

Build an advanced and highly reliable industrial Ethernet communication system

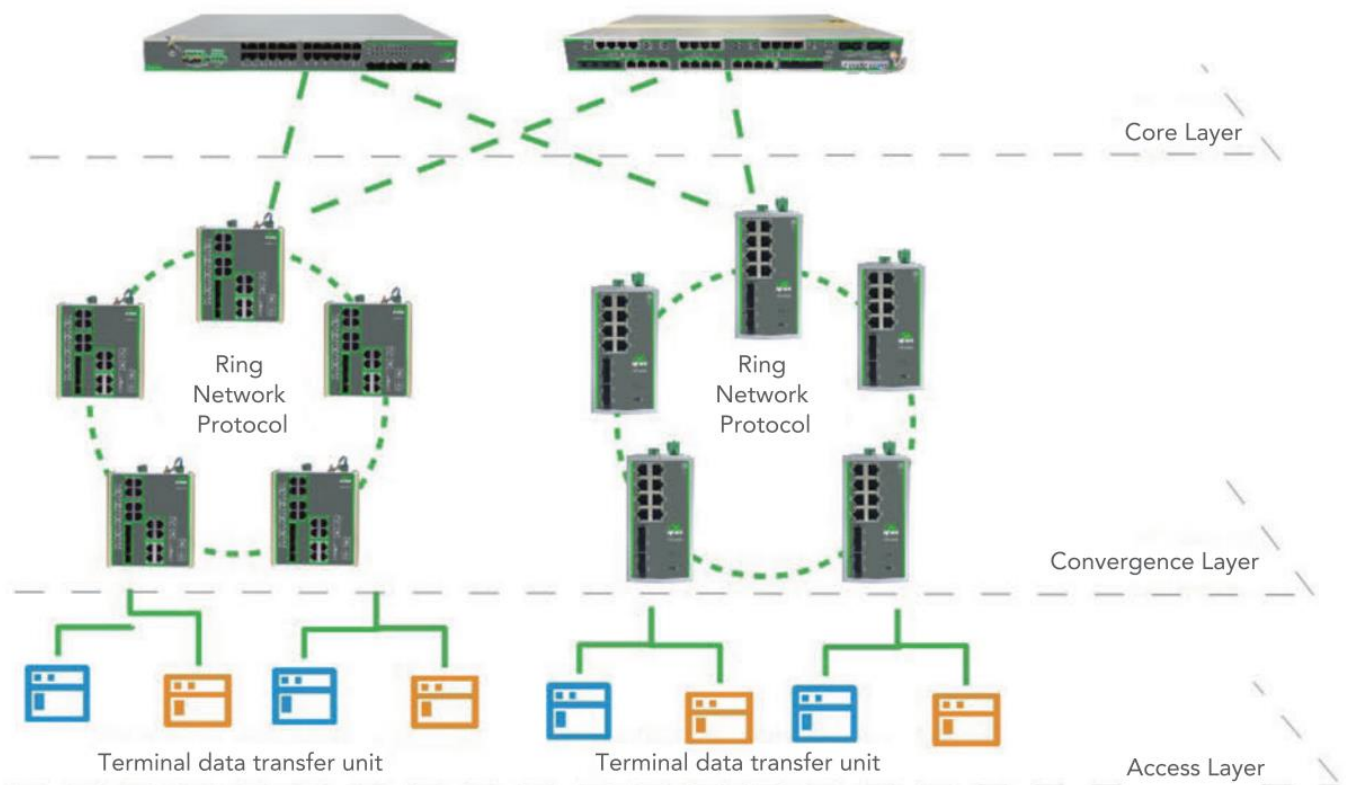
# ISM Series Switch

## Managed Industrial Switch

The ISM series is a managed industrial Ethernet switch designed to meet industrial application scenarios in power, transportation, industrial control and other harsh environments. The ISM series can operate in the extreme environment of  $-40\sim+85^{\circ}\text{C}$ . It integrates convenient safety management features and wire-speed forwarding performance. A sturdy casing and protected circuitry support ERPS and STP/RSTP/MRST ring network redundancy protocol support enhanced network management protocol to meet the industrial application requirements of harsh production environments.

