



## IGS-401F

4x 10/100/1000Base-T+ 1x 1000Base-SX/LX

## IGS-402F

4x 10/100/1000Base-T+ 2x 1000Base-SX/LX

## IGS-402S

4x 10/100/1000Base-T+ 2x 100/1000Base-X SFP

The series models are 4-port 10/100/1000Base-T Ethernet non-managed Gigabit switches, with 1 or 2 fiber ports, that provide stable and reliable Ethernet transmission. Housed in rugged DIN rail or wall mountable enclosures, these switches are designed for harsh environments, such as industrial networking, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. Standard operating temperature range models (-10 to 60°C) and wide operating temperature range models (-40 to 75°C) fulfill the special needs of industrial automation applications.

### Features

- 4x 10/100/1000Base-T RJ45 + 1x 1000Base-SX/LX Fiber (IGS-401F)
- 4x 10/100/1000Base-T RJ45 + 2x 1000Base-SX/LX Fiber (IGS-402F)
- 4x 10/100/1000Base-T RJ45 + 2x 100/1000Base-X SFP (IGS-402S)
- 12/24/48VDC redundant dual input power design
- Wide operating temperature -40 ~ 75°C ("E" model)
- Provides broadcast storm protection
- Supports DIP SW for alarm setting and broadcast storm protection
- Supports power failure alarm message by relay
- Supports flow control
- UL60950-1, CE, FCC, EN50121-4 certification
- Industrial Grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- IP30 rugged metal housing and fanless

### Specifications

|  |   |
|--|---|
| <b>IEEE Standard</b>                       | IEEE 802.3 10Base-T Ethernet<br>IEEE 802.3u 100Base-TX, 100Base-FX, Fast Ethernet<br>IEEE 802.3ab 1000Base-T Gbit/s Ethernet over twisted pair<br>IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber-Optic<br>IEEE 802.3x Flow Control and Back Pressure |
| <b>Switch Architecture</b>                 | Back-plane (Switching Fabric): 10Gbps (IGS-401F)<br>Back-plane (Switching Fabric): 12Gbps (IGS-402S, IGS-402F)  |
| <b>Data Processing</b>                     | Store and Forward   |
| <b>Flow Control</b>                        | IEEE 802.3x flow control, back pressure flow control  |
| <b>Provides Broadcast Storm Protection</b> | Present, Enable / Disable set by DIP SW   |
| <b>Jumbo Frame</b>                         | 10K Bytes   |
| <b>MAC Address Table</b>                   | 8K  |
| <b>Packet Buffer Size</b>                  | 1Mbits  |
| <b>Network Connector</b>                   | 4 x RJ-45<br>10/100/1000Base-TX auto negotiation speed, Auto MDI/MDI-X function, Full/Half duplex<br>1 or 2 1000Base-X Fiber SC connector (IGS-401F, IGS-402F)<br>2 100/1000Base-X SFP connector (IGS-402S)   |
| <b>Network Cable</b>                       | UTP/STP above Cat. 5e cable<br>EIA/TIA-568 100-ohm (100m)<br>Fiber Cable (Multi-mode): 50/125um, 62.5/125um<br>Fiber Cable (Single-mode): 9/125um   |
| <b>Protocols</b>                           | CSMA/CD   |
| <b>LED</b>                                 | Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber)<br>RJ-45 port : Link/Active (Green), Speed 10 (OFF), 100 (Green), 1000 (Yellow)<br>Fiber Per port: Link/Active (Green)  |

