



# **Switches Ethernet Industrial**

Workgroup

## PowerLION-24TP

Gigabit ETHERNET managed switch, store-and-forward forwarding scheme  
Port type and quantity: 24 x 10/100/1000BASE-T ports (RJ-45 connectors), 4 of which are Gigabit ETHERNET combo ports (RJ-45/SFP), Layer 3, with one optional 10GE uplink module  
Type: PowerLION-24TP  
Order No.: 943 886-001  
V.24 interface: outband management connection via V.24 (DB9 RS-232 console interface)  
Twisted pair (TP): 0 - 100 m  
Line - / star topology: any  
Operating voltage: min. 100 V, max. 240 V, input frequency: 47 to 63 Hz  
Current consumption: max. 140 W  
Layer 3: IPv4 routing at wire speed  
Static IP routes  
RIP I and RIP II  
OSPF routing  
IP Multicast Routing: DVMRP, PIM-DM  
IP Redundancy - VRRP  
VLAN: IEEE 802.1Q  
GVRP protocol for automatic VLAN registration and dynamic VLAN management  
Security: RADIUS client  
TACACS+ client  
HTTPs/SSL  
Secure Shell (SSH, Secure Telnet)  
Access Control  
IEEE 802.1x port based security  
Quality of Service: L2/L3/L4Traffic ClassIPv4 routing  
CoS by IEEE 802.1p 4 priority queues control  
WRR for priority queues  
Strict scheduling for priority queue  
Rate Limiting  
Random Early Detection (RED)  
Other services: auto-sensing, auto-negotiation on all 10/100/1000BASE-T ports  
up to 16 kByte memory for MAC address entries  
flow control mechanism: backpressure for half duplex; full duplex mode  
port mirroring  
IGMP snooping  
broadcast storm control  
QoS: DiffServ, Traffic and Bandwidth Management, 8-level priority in switching  
Management: SNMP v1 and SNMP v2 management functions, integration in HiVision  
RMON (groups 1,2,3 and 9)  
web-based management  
TELNET console interface  
BOOTP and DHCP for IP address assignment  
firmware upgraded by TFTP file transfer protocol through the Ethernet network  
dual firmware images  
configuration file upload/download by TFTP protocol  
two or more Configuration files  
system error log (syslog)  
Redundancy functions: IEEE 802.1D Spanning Tree Protocol  
IEEE 802.1w Rapid Spanning Tree  
IEEE 802.1s Multiple Spanning Tree  
link aggregation:  
- up to 8 ports in one trunk  
- up to 4 trunk groups  
- 802.3ad (LACP)  
- Cisco Ether-channel (static truck)  
Operating temperature: 0 °C to +40 °C  
Relative humidity (non-condensing): 5% to 95%  
Dimensions (W x H x D): 440 mm x 43 mm x 324 mm  
Mounting: 19" cabinet or table unit  
Protection class: IP 20  
Accessories to order separately: SFP transceivers: M-SFP-SX/LC (943 014-001), M-SFP-LX/LC (943 015-001), M-SFP-LH/LC (943 042-001) and M-SFP-LH+/LC (943 049-001)  
10GE uplink: PowerLION-XM-10G (943 886-201), XENPAK-10G-LR (943 886-901)  
Stack cable: PowerLION-XM-C30 (943 886-401), PowerLION-XM-C130 (943 886-501)



## SmartLION-TP/FX

4-slot intelligent chassis switch, modular, Layer 2, store and forward switch architecture  
Port type and quantity: up to 24 x 10/100BASE-TX ports (RJ-45 connectors) or 24 x 100BASE-FX (SC connectors) or mixed configuration TX/FX via modules, and two additional GigabitEthernet ports via uplink module

Type: SmartLION-TP/FX

Order No.: 943 885-005

V.24 interface: outband management connection via V.24 (DB9 RS-232 console interface)

Line - / star topology: any

Operating voltage: min. 100 V, max. 240 V, input frequency: 50 /60 Hz, 0.8 A

Current consumption: max. 60 W

Layer 3:

