

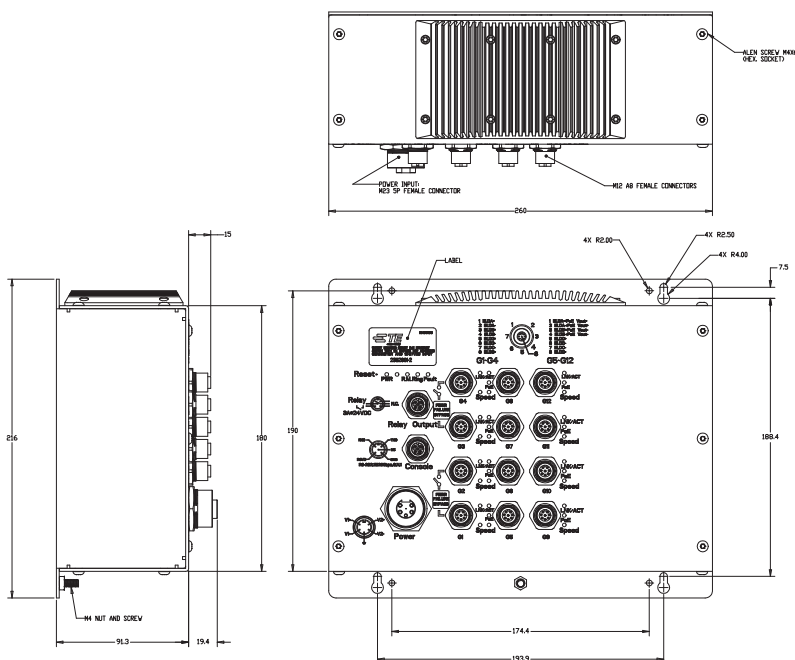


12-PORT EN50155 POE ETHERNET SWITCH

GIGABIT MANAGED ETHERNET SWITCH WITH 8 POE PORTS

TE's EN50155 compliant Ethernet switches are designed for industrial applications such as rolling stock, vehicle, and railway. The 2352901, is a managed Gigabit Redundant Ring Ethernet switch with 8x10/100/1000Base-T(X) P.S.E. and 4x10/100/1000Base-T(X) ports which is specifically designed for the toughest conditions. The switch supports the Ethernet Redundancy protocol, a recovery time < 30ms over 250 units of connection, MSTP (RSTP/STP compatible), it protects your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. The Ethernet switch uses M12 connectors to ensure tight, robust connections, and guarantee reliable operation. It also supports Power over Ethernet. Each switch has 8x10/100/1000Base-T(X) P.S.E. (Power Sourcing Equipment) ports. The Switch is easily managed using TE-vision, Telnet, CLI or its web-based interface.

Technical Drawing



Product Features:

- **TE-Ring:** TE-Ring is redundant ring technology, with recovery time of less 30 milliseconds and up to 250 nodes. The TE-Ring redundant ring technology can protect mission-critical application from network interruptions or temporary malfunction with its fast recover technology.
- **TE-Chain:** TE-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, TE-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. TE-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology.
- **IP-based Bandwidth Management:** The switch provide advanced IP-based bandwidth management which can limit the maximum bandwidth for each IP device. User can configure IP camera and NVR with more bandwidth and limit other device bandwidth.
- **Application-Based QoS:** The switch also support application-based QoS. Application-based QoS can set highest priority for data stream according to TCP/UDP port number.
- **Device Binding Function:** Special Device Binding function can only permit allowed IP address with MAC address to access the network. Hacker cannot access the IP surveillance network without permission. It can avoid hacker from stealing video privacy data and attacking IP camera, NVR and controllers.
- **Advanced DOS/DDOS Auto Prevention:** The switch also provided advanced DOS/DDOS auto prevention. If there is any IP flow become big in short time, the switch will lock the source IP address for certain time to prevent the attack. It's hardware based prevention so it can prevent DOS/DDOS attack immediately and completely.
- **IEEE 1588v2 Technology:** The IEEE 1588v2 technology can fulfill precision time synchronization requirements for protection and control applications.
- **Modbus TCP:** This is a Modbus variant used for communications over TCP/IP networks.
- **IEEE 802.3az Energy-Efficient Ethernet:** This is a set of enhancements to the twisted-pair and backplane Ethernet family of networking standards that will allow for less power consumption during periods of low data activity. The intention was to reduce power consumption by 50% or more.

