

# FR-9M348G

4× Gigabit Combo+ 16× Gigabit SFP +  
8× 10/100/1000M Base-TX



## Brief introduction

FR-9M348G is a multi-port, high-standard Industrial Managed Ethernet Switch independently developed by Fiberroad for industrial control. This product adopts industry-leading technical standards and can provide stable and reliable Ethernet transmission with high quality design and reliability. It offers and realizes Ethernet data exchange, convergence and longdistance optical transmission with efficient bandwidth and reliable fiber optic network solutions for users. The industrial switch complies with various characteristics such as no fan, low power consumption, high reliability and stability, and easy to maintain.

Industrial Ethernet Switch adopt mature technology and open network standards, adapt to low temperature and high temperature, strong anti-electromagnetic interference, anti-salt fog, anti-vibration and anti-shake, equipped with redundant dual power supply (AC/DC), which can offer redundant mechanisms for critical applications that need always-on connections. It can also operate either at standard operating temperature range -40 to 75°C. Industrial switches support standard 19" rack mounts with IP40 protection and are perfect choices for harsh environments, such as industrial networking, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications.

## Features

- > Supports up to 4×Uplink Combo Gigabit+ 16×100/1000M Base-FX+ 8×10/100/1000M Base-TX or 4×Uplink Combo Gigabit+ 24×10/100/1000M Base-TX
- > Cache up to 4Mbit for smooth transfer of 4K video
- > Support IEEE802.3/802.3u/802.3ab/802.3z/802.3x store and forward mode
- > Support large backplane bandwidth, large swap cache, ensure line-speed forwarding for all ports
- > Support ERPS ring network protocol of ITU G.8032 standard, self-healing time less than 20ms
- > Support STP/RSTP/MSTP protocol of international standard IEEE 802.3D/W/S
- > Redundant dual power DC/AC power supply are optional, anti-reverse connection, overcurrent protection
- > -40 ° C ~ 75 ° C wide temperature design to ensure that the equipment adapts to a variety of harsh on-site environments
- > IP40 grade protection, high strength metal case, fanless, low power design

## Specification

|                       |                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------|
| Ethernet Standards    | IEEE802.3 IEEE802.3u IEEE802.3z<br>IEEE802.3ab IEEE802.3x IEEE802.3az<br>IEEE802.3ah IEEE802.1X IEEE802.1Q |
| Cache                 | 4Mbits                                                                                                     |
| Maximum Frame         | 10K Bytes                                                                                                  |
| MAC Address           | 8K                                                                                                         |
| Forward Mode          | Store-and-forward and pass-through (full/half duplex mode)                                                 |
| Switching Performance | Delay: < 7μs<br>Backplane bandwidth: 56Gbps                                                                |

| Transmission Distance           |                                        |
|---------------------------------|----------------------------------------|
| SFP Port                        | Depends on optical module              |
| RJ45 Port Transmission Distance | 100m (using standard CAT5/CAT5e cable) |
| Power Information               |                                        |
| Supply Current                  | 0.6A/230VAC 1.0A/48VDC                 |
| Working Voltage                 | 15-55VDC 100-264VAC                    |
| Overload Protection             | Yes                                    |
| Power Reverse                   | Support                                |
| Power Consumption               | Full load<30W                          |
| POE                             |                                        |
| POE Standard                    | IEEE 802.3af/at, PSE                   |
| POE Power                       | Single port Maximum 30W                |
| POE Line Sequence               | 1/2(+), 3/6(-)end-end bridging method  |
| Physical Characteristics        |                                        |
| Material                        | Metallic aluminum alloy                |
| Cooling Mode                    | Natural cooling, no fan design         |
| Dimensions                      | 440mm*305mm*44mm                       |
| Installation Mode               | 1U Chassis Installation                |
| Weight                          | 3.0kg                                  |
| Environmental Requirements      |                                        |
| Operating Temperature           | -40°C~75°C                             |
| Operating Humidity              | 5%~90% (no condensation)               |

