

SH-G020 Series Unmanaged Industrial Switch

SH-G020 Series unmanaged industrial switch is designed for data communication in harsh environments. It features with fanless heat dissipation design, redundant circuit design, wide range of working environment temperature, high protection level, DIN-rail installation, providing excellent industrial-grade quality, which guarantee the reliability and security of industrial networks. It is widely used for the network access connectivity in many industries such as transportation, telecommunication, security, bank, customs, harbor, power station, oilfield.



SH-G020 series includes 10Gbase-X sub-series, Gigabit sub-series, and PoE sub-series:

10GBase-X sub-series

SH-G200016	2*10GBase-X/1000Base-X SFP and 16*10/100/1000Base-Tx
SH-G200008	2*10GBase-X/1000Base-X SFP and 8*10/100/1000Base-Tx

Gigabit sub-series

SH-G01204	12*1000Base-X/100Base-X SFP and 4*10/100/1000Base-Tx
SH-G0208	2*1000Base-X/100Base-X SFP and 8*10/100/1000Base-Tx
SH-G0008	8*10/100/1000Base-Tx
SH-G0204	2*1000Base-X/100Base-X SFP and 4*10/100/1000Base-Tx
SH-G0005	5*10/100/1000Base-Tx
SH-G0202	2*1000Base-X/100Base-X SFP and 2*10/100/1000Base-Tx

PoE sub-series

SH-G0208T	2*1000Base-X/100Base-X SFP and 8*10/100/1000Base-Tx PoE
SH-G0008T	8*10/100/1000Base-Tx PoE
SH-G0204T	2*1000Base-X/100Base-X SFP and 4*10/100/1000Base-Tx PoE
SH-G0005T	4*10/100/1000Base-Tx PoE and 1*10/100/1000Base-Tx

Rich models to meet the needs of various application scenarios

- ✓ Whether 100M access, Gigabit access or 10Gigabit access, whether electrical port access or optical port access, up to 16 ports, you can find a suitable model best matching your application scenario.
- ✓ Provide models with multiple uplink ports, supporting chain connections to simplify wiring, simplify deployment, and save costs especially for those scenarios with scattered deployments.

High-performance network switching technology

- ✓ Comply with multiple IEEE802.3 Ethernet standards
- ✓ All ports provide the capability of line-speed Layer 2 switching to ensure that all ports can forward packets without blocking.
- ✓ Up to 16k (10G models) / 8K (Gigabit models) MAC addresses, greatly facilitates your subsequent expansion and expands your application.

Excellent industrial quality, suitable for extremely harsh environments

- ✓ Wide range of working temperature from -40 °C to +85 °C , and 5%-95% relative humidity without condensation, meeting various harsh application environments
- ✓ Fanless design, to reduce the power consumption of the device, so the noise.
- ✓ Good protection design, such as IP 40 dustproof design, lightning protection, anti-surge, anti-interference of fast pulse group, anti-static interference, etc..
- ✓ Support DIN-rail, wall-mounted, and desktop installations
- ✓ LED indicators for instant monitoring of the performance status

Well power protection design for reliable performance

- ✓ Support wide-voltage DC power supply, from DC12V to 54V
- ✓ Well protection design, anti-reverse connection, over-voltage protection and over-current protection.
- ✓ Dual power redundancy design, when a power supply is abnormal, the device can work continuously and stably without network disconnection

Power over Ethernet

- ✓ Comply with multiple IEEE802.3at PoE+ and IEEE802.3af PoE standards
- ✓ Provides power and data communication over network cable, ideal solution for the application scenario where the traditional power is not available, simplifying and saving the cabling cost
- LED indicators for instant monitoring of the performance status

