INDUSTRIAL MANAGED ETHERNET SWITHCES

LARSEN & TOUBRO

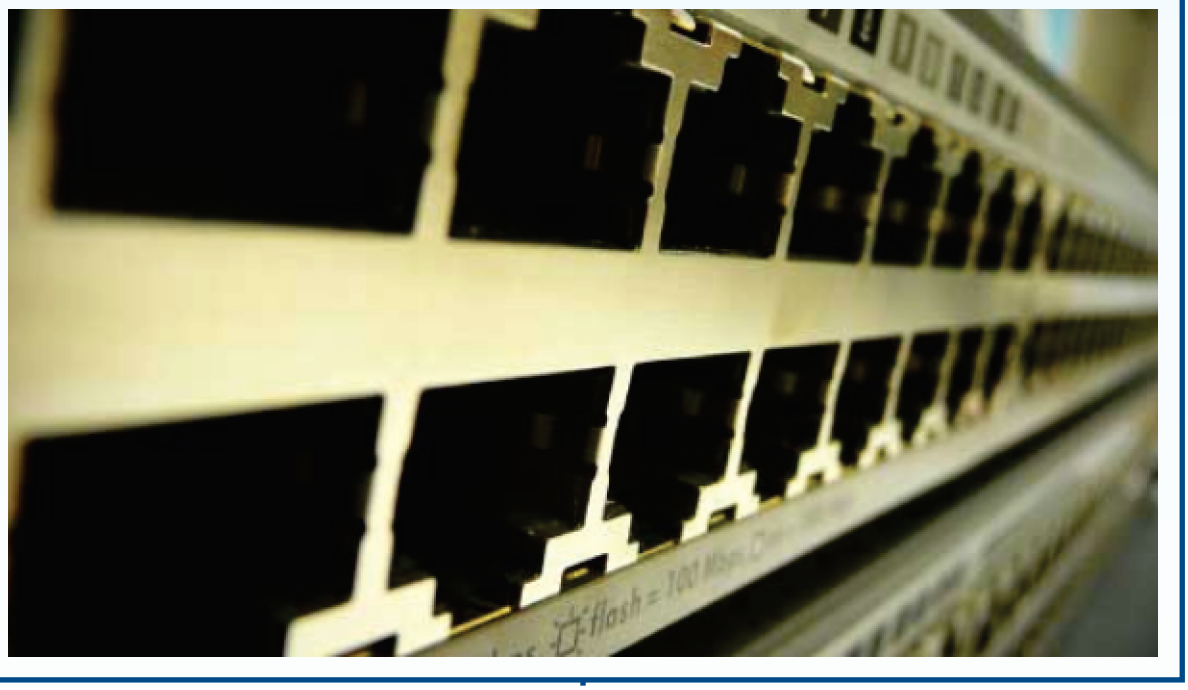
Larsen & Toubro (L&T) is India's leading engineering construction & manufacturing organization, a technology - driven company that infuses engineering with imagination.

L&T's Electrical & Automation group offers a wide range of advance solution through its state-of-the-art products and systems. Backed by world class in-house capabilities in technology development & customer support, L&T's products and systems are geared to offer complete customer satisfaction.

With several years of Industry experience, we, as in L&T's 'Relays & Integration Solutions (R&IS)' provide optimum systems for networking with its wide modular range of Industrial Managed Ethernet Switches which are in-turn scalable to address diverse needs of establishing data communication & interface.

"Modular range of Ethernet Switches"

LT XX SERIES
INDUSTRIAL GRADE MANAGED ETHERNET SWITCHES



LT 2X Series

- LT 20GF
- LT 20G

- LT 22GF

- LT 26G
- LT 24G

- LT 28G

LT 1X Series

- LT 10G

LT XX series of Managed Ethernet switches are available in 2 wide ranges, namely LT 2X series which are further available in models of LT 20GF, LT 20G, LT 22GF, LT26G, LT24G & LT28G and LT 1X series available in LT10G model having different combinations of RJ45 and Fibre optic/SFP ports.

LT2X series of Industrial Managed Ethernet Switches are IEC 61850 compliant and come with variations in modular design. The switches in these series have dual power supplies which help in handling power failure and in-turn protect mission-critical applications from network interruptions or temporary malfunctions to restore connectivity using its fast recovery technology. It helps users to expand their industrial network fast and cost-effectively, while the rugged industrial-grade design assures reliability and stability.

LT1X series of Industrial Managed Ethernet Switches is an intelligent range of managed Gigabit Ethernet Switches which

LT28G

28 PORT IEC61850 MODULAR PLATFORM

- Rack mount design
- IEC 61850 complaint
- 24 + 4G gigabit modular switch
- 4 x 10G copper / fibre ports
- Dual power supply

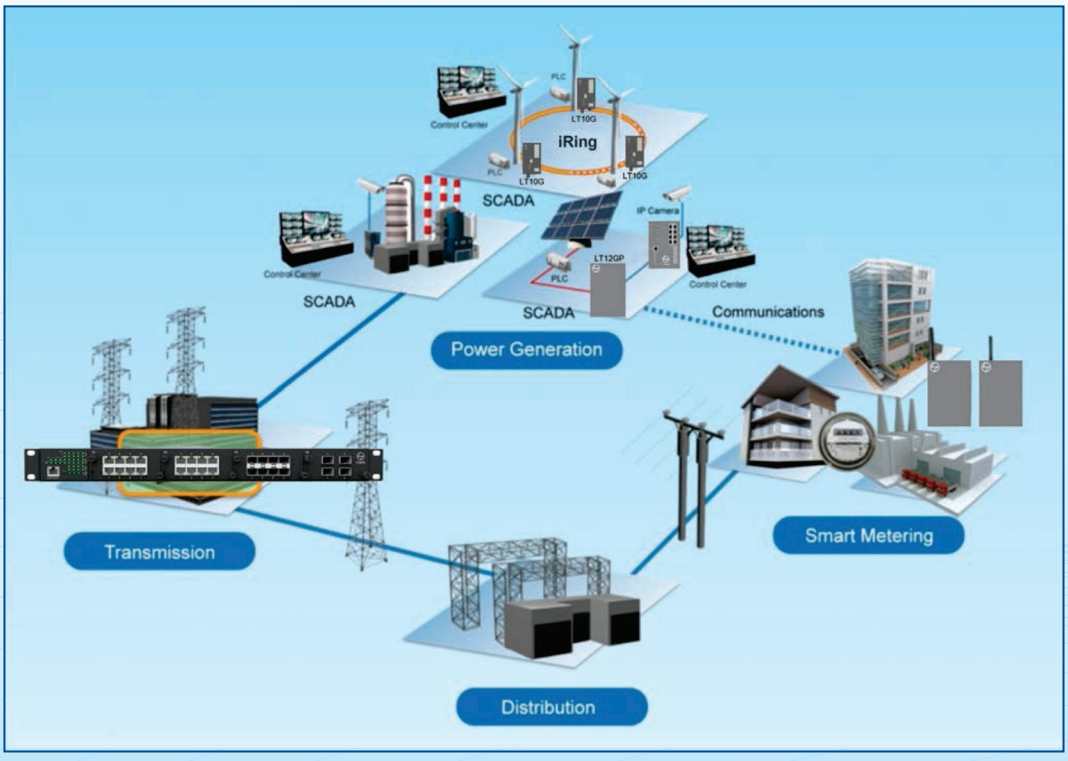
5 YEAR WARRANTY

IEC 61850 Complaint | 128 BIT ENCRYPTION | KEMA | RoHS Compliant | CE | FC

LT28TG is a highly redundant and scalable Layer-3 managed Gigabit Ethernet switch with 4 modular slots. Designed to withstand the harshest environments of Transmission and Distribution substations and rolling stock applications. The LT28TG is fully compliant with industry standards such as IEC 61850, IEEE 1613, and EN50155, with an operating temperature from -40 to +85 degrees Cel. and redundancy support through functions like iRing and STP/RSTP/MSTP assuring protection of all mission critical network applications.

