V1.0 Jun., 2022 **Industrial Ethernet Switch**

TXES-180-M12





EN50155 8-port unmanaged Ethernet switch with 8x10/100/500Base-T(X), M12 connector

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provided 8x10/100/500Base-T(X) ports
- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store and forward transmission
- Supports flow control
- M12 connectors to guarantee reliable operation against environmental disturbances
- Rigid IP-30 housing design
- Wall mounting enabled













Introduction

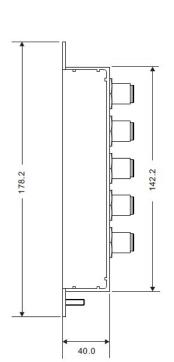
ORing's TransporterTM series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TXES-180-M12 is an un-managed Ethernet switch with 8x10/100/500Base-T(X) which is specifically designed for the toughest and fully compliant with EN50155 requirement. TXES-180-M12 ENSO155 Ethernet switch use M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. In addition, the wide operating temperature range from -40°C to 75°C can satisfy most of operating environment. The TXES-180-M12 can be easily adopted in all kinds of applications and provides the most rugged solutions for your network. Therefore, the switch is one of the most reliable choices for rolling stock Ethernet application.

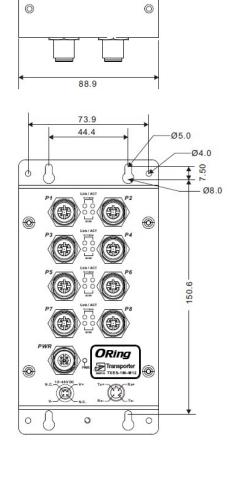
While installing in the train, TXES-180-M12 is mainly used for in-train monitoring and Entertainment service due to its high-speed Ethernet connection. Devices connected will be IP camera or CCTV for the use of train surveillance. As an unmanaged Ethernet Switch, TXES-180-M12 is not able and will not be used for any control related application. Its main function is simply forwarding the Ethernet packet from one Ethernet based device to another Ethernet device which are all connected to the Switch.

Industrial Ethernet Switch V1.0 Jun., 2022

Dimensions

Unit =mm (Tolerance ±0.5mm)





Pin Definition

1 2	10/100/500Base-T(X) M12 port	
	Pin No.	Description
	#1	Tx+
4 3	#2	Rx+
D-Coding M12	#3	Tx-
	#4	Rx-

