RJ SWITCH

Harsh Environment Industrial Ethernet Switch Plastic Enclosure - IP68

Rugged & Waterproof Switch

Amphenol offers a small size 5 port waterproof Ethernet Switch that can withstand a variety of extreme conditions - low & high temperatures, shocks & vibrations, dust particles or even liquid immersion. This is an easy way to make the Ethernet networks of your manufacturing site, automation or control units deterministic.

Amphenol IP68 Industrial Ring Switch

Amphenol IP68 Ring Ethernet switch is a combination of very fast, fault-tolerant network redundancy Sixnet technology and IP68 sealed & rugged packaging, specifically designed for the harshest environments.
Rings self-configure and just run, without any complex configuration.
The switch board is sealed within a waterproof IP68 polyester enclosure suitable for highly corrosive environments. The polyester material is glass fiber reinforced. This makes it very rugged against shocks and vibration.
The I/O interfaces are waterproof & rugged RJ45 connectors from the RJ FIELD plastic circular series.

Industrial Applications
- ■ Factory Automation
- ■ Robotics
- ■ Process Control
- ■ Transportation Systems
- ■ Data Acquisition & Transmission

Key Features
- ■ Ring Switch Networking Features (managed features available!)
  - ■ Real-Time Ring for ultra-fast fault-tolerant loops
    - • Recovery time of 30 ms + 5 ms per hop!
  - ■ Modbus monitoring over Ethernet
    - • Ideal for deterministic systems and PLCs
  - ■ Real-time traffic prioritization (QoS and CoS)
    - • Assure delivery of real-time data
    - • Improve network utilization
    - • User settable priority assignments
  - ■ Advanced switch features
    - • User configurable port settings
    - • Port mirroring for traffic diagnostics
    - • Pre-configurable for Plug-And-Play simplicity

❶ LEDs indicating activity, link status, datarate (10/100 Mbps)
❷ LED indicating ring status
❸ 5 rugged IP68 RJ Field Ethernet ports
❹ Real-time ring feature
❺ IP68 polyester enclosure reinforced with glass fiber
❻ OK power & ring status
❼ LEDs indicating power
❽ Redundant power inputs
❾ OK contact output

IP68 Unmanaged and Ring Switch Features

IEEE Ethernet Standards

IEEE 802.3	10Mbps Ethernet
IEEE 802.3u	100Mbps Fast Ethernet
IEEE 802.3x	Full-Duplex with Flow Control
IEEE 802.1p standard	QoS/CoS - Quality/Class of Service for Ring model only

Regulatory Approvals

EMI emissions	EN55022, FCC part 15, ICES-003
EMC immunity:	IEC61326-1, IEEE C37.90
Shocks:	IEC60068-2-27
Vibrations:	IEC60068-2-6
Free Fall:	IEC60068-2-32

Ethernet features

Ports	5 Shielded RJ45 ports 10/100BaseTX
Ethernet switch type	Intelligent store & forward
Full / Half Duplex	Configurable
RJ45 speed	10 or 100 Mbps auto-negotiation
RJ45 MDI/MDIX	Auto-crossover connection
RJ45 TD and RD polarity	Auto-polarity
Typical latency	16 us + frame time @ 10 Mbps (varies on load and settings)
	5 us + frame time @ 100 Mbps
MAC addresses supported	2048
Memory bandwidth	3.2 Gbps
Ethernet isolation	1500 Vrms 1 minute
Ring features	Link loss recovery time: 30 ms plus 5 ms per hop
(for Ring model only)	Maximum switches in ring: 50+
	Dual Ring support

Power Supply

Input power (typical)	ES: 2,4 W ; RS: 2,7 W
Redundant inputs	10-30 VDC; 10-50 VDC for EP models

Status Reporting (for Ring model only)

"OK" contact output	Output current: 0.5 A max
"OK" contact State	OFF when a fail occurs
	ON when power and switching is OK

Environmental

|	
Operating Temperature	- 40°C to +75°C
Storage Temperature	- 40°C to +85°C

Weight

	0.54 kg

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Real-Time Ring Switches

Amphenol Real-Time Ring switches combines the Plug&Play simplicity of an unmanaged switch with high performances of Sixnet Ring managed switches.

