

# 8 Giga Fiber for High Scalability Fiber Network

## DS410F

### Industrial 6GF+2GC+2G L2 Managed Fiber Switch

DS410F is designed for industrial environments requiring high port density fiber communication such as industrial automation, road highway tunnel surveillance. The 6-port Giga Fiber SFP, 2-port Giga SFP/RJ45 combo and 2-port Giga copper design makes it ideal to use in fiber demanding applications without the need to add fiber converter. The -40~75°C wide operation temperature guarantees the reliability of the operation under harsh environment. The support of NetMaster provides easy access over network management and group device maintenance.



NetMaster ViewMaster



### Features & Benefits

#### Full Gigabit Switching and Ultra High Throughput

- 10-port Full Gigabit Ethernet, including 2 Gigabit RJ45, 2 100/1000M RJ45/SFP Combo and 6 100/1000M SFP ports
- High flexibility of cable types and distances for system integrators
- Fiber ports support both 100M and 1000M SFP
- Stores and forwards with non-blocking switch fabric

#### Management Features

- Various configuration paths, including WebGUI, CLI, SNMP
- Layer 2 management features include VLAN, QoS, IGMP Snooping, LACP/Trunk, Rapid Spanning Tree protocol...etc.
- Traffic management: Port classification, Port policing, Port scheduler, Port shaping, QoS control list, WRED, Port Security
- LLDP topology control

#### Cyber Security for Critical Applications

- 802.1X/RADIUS port-based access control
- IP Security/Port Security
- HTTPs/ Management IP secure access

#### Rugged Design for Wayside Network Switching with Wide Power Input Range

- NEMA-TS2 compliance for wayside traffic control
- 10~60V wide power range design with redundant power input
- Excellent heat dissipation design for operating in -40~75°C environments
- High level **EMC protection** exceeding traffic control and heavy industrial standards' requirements
- IEC 61000-6-2/4 Heavy Industrial Environment
- EN50121-4 railway trackside EMC compliance



## Interfaces

### 10-port Full Gigabit Ethernet

- 6-port 100/1000M SFP
- 2-port 100/1000M SFP/RJ45 Combo
- 2-port 10/100/1000M RJ45

### System LED

- 1 x DI
- 1 x DO
- 1 x Ring status
- 2 x Power
- 1 x System Status

### RS232 System Management Console



### DIN Clip

### Integrated DI/DO Connector

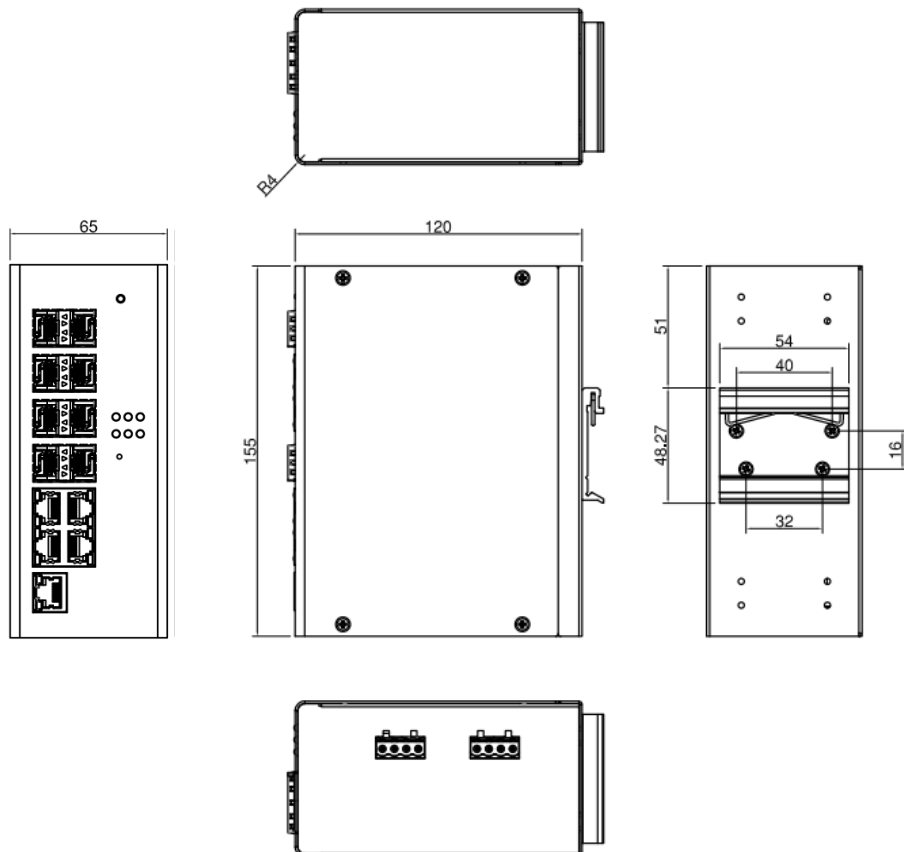
- 1 x 4-pin terminal block
- 2-pin for DI
- 2-pin for DO