LT28TG can also be managed conveniently via the iManage Software Suite, Telnet, and console (CLI) configuration.

- **IP-based Bandwidth Management:** The switch provides advanced IP-based bandwidth management limiting maximum bandwidth for each IP device. Users can configure an IP camera and NVR with dedicated bandwidth and limit the bandwidth of other devices.
- **Application-Based QoS:** The switch also supports application-based QoS. Application-based QoS can be set with the highest priority for data streaming according to TCP/UDP port number.
- **Device Link Function:** The special Device Link function permits only allowed IP addresses with a MAC address to access the network preventing unauthorized access to the network.
- **Advanced DOS/DDOS Auto Prevention:** Switch provides advance DOS/DDOS auto prevention. – This is a hardware based prevention. If there is a sudden surge in IP flow, the switch locks the source IP address temporarily and hence prevents network failure.
- **IEEE 1588 Precision Time Protocol:** IEEE 1588 PTPv2 provides precision time synchronization for protection and control applications such as SMV in the IEC 61850 process bus.
- **Modular Design:** Modular chassis design makes network planning easy by providing flexibility as your network grows and future proofing by developing modules based on newer standards.



Features

- Supports up to 4 x 10 Gigabit Uplink Ports
- Modular chassis allows for easy scalability and future proofing of network designs
- Supports iRing (recovery time < 30ms up to 250 units in one ring)
- Supports STP, RSTP and MSTP
- Supports Layer 3 routing, RIP and static routing function
- Support IEEE 1588v2 PTP clock synchronization
- IPv6 support
- VLAN Priority: Supports priority-tagged frames to be received by specific IEDs
- MRP Media Redundancy Protocol as per IEC62439-2
- Supports HTTPS/SSH protocol enhanced network security
- Supports SMTP clock client
- IP-based bandwidth management
- Application-based QoS management
- Device Linking security function
- DOS/DDOS auto threat prevention
- IGMP v2/v3 (IGMP snooping support)
- SNMP v1/v2c/v3 & RMON and 802.1Q VLAN Network Management
- Support ACL, TACACS+ and 802.1x User Authentication
- Supports 9.6K Bytes Jumbo Frame
- Multiple alarm notification methods
- Administration by Web-browser ,Telnet, Console (CLI), and iManage Software Suite configuration
- LLDP (Link Layer Discovery Protocol)
- Redundant hot swappable power supplies
- 19 inch rack mount design
- Operating Temperature Range: -40°C to 85°C

Specifications

Model Number LT28TG	
Physical Ports	
Slot Number	4 (up to 3 slots for 8 x 1G ports each and 1 slot for 4 x 10G ports)
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.z for 1000Base-X IEEE 802.3ae for 10Gigabit Ethernet IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8k
Priority Queues	8
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Max. Number of Available VLANs: 256 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Defined
Jumbo frame	Up to 9.6K Bytes

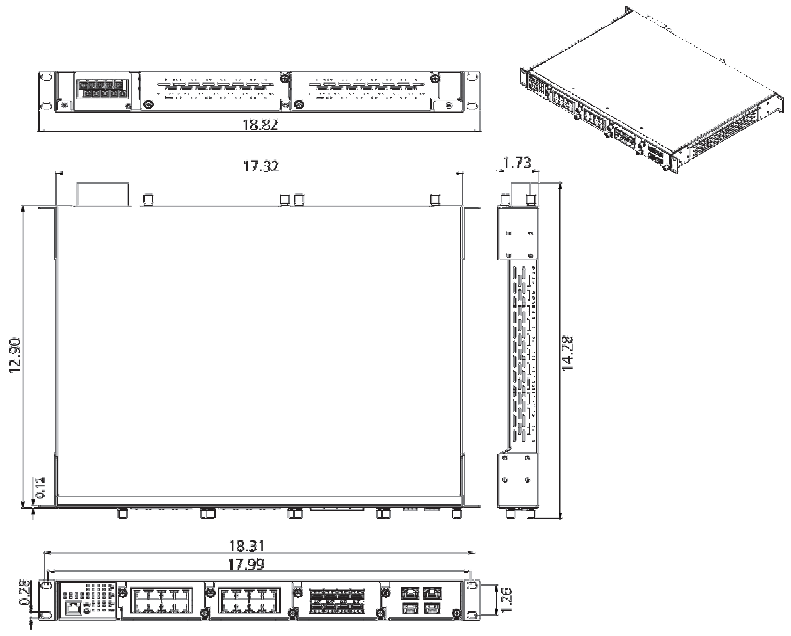
Specifications

Security Features	Device Linking security feature. Enable/disable ports, MAC based port security Port based network access control (802.1x) Single 802.1x and Multiple 802.1x MAC-based authentication QoS assignment Guest VLAN MAC address limit TACACS+ VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Web and CLI authentication and authorization Authorization (15 levels) via TACACS+ IP source guard
Software Features	Hardware routing, RIP and static routing IEEE 1588v2 PTP clock synchronization IEEE 802.1D Bridge, auto MAC address learning/aging and MAC address (static) Multiple Registration Protocol (MRP) Multiple VLAN Registration Protocol (MVRP) MSTP (RSTP/STP compatible) Redundant Ring (iRing) with recovery time less than 30ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported Voice VLAN IGMP v2/v3 Snooping IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/snooping DHCP Relay Modbus TCP DNS client proxy ARP inspection SMTP Client
Network Redundancy	iRing iBridge MRP (Media Redundancy Protocol as per IEC62439-2) MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in RJ-45 connector with console cable. 115200bps, 8, N, 1
LED Indicators	
Power Indicator (PWR1 / PWR2)	Green : Power LED x 2
System Ready Indicator (PWR)	Green : Indicates that the system ready. The LED is blinking when the system is upgrading firmware
Ring Master Indicator (R.M.)	Green : Indicates that the system is operating in iRing Master mode
iRing Indicator (Ring)	Green : Indicates that the system operating in iRing mode Green Blinking : Indicates that the Ring is broken.
Fault Indicator (Fault)	Amber : Indicate unexpected event occurred
Reset To Default Running Indicator (DEF)	Green : System resets to default configuration
Supervisor Login Indicator (RMT)	Green : System is accessed remotely
Smart LED Display system	Link/Act(LK/ACT) / Speed(SPD) / Duplex(FDX) green LED indicator x 3 Mode select(MODE) : Link/Act(LK/ACT) / Speed(SPD) / Duplex(FDX) mode select button Port Link/Act(LK/ACT) / Speed(SPD) / Duplex(FDX) LED show : Green x 28t