- ■ **Real-Time fault-tolerant Ring**
  Recovery time of 30 ms + 5 ms per hop!
- ■ **Real-Time traffic prioritization (QoS & CoS)**
  Assure delivery of real-time data
- ■ **Available Managed features**
  User configurable port settings
  Port mirroring for traffic diagnostics
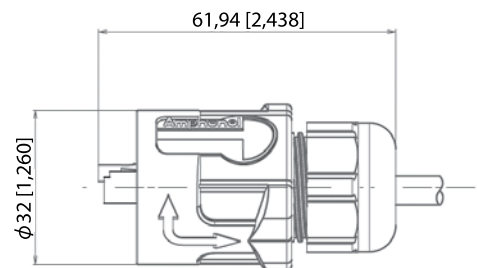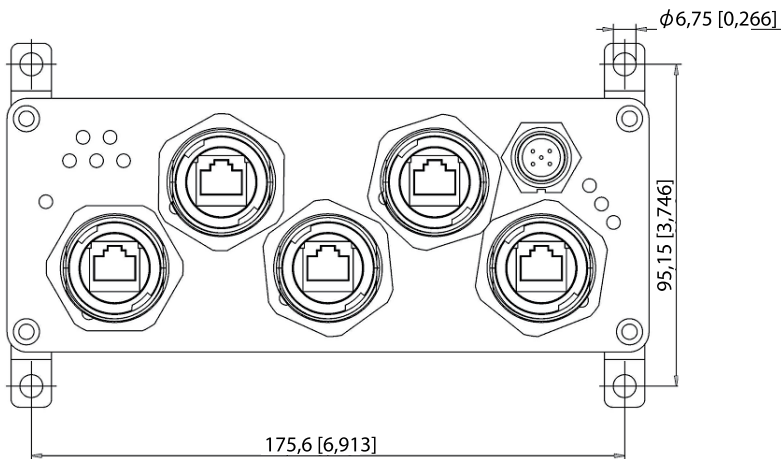 Pre-configurable for Plug & Play simplicity
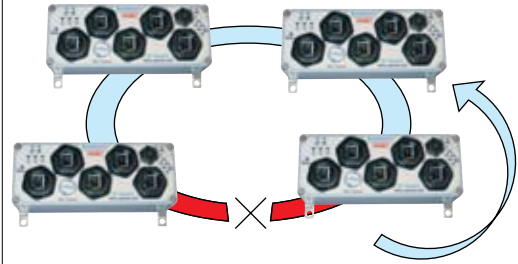
The use of such switches provides a fast network and avoids faults. When a break occurs, the switch instantly transfers data to new path. The link loss recovery is 30 ms plus 5 ms times the number of Ring switches in the ring. For example, 10 ring switches will recover in less than 80 ms. Rings can be pre-configured to "just run". They don't need an assigned IP address. But if you like, you can fine tune the performance of the ring by using a simple Windows wizard (which is free).
Ring networks can be divided into multiple "sub-rings" which enhance reliability and recovery speed through small ring paths.
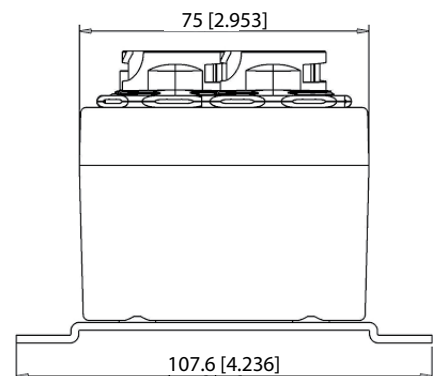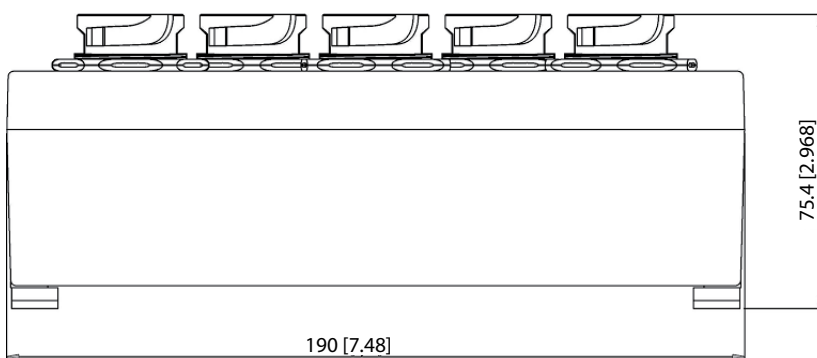
The prioritization of messages assures delivery of real-time data. Some applications need to force no-real-time data (such as video information) to lower priority and force critical real-time data at higher priority. Network utilization is improved.

This combination of Ethernet technology associated with rugged and sealed protective enclosure is the ideal solution to deliver deterministic performance to your industrial systems even in the harshest environment!

Dimensions *(mm/inch)*

φ6,75 [0,266]

61,94 [2,438]

95,15 [3,746]

φ32 [1,260]

175,6 [6,913]

Accessory: Plugs for RJ45 ports

75 [2.953]

75.4 [2.968]

190 [7.48]

107.6 [4.236]

informations & contacts: **www.rjswitch.com • contact@rjswitch.com**

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Part Numbers

Series IP68 RJ-Switch, with polyester body	RJS-PC	5ES	1	
Type of Electronics 5RS: 5 ports 10/100 Mbps, Ring switch (standard order) 5ES: 5 ports 10/100 Mbps, Unmanaged switch (special order)				
Connectors 1: RJ45 ports, 10/100BaseT(X) 1CAPS: Caps are attached on both power and data receptacles				
Military Rated Protection Blank: Industrial protection (standard order) EP: Extended power protection exceeds MIL-STD-1275 (special order)				

Example   IP68 Ethernet Ring switch, 5 ports 10/ 100 Mbps, with caps attached on the receptacles: RJS-PC-5RS-1CAPS

Note   The Ring model is pre-set for 1 ring enabled on the ports 4 and 5.
                You may change the configuration by using the free windows configuration tool.
                Simply choose the desired pair of ports for your new enabled ring.

Accessories

FREE WINDOWS CONFIGURATION TOOL
Download it at **www.rjswitch.com**

■ P/N: RJF PC5 PWR
Plug for power port
Sealing protection: IP68

■ P/N: RJF RB 6
Plugs for RJ45 ports
Sealing protection: IP68

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