### Integrated Power Connector

- 1 x 4-pin terminal block for redundant power input



## Dimensions



Technology	
<b>Standard</b>	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3u 100Base-FX Fast Ethernet Fiber
	IEEE 802.3ab 1000Base-T Gigabit Ethernet Copper
	IEEE 802.3z Gigabit Ethernet Fiber
	IEEE 802.3x Flow Control and back-pressure
	IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
	IEEE 802.1p Class of Service (CoS)
	IEEE 802.1Q VLAN
	IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP)
	IEEE 802.3ad Link Aggregation Control Protocol (LACP)
IEEE 802.1X Port based Network Access Protocol	
Performance	
<b>Switch Technology</b>	Store and Forward Technology with Non-Blocking Switch Fabric
<b>Number of MAC Address</b>	4K
<b>Packet Buffer Memory</b>	1.75M bits
<b>Transfer performance</b>	10Base-T: 14,880pps, 100Base-TX/FX: 148,800pps, 1000Base-TX/FX: 1,488,100pps
<b>VLAN</b>	4095 VLANs
<b>VLAN ID</b>	1~4095
<b>Traffic Prioritize</b>	8 Priority Queues per Port
Interface	
<b>Ethernet Port</b>	6 x 100/1000M SFP 2 x 100/1000M RJ45/SFP Combo, Auto Negotiation, Auto MDI/MDIX 2 x 10/100/1000Base-T RJ45, Auto Negotiation, Auto MDI/MDIX
<b>System LED</b>	1 x DI : Green On 1 x DO: Red On 1 x Ring: Reserved 2 x Power: Green On 1 x SYS: Ready: Green On, Firmware Updating: Green Blinking
<b>Ethernet Port LED</b>	Link (Green On), Activity (Green Blinking), Speed 1000M(Amber On), Speed 100M (Off)
<b>SFP LED</b>	Port: Link (Green On), Activity (Green Blinking); 1000M: Speed 1000M (Amber On), Speed 100M (Off)
<b>Reset</b>	System Reboot(2-6 Seconds)/Default Settings Reset(over 7 Seconds)
<b>Console</b>	1 x RS232 in RJ45 for System Configuration. Baud Rate: 115200.n.8.1, Pin Define: 3: TxD, 6:RxD, 5:GND
<b>Digital Input, Digital Output</b>	4-Pin Removable Terminal Block Connector 2-Pins for DI 2-Pins for DO (Relay Alarm) 1x Digital Output: Dry Relay Output with 0.5A /24V DC 1x Digital Input with Photo-Coupler Isolation Digital High: DC 11V~30V Digital Low: DC 0V~10V
<b>Power Input</b>	4-Pin Removable Terminal Block Connector 4 Pins for Redundant Power
Power Requirement	
<b>Input Voltage</b>	24VDC (10~60VDC)
<b>Reverse Polarity Protect</b>	Yes
<b>Input Current</b>	0.38A@24V
<b>Power Consumption</b>	Max 9.12W@24VDC full traffic, suggest to reserve 15% tolerance

