

Viking Series

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

Five Port (4+1), Jam Nut 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 connector shells and housing 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 In-Line 4+1 Port 10/100/1000Base-T 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 in a wall or floor mounted inline Mil-Dtl-38999 connector assembly.

The Viking series unmanaged Ethernet switch consists of two Ethernet interfaces for inline port expander applications. The 4x expansion interface of the Viking series 10/100/1000Base-T Ethernet switches is a D38999 size 19-35 connector with 4x IEEE-802.3U:2005 compliant 10/100/1000Base-T Ethernet ports.

The 1x uplink Ethernet electrical interface of the Viking series Ethernet switch is a D38999 size 11-35 connector with 1x IEEE-802.3U:2005 compliant 10/100/1000Base-T Ethernet ports and the power supply connections.

Viking series 10/100/1000Base-T 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	Product Number
10/100/1000Base-T - Jam Nut	V41J-5UAT-FW
10/100/1000Base-T - Flange	V41F-5UAT-FW

See Appendix A1 for more part number options

Facilitating Secure Communications in Harsh Environments

Five Port (4+1) Viking Series D38999, 10/100/1000Base-T Unmanaged In-Line 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-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

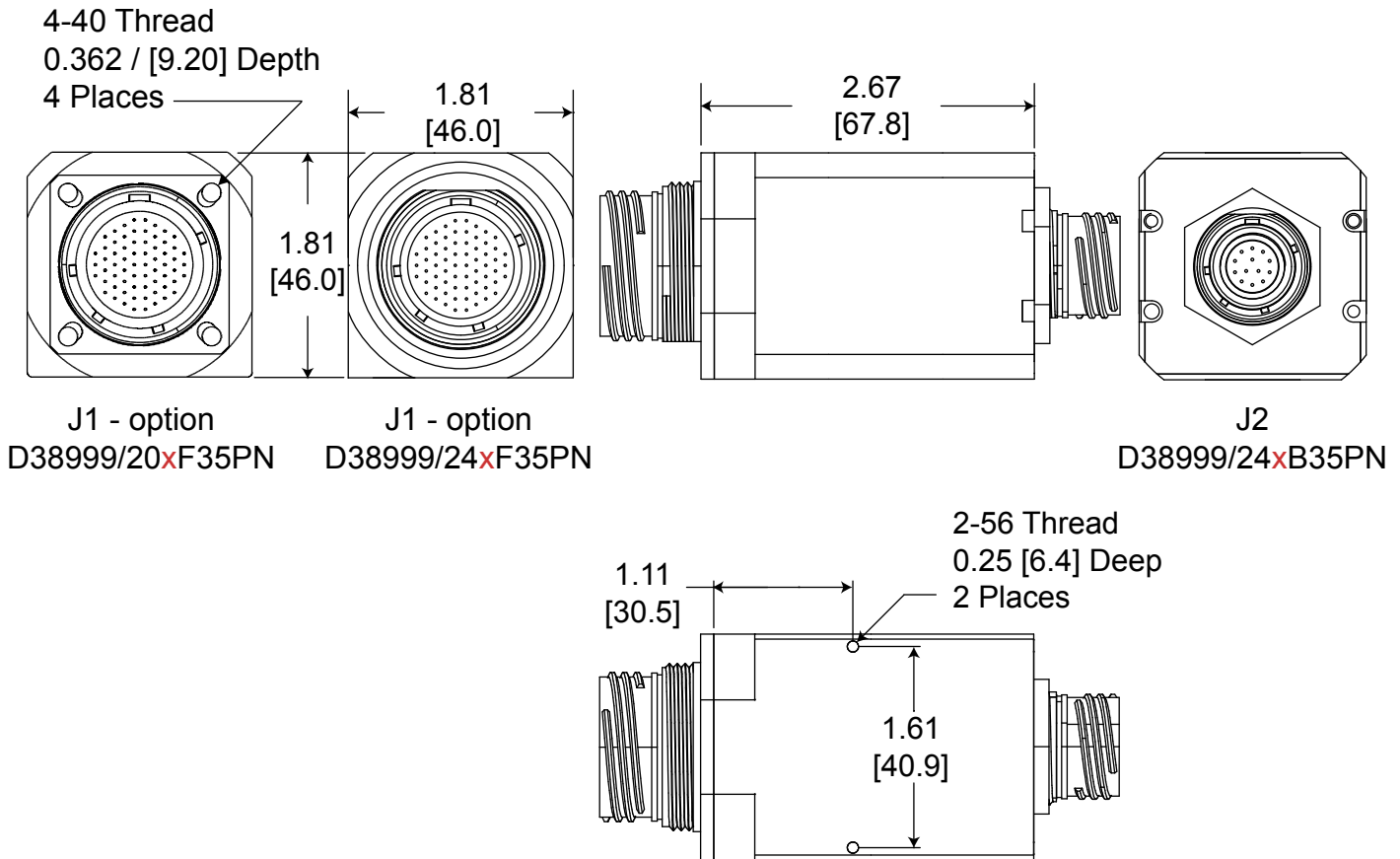
Parameter	Symbol	Minimum	Typical	Maximum	Unit
Power Supply Current @ 28VDC	P_i	150	180	250	mA
Power	P	5.0	6.0	7.0	W