Technical Specification

General	
Ethernet Port	Connector: RJ45 10/100/1000Base-Tx auto negotiation, Full/half duplex auto negotiation MDI/MDI-X auto negotiation
Fiber Port	10GBase-X SFP available 1000Base-X SFP available
Protocols	IEEE802.3, IEEE802.3i 10BASE-T, IEEE802.3u 100BASE-X, IEEE802.3z 1000Base-T, IEEE802.3ab 1000Base-X IEEE802.3ae 10GBase-X, IEEE802.3x Flow Control, IEEE802.3af PoE, IEEE802.3at PoE+
Reach	10Base-Tx UTP cable: <250m over Cat3/4/5 or up 100Base-Tx UTP cable: <150m over Cat5/5e or up 1000Base-TX UTP cable: <100m over Cat5e/6 or up Multi mode Fiber: <2km @1G, <300m @10G Single mode Fiber: <160km @1G, <100km @10G
PoE	IEEE802.3at and IEEE802.3af compliant Maximum power output: 30W each port Voltage input: DC48V~54V Pin: 1,2 (+) /3,6(-)
LED indicator	Power, TX Link/ACT, FX Link/ACT, 1000M Data rate
Power supply	Connector: 6-pin crimp terminal block Voltage input: DC12~54V (non PoE model), DC48V-54V (PoE model) Support dual power redundancy
Environmental	Working temperature: -40°C~+85 °C Storage temperature: -40 °C ~ +85 °C Relative Humidity: 5~95% (no condensing)
MTBF	100,000hrs
Protection	ESD: IEC 61000-4-2 level 3 for air discharge, and level2 for contact discharge Electrical fast burst: IEC 61000-4-4 level 2 for Ethernet ports Surge Immunity: IEC 61000-4-5 level 1 for Ethernet ports

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Based on Model			
Model	Ports	Switching Fabric	Power & Mechanical
SH-G200016	2*10GBase-X/1000Base-X SFP, 16*10/100/1000Base-TX	Bandwidth: 72G Forwarding Rate: 53.57Mpps MAC address: 16K Buffer: 2M	Power Consumption: <12W Shell size: 154*113*55mm Weight: 1.32KG
SH-G200008	2*10GBase-X/1000Base-X SFP, 8*10/100/1000Base-TX	Bandwidth: 56G Forwarding Rate: 41.67Mpps MAC address: 16K Buffer: 2M	Power Consumption: <12W Shell size: 154*113*55mm Weight: 1.31KG
SH-G01204	12*1000Base-X/100Base-X SFP, 4*10/100/1000Base-TX	Bandwidth: 32G Forwarding Rate: 23.81Mpps MAC address: 8K Buffer: 4M	Power Consumption: <18W Shell size: 154*113*55mm Weight: 1.31KG
SH-G0208	2*1000Base-X/100Base-X SFP, 8*10/100/1000Base-TX	Bandwidth: 20G Forwarding Rate: 14.88Mpps MAC address: 16K Buffer: 2M	Power Consumption: <7W Shell size: 154*113*55mm Weight: 1KG
SH-G0208T	2*1000Base-X/100Base-X SFP, 8*10/100/1000Base-TX PoE	Bandwidth: 20G Forwarding Rate: 14.88Mpps MAC address: 16K Buffer: 2M	Power Consumption: <7W* Shell size: 154*113*55mm Weight: 1.05KG
SH-G0008	8*10/100/1000Base-TX	Bandwidth: 16G Forwarding Rate: 11.9Mpps MAC address: 16K Buffer: 2M	Power Consumption: <7W Shell size: 154*113*55mm Weight: 1KG
SH-G0008T	8*10/100/1000Base-TX PoE	Bandwidth: 16G Forwarding Rate: 11.9Mpps MAC address: 16K Buffer: 2M	Power Consumption: <7W* Shell size: 154*113*55mm Weight: 1.05KG
SH-G0204	2*1000Base-X/100Base-X SFP, 4*10/100/1000Base-TX	Bandwidth: 12G Forwarding Rate: 8.93Mpps MAC address: 16K Buffer: 2M	Power Consumption: <7W Shell size: 154*113*55mm Weight: 1KG
SH-G0204T	2*1000Base-X/100Base-X SFP, 4*10/100/1000Base-TX PoE	Bandwidth: 12G Forwarding Rate: 8.93Mpps MAC address: 16K Buffer: 2M	Power Consumption: <7W* Shell size: 154*113*55mm Weight: 1.05KG
SH-G0005	8*10/100/1000Base-TX	Bandwidth: 10G Forwarding Rate: 7.44Mpps MAC address: 8K Buffer: 1M	Power Consumption: <6W Shell size: 120*94*43mm Weight: 0.5KG
SH-G0005T	4*10/100/1000Base-TX PoE, 1*10/100/1000Base-TX	Bandwidth: 10G Forwarding Rate: 7.44Mpps MAC address: 8K Buffer: 1M	Power Consumption: <6W* Shell size: 120*94*43mm Weight: 0.55KG
SH-G0202	2*1000Base-X/100Base-X SFP, 2*10/100/1000Base-TX	Bandwidth: 8G Forwarding Rate: 5.95Mpps MAC address: 8K Buffer: 1M	Power Consumption: <3.2W Shell size: 120*94*43mm Weight: 0.5KG

*The power consumption doesn't include PoE consumption.

