RJSML-8US1 & RJSML-8UG1

Unmanaged military Ethernet switch - Fast or Gigabit

Military ethernet switch for harsh environment with industrial EMI compliancy

Sealed, rugged & unmanaged switch

Amphenol offers an unmanaged Ethernet switch with 8 gigabit ports RJSML-8UG1.
The switch can withstand a variety of extreme conditions. Whatever the situation - high temperatures, extreme shocks & vibrations, dust particles or even liquid immersion- there is a solution available.

The switch electronics are sealed within a waterproof IP68 metallic enclosure.
The conductive cadmium plating is suitable for most demanding EMI-RFI environments. Black paint is also offered when RoHS is required (other colors available).
The I/O interface includes redundant power inputs as well as waterproof rugged RJ45 connectors from the RJFTV FIELD threaded product series based on MIL-DTL-38999 (Series III) metallic shell size 19. This serie enables the transformation without tooling of any standard RJ45 cordset into a robust and waterproof connection system.

Military applications

- Battlefield communication C4ISR
- Rugged Networks
- Mobile communications
- Avionic & shipboard systems

Key features

- **Rugged environmental feature**
  - Rugged metal packaging with cadmium or paint protection
  - Mil-DTL-38999 III connectors for both power and Ethernet ports
  - IP65/IP68 rated when mated
  - Power filtering and protection (-704 option)
    - MIL- STD-461E (CE03) 600V spike suppressior
    - MIL- STD-704A
    - MIL- STD-1275A
    - RT CA/DO- 160B
  - MIL-STD-810F shocks
  - RTCA/DO- 160C Vibrations
  - Full-Duplex operation with flow control (no collisions!)
  - MIL STD 810F altitude 50,000 ft (15,000 m)
  - Auto-detecting, auto-crossover and auto-polarity
  - Broadcast storm protection
- **Models 8US1**
  - 8 ports 10/100-BaseT(X)
  - Wide operating temperature range of –40°C to 70°C
- **Models 8UG1**
  - 8 ports 10/100/1000-BaseT(X)
  - Wide operating temperature range of –10°C to 60°C
  - Supports Jumbo frame transmission up to 9kbytes
- **Models 8UG1-ET**
  - 8 ports 10/100/1000-BaseT(X)
  - Wide operating temperature range of –40°C to 70°C
  - Supports Jumbo frame transmission up to 9kbytes

IEEE Ethernet standards

Models	Features	802.3/u	802.3x	802.3ab
RJS XX 8US1 XX	Unmanaged - Fast	●	●	X
RJS XX 8UG1 XX	Unmanaged - Gigabit	●	●	●

IEEE 802.3/u	10 Mbps & 100 Mbps fast Ethernet
IEEE 802.3x	Full-Duplex with flow control
IEEE 802.3ab	1000 Mbps Gigabit Ethernet

Ethernet features

RJ45 Ports	8 shielded RJ45 ports 10/100 BaseT(X) or 1000 Base T(X)
Connectors for RJ45 ports	RJFTV: jam nut receptacle based on MIL-DTL-38999 III Olive drab cadmium or nickel plated
RJ45 speed	10, 100 or 1000 Mbps auto -negotiation
Full / Half duplex	Automatic
MDI/MDIX	Auto-crossover

Environmental specifications

Safety	UL 60950-1, CAN/CSA-C22.2 No.60950
EMI emissions	U.S.A.: FCC Part 15 CISPR 22 U.E. EN55011, EN61000-6-4, EN55022 Class A, EN61000-3-2/3, EN55024, IEC61000-4-2/3/4/5/6/8, EN61000-6-2
Shocks	MIL-STD-810F: 40g, 11 ms, 18 saw tooth shocks
Vibrations	RTCA/DO-160C sinusoidal vibrations 5-55 Hz: 0.01 inch: 55-500 Hz : 1.5 g
Altitude	MIL-STD-810F: 50.000 ft - 15.000 m
Temperature	Operating models 8UG1: -10°C to +60°C models 8US1: -40°C to +70°C models 8UG1-ET: -40°C to + 70°C Storage all models: -40°C to +85°C

