# ITP-500

**5x 10/100Base-TX Ethernet Switch (Slim)**

# ITP-800

**8x 10/100Base-TX Ethernet Switch**

These models are unmanaged, industrial grade Fast Ethernet switches with 5(8) 10/100Base-TX Fast Ethernet ports. This series of unmanaged Ethernet switches is designed for industrial applications in harsh environments. These switches Ethernet ports utilize M12 connectors to ensure water tight, robust connections and guarantee reliable operation against environmental disturbances such as vibration and shock.
These switches are compliant with EN50155, covering operating temperature, power input voltage, surge, ESD, vibration, and shock, thus making these switches suitable for industrial applications in vehicle, rolling stock and railways.

## Features

- 8-Port 10/100Base-TX Ethernet Switch (ITP-800)
- 5-Port 10/100Base-TX Ethernet Switch (ITP-500)
- Use M12 connector anti vibration and shock for vehicle, rolling stock, and railway applications
- Supports flow control
- Slim design (ITP-500, figure 5)
- Fanless design
- DIN rail or wall mounting installation
- Supports broadcast storm protection
- Supports auto-negotiation and auto-MDI/MDI-X
- Build-in 2 bypass port to avoid one or more nodes power fail in a bus structure to collapse the network (ITP-800)
- Redundant dual DC input power 12/24/48VDC (8.4~60VDC) (ITP-800)
- DC input power 12/24/48VDC (8.4~60VDC) (ITP-500)
- Very low power consumption
- IP67 water proof grade rugged housing for against water, dust, and and oil (Figure 2)
- Wide operating temperature -40~75°C (ITP-500-E, ITP-800-E)
- CE, FCC, EN50155 and EN50121-4 for railway certified
- Industrial Grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified

## Specifications

| | |
|---|---|
| **IEEE Standard** | IEEE 802.3 10Base-T Ethernet |
| | IEEE 802.3u 100Base-TX Fast Ethernet |
| | IEEE802.3x Flow Control and Back Pressure |
| **Switch Architecture** | Back-plane (Switching Fabric): 1Gbps (ITP-500)<br>Back-plane (Switching Fabric): 1.6Gbps (ITP-800)<br>(Full wire-speed) |
| **Data Processing** | Store and Forward |
| **Flow Control** | IEEE 802.3x flow control, back pressure flow control |
| **Provides Broadcast Storm Protection** | Supported |
| **MAC Address Table** | 1 K |
| **Packet Buffer Size** | 448Kbits |
| **Network Connector** | 5x M12 D-code Female (ITP-500) |
| | 8x M12 D-code Female (ITP-800) |
| | 10/100Base-TX auto negotiation speed |
| | Auto MDI/MDI-X function |
| | Full/Half duplex |
| | Built in 2 bypass port (ITP-800) |
| **Network Cable** | 10Base-T: 2-pair UTP/STP Cat. 5e cable |
| | EIA/TIA-568 100-ohm (100m) |
| | 100Base-TX: 2-pair UTP/STP Cat. 5e cable |
| | EIA/TIA-568 100-ohm (100m) |
| **Protocols** | CSMA/CD |
| **LED** | Per unit: Power 1 (Green), Power 2 (Green) (ITP-800)<br>Per unit: Power (Green) (ITP-500) |
| | Per port: Link/Active (Green) |
| **Reverse Polarity Protection** | Present for power input |
| **Overload Current Protection** | Supported |

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| **Power Supply** | Redundant Dual DC 12/24/48V (8.4~60VDC) Input power (ITP-800) |
| | DC 12/24/48V (8.4~60VDC) Input power (ITP-500) |
| **Power Connector** | 5 Pin Male A-Code M12 |
| **Power Consumption** | |

| Input Voltage | ITP-500 | ITP-800 |
|---|---|---|
| 12VDC | 0.8W | 1.8W |
| 24VDC | 1.0W | 2.2W |
| 48VDC | 1.9W | 3.4W |