|                                    |   |
|------------------------------------|---|
| <b>DIP SW</b>                      | DIP 1 ON : Disable power failure alarm<br>OFF : Enable power failure alarm<br>DIP 2 ON : Disables broadcast storm protection<br>OFF : Enable broadcast storm protection<br>DIP 3 ON : Fiber 2 for 100Base-FX SFP<br>OFF : Fiber 2 for Gigabit SFP (IGS-402S)<br>DIP 4 ON : Fiber 1 for 100Base-FX SFP<br>OFF : Fiber 1 for Gigabit SFP (IGS-402S) |
| <b>Reserve Polarity Protection</b> | Present   |
| <b>Overload current protection</b> | Present   |
| <b>Power Supply</b>                | Redundant Dual DC 12/24/48V (9.6~60VDC) Input power (Removable Terminal Block)<br>Provide DC Power JACK adapter cable for external power supply   |
| <b>Power Consumption</b>           | 7.9W (IGS-402F)<br>7.8W (IGS-401F)<br>7.9W (IGS-402S)   |
| <b>Alarm Relay Contact</b>         | Relay outputs with current carrying capacity of 1 A @24VDC  |
| <b>Removable Terminal Block</b>    | Provide 2 Redundant power, Alarm relay contact, 6 Pin   |
| <b>Operating Temperature</b>       | -10 ~ 60°C (IGS-402S, IGS-401F, IGS-402F)<br>-40 ~ 75°C (IGS-402S-E, IGS-401F-E, IGS-402F-E)  |
| <b>Operating Humidity</b>          | 5% to 95% (Non-condensing)  |
| <b>Storage Temperature</b>         | -40 ~ 85°C  |
| <b>Housing</b>                     | Rugged Metal, IP30 Protection, Fanless  |
| <b>Dimensions</b>                  | 106 x 62.5 x 134.8 mm (D X W X H)   |
| <b>Weight</b>                      | 0.84kg (IGS-402S) 0.67kg (IGS-401F)<br>0.68kg (IGS-402F)  |
| <b>Installation Mounting</b>       | DIN Rail mounting or wall mounting  |
| <b>MTBF</b>                        | 438,031 Hours (IGS-402S) 407,596 Hours (IGS-401F)<br>391,633 Hours (IGS-402F)<br>(MIL-HDBK-217)   |
| <b>Warranty</b>                    | 5 years   |

| Certification                             |   |
|---|---|
| EMC/EMS                                   | CE  |
| EMI (Electromagnetic Interference)        | FCC Part 15 Subpart B Class A, CE EN55022 Class A |
| Railway Traffic                           | EN50121-4   |
| Immunity for Heavy Industrial Environment | EN61000-6-2                                       |
| Emission for Heavy Industrial Environment | EN61000-6-4                                       |

|           |   |
|-----------|---|
| EMS       | 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 |
| Safety    | UL60950-1   |
| Shock     | IEC 60068-2-27  |
| Freefall  | IEC 60068-2-32  |
| Vibration | IEC 60068-2-6   |