Weight

approx 2.8 kg

Power supply

Input voltage	8US1, 8UG1, & 8UG1-ET: 12-48 VDC, redundant power input (P1 and P2) 8US1-704 & 8UG1-704: 12-33 VDC, single power input (P1 only) 8US1-PSM & 8UG1-PSM: 85-264 VAC single power input
Input power	5 W max
Connectors for power	MIL-DTL-38999 III jam nut receptacle, olive drab cadmium or nickel plated 1 connector TVx07xx0935P: 6 cts # 22D (wire 0.38 mm^2 maxi)
"OK" contact output	Sourcing power ; maximum current: 1 A @ 24VDC Not available for -704 and -PSM options

Additional power protection for models MG7F3G-704 (option-704)	
MIL-STD-461E	CE102 conducted emission
DEF-STAN-59-41	DCE01/DCE02
DEF-STAN-61-5	Pt 6
MIL-STD-704A	600V input transient, applied for 10us
MIL-STD-1275A	Spikes: +/- 250 V for 100us Surges: 100 V for 50 ms at 0.5 mohm Ripple: 14VAC pk-pk

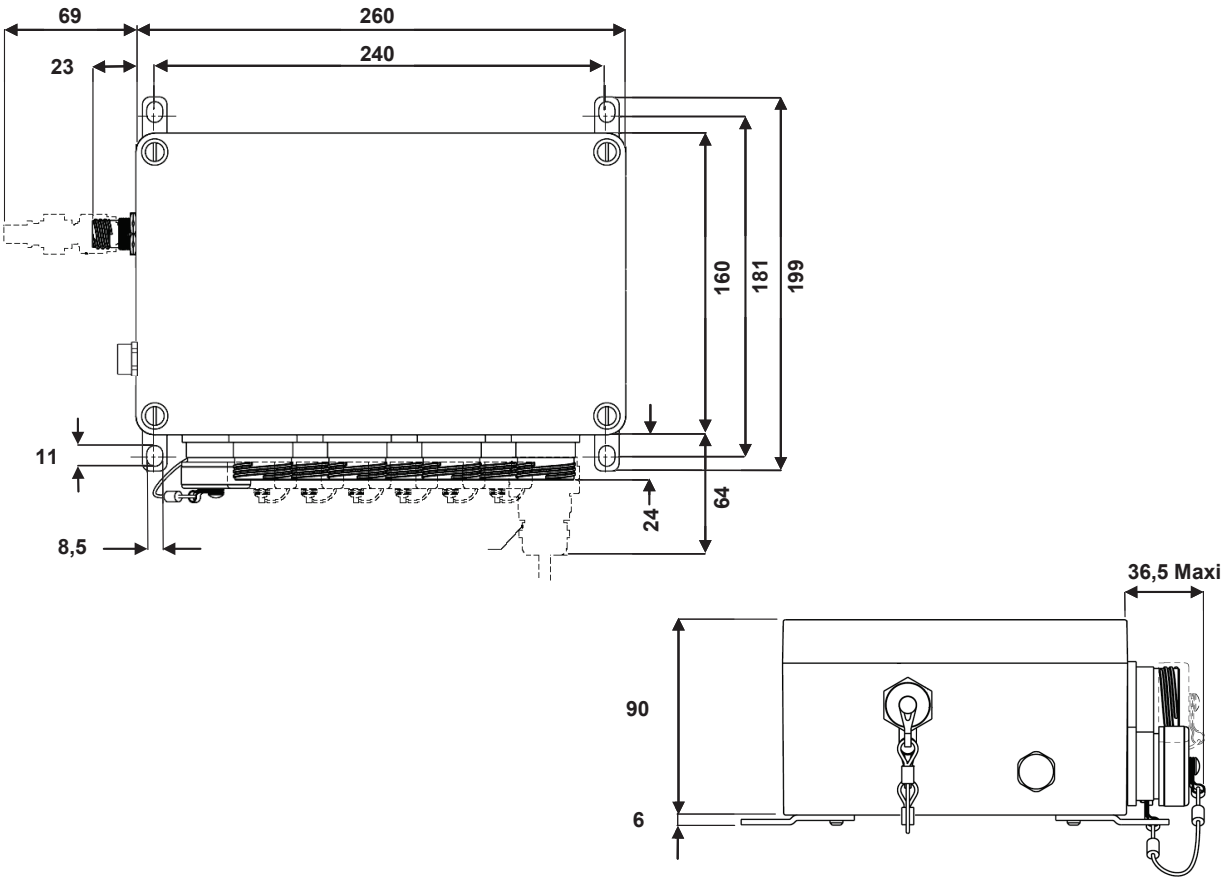
Description

1. IP68 aluminium enclosure with cadmium conductive plating or black paint (RoHS)
2. Redundant power inputs
3. Balance pressure vent
4. 8 rugged IP68 RJF TV Ethernet ports
5. Fixture for vertical mounting

Optional caps available

IMPORTANT NOTE
This model has no LED indicator.

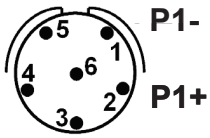
Description (in mm)



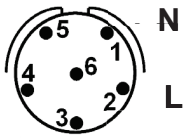
Pin-out for the power connector

OK (3&6)

8US1, 8UG1, & 8UG1-ET
P1 and/or P2: 12-48 VDC



8US1-704 & 8UG1-704
P1: 12-33VDC
3, 4, 5, 6: not connected



8US1-PSM & 8UG1-PSM
L: 85-264 VAC
3, 4, 5, 6: not connected

Part number code

Series	RJS	ML	8US1	-	-	-

Type of Enclosure
ML: MIL-DTL-38999 (series III) Receptacles, OD Cadmium Plating
BKN: RAL 9005 (Jet black) Paint on Aluminium box, Nickel plated 38999 (series III) Receptacles, ROHS compliant

Type of Electronics
8US1: unmanaged 8 ports 10/100 Base T(X), wide temperature range
8UG1: unmanaged 8 ports 10/100/1000 Base T(X)
8UG1-ET: unmanaged 8 ports 10/100/1000 Base T(X), wide temperature range

Optional: transient suppression module; 600V spike suppressor