The ISM series managed industrial Ethernet switches have both solid industrial quality and advanced and complete network functions, which can support the construction of highly reliable industrial Ethernet communication systems in harsh industrial environments.

### Applications



## Features

- + Easy and reliable operation in power stations, transportation, and industrial control environments
  - + Excellent EMC electromagnetic compatibility and radiation performance
  - + Real industrial design, working temperature: -40~85°C
  - + Support redundant power input, industrial-grade surge protection
  - + Rugged all-metal housing, strong anti-vibration and shock resistance characteristics
  - + Adopt fanless cooling technology to effectively reduce the failure rate of equipment
  - + IP40 sealed protection, dust, dirt and debris proof
- **Highly-reliable Advanced Communication Systems**

The ISM series of managed industrial Ethernet switches have both solid industrial quality and advanced and complete network functions, which can support the construction of advanced, highly reliable and complex industrial Ethernet communication systems in harsh industrial environments.
  - **The ring network technology protects the core network**

Ring network technology protects the core network by supporting a variety of ring network protocols, suitable for various application scenarios.
  - **No fear of severe cold industrial environment challenges**

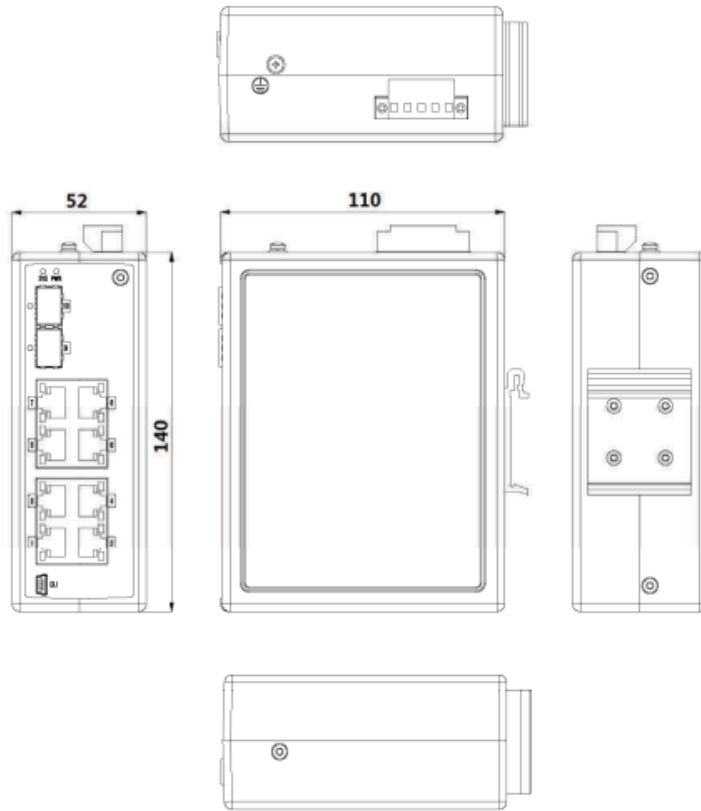
EMC level 4 standard for strong electromagnetic interference, zero packet loss, wide temperature operation, IP40 protection, redundant power supply design and power supply failure alarms, etc., make ISM series industrial Ethernet switches operable in harsh industrial environments. Compliant with CE, FCC and other international certifications.
  - **Efficient and easy deployment and management of the network**

The ISM series supports SNMP, which can perform integrated network management for different network management systems. RMON supports effective network monitoring and fault prediction, allowing users to efficiently deploy and manage the network.
  - **Complete network security performance**

