

Switch Imtech Bridge Guard

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References

IMO Res.A.694(17), MSC.128(75), MSC.191(79), IEC 60945 (2002) inc. corr.1 (2008), IEC 61162 Series, IEC 62288 Ed.2.0 (2008), IEC 62616 (2010) , IEC 61696-1 IEC FDIS Ed.2 TC80-690 FDIS VDR, IEC 61924-2 NEN-EN-IEC Ed.1 2012-12

Introduction

The standard standard switch that is used for the BNWAS depends on which system it is integrating with. In a stand-alone version, a switch might not be necessary. In combination with the Imtech Unimacs bridge mostly the Moxa EDS 518A is used.

This serie is type-approved under Bureau Veritas certificate number 22935/AO BV

Abbreviations list

BNWAS	Bridge Navigational Watch Alarm System
LED	Light Emitting Diode

1. The Switch

The Moxa switch is a Switch/repeater that conforms to the IEEE 802.3. It comes in divers versions. It will need a supply voltage of 24V DC. If power is supplied, it needs to last at least for the given time in MSC 128(75). The power supply usually lies outside the scope of the BNWAS.



Figure 1-1: Different variations Moxa switch

2. Specifications

Technology

Standards:

IEEE 802.3 for 10BaseT
 IEEE 802.3u for 100BaseT(X) and 100BaseFX
 IEEE 802.3ab for 1000BaseT(X)
 IEEE 802.3z for 1000BaseX
 IEEE 802.3x for Flow Control
 IEEE 802.1D-2004 for Spanning Tree Protocol
 IEEE 802.1w for Rapid STP
 IEEE 802.1s for Multiple Spanning Tree Protocol
 IEEE 802.1Q for VLAN Tagging
 IEEE 802.1p for Class of Service
 IEEE 802.1X for Authentication
 IEEE 802.3ad for Port Trunk with LACP

Protocols: IGMPv1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, BootP, TFTP, SNMP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, Syslog, DHCP Option 66/67/82, SSH, SNMP Inform, EtherNet/IP, Modbus/TCP, LLDP, IEEE 1588 PTPv2, IPv6, NTP Server/Client
MIB: MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9
Flow Control: IEEE 802.3x flow control, back pressure flow control

Switch Properties

Priority Queues: 4
Max. Number of Available VLANs: 64
VLAN ID Range: VID 1 to 4094
IGMP Groups: 256
MAC Table Size: 8 K
Packet Buffer Size: 2 Mbit

Interface

Fiber Ports: 100BaseFX (SC/ST connector) and 1000BaseSFP slot
RJ45 Ports: 10/100BaseT(X) or 10/100/1000BaseT(X) auto negotiation speed

Console Port: RS-232 (RJ45 connector)

LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 100M (fiber port), MSTR/HEAD, CPLR/TAIL

Alarm Contact: 2 relay outputs with current carrying capacity of 1 A @ 24 VDC

Digital Inputs: 2 inputs with the same ground, but electrically isolated from the electronics.

• +13 to +30V for state "1"

• -30 to +3V for state "0"

• Max. input current: 8 mA

Optical Fiber

	100BaseFX	
	Multi-mode	Single-mode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km ^a	40 km ^c
	4 km ^b	
Saturation	-6 dBm	-3 dBm

a. 50/125 µm, 800 MHz*km fiber optic cable

b. 62.5/125 µm, 500 MHz*km fiber optic cable

c. 9/125 µm single-mode fiber optic cable

d. 9/125 µm single-mode fiber optic cable (80 km)

Figure 2-1: Specifications 1

Power Requirements

Input Voltage: 24 VDC (12 to 45 VDC), redundant dual inputs

Input Current:

EDS-518A: 0.51 A @ 24 V

EDS-518A-MM/SS: 0.61 A @ 24 V

Overload Current Protection: Present

Connection: 2 removable 6-contact terminal blocks

Reverse Polarity Protection: Present

Physical Characteristics

Housing: Metal, IP30 protection

Dimensions: 94 x 135 x 142.7 mm (3.7 x 5.31 x 5.62 in)

