

# LMSW-42M

## Ruggedized Gigabit Ethernet Managed PoE Switch

### Description:

The LMSW-42M is a small version of ruggedized field switch, which has been developed according to the requirements for optical networks in harsh environmental conditions. It is designed for operation in military tactical networks, for installation in heavy industry enterprise, oil refineries and mining plants, or for rescue actions during natural disasters. The switch combines all advantages: excellent optical network performance and rugged construction.

The Gigabit Ethernet LMSW-42M switch includes 4x RJ-45 LAN ports and 2x optical fiber ports. The switch supports a variety of management functions, including STP/RSTP/MSTP and ITU-T G.8032 Ring <50 ms recovery time, advanced PoE management functions such as PoE device auto-checking and auto reset, layer 2 Ethernet IGMP, VLAN, QoS, Security, IPv6, bandwidth control, port mirroring, cable diagnostic and Green Ethernet.

The switch is classified as power source equipment (PSE) and can be used to power IEEE 802.3af/at standard devices (PD), eliminating the need of additional power cable wiring. It is able to fit all the common 24/48 VDC and 230 VAC power systems simultaneously (redundant power supply). The switch operates in wide operating temperature range -40 +75 °C.

### Features:

- Robust compact design resistant to harsh environmental conditions and rough handling
- 2x 100/1000Base-X: HMA FO connectors
- 4x 10/100/1000Base-T: RJ-45 interface with support of IEEE802.3af/at PoE output (30 W per Port)
- Built-in power booster design up to 55 VDC for PoE/PoE+ output
- Redundant dual input power 20-57 VDC / 80-264 VAC



### Functionality:

- Advanced PoE Management, PoE PD auto detection and auto reset, PoE configuration for power planning, weekly scheduling
- Cable diagnostic, measuring cable OK or broken point distance
- Support IEEE802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption
- STP, RSTP, MSTP, ITU-T G.8032 Ethernet Protection Ring (EPR) for cabling redundant
- u-Ring for Redundant Ethernet Ring, recovery time <20ms in 250 units
- QoS, Traffic classification QoS, CoS, Bandwidth control for Ingress and Egress, Strom Control, DiffServ
- IEEE802.1q VLAN, port base VLAN, Mac base VLAN, IP subnet base VLAN, Protocol base VLAN, VLAN translation, MVR
- Dynamic IEEE 802.3ad LACP Link Aggregation, Static Link Aggregation
- IGMP/MLD snooping V1/V2/V3, IGMP Filtering / Throttling, IGMP query, IGMP proxy reporting, MLD snooping
- Security: Port based and MAC based IEEE802.1X, RADIUS, ACL, TACACS+, HTTP/HTTPS, SSL/SSH v2
- Software upgrade via TFTP and HTTP, redundant firmware to avoid in case of upgradeing failure
- DHCP client/Relay/Snooping/Snooping option 82/Relay option 82
- RMON, MIB II, Port mirroring, Event syslog, DNS, NTP/SNTP, IEEE802.1ab LLDP
- Support IPV6 Telnet server /ICMP v6, SNMP, HTTP, SSH/SSL, NTP/SNTP, TFTP, QoS, ACL
- CLI, Web based management, SNMP v1/v2c/v3, Telnet server for management

