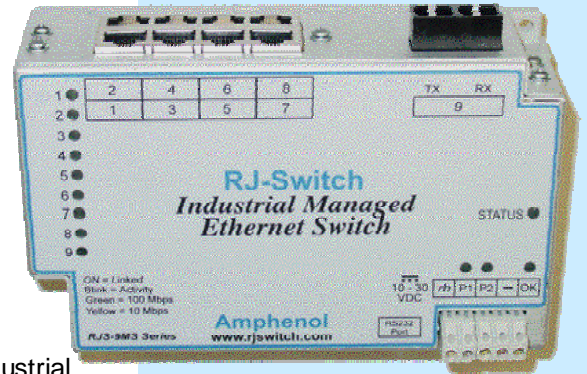


RJ Switch

Industrial Ethernet Switches



Industrial Rugged Ethernet Switch

Amphenol offers a full range of Rugged Ethernet switches for industrial use. Those switches are specifically designed for industrial applications where Real-Time is a key requirement. The wide range, from unmanaged Plug & Play switches to those managed with fiber optics ports, will fulfill to all your needs. This family of switches, IP30 rated, is suitable for both Din-Rail or flat panel mounting. This is an easy way to make the Ethernet networks of your manufacturing site, automation or control units deterministic.

This wide range of Ethernet switches is available with following features:

- ✓ Unmanaged, Real-Time Ring and Managed models
- ✓ RJ45 ports and up to two fiber optics ports (multimode or singlemode)
- ✓ 5 or 9 ports models

Key Features

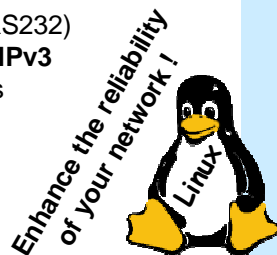
- ✓ **Redundant power** inputs with surge/spike protection
- ✓ Ultra reliable **1,000,000 hours MTBF**
- ✓ **Hazardous location: operation in Zone 2**
- ✓ Wide operating temperature range of **-40°C to 70/85°C**
- ✓ Rugged metal packaging with DIN rail or direct panel mounting
- ✓ Auto-detecting, auto-crossover and auto-polarity
- ✓ Full-Duplex operation with flow control (no collisions!)
- ✓ **Ring Switch** Networking Features
 - ✓ Real-Time Ring for ultra-fast fault-tolerant loops
 - ✓ Recovery time of 30 ms + 5 ms per hop!
 - ✓ Ideal for **deterministic** systems and PLCs
 - ✓ Real-time **traffic prioritization**
 - ✓ Port mirroring for traffic diagnostic
- ✓ **Managed Switch** Networking Features
 - ✓ Rapid Spanning Tree (**RSTP**) for fast redundant rings
 - ✓ Priority queuing for real-time performance (QoS and CoS)
 - ✓ **SNMP** v1 and v2 for network management
 - ✓ **SNMPv3** for authentication and encryption
 - ✓ **IGMP** for multicast filtering
 - ✓ **VLAN** for traffic segregation
 - ✓ User friendly configuration (web, Telnet, RS232)
 - ✓ Encryption using **HTTPS, SSL, SSH, SNMPv3**
 - ✓ Message filtering to stop broadcast storms
 - ✓ RMON and port mirroring for diagnostics
 - ✓ The Power of **Linux** Inside

Exceeds MIL-STD-1275

VLAN
for traffic segregation

Industrial Applications

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



Amphenol®
Copyright.

Managed, Ring & Unmanaged Switch Features

RoHS



IEEE Ethernet Standards

IEEE 802.3 /u	10 Mbps Ethernet and 100 Mbps Fast Ethernet
IEEE 802.3x	Full-Duplex with Flow Control
IEEE 802.1p	Priority Queuing – QoS, CoS, ToS/DS (Ring and managed models)
IEEE 802.1D/w	Rapid Spanning Tree for redundant rings and Spanning Tree for interoperability (managed models)
IEEE 802.1Q	VLAN for traffic segregation (managed models)

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
Hazardous Location:	UL1604, CSA C22.2/213 (Class 1, Div. 2), EN50021/Zone 2



DNV tested
for marine and
off-shore use

Ethernet features

RJ45 ports	5 or 9 Shielded RJ45 ports 10/100BaseTX
Fiber optic ports	SC or ST connectors Data rate 100BaseFX (100Mbps) Wavelength 1300 nm center Fiber multimode (mm) optimal: 62.5/125 um Fiber singlemode (sm) optimal: 9/125 um Fiber max distance (Full duplex): 2km (mm), 15 or 40 km (sm)
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

Exceeds MIL-STD-1275

Environmental

Operating Temperature	- 40°C to +85°C (- 40°C to +70°C for RJS-9MS models)
Storage Temperature	- 40°C to +85°C
Humidity (non-condensing)	5 to 95 % RH

