



- 16 Port 10/100/1000 Base-TX and 4 Slot 100/1000 Base-LX, 2 Slot 100/1000/2500Base-LX, 1 console Port 지원.
- ITU-T ERPS G.8032, STP(802.1D), RSTP(802.1w), MSTP(802.1s), HSTW-Ring 프로토콜 지원. (Recovery time <50ms, 15ms 이내)

- WEB, CLI, TELNET, SSH, SNMP 지원.
- IEEE802.3af-2003, IEEE802.3at-2009 POE 지원.
- 동작온도 범위 -40°C ~ +85°C(산업용 부품 사용).
- 산업용 표준디자인.
- Packet 무손실.

## Introduction

HSTW-IEL-6800M(16G8SF) Series의 산업용 광장비는 16 Port 10/100/1000 Base-TX와 4 Slot 100/1000Base-LX, 2 Slot 100/1000/2500Base-LX를 지원하며, 이중화 링 네트워크, VLAN, 트렁킹, 서비스 품질, 속도 제어, 포트 미러링, 장애 경보 및 온라인 펌웨어 업그레이드와 같은 고급 네트워크

관리 기능을 제공합니다. 모든 구성 요소는 산업 등급을 사용하므로 제품 신뢰성이 매우 좋고, 넓은 입력 전압을 제공합니다. KC표준, 산업용 표준 설계, 이중화 전원 입력, -40°C~85°C 작동 온도로 외부 환경에 매우 적합 합니다.

## Features

- Recovery time <50ms, 15ms 이내.
- IEEE802.3af-2003, IEEE802.3at-2009(Optional).
- IPv4/IPv6 지원.
- L2 장비 Standard
- STP/RSTP/MSTP/ITU-T ERPS G.8032 /HSTW-Ring Ethernet Ring Protection 지원.
- IGMP v1/v2/v3 Snooping, MLD v1/v2 Snooping 지원.
- IP source guard/RADIUS/TACACS+/ACL/SSH v2/HTTPS 지원.
- Port-based IEEE802.1X/Single and multiple IEEE802.1X/MAC-based authentication/VLAN Assignment 지원.
- Port Trunking, port speed limit, broadcast storm control 지원.
- LACP/Link Aggregation Static 지원.
- DNS client/proxy 지원.
- IEEE802.1Q VLAN/MAC based VLAN/Protocol based VLAN /IP subnet based VLAN/GVRP/MVR 지원.
- IETF RFC 1213 MIB-II (Management Information Base) 지원.
- Web Interface Management CLI-Console/Telnet, SNMP v1/v2/v3 RMON/System syslog 지원.
- Bypass 모듈(Optional).
- 광 선로 감지 기능(Optional).

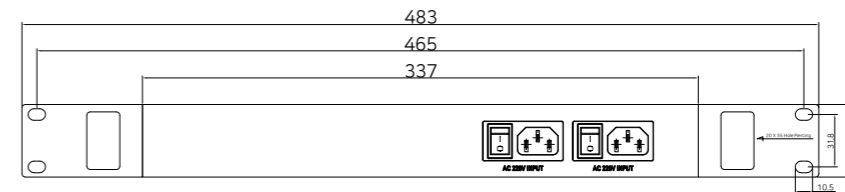
## Dimension

Top View

Side View



Rear View



Front View



## Ordering Information

**HSTW-IEL-6800M(16G6SF)** 16x 10/100/1000M Copper RJ-45 Ports, 4x 100/1000M SFP Slot, 2x 100/1000/2500M SFP Slot

**HSTW-IEL-6800M(16G6SF)- P** 16x 10/100/1000M Copper RJ-45 Ports, 4x 100/1000M SFP Slot, 2x 100/1000/2500M SFP Slot, POE 지원

· **SFP Module CWDM/WDM Version Optical Output Wavelength(nm)**  
A 1470, B 1490, C 1510, D 1530, E 1550, F 1570, G 1590, H 1610, M 1270, N 1290, P 1310, Q 1330, R 1350, S 1370, T 1390, U 1410, V 1430, W 1450

## · HSTW - IEL- 6800M(16G6SF) - P

HyeSung TechWin  
(회사 상호)

Industrial Ethernet Link  
(산업용)