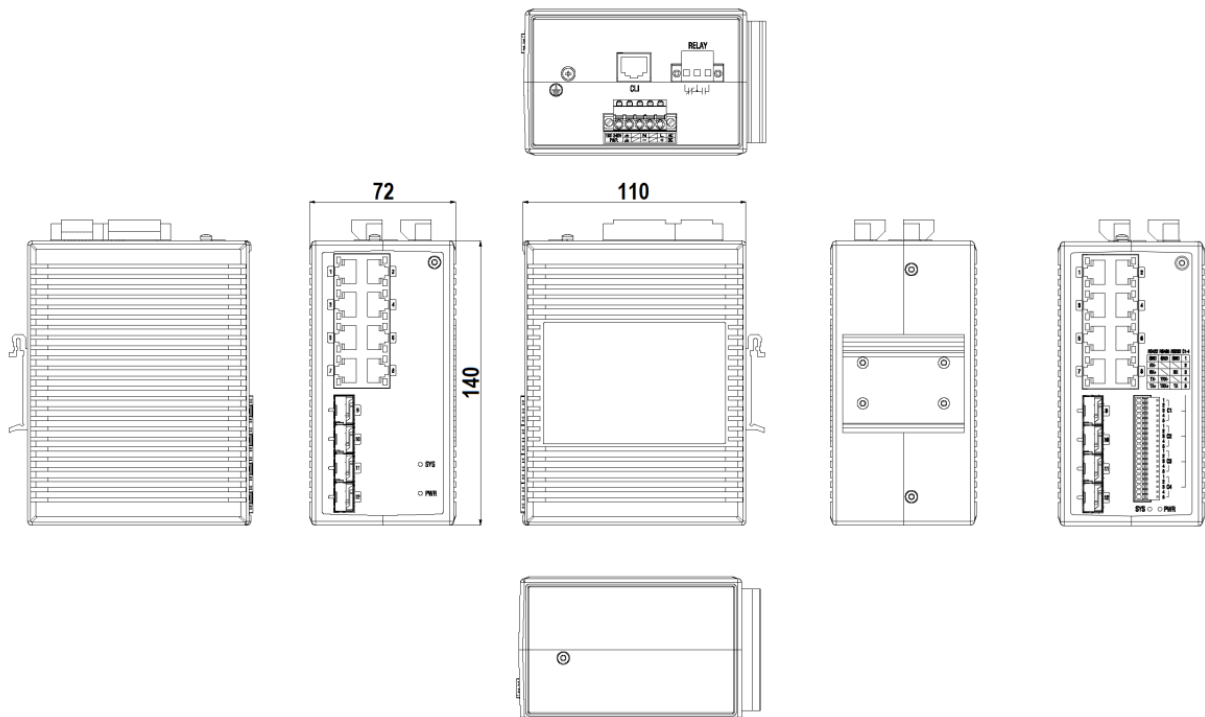
The ISM series also has complete security functions, including support for ACL policy to specify login IP to ensure management security and support for MAC address binding to achieve data isolation and prevent illegal intrusion. The device supports intelligent functions such as QoS intelligent data control, IGMP Snooping and GMRP multicast data filtering and VLAN network partitioning. Efficiently utilizes network bandwidth while ensuring the security of the network.