Specifications

Fault Contact			
Relay	Relay output capacity of 1A at 24VDC		
Power			
Redundant power input modular	Dual 24VDC power inputs at terminal block	Dual 48VDC (36-72VDC) power inputs at terminal block	Dual 110/220VDC/AC (88~264VAC / 100~370VDC) power inputs at terminal block
Overload current protection	Present	Present	Present
Physical Characteristic			
Enclosure	19 inches rack mountable		
Environmental			
Storage Temperature	-40 to 85°C (-40 to 185°F)		
Operating Temperature	-40 to 85°C (-40 to 185°F)		
Operating Humidity	5% to 95% Non-condensing		
Regulatory Approvals			
Power Automation	IEC 61850-3, IEEE 1613		
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)		
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11		
Warranty			
Warranty	5 Years		

Dimensions



All Dimensions are in Inches

Ordering Information

Base	Power Supply 1	Power Supply 2	Mount	Ethernet Port 1-8	Ethernet Port 9-16	Ethernet Port 17-24	Ethernet Port 25&26	Ethernet Port 27&28	Description
LT28TG	LV	LV	R	8GSFP**	8GSFP**	XX	XX	XX	
LT28TG	|	|	|	|	|	|	|	|	Core assembly and packaging
	XX	XX	|	|	|	|	|	|	None
	LV	LV	|	|	|	|	|	|	24VDC (18-36VDC)
	MV	MV	|	|	|	|	|	|	48 VDC (36-72VDC)
	HV	HV	|	|	|	|	|	|	88-300VDC or 85-264VAC
			RF	|	|	|	|	|	19" Rack Mount - Power terminal in the Front (same side as Ethernet ports)
			RR	|	|	|	|	|	19" Rack Mount - Rear Mount Power Terminal connection
			P	|	|	|	|	|	Panel Mounting
			N	|	|	|	|	|	No Mounting Hardware
				XX	XX	XX	|	|	None
				8GRJ45	8GRJ45	8GRJ45	|	|	8 X 10/100/1000Base TX RJ45 Module
				8GSFP**	8GSFP**	8GSFP**	|	|	8 X 100/1000Base (X) SFP (Blank no SFP transceivers) Module
							XX	XX	Blank module
							2TGSFP	2TGSFP	2 X 10GE SFP (Blank no SFP transciever)

SFP** SEE ACCESSORIES FOR SFP TRANSCEIVER PRICING
Ports 25 to 28 must have the same connector type and speed

Example Order Code: **LT28G-HV-LV-R-8GRJ45-8GRJ45-8GRJ45-2TGSFP-2TGSFP-C1-F3.07**

Description: 28 Port Gigabit Switch, Single Input Power Supply 1: 88-300VDC or 100-240VAC, Single Input Power Supply 2: 12-36VDC, Rack Mount, 8-10/100/1000Base-T(X) Ports, 8-10/100/1000Base-T(X) Ports, 8-10/100/1000Base-T(X) Ports, 2x10000 Base-X SFP, 2x10000 Base-X SFP, Conformal Coating, Firmware version 3.07
C1 – Add for conformal coating, FW – Leave blank for latest firmware

LT26G

26 PORT IEC61850 ETHERNET SWITCH

- Rack mount design
- IEC 61850 complaint
- 24 + 2G SFP port switch
- Dual power supply

5 YEAR WARRANTY

IEC 61850 Complaint | 56 BIT ENCRYPTION | RoHS Compliant

The LT26G switch is a 26-port rack mount highly redundant Managed Gigabit Ethernet Switch, designed for the demanding environments required for power substation and rolling stock applications. The LT26G complies with IEC61850-3 and IEEE1613 standards. With Ethernet Redundancy protocols such as iRing (recovery time <30ms with up to 250 Ethernet switches), iBridge, and MSTP/RSTP/STP (IEEE 802.1s/w/D), the LT26G can protect all mission-critical applications from network interruptions and temporary malfunctions to restore connectivity quickly. The iBridge technology allows these switches to provide a means to complement and inter-operate with most third party proprietary ring technologies. The LT26G switch can be managed centrally and conveniently by our powerful windows utility called the iManage Software Suite.

The LT26G switch provides a multi power, dual input, redundant design providing a combination of DC and/or AC inputs ensuring continuous operation. An IP-40 galvanized steel, fanless enclosure, and a wide operating temperature range of -40 to +85 degrees Cel. to suit the harshest of environments. An additional relay output is provided for system alarm warning.

Features

- Suitable for Substation Automation Applications
- Rapid Network Recovery: iRing (recovery time <30ms up to 250 Ethernet Switches)
- iBridge is a unique feature that supports third party ring technologies
- MSTP/RSTP/STP (IEEE 802.1s/w/D)
- Secure ACL supported
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Port Trunking for bandwidth management
- SNMP v1/v2c/v3 support for secure network management
- Supports LLDP (Link Layer Discovery Protocol)
- Port lock to prevent access from unauthorized MAC addresses
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- iManage Software Suite supports centralization management and is configurable via a Webbrowser,Telnet, Console (CLI)
- Isolated Dual Redundant Power Supply Inputs with 12-36VDC or 36-72VDC or 100-240VAC power supply range
- 19 inch rack mountable
- Up to 24x10/100Base-T(X) Ports
- 2 Gigabit SFP or RJ45 Optional Ports
- Operating Temperature Range: -40°C to 85°C

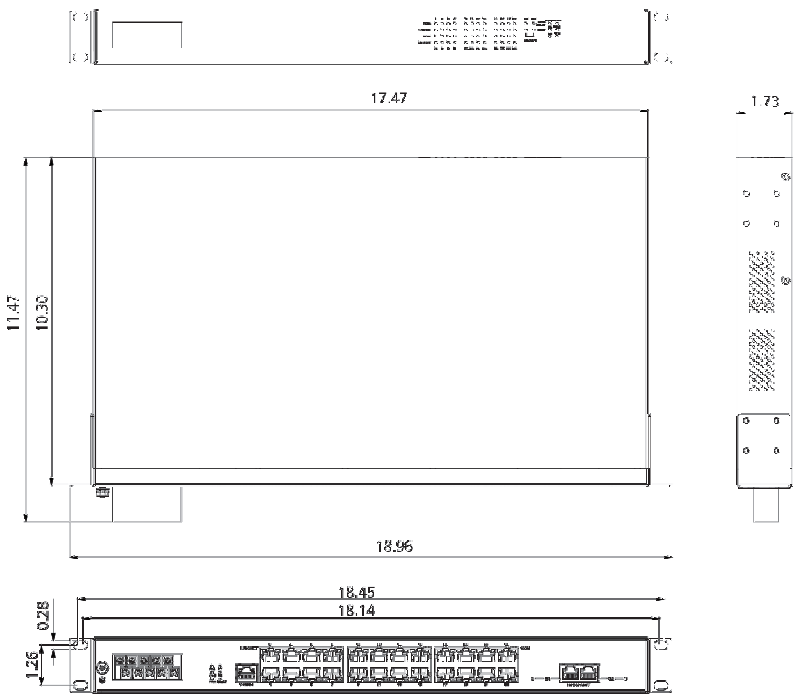
Specifications

Switch Model	LT26G
Physical Ports	
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	24
Gigabit combo port with 10/100/1000Base-T(X) and/or 1000Base-X SFP	2
RS-232 Serial Console Port in back	RS-232 console cable. 9600bps, 8, N, 1
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T IEEE 802.3z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1X for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching bandwidth : 8.8Gbps Max. Number of Available VLANs:4096 IGMP multicast groups: 1024 Port rate limiting: User Define
Security Features	Enable/disable ports, MAC based port security ACL supported Port based network access control (802.1x) VLAN (802.1q) to segregate and secure network traffic Radius centralized password management SNMP v1/v2c/v3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (iRing) with recovery time less than 30ms over 250 Ethernet Switches TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support
Network Redundancy	iRing iBridge STP RSTP MSTP