Status

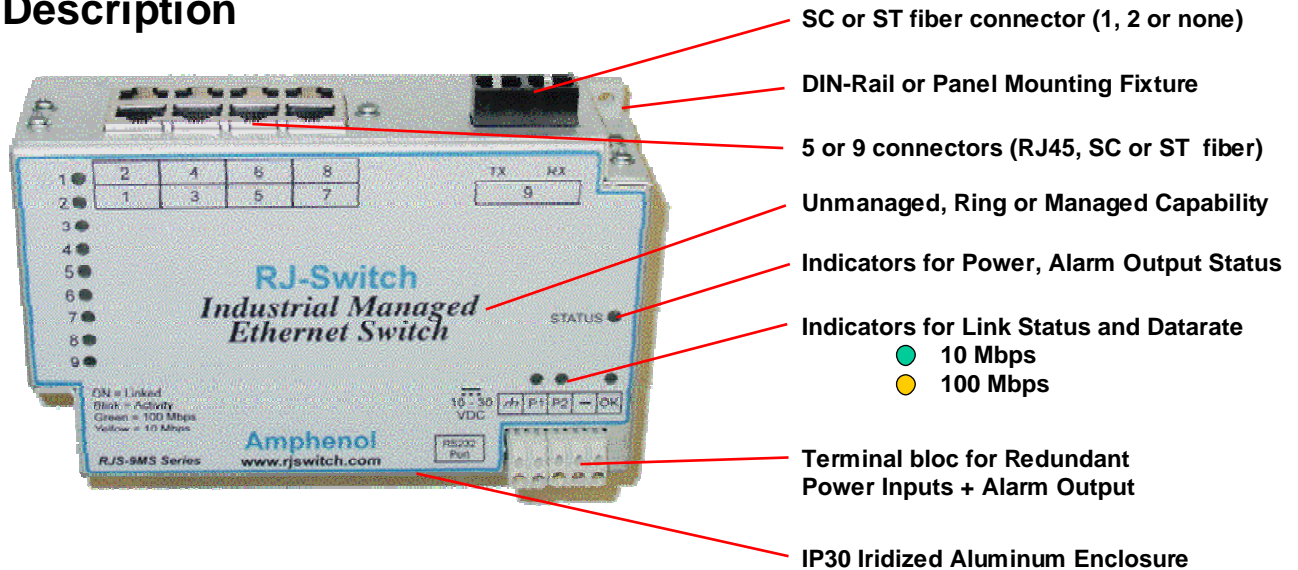
"OK" contact output	10 – 30 VDC (or 10 - 50 VDC depends on models) Maximum current 0.5 A
---------------------	----------------------------------------------------------------------------

Power Supply

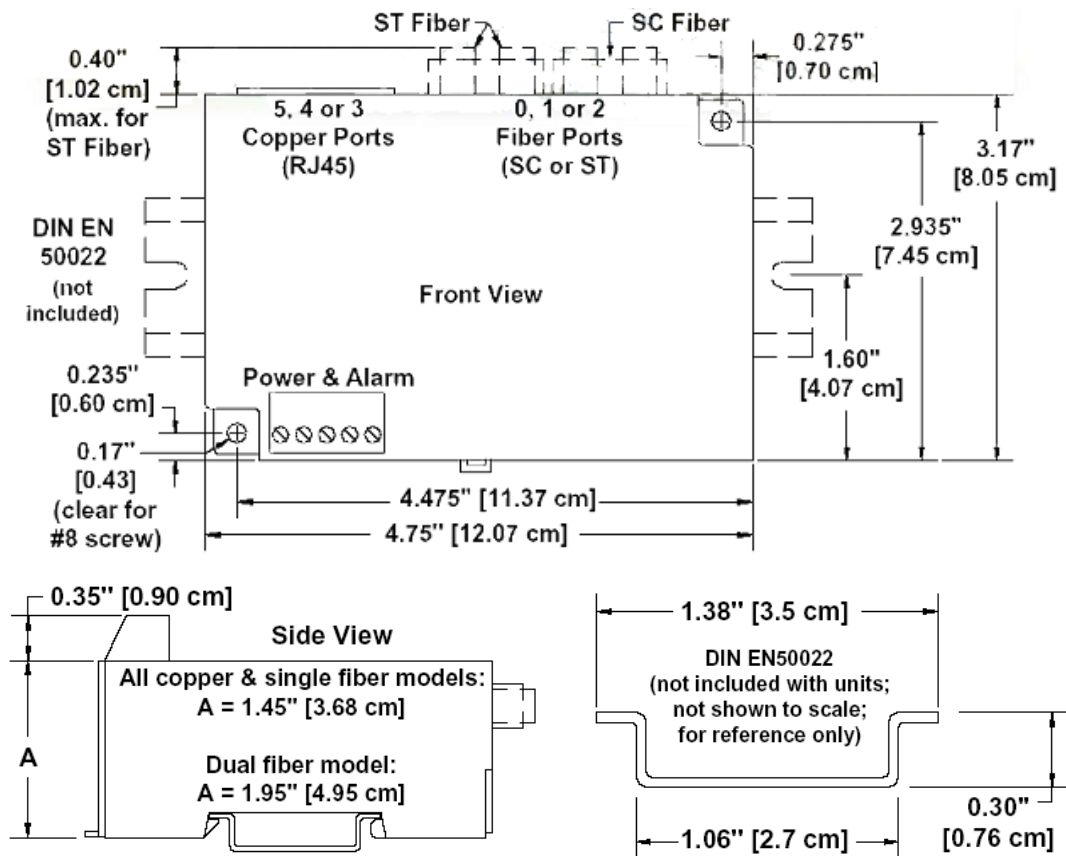
Input Power	4 W - typical, depends on models (all ports active at 100 Mbps)
Redundant Inputs	10 - 50 VDC (models RJS-5RS; RJS-9RS) 10 - 30 VDC (all other models)

