

- Bandwidth up to 24 Gbps
- Non-blocking architecture
- L3 switches
- Passive cooling
- Support for Multicast (IGMP Snooping, MVR)
- Advanced security functions (L2-L4 ACL, IP Source Guard, Dynamic ARP Inspection, etc.)

MES3508, **MES3508P** and **MES3510P** industrial switches manufactured by ELTEX are designed to organize secure fault-tolerant networks on sites with high requirements to temperature, vibrations and mechanical impact.

The switches have ports of 10/100/1000BASE-T with PoE/PoE+¹ technology support and Combo ports of 10/100/1000BASE-T/1000BASE-X/100BASE-FX for optional connection of an optic-fiber cable.



Technical features

	MES3508	MES3508P	MES3510P
Interfaces			
10/100/1000BASE-T (RJ-45)	8	—	—
10/100/1000BASE-T PoE/PoE+ (RJ-45)	—	8	8
100BASE-FX/1000BASE-X (SFP)	—	—	4
10/100/1000BASE-T/100BASE-FX/1000BASE-X (RJ-45/SFP) Combo	2	2	—
Console port RS-232 (RJ-45)		1	
Performance			
Bandwidth	20 Gbps	20 Gbps	24 Gbps
Throughput for 64 bytes ²	14 MPPS	14 MPPS	17.8 MPPS
Buffer memory		1.5 MB	
RAM (DDR3)		512 MB	
ROM (RAW NAND)		512 MB	
MAC table		16384	
ARP table ³		4023	
VLAN table		4094	
L2 Multicast groups		4091	
SQinQ rules		3006 (ingress/egress)	
ACL rules		3006	
L3 IPv4 Unicast routes ⁴		12866	
L3 IPv6 Unicast routes ⁴		3222	
L3 IPv4 Multicast routes (IGMP Proxy, PIM) ⁴		3876	
L3 IPv6 Multicast routes (IGMP Proxy, PIM) ⁴		1006	

¹ Excluding MES3508.

² Values are given for 1-way transmission.

³ For each host in the ARP table, an entry is created in the routing table.

⁴ IPv4/IPv6 Unicast/Multicast share hardware resources.

Technical features (continued)

	MES3508	MES3508P	MES3510P
VRRP routers		255	
Maximum size of ECMP groups		8	
VRF		16 (including default VRF)	
L3 interfaces		2048	
Link Aggregation Groups (LAG)		48, up to 8 ports per LAG	
Quality of Service (QoS)		8 egress queues per port	
Jumbo frames		10240 bytes	

Features and capabilities

Interfaces functions

- HOL blocking protection
- Back Pressure
- Auto MDI/MDIX
- Jumbo frames
- IEEE 802.3X flow control
- Port mirroring (SPAN, RSPAN)

MAC table functions

- Independent mode of learning for each VLAN
- MAC Multicast Support
- Automatic MAC addresses aging
- Static MAC Entries
- MAC Flapping logging

VLAN functions

- Voice VLAN
- IEEE 802.1Q
- Q-in-Q
- Selective Q-in-Q
- GVRP

L2 Multicast functions

- Multicast profiles
- Multicast static groups
- IGMP Snooping v1,2,3
- Port/host based IGMP Snooping Fast Leave
- PIM Snooping
- IGMP proxy-report
- Support for IGMP authorization via RADIUS
- MLD Snooping v1,2
- IGMP Querier
- MVR

L2 functions

- STP (Spanning Tree Protocol, IEEE 802.1d)
- RSTP (Rapid Spanning Tree Protocol, IEEE 802.1w)
- MSTP (Multiple Spanning Tree Protocol, IEEE 802.1s)
- STP Multiprocess
- PVSTP+
- RPVSTP+
- Spanning Tree Fast Link option
- STP Root Guard
- STP Loop Guard
- BPDU Filtering
- STP BPDU Guard
- Loopback Detection (LBD) based on VLAN
- ERPS (G.8032v2)
- Flex-link
- Private VLAN, Private VLAN Trunk
- Layer 2 Protocol Tunneling (L2PT)

L3 functions

- Static IP routes
- Dynamic routing protocols: RIPv2, OSPFv2, OSPFv3, IS-IS (IPv4 Unicast), BGP¹ (IPv4 Unicast, IPv4 Multicast, IPv6 Unicast)
- BFD (for BGP, OSPF)
- Address Resolution Protocol (ARP)
- Proxy ARP
- Policy-Based Routing (IPv4)
- VRRP
- Multicast routing protocols: PIM SM, PIM DM, IGMP Proxy, MSDP
- ECMP load balancing
- IP Unnumbered
- GRE
- VRF Lite

Link Aggregation functions

- Static LAG
- Dynamic LAG (LACP)
- LAG Balancing Algorithms
- Multi-Switch Link Aggregation Group (MLAG)

IPv6 functions

- IPv6 Host
- Dual-stack

Service functions

- Virtual Cable Testing (VCT)
- Optical transceiver diagnostic
- Green Ethernet

Security functions

- Protection against unauthorized DHCP servers (DHCP Snooping)
- DHCP option 82
- IP Source Guard
- Dynamic ARP Inspection
- First Hop Security
- sFlow
- MAC-based authentication, Port Security, static MAC entries
- Port-based authentication IEEE 802.1x
- Guest VLAN
- DoS attack prevention
- Traffic segmentation
- DHCP client filtering
- BPDU attack prevention
- NetBIOS/NetBEUI filtering
- PPPoE Intermediate Agent

¹ BGP protocol support is provided under license.