Specifications

Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support		
LED Indicators In Front And Back			
Power indicator	Green: Power LED x 2		
System Ready Indicator	Green: Indicate system ready. Blinking for system is upgrading firmware.		
Ring Master Indicator	Green: Indicate system operated in iRing Master mode		
iRing Indicator	Green: Indicate system operated in iRing mode Blinking to indicate Ring is broken.		
Fault indicator	Amber: Indicate unexpected event occurred		
10/100Base-T(X) RJ45 port indicator	Green at left for port Link/Act. Amber at right for 100Mbps indicator		
10/100/1000Base-T(X) RJ45 port indicator with combo port	Green at down for port Link/Act		
1000Base-X SFP port indicator with combo port	Green at up for port Link/Act		
Fault Contact			
Relay	Relay output to carry capacity of 1A at 24VDC		
Power			
Redundant Input power	12 ~ 36VDC power inputs	36 ~ 72VDC power inputs	88 ~300VDC/100 ~ 240VAC power inputs
Power consumption (Typ.)	18 Watts Max.		
Overload current protection	Present	Present	Present on terminal block
Physical Characteristic			
Dimension (W x D x H)	443.7(W) x 262.7(D) x 44(H) mm (17.46 x 10.34 x 1.73 inch)		
Enclosure	IP-40 Galvanized Steel Housing		
Weight (g)	4 Kg		
Environmental			
Storage Temperature	-40oC to 85oC (-40oF to 185oF)		
Operating Temperature	-40oC to 85oC (-40oF to 185oF) No fans		
Operating Humidity	5% to 95% Non-condensing		
Regulatory Approvals			
Power Automation	IEC 61850-3, IEEE 1613		
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)		
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-11		
Warranty			
Warranty	5 Years		

Dimensions



All Dimensions are in Inches

Ordering Information

Base	Power Supply 1	Power Supply 2	Mount	Ethernet Port 1-8	Ethernet Port 9-16	Ethernet Port 17-24	Ethernet Port 25	Ethernet Port 26	Description
LT26G	HV	LV	R	8GRJ45	8GRJ45	XX	1GRJ45	1SFP**	
LT26G	|	|	|	|	|	|	|	|	Core assembly and packaging
	LV	LV	|	|	|	|	|	|	12-36VDC
	MV	MV	|	|	|	|	|	|	36-72VDC)
	HV	HV	|	|	|	|	|	|	88-300VDC or 100-240VAC
			R	|	|	|	|	|	Rack Mount
			P	|	|	|	|	|	Panel Mounting
			N	|	|	|	|	|	No Mounting Hardware
				|	XX	XX	|	|	None
				8GRJ45	8GRJ45	8GRJ45	|	|	8 X 10/100/1000Base TX RJ45
							XX	XX	None
							1GRJ45	1GRJ45	10/100/1000Base TX RJ45
							1SFP**	1SFP**	100/1000Base (X) SFP (Blank no SFP transciever)

SFP** SEE ACCESSORIES FOR SFP TRANSCEIVER PRICING
Also available - LT24G having 8 Cu + 12G SFP ports

Example order code: **LT26G-HV-LV-R-8GRJ45-8GRJ45-XX-1GRJ45-1SFP**-C1-F3.07**

Description: 26 Port Gigabit Switch, Single Input Power Supply 1: 88-300VDC or 100-240VAC, Single Input Power Supply 2: 12-36VDC, Rack Mount, 8-10/100/1000Base-T(X) Ports, 8-10/100/1000Base-T(X) Ports, XX, 1x10/100/1000Base-T(X), 1x1000Base-X SFP, Conformal Coating, Firmware version 3.07
C1 – Add for conformal coating, FW – Leave blank for latest firmware

LT22GF

22 PORT GIGABIT DIN RAIL SWITCH

- Din rail / wall mounting
- IEC 61850 complaint
- 8 + 12G SFP port switch
- Dual power supply

The LT22GF is an IEC 61850-3 compliant managed full gigabit Ethernet switch with 8x10/100/1000Base-T(X) ports and 12x100/1000Base-X SFP ports. The switch is designed for power substation applications and rolling stock applications. The LT22GF is also fully compliant with EN50155 requirements. Complete support of the Ethernet Redundancy protocol, iRing (recovery time < 30ms over 250 units) and is MSTP/RSTP/STP compatible. The switch is designed to protect mission-critical applications from network interruptions and/or temporary malfunctions. The LT22GF can be managed centrally using the iManaged Software Suite, a Web-based interface, Telnet and console (CLI) configuration. This switch is one of the most reliable choices for power substation and rolling stock applications.

iRing: is a redundant ring technology with recovery times of less than 30ms with up to 250 nodes. The iRing redundant ring technology protects mission-critical applications from network interruptions and/or temporary malfunctions with its fast recover technology.

iBridge: is an enhanced redundant technology that makes iS5Com switches compatible with other vendors proprietary redundant ring technologies. It allows for a single ring when formed with other vendor products.

iChain: is a revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network. iChain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger, more robust compound network topology. iChain provides ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness.

MRP: Media Redundancy Protocol (MRP) meets the IEC 62439-2 protocol standard. It allows rings of Ethernet switches to overcome any single failure with recovery times much faster than achievable using the Spanning Tree Protocol.

IP-based Bandwidth Management: The switch provides an advanced IP-based bandwidth management which can limit the maximum bandwidth for each IP device. User can configure IP camera and NVR with more bandwidth and limit other device bandwidth.

Application-Based QoS: The switch also supports application-based QoS. Application-based QoS can set highest priority for data stream according to TCP/UDP port number.

Device Link Function: This function prevents unauthorized access to the network by only allowing permitted IP addresses that have a MAC address to access the network.

Advanced DOS/DDOS Auto Prevention: The switch also provides an advanced hardware based DOS/DDOS auto prevention. If there is a sudden surge in IP flow, the switch locks the source IP address temporarily and hence preventing network failure.

IEEE 1588 Precision Time Protocol: IEEE 1588 PTPv2 provides precision time synchronization for protection and control applications such as SMV in the IEC 61850 process bus.

Modbus TCP: This is a Modbus variant used for communications over TCP/IP networks.

IEEE 802.3az Energy-Efficient Ethernet: This is a set of enhancements to the twisted-pair and backplane Ethernet family of networking standards, which allow for less power consumption during periods of low data activity.

