Overview

GE's Industrial Fast Ethernet Managed Switch Series is now IFS. The IFS Industrial Hardened Managed Switch Series is equipped with seven 10/100Mbps Fast Ethernet ports with three GigE uplink TP/SFP combo ports (two for drop and insert functionality and a third for uplinking to a backbone) or eight 10/100Mbps Fast Ethernet ports with two GigE uplink TP/SFP Combo ports. The 8+2 configuration is also available in a PoE version. These are fully managed Layer 2+ switches providing a robust industrial hardened design that provides for rapid operational recovery in the event of a network or power system failure.

Layer 2+ Managed Switch

The IFS Industrial Hardened Managed Switch Series supports advanced features including IEEE 802.1Q VLAN, GVRP, port link aggregation, QoS, broadcast storm control and MAC address filtering. The series also includes IGMP snooping and querying multicasting for media operations and bandwidth utilization to fit a variety of applications. Via aggregation of supporting ports, the series allows the operation of high-speed trunk operation combining multiple ports. A maximum of four ports can be assigned for four trunk groups and support fail-over as well. Additionally, its standards-compliant implementation ensures interoperability with equipment from other vendors.

Industrial-grade Network Redundancy and Recovery

These switches not only incorporate the industry standard Rapid Spanning Tree Protocol (IEEE 802.1w RSTP), but also an advanced Industrial Fail-Safe (IFS) technology accommodating multiple redundant ring topologies and improved network recovery time of less than 20ms. The switches incorporate a redundant power supply system to further enhance network reliability and uptime. Ideal for use in implementing highly fault-tolerant ring and mesh network architectures, these switches are well suited for harsh environments such as industrial security, factory automation and intelligent transportation systems (ITS).

Robust Hardened Design

With an IP-30 rated enclosure, IFS Industrial Fast Ethernet Managed Switches provide a high level of immunity against electromagnetic (EMI) and radio-frequency (RFI) interference typically found in industrial environments. This series of switches comply with IEC60068-2-xx standards for free-fall, shock, and vibration and operate in -40° C to 75° C temperatures found in difficult environments such as plant floors or in curbside traffic control cabinets.

GE-DSH-82/73 Series Industrial Fast Ethernet Managed Switches

8+2 Industrial Fast Ethernet Managed Switch

8+2 Industrial Fast Ethernet Managed PoE Switch

7+3 Industrial Fast Ethernet Managed Switch

Standard Features

Physical Ports
- Auto MDI/MDI-X
- Auto-negotiation
- 1 RJ-45 console port

GE-DSH-82
- 8-port 10/100Base-TX + 2 TP/SFP GigE Combo Ports

GE-DSH-82-PoE
- 8-port 10/100Base-TX with PoE + 2 TP/SFP GigE Combo Ports

GE-DSH-73
- 7-port 10/100Base-TX + 3 TP/SFP GigE Combo Ports

Switch Architecture
- Complies with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z standards
- Store-and-forward switching architecture, broadcast storm control and runt/CRC filtering optimize network bandwidth by eliminating erroneous packets
- High performance non-blocking switch fabric (5.6 or 7.4Gbps)
- Back pressure (half-duplex) and IEEE 802.3x PAUSE frame-flow control (full-duplex) to prevent packet loss

Layer 2+ Features
- **Multicasting** (IGMP Snooping v1 and v2 with IGMP Query mode for Multicast Media applications)
- **Quality of Service** (4 priority queues on all switch ports; Traffic classification by: Port-Based priority, IEEE 802.1p Class of Service, IP TOS (Type of Service) priority); Supports strict priority and Weighted Round Robin (WRR) policies; Ingress/Egress Bandwidth control on each port)
- **Supports Spanning Tree Protocol** (STP, IEEE 802.1D Spanning Tree Protocol; RSTP, IEEE 802.1w Rapid Spanning Tree Protocol)
- **Supports VLANs** (IEEE 802.1Q Tagged based VLAN; Port-Based VLAN; GVRP; Up to 9 VLANs groups, out of 4K VLAN IDs)
- **Supports Link Aggregation** (Up to 4 Trunk groups; Up to 4 ports per trunk group with 800Mbps bandwidth (Full Duplex mode); IEEE 802.3ad LACP (Link Aggregation Control Protocol); Cisco ether-Channel (Static Trunk))

