# 8x10/100TX + 2x100FX
# Industrial Ethernet Switch (Managed / Ring)



## *Benefits*

- **System Interface/Performance**
  - RJ-45 port support Auto MDI/MDI-X Function
  - Store-and-Forward Switching Architecture
  - Back-plane (Switching Fabric): 2Gbps
  - 1Mbits Packet Buffer
  - 8K MAC Address Table

- **Power Supply**
  - Input Power Isolation design for Telcom application, Pass Hi-Pot test~1.5KV
  - Wide-range Redundant Power Design
  - Power Polarity Reverse Protect

- **VLAN**
  - Port Based VLAN
  - Support 802.1 Q Tag VLAN
  - GVRP
  - Double Tag VLAN (Q in Q)*
  - Private VLAN**

- **Port Trunk with LACP**

- **QoS (Quality of Service)**
  - Support IEEE 802.1p Class of Service,
  - Per port provides 4 priority queues
  - Port Base, Tag Base and Type of Service Priority

- **Port Mirror: Monitor traffic in switched networks.**
  - TX Packet only
  - RX Packet only
  - Both of TX and RX Packet

- **Security**
  - Port Sercurity : MAC address entries/filter
  - IP Sercurity : IP address security management to prevent unauthorized intruder.
  - Login Security: IEEE802.1X/RADIUS

- **IGMP with Query mode for Multi Media Application**

- **Case/Installation**
  - IP-30 Protection
  - DIN Rail and Wall Mount Design

- **Spanning Tree**
  - Support IEEE802.1d Spanning Tree
  - Support IEEE802.1w Rapid Spanning Tree

- **Ring**
  - Ring, Dual Homing, and Couple Ring Topology
  - Provide redundant backup feature and the recovery time below 300ms

- **Support 802.1ab LLDP**

- **Bandwidth Control**
  - Ingress Packet Filter and Egress Rate Limit
  - Broadcast/Multicast Packet Filter Control

- **System Event Log**
  - System Log Server/Client
  - SMTP e-mail Alert
  - Relay Alarm Output System Events

- **SNMP Trap**
  - Device cold start
  - Power status
  - Authentication failure
  - Ring topology changed
  - Port Link up/Link down

- **TFTP Firmware Update and System Configure Restore and Backup**

## Standard Compliance

| | |
|---|---|
| IEEE Standard | IEEE 802.3 10Base-T Ethernet<br>IEEE 802.3u 100Base-TX and 100Base-FX Fast Ethernet<br>IEEE802.3x Flow Control and Back Pressure<br>IEEE802.3ad Port trunk with LACP<br>IEEE802.1d Spanning Tree/ IEEE802.1w Rapid Spanning Tree<br>IEEE802.1p Class of Service<br>IEEE802.1Q VLAN Tag<br>IEEE 802.1x User Authentication (Radius)<br>IEEE802.1ab LLDP** |
| RFC Standard | RFC2030 SNTP, RFC 2821 SMTP, RFC 1215 Trap, RFC2233 MIBII, RFC 1157 SNMP MIB, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB, RFC 2665 Ethernet like MIB, RFC 2819 RMON MIB, Private MIB |

## Hardware Specification

| | |
|---|---|
| Switch Architecture | Back-plane (Switching Fabric): 2Gbps<br>Packet throughput ability (Full-Duplex): 2.976Mpps @64bytes |
| Transfer Rate | 14,880pps for Ethernet port<br>148,800pps for Fast Ethernet port |
| Packet Buffer | 1Mbits |
| Mac Address | 8K MAC address table |
| Flash ROM | 4Mbytes |
| DRAM | 32Mbytes |
| Connector | 10/100TX: 8 x RJ-45 with auto MDI/MDI-X function<br>100M fiber: 2 x SC type connector for Singlemode or Multimode type fiber cable<br>RS-232 connector: RJ-45 type |
| Network Cable | 10Base-T: 2-pair UTP/STP Cat. 3, 4, 5 cable<br>EIA/TIA-568 100-ohm (100m)<br>100Base-TX: 2-pair UTP/STP Cat. 5/ 5E cable<br>EIA/TIA-568 100-ohm (100m) |
| Optical Cable | Multimode: 50/125µm~62.5/125µm<br>Single mode: 9/125µm<br>Available distance: 2km (Multimode) / 30km (Singlemode)<br>Wavelength: 1310nm (Multimode/Singlemode) |
| Protocol | CSMA/CD |
| LED | Per unit: Power (Green), Power 1 (Green), Power 2 (Green), Fault (Orange), Master (Green)<br>8 10/100: Link/Activity (Green), Full duplex/Collision (Orange)<br>Fiber: Link/Activity (Green) |
| Power Supply | DC 24 ~48V<br>Redundant power with polarity reverse protect function and removable terminal block<br>Input Power Isolation design for Telcom application, Pass Hi-Pot test~1.5KV |
| Power Consumption | 9.54Watt |
| Operating Humidity | 5% to 95% (Non-condensing) |
| Operating Temperature | Standard 0°C to 60°C<br>Wide Operating Temperature -40°C~75°C) |
| Storage Temperature | -40°C to 85°C |
| Case Dimension | IP-30, 72mm (W) x 105mm (D) x 152mm (H) |
| Fan Number | 0 |
| Installation | DIN rail and wall mount ear. |
| EMI | FCC Class A, CE EN61000-4-2, CE EN61000-4-3, CE EN-61000-4-4, CE EN61000-4-5, CE EN61000-4-6, CE EN61000-4-8, CE EN61000-4-11, CE EN61000-4-12 |
| Safety | UL, cUL, CE/EN60950-1 |
| Stability Testing | IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration) |