Facilitating Secure Communications in Harsh Environments

Five Port (4+1) Viking Series D38999,
10/100/1000Base-T Unmanaged In-Line Ethernet Switch

OUTLINE DRAWING

Dimensions are shown as: inches [mm]



x= Finish Code: F, W or Z

Facilitating Secure Communications in Harsh Environments

Five Port (4+1) Viking Series D38999,
10/100/1000Base-T Unmanaged In-Line Ethernet Switch

J1 / D38999/20xF35PA ELECTRICAL PIN FUNCTIONS - Continued on next page

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

Facilitating Secure Communications in Harsh Environments

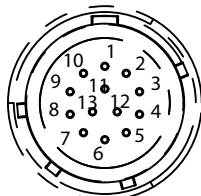
Five Port (4+1) Viking Series D38999,
10/100/1000Base-T Unmanaged In-Line Ethernet Switch

J1 D38999/20WF35PN ELECTRICAL PIN FUNCTIONS - Continued from the previous page

Pin #	Port #	Function	RJ-45 Pin #	Logic Family
35	2	MDA-	2	IEEE-802.3:2005 10/100/1000Base-T
36	2	MDA+	1	IEEE-802.3:2005 10/100/1000Base-T
37	N/A	N/C	N/A	Do Not Connect
38	N/A	N/C	N/A	Do Not Connect
39	N/A	N/C	N/A	Do Not Connect
40	3	MDA+	1	IEEE-802.3:2005 10/100/1000Base-T
41	3	MDA-	2	IEEE-802.3:2005 10/100/1000Base-T
42	N/A	N/C	N/A	Do Not Connect
43	N/A	N/C	N/A	Do Not Connect
44	2	MDB-	6	IEEE-802.3:2005 10/100/1000Base-T
45	2	MDB+	3	IEEE-802.3:2005 10/100/1000Base-T
46	N/A	N/C	N/A	Do Not Connect
47	N/A	N/C	N/A	Do Not Connect
48	3	MDB+	3	IEEE-802.3:2005 10/100/1000Base-T
49	3	MDB-	6	IEEE-802.3:2005 10/100/1000Base-T
50	N/A	N/C	N/A	Do Not Connect
51	N/A	N/C	N/A	Do Not Connect
52	2	MDC-	5	IEEE-802.3:2005 10/100/1000Base-T
53	2	MDC+	4	IEEE-802.3:2005 10/100/1000Base-T
54	N/A	N/C	N/A	Do Not Connect
55	3	MDC+	4	IEEE-802.3:2005 10/100/1000Base-T
56	3	MDC-	5	IEEE-802.3:2005 10/100/1000Base-T
57	N/A	N/C	N/A	Do Not Connect
58	N/A	N/C	N/A	Do Not Connect
59	2	MDD-	8	IEEE-802.3:2005 10/100/1000Base-T
60	2	MDD+	7	IEEE-802.3:2005 10/100/1000Base-T
61	3	MDD+	7	IEEE-802.3:2005 10/100/1000Base-T
62	3	MDD-	8	IEEE-802.3:2005 10/100/1000Base-T
63	N/A	N/C	N/A	Do Not Connect
64	N/A	N/C	N/A	Do Not Connect
65	N/A	N/C	N/A	Do Not Connect
66	N/A	N/C	N/A	Do Not Connect

Five Port (4+1) Viking Series D38999,
10/100/1000Base-T Unmanaged In-Line Ethernet Switch
J2 D38999 PIN AND PORT ASSIGNMENTS

TOP



Front view of the J2 D38999 connector shown
- mating cable plug opposite - see J2 D38999 Pin
Function Chart below for details