VLAN: IEEE 802.1Q tagging VLAN, port-based VLAN

static VLAN groups up to 256

dynamic VLAN groups up to 2048 management

VLAN ID from 0 to 4094

Security: IEEE 802.1x port based security

RADIUS

Quality of Service: up to 8 priority levels ID for two priority queues

Other services: auto-negotiation on all 10/100BASE-TX ports

8K MAC address table with Auto learning function

flow control mechanism: backpressure for half duplex; flow control for full duplex

port mirroring

IGMP (v1/v2) snooping and query function

broadcast storm control

stack grouping with up to 8 units

Management: SNMP v1 management functions, integration in HiVision

RMON 1

web-based management

TELNET console interface

DHCP client function

firmware upgraded by TFTP file transfer protocol through the Ethernet network

Redundancy functions: IEEE 802.1D Spanning Tree Protocol

link aggregation: IEEE802.3ad with LACP function.

up to 7 trunk groups, trunk member up to 4 ports and include 2 uplink ports

Operating temperature: 0 °C to +40 °C

Relative humidity (non-condensing): 5% to 95%

MTBF: 11.1 years

Dimensions (W x H x D): 440 mm x 280 mm x 44 mm

Mounting: 19" cabinet or table unit

Protection class: IP 20

Accessories to order separately: modules: SmartLion-XM-8TP (943 885 105),

SmartLion-XM-8FX-MM (943 885 205), SmartLion-XM-8FX-SM (943 885 305),

SmartLion-XM-2TP (943 885 405), SmartLion-XM-2SFP (943 885 505)

Modulation: SNMP v1 management functions, integration in HiVision

RMON 1

web-based management

TELNET console interface

DHCP client function

firmware upgraded by TFTP file transfer protocol through the Ethernet network



## Giga LION-24 TP

Gigabit ETHERNET managed switch,  
store-and-forward forwarding scheme  
Port type and quantity: 24 x 10/100/1000BASE-T ports (RJ-45 connectors), 4 of  
which are Gigabit ETHERNET combo ports (RJ-45/SFP)  
Type: Giga LION-24 TP  
Order No.: 943 860-001  
V.24 interface: outband management connection via V.24 (DB9 RS-232 console  
interface)  
Twisted pair (TP): 0 - 100 m  
Line - / star topology: any  
Operating voltage: min. 100 V, max. 240 V, input frequency: 47 to 63 Hz  
Current consumption: max. 140 W  
Layer 3:  
VLAN: IEEE 802.1Q tagging VLAN, port-based VLAN  
up to 255 active VLANs  
GVRP protocol for automatic VLAN registration and dynamic VLAN management  
private VLAN  
Security: RADIUS (Authentication)  
TACACS+  
SSL  
SSH (v1.5)  
Access Control  
IEEE 802.1x port based security  
Quality of Service: L2/L3/L4Traffic Classification/Priority Management  
CoS by IEEE 802.1p 4 priority queues control  
Traffic Classification/Priority Management  
WRR for priority queues  
Strict scheduling for priority queue  
Rate Limiting  
Random Early Detection (RED)  
Other services: auto-sensing, auto-negotiation on all 10/100/1000BASE-T ports  
up to 16 kByte memory for MAC address entries  
flow control mechanism: backpressure for half duplex;  
HOL (Head of Line) blocking prevention  
port mirroring  
load balance for both unicast and multicast traffics  
IGMP (v1/v2) snooping and query function  
broadcast storm control  
Management: SNMP v1 and SNMP v2 management functions  
RMON (groups 1,2,3 and 9)  
web-based management  
TELNET console interface  
BOOTP and DHCP for IP address assignment  
firmware upgraded by TFTP file transfer protocol through the Ethernet network  
dual firmware images  
configuration file upload/download by TFTP protocol  
two or more Configuration files  
system error log (syslog)  
Redundancy functions: IEEE 802.1D Spanning Tree Protocol  
IEEE 802.1w Rapid Spanning Tree  
IEEE 802.1s Multiple Spanning Tree  
link aggregation  
up to 8 ports in one trunk  
up to 4 trunk groups  
802.3ad (LACP)  
Cisco Ether-channel (static truck)  
Operating temperature: 0 °C to +40 °C  
Relative humidity (non-condensing): 5% to 95%  
MTBF: 17.2 years  
Dimensions (W x H x D): 440 mm x 324 mm x 43 mm  
Mounting: 19" cabinet or table unit  
Protection class: IP 20  
Accessories to order separately: "SFP transceivers: M-SFP-SX/LC (943 014-001), M-  
SFP-LX/LC (943 015-001),  
M-SFP-LH/LC (943 042-001) and M-SFP-LH+/LC (943 049-001)"