Features

- Designed for power substation / Railway application and fully compliant with the requirement of IEC 61850-3 and IEEE 1613
- Leading EN50155-compliant Ethernet switch for rolling stock application
- Supports iRing (recovery time < 30ms over 250 units) and MSTP(RSTP/STP compatible) for Ethernet Redundancy
- iBridge support other vendors ring technology in an open architecture
- iChain allows for multiple redundant network rings
- Supports standard IEC 62439-2 MRP (Media Redundancy Protocol) function
- Supports IEEE 1588v2 clock Synchronization
- Supports IPV6 new internet protocol version
- Supports Modbus TCP protocol
- Supports IEEE 802.3az Energy-Efficient Ethernet technology
- Provides HTTPS/SSH protocol to enhance network security
- Supports SMTP client
- Supports IP-based bandwidth management
- Supports application-based QoS management
- Supports Device Linking security function
- Supports DOS/DDOS auto prevention
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Supports SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Support ACL, TACACS+ and 802.1x User Authentication for security
- Supports 9.6K Bytes Jumbo Frame
- Multiple notification for warning of unexpected event
- Web-based ,Telnet, Console (CLI), and Windows utility (iMSS) configuration
- Support LLDP Protocol
- Rigid IP-40 housing design
- DIN-Rail and wall mount
- Available with Dual High Voltage Universal Power Supplies
- Operating Temperature Range: -40°C to 85°C

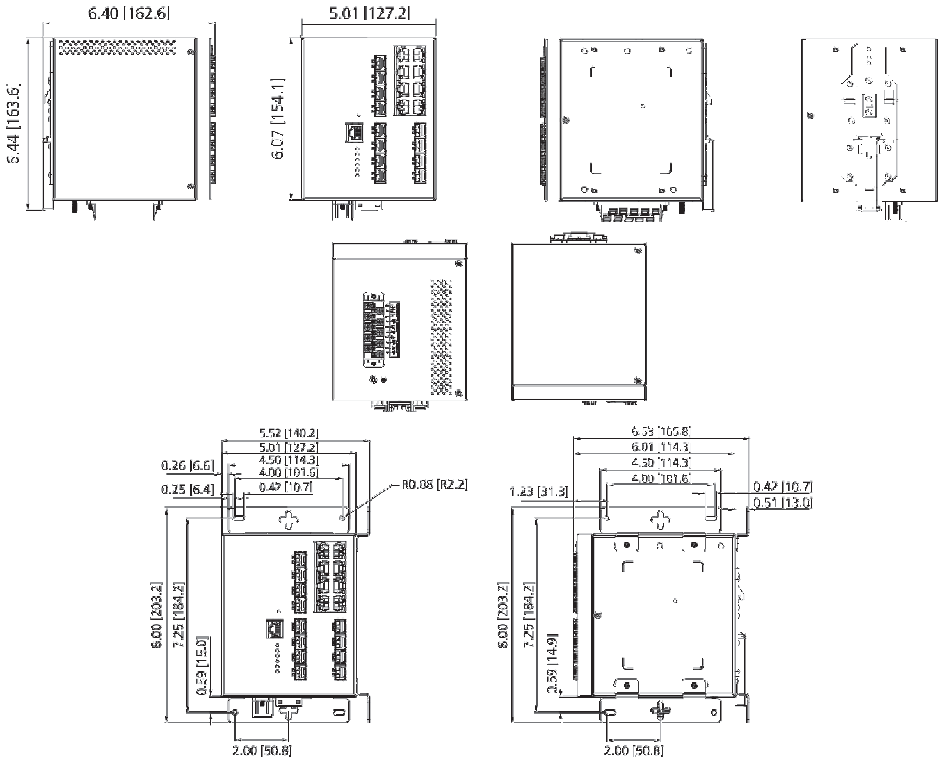
Specifications

Model Number LT22GF	
Physical Ports	
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	8
100/1000Base-X with SFP port	Up to 12
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.z for 1000Base-X IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8k
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 40Gbps Max. Number of Available VLANs: 256 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Define Https / SSH enhance network security
Jumbo frame	Up to 9.6K Bytes
Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (iRing) with recovery time less than 30ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP

Specifications

Network Redundancy	iRing iBridge iChain MRP MSTP (RSTP/STP compatible)
RS-232 Serial Console Port	RS-232 in RJ45 connectorwith consolecable. 115200bps, 8, N, 1
Fault Contact	
Relay	Relay output capacity: 1A at 24VDC
Power	
Redundant Input Power	Dual DC inputs 10-48VDC, Dual DC 36-72VDC, and Dual AC/DC power inputs. 85-264VAC / 88-370VDC
Power Consumption (Typ.)	18 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	IP-40
Dimension (W x D x H)	5 x 6.44 x 6.07 inch
Environmental	
Storage Temperature	-40° C to 85° C (-40° F to 185° F)
Operating Temperature	-40° C to 85° C (-40° F to 158° F)
Operating Humidity	5% to 95% Non-condensing
Regulatory Approvals	
Power Automation Compliancy	IEC 61850-3, IEEE 1613
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
EMS	EN61000-4-2 (ESD) EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	
Warranty	5 Years

Dimensions



Panel Mount - Bracket installed at side or rear

All Dimensions are in Inches

Ordering Information

Base	Power Supply 1	Power Supply 2	Mount	Ethernet Port 1-8	Ethernet Port 9-12	Ethernet Port 12-16	Ethernet Port 17-20	Description
LT22GF	HV	LV	D	8GRJ45	4GSFP	4GSFP	XX	
LT22GF	|	|	|	|	|	|	|	Core assembly and packaging
	LV	LV	|	|	|	|	|	Power Supply Input (10-48VDC)
	MV	MV	|	|	|	|	|	Power Supply input (36-72VDC)
	HV	HV	|	|	|	|	|	Power Supply Input 88-370VDC or 85-264VAC
			D	|	|	|	|	DIN Rail Mounting
			P	|	|	|	|	Panel Mounting
			N	|	|	|	|	No Mounting Hardware
				8GRJ45	|	|	|	8 X 10/100/1000BaseTX RJ45
				XX	XX	XX	XX	None
					4GSFP	4GSFP	4GSFP	4 x 100/1000 BASE (X) SFP (Blank no SFP transciever**)

SFP** SEE ACCESSORIES FOR SFP TRANSCEIVER PRICING

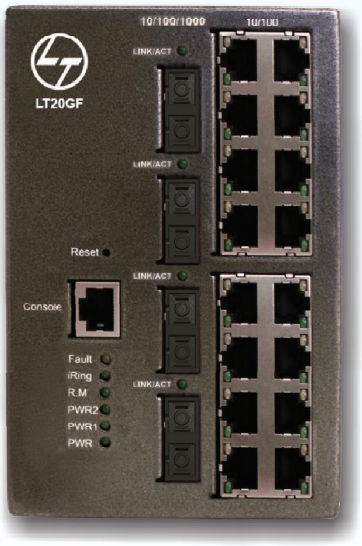
Example Order Code: LT22GF-HV-LV-D-8GRJ45-4GSFP-4GSFP-XX-C1-F3.07

Description: 20 Port Gigabit Switch, Power Supply 1 Input 88-370VDC or 85-264VAC, Power Supply 2 input 36-72VDC, DIN Rail Mount, 8x10/100/1000Base TX Ports, 4x100/1000Base (X) SFP, 4x100/1000Base (X) SFP ports, Conformal Coating, Firmware version 3.07, C1 – Add for conformal coating, FW – Leave blank for latest firmware **SFP's to be ordered separately.

LT20GF

20 PORT GIGABIT DIN RAIL SWITCH

- Din rail / wall mounting
- IEC 61850 complaint
- 16+ 4G SFP port switch
- Dual power supply



IEC 61850 Complaint | 56 BIT ENCRYPTION

The LT20GF managed Ethernet switch with Ethernet Redundancy protocols such as iRing (recovery time <30ms with up to 250 Ethernet Switches), iBridge, and MSTP/RSTP/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions to restore connectivity using its fast recovery technology. The unique iBridge technology now provides a means to complement and interconnect with most third party proprietary ring technologies. The switch can be managed centralized and convenient by a powerful windows utility called the iManage Software Suite. The product is made from galvanized steel and has a wide operating temperature from -40 to 85 degrees Cel. suitable for the harshest of environments without the use of fans.

