
DIVISION 27 21 29
IFS 24-PORT GIGABIT MANAGED SWITCH

GE-DSG / DSSG SERIES
ENGINEERING SPECIFICATIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. GE-DSG / DSSG Series 24 Port Gigabit Managed Switch, with optional stacking and/or PoE.

1.02 SECTION INCLUDES

- A. **IFS GE-DSG-244:** 24-Port 10/100/1000Mbps with 4 Shared Gigabit SFP Managed Switch – Standalone
- B. **IFS GE-DSSG-244:** 24 Gigabit SFP slots with 4 shared 10/100/1000Base-T Managed Stackable Fiber Switch
- C. **IFS GE-DSSG-244-PoE:** 24-Port Gigabit + 4 Gigabit SFP Managed Stackable Switch with PoE

1.03 REFERENCES

- A. Underwriters Laboratory (UL)
- B. Underwriters Laboratory Canada (ULC)
- C. European Union Compliance (CE)

1.04 SYSTEM DESCRIPTION

- A. The IFS GE-DSG and GE-DSSG Series Layer 2 Managed Gigabit Ethernet Switch provides 24 Gigabit ports with 4 shared mini-GBIC SFP combination ports.
- B. The IFS GE-DSSG-244 and GE-DSSG-244-PoE are equipped with 2 dedicated High-Speed HDMI-like interfaces for stacking management. Up to 16 IFS GE-DSSG series switches can be stacked to have 384 Gigabit ports managed via one IP address.
- C. The PoE in-line power is compliant with the IEEE 802.3af standard providing 15.4W per port that can power 24 PoE compliant devices at a distance up to 100 meters through the 4-pair Cat 5/5e UTP wire
- D. The Gigabit TP / SFP combo ports can be either 10 / 100 / 1000Mbps on TP ports or 1000Base-SX / LX only through the SFP (Small Form-Factor Pluggable) interface.
1. The SFP module shall utilize **850nm** optics capable of bi-directional data transmission of **1000Base-SX** on two multimode optical fibers.
 2. The SFP module shall utilize **1310nm** optics capable of bi-directional data transmission of **1000Base-LX** on two single-mode optical fibers.
 3. The SFP module shall utilize **1310nm/1490nm or 1310nm/1550nm** optics capable of bi-directional data transmission of **1000Base-BX** on one single-mode optical fiber.
 4. The SFP module shall utilize **1310nm** optics capable of bi-directional data transmission of

100Base-FX on multimode or single-mode optical fibers.

1.05 SUBMITTALS

- A. Manufacturer's Quick Installation Guide and Operating Manual: Printed installation guide and operating information for the Gigabit Managed Switch.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Store in original packaging in a climate controlled environment. Storage Temperature not to exceed: -20° C to +70° C
- B. Deliver materials in unopened factory packaging with Manufacturer's bar coding to the job site.
- C. Inspect product upon delivery to assure that specified products have been received.

1.07 PROJECT/SITE CONDITIONS

- A. Temperature Requirements: Products shall operate in an environment with an ambient temperature range of 0° C to +50° C with the assistance of fan-forced cooling.
- B. Humidity Requirements: Products shall operate in an environment with relative humidity of 10% to 90% (non-condensing).

1.08 WARRANTY

- A. UTCFS Return and Warranty Policy: UTCFS warrants the product to be free of factory defects for period of 3 years.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Acceptable Manufacturer:
1. IFS Brand
UTC Fire & Security, Inc.
8985 Town Center Parkway
Bradenton, FL 34202-5129
 2. Phone 1-855-286-8889
 3. Email: presales@interlogix.com
 4. Substitutions: Not Permitted
 5. All fiber optic modules shall be supplied from a single manufacturer.

2.02 MANUFACTURED UNITS

- A. Model Number Descriptions: Reference Table A: Product Number Descriptions
- B. Model Compatibility Chart: Reference Table B: Product Compatibility Chart

2.03 GENERAL SPECIFICATIONS

- A. The 24-Port Gigabit Managed Ethernet switch shall be an IFS GE-DSG or GE-DSSG Series model.
- B. The switch shall comply with IEEE 802.3, 802.3u, 802.3ab and 802.3z Ethernet standard.
- C. The switch shall support the Ethernet data IEEE 802.3 protocol using Auto-negotiating and Auto-MDI/MDI-X features.
- D. The switch shall support the transmission of 100 Mbps over a multimode or single-mode fiber.
- E. The switch shall support the transmission of 1000 Mbps over a multimode or single-mode fiber.