## LION-24 TP

Fast Ethernet managed switch,  
store-and-forward forwarding scheme  
Port type and quantity: 24 x 10/100BASE-T ports (RJ-45 connectors) and another  
2 expansion slots for Gigabit or 100BASE-FX fiber interface  
Type: LION-24 TP  
Order No.: 943 118-005  
V.24 interface: outband management connection via V.24  
Twisted pair (TP): 0 - 100 m  
Line - / star topology: any  
Operating voltage: min. 100 V, max. 240 V, input frequency: 47 to 63 Hz  
Current consumption: max. 80 W  
Layer 3:  
VLAN: IEEE 802.1Q tagging VLAN, port-based VLAN  
up to 255 active VLANs  
GVRP protocol for automatic VLAN registration and dynamic VLAN management  
private VLAN  
Security: RADIUS (Authentication)  
TACACS+  
SSL  
SSH (v1.5)  
Access Control  
IEEE 802.1x port based security  
Quality of Service: L2/L3/L4 Traffic Classification/Priority Management  
CoS by IEEE 802.1p 4 priority queues control  
Traffic Classification/Priority Management  
WRR for priority queues  
Strict scheduling for priority queue  
Rate Limiting  
Random Early Detection (RED)  
Other services: Auto MDI/MDIX on all 10/100Base-TX ports  
up to 8 kByte memory for MAC address entries  
4 Mbit for packet buffer size  
flow control mechanism: backpressure for half duplex; IEEE802.3x for full duplex  
operation  
HOL (Head of Line) blocking prevention  
port mirroring  
load balance for both unicast and multicast traffics  
IGMP (v1/v2) snooping and query function  
broadcast storm control  
Management: SNMP v1 and SNMP v2c management functions  
RMON (groups 1,2,3 and 9)  
web-based management  
TELNET console interface  
BOOTP and DHCP for IP address assignment  
firmware upgraded by TFTP file transfer protocol through the Ethernet network  
dual firmware images  
configuration file upload/download by TFTP protocol  
two or more Configuration files  
SNMP access IP filtering configuration MAC based port security  
Redundancy functions: IEEE 802.1D Spanning Tree Protocol  
IEEE 802.1w Rapid Spanning Tree  
link aggregation  
up to 8 ports in one trunk  
up to 4 trunk groups  
802.3ad (LACP)  
Cisco Ether-channel (static truck)  
Operating temperature: 0 °C to +40 °C  
Relative humidity (non-condensing): 10% to 90%  
MTBF: 8.1 years; MIL-HDBK 217F: Gb 25 °C  
Dimensions (W x H x D): 440 mm x 324 mm x 43 mm  
Mounting: 19" cabinet or table unit  
Protection class: IP 20  
Accessories to order separately: 10/100 uplink module LION-01FX-MM (943 118  
105); 100BASE-FX  
10/100 uplink module LION-01FX-SM (943 118 205), 100BASE-FX  
Gigabit uplink module LION-GIGA-1SX (943 118 305); 1000BASE-SX  
Gigabit uplink module LION-GIGA-1LX (943 118 405); 1000BASE-LX  
Gigabit uplink module LION-GIGA-1T (943 118 505); 1000BASE-T  
Gigabit uplink module LION-GBIC (943 118 605);  
Transceiver GBIC SX (943 411 100);  
Transceiver GBIC LX (943 411 200)



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