## Product Size (mm)

ISM5310D

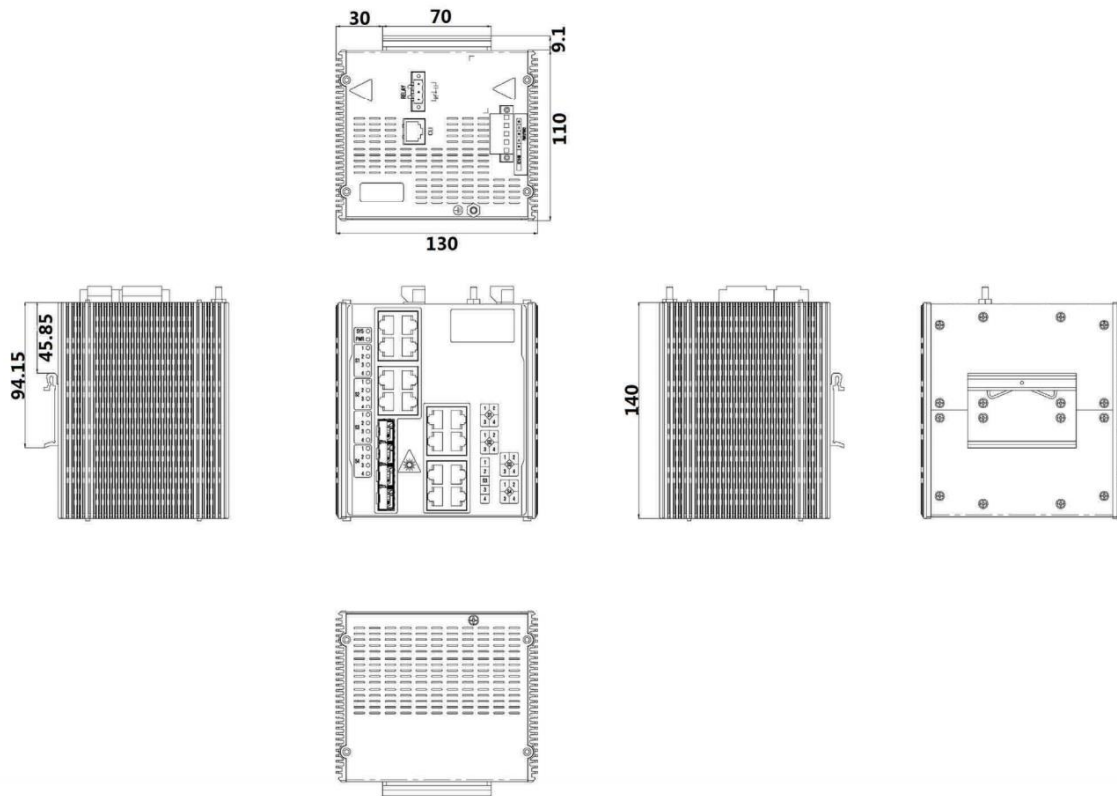


ISM5012D

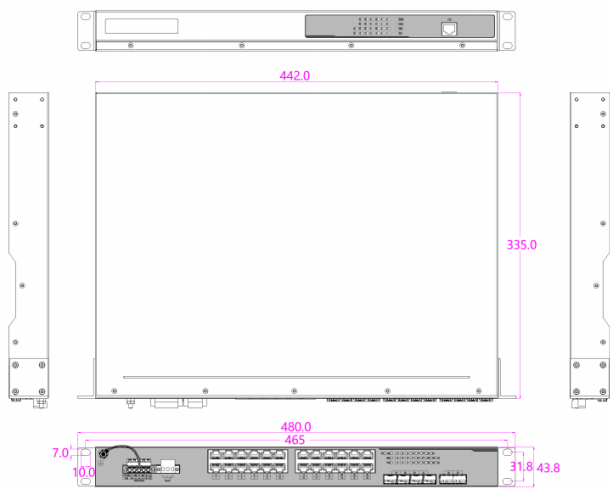




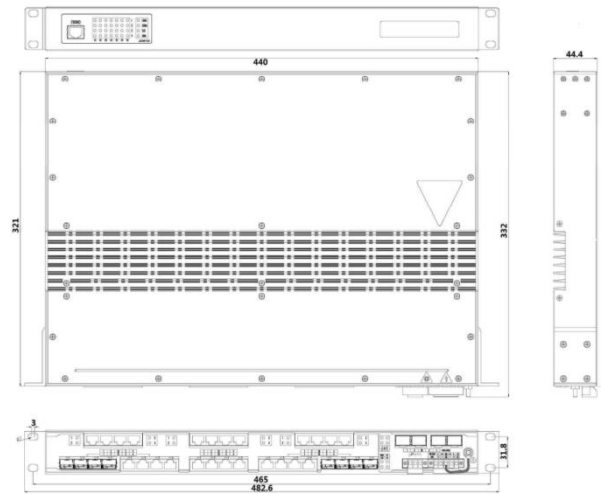
### ISM 5020D



### ISM5026U



### ISM7028U



# Specifications

ISM hardware specifications			
Project	ISM Managed Switch		
Interface			
RJ45 port	10/100/1000Base-T(X) adaptive RJ45 electrical port,		
FX optical port	100/1000 Base-FX port SFP slot		
Optical Multiplexing Port	100/1000Base Combo Port		
LED Indicator	PWR、SYS、S (optical port), electrical port		
Console Port	All models support		
Mechanical properties			
Shell	Fully enclosed seamless metal shell		
Protection level	IP40; IP30(PoE model)		
Size	ISM5310D	52 mm x 140mm x 110mm	
	ISM5012D	72 mm x 140mm x 110mm	
	ISM5020D	130 mm x 140mm x 110mm	
	ISM5026U	442mmx43.8mmx335mm	
	ISM7028U	440mmx44.4mmx321mm	
Weight	ISM5012D	1.0 kg	ISM5310D 0.7 kg
	ISM5020D	1.3.kg	ISM5026U 4 kg
	ISM7028U	3.7 kg	
Cooling Method	Fanless cooling	Installation method	Rail, rack
Power Supply			