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

## Specifications:

| Standards:                         |   |
|------------------------------------|---|
| IEEE 802.3                         | 10Base-T 10Mbit/s Ethernet  |
| IEEE 802.3u                        | 100Base-TX, 100Base-FX, Fast Ethernet   |
| IEEE 802.3ab                       | 1000Base-T Gbit/s Ethernet over twisted pair  |
| IEEE 802.3z                        | 1000Base-X Gbit/s Ethernet over Fiber-Optic   |
| IEEE 802.1d                        | STP (Spanning Tree Protocol)  |
| IEEE 802.1w                        | RSTP (Rapid Spanning Tree Protocol)   |
| IEEE 802.1s                        | MSTP (Multiple Spanning Tree Protocol)  |
| ITU-T G.8032 / Y.1344              | EPR (Ethernet Protection Ring)  |
| IEEE 802.1Q                        | Virtual LANs (VLAN)   |
| IEEE 802.1X                        | Port based Network Access Control, Authentication   |
| IEEE 802.3ad                       | Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)  |
| IEEE 802.3x                        | Flow control for Full Duplex  |
| IEEE 802.3af                       | PoE (Power over Ethernet)   |
| IEEE 802.3at                       | PoE+ (Power over Ethernet enhancements)   |
| IEEE 802.1ad                       | Stacked VLANs, Q-in-Q   |
| IEEE 802.1p                        | LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization   |
| IEEE 802.1ab                       | Link Layer Discovery Protocol (LLDP)  |
| IEEE 802.3az                       | EEE (Energy Efficient Ethernet)   |
| VLAN ID                            | 4096  |
| Switch Architecture                | Backplane (Switching Fabric): 12Gbps  |
| <b>Data Processing</b>             | Store and Forward   |
| <b>Flow Control</b>                | IEEE 802.3x for full duplex mode<br>Back pressure for half duplex mode  |
| <b>Jumbo Frame</b>                 | 9.6KB   |
| <b>MAC Address Table</b>           | 8K  |
| <b>PoE standard</b>                | IEEE802.3af, IEEE802.3at  |
| <b>PoE RJ-45 pin Assignment</b>    | 8 RJ-45 port support IEEE 802.3af/at<br>End-Span, Alternative A mode<br>Positive (VCC+): RJ-45 pin 1, 2. Negative (VCC-): RJ-45 pin 3, 6. Data (1,2,3,6)    |
| <b>Network Connector</b>           | 8 x RJ-45 10/100/1000BaseT(X) auto negotiation speed,<br>Auto MDI/MDI-X function, Full/Half duplex<br>3X 100/1000 BaseX dual speed mode SFP slot, With DDMI |
| <b>Console</b>                     | RS-232 (RJ-45)  |
| <b>Network Cable</b>               | UTP/STP above Cat. 5e cable<br>EIA/TIA-568 100-ohm (100m)<br>CSMA/CD  |
| <b>Protocol</b>                    |   |
| <b>Reverse polarity protection</b> |   |
| <b>Overload current protection</b> |   |
| <b>CPU Watch Dog</b>               |   |
| <b>Power Supply</b>                | Redundant Dual DC 20~57VDC/80-264 VAC   |
| <b>LED signalization</b>           |   |

| Mechanical parameters:    |  |
|---------------------------|--|
| Interface                 | RJ-45 port: ruggedized, watertight connectors<br>FO - HMA-J <sup>1</sup> : 50/125 µm or 62.5/125 µm MM optical cable, 9/125 µm SM optical cable    |
| Wavelength                | MM: 1300 nm, SM: 1310 nm, 1550 nm  |
| Distance                  | UTP cable (10Base-T, 100Base-TX, 1000Base-TX): 100 m<br>MM optical cable, full duplex: up to 2 km,<br>SM optical cable, full duplex: 10, 30, 50 km |
| Environmental temperature | Fulfils MIL-STD 810E<br>Operating: -40 °C to +75 °C<br>Storage: -40 °C to + 85 °C  |
| Mechanical                | Fulfils MIL-STD 810E, IP 63 protection   |
| Power supply:             | DC 20-57 V DC<br>AC 80-264 V AC  |
| Dimensions                | 215 x 215 x 65 mm (W x D x H)  |

Note: 1) HMA-J standard, other on request

## Ordering code:

|                 |   |                          |   |                                  |   |                            |
|-----------------|---|--------------------------|---|----------------------------------|---|----------------------------|
| <b>LMSW-42M</b> | - | <b>XX</b>                | - | <b>XX</b>                        | - | <b>(AC/DC<sup>4</sup>)</b> |
|                 |   | <b>Fiber optic</b>       |   | <b>Distance (FO)</b>             |   | <b>Power supply</b>        |
|                 |   | <b>M5</b> MM 50/125 µm   |   | <b>XX<sup>2</sup>:</b> 2 km (MM) |   | AC: 80-264 V AC            |
|                 |   | <b>M6</b> MM 62.5/125 µm |   | <b>10:</b> 10 km                 |   | DC: 20-57 V DC             |
|                 |   | <b>S3</b> SM 1310 nm     |   | <b>30:</b> 30 km                 |   |                            |
|                 |   | <b>S5</b> SM 1550 nm     |   | <b>50<sup>3</sup>:</b> 50 km     |   |                            |

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

**Standard Accessories:**

**Power supply cables:**

**DC:** LMC-PSC2-03-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



LMC-PSC2-03-DC



LMSW08-PSC-02-EU

**Optional Accessories:**

LMSW08B-LAN-02.....Data cable 2 m RJ45-RJ45  
LMSW08B-LAN-05.....Data cable 5 m RJ45-RJ45  
LMSW08B-LAN-08.....Data cable 8 m RJ45-RJ45  
HMA optical cable



LMSW08B-LAN-08



HMA Optical cable

**LMSW-42M application diagram:**

