

Viking Series

10/100/1000Base-T, Auto MDI/MDIX,
Autonegotiable, MIL-DTL-38999, Layer
2, Unmanaged Ethernet Switch

Five Port, Receptacle

FEATURES

- 5 triple-speed (10/100/1000 Mbps) copper Ethernet ports per IEEE 802.3:2005
- Cable link distances up to 100 Meters (EIA/TIA Cat-5E)
- Operating temperature range from -40°C to +85°C
- Jumbo frame support in all speeds (10/100/1000 Mbps)
- 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 housings are strong, durable and light weight
- Auto sensing of half or full duplex operation
- Unmanaged Ethernet switch - no configuration required

APPLICATIONS

Viking series 10/100/1000Base-T Ethernet switches enable high speed network communications in harsh environments.

- Civil and military vehicle networking
- Plug and play operation - no configuration required
- Unmanaged Ethernet switch port multiplication

The MIL-DTL-38999, Series III shell provides a sealed interface that is water-tight to MIL-STD-810 when mated.



D38999 10/100/1000Base-T / Unmanaged Ethernet Switch

DESCRIPTION

Viking series 10/100/1000Base-T unmanaged Ethernet switches consist of 5x 10/100/1000Base-T ports with Autonegotiation and Auto MDI / MDIX circuitry into a bulkhead mounted MIL-DTL-38999 connector assembly.

The external interface of the Viking series 10/100/1000Base-T Ethernet switches is a size 19 D38999 Series III connector with 5x IEEE-802.3U:2005 compliant Ethernet ports plus the power supply and ground connections.

Viking series 10/100/1000Base-T Ethernet switches are vibration isolated, environmentally hardened components designed for use in harsh environment applications.

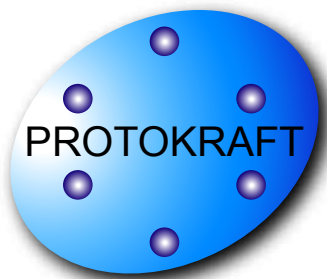
- Front interface is sealed against liquid and solid contaminants
- Shock and vibration resistant

ORDERING INFORMATION

Application	Product Number
5x10/100/1000Base-T, Flange	V51F-5UAT-FW
5x10/100/1000Base-T, Jam Nut	V51J-5UAT-FW

See Appendix A1 for more part number options

V51x-5UAT-FW-DS - April 21, 2012 - Released



Facilitating Secure Communications in Harsh Environments

Five Port Viking Series D38999,
10/100/1000Base-T Unmanaged Ethernet Switch

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		+85	°C
Supply Voltage	V_{CC}	+12.0	28.0	+36.0	V
Power Supply Noise (p-p)	N_p			200	mV

INTERFACE SPECIFICATIONS COMPLIANCE

Requirement	Feature	Condition	Notes
MIL-STD-883	ESD	Class II	2200V
MIL-STD-810	Vibration	3.8g ² /Hz	43G rms
MIL-STD-810	Shock	40.0g	6-9mS
MIL-STD-810	Immersion	1.0 meter	2.0Hours
MIL-STD-1344	Flame Resistance	Method 1012	30 Seconds
MIL-STD-1344	Damp Heat	10 Cycles	24 Hours
MIL-STD-704	Aircraft Electric Power	F	
MIL-STD-1275	Military Vehicles	B	
MIL-STD-461	EMI	F	

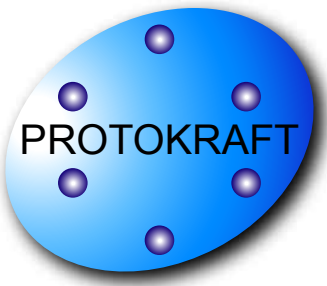
MATERIALS

Item	Detail	Notes
Shell and housing	T-6061 Aluminum Alloy	
Plating	OD-CD, NI or ZN-NI	
Insert	Thermoplastic	
Interfacial Seal	Elastomer	
Weight	>8.0oz. / 225Gr.	