Industrial Ethernet Switch V1.0 Jun., 2022

Specifications

Physical Ports	ORing Switch Model	TXES-180-M12	
### Cechnology Ethernet Standards	Physical Ports		
Ethernet Standards		8 (4–pin female D-coding)	
Etheret Standards IITT 80.2 has for Dickson-TX IEEE 80.2 bas for Processing Some and Forward Indicator (Power) Geents Power LEDs 10.2/100/Mbps port Link/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More Apply port Link/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Remon green Tile For More More Apply apply and Ink/Act indicator: On for link-up, Off for link-down, Binding for active. Reverse Polarity Protection Present Power consumption (Typ.) 1.5 Vatts mux. Present Prover Tile For For Apply app			
Packet buffer	Ethernet Standards	IEEE 802.3u for 100Base-TX	
Processing Store-and-Forward Switching Interior; < Fu Switching		4k	
Switch Properties Switching laterogy <7 Jps Switch Properties Switching laterogy <7 Jps Switchin			
LED Indicators Switching bandwidth: 1.6Gbps	Processing		
Power indicator (Power) Green: Power LED x 1	Switch Properties	Switching bandwidth: 1.6Gbps	
Top green LED for 10/100Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active. Bottom green LED for 50/00Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active. Power 12_48VDC on 4-pin M12 A-coded male connector *NOTICE: For EN50155 railway applications, 24VDC power input is required. Power consumption (Typ.) 1.6 Watst max. Overload current protection Present Physical Characteristic Endosure 1P-30 Dimension (W x D x H) 38, 9 (W) x 40 (ID) x 7.02 (H) inch Weight (g) 550g Environmental Storage Temperature 40 to 85°C (-40 to 185°F) Operating Temperature 40 to 75°C (-40 to 167°F) Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC (EEMC (EN 55035, RN 155032), FCC Part 158, BN 50155(BN 50121-1, EN 50121-3-2) EMI EN 55032 (SEPEN 61000-4-2 (ESD), RCC Part 158, BN 50155(BN 50100-4-4 (EFT), RC/EN 61000-4-5 (Surge), RC/EN 61000-4-6 (CS), RC/EN 61000-4-1 (RD/F), RC/EN 61000-4-1 (RD/F)	LED indicators		
Power 12-48/0/C on 4-pin M12 A-coded male connector	Power Indicator (Power)	Green: Power LED x 1	
Input power	10/100/500Base-T(X) M12 Port Indicator	Top green LED for 10/100Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active. Bottom green LED for 500Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active.	
Power consumption (Typ.) 1.6 Watts max.	Power		
Overload current protection Present Reverse Polarity Protection Present Physical Characteristic IP-30 Enclosure IP-30 Dimension (W x D x H) 88.9 (W) x 40 (D) x 78.2 (H) mm 3.5 (W) x 1.57 (D) x 7.02 (H) inch Weight (g) 550g Environmental 550g Storage Temperature -40 to 85°C (-40 to 185°F) Operating Temperature -40 to 75°C (-40 to 167°F) Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 610000-3-2, EN 610000-3-3, FCC Part 15 B dass A EMS EN 55035 (EE/EN 61000-4-2 (ESD), IEC/EN 610000-4-3 (RS), IEC/EN 61000-4-4 (EFT), EC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-7 (RS), IEC/EN 61000-4-1 (IDIP) Shock IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 50155 (IEC 61373)	Input power		
Reverse Polarity Protection	Power consumption (Typ.)	1.6 Watts max.	
Physical Characteristic P-30	Overload current protection	Present	
Enclosure IP-30 88.9 (W) x 40 (D) x178.2 (H) mm 3.5 (W) x 1.57 (D) x7.02 (H) inch	Reverse Polarity Protection	Present	
Dimension (W x D x H) 88.9 (W) x 40 (D) x 178.2 (H) mm 3.5 (W) x 1.57 (D) x 7.02 (H) inch Weight (g) 550g Environmental Storage Temperature -40 to 85°C (-40 to 185°F) Operating Temperature -40 to 75°C (-40 to 167°F) Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-1 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Physical Characteristic		
## Weight (g) \$50g Environmental \$10	Enclosure	IP-30	
Environmental Storage Temperature -40 to 85°C (-40 to 185°F) Operating Temperature -40 to 75°C (-40 to 167°F) Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC EMC CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Dimension (W x D x H)	88.9 (W) x 40 (D) x178.2 (H) mm 3.5 (W) x 1.57 (D) x 7.02 (H) inch	
Storage Temperature -40 to 85°C (-40 to 185°F) Operating Temperature -40 to 75°C (-40 to 167°F) Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Weight (g)	550g	
Operating Temperature -40 to 75°C (-40 to 167°F) Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Environmental		
Operating Humidity 5% to 95% non-condensing Regulatory approvals EMC CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-9 (PMF), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Storage Temperature	-40 to 85°C (-40 to 185°F)	
Regulatory approvals EMC CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Operating Temperature	-40 to 75°C (-40 to 167°F)	
EMC CE EMC (EN 55032, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Operating Humidity	5% to 95% non-condensing	
EMI EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Regulatory approvals		
EMS EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8 (PFMF), IEC/EN 61000-4-11 (DIP)) Shock IEC60068-2-27 Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	EMC	CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121–1, EN 50121–3–2)	
Shock IEC60068-2-27	EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A	
Free Fall IEC60068-2-31 Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	EMS	EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8 (PFMF), IEC/EN 61000-4-11 (DIP))	
Vibration IEC60068-2-6 Safety EN 62368-1 Other EN 50155 (IEC 61373)	Shock	IEC60068-2-27	
Safety EN 62368-1 Other EN 50155 (IEC 61373)	Free Fall	IEC60068-2-31	
Other EN 50155 (IEC 61373)	Vibration	IEC60068-2-6	
	Safety	EN 62368-1	
MTRF 1 560 399 hrs	Other	EN 50155 (IEC 61373)	
1,500,537 11.5.	MTBF	1,560,399 hrs.	
Warranty 5 years	Warranty	5 years	