

## IFS-402CGSW

4x FE RJ45 + 2x 100/1000 SFP, Compact size

NEW



- 4KV surge protection for UTP and SFP ports
- EN50121-4, EN61000-6-2, EN61000-6-4, CE, FCC certified
- Compact size for easy installation



The IFS-402CGSW is a managed industrial grade L2 switch with 4 10/100Base-TX ports and 2 GbE/100M SFP ports. Housed in rugged DIN rail or wall mountable enclosures, the switch is designed for harsh environments, such as industrial networking. It is an ideal solution for Smart City, surveillance, Intelligent traffic control systems, production automation applications. 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

- Redundant power input
  - Cable diagnostics
  - Provides SmartConfig for quick and easy mass Configuration\*
  - Supports SmartView for Centralized Management\*
- \*Please see Chapter 1- [Software Management](#) for more details

## Specifications

|                             |                                                                                                                                                                  |                                                                                  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Standard                    | IEEE 802.3                                                                                                                                                       | 10Base-T 10Mbit/s Ethernet                                                       |
|                             | IEEE 802.3u                                                                                                                                                      | 100Base-TX, 100Base-FX, Fast Ethernet                                            |
|                             | IEEE 802.3z                                                                                                                                                      | 1000Base-X Gbit/s Ethernet over Fiber-Optic                                      |
|                             | IEEE 802.1d                                                                                                                                                      | STP (Spanning Tree Protocol)                                                     |
|                             | IEEE 802.1w                                                                                                                                                      | RSTP (Rapid Spanning Tree Protocol )                                             |
|                             | IEEE 802.1s                                                                                                                                                      | MSTP (Multiple Spanning Tree Protocol)                                           |
|                             | IEEE 802.1Q                                                                                                                                                      | Virtual LANs (VLAN)                                                              |
|                             | IEEE 802.1X                                                                                                                                                      | Port based and MAC based Network Access Control, Authentication                  |
|                             | IEEE802.3ac                                                                                                                                                      | Max frame size extended to 1522Bytes                                             |
|                             | IEEE 802.3ad                                                                                                                                                     | Link aggregation for parallel links with LACP(Link Aggregation Control Protocol) |
|                             | IEEE 802.3x                                                                                                                                                      | Flow control for Full Duplex                                                     |
|                             | IEEE 802.1ad                                                                                                                                                     | Stacked VLANs, Q-in-Q                                                            |
|                             | IEEE 802.1p                                                                                                                                                      | LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization                          |
|                             | IEEE 802.1ab                                                                                                                                                     | Link Layer Discovery Protocol (LLDP)                                             |
|                             | IEEE 802.3az                                                                                                                                                     | EEE (Energy Efficient Ethernet)                                                  |
| Switch Architecture         | Back-plane (Switching Fabric):<br>4.8Gbps<br>Full wire-speed                                                                                                     |                                                                                  |
| Data Processing             | Store and Forward                                                                                                                                                |                                                                                  |
| Flow Control                | IEEE 802.3x for full duplex mode Back pressure for half duplex mode                                                                                              |                                                                                  |
| Network Connector           | 4x 10/100Base-TX RJ-45 + 2x FE/GbE SFP slot<br>RJ-45 UTP port support Auto negotiation speed,<br>Auto MDI/MDI-X function,<br>SFP ports support FE/GbE with DDMMI |                                                                                  |
| Console                     | RS-232 (RJ-45)                                                                                                                                                   |                                                                                  |
| Network Cable               | UTP/STP above Cat. 5e cable<br>EIA/TIA-568 100-ohm (100m)                                                                                                        |                                                                                  |
| Protocols                   | CSMA/CD                                                                                                                                                          |                                                                                  |
| Reverse Polarity Protection | Supported for power input                                                                                                                                        |                                                                                  |
| Overload Current Protection | Supported                                                                                                                                                        |                                                                                  |
| CPU Watch Dog               | Supported                                                                                                                                                        |                                                                                  |
| Power Supply                | Redundant Dual 12/24/48VDC (9.6~60VDC) Input power (Removable Terminal Block)                                                                                    |                                                                                  |