## Application

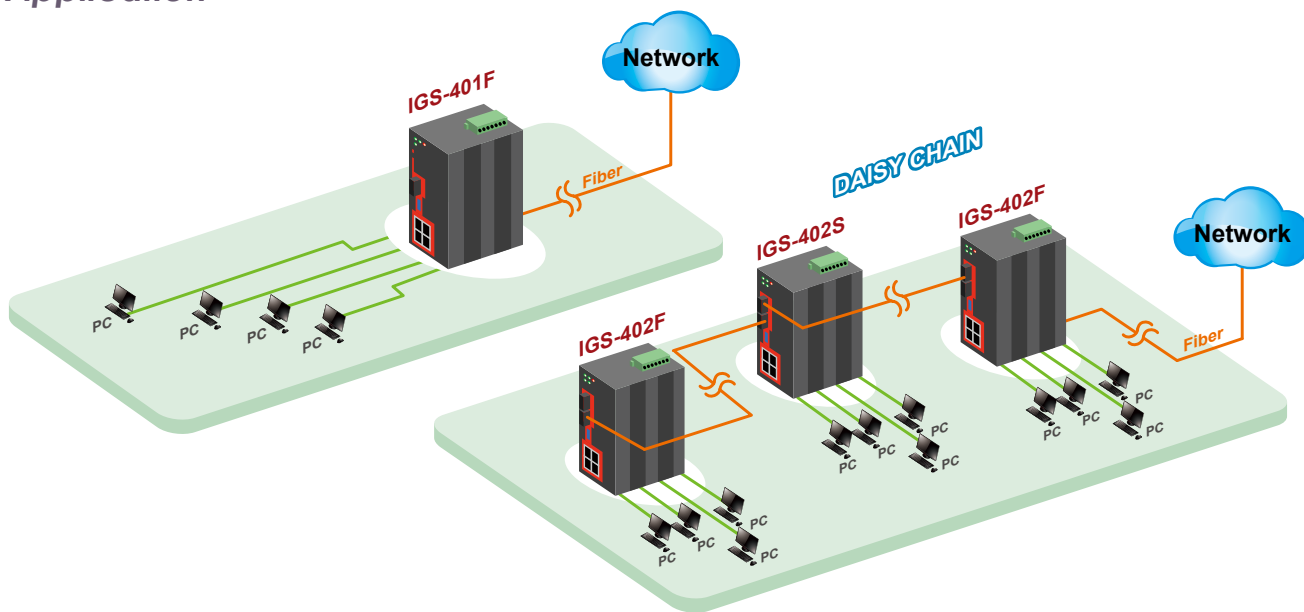
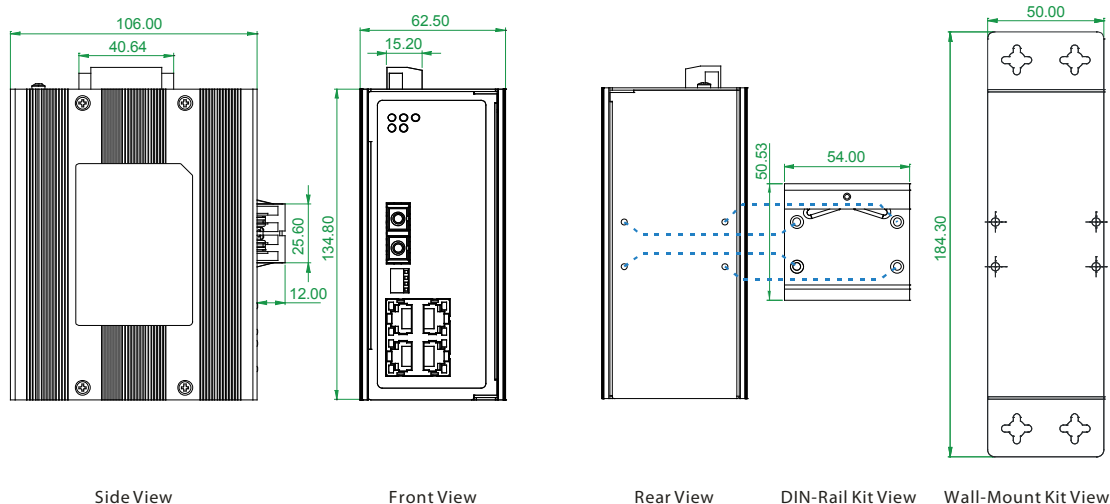


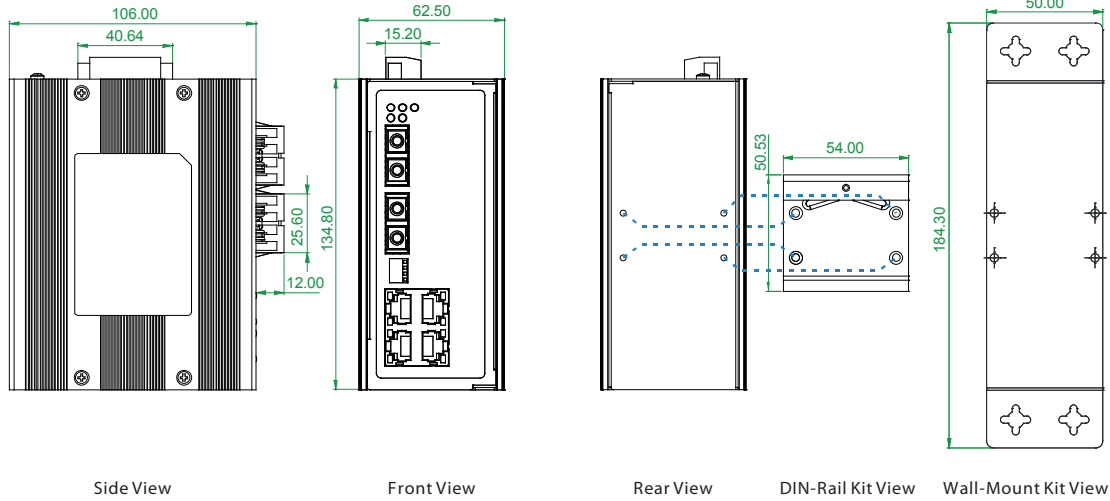
Figure : IGS-402S, IGS-401F & IGS-402F Gigabit Ethernet Switch Transmission

