

# LMSW-E33

## Ruggedized 1/10 Gigabit Ethernet Layer 2 Managed PoE Switch

**2x 10G WAN, FO HMA or RJ-45**  
**8 or 24x LAN 10/100/1000Base-T, PoE**

### Description:

The OPTOKON® LMSW-E33 ruggedized switch based on Cisco® Embedded Service Switch (ESS) 3300 extends switching capabilities to mobile and embedded networks that operate in extreme environments. The flexible, compact form factor of the switch, powered by Cisco IOS® Software, provides highly secure data, voice, and video communications to stationary and mobile network nodes, making it ideal for use in harsh environmental conditions. 10G fiber optic ports are terminated with HMA "Expanded Beam" connectors, which allows interconnection of the nodes of tactical network by the help of cables with optical fibers. The used "Expanded Beam" technology preserves all advantages of signals transmission through the optical lines in field harsh environmental conditions. The switch supports a variety of management functions, including Web UI, MIB, SmartPort, SNMP, syslog, DHCP server, SPAN session

The switch is able to fit all the common 24 V DC power systems. The switch operates in wide operating temperature range -40 to +70°C. The switch can operate as standalone device or in addition the 19" brackets allow switch installation into 19" rack. Two switches can be connected on the side and mounted in a 19 "rack.

### Features:

- Robust compact design resistant to harsh environmental conditions and rough handling
- 10G uplinks, 1G downlinks
- WAN – 2 ports of 1G/10G (copper or fiber)
- LAN – 8x 1G ports:
  - 4x of 1G combo
  - 4 ports of 10Base-T/100Base-TX/1000Base-T or
- LAN – 24x ports 10Base-T/100Base-TX/1000Base-T
- HMA fiber optic connectors
- MRJ, RJFTV RJ-45 or D38999 multipin connectors
- PoE on all 8/24 ports available
- RS-232 and USB console
- Advanced next generation Cisco IOS-XE software
- 20 – 40 V DC power supply
  - Low power 24 W consumption
  - (150 W in case of PoE functionality)



LMSW-E33-82P-S310/D38999



LMSW-E33-242-S310/MRJ

### Primary features:

- |                                  |   |
|----------------------------------|---|
| <b>10G uplinks, 1G downlinks</b> | Enables high-quality video and data communication for next generation of bandwidth-intensive use cases such as tactical data centers, HD video surveillance, self-driving vehicles, and future-proofing |
| <b>Robust compact design</b>     | A compact form factor that can withstand harsh environments (-40 to +70°C operating temperature)  |
| <b>Security</b>                  | Enterprise-grade Cisco IOS-XE switching security features ensure highly secure voice, video, and data communication   |
| <b>Manageability</b>             | Facilitates easy deployment and rapid configuration with easy-to-use WEB UI and familiar Cisco CLI  |
| <b>Power over Ethernet</b>       | PoE standard IEEE 802.3af on request with visibility and management from Cisco IOS-XE Software  |
| <b>Layer 2 switching</b>         | Enables to offer enterprise-grade Layer 2 switching feature set to end customers  |
| <b>Quality of service</b>        | Allows customers to prioritize flows and ensure make sure that mission-critical flows are not affected by low-priority traffic  |

**IEEE standards:**

IEEE 802.1D MAC Bridges, STP  
 IEEE 802.1p Layer2 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 802.3ah 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

**RFC compliance:**

RFC 768: UDP  
 RFC 783: TFTP  
 RFC 791: IPv4 protocol  
 RFC 792: ICMP  
 RFC 793: TCP

RFC 826: ARP  
 RFC 854: Telnet  
 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 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

Specifications:		Electromagnetic compatibility tests:
Interface	RJ-45 port: ruggedized, watertight connectors D38999: multipin connector FO: HMA-J Expanded Beam connector	<b>EMC</b> – Electromagnetic compatibility: MIL-STD 461F methods RE102, CE102 CS101, CS114, CS115, CS116, RS103
Distance	UTP cable (10Base/100Base/1000Base-T): 100 m	<b>Mechanical:</b> MIL-STD 810G, IP 65 protection
Power supply:	20-40 V DC	<b>Environmental:</b> MIL-STD 810G Operating temperature: -40 °C to +70 °C Storage temperature: -40 °C to +85 °C
Dimensions (W x D x H)	8x LAN ports: 220 x 230 x 112 mm 24x LAN ports: 430 x 230 x 112 mm	
Weight	4.5 / 6.0 kg	
MTBF:	180 000 hrs	