Weight: 1630 g

Installation: DIN-rail mounting, wall mounting (with optional kit)

Environmental Limits

Operating Temperature:

Standard Models: 0 to 60°C (32 to 140°F)

Wide Temp. Models: -40 to 75°C (-40 to 167°F)

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Standards and Certifications

Safety: UL 508, UL 60950-1, CSA C22.2 No. 60950-1, EN 60950-1

Hazardous Location: UL/cUL Class 1 Division 2 Groups A/B/C/D,

ATEX Zone 2 Ex nA nC IIC T4 Gc

EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A

EMS:

EN 61000-4-2 (ESD) Level 2, EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 2, EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-12

Marine: DNV, GL, NK

Shock: IEC 60068-2-27

Freefall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Note: Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)

Time: 240,000 hrs

Database: Telcordia (Bellcore), GB

Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Figure 2-2: Specifications 2

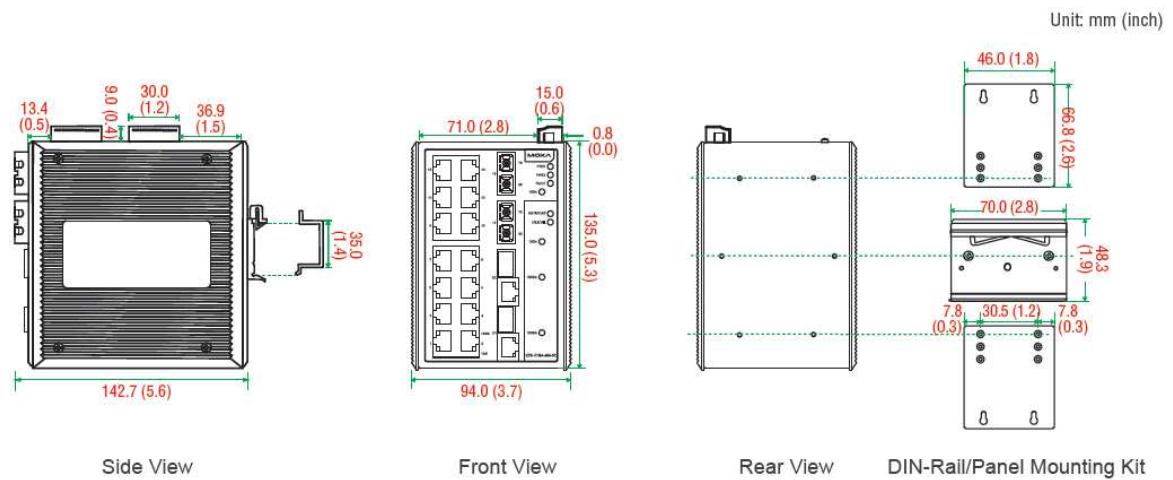


Figure 2-3: Dimensions

Available Models		Port Interface					
		Gigabit Ethernet	Fast Ethernet				
Standard Temperature (0 to 60° C)	Wide Temperature (-40 to 75° C)	Combo Port, 10/100/1000BaseT(X) or 1000BaseSFP*	10/100BaseT(X)	100BaseFX			
				Multi-mode, SC Connector	Multi-mode, ST Connector	Single-mode, SC Connector	Single-mode, SC Connector, 80 km
EDS-518A	EDS-518A-T	2	16	—	—	—	—
EDS-518A-MM-SC	EDS-518A-MM-SC-T	2	14	2	—	—	—
EDS-518A-MM-ST	EDS-518A-MM-ST-T	2	14	—	2	—	—
EDS-518A-SS-SC	EDS-518A-SS-SC-T	2	14	—	—	2	—
EDS-518A-SS-SC-80	—	2	14	—	—	—	2

Figure 2-4: Available models