LMSW – 10M

Ethernet Layer 3 PoE Switch with UPS

Description:

The OPTOKON LMSW-10M Ethernet Switch is a ruggedized access Switch with built-in uninterruptible power supply (UPS) Integrating Cisco Ethernet 2000 Series Switches with proven Cisco IOS Software. The switch is designed for Power sensitive harsh military and civil environments (i.e. vehicle, mining, industrial). Their extensive certifications, as well as a wide range in power supply voltage input and operation temperature, make them suitable for almost all industrial applications.
Switch provides customers with highly secure access and military and industry-leading convergence using Cisco Resilient Ethernet Protocol (REP).

The LMSW-10M ruggedized field switch has been developed according to the above mentioned requirements. The switch combines all advantages: excellent optical network performance and rugged construction designed for operation in harsh environmental conditions. The LMSW-10M includes a 16/2 port switch, VoIP gateway and UPS. VoIP gateway is two or four-port FXS telephone extension to IP network and support SIP RFC 3261 protocol. It provides telephone services and T.38 fax over IP network with easy operation.

Power supplying of LMSW-10M can be ensured from any DC source 10.5 - 30 V and 230 V AC power system. It includes an Li-ion UPS to maintain power in the event of a power outage (2.2 hours).

Features:

- Robust compact design resistant to harsh environmental conditions and rough handling
- 2x 100/1000Base-X: HMA FO connectors
- 16x 10/100/1000Base-T: RJ-45 interface with support of IEEE802.3a PoE output (15,4 W per Port) + 2x FXS ports
- Power supply from 10.5 - 36 VDC / 176 - 264 VAC
- Backup battery – 30 min operation during full load (15 port up with providing PoE)
- USB connector
- IPv4 routing: RIP, OSPF, EIGRP, VRF Lite, 3500 routes
- IPv6 routing: Static routing, OSPFv3, 1750 routes
- Network Address Translation (NAT): Line-rate, hardware-enabled 1:1 static address translation designed to enable duplicate IP address usage in the Layer 2 machine node networks

1. Environmental and mechanical tests:		**2. Electromagnetic compatibility tests**
MIL-STD 810G Method 501	High temperature	**EMC** – Electromagnetic compatibility
MIL-STD 810G Method 502	Low temperature	EM emission, EM compatibility
MIL-STD 810G Method 503	Change of temperature	EN 55022 ed.3:2011, Class B ITE
MIL-STD 810G Method 506	Rain	EN 61000-6-3 ed.2: 2007 + A1: 2011
MIL-STD 810G Method 507	Humidity	MIL-STD 461E: 1999, method RE102, CE102
MIL-STD 810G Method 513	Acceleration	MIL-STD 461F methods CS101, CS114, CS115, CS116, RS103
MIL-STD 810G Method 514	Vibration	
MIL-STD 810G Method 516	Impact	
3. Safety tests		
LVD – Low Voltage Directive: EN 60950-1 ed.2:2006		

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Specifications:

Standard data VoIP	IEEE 802.3 10Base-T, 802.3u 100Base-TX a 100Base-FX SIP
Protocol	CSMA/CD
Interface	Metallic - mechanical resistant connectors Optical - HMA 62.5/125 µm or 50/125 µm MM optical cable 9/125 µm SM optical cable
PoE	PSE – power sourcing equipment,
Wavelength	MM: 1300 nm, SM: 1310 nm, 1550 nm
Distance	UTP cable (10/100/1000Base-T): 100 m MM optical cable, full duplex: up to 2 km, SM optical cable, full duplex: 10, 30, 50 km
Environmental temperature humidity	Fulfils MIL-STD 810E operating -30 °C to +50 °C, storage -50 °C to + 70 °C 10% to 95%
Mechanical	Fulfils MIL-STD 810E, IP 65 protection
Power supply	100-242 V AC / 10.5 to 36 V DC,
Dimensions	400 x 250 x 250 mm (W x D x H), 800 x 520 x 400 mm including transporting box

Standards:

