Industrial Ethernet & IIoT Solution

State-of-the-Art Industrial Networking for Smart Manufacturing

Layer 3 Managed Switch
DVS-G928W01

- 28-Port full GbE (10 GbE optional), modular design for flexible configuration
- Layer 3 routing functions (RIP & VRRP) allow multiple subnets in a large network to exchange data and information across a network address
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP and SNMP v1 / v2c / v3
- IPv6 address suitable for large network and neighbor discovery
- EtherNet/IP and Modbus TCP protocols that facilitate the remote management by SCADA and other industrial devices
- Adopts high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 30 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- IEEE 1588v2 PTP (Precision Time Protocol) for precise time synchronization and calibration for network equipment
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- Cable diagnostic to auto-detect the twisted-pair cabling quality and report cabling issues regularly
- Auto alarm notifications by emails, relay, Syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- $100 \sim 240\ V_{AC}$ and $125 \sim 370\ V_{DC}$ wide-range redundant power input
- IP30 metal case, -40ºC ~ 85ºC operating temperature
- Electrical substation: IEC 61850-3, IEEE 1613
- Rail traffic: EN 50121-4
- Certification: UL 61010, IEC 60950-1, CE, FCC, CCC and RCM

Modules

DVS-G900-8GE	**DVS-G900-8GF**	**DVS-G900-6GM12**	**DVS-G900-4GF**
8 10/100/1000Base-T RJ45	8 100/1000Base-SFP	6 10/100/1000Base-T M12	4 100/1000Base-SFP

DELTA

Industrial Ethernet & IIoT Solution

Managed Switch

DVS-G116

- 12-Port GbE + 4-Port GbE SFP, designed for backbone networks in IIoT applications; full Gigabit Ethernet configuration
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP and SNMP v1 / v2c / v3
- IPv6 address for large network and neighbor discovery
- Modbus TCP and EtherNet/IP protocols that facilitate remote management by SCADA and other industrial devices
- Optimizes network redundancy by adopting high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 10 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- DDM diagnosis function by SFP fiber module
- Auto alarm notifications by emails, DI, relay, syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- IP40 metal case, -40ºC ~ 75ºC wide operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM

DVS-G112

- 8-Port GbE + 4-Port GbE SFP, designed for backbone networks in IIoT applications; full Gigabit Ethernet configuration
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP & SNMP v1 / v2c / v3
- IPv6 address for large network and neighbor discovery
- Modbus TCP and EtherNet/IP protocols that facilitate remote management by SCADA and other industrial devices
- Optimizes network redundancy by adopting high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 10 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- DDM diagnosis function by SFP fiber module
- Auto alarm notifications by emails, DI, relay, syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- IP40 metal case, -40ºC ~ 75ºC wide operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM

DVS-G106

- 4-Port GbE + 2-Port GbE SFP, designed for backbone networks in IIoT applications; full Gigabit Ethernet configuration
- Complete L2 network management functions: Q-in-Q VLAN, QoS, LACP, IGMP and SNMP v1/v2c/v3
- IPv6 address for large network and neighbor discovery
- Modbus TCP and EtherNet/IP protocols that facilitate remote management by SCADA and other industrial devices
- Optimizes network redundancy by adopting high-end proprietary redundancy technologies ONE RING & ONE CHAIN for quick self-recovery within 10 ms from network disconnection
- Enhanced network security with IEEE 802.1X, TACACS+, SSH, HTTPS and SNMP v3
- Loopback-detection to avoid broadcast storms by automatically shutting down the ports over a switching loop
- DDM diagnosis by SFP fiber module
- Auto alarm notifications by emails, DI, relay, syslog and SNMP trap
- Compatible with various industrial protocols, including EtherNet/IP, PROFINET, CC-LINK IE and DNP 3.0
- IP40 metal case, -40ºC ~ 75ºC wide operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM

DVS-103

- 3-Port 10/100Base-T(X) Ethernet switch for EtherNet/IP DLR specifically
- Supports EtherNet/IP protocol
- DLR (device-level ring) technology, self-healing recovery time < 3 ms (less than 50 nodes)
- Design with DI and DO for auto alarms
- IP40 metal case, -20ºC ~ 70ºC operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM

PoE+ Managed Switch

DVS-G512

- 8-Port GbE + 4-Port 100/1000Base-SFP, full Gigabit
- 8 10/100/1000Base-T PoE (PSE) ports, each provides 30 W power supply to meet IEEE 802.3at and IEEE 802.3af standards
- Complete L2 network management functions: VLAN, QoS, LACP, IGMP and SNMP v1/v2c/v3
- IPv6 address for large network and neighbor discovery
- Advanced PoE management and intelligent powered device (PD) class detection
- IEC 62439-2 MRP media redundancy protocol; IEEE 1588v2 PTP precision time protocol
- DDM diagnosis function by SFP fiber module
- Auto alarm notifications by emails, relay, syslog and SNMP trap
- IP30 metal case, -40ºC ~ 70ºC operating temperature
- Certification: CE, FCC and RCM

Industrial Ethernet & IIoT Solution

Unmanaged Switch

DVS-G008W01

- 8-Port GbE
- Transparent transmission of VLAN tagged packets
- Auto alarm notifications by relay output for power failure
- Power supply: 12 ~ 48 V_{DC} or 10 ~ 24 V_{AC}, supports redundant dual inputs
- IP30 metal case, -40ºC ~ 75ºC operating temperature
- Certification: UL 61010, EN 62368-1, CE, FCC and RCM

DVS-005 / 008 / 016

- 5 / 8 / 16-Port FE; supports long-distance transmission via fiber optics
- IEEE 802.1p based QoS for packet forwarding precedence
- Built-in broadcast storm protection
- Transparent transmission of VLAN tagged packets
- Auto alarm notification by relay output for link-down and power failure
- Power supply: 12 ~ 48 V_{DC}, supports redundant dual inputs
- IP40 metal case, -40ºC ~ 75ºC operating temperature
- Certification: UL 508, IEC 61131-2, CE, FCC and RCM

DVS-G005I00C

- 5-Port GbE
- Jumbo frame size: up to 10k Bytes
- Power supply: 12 ~ 48 V_{DC}, supports redundant dual inputs
- IP40 PC case, -20ºC ~ 70ºC operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM

DVS-008W00-M12

- 8-Port 10/100Base-T(X) M12, ensures robust and tight connection
- Strong 5g resistance to extreme vibration environments
- IP67 metal housing to prevent water and dust ingress
- Transparent transmission of VLAN tagged packets
- Power supply: 12 ~ 48 V_{DC}, supports redundant dual inputs
- -40ºC ~75ºC wide operating temperature
- Certification: UL 61010, EN 62368-1, CE, FCC and RCM

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PoE+ Unmanaged Switch
DVS-G406W01-2GF

- 4-Port GbE + 2-Port 100/1000Base-SFP, full Gigabit
- 4 10/100/1000Base-T PoE (PSE) ports, each provides 30 W power supply to meet IEEE 802.3at and IEEE 802.3af standards
- Jumbo frame size: up to 9,216 Bytes
- Auto alarm notifications by relay output for power failure
- IP30 metal case, -40ºC ~ 70ºC operating temperature
- Certification: CE, FCC and RCM

PoE+ Splitter
DVS-G401

- 1-Port GbE for PoE+ data / power input and 1-Port GbE for data output
- All ports compliant with IEEE 802.3at and IEEE 802.3af standards, each provides 30 W power supply
- Intelligent PoE input overvoltage protection
- Power output up to 27 W
- IP30 metal case, -20ºC ~ 70ºC operating temperature
- Certification: CE, FCC and RCM

