



Central links in IT networks

# Ethernet Switch

## Supplementary description of the unit

### Network as the basis for displaying the situation

It is essential to ensure network communication for a large number of participants and between mission-critical IT systems in vehicles when it comes to optimising situational awareness on military platforms. ATM's practice-proven and versatile ethernet switches, provide robust solutions in IP-based network communication.

### From unmanaged to managed

ATM reacts flexibly to the customer's requirements and offers ethernet switches in three different variants: From the unmanaged plug-and-play Layer 2 switch to the managed Layer 2+ switch to the managed Layer 3 switch. ATM's ethernet switches support data rates from ten megabits up to high bandwidths of ten gigabits per second.

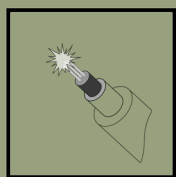
### Easy and flexible to handle

ATM switches are compact and lightweight in design. They have no operational control elements and the user can manipulate the ethernet switches easily and flexibly. Its scalable range of functions offers options for a variety of applications in armoured vehicles.

- Layer 2, 2+ and 3 ethernet switches
- 10 Gbit per second bandwidth
- Fibre optic interface with robust expanded beam connectors
- Design with 500g shock load
- One dedicated cable per participant
- Single-lane ethernet for optical networks via WDM transceivers

**KNDS**

## Key features



**FOC with expanded beam connector**



**Environment acc. MIL-STD-810**



**On-board network acc to VG 96916**



**IP65 protection**

## Technical data

### Hardware variants

- 5/8/12/28-port switch
- Switch with copper interfaces
- Switch with fibre optic interfaces
- Switch with 10Gbit per second

### Interfaces

- 10 Base-2
- 10/100/1000 Base-T
- 1000Base-SX MultiMode fibre optic
- 100Base-FX MultiMode fibre optic
- 1000Base-LX SingleMode fibre optic
- 1000Base-BX BIDI
- 10G Base-FX MultiMode

### Connector types supported

- S/T connector
- RJ45 connector (RJ45)
- Expanded beam connectors
- Triax
- RoHS-compliant connectors
- No complex Y-cables necessary for connection

### Environment

- Temperature shock, humidity, altitude, vibration, extreme shock (500g), salt fog according to MIL-STD-810
- Extended temperature range  
Operation: -46°C to +63°C;  
Storage: -46°C to +71°C
- EMV according MIL-STD-461 & VG 95373
- IP 65 protection
- Vehicle electrical system according to VG 96916
- Power Supply according to MIL-STD-1275
- CE conformity

### Transceiver

- Single-lane ethernet via wavelength division multiplexing transceiver

- Bidirectional optical transceivers (BIDI) transmit and receive through the same optical fibre
- Reduction in the complexity and cost of optical networks through BIDI

### Quality of service

- Quality of Service (QoS) for monitoring, diagnosis and statistics of IP traffic
- Evaluation of the status and traffic of the ports and display of statistical data
- Assistance with wiring problems and checking the functionality of the cable
- QoS management prioritised QoS queues per port with scheduling

### Routing

- Multicast and dynamic routing
- Advanced LAN switching in vehicles
- Advanced routing requirements in vehicles

### VLAN

- Establishment of virtual LANs as logical subnets
- Internet Group Management (IGMP) protocol

### Layer 2+ functions

- Multicast and broadcast storm control
- Flooding control
- Support 8K IPv4 and IPv6 multicast group

### Layer 3 functions

- Rapid spanning tree protocol (IEEE 802.1W) & MSTP
- Multiple protocol support IEEE 802.1d/w/s/x
- RADIUS accounting

### Data transmission

- Jumbo frames on all ports at all speeds
- Hardware & software-based IPv6 L3 static routing
- RFC 2328 OSPFv2 dynamic routing
- Maximum data transmission rate through non-blocking wirespeed performance
- Internal 20Gbps frame bus