Features

- Upto 16x10/100Base (TX), and upto 4x100/1000Base (X) ports
- Fastest Redundant Ethernet Ring : iRing (recovery time <30ms with up to 250 Ethernet Switches)
- iBridge supports other vendors' ring technology in open architecture
- STP/RSTP/MSTP supported
- Supports PTP Client (Precision Time Protocol) clock synchronization
- IGMP v2/v3 (IGMP snooping for support) filtering multicast traffic
- Port Trunking for easy of bandwidth management
- SNMP V1/V2c/V3 support for secured network management
- RMON for traffic monitoring
- Supports LLDP protocol
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Port lock to prevent access from unauthorized MAC address
- Windows utility (iManage Software Suite) supporting centralized management and configurable by Web-based, Telnet, and Console (CLI)
- Supports two Gigabit combo ports
- Rigid IP-40 housing design
- DIN-Rail and wall mount
- Available with Dual High Voltage power Supplies
- Operating Temperature Range: -40°C to 85°C

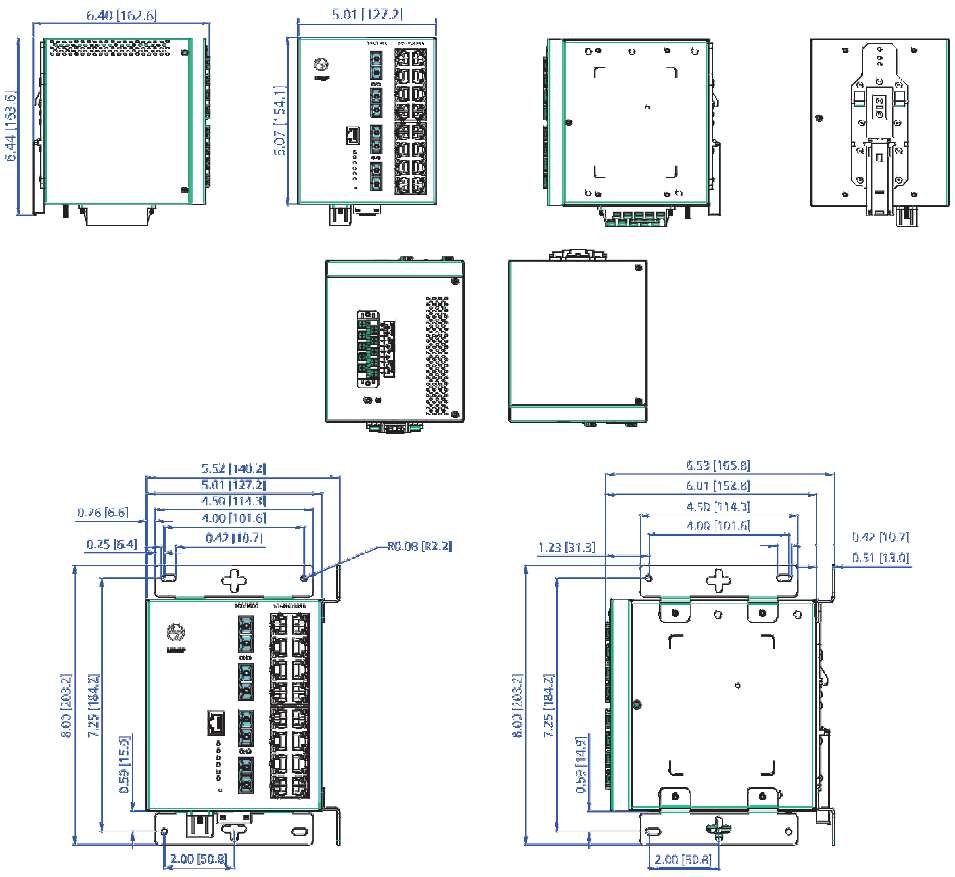
Specifications

Model Number LT20G	
Physical Ports	
10/100 Base-T(X) Ports in RJ45 Auto MDI/MDIX	Up to 16
10/100/1000Base-T(X) and 100/1000Base-X SC/ST/LC/SFP Ports	Up to 4
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3z for 1000Base-X IEEE 802.3ab for 1000Base-TX IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency : 9 µs Switching bandwidth : 7.2Gbps Max. Number of Available VLANs : 4096 IGMP multicast groups : 1024 Port rate limiting : User Define
Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMP v1/v2c/v3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (iRing) with recovery time less than 30ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP v2/v3 (IGMP snooping support) for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support
Network Redundancy	iRing iBridge STP RSTP MSTP
Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 9600bps, 8, N, 1

Specifications

LED Indicators	
Power Indicator	Green : Power LED x 3
R.M. Indicator	Green : Indicates that the system is operating in iRing master mode
iRing Indicator	Green : Indicates that the system is operating in iRing mode
Fault Indicator	Amber : Indicates unexpected event occurred
Power Indicator	Green : Power LED x 3
10/100/1000Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for 100Mbps indicator
100/1000Base-X SFP Port Indicator	Green for port Link/Act.
Fault Contact	
Relay	Relay output capacity: 1A at 24VDC
Power	
Redundant Input Power	Dual DC inputs 10 to 48VDC, Dual DC Inputs 36-120VDC, or Dual Input 88-370VDC or 85-264VAC.
Power Consumption (Typ.)	12 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present on terminal block
Physical Characteristic	
Enclosure	IP-40
Dimension (W x D x H)	96.4(W)x108.5(D)x154(H) mm (3.8 x 4.27 x 6.06 inch)
Weight (g)	1220 g
Environmental	
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Operating Temperature	-40°C to 85°C (-40°F to 158°F)
Operating Humidity	5% to 95% Non-condensing
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	
Warranty	5 Years

Dimensions



Panel Mount option - Bracket installed at side or rear

All Dimensions are in Inches

Ordering Information

Base	Power Supply 1	Power Supply 2	Mount	Ethernet Port 1-8	Ethernet Port 9-16	Ethernet Port 17&18†	Ethernet Port 19&20†	Description
LT20GF	HV	HV	D	8RJ45	8RJ45	2MMST	2SSC15	
LT20GF	|	|	|	|	|	|	|	Managed core assembly and packaging
	LV	LV	|	|	|	|	|	Power Supply Input (10-48VDC)
	MV	MV	|	|	|	|	|	Power Supply Input (36-72VDC)
	HV	HV	|	|	|	|	|	Power Supply Input 88-370VDC or 85-264VAC
			D	|	|	|	|	DIN Rail Mounting
			P	|	|	|	|	Panel Mounting
			N	|	|	|	|	No Mounting Hardware
				8RJ45	8RJ45	|	|	8 X 10/100Base TX RJ45
					XX	XX	XX	None
						2GRJ45	2GRJ45	2 x 10/100/1000Base TX RJ45
						2GSFP	2GSFP	2 x 1000Base (X) SFP (Blank no SFP transciever**)