PoE+ Injector
DVS-G402

- 2-Port GbE for PoE+ data / power output and 2-Port GbE for data input
- All ports compliant with IEEE 802.3at and IEEE 802.3af standards, each provides 30 W power supply
- Intelligent PoE output overvoltage protection
- Built-in 12 V_{DC} power booster for flexible PoE deployment
- IP30 metal case, -20ºC ~ 70ºC operating temperature
- Certification: CE, FCC and RCM

Industrial Ethernet & IIoT Solution

Ethernet-to-Fiber Media Converter
DVS-G002I00-TF

- 1-Port 100/1000Base-T to 100/1000Base-SFP
- Jumbo frame size: up to 10k Bytes
- Supports Link Fault Pass-Through (LFP)
- Power supply: 12 ~ 48 V_{DC}, supports redundant dual inputs
- IP40 PC case, -20ºC ~ 70ºC operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC and RCM

SFP Fiber Transceiver
LCP-GbE

- 1-Port GbE, compliant with IEEE 802.3z
- Full duplex operation
- DDM diagnosis monitors transmission quality
- Hot-plugging duplex LC connectors for maximum flexibility
- Metal case, -40ºC ~ 85ºC operating temperature

LCP-1FE

- 1-Port FE, compliant with IEEE 802.3u
- Full duplex operation
- DDM diagnosis monitors transmission quality
- Hot-plugging duplex LC connectors for maximum flexibility
- Metal case, -40ºC ~ 85ºC operating temperature

High-Gain Antenna
DVW-ANT

- Supports IEEE 802.11 b/g/n or IEEE 802.11 a/b/g/n
- 2.4 & 5 GHz dual-band omni-directional 5.5 & 8dBi, or 2.4 GHz omni-directional 7 dBi
- Powerful magnetic base with 3-meter extension cord and RP-SMA (male) connector
- IP65 waterproof and UV resistant design, suitable for applications under all kinds of weather conditions
- -30ºC ~ 60ºC operating temperature

Industrial 4G/WAN Cloud Router
DX-3021L9

- 4-Port FE LAN + 1-Port FE WAN + 1-Port RS-232 + 1-Port RS-485
- Universal 4G LTE-FDD and LTE-TDD frequency bands, compatible with WCDMA/GSM/GPRS/EDGE 3G/2G networks
- Supports DIACloud Cloud Management Platform, no ISP public IP address required
- Supports Modbus TCP, Modbus ASCII/RTU, Mitsubishi MC and Siemens TCP protocols
- Dual SIM dual standby technology, seamless switch among ISP systems for continuous network connection
- Built-in DI/DO for alarm settings and triggering
- Firmware upgrade and automatic configuration via USB flash drives; allows remote access to the USB flash drives via FTP
- USB port compatible with 3rd party Wi-Fi USB adapter to add WLAN interface as Wi-Fi client (only Realtek RTL8192EU driver supported)
- Internet connection via cellular network or broadband interfaces; allows self-defined internet connectivity priority
- Firewalls: SPI, DoS attacks, IP/MAC filter
- IP30 metal case, -20ºC ~ 70ºC operating temperature
- Certification: NCC, CE, FCC and UL

IEEE 802.11 WLAN
DVW-W01I2-E1

- Comprehensive transmission interface: 1-Port GbE + 1-Port RS-232 + 1-Port RS-485
- Compliant with IEEE 802.11ac wireless technology for up to 866 Mbps data transmission rate
- Proprietary ONE ROAMING high-end fast roaming technology with seamless switch (< 150 ms) among APs
- Multiple wireless modes: AP, Client, repeater
- Supports serial device servers and Modbus gateways
- Wireless QoS (IEEE 802.11e, WMM) for video packet transmission precedence
- Enhanced wireless security: WPA-PSK / WPA2-PSK (TKIP/AES)
- Modbus TCP protocol that facilitates remote management by SCADA and other industrial devices
- Auto alarm notification by emails, DI and relay
- IP40 metal case, -10ºC ~ 60ºC operating temperature
- Certification: UL 61010, IEC 62368-1, CE, FCC, RCM, SRRC and NCC

