CYBOX ES-R 05U

UNMANAGED 5-PORT RAILWAY SWITCH

ELTEC systems

MADE IN GERMANY

Picture may be subject to change

KEY FEATURES

- 5-port 10/100/1000 BaseT(X) on M12 X-coded connectors
- Fully non-blocking wire-speed switching
- 4,096 MAC addresses available
- Most advanced Energy-Efficient Ethernet (IEEE802.3az) for optimized power consumption
- Overheat protection
- Hardware loop detection
- Ultra-wide-range power supply 24 to 110 VDC
- PoE+ power supply budget up to 100W
- Maintenance-free design
- -40 °C to +70 °C operating temperature
- EN 50155 compliant

TYPICAL APPLICATIONS

- Passenger Wi-Fi
- Passenger Entertainment
- Passenger Information
- Ticketing System
- Fleet Management
- Video Surveillance

HIGH-END WIRELESS COMMUNICATION

The CyBox ES-R is a robust unmanaged 5-port Gigabit Ethernet switch for railway applications. It offers advanced Energy-Efficient Ethernet (EEE) for low-power, high-performance solutions. Its high-end connectors are especially suitable to reliably transmit data and power under the most extreme use with regard to shock and vibration. The switch offers stable, secure, and high bandwidth connections between the local Ethernet and a variety of network devices such as IP cameras or ELTEC Wi-Fi access points and 5G/LTE routers. It is particularly designed to meet the requirements of rolling stock applications.
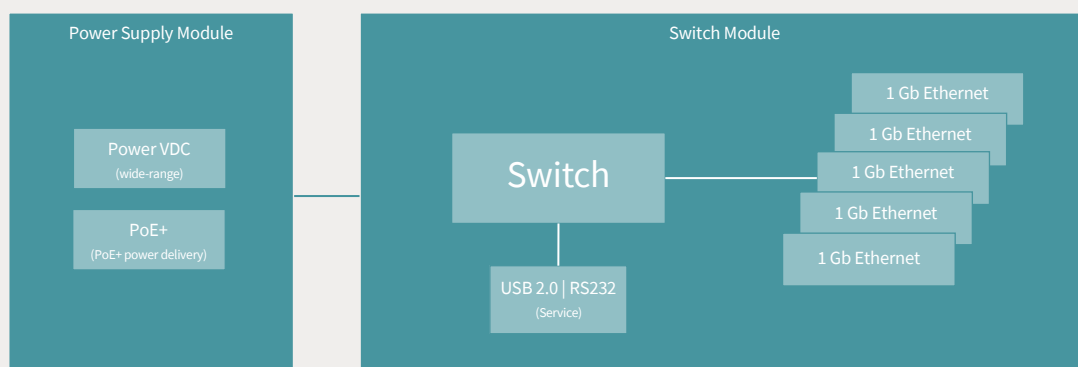
MODULAR PLATFORM

Due to the highly modular concept the CyBox ES-R can be easily equipped with different power supply modules to meet your application demands. These are pre-assembled units to offer flexible configurations for short delivery times. The fanless and maintenance-free design features various mounting options like wallmount, DIN rail and 19" rack mounts to integrate the system into an existing environment.

MULTIPLE POWER OPTIONS

The CyBox ES-R provides flexible powering options. It can be equipped with an internal 30 W power supply or a Power-over-Ethernet (PoE+) input port to extend the power delivery to external PoE+ capable devices. The PoE+ standard provides up to 25.5 W at each port depending on the power consumption of the end devices. The CyBox ES-R supports a maximum output power budget of up to 100 W in total with an internal power supply via all 5 ports. For the PoE+ input port an external PoE+ power supply unit is needed.

BLOCK DIAGRAM

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TECHNICAL DATA

PHYSICAL INTERFACES

LAN	5x 10/100/1000 BaseT(X), M12 X-coded
Console Port	M12 8-pin female A-coded
Power Input	M12 4-pin male A-coded
Reset Switch	available on the front panel

ELECTRICAL SPECIFICATIONS

Power Supply	24 to 110 VDC, wide-range power supply (compliant to EN 50155)
Power over Ethernet	optional PoE+, Class-4 powered device, IEEE 802.3at
Interruptions of Voltage Supply	EN 50155, Class S2
Power Consumption	6 W typ., 9 W max.
Power Delivery	100 W max. for PoE+ option or more with external PoE+ power supply

ENVIRONMENTAL CONDITIONS

Ambient Temperature	Class TX, -40.. +70 °C (85 °C) operating, -40.. +85 °C storage
Humidity	max. 95 % non-condensing operating and storage
Altitude	Class AX, up to +2000 m
PCB Protection	conformal coating

RELIABILITY

MTBF	approx. ~350.000 h

MECHANICAL SPECIFICATIONS

Dimensions	143 mm x 112 (129) mm x 65 mm (w h d), (incl. wall-mount mounting points)
19-inch Rack Mounting	28 TE housing, 3 U rack compatible
Weight	1800 - 2200 g depending on modules
Housing	IP40, aluminum, DIN-rail, conductive cooling

STANDARDS AND SPECIFICATIONS

DIRECTIVES AND REGULATIONS

Directive (EU) 2016/797	EN 50155 (IEC 60571)
	EN 45545-2 (HL 1 to HL 3)
	EN 61373 (Category 1, Class B)
Directive 2014/30/EU	EMC
Directive 2014/35/EU	Low Voltage
FCC	Title 47 CFR Part 15B (on request)

STANDARD CONFIGURATIONS

ORDER NO.	DESCRIPTION
CYESR-1005	5x 10/100/1000 BaseT(X) (M12X), unmanaged
CYESR-1105	5x 10/100/1000 BaseT(X) (M12X), unmanaged, PoE+ input port
CYESR-1205	5x 10/100/1000 BaseT(X) (M12X), unmanaged, PoE+ power delivery

Further information and order numbers on www.eltec.com

OPTIONS

Mounting	wall-mount, 19-inch rack
Powering Option	PoE+ with external PoE input port for higher power output applications or PoE+ internal 100 W power supply module
Evaluation Kit	soon available

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