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| **Operating Temperature** | -40°C~75°C |
| **Operating Humidity** | 5% to 95% (Non-condensing) |
| **Storage Temperature** | -40°C~85°C |
| **Housing** | IP67 water-proof grade rugged housing, and fanless (Figure 2) |
| **Dimensions** | 43 x 30 x 206.5 mm (D x W x H) (ITP-500)<br>39 x 65.1 x 191.5 mm (D x W x H) (ITP-800) |
| **Weight** | 260g (ITP-500)<br>410g (ITP-800) |
| **Installation Mounting** | Wall mounting, or DIN rail (optional) |
| **MTBF** | 2,315,383 Hours (ITP-500)<br>1,492,660 Hours (ITP-800)<br>(MIL-HDBK-217) |
| **Warranty** | 5 years |
| **Certification** | |
| **EMC** | CE |
| **EMI** | FCC, FCC Part 15 Subpart B Class A, CE |
| **Railway Traffic** | EN50155, EN50121-4 |
| **Immunity for Heavy Industrial Environment** | EN61000-6-2 |

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|---|---|
| **Emission for Heavy Industrial Environment** | EN61000-6-4 |
| **EMS (Electromagnetic Susceptibility) Protection Level** | EN61000-4-2 (ESD) Level 3, Criteria B |
| | EN61000-4-3 (RS) Level 3, Criteria A |
| | EN61000-4-4 (Burst) Level 3, Criteria A |
| | EN61000-4-5 (Surge) Level 3, Criteria B |
| | EN61000-4-6 (CS) Level 3, Criteria A |
| | EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A |
| | EN 61000-4-11 Voltage Dips |

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| **Safety** | UL60950-1 (Pending) |
| **Shock** | IEC 61373 |
| **Freefall** | IEC 60068-2-32 |
| **Vibration** | IEC 61373 |

## Application

**Figure 1 :** ITP Series in Onboard Train Application

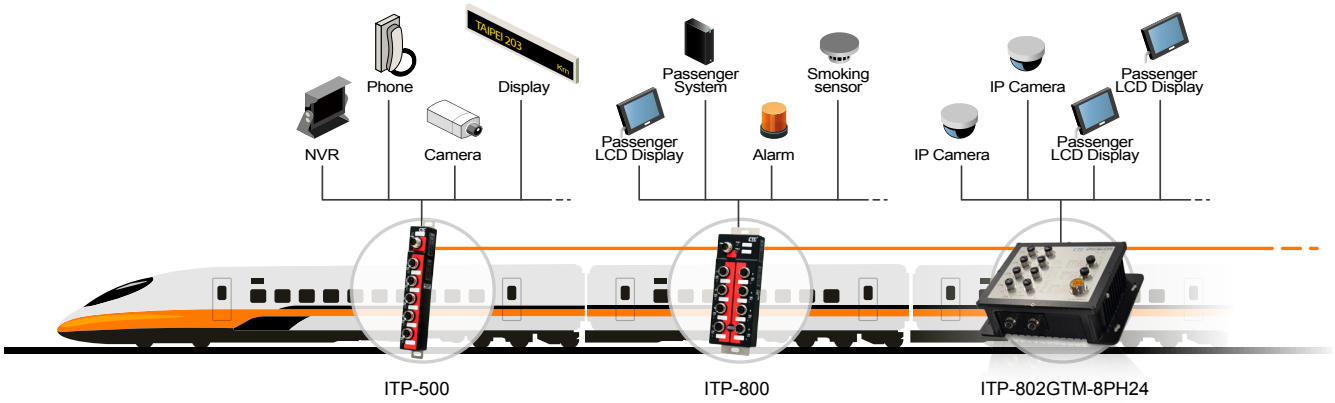
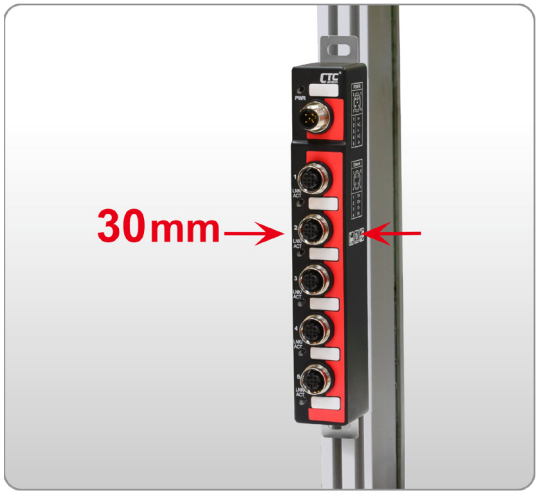