|                                           |                                                                                                                                                            |                         |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Power Consumption                         | Input Voltage                                                                                                                                              | Total Power Consumption |
|                                           | 12VDC                                                                                                                                                      | 4.7W                    |
|                                           | 24VDC                                                                                                                                                      | 4.8W                    |
|                                           | 48VDC                                                                                                                                                      | 5.3W                    |
| LED                                       | Per unit: Power 1 (Green), Power 2 (Green)<br>Per RJ-45 port: 100 Link/Active (Green)<br>10 Link/Active (Amber)<br>SFP Fiber Per port: Link/Active (Green) |                         |
| Jumbo Frame                               | 10K                                                                                                                                                        |                         |
| IEEE802.3ac                               | Max frame size extended to 1522Bytes (allow Q-tag in packet)                                                                                               |                         |
| MAC Address Table                         | 4K                                                                                                                                                         |                         |
| Memory Buffer                             | 1.75M bits for packet buffer                                                                                                                               |                         |
| Device Memory                             | 128M Bytes Flash ROM, 256M Bytes RAM                                                                                                                       |                         |
| Warning Message                           | System Syslog, SMTP/ e-mail event message                                                                                                                  |                         |
| Removable Terminal Block                  | Provides 2 redundant power, 4 Pin                                                                                                                          |                         |
| Operating Temperature                     | -10 ~ 60°C (IFS-402CGSW)<br>-40 ~ 75°C (IFS-402CGSW-E)                                                                                                     |                         |
| Operating Humidity                        | 5% to 95% (Non-condensing)                                                                                                                                 |                         |
| Storage Temperature                       | -40 ~ 85°C                                                                                                                                                 |                         |
| Housing                                   | Rugged Metal, IP30 Protection, Fanless                                                                                                                     |                         |
| Dimensions                                | 106x 31.6x 142mm (Dx Wx H)                                                                                                                                 |                         |
| Weight                                    | 535g                                                                                                                                                       |                         |
| Installation Mounting                     | DIN Rail mounting, or wall mounting (Optional)                                                                                                             |                         |
| MTBF                                      | 1038,003Hours<br>(MIL-HK8K-217)                                                                                                                            |                         |
| Warranty                                  | 5 years                                                                                                                                                    |                         |
| Certification                             |                                                                                                                                                            |                         |
| EMC                                       | CE (EN55032, EN55035)                                                                                                                                      |                         |
| EMI (Electromagnetic Interference)        | FCC Part 15 Subpart B Class A,CE                                                                                                                           |                         |
| Railway Traffic                           | EN50121-4                                                                                                                                                  |                         |
| Immunity for Heavy Industrial Environment | EN61000-6-2                                                                                                                                                |                         |

|                                                              |                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Emission for Heavy Industrial Environment</b>             | EN61000-6-4                                                                                                                                                                                                                                                                          |
| <b>EMS (Electromagnetic Susceptibility) Protection Level</b> | EN61000-4-2 (ESD) Level 3, Criteria B<br>EN61000-4-3 (RS) Level 3, Criteria A<br>EN61000-4-4 (Burst) Level 3, Criteria A<br>EN61000-4-5 (Surge) Level 3, Criteria B<br>EN61000-4-6 (CS) Level 3, Criteria A<br>EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A |

|                         |                             |
|-------------------------|-----------------------------|
| <b>Safety</b>           | EN62368-1 (Pending)         |
| <b>Surge Protection</b> | 4KV for UTP and Fiber ports |
| <b>Shock</b>            | IEC 60068-2-27              |
| <b>Freefall</b>         | IEC 60068-2-31              |
| <b>Vibration</b>        | IEC 60068-2-6               |

