		
	24	MDD+	7		
	35	MDD-	8		
All	1	N/C		N/A	
	2	N/C			
	3	CASE GND			
	4	+28V			
	5	28V RTN	N/A		
	6	N/C			
	7	N/C			
	14	N/C			
	100	Reset			Active Low LVTTTL
	121	CLI			RS232_IN*
	128	CLI			RS232_OUT*
	47	GND			RS232_GND*

*RS-232 port is wired in a straight-through configuration

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APPENDIX A2 PART NUMBER OPTIONS

VS448 - BiWN - Q

Base Part Number
VS448 = Viking Switch

Configuration
Bi= L2 Managed Qualified
10 Port Ethernet Switch

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.

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