THE DFX1000-12/24G IS A RUGGEDIZED, FEATURE RICH, HIGH PERFORMANCE LAYER 2 ETHERNET SWITCH SPECIFICALLY DESIGNED TO MEET THE HARSH ENVIRONMENTAL CONDITIONS PREVALENT IN TRANSMISSION AND DISTRIBUTION SUBSTATIONS.

DFX1000-12/24G Carrier Grade Switch

The DFX1000-12/24G Layer 2 Switch provides carrier grade high performance Ethernet switching to meet the needs of high availability utility communications networks.

The DFX1000-12/24G is ruggedized to meet the stringent requirements of IEC-61850 and IEEE 1613 for utility substation environments.

The DFX1000-12/24G has 12/24 x 10/100/1000Base-T Ethernet interfaces using standard RJ45 connectors or SFPs. The unit supports MDI/ MDX, so that cross-over cables are not needed.

It has a high performance Ethernet switching fabric and supports jumbo frames, with a range of rate limiting and storm control options.

Tag based VLANs (802.1q with 8K MAC addresses and 4K VLANs) are supported, allowing network segmentation without being restricted by physical connections.

Double tagging (QinQ) is also provided to facilitate scalability of networks.

VLAN, access port, trunk port & filtered trunks ports are also supported, allowing network designers more flexibility.

Advanced features such as rate limiting on the Ethernet ports is provided, preventing unpredictable network performance due to broadcast storms of malfunctioning equipment.

The Spanning Tree Protocol is supported to allow the DFX to be deployed in loop topologies thus providing redundant paths to protect against link failure. RSTP and MSTP protocols are also supported to enabled more sophisticated strategies to be implemented.

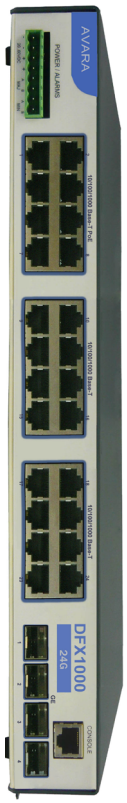
IPv4/IPv6 multicast together with link aggregation (IEEE 802.3ad) is also supported.

With an increasing number of critical services migrating to Ethernet, the DFX has been designed with an extremely high MTBF and for operation in extreme temperatures.

Ethernet OAM is supported providing network diagnostic capabilities.

The DFX1000-12/24G can be managed locally via the console port or remotely using Telnet, SNMP or Avara's Web Server over secure VLAN, SSH and HTTPS.

Full remote configuration and software download options reduces upgrade time. A comprehensive set of SNMP traps and alarms are provided to assist fault management and isolation.



DFX1000-12/24G
Carrier Grade Switch

Technical Highlights

Interfaces

- 12/24 x 10/100/1000Base-T Ethernet Ports
- PoE supported on four (4) ports

Key Features

- High performance Ethernet switching capability and functionality
- Supports Jumbo Frames
- Supports Link Aggregation
- Supports 8K MAC Addresses
- Support 4096 VLANs
- Supports STP/MSTP/RSTP
- Supports IPv4/IPv6 Multicast
- Supports MEF E-Lane, E-Line, and E-Tree services
- Supports Synchronous Ethernet
- Supports IEEE1588v2
- Ethernet OAM
- Network security features
- 802.1x port-based/MAC-based access control
- Rugged industrial design with compliance to IEC-61850-3 and IEEE 1613 standards.
- High MTBF (> 50 years) and fan-less operation to ensure high availability
- Wide Operating Power Supply Range

AVARA
TECHNOLOGY

TECHNICAL SPECIFICATIONS

Interfaces

Ethernet (Electrical)	10/100/1000 Base-T (RJ45)
Ethernet (SFP)	1000 Base-X (SFP)

Ethernet Switching

802.1Q VLAN switch with 8K MACs and 4K VLANs
Push/pop up to two VLAN tags
IPv4/IPv6 multicast
Policing with storm control and MC/BC protection
STP, RSTP and MSTP support
Link aggregation (IEEE 802.3ad)
Independent and shared VLAN learning (IVL, SVL)
Jumbo frame support

Carrier Ethernet

Provider Bridging (PB)
MEF E-Lane, E-Line, and E-Tree services

Timing Synchronization

Synchronous Ethernet support
IEEE 1588v2

Security

SSH & HTPPS support
MAC address locking per port

OAM and APS

Supports Ethernet OAM
Supports APS switch-over less than 50 ms

MTBF	50 Years
Alarm Contacts	2x Relay outputs with current carrying capacity of 1A @ 24V
Environmental	
Operating Temperature	-5 °C to +65 °C
Relative Humidity	5-90% (Non-condensing)

Standards

IEEE 802.3 Ethernet	EN55022 Class B Emissions
IEEE 802.3u Fast Ethernet	IEC 61850-3
IEEE 802.1p VLAN Tagging	IEEE 1613
IEEE 802.1q Prioroty Queing	EN60950 Safety
IEEE 802.3x Flow Control	EN55024 Immunity
RFC1157 SNMP	EN50082-2 Generic Immunity
RFC1213 MIB II	ETS 300 019 -1-1 Operational
RFC854 Telnet	ETS 300 019 -1-2 Storage
RFC783 TFTP	ETS 300 019 -1-3 Transport

Management	
Local	CLI via Console
Remote	Telnet, SNMP, Web Server
Power	
Power Supply	20 to 72 VDC 88 to 300 VDC Redundant power supply options available

Preliminary

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