J2 / D38999 ELECTRICAL PIN FUNCTIONS

Pin #	Function	RJ-45 Pin #	Logic Family
1	*RESET_LOW	N/A	LVTTTL with Internal Pullup
2	MDA+	1	IEEE-802.3.2005 10/100/1000Base-T
3	MDA-	2	IEEE-802.3.2005 10/100/1000Base-T
4	MDB+	3	IEEE-802.3.2005 10/100/1000Base-T
5	MDB-	6	IEEE-802.3.2005 10/100/1000Base-T
6	GND	N/A	Isolated from Case GND
7	MDC-	5	IEEE-802.3.2005 10/100/1000Base-T
8	MDC+	4	IEEE-802.3.2005 10/100/1000Base-T
9	MDD-	8	IEEE-802.3.2005 10/100/1000Base-T
10	MDD+	7	IEEE-802.3.2005 10/100/1000Base-T
11	V _{cc}	N/A	12-36VDC
12	GND	N/A	Isolated from Case GND
13	V _{cc}	N/A	12-36VDC

*Reset Function: Logic "0" Input = Restart, registers initialized; Logic "1", Open or High Z Input = Normal Operation

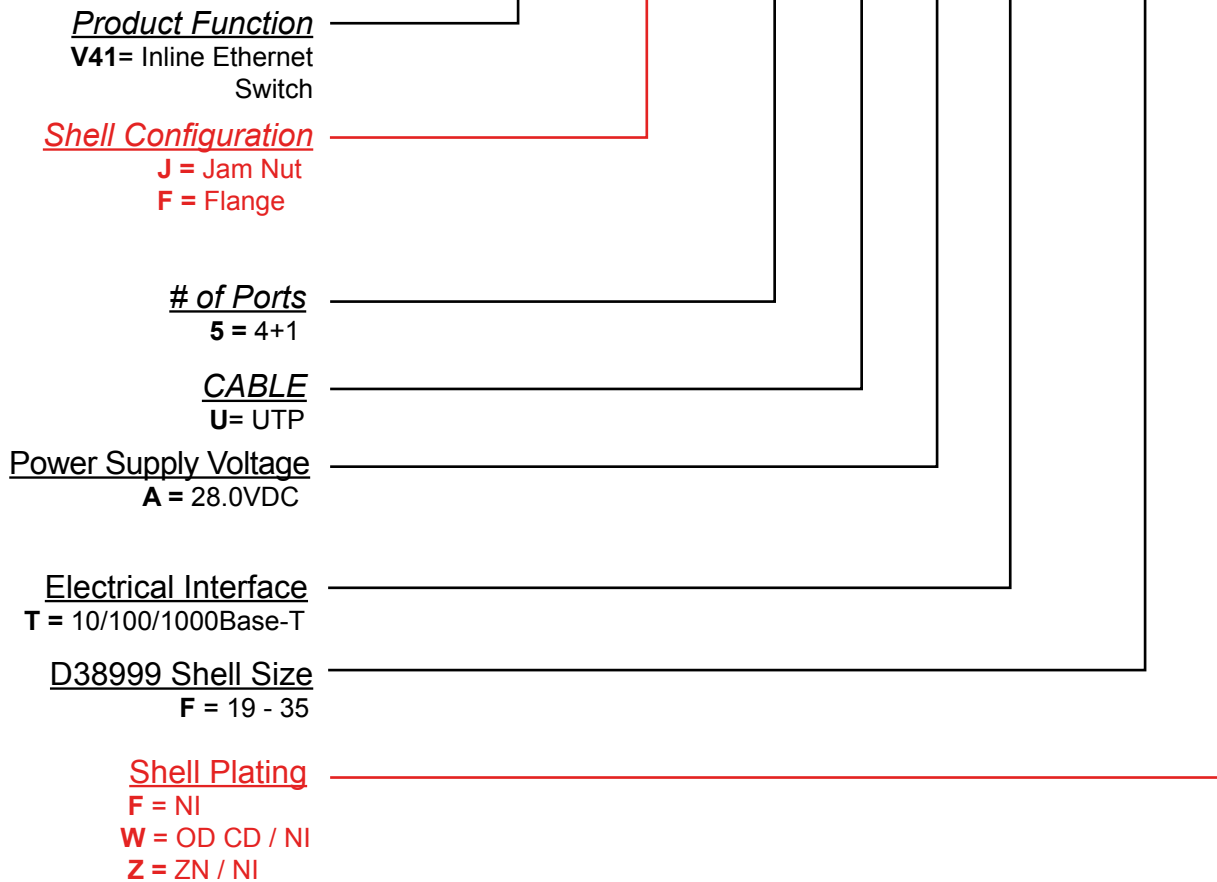
Five Port (4+1) Viking Series D38999,
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APPENDIX A1

PART NUMBER OPTIONS

In-Line, Five (4+1) Port, 10/100/1000Base-T, Ethernet Switch

V41 **X** - **5** **U** **A** **T** - **F** **X**



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