TURCK

Your Global Automation Partner

TBEN-L-SE-M2
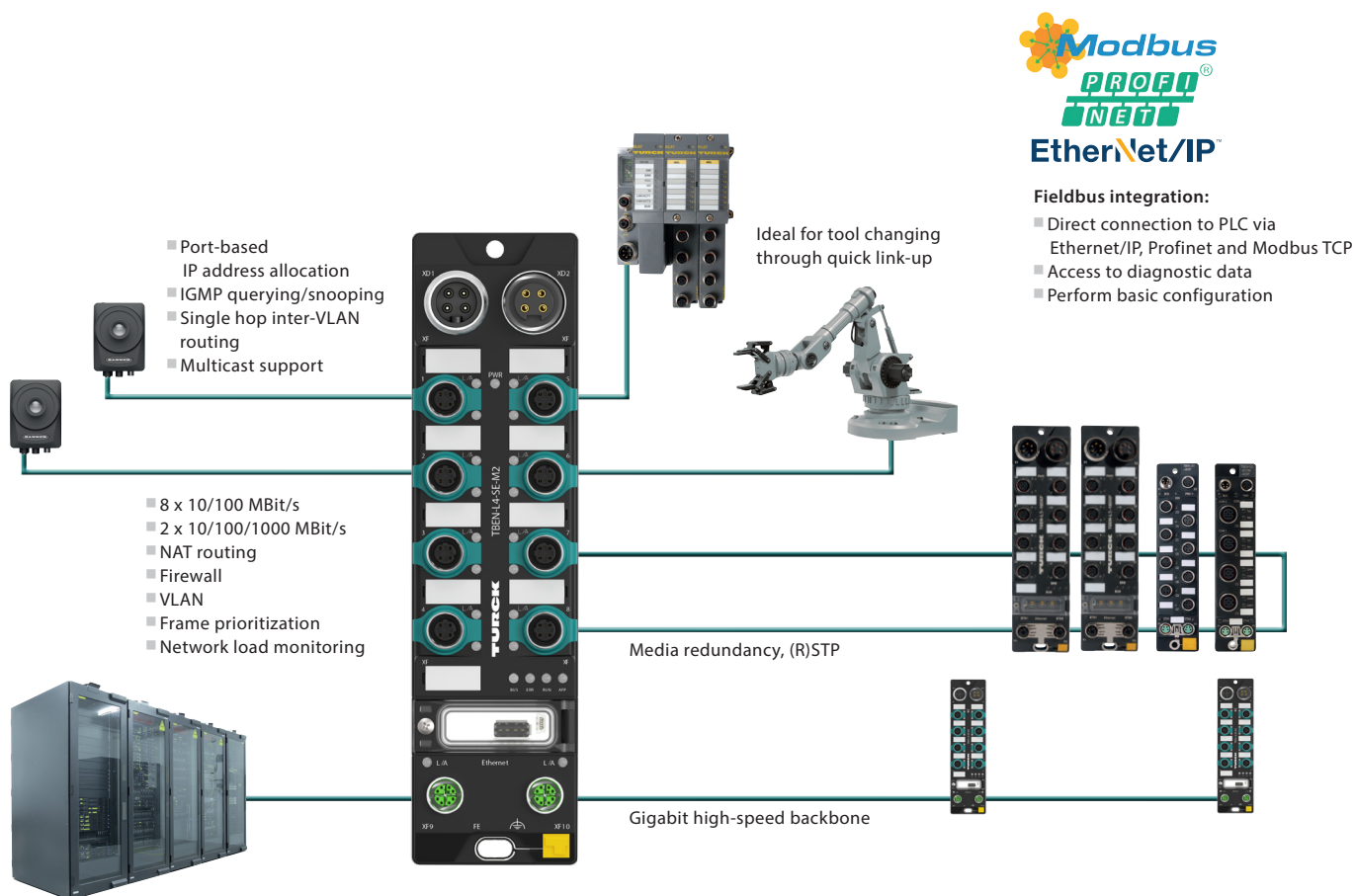# Managed Ethernet Switch in IP67

Managed Ethernet Switch in IP67

Secure turbocharger for IIoT

Extremely fast, compact, robust and secure: The TBEN-L managed Ethernet switch combines these features, thus enabling the creation of decentralized Ethernet connections di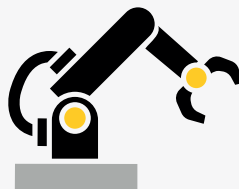rectly at the machine. With two GBit high-speed backbone ports, the switch offers enough bandwidth for a high-performance data flow of the eight standard ports (100 MBit/s). Supported by the fastest linkup times and cut-through forwarding, the switch ensures high cycle rates even in tool changing applications. In many applications it therefore saves wiring effort and supports modular machine concepts without the need for a control cabinet.