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| Part Number | | | | |
|--|---|---------------------|---|-----------|
| | 2352901-1 | 2352901-2 | 2352901-3 | 2352901-4 |
| Physical ports | | | | |
| 10/100/1000 Base-T(X) Ports in M12 Auto MDI/MDIX with P.S.E. | 8 x M12 connector (8-pin M12 Female A-coding) | | 8 x M12 connector (8-pin M12 Female X-coding) | |
| 10/100/1000Base-T(X) ports in M12 Auto MDI/MDIX | 4 x M12 connector (8-pin M12 Female A-coding) | | 4 x M12 connector (8-pin M12 Female X-coding) | |
| Bypass | - | 2 x bypass function | | |
| Technology | | | | |
| Ethernet Standards | IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow control IEEE 802.3ad for LACP IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) IEEE 802.3at PoE specification | | | |
| MAC Table | 8k | | | |
| Priority Queues | 8 | | | |
| Processing | Store-and-Forward | | | |
| Switch Properties | Switching latency: 7 us Switching bandwidth: 24 Gbps Max. Number of Available VLANs: 4095 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Define | | | |
| Jumbo frame | Up to 9.6K Bytes | | | |
| Security Features | Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security | | | |
| Software Features | STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (TE-Ring) with recovery time less than 30ms over 250units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering IP based bandwidth management Application based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server / Client support SMTP Client Modbus TCP | | | |

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| | | | |
|--|---|---|---|
| Network Redundancy | TE-Ring TE-Chain MRP (available on request) MSTP (RSTP/STP compatible) | | |
| RS-232 Serial Console Port | RS-232 in M12 (female A-coding) connector with console cable. 115200bps, 8, N, 1 | | |
| LED Indicators | | | |
| Power Indicator (PWR) | Green : Power LED x 2 | Green power LED x1 | |
| Ring Master Indicator (R.M.) | Green : Indicates that the system is operating in TE-Ring Master mode | | |
| TE-Ring Indicator (Ring) | Green : Indicates that the system operating in TE-Ring mode Green Blinking : Indicates that the Ring is broken. | | |
| Fault Indicator (Fault) | Amber : Indicate unexpected event occurred | | |
| 10/100/1000Base-T(X) M12 P.S.E. Port Indicator | Up of Green LED for Link/Act indicator. Middle of Green LED for PoE enabled indicator. Down of dual color LED for Ethernet speed indicator : Green LED for 1000Mbps, Amber for 100Mbps. Off for 10Mbps | | |
| 10/100/1000Base-T(X) M12 Port Indicator | Up of Green LED for Link/Act indicator. Down of dual color LED for Ethernet speed indicator : Green LED for 1000Mbps, Amber for 100Mbps, Off for 10Mbps | | |
| Fault contact | | | |
| Relay | Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin female A-coding) | | |
| Power | | | |
| Redundant Input Power | Dual DC inputs. 24 (12-36VDC) VDC on 5-pin M23 connector | Dual DC inputs. 12-36VDC on 4 pin male M12 S-coding | 72-110VDC input. on 4 pin male M12 S-coding |
| Power consumption (Typ.) | 25 Watts (power consumption of P.S.E. is not included) | TBD | TBD |
| Total PoE Output Power | 90 Watts | | |
| Overload current protection | Present | | |
| Reverse Polarity Protection | Present | | |
| Physical Characteristics | | | |
| Enclosure | IP-30 | | |
| Dimensions (WxDxH) in mm | 260 (W) x 91.6 (D) x216 (H) | 260 (W) x 89.6 (D) x216 (H) | |
| Weight (g) | 2553 | 2575 | TBD |
| 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 | | |

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| Regulatory Approvals | |
|----------------------|---|
| EMC | CE EMC (EN 55024, EN 55032), FCC Part 15B, EN 50155(EN 50121-1, EN 50121-3-2) |
| EMI | EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15B class A |
| EMS | EN 55024 (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 and Free Fall | IEC60068-2-27, IEC60068-2-31 |
| Vibration | IEC60068-2-6 |
| Safety | EN60950-1 |
| Other | EN 50155 (IEC 61373) |