Input Voltage	ISM5012D/5020D	24VDC(18~60V), Redundant input	
	ISM5310D	48VDC(48~57VDC) Redundant input	
	ISM5026U/7028U	220VAC (100~240V) Or 110VDC (100~240V) Redundant input	
Interface Terminal	ISM5310D/5012D 5020D/5026U/7028U	5-pin pluggable screw terminal block	
Power Consumption	ISM5310D	Each PoE port provides up to 30W	
	ISM5012D	≤15W	ISM5020D ≤20.5W
	ISM5026U	≤25W	ISM7028U ≤35W
Power Protection	Support reverse connection protection and overload protection		
Working Environment			
Operating Temperature	ISM5012D/5020D/5026U/7028U	-40 ~ +85 °C	
	ISM5310D	-40 ~ +75 °C	
Storage Temperature	-40 ~ +85 °C	Relative Humidity	5 ~ 95% (non-condensing)
EMC			
ESD	EN61000-4-2, level 4	CS	EN61000-4-6, level 3
RS	EN61000-4-3, level 3	PFMF	EN61000-4-8, level 5
EFT	EN61000-4-4, level 5	EC	EN61000-4-9 level 5
Surge	EN61000-4-5, level 4	OWIT	EN61000-4-12 level 3
Mechanical			
Shockproof	IEC60068-2-27	Vibration	IEC60068-2-6
Fall	IEC60068-2-32		
Certification			
CE, FCC, IEC61850-3			
Warranty			
Warranty Period	3 Years	MTBF	35 years