Power protection rating	Industrial	MIL-STD-1275 Available on : RJS-5RS RJS-9RS RJS-9MS -4 & -5
Surge protection		100 V for 1s
Transient protection	15 KW peaks	15 KW peaks
Spike protection	5 KW (10 times for 10 µs)	5 KW (10 times for 10 µs) 250 V (50 times for 100 µs)

Description

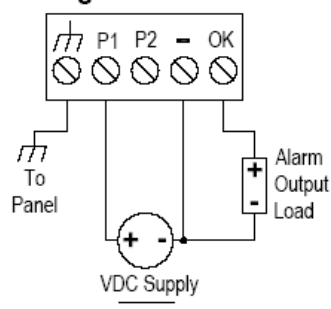


Dimensions (example for 5 Port Ring Models)

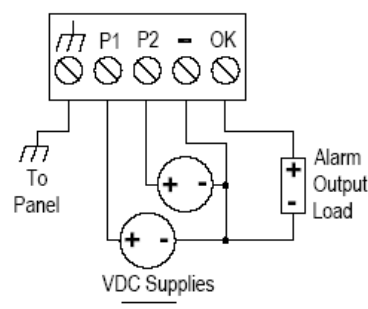


Power and alarm wiring

Single DC Power



Redundant DC Power



Part Numbers

Series	RJS	5ES	1	-	-
RJ-Switch					
Type of Electronics					
5ES : 5 ports total, Ethernet unmanaged switch					
9ES : 9 ports total, Ethernet unmanaged switch					
5RS : 5 ports total, Ethernet Ring switch					
9RS : 9 ports total, Ethernet Ring switch					
5MS : 5 ports total, Ethernet Managed switch					
9MS : 9 ports total, Ethernet Managed switch					
RJ45 or fiber ports					
1 : RJ45 ports only, no fiber					
2 : 1 multimode fiber ports					
3 : 1 singlemode fiber ports					
4 : 2 multimode fiber ports (except for 9ES- models)					
5 : 2 singlemode fiber ports (except for 9ES- models)					
Style of Fiber connectors					
Blank: No fiber					
SC : SC style fiber connector(s)					
ST : ST style fiber connector(s)					
SCL : SC style fiber connector(s), long haul fiber (40km), on singlemode models					
STL : ST style fiber connector(s), long haul fiber (40km), on singlemode models					
Pre-set for Ring models only					
E0 : Pre-set for 0 rings (special order)					
E1 : Pre-set for 1 ring (standard order), configured on last 2 ports					
E2 : Pre-set for 2 rings (special order), Ring 1 = last 2 ports, Ring 2 = ports 1 & 2.					

Example: RJ-Switch, 5 ports Ethernet Ring switch, with 1 multimode ST fiber port, pre-set for 1 ring:

RJS-5RS-2-ST-E1

A complete range of IP67 sealed Industrial Ethernet switches

Amphenol offers the widest range of IP67 sealed Industrial Ethernet switches for very harsh environments. The Ethernet interfaces are waterproof & rugged RJ45 connectors from the RJ FIELD series (www.rjfield.com).

For any other product such as RJ45/fiber optics converter, please do not hesitate to consult us.



New !!!

RJS-PC5 series

- ✓ 5 ports IP67 RJ45 connectors
- ✓ polyester enclosure
- ✓ Ring or unmanaged models



RJS-AL series

- ✓ 8 ports IP67 RJ45 connectors
- ✓ aluminum enclosure
- ✓ Managed or unmanaged models



RJS-PC series

- ✓ 8 ports IP67 RJ45 connectors
- ✓ polyester enclosure
- ✓ Managed or unmanaged models

Consult our dedicated website for more information:

www.rjswitch.com