Communication Module

High-Speed and Stable Industrial Network Solutions

Master Module

Ethernet │ DVPEN01-SL

- Modbus TCP connections:
  Client: 32 │ Server: 16
- Smart data exchange
- RTU mapping
- Simple firewall
- Email alarm

Ethernet │ RTU-EN01

- Modbus TCP slave protocol
- Able to connect 8 DVP-S Series
  analog I/O modules
- Able to connect digital I/O modules (256 points)
- RS-485 port supports max. 32 Modbus slaves
- Smart PLC if-then function
- Smart monitor function

CANopen │ DVPCOPM-SL

- CANopen protocol
- Able to connect max. 110 slaves
- Various PDO and high-speed
  SDO transmission
- Supports NMT slave, Heartbeat,
  Emergency, and more protocols

CANopen │ RTU-CN01

- CANopen protocol
- Able to connect 8 DVP-S series
  analog I/O modules
- Able to connect DVP-S series
  digital I/O modules (256 points)

EtherCAT │ RTU-ECAT

- EtherCAT protocol
- Able to connect 8 DVP-S series
  analog I/O modules
- Able to connect DVP-S series
  digital I/O modules (256 points)

DeviceNet │ DVPDNET-SL

- For DVP-EH3-L, DVP-MC, DVP-SA2, SE, SV2,
  SX2 Series only
- Supports DeviceNet protocol
- Connectable to 63 slaves
- Max. baud rate: 500k bps
- Max. network length: 500m
- RTU mapping

RS-485 │ DVPSCM12-SL

- Standard Modbus communication and user-defined RS-485 communication protocols
- 2 sets of independent RS-485 communication interfaces
- Isolated power and communication provide strong noise immunity;
  built-in 120 Ω terminal resistor switch and removable terminal
- Data transmission settings via software, no programming required
- Applicable for PLC communication ports for program uploading/downloading and monitoring

RS-485 │ RTU-485

- Modbus protocol
- Able to connect 8 DVP-S Series
  analog I/O modules
- Able to connect digital I/O modules
  (256 points)
- Max. baud rate: 115.2 Kbps

Master Module

BACnet MS/TP │ DVPSCM52-SL

- BACnet MS/TP slave, standard Modbus and user-defined RS-422/485 communication protocols
- Compatible with major brand software and DDC; remote I/O and converter function available when connected to a PLC with I/O point extension
- Isolated power and communication provide strong noise immunity
- Compatible with high-speed communication modules on the left (PLC needed)

USB Converter

USB » CAN │ IFD6530

- A USB/RS-485 communication converter for AC motor drive C2000 series
- Offers 9 V power supply
- Supports AC motor drive VFD series keypad (KPC-CC01) for parameter storage and editing in TPEditor software
- Supports baud rate 75 ~ 115,200 bps

USB » RS-485 │ IFD6500

- A USB/RS-485 communication converter
- Supports baud rate 75 ~ 115,200 bps
- No external power supply required
- Auto-detects data flow direction
- Plug and play USB device

USB » CAN │ IFD6503

- Extracts CAN messages (standard and extended frames), decodes and displays following DeviceNet and CANopen protocols
- Filters by preset conditions
- CAN messages (1 sent manually, and max. 8 sent automatically)
- Max. 1 Mbps
- Plug and play USB device

Modbus Serial Converter

RS-422/485 │ IFD8510-A

- Automatically configures communication format and transmission
- Switch-less and fully-isolated design
- Communication baud rate: up to 115,200bps

RS-232 « » RS-422/485 │ IFD8500-A

- RS-232 to RS-422/485 isolated converter
- Auto transmission speed adjustment

Modbus Serial Converter

EtherNet/IP, Modbus TCP » Modbus │ IFD9506

- Isolation in RS-485 channel (incl. power supply)
- EtherNet/IP and Modbus TCP protocols
- Smart monitor function
- Supports webpage setup and on-line monitoring
- Serial virtual COM available
- Alarm notifications through email