## Software Specifications

| Topology                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VLAN</b>                                                 | IEEE 802.1q VLAN, up to 4094 802.1Q VLAN VID<br>IEEE 802.1q VLAN, up to 4094 Groups<br>IEEE 802.1ad Q-in-Q<br>MAC-based VLAN, up to 256 entries<br>IP Subnet-based VLAN, up to 128 entries<br>Protocol-based VLAN(Ethernet, SNAP, LLC), up to 128 entries<br>VLAN Translation, up to 256 entries<br>Private VLAN for port isolation<br>GVRP (GARP VLAN Registration Protocol)<br>MVR ( Multicast VLAN Registration) |
| <b>Link Aggregation (Port Trunk)</b>                        | Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group<br>Dynamic (IEEE 802.3ad LACP), up to 5 trunk group                                                                                                                                                                                                                                                                                                |
| <b>Spanning Tree</b>                                        | IEEE 802.1d STP<br>IEEE 802.1w RSTP<br>IEEE 802.1s MSTP                                                                                                                                                                                                                                                                                                                                                             |
| <b>Loop Protection</b>                                      | Supported                                                                                                                                                                                                                                                                                                                                                                                                           |
| QoS Features                                                |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Class of Service</b>                                     | IEEE 802.1p 8 active priorities queues for per port                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Traffic Classification QoS</b>                           | IEEE 802.1p based CoS<br>IP Precedence based CoS<br>IP DSCP based CoS<br>QCL(QoS Control List): Frame Type, Source/ Destination MAC, VLAN ID, PCP, DEI<br>QCE(QoS Control Entry): Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number                                                                                                                                                                       |
| <b>Bandwidth Control for Ingress</b>                        | 100~1,000,000 when the "Unit" is "kbps" and 1~1,000 when the "Unit" is "Mbps"                                                                                                                                                                                                                                                                                                                                       |
| <b>Bandwidth Control for Egress</b>                         | 100~1,000,000 when the "Unit" is "kbps" and 1~1,000 when the "Unit" is "Mbps"<br>Per queue / Per port shaper                                                                                                                                                                                                                                                                                                        |
| <b>DiffServ (RF 2474) Remarking</b>                         |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Storm Control</b>                                        | for Unicast, Broadcast, Multicast                                                                                                                                                                                                                                                                                                                                                                                   |
| IP Multicasting Features                                    |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>IGMP / MLD Snooping</b>                                  | IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2<br>Port Filtering Profile<br>Throttling, Fast Leave<br>Maximum Multicast Group : up to 1022 entries<br>Query / Static Router Port                                                                                                                                                                                                                                    |
| Security Features                                           |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>IEEE 802.1X</b>                                          | Port-Based<br>MAC-Based                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>ACL</b>                                                  | Number of rules : up to 256 entries<br>for L2 / L3 / L4<br>L2 : Mac address SA/DA/VLAN<br>L3: IP address SA/DA, Subnet<br>L4: TCP/UDP                                                                                                                                                                                                                                                                               |
| <b>RADIUS authentication &amp; accounting</b>               |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>TACACS+ authentication &amp; accounting, TACACS+ 3.0</b> |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>HTTPS, HTTP</b>                                          | Supported                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>SSL / SSH v2</b>                                         | Supported                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>User Name Password Authentication</b>                    | Local Authentication                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Management Interface Access Filtering</b>                | Remote Authentication (via RADIUS / TACACS+)                                                                                                                                                                                                                                                                                                                                                                        |
|                                                             | Web, Telnet / SSH, CLI RS-232 console                                                                                                                                                                                                                                                                                                                                                                               |

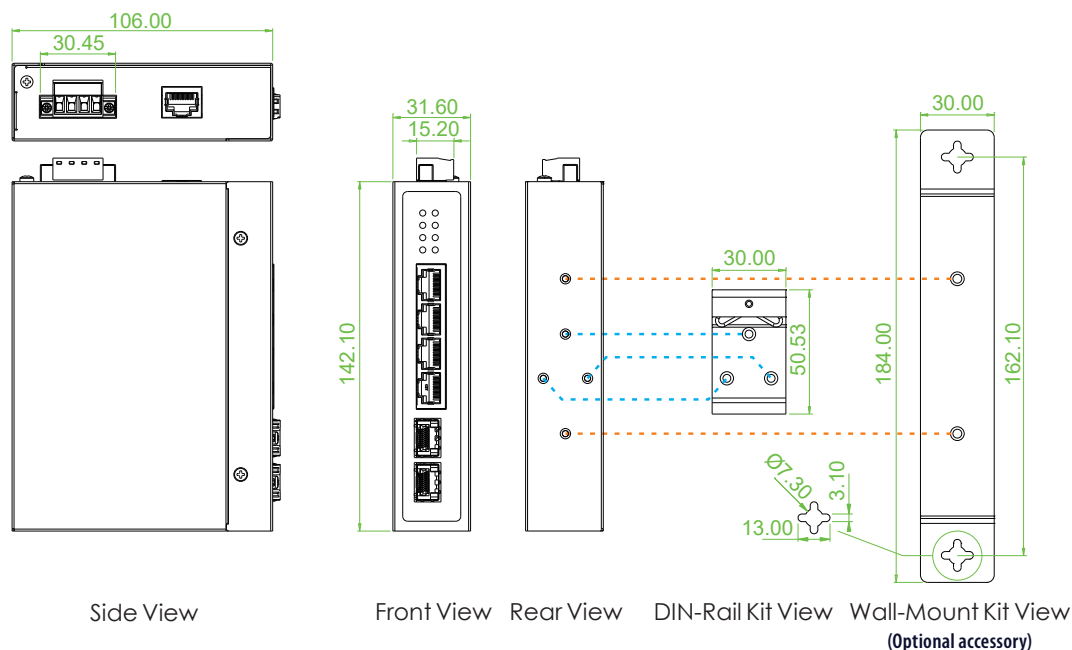
| Management Features                   |                                                             |
|---------------------------------------|-------------------------------------------------------------|
| <b>CLI</b>                            | Cisco® like CLI                                             |
| Web Based Management                  |                                                             |
| <b>Telnet</b>                         | Supports for management and monitoring                      |
| <b>SNMP</b>                           | V1, V2c, V3                                                 |
| <b>ModBus/TCP</b>                     | Supports management and monitoring                          |
| <b>SW &amp; Configuration Upgrade</b> | TFTP, HTTP<br>Redundant firmware in case of upgrade failure |
| <b>FTP client</b>                     | Supports for upload/download configuration                  |