• IEEE 802.1D MAC bridges, STP • IEEE 802.1p Layer 2 COS prioritization • IEEE 802.1q VLAN • IEEE 802.1s Multiple Spanning-Trees • IEEE 802.1w Rapid Spanning-Tree • IEEE 802.1x Port Access Authentication • IEEE 802.1AB LLDP • IEEE 802.3ad Link Aggregation (LACP) • IEEE 802.3af Power over Ethernet provides up to 15.4W DC power to each end device • IEEE 802.3at Power over Ethernet provides up to 25.5W DC power to each end device • IEEE 802.3af Power over Ethernet • IEEE 802.3at Power over Ethernet Plus • IEEE 802.3ah 100BASE-X SMF/MMF only	• IEEE 802.3x full duplex on 10Base-T • IEEE 802.3 10BASE-T specification • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3z 1000BASE-X specification • IEEE 1588v2 PTP Precision Time Protocol • IEEE 802.3af Power over Ethernet • IEEE 802.3at Power over Ethernet Plus • IEEE 802.3ah 100BASE-X SMF/MMF only • IEEE 802.3x full duplex on 10Base-T • IEEE 802.3 10BASE-T specification • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3z 1000BASE-X specification • IEEE 1588v2 PTP Precision Time Protocol
• RFC 768: UDP • RFC 783: TFTP • RFC 791: IPv4 protocol • RFC 792: ICMP • RFC 793: TCP • RFC 826: ARP • RFC 854: Telnet • RFC 951: BootP • RFC 959: FTP • RFC 1157: SNMPv1 • RFC 1901,1902-1907 SNMPv2 • RFC 2273-2275: SNMPv3 • RFC 2571: SNMP Management • RFC 1166: IP Addresses • RFC 1256: ICMP Router Discovery	• RFC 1305: NTP • RFC 1492: TACACS+ • RFC 1493: Bridge MIB Objects • RFC 1534 DHCP and BootP interoperation • RFC 1542: Bootstrap Protocol • RFC 1643: Ethernet Interface MIB • RFC 1757: RMON • RFC 2068: HTTP • RFC 2131, 2132: DHCP • RFC 2236: IGMP v2 • RFC 3376: IGMP v3 • RFC 2474: DiffServ Precedence • RFC 3046: DHCP Relay Agent Information Option • RFC 3580: 802.1x RADIUS • RFC 4250-4252 SSH Protocol

Ordering code:

LMSW-10M	-	XXXX	-	XX[1]	-	XX	-	(AC/DC[3])
Ports configuration **Typ** FO UTP FXS **2162** 2 16 2				**Fiber optic** **M5**: Multimode **S3**: SM 1310 nm **S5**: SM 1550 nm		**Distance (FO)** **XX**[1]: 2 km (MM) **10**: 10 km **30**: 30 km **50**[2]: 50 km		**AC:** 176-264 VAC **DC:** 10.5-36 VAC **AD:** AC/DC

1) MM fiber – the distance depends on fiber type, up to 2 km.
SM fiber – longer distance on request
2) 1550 nm – DFB laser, 50 km distance connectivity
3) standard power supply: AC/DC, please define – if required different (100-242 VAC)

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Standard Accessories:

DC: LMCAB-PSC-03-62GB-16J08-33SN-DC
2-wires shielded cable 3 m, one side – connector 62GB
AC: LMSW08-PSC-02-EU (UK)
power supply cord, EU (UK) plug – other on request

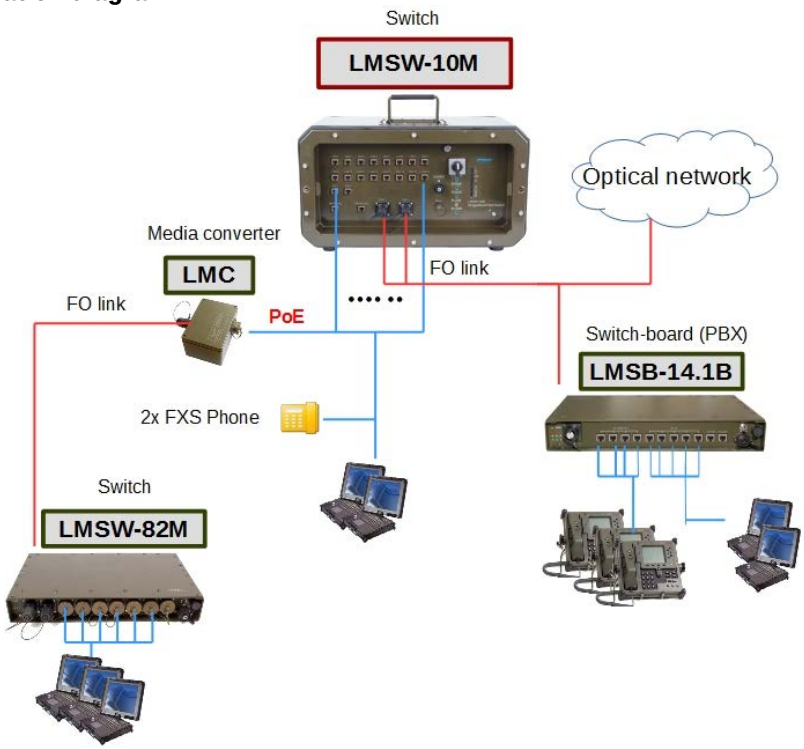
Optional Accessories:

HMA Optical cable
LMCAB-LAN-05-RJ45-RJ45..... 5 m RJ45 Data cable
LMCAB-FXS-05-RJ45-RJ11..... 5 m RJ45 to RJ11 Phone cable
LMCASE-10M..... Case for LMSW-10M (800 x 520 x 400 mm)

LMCAB-LAN-05-RJ45-RJ45

LMCASE-10M

LMSW10M application diagram:



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