(Blank): no transient suppression module
704: switch equiped with additional transient suppression module

Optional: AC power supply
(Blank): DC powered
PSM: switch powered with 85-264 VAC instead of DC power

Optional: Caps for receptacles fixed with cord directly to the receptacle
(Blank): no caps included. The Ethernet ports are still sealed but the contacts are not protected.
CAPS: attached caps for both power and data included

Example: RJS ML 8UG1 704 CAPS: unmanaged switch in an aluminum enclosure with olive drab green conductive cadmium plating, 8 gigabit ports, RJFTV threaded coupling receptacles, additional transient suppression module, caps are added to the switch

Remark: All BKN Ethernet switches and nickel plated accessories are RoHs compliants.
-704- and –PSM- options can not be selected together.
With the -704- option, a filter module is included inside the switch allowing to meet MIL-STD-461 and other aircraft standards.
With the -CAPS- option, all the receptacles come pre-equipped with a cap.

Accessories

Plugs for Ethernet ports
RJF TV 6 M G: cadmium OD plating
RJF TV 6 M N: nickel plating
Based on MIL-DTL-38999
No tool required !!!

Caps for Ethernet ports
RJSML C7G: cadmium OD plating
RJSML C7N: nickel plating
A simple screwdriver is needed!

Plugs for I/O ports:
MIL-DTL-38999,
cadmium plated, crimp contacts
Two plugs (6 cts # 22D)
TV 06 RW 0935 S: cadmium OD plating
TV S06 RF 0935 S: nickel plating

Backshells for I/O plugs
We suggest to use MIL-DTL-38999 III backshells.
Consult the dedicated catalog (E118) for details.
Examples:
TVNSA 09 014 : shielding backshell, cadmium OD plating
TVNSA 09 023: shielding backshell, nickel plating
+ 804221 straight heat shrink for sealing

Example: RJS ML 8UG1 704 CAPS with an RJSML 8UG1 704 CAPS switch, we suggest to use hereafter accessories:
RJF TV 6 M G (up to 8) for Ethernet ports
TV 06 RW 0935 S + TVNSA 09 014 + 804221 for power port