

DVS-109 series

Managed Industrial 8-Port FE + 1-Port GbE Ethernet Switches



UL508



-40~75°C



EMC LEVEL 4



FANLESS

Rugged
ETHERNET


- ▶ IPv6 address suitable for larger network and neighbor discovery
- ▶ Automatic IP assignment by DHCP/BootP server for easy network construction
- ▶ DHCP relay option 82 for sending DHCP requests with clients' identities to a DHCP server
- ▶ Port-based DHCP server with IP and MAC binding makes IP maintenance much easier*
- ▶ SNMP v1/v2c/v3 facilitates the exchange of management between network devices
- ▶ Supports EtherNet/IP and MODBUS TCP protocols that facilitate the remote management by SCADA and other industrial devices
- ▶ Proprietary ONE RING and ONE CHAIN high end redundancy technology, easy to build multiple ring topology, self-healing recovery time < 20ms
- ▶ STP/RSTP/MSTP for network redundancy further ensures reliability
- ▶ QoS(IEEE 802.1p) and TOS/DSCP for mission-critical applications
- ▶ IEEE 802.1Q VLAN, MAC-based VLAN, IP Subnet-based VLAN, VLAN isolation and GVRP optimize network strategy
- ▶ Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- ▶ IEEE 802.3ad port trunking in parallel to increase the link bandwidth
- ▶ SNTP (simple network time protocol) for network clock synchronization
- ▶ Broadcast/Multicast/Unknown Unicast storm control improves throughput problems
- ▶ Loopback-Detection to avoid broadcast loops, and shutdown the corresponding ports automatically
- ▶ Cable diagnostic provides the mechanism to detect and report potential cabling issues
- ▶ Intelligent Access Control List (ACL)
- ▶ MAC addresses locking function per port blocks unauthorized access
- ▶ USB console interface for easy connection with laptops
- ▶ IGMP Snooping and GMVP prunes multicast traffic
- ▶ RMON groups 1,2,3,9 (history, statistics, alarms and events) for enhanced flow management and analysis
- ▶ CPU utilization displays the amount of work the CPU handles
- ▶ Port mirroring for Many-to-One ports online troubleshooting
- ▶ Versatile system file updates by TFTP, HTTPS or HTTP
- ▶ DDM diagnosis function by SFP fiber module
- ▶ Auto warning by email, DI, relay, Syslog & SNMP trap
- ▶ Compatible with various industrial protocols, including EtherNet/IP, Profinet, CC-LINK IE and DNP 3.0

*Please check DELTA website for the latest firmware version

Specifications

TECHNOLOGY

Standard Compliance

- IEEE 802.3 10Base-T
- IEEE 802.3u 100Base-T(X) and 100Base-FX
- IEEE 802.3ab 1000Base-T
- IEEE 802.3x Flow Control
- IEEE 802.1D Spanning Tree Protocol

- IEEE 802.1w Rapid Spanning Tree Protocol
- IEEE 802.1s Multiple Spanning Tree Protocol
- IEEE 802.1p Class of Service, Priority Protocols
- IEEE 802.1Q VLAN Tagging
- IEEE 802.1X Port Authentication
- IEEE 802.3ad LACP Aggregation

- IEEE 802.1AB Link Layer Discovery Protocol

Processing Type

- Store and Forward
- IEEE 802.3x Flow control in full duplex, back-pressure flow control in half duplex

INTERFACE

Fast Ethernet

RJ45 Ports:

- 10/100Base-T(X), auto MDI/MDI-X, auto negotiation

Gigabit Ethernet

RJ45 Ports:

- 10/100/1000Base-T, auto MDI/MDI-X, auto negotiation

Console Port

- USB B-Type connector

LEDs

Device:

- ALARM, PWR1, PWR2, DI

Ports:

- 10/100/1000M(GbE RJ45 port), 10/100M(FE RJ45 port), LINK/ACT

Digital Inputs (DI)

- 1 set
- 0~+5V is OFF
- +11V~30V is ON
- Max. input current 6mA

Alarm Contacts (DO)