- F. The switch shall provide a RS-232 serial connection for local management of the device.
- G. The switch shall be a 1U (1.75 inches) 19-inch rack mountable equipment that can be installed in standard cabinet or 19-inch rack.
- H. The switch shall be connected with EIA568A/B Cat 5/5e/6 UTP/STP cable system for its RJ-45 interface ports.
- I. The IFS **GE-DSG-244**:
 - 1. The switch shall feature 24 fixed 10/100/1000T electrical ports.
 - 2. The switch shall feature four shared 100/1000SX/LX optical SFP ports.
 - 3. The switch shall provide power, link speed and fiber port status indicating LED's for monitoring proper system operation.
- J. The IFS **GE-DSSG-244**:
 - 1. The switch shall feature 8 shared 10/100/1000T electrical ports.
 - 2. The switch shall feature 24 fixed 100/1000 SX/LX optical SFP ports.
 - 3. The switch shall feature 2 dedicated 5Gbps stacking interface with HDMI connector.
 - 4. The switch shall provide power, Stack group master, Stacking interfaces, link speed and fiber port status indicating LED's for monitoring proper system operation.
- K. The IFS **GE-DSSG-244-PoE**:
 - 1. The switch shall feature 24 fixed 10/100/1000T electrical ports.
 - 2. The switch shall feature four shared 100/1000SX/LX optical SFP ports.
 - 3. The switch features 2 dedicated 5Gbps stacking interface with HDMI connector.
 - 4. The switch shall comply with IEEE 802.3af Power over Ethernet.
 - 5. The switch shall support IEEE802.3af Power over Ethernet detection and 48VDC power injection at port#1 to port#24.
 - 6. The switch shall transmit DC Voltage to the Cat5/5e cable and transfer data and power simultaneously to remote PD (Powered Device) equipments.
 - 7. The switch shall Auto-detect of PoE IEEE 802.3af equipment; protect devices from being damaged by incorrect installation.
 - 8. The switch shall support a total distance up to 100 meters on each PoE port.
 - 9. The switch shall provide power, Stack group master, Stacking interfaces, FAN alert, link active, PoE In-use and fiber port status indicating LED's for monitoring proper system operation.

2.04 DATA SPECIFICATIONS

- A. Data Interface: Ethernet IEEE802.3/3u/3ab/3z
- B. Data Rate:
 - 1. GE-DSG-244 Port-1 to Port-24 TP: 10/100/1000 Mbps

- 2. GE-DSG-244 Port-21 to Port-24 SFP: 100/1000 Mbps
- 3. GE-DSSG-244 Port-1 to Port-24 SFP: 100/1000 Mbps
- 4. GE-DSSG-244 Port-1 to Port-8 TP: 10/100/1000 Mbps
- 5. GE-DSG-244-PoE Port-1 to Port-24 TP: 10/100/1000 Mbps
- 6. GE-DSG-244-PoE Port-21 to Port-24 SFP: 100/1000 Mbps

C. Data Inputs: 24

D. Operation Mode: Half Duplex or Duplex

2.05 OPTICAL SPECIFICATIONS

- A. IFS Model Number GE-DSG / DSSG series Managed Gigabit Switch:
 - 1. Optical Interface: 3.3V SFP (Small Form-Factor Pluggable) slot
 - 2. Number of SFP Optical ports:2
 - 3. Optical Fiber:
 - 62.5/125 micron multimode
 - 9/125 micron single-mode
 - 4. Number of Fibers Required: 1 or 2, based on SFP module
 - 5. Optical Wavelength:
 - 100FX multimode: 1300/1310nm
 - 100FX single-mode: 1310nm
 - 1000SX multimode: 850nm
 - 1000LX single-mode: 1310nm
 - 6. Optical Power Budget: vary on SFP module
 - 7. Maximum Distance: 74.56 miles (120km)

2.06 STATUS INDICATORS

A. IFS GE-DSG-244

System:

- 1. PWR Green The switch unit is on 10/100/1000Base-T
- 1. 1000 Green Illuminates to indicate the link through that port is successfully established with speed 1000Mbps
LNK/ ACT Blinks to indicate that the switch is actively sending or receiving data over that port.
Off: If 10/100 LNK/ACT LED illuminates, it indicate that the port is operating at 10Mbps or 100Mbps
If 10/100 LNK/ACT LED is off, indicates that the port is link down
- 2. 10/100 Orange Illuminates to indicate the link through that port is successfully established with speed 10Mbps or 100Mbps
LNK/ ACT Blinks to indicate that the switch is actively sending or receiving data over that port.
If 1000 LNK/ACT LED illuminates, it indicates that the port is operating at 1000Mbps
If 1000 LNK/ACT LED is off,

it indicates that the port link is down

SFP (Port-21 to Port-24)

- 1. LNK/A Green CT Illuminates to indicate that the link through that port is successfully established. Blinks to indicate that the switch is actively sending or receiving data over that port.