## Dimensions

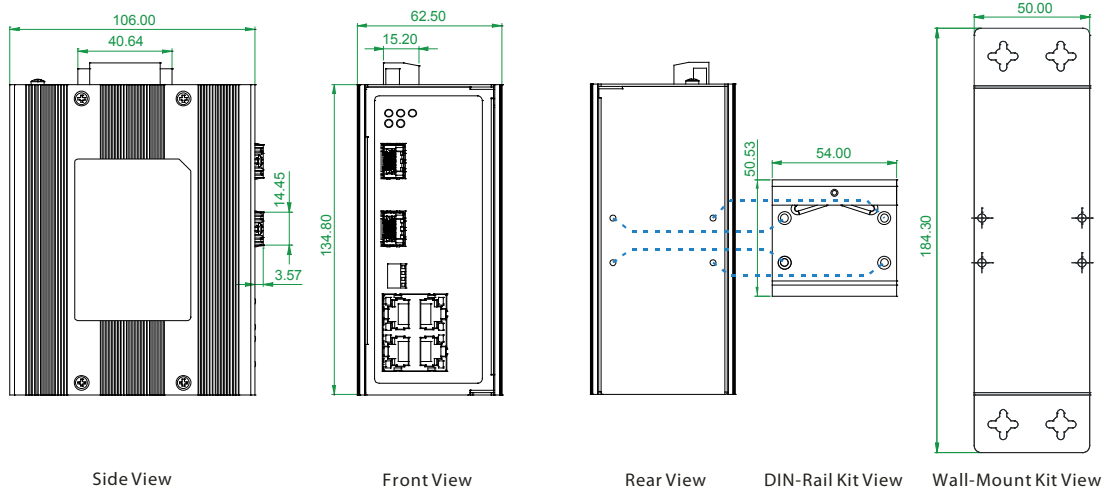
IGS-401F



IGS-402F



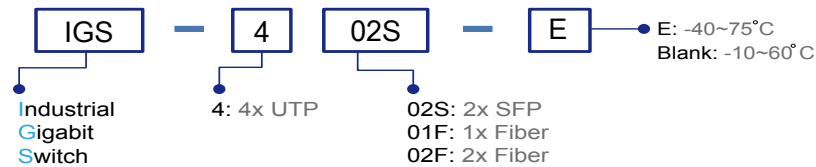
IGS-402S



## Ordering Information

| Model Name | Total Port | UTP Port           |            | Fiber Port     |                  | Certification     |                            |    |     | Operating Temperature |
|------------|------------|--------------------|------------|----------------|------------------|-------------------|----------------------------|----|-----|-----------------------|
|            |            | 10/100/1000 Base-T | 1000Base-X | 100/1000Base-X | Safety UL60950-1 | Railway EN50121-4 | EN61000-6-2<br>EN61000-6-4 | CE | FCC |                       |
| IGS-401F   | 5          | 4                  | 1 SC       | —              | V                | V                 | V                          | V  | V   | -10~60°C              |
| IGS-401F-E | 5          | 4                  | 1 SC       | —              | V                | V                 | V                          | V  | V   | -40~75°C              |
| IGS-402F   | 6          | 4                  | 2 SC       | —              | V                | V                 | V                          | V  | V   | -10~60°C              |
| IGS-402F-E | 6          | 4                  | 2 SC       | —              | V                | V                 | V                          | V  | V   | -40~75°C              |
| IGS-402S   | 6          | 4                  | —          | 2 SFP          | V                | V                 | V                          | V  | V   | -10~60°C              |
| IGS-402S-E | 6          | 4                  | —          | 2 SFP          | V                | V                 | V                          | V  | V   | -40~75°C              |

### Model Naming Rule



| Fiber Connector            | Connectivity                        | Distance              |
|----------------------------|-------------------------------------|-----------------------|
| SC                         | SC001: 500m (SC, M/M)               | 002: 2km (M/M)        |
| (IGS-401F & IGS-402F only) | SC020A: WDM 20km A type (TX:1310nm) | SC020: 20km (SC, S/M) |
|                            | SC020B: WDM 20km B type (TX:1550nm) | SC040: 40km (SC, S/M) |

### Accessories

|                        |   |
|------------------------|---|
| <b>DR-4524</b>         | Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50°C |
| <b>MDR-40-24</b>       | Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70°C |
| <b>SFP Transceiver</b> | Compatible, Reliable, 5-year Warranty                               |

### SFP Naming Rule