|                               |                                                                                                                                                                                                |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage Temperature           | -40°C~85°C                                                                                                                                                                                     |
| <b>Protection</b>             |                                                                                                                                                                                                |
| MTBF                          | 500,000 hours                                                                                                                                                                                  |
| Warranty                      | 5 year warranty, lifetime technical support                                                                                                                                                    |
| <b>Certification Standard</b> |                                                                                                                                                                                                |
| EMI                           | FCC Part 15 B Class A, EN 55022 Class A                                                                                                                                                        |
| EMS                           | EN61000-4-2(ESD), EN61000-4-3(RS),<br>EN61000-4-4(EFT), EN61000-4-5(Surge),<br>EN61000-4-6(CS), EN61000-4-8,<br>EN61000-4-11                                                                   |
| Impact                        | IEC60068-2-27                                                                                                                                                                                  |
| Drop                          | IEC60068-2-32                                                                                                                                                                                  |
| Vibration                     | IEC60068-2-6                                                                                                                                                                                   |
| Safety Level                  | EN60950-1                                                                                                                                                                                      |
| <b>Software Function</b>      |                                                                                                                                                                                                |
| Redundant Network             | Support STP/RSTP, support EAPS、ERPS                                                                                                                                                            |
| Multicast Support             | Support IGMP Snooping V1/V2/V3, support GMRP                                                                                                                                                   |
| VLAN                          | Support IEEE 802.1Q 4K VLAN, support QinQ                                                                                                                                                      |
| Link Aggregation              | Support manual aggregation, support static/dynamic LACP                                                                                                                                        |
| QOS                           | Support COS、DSCP, 8 queues, support WRR、SP、WFQ, QOS                                                                                                                                            |
| POE Management                | Support total power control, POE on/ off, port power sequencing, POE timing                                                                                                                    |
| Diagnostic Maintenance        | Support port mirroring, Syslog, Ping                                                                                                                                                           |
| Management Function           | Support CLI、WEB、SNMP, Telnet server for management                                                                                                                                             |
| Alarm Management              | Support 1 way relay alarm output, RMON, TRAP                                                                                                                                                   |
| Security                      | Support DHCP Snooping, Option 82, 802.1X security access,<br>Support user hierarchical management, ACL access control list,<br>Support DDOS, port-based MAC filtering / binding, MAC whitelist |

|                  |                                                                                                               |
|------------------|---------------------------------------------------------------------------------------------------------------|
| Port Management  | Support port startup and disabling, support rate setting, Support 802.3x flow control, port name modification |
| Login IP         | 192.168.1.6                                                                                                   |
| Account/Password | Admin/admin                                                                                                   |

\*Note: The SFP model does not contain optical modules by default. If you find any shortage or damage, please contact us in time.

## Precautions

To avoid damage to the equipment and personal injury caused by improper use, please observe the following precautions:

- > Keep the power off during installation, wear an anti-static wrist, and ensure that the anti-static wrist is in good contact with the skin to avoid potential safety hazards.
- > The switch can work normally under the correct power supply. Please confirm that the power supply voltage matches the voltage indicated by the switch.
- > Before powering on the switch, please make sure that the power circuit is not overloaded, so as not to affect the normal operation of the switch and even cause unnecessary damage.
- > To avoid the risk of electric shock, do not open the case while the switch is working, even if it is not charged, do not open it yourself.
- > Before cleaning the switch, pull out the power plug of the switch. Do not wipe with a wet cloth. Do not use liquid to clean it.
- > The equipment installed in the rack is generally from bottom to top to avoid overload installation.
- > Avoid placing other heavy objects on the surface of the switch to avoid accidents.

## Order Information

|           |                                                                                 |
|-----------|---------------------------------------------------------------------------------|
| FR-9M348G | 4* Gigabit COMBO+16*Gigabit SFP+8 *10/100/1000M Base-TX (100M Base-FX optional) |
| FR-9M3424 | 4* Gigabit COMBO+24* 10/100/1000M Base-TX                                       |
| FR-9M34G8 | 4* Gigabit COMBO+8*Gigabit SFP+16* 10/100/1000M Base-TX (100M Base-FX optional) |

\*Fiber port can add SFP module. RJ45 port with PoE optional.