자사 모델명 시리즈

Power over Ethernet(POE)  
지원

# Specifications

Technical parameters	Specification	
<b>Product Name</b>	22ports L2 Full Gigabit Managed Industrial Ethernet Switch	
<b>Product Model</b>	HSTW-IEL-6800M(16G6SF)Series	
<b>Interface</b>	16x 10/100/1000M Copper RJ-45 Ports, 4x 100/1000M SFP Slot, 2x 100/1000/2500M SFP Slot, 1 console Port	
<b>Network Protocols</b>	IEEE802.3i	10Base-T 10Mbit/s Ethernet
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab	1000Base-T Gigabit/s Ethernet over twisted pair
	IEEE 802.3z	1000/2500Base-LX Gigabit/s Ethernet over Fiber-Optic
	IEEE 802.3x	Flow control, Back pressure
	IEEE 802.3ad	Link aggregation for parallel links with LACP (Link Aggregation Control Protocol)
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization
	IEEE 802.1q	Virtual LANs (VLAN)
	IEEE 802.1ad	Stacked VLANs, Q-in-Q
	IEEE 802.3az	EEE (Energy Efficient Ethernet)
IEEE 802.1x	Port based and MAC based Network Access Control, Authentication	
<b>Port Management</b>	Enable/Disable port Speed, duplex, MTU settings, etc. Flow-control flow control setup Port mirroring Support port access direction, VLAN image To support the port speed limit Support port isolation settings Unknown unicast, multicast, broadcast storm suppression	
<b>Spanning Tree Protocol</b>	IEEE 802.1D	STP (Spanning Tree Protocol)
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)
<b>ITU-T G.8032/ Y.1344</b>	ERPS (Ethernet Ring Protection Switching) Recovery time <50ms, 15ms 이내 Single Ring, Sub-Ring, Multiple Ring Topology Network	
<b>사설 Ring Protocol</b>	HSTW-Ring Protocol	
<b>Link Aggregation</b>	Support static manual aggregation, Support LACP dynamic convergence IEEE 802.3ad	
<b>IEEE802.3af-2003, IEEE802.3at-2009</b>	Power over Ethernet(POE)	
<b>VLAN</b>	Support up to 4K VLANs simultaneously (out of 4096 VLAN IDs) Support Port based VLAN and IEEE 802.1Q VLAN	
<b>IGMP Snooping</b>	Support static add/delete	
<b>GMRP</b>	Supports GARP multicast registration protocol	
<b>MAC</b>	Support static add/delete MAC address learning limit Support dynamic aging time settings	
<b>ACL</b>	Based on the source MAC, destination MAC, protocol type, source IP, Destination IP, L4 port number Support time-range time management	
<b>QOS</b>	Based on 802.1p (COS) classification Based on DSCP classification Based on the source IP, destination IP, port number classification Support SP,WRR, DRR scheduling strategy Support traffic speed limit CAR	
<b>MPLS</b>	MPLS supports static LSP / Support VPN MPLS	
<b>LLDP</b>	Support LLDP link discovery protocol	
<b>802.1x</b>	Support 802.1x port authentication (Radius, local)	

Technical parameters	Specification	
<b>Prevent attack</b>	DOS defense Support for CPU protection, limited to send CPU message rate	
<b>System Management</b>	User add / delete User login, operation, status, event log Device reset, configuration save / restore, upgrade management, time setting, etc.	
<b>Management Function</b>	CLI	Support serial command line management
	TELNET	Support serial command line management
	SSH	Supports SSHv1/2 remote management
	SNMP	Cold Start, Warm Start, Link Down, Link Up SNMP v1/v2/v3 and so on
	WEB	Supports two layers, three layers of view, etc
	RMON	RMON I (1, 2, 3, 9 group), RMON II
<b>Network Media</b>	10BASE-T: Cat3,4,5 UTP(≤100 meter) 100BASE-TX: Cat5 or later UTP(≤100 meter) 1000BASE-TX: Cat6 or later UTP(≤100 meter)	
<b>Fiber Media</b>	Multi-mode: 1310nm, 2km Single-mode:1310nm, 20; 1550nm, 40/60/80/100/120km	
<b>Performance Specification</b>	Bandwidth:60Gbps Packet Buffer Memory:4Mbit Packet Forwarding Rate:37.2Mpps Address Table:8K Switching delay:< 5μs	
<b>IGMP / MLD Snooping</b>	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2 Port Filtering Profile Throttling, Fast Leave Maximum Multicast Group : up to 1022 entries Query / Static Router Port	
<b>Forwarding Mode</b>	Store-And-Forward	
<b>LED Display</b>	Run indicator: LED-Green Power supply indicator: LED-Green 10/100/1000M-TX indicator: LED-Yellow, LED-Green 100/1000/2500M LINK indicator: LED-Green	
<b>Power Supply</b>	Input Voltage: AC(85~264VAC), 48VDC Dual power supplying redundancy	
<b>Working Environment</b>	Working temperature: -40~85℃ Storage temperature: -40~90℃ Relative Humidity: 5%~95% (no condensation)	
<b>Industry Standard</b>	EMI: FCC Part 15, CISPR (EN55022) class A EMS: EN61000-4-2 (ESD) EN61000-4-3(RS) exceeds Level 3 EN61000-4-4 (EFT) IEC 61000-4-5 (Surge) IEC 61000-4-6 (CS) Level 2 IEC 61000-4-8 IEC 61000-4-11 IEC 61000-4-16 Shock(충격): IEC 60068-2-27 Free fall(낙하): IEC 60068-2-31 Vibration(진동,내시험): IEC 60068-2-6	
<b>Certification</b>	CE mark, commercial / FCC Part 15 Class B / VCCI ClassB / EN 55022 (CISPR 22), ClassB	
<b>Mechanical Structure</b>	Shell: IP30 protect grade, metal shell Installation: DIN-Rail or Wall mounts	
<b>MIB</b>	RFC1213 MIB II, Private MIB	
<b>Over load protection</b>	Support	
<b>Redundancy protection</b>	Support	
<b>MTBF</b>	200,000 hours	
<b>Warranty</b>	5 years warranty	