|                            |                                                   |
|----------------------------|---------------------------------------------------|
| <b>RMON</b>                | RMON I (1, 2, 3, 9 group), RMON II                |
| <b>MIB</b>                 | RFC1213 MIB II, Private MIB                       |
| <b>UPnP</b>                | Supported                                         |
| <b>BOOTP</b>               | Supported                                         |
| <b>DHCP</b>                | Server, Client, Relay, Relay option 82 , Snooping |
| <b>RARP</b>                | Supported                                         |
| <b>IP Source Guard</b>     | Supported                                         |
| <b>Port Mirroring</b>      | Supported                                         |
| <b>Event Syslog</b>        | Syslog server (RFC3164)                           |
| <b>Warning Message</b>     | System syslog, e-mail                             |
| <b>DNS</b>                 | Client, Proxy                                     |
| <b>NTP</b>                 | Client                                            |
| <b>LLDP (IEEE 802.1ab)</b> | Link Layer Discovery Protocol<br>LLDP-MED         |

| IPv6 Features          |                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>IPv6 Management</b> | Telnet Server/ICMP v6                                                                                                                      |
| <b>SNMP over IPv6</b>  | Supported                                                                                                                                  |
| <b>HTTP over IPv6</b>  | Supported                                                                                                                                  |
| <b>SSH over IPv6</b>   | Supported                                                                                                                                  |
| <b>IPv6 Telnet</b>     | Supported                                                                                                                                  |
| <b>IPv6 NTP</b>        | Client                                                                                                                                     |
| <b>IPv6 TFTP</b>       | Supported                                                                                                                                  |
| <b>IPv6 QoS</b>        | Supported                                                                                                                                  |
| <b>IPv6 ACL</b>        | Number of rules: up to 256 entries<br>for L2 / L3 / L4<br>L2 : Mac address SA/DA/VLAN<br>L3: IP address SIP ,Subnet (32bit)<br>L4: TCP/UDP |

| Others Features         |                                                                                                                                                                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Green Ethernet</b>   | Supports IEEE 802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption<br>Determine the cable length and lowering the power for ports with short cables<br>Lower the power for a port when there is no link |
| <b>Cable Diagnostic</b> | Measuring UTP cable normal or broken point distance                                                                                                                                                                                     |

## Dimensions



## Ordering Information

| Model Name    | Total Port | RJ45          | Fiber           | Input Power | Certification     |                                 | Operating 10/100Base-TX |
|---------------|------------|---------------|-----------------|-------------|-------------------|---------------------------------|-------------------------|
|               |            | 10/100Base-TX | 100/1000 Base-X |             | Railway EN50121-4 | CE, FCC EN61000-6-2 EN61000-6-4 |                         |
| IFS-402CGSW   | 6          | 4             | 2 SFP           | 12/24/48VDC | V                 | V                               | -10~60°C                |
| IFS-402CGSW-E | 6          | 4             | 2 SFP           | 12/24/48VDC | V                 | V                               | -40~75°C                |

### Package List

- IFS-402CGSW device
- Console cable (RJ-45 to DB9)
- Din Rail with screws
- Terminal block
- Protective caps for SFP ports

## Optional Accessories

### Wall Mount Kit

|           |                                                           |
|-----------|-----------------------------------------------------------|
| IND-WMK01 | Wall Mount kit for Industrial product (184x30mm) (Narrow) |
|-----------|-----------------------------------------------------------|

### Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with the series product for guaranteed compatibility and performance. The best performance can be guaranteed even in mission-critical applications.

|                    |                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------|
| ISFP-M7000-85-D(E) | Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, DDML, -10~70°C (-40~85°C) |
| ISFP-S7020-31-D(E) | Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDML, -10~70°C (-40~85°C)          |
| ISFP-T7T00-00-(E)  | Industrial SFP 10/100/1000Base-T UTP 100meter, -10~70°C (-40~85°C)                                      |
| ISFP-M5002-31-D(E) | Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, DDML, -10~70°C (-40~85°C)        |
| ISFP-S5030-31-D(E) | Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDML, -10~70°C (-40~85°C)                   |

### Industrial Power Supply

|           |                                                                                  |
|-----------|----------------------------------------------------------------------------------|
| MDR-20-24 | Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 24VDC, 24W, -20 ~ +70°C |
| MDR-40-48 | Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 48VDC, 40W, -20 ~ +70°C |