- Port-based IP address allocation
- IGMP querying/snooping
- Single hop inter-VLAN routing
- Multicast support

- 8 x 10/100 MBit/s
- 2 x 10/100/1000 MBit/s
- NAT routing
- Firewall
- VLAN
- Frame prioritization
- Network load monitoring

Ideal for tool changing through quick link-up

Media redundancy, (R)STP

Gigabit high-speed backbone

Fieldbus integration:
- Direct connection to PLC via Ethernet/IP, Profinet and Modbus TCP
- Access to diagnostic data
- Perform basic configuration

Secure network
The switch offers NAT routing for the secure integration of machines without IP address conflicts. The embedded firewall ensures managed and above all secure data exchange. The network load monitoring function of the switch helps to diagnose impending overloads early in order to intervene in advance.
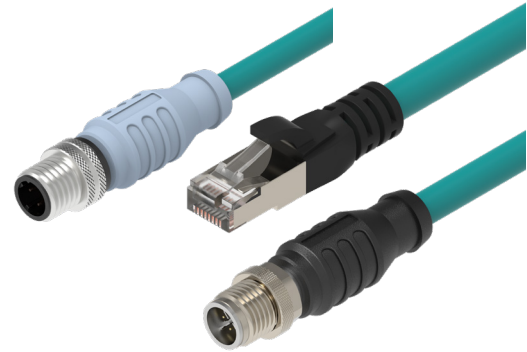
Ideal for tool changing
In robot applications for car body construction, the throughput of the application depends on the speed of the automatic tool changing. The quick link-up technology enables the switch to support tool start times with fast startup or quick connect in less than 150 ms.

Ethernet Cables

Ethernet cables with X-coded M12 connectors suitable for the IP67 switch are now also available which can transfer up to 10 GBit/s. Turck is thus expanding its range of conventional Ethernet cables for industrial applica-tions, which were previously D-coded for transfer rates of up to 100 MBit/s. These Ethernet connection cables and cordsets are available with M8, M12, RJ45 or flange connectors in lengths between 0.2 and 100 meters.
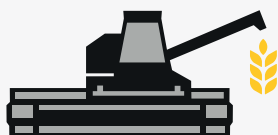
RSSD RSSD 441-*M
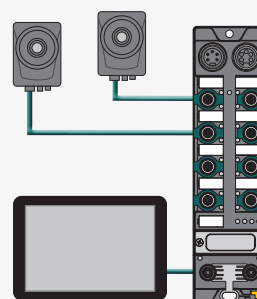
RSSX RSSX 860-*M

RSSD RJ45SC 441-*M

RSSD PSGS 4M 4413-*M

Suitable for mobile equipment
The lower voltage threshold of 8 VDC, its UV resistance and protection against voltage spikes (load dump) makes the switch ideal for use in convenience func-tions for mobile equipment such as the connection of cameras.

Gigabit high-speed backbone
Two gigabit Ethernet ports enable the switch to also offer the throughput required for data-intensive applications like the transfer of video streams. The cut-through packet forwarding ensures here almost latency-free data transmission.

Types and Features

Ethernet switches

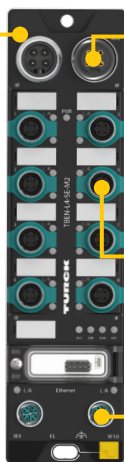|	TBEN-L4-SE-M2	TBEN-L5-SE-M2	TBEN-LL-SE-M2
Power supply	2 x 7/8" 4-pin	2 x 7/8" 5-pin	2 x M12 L-Code 5-pin
Packet forwarding	Cut-through		
Configuration	Web-based management, backup and restore of the configuration, Configuration via USB		
DHCP function	DHCP server		
	DHCP client, DHCP server option 82, port-based IP address assignment		
Protocols	HTTP, HTTPS, LLDP, SNMP V1-V3, NTP, IGMP (snooping/querier)		
Media redundancy	RSTP		
Profinet	Device, Conformance class A		
Ethernet/IP	Device, Single hop inter-VLAN routing		
Modbus TCP	Server		
Profinet	Conformance class A		
Ethernet/IP	Single hop inter-VLAN routing		
Prioritization according to IEEE 802.1q	yes		
Other functions	VLAN, firewall, NAT routing, Port Mirroring, PLC fieldbus integration		

Cables

	Ethernet 860/CAT 6A	Ethernet 441/CAT 5e
Jacket material	TPE	
Jacket color	Teal	
Strand layout	4UTP/26AWG	2UTP/24AWG
Shielding	Foil and tinned copper braid	
Temperature range	-40…+80 °C	-40…+70 °C
Oil-resistant	Yes	
UV resistant	Yes	
Flexibility	Very good	Very good
Drag chain suitability	Well suited	Well suited
Robot application	Suitable	Suitable
UL Approval	c(UL)US CMX OUTDOOR-CMR	c(UL)US CMX OUTDOOR-CM
RoHS compliant	Yes	

Managed 10-port Ethernet switch in IP67

Robust housing
- 60 x 230 x 39 mm
- IP65/IP67/IP69K
- Fully potted
- UV resistant
- -40…+70 °C
- FE connection
- Marking to DIN EN 81346-2

Power supply
- Wide voltage range from 8 VDC…30 VDC
- Power-in, power-out, 7/8" or M12 L-coded
- Load-dump resistant

8 x 10/100 MBit/s Ethernet ports
- M12 D-coded
- Ideal for tool changing through quick link-up

2 x 10/100/1000 MBit/s Ethernet ports
- M12 X-coded, high-speed backbone