Industry Fail-Safe (IFS) Ring Technology
- Rapid Ring, Dual Homing and Couple Ring Topologies
- Provides redundant backup feature and recovery time of less than 20ms

Power over Ethernet (GE-DSH-82-PoE Model Only)
- Complies with IEEE 802.3af Standard
- Provides full-power (15.4W) PoE on each port - no port sharing
- Auto-detects PoE powered devices (PD)
- Power feeding On/Off and priority configuration
- LED PoE Status Monitoring

Robust Hardened Design
- Slim IP-30 metal case for protection
- Provides either DIN-rail or wall-mounting
- 12 to 48 VDC, redundant power with reverse-polarity protection
- Removable terminal block for master and slave power
- Alarm relay output for port breakdown and power-failure alert
- Voltage/surge-suppression
  - EFT 3000VDC protection for power lines
  - ESD 4000VDC or 6000VDC protection for Ethernet
- Complies with IEC60068-2-xx standards for free-fall, shock and vibration
- Wide operating temperature range of -40° C to +75° C

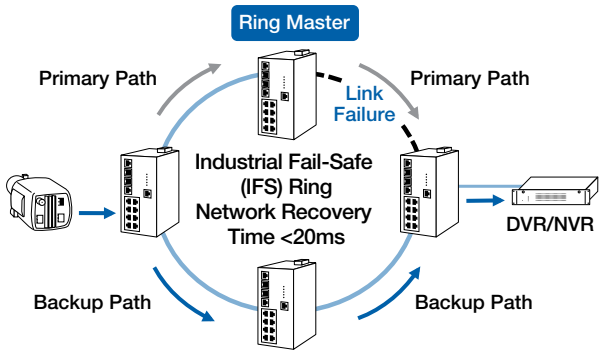
Advanced Security
- IEEE 802.1x Port-Based Authentication
- MAC address Filtering and MAC address Binding
- IP address security management to prevent unauthorized intruder
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

Management
- Web-based, Telnet, Console Command Line management
- Access through SNMP v1, v2c and v3 set and get requests
- SNMP Trap / SMTP email for remote notification of events
- System Log Server / Client
- Configuration backup / restore
- TFTP firmware upgrade
- Supports LLDP to allow switch to advise its identification and capability on the LAN