DIP Switches configuration

SH-G020 series provide 3 DIP switches for customization.

Function	Description	Example
Port isolation	The isolated ports cannot communicate with each other, which improves network security.	Set downstream ports to be isolated from each other.
Cross-device isolation (QINQ)	The same ports of two interconnected devices form a group (one connection), and ports in different groups cannot communicate.	Fiber optic media converter with multi-ports.
Port aggregation	If more than one port is interconnected between devices, port aggregation needs to be set up to increase bandwidth, provide link redundancy, and improve network availability. (Note: the two interconnected devices need to be configured peer-to-peer)	Set upstream ports to port aggregation.
Storm control	The port with storm control enabled will control the rate of received flooding packets (unknown multicast, multicast, broadcast), which avoids the spread of storms and improving network availability.	Set the downstream port to enable storm control.
Port mirroring	Mirror all the input/output packets of the mirroring source port to the mirroring destination port. Supports one-to-one mirroring (1 mirroring source port to 1 mirroring destination port) and one-to-many mirroring (multiple mirroring source ports to 1 mirroring destination port).	Set port 5 to be the mirroring source port, and port 1 to be the mirroring destination port
Port flow control	Port flow control is a network-wide strategy, which needs to be enabled on the entire network. When network congestion occurs, backpressure is applied hop-by-hop to the source port of the packet flow through flow control frames, so that no packet loss occurs on the entire network. This feature needs to be turned on with caution.	Enable flow control on all ports.
DHCP Trust port	When enabled, the DHCP server can only be deployed on the Trust port (not necessarily directly connected). This feature prevents DHCP spoofing.	Set the upstream port as the DHCP Trust port.
VLAN configuration	The upstream port is configured as a trunk port, and the downstream port is configured as an access port. Set the downstream port to different VLAN. Downstream ports of different VLANs cannot communicate with each other.	Set the downstream ports 1-4 as VLAN 10, the downstream ports 5-8 as VLAN 20, and the upstream port 9 as the trunk port.
Policy restart	To restart the device is restart automatically under the setting policy condition, eg: a) the port it linked up, but no packets are sent and received for a period of time; b)scheduled restart for 1 day. or other customized condition.	Set a timer period to restart the device.
.1x similar protocol	Support port and MAC address binding	secure access
Private Ring	Support the private ring network protocol SmartRing. As a leaf node switch, it cooperates with the root switch group ring. [Note 1]	Ring network application

Note 1: Leaf node switch and root switch group ring: It is a plug-and-play cost-effective ring group solution launched by our company according to market demand and for entry-level ring network application scenarios. The leaf is used for terminal access. The leaf node switch forms a ring topology, and the root switch spans between the ring topology and the aggregation switch, and can quickly complete the ring network topology deployment without configuration.

Ordering Information

Model	Products & Description
SH-G200016	10G Ethernet Industrial Switch, 2*10GBase-X/1000Base-X SFP and 16*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G200008	10G Ethernet Industrial Switch, 2*10GBase-X/1000Base-X SFP and 8*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G01204	Gigabit Ethernet Industrial Switch, 12*1000Base-X/100Base-X SFP and 4*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G0208	Gigabit Ethernet Industrial Switch, 2*1000Base-X/100Base-X SFP and 8*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G0008	Gigabit Ethernet Industrial Switch, 8*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G0204	Gigabit Ethernet Industrial Switch, 2*1000Base-X/100Base-X SFP and 4*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G0005	Gigabit Ethernet Industrial Switch, 5*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G0202	Gigabit Ethernet Industrial Switch, 2*1000Base-X/100Base-X SFP and 2*10/100/1000Base-Tx, DC12V-54V, DIN rail, -40~+85℃
SH-G0208T	Gigabit Ethernet Industrial PoE Switch, 2*1000Base-X/100Base-X SFP and 8*10/100/1000Base-Tx PoE, DC48V-54V, DIN rail, -40~+85℃
SH-G0008T	Gigabit Ethernet Industrial PoE Switch, 8*10/100/1000Base-Tx PoE, DC48V-54V, DIN rail, -40~+85℃
SH-G0204T	Gigabit Ethernet Industrial PoE Switch, 2*1000Base-X/100Base-X SFP and 4*10/100/1000Base-Tx PoE, DC48V-54V, DIN rail, -40~+85℃
SH-G0005T	Gigabit Ethernet Industrial PoE Switch, 4*10/100/1000Base-Tx PoE and 1*10/100/1000Base-Tx, DC48V-54V, DIN rail, -40~+85℃