Software	
Management Interface	WebGUI, Command Line Interface (CLI), SNMP
Network Management	IPv4, SNMP v1/v2c/v3/Trap, MIBs, LLDP, DHCP client, TFTP, System Log,
Traffic Management	Flow Control, Port Trunk/802.3ad LACP, VLAN, Private VLAN, Shared VLAN, Rate Limiters, Port Mirror, IGMP Snooping v2, Port classification, Port policing, Port scheduler, Port shaping, QoS control list, Storm policing, WRED, Port Security, ACL, Loop Protection
Security	IEEE 802.1X/RADIUS, Management IP, Management VLAN, SSL
Redundancy	Rapid Spanning Tree Protocol (RSTP)
Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal with Aluminum
Dimension	65x155x120 (W x H x D) / without DIN Rail Clip
Ingress Protection	IP30
Weight	~985g without package
Environmental	
Operating Temperature & Humidity	-40°C~75°C , 0%~95% Non- Condensing
Storage Temperature	-40°C~85°C
MTBF	>200,000 hours
Warranty	5 years
Standard	
Safety	EN60950-1 Compliance
EMC	EN61000-6-2/EN61000-6-4
EMI	CISPR 22, FCC part 15B Class A
EMS	EN61000-4-2 ESD, EN61000-4-3 RS, EN61000-4-4 EFT, EN61000-4-5, EN61000-4-6 CS, EN61000-4-8 Magnetic Field
Railway	EN50121-4 Compliance



## Ordering Information

Model Name	Description
DS410F	Industrial 10-port Full Gigabit L2 Managed Fiber Switch, 6GSFP+2GC+2G
	<b>Package List</b>
	1 x Product Unit (Without SFP Transceiver)
	2 x 4-pin Removable Terminal Block Connector
	1 x Attached Din Clip
	1 x Quick Installation Guide



## Optional Accessory

Item	
<b>MK-D1-2</b>	Wall-mounting kit with 2 plates and 8 screws
<b>CBL-RJ45F9-1.5M</b>	Serial RS232 console cable RJ45 to DB9 Female 1.5Meter
<b>PSD40-24</b>	40W/24VDC DIN-rail power supply
<b>SFPGEM05</b>	SFP, 1000Mbps, LC, multi, 550M, 0~70°C
<b>SFPGEM05T</b>	SFP, 1000Mbps, LC, multi, 550M, -40~85°C
<b>SFPGEM05D</b>	SFP, 1000Mbps, LC, multi, DDM, 550M, 0~70°C
<b>SFPGEM05DT</b>	SFP, 1000Mbps, LC, multi, DDM, 550M, -40~85°C
<b>SFPGEM2</b>	SFP, 1000Mbps, LC, multi, 2KM, 0~70°C
<b>SFPGEM2T</b>	SFP, 1000Mbps, LC, multi, 2KM, -40~85°C
<b>SFPGEM2D</b>	SFP, 1000Mbps, LC, multi, DDM, 2KM, 0~70°C
<b>SFPGEM2DT</b>	SFP, 1000Mbps, LC, multi, DDM, 2KM, -40~85°C
<b>SFPGES10</b>	SFP, 1000Mbps, LC, single, 10KM, 0~70°C
<b>SFPGES10T</b>	SFP, 1000Mbps, LC, single, 10KM, -40~85°C
<b>SFPGES10D</b>	SFP, 1000Mbps, LC, single, DDM, 10KM, 0~70°C
<b>SFPGES30</b>	SFP, 1000Mbps, LC, single, 30KM, 0~70°C
<b>SFPGES30T</b>	SFP, 1000Mbps, LC, single, 30KM, -40~85°C
<b>SFPGES30D</b>	SFP, 1000Mbps, LC, single, DDM, 30KM, 0~70°C
<b>SFPGES10-A</b>	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1310nm RX-1550nm, 0~70°C
<b>SFPGES10-B</b>	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1550nm RX-1310nm, 0~70°C
<b>SFPGES10T-A</b>	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1310nm RX-1550nm, -40~85°C
<b>SFPGES10T-B</b>	SFP, 1000Mbps, LC, single, 10KM, BiDi TX-1550nm RX-1310nm, -40~85°C
<b>SFPGES10D-A</b>	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1310nm RX-1550nm, 0~70°C
<b>SFPGES10D-B</b>	SFP, 1000Mbps, LC, single, DDM, 10KM, BiDi TX-1550nm RX-1310nm, 0~70°C