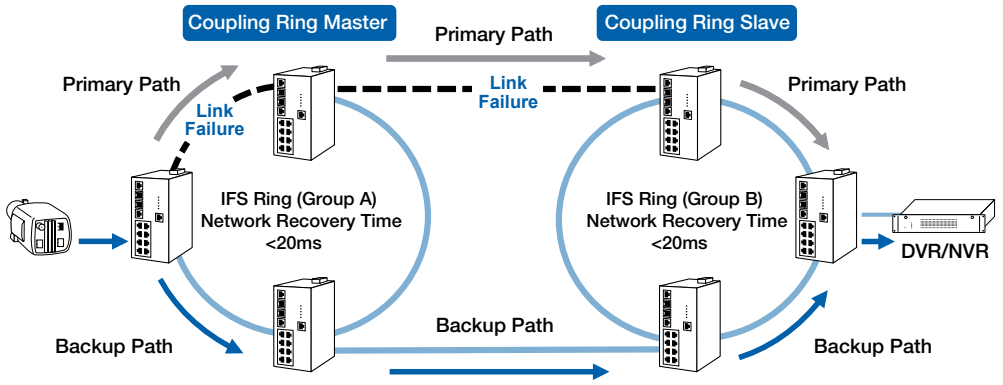
Warranty
- 3-year limited warranty

Application Diagrams

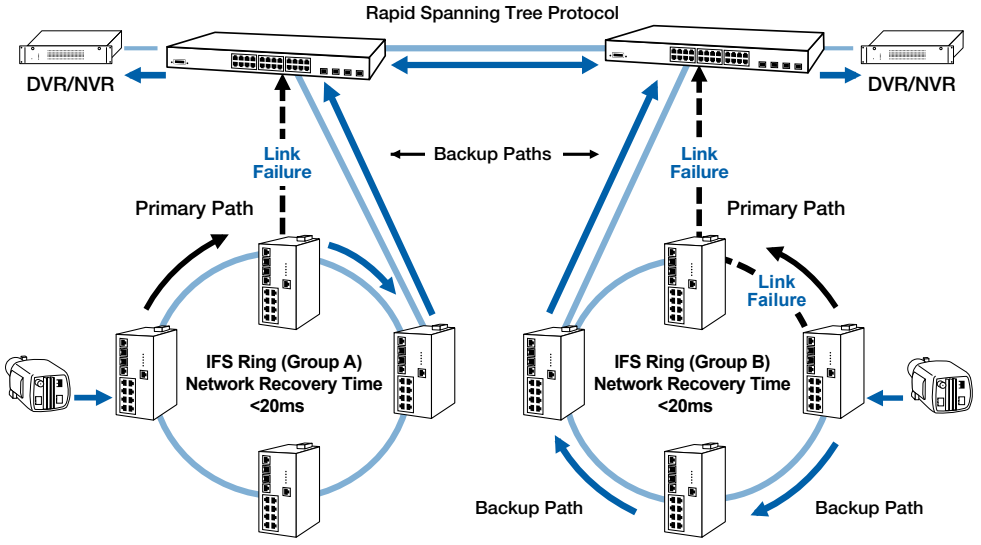
GE-DSH-82/GE-DSH-82-PoE
Self-healing Ring Topology – 2 physical routes at the edge



GE-DSH-73
Dual Redundant Ring Topology - 4 physical pathways (high fault-tolerant ring)



GE-DSH-73
Dual Redundant Network Architecture - 4 physical pathways to network backbone