ELECTRICAL PERFORMANCE SPECIFICATIONS T_A = Operating Temperature Range

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Power Supply Current @ 28VDC	P_i	150	180	250	mA
Power	P	5.0	6.0	7.0	W

V51x-5UAT-FW-DS - April 21, 2012 - Released

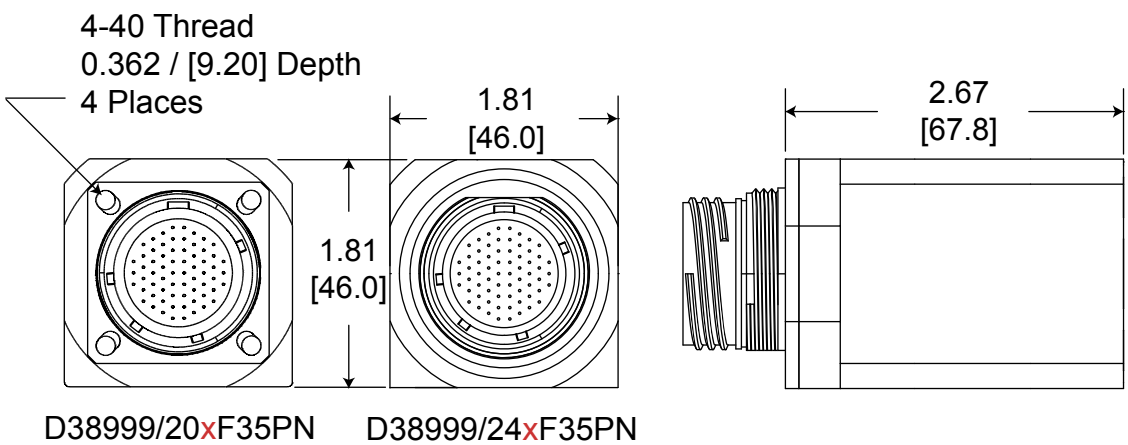


Facilitating Secure Communications in Harsh Environments

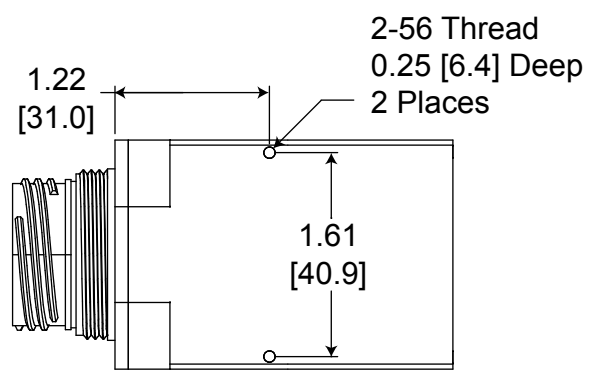
Five Port Viking Series D38999,
10/100/1000Base-T Unmanaged Ethernet Switch

OUTLINE DRAWING

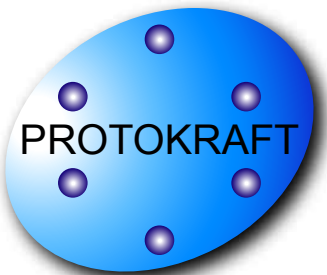
Dimensions are shown as: inches [mm]



x = Finish Code: F, W or Z



V51x-5UAT-FW-DS - April 21, 2012 - Released

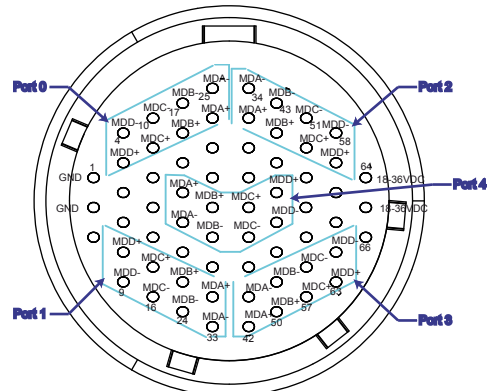


Facilitating Secure Communications in Harsh Environments

Five Port Viking Series D38999,
10/100/1000Base-T Unmanaged Ethernet Switch

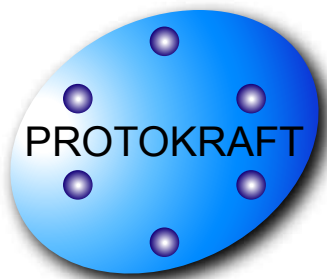
J1 PIN FUNCTIONS ETHERNET PIN AND PORT ASSIGNMENTS

TOP



Front view of the J1 connector shown
- mating cable plug opposite - see J1 D38999 Pin
Function Chart for details