## Software Feature

| | |
|---|---|
| Management | SNMP v1 v2c, v3/ Web/Telnet/CLI/Menu Driven** Management |
| SNMP MIB | RFC 1215 Trap, RFC1213 MIBII, RFC 1157 SNMP MIB, RFC 1493 Bridge MIB, RFC 2674 VLAN MIB, RFC 1643 , RFC 1757, RSTP MIB, Private MIB |
| VLAN | Port Based VLAN<br>IEEE 802.1Q Tag VLAN (256 entries)/ VLAN ID (Up to 4K, VLAN ID can be assigned from 1 to 4096.)<br>GVRP (256 Groups)<br>Double Tag VLAN (Q in Q)*<br>Private VLAN** |
| Port Trunk with LACP | LACP Port Trunk: 4 Trunk groups/Maximum 4 trunk members |
| LLDP** | Support LLDP to allow switch to advise its identification and capability on the LAN |
| Spanning Tree | Support IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree |
| Ring | Support Ring, Dual Homing, and Couple Ring<br>Provide redundant backup feature and the recovery time below 300ms |
| Quality of Service | The quality of service determined by port, Tag and IPv4 Type of service, IPv4/IPv6 Different Service |
| Class of Service | Support IEEE802.1p class of service, per port provides 4 priority queues |
| Port Security | Support 100 entries of MAC address for static MAC and another 100 for MAC filter |
| Port Mirror | Support 3 mirroring types: "RX, TX and Both packet". |
| IGMP | Support IGMP snooping v1,v2<br>256 multicast groups and IGMP query |
| IP Security | Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder. |
| Login Security | Support IEEE802.1X Authentication/RADIUS |
| Bandwidth Control | Support ingress packet filter and egress packet limit<br>The egress rate control supports all of packet type and the limit rates are 100K~250Mbps<br>Ingress filter packet type combination rules are Broadcast/Multicast/Unknown Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all of packet. The packet filter rate can be set from 100k to 250Mbps |
| Flow Control | Support Flow Control for Full-duplex and Back Pressure for Half-duplex |
| System Log | Support System log record and remote system log server |
| SMTP | Support SMTP Server and 6 e-mail accounts for receiving event alert |
| Relay Alarm | Provides one relay output for port breakdown, power fail and alarm<br>Alarm Relay current carry ability: 1A @ DC24V |
| SNMP Trap | Up to 3 Trap stations<br>Cold start, Port link up, Port link down, Authentication Failure, Private Trap for power status, Port Alarm configuration, Fault alarm, Ring topology change |
| DHCP | Provide DHCP Client/ DHCP Server/ IP Relay functions |
| DNS | Provide DNS client feature and support Primary and Secondary DNS server. |
| SNTP | Support SNTP to synchronize system clock in Internet |
| Firmware Update | Support TFTP firmware update, TFTP backup and restore. |
| Configuration upload and download | Support binary configuration file for system quick installation |

\* Future release
** Optional

## Order Information

| Part Number | Product Family | Description |
|---|---|---|
| 26 870 302 | DragonLine | 8x10/100TX + 2x100FX<br>Industrial Ethernet Switch (Managed / Ring / SC / MM / 2km) |
| 26 870 352-30 | DragonLine | 8x10/100TX + 2x100FX<br>Industrial Ethernet Switch (Managed / Ring / SC / SM / 30km) |
| 26 870 302E | DragonLine | 8x10/100TX + 2x100FX<br>Industrial Ethernet Switch (Managed / Ring / SC / MM / 2km)<br>Wide Temperature Range (-40°C~75°C) |
| 26 870 352E-30 | DragonLine | 8x10/100TX + 2x100FX<br>Industrial Ethernet Switch (Managed / Ring / SC / SM / 30km)<br>Wide Temperature Range (-40°C~75°C) |