Industrial Fast Ethernet Managed Switch Specifications

	Part No.	GE-DSH-82	GE-DSH-82-PoE	GE-DSH-73
	Description			
Physical Ports	10/100Base-T(x) Ports	RJ-45 (8)	RJ-45 (8)	RJ-45 (7)
	GigE Combo Uplink Ports	RJ-45 (Ports 9 and 10): 10/100/1000Mbps SFP/Mini-GBIC Slots (Shared with Ports 9 and 10): 100/1000Base-SX/LX	RJ-45 (Ports 9 and 10): 10/100/1000Mbps SFP/Mini-GBIC Slots (Shared with Ports 9 and 10): 100/1000Base-SX/LX	RJ-45 (Ports 7, 9 and 10): 10/100/1000Mbps SFP/Mini-GBIC Slots (Shared with Ports 7, 9 and 10): 100/1000Base-SX/LX
	Port Configuration	Auto MDI/MDI-X		
	Port Speed	Auto-negotiate		
	Electro Static Discharge (ESD) Protection	4KV DC	6KV DC	6KV DC
	Console Port	RJ-45 (1)	RJ-45 (1)	RJ-45 (1)
	Digital Inputs/ Digital Outputs			6-pin removable screw terminal 2 Digital Input (DI): Level 0: -30~2V Level 1: 10~30V Max. input current: 8mA 2 Digital Output (DO): Open collector to 40VDC, 200mA
Switch Performance	Switch Architecture	Store-and-Forward	Store-and-Forward	Store-and-Forward
	Switch Fabric	5.6Gbps/non-blocking	5.6Gbps/non-blocking	7.4Gbps/non-blocking
	Throughput (Packet per second)	4.16Mpps @64Bytes	4.16Mpps @64Bytes	5.5Mpps @64Bytes
	Address Table	8K entries	8K entries	8K entries
	Share Data Buffer	1Mbit	1Mbit	1Mbit
	Maximum Frame Size	1522 Bytes packet	1522 Bytes packet	1522 Bytes packet
	Flow Control	Back pressure for Half-Duplex IEEE 802.3x Pause Frame for Full-Duplex	Back pressure for Half-Duplex IEEE 802.3x Pause Frame for Full-Duplex	Back pressure for Half-Duplex IEEE 802.3x Pause Frame for Full-Duplex
Layer 2+	Port Configuration	Port disable/enable, Auto-negotiation 10/100Mbps full and half-duplex mode selection, Flow control disable/enable and bandwidth control on each port		
	Port Status	Display each port's speed Auto negotiation status, duplex mode, link status, Flow control status		
	Bandwidth Control	Bandwidth control per port: Ingress: 500Kb~80Mbps, Egress: 64Kb~80Mbps		
	Spanning Tree	IEEE 802.1d Spanning Tree, IEEE 802.1w Rapid Spanning Tree		
	VLAN	Port-Based VLAN, up to 9 VLAN groups IEEE 802.1q Tagged Based VLAN , 4K VLAN ID, up to 256 VLAN groups		
	Multicast	IGMP Snooping v1 and v2 Query mode 256 Multicast groups		
	QoS	Traffic classification based on : • Port Number • 802.1Q Tag • 802.1p priority • IP DSCP/TOS field in IP Packet		
	Port Mirroring	RX / TX / Both		
	Security	Support 100 entries of MAC address for static MAC and another 100 for MAC filter Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder		
	SNMP MIBs	RFC-1213 MIB-II RFC-2863 Interface MIB RFC-1493 Bridge MIB RFC-2819 RMON MIB (Group 1, 2, 3, 9) RFC-2674 Extended Bridge MIB (Q-Bridge) Private MIB		
	Link Aggregation	Static Port Trunk, IEEE 802.3ad LACP (Link Aggregation Control Protocol), Supports 4 groups of 4-Port trunk		
	Management Interface	Console, Telnet, Web Browser, SNMP v1, v2c and v3		
Power over Ethernet (PoE)	IEEE PoE Standard		IEEE 802.3af PSE (Power Sourcing Equipment)	
	Maximum Devices		8	
	Output Power (per-port)		48VDC Max. @ 350mA 15.4 watts	
	PoE Pin Assignment		1/2(+), 3/6(-)	