V51x-5UAT-FW-DS - April 21, 2012 - Released



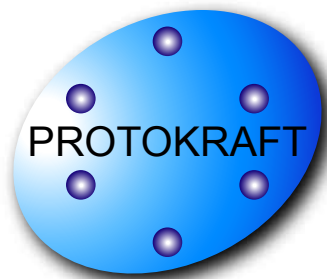
Facilitating Secure Communications in Harsh Environments

Five Port Viking Series D38999,
10/100/1000Base-T Unmanaged Ethernet Switch

J1 D38999 ELECTRICAL PIN FUNCTIONS - Continued on next page

Pin #	Port #	Function	RJ-45 Pin #	Logic Family
1	N/A	GND	N/A	Isolated from Case GND
2	N/A	GND	N/A	Isolated from Case GND
3	N/A	N/C	N/A	Do Not Connect - Factory Use Only
4	0	MDD-	8	IEEE-802.3.2005 10/100/1000Base-T
5	0	MDD+	7	IEEE-802.3.2005 10/100/1000Base-T
6	N/A	N/C	N/A	Do Not Connect - Factory Use Only
7	N/A	N/C	N/A	Do Not Connect - Factory Use Only
8	1	MDD+	7	IEEE-802.3.2005 10/100/1000Base-T
9	1	MDD-	8	IEEE-802.3.2005 10/100/1000Base-T
10	0	MDC-	5	IEEE-802.3.2005 10/100/1000Base-T
11	0	MDC+	4	IEEE-802.3.2005 10/100/1000Base-T
12	N/A	N/C	N/A	Do Not Connect - Factory Use Only
13	N/A	N/C	N/A	Do Not Connect - Factory Use Only
14	N/A	N/C	N/A	Do Not Connect - Factory Use Only
15	1	MDC+	4	IEEE-802.3.2005 10/100/1000Base-T
16	1	MDC-	5	IEEE-802.3.2005 10/100/1000Base-T
17	0	MDB-	6	IEEE-802.3.2005 10/100/1000Base-T
18	0	MDB+	3	IEEE-802.3.2005 10/100/1000Base-T
19	N/A	N/C	N/A	Do Not Connect - Factory Use Only
20	4	MDA+	1	IEEE-802.3.2005 10/100/1000Base-T
21	4	MDA-	2	IEEE-802.3.2005 10/100/1000Base-T
22	N/A	N/C	N/A	Do Not Connect - Factory Use Only
23	1	MDB+	3	IEEE-802.3.2005 10/100/1000Base-T
24	1	MDB-	6	IEEE-802.3.2005 10/100/1000Base-T
25	0	MDA-	2	IEEE-802.3.2005 10/100/1000Base-T
26	0	MDA+	1	IEEE-802.3.2005 10/100/1000Base-T
27	N/A	N/C	N/A	Do Not Connect - Factory Use Only
28	N/A	N/C	N/A	Do Not Connect - Factory Use Only
29	4	MDB+	3	IEEE-802.3.2005 10/100/1000Base-T
30	4	MDB-	6	IEEE-802.3.2005 10/100/1000Base-T
31	N/A	N/C	N/A	Do Not Connect - Factory Use Only
32	1	MDA+	1	IEEE-802.3.2005 10/100/1000Base-T
33	1	MDA-	2	IEEE-802.3.2005 10/100/1000Base-T
34	2	MDA-	2	IEEE-802.3.2005 10/100/1000Base-T