ISM software specifications			
Project	ISM Managed Switch		
Exchange performance			
Inherent delay in forwarding	ISM/5012D/5026U	2.5 us	
	ISM5020D	3.5 us	ISM7028U 4 us
Switching bandwidth	ISM5012D/5020D/5026U	52 Gbps	
	ISM5310DD	28Gbps	ISM7028U 144 Gbps
Forwarding Rate	100 Mbit ports	0.1488M pps	1000Mbit ports 1.488Mpps
MAC	ISM/5012D/5020D/5026U	8 K	
	ISM5310	8 K	ISM7028U 16 K
Packet buffer	ISM5012D/5020D/5026U	4 Mbit	
	ISM5310	4 Mbit	ISM7028U 12 Mbit
Function Features			
Ethernet Standard	IEEE 802.3 applies to Ethernet		
	IEEE 802.3u is suitable for 100BaseT(X) and 100Base-FX		
	IEEE 802.3x is suitable for Flow Control		
	IEEE 802.3z Gigabit Ethernet		
	IEEE 802.1d is suitable for Spanning Tree Algorithm		
	IEEE 802.1w is suitable for Rapid Spanning Tree		
	IEEE 802.1q is suitable for VLAN Tagging		
	IEEE 802.1p is suitable for Priority Queueing		
	IEEE 802.1X is suitable for port and MAC-based access control		
	IEEE 802.3ad is suitable for Port Trunk with LACP		
Multicast features	Maximum number of IGMP groups 256		
	Support GMRP		
	Support IGMP Snooping		
Port Mirroring	Support multi-port mirroring function		
Port Speed Limit	Support port outbound and inbound rate limiting to avoid impact		
Broadcast	Support broadcast storm suppression		
Time	Support PTP		
VLAN	Support Port Based VLAN		
	Support GVRP		
Port Isolation	Support port isolation feature, limit the communication between ports without configuring VLAN, provide users with a safe, fast and flexible networking solution		
QoS	8 (4 for ISM5020D)	Jumbo Frame	9 K
High reliability			
Ring Network Protocol	Support STP/RSTP/MSTP/ERPS/EAPS protocol, RSTP is enabled by default.		
	Support single ring, double ring, tangent ring, cross ring		
Link Aggregation	Support LACP (Dynamic Link Aggregation) and static aggregation		
Equipment maintenance			
Management Method	Support command line interface (CLI), IE browser management		
	Support RADIUS, TACACS+ authentication mechanism		
Network Management Agreement	Support network management tools based on SNMPv1/v2/v3		
LLDP	Support Layer 2 link status information detection		
Alarm Output	Relay (no ISM5310)		
System Status Display	Support CPU load statistics, memory usage status display		
	Support port status display		
	Support firmware version information display		
Backup/Restore	Support device model, serial number, host name display		
	Support import/export backup configuration files and restore		
Logging	Support local log recording and remote log server functions for easy troubleshooting		
System	Support local/remote firmware upgrade function		

Model	Optical multiplexing Ports	100/1000Base X SFP Ports	10/100/1000 Base-T(X) Adaptive RJ45	Installation method
ISM5310D-P-2GSFP-8T-48 (PoE)	–	2	8*10/100/1000 Base-T(X)	DIN-rail
ISM5012D-P-4GSFP-8GT-24	–	4	8*10/100/1000 Base-T(X)	DIN-rail
ISM5020D-P-4GSFP-16GT-24	–	4	16*10/100/1000 Base-T(X)	DIN-rail
ISM5026U-P-4GC-2GSFP-20GT-HV-HV	4	2	20*10/100/1000 Base-T(X)	Rack
ISM7028U-P-8GC-4GSFP-16GT-HV-HV	8	4	16*10/100/1000 Base-T(X)	Rack

## About Us

InHand Networks is a global leader of Industrial IoT, with a record of tremendous success following groundbreaking innovation since our inception in 2001.

InHand serves world-class partners and customers with industrial M2M routers, gateways, industrial Ethernet switches, rugged computers and IoT management platforms. We provide IoT solutions for various vertical markets including Smart Grid, Industrial Automation, Remote Machine Monitoring, Smart Vending, Smart City, Retail and more.

Proudly bearing the marks of both Rockwell Automation Encompass Product Partner in Asia-Pacific and Schneider Electric CAPP Technology Partner, InHand Networks defines industrial innovation and reliability.



43671 Trade Center Place, Suite 100, Dulles, VA 20166  
 T: +1 (703) 348-2988  
 E: [info@inhandnetworks.com](mailto:info@inhandnetworks.com)  
 W: [www.inhandnetworks.com](http://www.inhandnetworks.com)