Industrial Fast Ethernet Managed Switch Specifications

	PART NO.	GE-DSH-82	GE-DSH-82-PoE	GE-DSH-73
	Description			
LED Status Indicators	Power (3)	System Power: On/Green; Power 1: Active /Green; Power 2: Active/Green		
	Power/Port Fault (1)	Failure/Red		
	IFS Ring - Master (1)	Active/Green		
	10/100Mbps Ports	Green LED: Steady/LNK; Blinking/ACT; Off/No device attached Amber LED: Steady/Full-duplex; Blinking/Packet Collision; Off/Half-duplex or no device attached		
	RJ-45 GigE Uplink Ports	Green LED: Steady/LNK; Blinking/ACT; Off/No device attached Green LED: On/1000Mbs, Off/10/100Mbps		
	SFP GigE Uplink Ports	Green LED: Steady/LNK; Blinking/ACT; Off/No device attached		
	PoE (8)		Green LED: IEEE802.3af device detected Off/ No IEEE802.3af device attached	
Electrical & Mechanical	Power Input 1 (Primary Power)	12-48VDC	48VDC	12-48VDC
	Power Input 2 (Redundant Power)	12-48VDC	48VDC	12-48VDC
	Electrical Fast Transient (EFT) Protection	3KV DC	3KV DC	3KV DC
	Power and Alarm Fault Connector	6-pin removable screw terminal	6-pin removable screw terminal	6-pin removable screw terminal
	Alarm Fault Relay	30VDC - 3A max.	30VDC - 3A max.	30VDC - 3A max.
	Enclosure	IP-30 Metal Case	IP-30 Metal Case	IP-30 Metal Case
	Mounting	DIN-rail or wall-mount	DIN-rail or wall-mount	DIN-rail or wall-mount
	Dimensions (in/cm) (W x D x H)	2.83 x 4.18 x 5.98 in. (72 x 106.20 x 152 mm)	2.83 x 4.18 x 5.98 in. (72 x 106.20 x 152 mm)	2.83 x 4.18 x 5.98 in. (72 x 106.20 x 152 mm)
	Weight (lbs/kg)	2.1 lbs., 954g	2.2 lbs., 993g	2.2 lbs., 998g
Environ-mental	Operating Temperature	-40°C ~ -75°C		
	Storage Temperature	-40°C ~ -85°C		
	Relative Humidity	Relative Humidity 5%~95% (non-condensing)		
Standards Compliance	Regulatory Standards	FCC Part 15 Class A, CE		
	IEEE/RFC Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100Base-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x Flow Control and Back Pressure IEEE 802.1d Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.3af Power over Ethernet (GE-DSH-82-PoE) RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP Version 1 RFC 2236 IGMP Version 2		
	IEC Standards	IEC60068-2-32 (Free fall) IEC60068-2-27 (Shock) IEC60068-2-6 (Vibration)		

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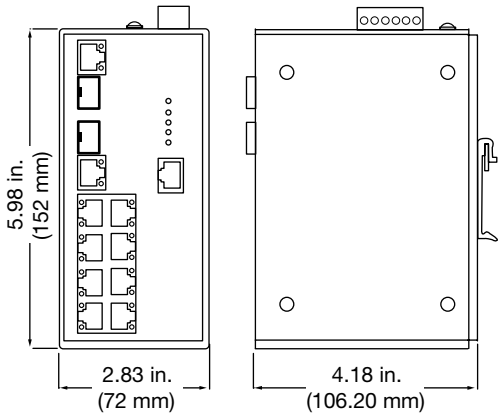
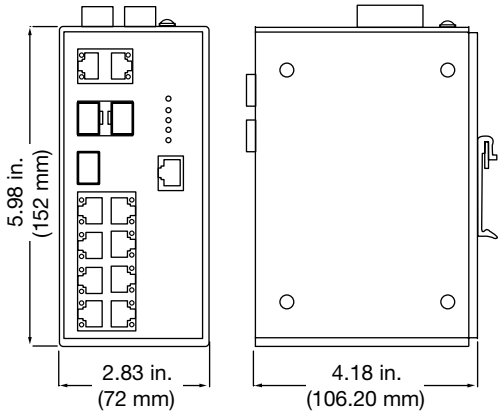
Specifications subject to change without notice.

Dimensional Diagrams



GE-DSH-82/GE-DSH-82-P0E



GE-DSH-73

Ordering Information

GE-DSH-82	8-port 10/100 Mbps + 2-port GigE (TP/SFP) Industrial Ethernet Managed Switch (Wide Operating Temp. -40~75°C)
GE-DSH-82-PoE	8-port 10/100 Mbps + 2-port GigE (TP/SFP) Industrial Ethernet Managed PoE Switch (Wide Operating Temp. -40~75°C)
GE-DSH-73	7-port 10/100 Mbps + 3-port GigE (TP/SFP) Industrial Ethernet Managed Switch (Wide Operating Temp. -40~75°C)

Note: External power supply must be purchased separately.

Security Products by GE are now part of the UTC Fire & Security family

UTC Fire & Security
A United Technologies Company

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