**Ordering code:**

LMSW-E33 <sup>1</sup> -XXX(P) <sup>2</sup>	WAN ports		DC24	XX
	XX	XX		
<b>XX: port configuration</b>	<b>Fiber type/λ</b>	<b>Distance</b>	<b>Power supply</b>	<b>LAN connector<sup>4</sup></b>
<b>42</b> 2x WAN 10G, 4x 1G LAN	<b>M5:</b> MM 50/125	<b>XX<sup>3</sup>:</b> MM	<b>DC24:</b> 20-40 V DC	<b>RJFTV6</b>
<b>82</b> 2x WAN 10G, 8x 1G LAN	<b>S3:</b> SM 1310 nm	<b>10:</b> 10 km		<b>RJF</b>
<b>242</b> 2x WAN 10 G, 24x 1G LAN	<b>S5:</b> SM 1550 nm	<b>30:</b> 30 km		<b>MRJ</b>
<b>80</b> No WAN, 8x 1G LAN				<b>D38999<sup>5</sup></b>
<b>240</b> No WAN, 24x 1G LAN	<b>CT:</b> RJ-45	<b>UTP:</b> 100 m		

- Note:
- 1) 8x LAN ½ 19" rack width, 24x LAN full 19" rack width
  - 2) LAN ports with PoE - supports up to 24 PoE/PoE+ ports [PoE/PoE+ power budget – 130 W]
  - 3) Multimode – up to 550 m, distance depends on optical fiber parameters
  - 4) connectors versions depends on rack width and number of LAN ports
  - 5) D38999 – 18-pins connector, it includes 2x 1G ports

**LMSW-E33 variants:**



LMSW-E33-82P-S310/MRJ

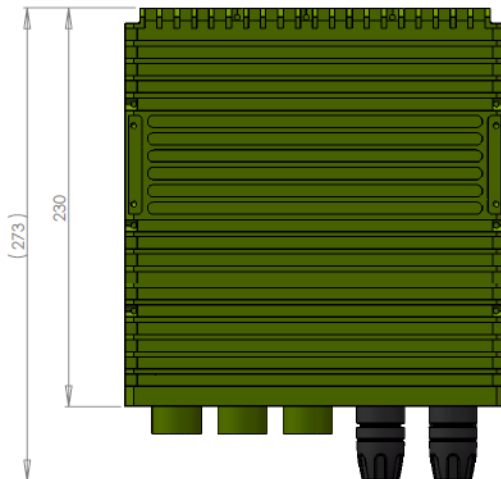
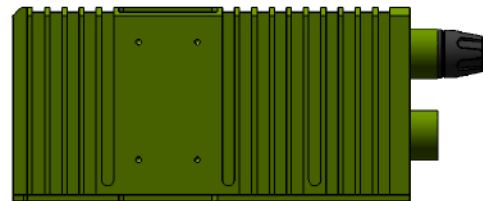
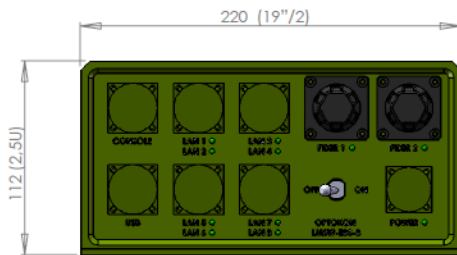


LMSW-E33-42-S310/RJFTV6



LMSW-E33-82P-S310/D38999

**LMSW-E33 dimensions:**



LMSW-E33-82P-S310/D38999  
Front view

**Standard accessories:**

- Power cable  
LMCAB-PSC-03-D3-26WB2SN-DC
- Manual

**Options:**

- Military-Grade UTP cables (IP67) xx – length m  
LMCAB-LAN-xx-RJ45-RJ45  
LMCAB-LAN6-xx-RJFTV6MG-RJ45,  
LMCAB-LSC-xx-D3-26WD18PN-2xRJ45F
- Tactical fiber optic cable with HMA-J connectors
- Brackets for installation into 19" rack



LMCAB-PSC-03-D3-26WB2SN-DC



LMCAB-LAN6-03-RJFTV6MG-RJ45



LMCAB-LAN-05-RJ45-RJ45



Tactical cable with HMA-J connectors