Features and capabilities (continued)

ACL (Access Control List)

- L2-L3-L4 ACL (Access Control List)
- Time-Based ACL
- IPv6 ACL
- ACL based on:
 - Physical port number
 - IEEE 802.1p
 - VLAN ID
 - Ethertype
 - DSCP
 - Protocol type
 - TCP/UDP port number
 - User Defined Bytes

Quality of service (QoS) and rate limiting

- QoS statistics
- Port rate limiting (shaping, policing)
- IEEE 802.1p CoS
- Storm Control for different types of traffic (broadcast, multicast, unknown unicast)
- Bandwidth management
- Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)
- Three marking colors
- ACL-based CoS/DSCP mark assignment
- ACL-based VLAN mark assignment
- 802.1p priorities adjustment for Management VLAN
- CoS to DSCP, DSCP to CoS remarking
- 802.1p DSCP mark assignment for IGMP

OAM/CFM

- IEEE 802.3ah Ethernet Link OAM
- IEEE 802.1ag Connectivity Fault Management (CFM)
- IEEE 802.3ah Unidirectional Link Detection

Management functions

- Configuration file download and upload via TFTP/SCP/SFTP/FTP
- Redirecting the output of CLI commands to an arbitrary file on ROM
- SNMP (Simple Network Management Protocol)
- Command line interface (CLI)
- WEB interface
- Syslog
- SNTP (Simple Network Time Protocol) client
- NTP (Network Time Protocol) client, NTP server, NTP peer
- Traceroute
- LLDP (802.1ab) + LLDP MED
- Processing traffic management with two 802.1Q headers
- Authorization of entered commands using TACACS+ server
- Access control – privilege levels
- Management interface blocking
- Local authentication
- IP addresses filtering for SNMP
- RADIUS and TACACS+ (Terminal Access Controller Access Control System) clients
- Change of Authorization (CoA)
- SSH server, Telnet server
- SSH client, Telnet client
- Remote start of commands via SSH
- SSL
- Macrocommands
- CLI commands logging
- System log
- DHCP autoprovision
- DHCP Relay (Option 82)
- DHCP Option 12
- DHCPv6 Relay, DHCPv6 LDRA (Option 18, 37)
- DHCP server
- PPPoE Circuit ID tag
- Debugging commands
- Rate limit of traffic to CPU

- Password encryption
- Password recovery
- Ping (IPv4/IPv6)
- DNS server (Resolver)

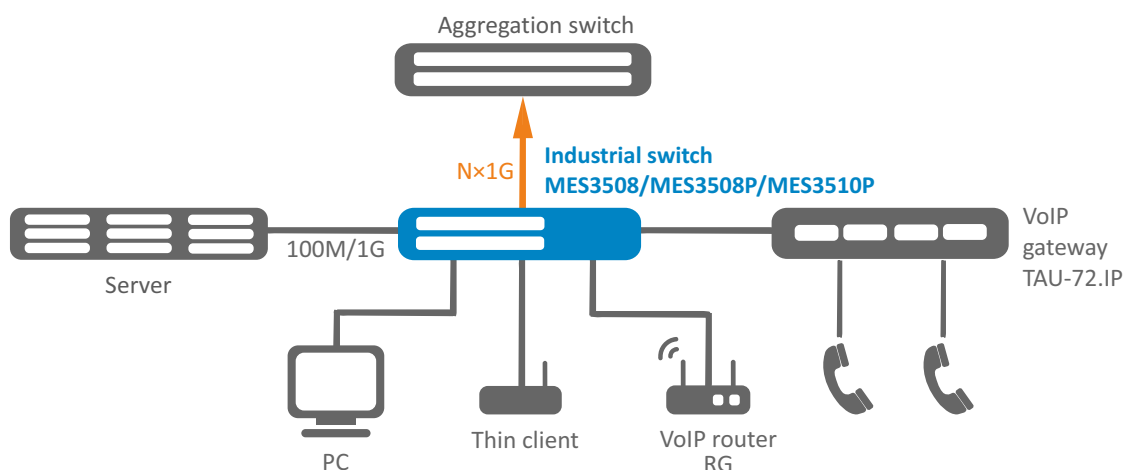
Monitoring functions

- Interface statistics
- RMON/SMON remote monitoring
- IP SLA
- CPU utilization monitoring per task and traffic type
- RAM monitoring
- Temperature monitoring
- TCAM utilization monitoring