V51x-5UAT-FW-DS - April 21, 2012 - Released



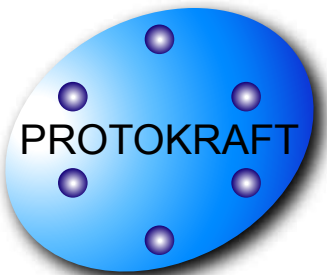
Facilitating Secure Communications in Harsh Environments

Five Port Viking Series D38999,
10/100/1000Base-T Unmanaged Ethernet Switch

J1 D38999 ELECTRICAL PIN FUNCTIONS - Continued from previous page

Pin #	Port #	Function	RJ-45 Pin #	Logic Family
35	2	MDA+	1	IEEE-802.3.2005 10/100/1000Base-T
36	N/A	N/C	N/A	Do Not Connect - Factory Use Only
37	N/A	N/C	N/A	Do Not Connect - Factory Use Only
38	4	MDC+	4	IEEE-802.3.2005 10/100/1000Base-T
39	4	MDC-	5	IEEE-802.3.2005 10/100/1000Base-T
40	N/A	N/C	N/A	Do Not Connect - Factory Use Only
41	3	MDA-	2	IEEE-802.3.2005 10/100/1000Base-T
42	3	MDA+	1	IEEE-802.3.2005 10/100/1000Base-T
43	2	MDB-	6	IEEE-802.3.2005 10/100/1000Base-T
44	2	MDB+	3	IEEE-802.3.2005 10/100/1000Base-T
45	N/A	N/C	N/A	Do Not Connect - Factory Use Only
46	4	MDD+	7	IEEE-802.3.2005 10/100/1000Base-T
47	4	MDD-	8	IEEE-802.3.2005 10/100/1000Base-T
48	N/A	N/C	N/A	Do Not Connect - Factory Use Only
49	3	MDB-	6	IEEE-802.3.2005 10/100/1000Base-T
50	3	MDB+	3	IEEE-802.3.2005 10/100/1000Base-T
51	2	MDC-	5	IEEE-802.3.2005 10/100/1000Base-T
52	2	MDC+	4	IEEE-802.3.2005 10/100/1000Base-T
53	N/A	N/C	N/A	Do Not Connect - Factory Use Only
54	N/A	N/C	N/A	Do Not Connect - Factory Use Only
55	N/A	N/C	N/A	Do Not Connect - Factory Use Only
56	3	MDC-	5	IEEE-802.3.2005 10/100/1000Base-T
57	3	MDC+	4	IEEE-802.3.2005 10/100/1000Base-T
58	2	MDD-	8	IEEE-802.3.2005 10/100/1000Base-T
59	2	MDD+	7	IEEE-802.3.2005 10/100/1000Base-T
60	N/A	N/C	N/A	Do Not Connect - Factory Use Only
61	N/A	N/C	N/A	Do Not Connect - Factory Use Only
62	3	MDD-	8	IEEE-802.3.2005 10/100/1000Base-T
63	3	MDD+	7	IEEE-802.3.2005 10/100/1000Base-T
64	ALL	VCC	N/A	18-36VDC
65	ALL	VCC	N/A	18-36VDC
66	N/A	N/C	N/A	Do Not Connect - Factory Use Only

V51x-5UAT-FW-DS - April 21, 2012 - Released



Facilitating Secure Communications in Harsh Environments

Five Port Viking Series D38999,
10/100/1000Base-T Unmanaged Ethernet Switch

APPENDIX A1 PART NUMBER OPTIONS Five Port, 10/100/1000Base-T

V51 **X** - **5** **U** **A** **T** - **F** **X** **X**

Shell Configuration
V51= 38999 Receptacle

Shell Configuration
F = Square Flange
J = Jam Nut

of Ports
5= 5

CABLE
U= UTP

Power Supply Voltage
A = 28.0VDC

Electrical Interface
T = 10/100/1000Base-T

D38999 Shell Size
F = 19 - 35

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

Shell Polarization
(leave blank) _ = N
A = A
B = B
C = C
D = D

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

V51x-5UAT-FW-DS - April 21, 2012 - Released