B. IFS GE-DSSG-244

System:

- 1. PWR Green The switch unit is on
- 2. Master Green Illuminates to indicate that the Switch is the Master of the stack group
- 3. STX1 Green Illuminates to indicate that the stacking link through that port is successfully established.
- 4. STX2 Green Illuminates to indicate that the stacking link through that port is successfully established.

10/100/1000Base-T and SFP

- 1. 1000 LNK/ACT Green Illuminates to indicate that the link through that port is successfully established with speed 1000Mbps Blinks to indicate that the switch is actively sending or receiving data over that port. 10/100 LNK/ACT LED light indicates that the port is operating at 10Mbps or 100Mbps If LNK/ACT LED is off, it indicates that the port link is down
- 2. 10/100 LNK/ACT Green Illuminates to indicate the link through that port is successfully established with 10Mbps or 100Mbps speed. Blinks to indicate that the switch is actively sending or receiving data over that port. 1000 LNK/ACT LED indicates that the port is operating at 1000Mbps If 1000 LNK/ACT LED is off, it indicates that the port link is down

C. IFS GE-DSSG-244-PoE

System:

- 1. PWR Green The switch unit is on
- 2. Master Green Illuminates to indicate that the Switch is the Master of the stack group
- 3. STX1 Green Illuminates to indicate that the stacking link through that port is successfully established.

- 4. STX2 Green Illuminates to indicate that the stacking link through that port is successfully established.

Alert:

- 1. PWR Alert Green Illuminates to indicate that the power supply failure
- 2. FAN1 Alert Green Illuminates to indicate that the FAN1 failure
- 3. FAN2 Alert Green Illuminates to indicate that the FAN2 failure
- 4. FAN3 Alert Green Illuminates to indicate that the FAN3 failure

10/100/1000Base-T

- 1. 10/100/1000 LNK/ACT Green Illuminates to indicate that the link through that port is successfully established with speed 10Mbps or 100Mbps or 1000Mbps Blinks to indicate that the switch is actively sending or receiving data over that port. Off: If L10/100 NK/ACT LED illuminates, it indicates that the port is operating at 10Mbps or 100Mbps If LNK/ACT LED is off, it indicates that the port is link down
- 2. PoE In-Use Orange Lights to indicate the port is providing 48VDC in-line power Off: Indicates that the connected device is not a PoE Powered Device (PD)

SFP (Port-21 to Port-24)

- 1. LNK/A Green CT Lit: Indicates that the link through that port is successfully established. Blinks to indicate that the switch is actively sending or receiving data over that port.

2.07 CONNECTORS

- A. Optical: SFP slot
- B. Power: Universal AC socket
- C. Data: RJ-45
- D. Console: DB9 Type RS-232 serial com.
- E. Stacking: HDMI connector

2.08 ELECTRICAL SPECIFICATIONS

- A. Power Characteristics of IFS **GE-DSG-244**:
 - 1. Voltage Input:100~240V AC / 50-60Hz
 - 2. Current: 0.6A max.
 - 3. Power Consumption: Maximum 31Watts
- B. Power Characteristics of GE-DSSG-244:
 - 4. Voltage Input:100~240V AC / 50-60Hz
 - 5. Current: 0.6A max.
 - 6. Power Consumption: Maximum 46Watts
- C. Power Characteristics of **GE-DSSG-244-PoE**:
 - 7. Voltage Input:100~240V AC / 50-60Hz
 - 8. Current: 3.0A max.

9. Power Consumption: Maximum 290Watts with PoE full load
- D. PoE Output Power of IFS **GE-DSSG-244-PoE**:
 1. PoE output budget: 220Watts
 2. IEEE 802.3af class 3 (15.4W): Max. 14 ports
 3. IEEE 802.3af class 2 (7W): Max. 24 ports

2.09 MECHANICAL SPECIFICATIONS

- A. Surface Mount Dimensions of IFS **GE-DSG-244**: 17.32" x 7.87" x 1.75", 1U height
- B. Surface Mount Dimensions of IFS **GE-DSSG-244**: 17.32" x 7.87" x 1.75", 1U height
- C. Surface Mount Dimensions of IFS **GE-DSSG-244-PoE**: 17.32" x 11.81" x 1.75", 1U height
- D. Finish: Module shall be constructed of a metal enclosure with a powder coat.
- E. Weight of IFS **GE-DSG-244**: <7.87 lbs
- F. Weight of IFS **GE-DSSG-244**: <6.61 lbs
- G. Weight of IFS **GE-DSG-244**: <9.92 lbs

2.10 ENVIRONMENTAL SPECIFICATIONS

- A. MTBF: > 50,000 Hours
- B. Operating Temp: 0° C to +50° C
- C. Storage Temp: -20° C to +70° C
- D. Relative Humidity: 10% to 90% (non-condensing).