MIB/IETF Standards

- RFC 1065, 1066, 1155, 1156, 2578 MIB Structure
- RFC 1212 Concise MIB Definitions
- RFC 1213 MIB II
- RFC 1215 MIB Traps Convention
- RFC 1493, 4188 Bridge MIB
- RFC 1157, 2571-2576 SNMP MIB
- RFC 1901-1908, 3418, 3636, 1442, 2578 SNMPv2 MIB
- RFC 1271, 1757, 2819 RMON MIB
- RFC 2465 IPv6 MIB
- RFC 2466 ICMPv6 MIB
- RFC 2737 Entity MIB
- RFC 4293 IPv6 SNMP Mgmt Interface MIB
- Private MIB
- RFC 3289 DIFFSERV MIB
- RFC 2021 RMONv2 MIB
- RFC 1398, 1643, 1650, 2358, 2665, 3635 Ether-like MIB
- RFC 2668 802.3 MAU MIB
- RFC 2674, 4363 802.1p MIB
- RFC 2233, 2863 IF MIB
- RFC 2618 RADIUS Authentication Client MIB
- RFC 4022 MIB for TCP
- RFC 4113 MIB for UDP
- RFC 3298 MIB for Diffserv
- RFC 2620 RADIUS Accounting Client MIB
- RFC 2925 Ping & Traceroute MIB
- RFC 768 UDP
- RFC 791 IP
- RFC 792 ICMPv4
- RFC 2463, 4443 ICMPv6
- RFC 4884 Extended ICMP for Multi-Part messages support
- RFC 793 TCP
- RFC 2474, 3260 Definition of the DS field in the IPv4 and IPv6 headers
- RFC 1321, 2284, 2865, 3580, 3748 Extensible Authentication Protocol (EAP)
- RFC 2571, RFC2572, RFC2573, RFC2574 SNMP
- RFC 826 ARP
- RFC 854 Telnet
- IEC 61850

Use case



Physical specifications

	MES3508	MES3508P	MES3510P
Physical specifications and environmental parameters			
Power supply	20–75 V DC	with PoE enabled: 45–57 V DC with PoE disabled: 20–57 V DC	
Input current	0.75–0.2 A	with PoE enabled: 5.67–4.47 A with PoE disabled: 0.75–0.26 A	with PoE enabled: 5.78–4.56 A with PoE disabled: 1.0–0.35 A
Maximum power consumption (including PoE)	15 W	260 W	260 W
PoE budget	—	240 W (for 802.3at applications, 54–56 V DC is recommended)	240 W (for 802.3at applications, 54–56 V DC is recommended)
Heat dissipation	15 W	20 W	20 W
Hardware support for Dying Gasp	no	no	no
Reverse polarity protection	yes		
Signal relay	one signal relay output: 1 A, 24 V DC		
Operating temperature	from -40 to +70 °C		
Storage temperature	from -50 to +85 °C		
Humidity	from 5 to 95 % (non-condensing)		
Cooling	passive cooling		
Case	metal, IP30		
Form factor	DIN rail for wall mounting (optional in supply package)		
Dimensions (W × H × D)	85 × 152 × 115 mm	85 × 152 × 115 mm	85 × 175 × 115 mm
Weight	1.36 kg	1.40 kg	1.74 kg

Physical specifications (continued)

Standards and certificates	
Security	UL 508
Electromagnetic compatibility	EN 55022 Class A EN 61000-4-2 (ESD) Level 3 EN 61000-4-3 (RS) Level 3 EN 61000-4-4 (EFT) Level 3 EN 61000-4-5 (Surge) Level 3 EN 61000-4-6 (CS) Level 3 EN 61000-4-8
Application within power engineering facilities	IEC 61850-3 IEEE 1613
Shock	IEC 60068-2-27
Free fall	IEC 60068-2-32
External mechanical stress	0.5–55 Hz, 1g, 3g single strikes

Ordering information

Name	Description
MES3508	MES3508 Ethernet switch, 8 ports of 10/100/1000BASE-T, 2 Combo ports of 10/100/1000BASE-T/100BASE-FX/1000BASE-X, L3, 20–75 V DC
MES3508P	MES3508P Ethernet switch, 8 ports of 10/100/1000BASE-T (PoE/PoE+), 2 Combo ports of 10/100/1000BASE-T/100BASE-FX/1000BASE-X, L3, 45–57 V DC with PoE (20–57 V DC without PoE)
MES3510P	MES3510P Ethernet switch, 8 ports of 10/100/1000BASE-T (PoE/PoE+), 4 ports of 100BASE-FX/1000BASE-X, (SFP), L3, 45–57 V DC with PoE (20–57 V DC without PoE)

Related products

DRS-270-56 DRS-270-56 power module, 110–240 V AC, 270 W

Related software

ECCM-MES3508	ECCM-MES3508 option of Eltex ECCM control system to manage and monitor Eltex network elements: 1 network element MES3508
ECCM-MES3508P	ECCM-MES3508P option of Eltex ECCM control system to manage and monitor Eltex network elements: 1 network element MES3508P
ECCM-MES3510P	ECCM-MES3510P option of Eltex ECCM control system to manage and monitor Eltex network elements: 1 network element MES3510P

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About Eltex

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