Ordering Information

						2MMSC	2MMSC	2 x 100FX Multimode SC, 1310nm, 2Km
						2MMST	2MMST	2 x 100FX Multimode ST, 1310nm, 2Km
						2SSC15	2SSC15	2 x 100FX Singlemode SC, 1310nm, 15km
						2SST15	2SST15	2 x 100FX Singlemode ST, 1310nm, 15km
						2SSC40	2SSC40	2 x 100FX Singlemode SC, 1310nm, 40km
						2SST40	2SST40	2 x 100FX Singlemode ST, 1310nm, 40km
						2SSC60	2SSC60	2 x 100FX Singlemode SC, 1310nm, 60km
						2SST60	2SST60	2 x 100FX Singlemode ST, 1310nm, 60km
						2SSC80	2SSC80	2 x 100FX Singlemode SC, 1550nm, 80km
						2SST80	2SST80	2 x 100FX Singlemode ST, 1550nm, 80km
						2SSC100	2SSC100	2 x 100FX Singlemode SC, 1550nm, 100km
						2SST100	2SST100	2 x 100FX Singlemode SC, 1550nm, 100km
						2GMMSC	2GMMSC	2 x 1000 SX Multimode ST, 850nm, 550m
						2GMMST	2GMMST	2 x 1000 SX Multimode SC, 850nm, 550m
						2GSST10	2GSST10	2 x 1000 LX Singlemode ST, 1310nm, 10km
						2GSSC10	2GSSC10	2 x 1000 LX Singlemode SC, 1310nm, 10km
						2GSST40	2GSST40	2 x 1000 LX Singlemode ST, 1310nm, 40km
						2GSSC40	2GSSC40	2 x 1000 LX Singlemode SC, 1310nm, 40km
						2GSST70	2GSST70	2 x 1000 LX Singlemode ST, 1550nm, 70km
						2GSSC70	2GSSC70	2 x 1000 LX Singlemode SC, 1550nm, 70km

SFP** SEE ACCESSORIES FOR SFP TRANSCEIVER PRICING
Also available - LT20 G having 16Cu + 2G SFP ports. (Managed Non-IEC61850 compliant switch

†Ports 17 and 18 must either be Singlemode or Multimode and not mixed
Connector type must also be the same i.e. SC/ST cannot be combined with SFP or Rj45
†Ports 19 and 20 must either be Singlemode or Multimode and not mixed
Connector type must also be the same i.e. SC/ST cannot be combined with SFP or RJ45

Example Order Code: **LT20GF-HV-HV-D-8RJ45-8RJ45-2MMST-2SSC15-C1-F3.07**
Description: 20 Port Gigabit Switch, Dual Input 88-370VDC or 85-264VAC, DIN Rail Mount, 16x10/100Base, TX Ports, 2 x 100FX Multimode ST, 2 x 100FX Singlemode SC, 15Km Ports, Conformal Coating, Firmware version 3.07
C1 – Add for conformal coating
FW – Leave blank for latest firmware

LT10G

10 PORT GIGABIT DIN RAIL SWITCH

- Din rail / wall mounting
- 8 + 2 SFP 'OR' 7 + 3 SFP port switch
- Managed ethernet switch
- Dual power supply

5 YEAR WARRANTY

56 BIT ENCRYPTION

The LT10G is an intelligent managed Gigabit Ethernet Switch. The Intelligent Operating System (iOS) offers many powerful features including iRing delivering a total recovery time <30ms with up to 250 ethernet switches. The iBridge technology, and MSTP/RSTP/STP (IEEE 802.1s/w/D) feature set ensures that the best redundancy options are available to protect mission critical applications from network interruptions. Every function of the LT10G can be managed conveniently using the iManage Software Suite. The LT10G switch supports DDM (Digital Diagnostic Monitoring), which instantly monitors the status of electrical voltage, current, and temperature of the SFP module. The product is made from galvanized steel and has a wide operating temperature range from -40 to +85 degrees Cel. suitable for the harshest of environments without the use of fans.

Features

- Rapid Network Recovery: iRing recovery time < 30ms up to 250 ethernet switches
- iBridge is a unique feature that supports third party ring technologies
- Supports STP/RSTP/MSTP
- Supports PTP Client (Precision Time Protocol) clock synchronization
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Port Trunking for easy bandwidth management
- SNMP v1/v2c/v3 support for network management
- Supports RMON traffic monitoring
- Supports DDM (Digital Diagnostic Monitoring) function for SFP modules
- Supports LLDP (Link Layer Discovery Protocol)
- Port lock to prevent access from unauthorized MAC address
- Event notifications via Syslog, Email, SNMP trap, and Relay Output
- iManage Software Suite supports centralized management and configurable by Web-based, Telnet, Console(CLI)
- IP-40 Galvanized Steel Housing
- DIN-Rail and wall mounting
- 7x10/100Base-T(X) ports and up to 3 SFP or RJ45 optional ports
- Operating Temperature Range: -40°C to 85°C

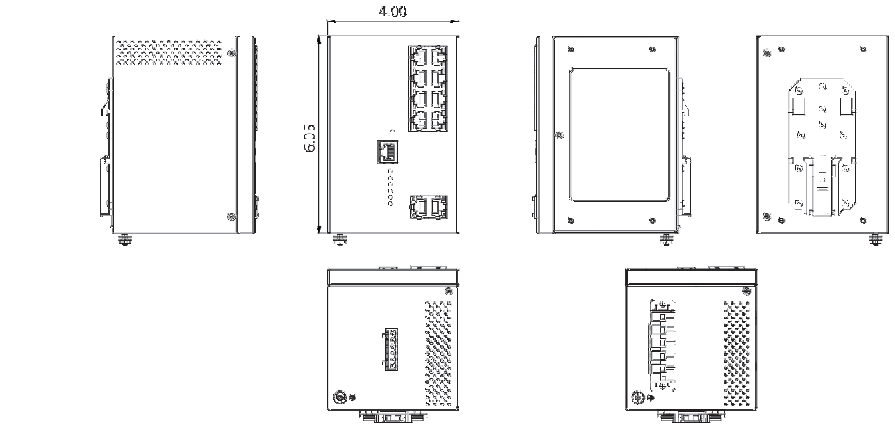
Specifications

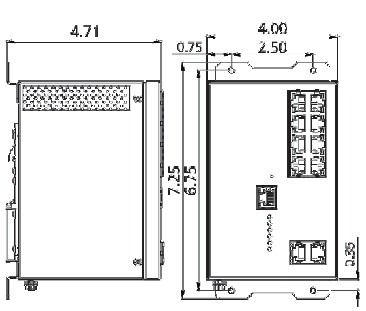
Model Number LT10G	
Physical Ports	
10/100 Base-TX Ports (RJ45) Auto MDI/MDIX	7
Gigabit combo Ports with 10/100/1000Base-TX and 100/1000Base-X SFP Ports	3- Base T(X) or 3- Base (X) SFP
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3z for 1000Base-X IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 7.4Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Defined
Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMP v1/v2c/v3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (iRing) with recovery time less than 10ms up to 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Supports PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support
Network Redundancy	iRing iBridge STP RSTP MSTP