**Figure 2** : IP67 Protection

**Figure 3** : Wide Range Temperature

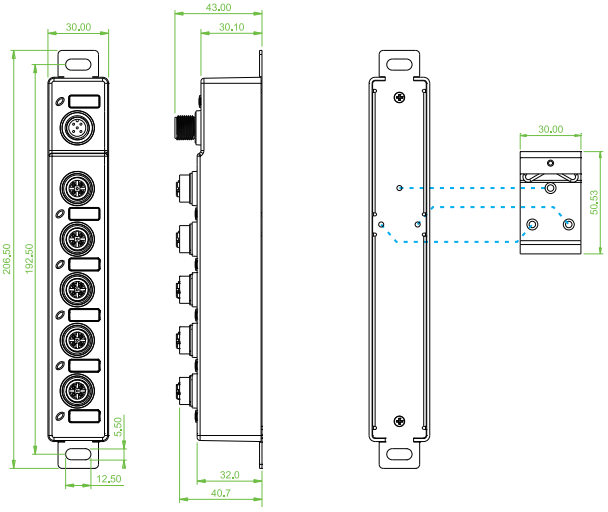
**Figure 4** : ITP Series for Industrial Automation

**Figure 5** : Slim and Compact Size



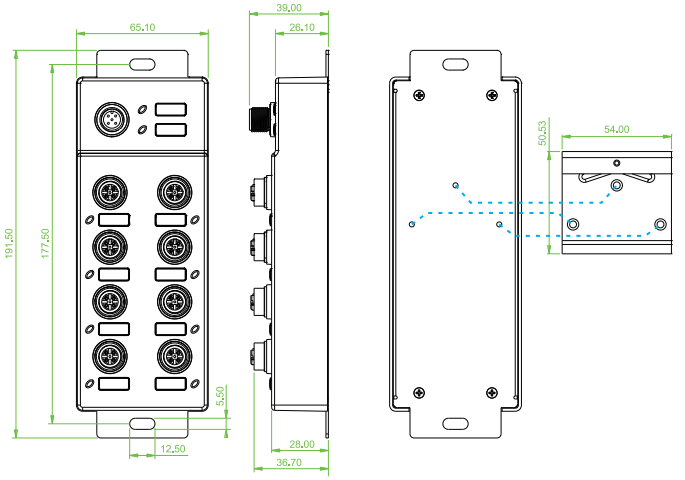
## Dimensions

▶ ITP-500




Front View | Side View | Rear View | DIN-Rail Kit View (Optional)

▶ ITP-800




Front View | Side View | Rear View | DIN-Rail Kit View (Optional)

## Ordering Information

| Model Name | IP67 | Total Port | UTP Port M12 | Power Supply | Certification | | | | Shock Vibration | Operating Temperture |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 10/100 Base-TX | 12/24/48VDC (8.4~60VDC) | EN50155 | EN50121-4 | EN61000-6-2 EN61000-6-4 | CE FCC | IEC61373 | |
| ITP-500-E | V | 5 | 5 | 1 | V | V | V | V | V | -40~75°C |
| ITP-800-E | V | 8 | 8 | 2 | V | V | V | V | V | -40~75°C |

**Model Naming Rule**

ITP - 8 00 - E → E: -40~75°C

- ITP: Industrial TransPortation Switch
- 8: 8x FE UTP; 5: 5x FE UTP
- 00: 0 Fiber

### Package List

- ITP-500-E or ITP-800-E device
- Protective caps for UTP port and power
- Wall mount (bound with switch device)
- Quickly installation guide

## Optional Accessories

### Optional Cable/Connector

**P/N: CAB-M12DM4-RJ45**
M12 D-code Male (4-Pin) to RJ-45, AWG 24 ,IP67, 1 meter

For FE UTP

**P/N: CAB-M12AF5-OPEN**
M12 A-code Female (5-Pin) to open wire, AWG 22, IP67, 1 meter

For Power

**P/N: M12D-M4**
M12 D-code Male (4-Pin) connector, IP67

For FE UTP

**P/N: M12A-F5**
M12 A-code Female (5-Pin) connector, IP67

For Power