2.11 REGULATORY AGENCIES/APPROVALS AND LISTINGS

- A. Underwriters Laboratory (UL) Listing Number: I.T.E. 6D16
- B. Underwriters Laboratory Canada (ULC) Listing Number: I.T.E. 6D16
- C. Federal Communications Commission (FCC) Part 15, Class A
- D. European Union Compliance (CE) with following standard:
 1. EN 55022:2006, Class A
 2. EN61000-3-2:2006
 3. EN61000-3-3+A2:2005
 4. EN 55024+A2:2003

2.12 ACCESSORIES

- A. AC Power cord
- B. Rubber feet
- C. Rack-mount brackets
- D. RS-232 DB9 male console cable
- E. 30cm Stacking cable (GE-DSSG-244 and GE-DSSG-244-PoE)

PART 3 - EXECUTION

3.01 PREPARATION

- A. Standalone Module (Surface Mount)
 1. Shall be mounted on a properly prepared surface adequate for the size and weight of module.
 2. The placement of the unit shall allow provision for cable installation and maintenance as indicated on the approved detail drawings and in compliance with the installation manual.
- B. Rack Mount Module (19" Rack)
 1. The unit is installed in a standard EIA 19" (482.6 mm) rack or wall standoff bracket

adequate for the size and weight of the rack mount unit. The placement of the unit shall allow provision for cable installation and maintenance as indicated on the approved detail drawings and in compliance with the user's manual.

C. Optical Fibers

1. Caution: NEVER look into the end of an active optical fiber when using laser light output. Eye damage can occur. Wear eye protection when cleaving, terminating, and splicing fiber.
2. The number of optical fiber SFP slot shall meet the requirements of the IFS model number.
3. All optical fiber cables shall be properly installed and terminated with the mating optical connectors.
4. The optical link shall be tested with either a power meter, at a minimum, or OTDR to ensure the link budget (overall path loss) plus an added 3dB of optical safety margin does not exceed the optical power budget.

3.02 INSTALLATION

- A. General: Locate fiber optic modules as indicated on the approved detail drawings and install module in compliance with the IFS User's manual.

3.03 TESTING

- A. Testing the Fiber Optic Ethernet Link.
 1. Verify that the data leads and optical fibers are properly connected.
 2. Make sure that power is applied to all fiber optic modules, controllers, and receiver drivers or other equipment used in the system.
 3. Successful data link operation should be confirmed at this point by communicating with other equipment.
- B. Testing the 10/100/1000T Fast Ethernet and Gigabit Copper Link.
 1. Verify that the data leads and UTP ports are properly connected.
 2. Successful data link operation should be confirmed at this point by communicating with other equipment.
- C. IFS GE-DSSG-244-PoE Power over Ethernet Testing:
 1. Testing the 10/100/1000T PoE Copper output capability.
 2. Make sure that power is applied to the PoE switch.

3.04 CLEANING

- A. Follow all instructions for proper use of solvents and adhesives used for termination and splicing.
- B. At completion of the installation, dispose of all fiber scraps properly.

MANUFACTURED UNITS REFERENCE TABLES

Table A: Product Number Descriptions

IFS PART NO.	DESCRIPTION	MAX. DISTANCE*
GE-DSG-244	24-Port 10/100/1000Mbps with 4 Shared SFP Managed Switch	Varies with SFP module
GE-DSSG-244	24 Gigabit SFP slots with 4 shared 10/100/1000Base-T Managed Stackable Fiber Switch	Varies with SFP module
GE-DSSG-244-PoE	24-Port Gigabit + 4 Gigabit SFP PoE Managed Stackable Switch	Varies with SFP module

* Maximum distance is limited to optical loss of the fiber and any additional loss by connectors, splices and patch panels.

Table B: Product Compatibility Chart

IFS GigE Ethernet Switches	COMPATIBLE EQUIPMENT
GE-DSG-244	IEEE 802.3u standard TX and FX base for 10/100TX and 100FX protocol
GE-DSSG-244	
GE-DSSG-244-PoE	IEEE 802.3ab standard copper base for 1000Base-T protocol IEEE 802.3z standard fiber base for 1000Base-SX/LX IEEE 802.3af Power over Ethernet

END OF SECTION