- 1 relay output
- Carry current 2A@24V_{DC}

Reset Button

- 1 set

PERFORMANCE AND SCALABILITY

Switching Capacity

- 3.6Gbps, Wired speed, Non-blocking switching fabric

Forwarding Rate

- 5.35Mpps

MAC Address Table

- 8K

Packet Buffer Memory

- 512K bits

IGMP Multicast Groups

- 256

Max. VLANs

- 255

Quality of Service

- 8 priority queues per port

DHCP/BootP Server

- 1275 IP addresses

Jumbo Frame

- 9,216 Bytes

MANAGEMENT

Software

- STP/RSTP/MSTP, LACP, QoS, IGMP Snooping v1/v2/v3, IGMP Query v1/v2, GARP, GMRP, VLAN, SSH, DNS, HTTP, HTTPS, RADIUS, TACACS+, SNMP v1/v2c/v3, SNMP Traps, TFTP, RMON, LLDP, BootP Server/Client, DHCP Server/Client, DHCP L2 Relay, DHCP Relay Option 82, DHCP Option 66/67, Telnet, Syslog, SMTP, SMTP Server/Client, IPv6, MODBUS TCP, EtherNet/IP

Security

- MAC/IP/TCP/UDP filtering, HTTPS, SSH, 802.1x, TACACS+, SNMP v3

Configuration

- Web Browser, Cisco-like Telnet CLI, USB Local Console, SNMP, MODBUS TCP, EtherNet/IP, IEXplorer Utility

MIB

- MIB II, Bridge MIB, SNMP MIB, Ether-like MIB, Q-Bridge/P-Bridge MIB, IF MIB, Traceroute MIB, TCP MIB, UDP MIB, IP MIB, RMON Group 1,2,3,9, Delta Private MIB

POWER REQUIREMENTS

Input Voltage

- 2 sets, 12 to 48V_{DC} redundant terminal block input

Input Current

- Max. 0.58A

Overload Current Protection

- Present, max. Input current 3A

Reverse Polarity Protection

- Present

Buffer Time

- Min. 12ms at 24V_{DC}

PHYSICAL

Housing

- IP40 metal case

Dimensions

- 145.3 mm (H) x 75 mm (W) x 108.7 mm (D)

Weight

- 500g

Installation

- Industrial DIN-Rail and wall mounting

ENVIRONMENTAL LIMITS

Operating Temperature

- -40°C to 75°C (-40°F to 167°F)

Storage Temperature

- -40°C to 85°C (-40°F to 185°F)

Ambient Relative Humidity

- 5% to 95% (non-condensing)

APPROVALS

Safety

- UL 508, EN 60950-1, IEC 61131-2

EMI

- FCC 47 CFR Part 15 Subpart B Class A, IEC 61000-6-4, EN 55022(CISPR22)

EMS [IEC 61000-6-2, EN 55024(CISPR24)]

- IEC 61000-4-2 level 3, IEC 61000-4-3 level 3, IEC 61000-4-4 level 4, IEC 61000-4-5 level 3, IEC 61000-4-6 level 3, IEC 61000-4-8 level 4, IEC 61000-4-29

Environmental Type Tests

Cold Temperature:

- IEC 60068-2-1

Dry Heat:

- IEC 60068-2-2

Humidity:

- IEC 60068-2-30

Shock:

- IEC 60255-21-2

Freefall:

- IEC 60068-2-32

Vibration:

- IEC 60068-2-6

Hi-Pot:

- 1.5KV

Ordering Information

Product		Port Combination			Interface		
Model Name	Operating Temperature	Combo Port 10/100/1000Base-T and 100/1000Base-SFP	10/100/1000 Base-T	10/100 Base-T(X)	DI	DO (Relay)	Power Input
DVS-109W02-1GE	-40°C to 75°C	---	1	8	1	1	2

Optional Products

DVP/CliQ/PMC Series: 12/24 V_{DC} Industrial Power Supply