Specifications

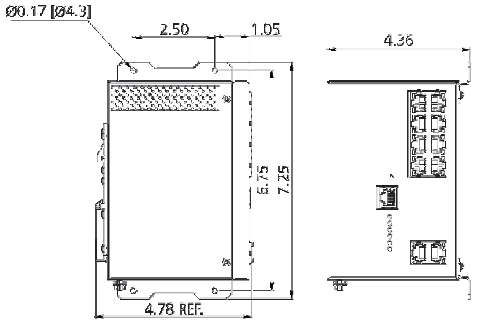
Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events SMTP for event warning notification via email Event selection support
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 9600bps, 8, N, 1
LED Indicators	
Power indicator	Green : Power LED x 3
R.M. Indicator	Green : Indicate system operated in iRing master mode
Fault Indicator	Amber : Indicate unexpected event occurred
10/100Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for Duplex/Collision
10/100/1000Base-T(X) RJ45 Port Indicator	Green for port Link/Act. Amber for 100Mbps indicator
100/1000Base-X SFP Port Indicator	Green for port Link/Act.
Fault Contact	
Relay	Relay output capacity: 1A at 24VDC
Power	
Input Power	Dual DC inputs 10 to 48VDC, Dual DC Inputs 36-120VDC, or Single input universal supply 120-370VDC or 85-264VAC with a single 10-48VDC Backup
Power Consumption (Typ.)	12 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Internal
Physical Characteristic	
Enclosure	IP-40 Galvanized Steel Housing
Dimension (W x D x H)	74.3(W)x109.2(D)x153.6(H) mm (2.93 x 4.3 x 6.05 inch)
Weight (g)	1.1 kg
Environmental	
Storage Temperature	-40oC to 85oC (-40oF to 185oF)
Operating Temperature	-40oC to 85oC (-40oF to 185oF) NO FANS
Operating Humidity	5% to 95% Non-condensing
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	
Warranty	5 Years

Dimensions





Panel Mount - Bracket installed at rear



Panel Mount - Bracket installed at side

All Dimensions are in Inches

Ordering Information

Base	Power Supply	Mount	Ethernet Port 1-7	Ethernet Port 8*	Ethernet Port 9 & 10	Description
LT10G	HV	P	7RJ45	1GRJ45	2SFP**	
LT10G	|	|	|	|	|	Core assembly and packaging
	LV	|	|	|	|	Dual Input (10-48VDC)
	MV	|	|	|	|	Dual Input (36-120VDC)
	HV	|	|	|	|	Single Input 120-370VDC or 85-264VAC with Single 10-48VDC Backup
		D	|	|	|	DIN Rail Mounting
		P	|	|	|	Panel Mounting
		N	|	|	|	No Mounting Hardware
			|	|	XX	None
			7RJ45	|	XX	10/100Base TX RJ45
				1GRJ45	2GRJ45	10/100/1000 Tx RJ45
				1SFP**	2SFP**	1000SX SFP (Blank no optical transciever)

SFP** SEE ACCESSORIES FOR SFP TRANSCEIVER PRICING
Also available - LT20 G having 16Cu + 2G SFP ports. (Managed Non-IEC61850 compliant switch
*DEFAULT PORT TYPE IS GRJ45 | PORT 9 & 10 MUST HAVE SAME PORT TYPE

Example Order Code: **LT10G-HV-P-7RJ45-1GRJ45-1SFP**-2SFP**-C1-F3.07**

Description: 10 Port Gigabit Switch, Single Input 120-370VDC or 85-264VAC with Single 10-48VDC Backup, Panel Mount, 7-10/100Base TX Ports, 1-10/100/1000Base-TX, 2-100/1000Base-X SFP** Ports, Conformal Coating, Firmware version 3.07, C1 – Add for conformal coating, FW – Leave blank for latest firmware

SFP TRANSCEIVERS

SFP Module	Description
SFP100-MM-2	SFP 100Mbps Multimode LC Transceiver 2km, 1310nm, -40C - +85C
SFP100-SM-30	SFP 100Mbps Singlemode LC Transceiver 30km, 1310nm, -40C - +85C
SFP100-SM-60	SFP 100Mbps Singlemode LC Transceiver 60km, 1310nm,-40C - +85C
SFP100-SM-100	SFP 100Mbps Singlemode LC Transceiver 100km, 1550nm,-40C - +85C
SFP100-SM-120	SFP 100Mbps Singlemode LC Transceiver 120km, 1550nm,-40C - +85C
SFP100BIDI1-SM-20	SFP 100Mbps Bi-Directional Singlemode LC Transceiver 20km, TX1310 nm, RX1550nm, -40C - +85C
SFP100BIDI2-SM-20	SFP 100Mbps Bi-Directional Singlemode LC Transceiver 20km, TX1550 nm, RX1310nm, -40C - +85C
SFP100BIDI1-SM-40	SFP 100Mbps Bi-Directional Singlemode LC Transceiver 40km, TX1310 nm, RX1550nm, -40C - +85C
SFP100BIDI2-SM-40	SFP 100Mbps Bi-Directional Singlemode LC Transceiver 40km, TX1550 nm, RX1310nm, -40C - +85C
SFP100BIDI1-SM-60	SFP 100Mbps Bi-Directional Singlemode LC Transceiver 60km, TX1310 nm, RX1550nm, -40C - +85C
SFP100BIDI2-SM-60	SFP 100Mbps Bi-Directional Singlemode LC Transceiver 60km, TX1550 nm, RX1310nm, -40C - +85C
SFP1000-MM-550	SFP 1Gbps Multimode LC Transceiver 500m, 850nm, -20C - +85C
SFP1000-MM-2	SFP 1Gbps Multimode LC Transceiver 2km, 1310nm, -40C - +85C
SFP1000-SM-10	SFP 1Gbps Singlemode LC Transceiver 10km, 1310nm, -40C - +85C
SFP1000-SM-20	SFP 1Gbps Singlemode LC Transceiver 20km, 1310nm, -40C - +85C
SFP1000-SM-30	SFP 1Gbps Singlemode LC Transceiver 30km, 1310nm, -40C - +85C
SFP1000-SM-40	SFP 1Gbps Singlemode LC Transceiver 40km, 1310nm, -40C - +85C
SFP1000-SM-50	SFP 1Gbps Singlemode LC Transceiver 50km, 1550nm, -40C - +85C
SFP1000-SM-70	SFP 1Gbps Singlemode LC Transceiver 70km, 1550nm, -40C - +85C
SFP1000-SM-8-	SFP 1Gbps Singlemode LC Transceiver 80km, 1550nm, -40C - +85C
SFP1000BIDI1-SM-10	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 10km, TX1310 nm, RX1550nm, -40C - +85C
SFP1000BID2-SM-10	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 10km, TX1550 nm, RX1310nm, -40C - +85C
SFP1000BIDI1-SM-20	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 20km, TX1310 nm, RX1550nm, -40C - +85C
SFP1000BID2-SM-20	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 20km, TX1550 nm, RX1310nm, -40C - +85C
SFP1000BIDI1-SM-40	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 40km, TX1310 nm, RX1550nm, -40C - +85C
SFP1000BID2-SM-40	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 40km, TX1550 nm, RX1310nm, -40C - +85C
SFP1000BIDI1-SM-60	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 60km, TX1310 nm, RX1550nm, -40C - +85C
SFP1000BID2-SM-60	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 60km, TX1550 nm, RX1310nm, -40C - +85C
SFP1000BIDI1-SM-80	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 80km, TX1310 nm, RX1550nm, -40C - +85C
SFP1000BID2-SM-80	SFP 1Gbps Bi-Directional Singlemode LC Transceiver 80km, TX1550 nm, RX1310nm, -40C - +85C

*SFP's to be ordered separately.

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