

RJSML-MG7F3G - Managed military Ethernet switch - 7 fast ports + 3 Gigabit ports

Military ethernet switch for harsh environment with industrial EMI compliancy

Description

SEALED, RUGGED & MANAGED SWITCH

Amphenol offers a 10 ports managed Ethernet switch RJSML-MG-7F3G.

Note: this model replaces the RJSML-9MG1 and the RJSML-9RG1.

The switch can withstand a variety of extreme conditions: whatever the situation - high temperatures, extreme shocks and 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 (others colors available).

The I/O interface includes redundant power inputs as well as waterproof rugged RJ45 connectors from the RJF TV 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.



Main features

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, CE102, CS101, CS114, CS115 & CS116
 - MIL-STD-704A, 600V spike suppressor
 - MIL-STD-1275A/B/C/D, Spikes: +/- 250 V for 50 μ s 15 mJ
- MIL-STD-810F shocks
- RTCA/DO-160C Vibrations
- Wide operating temperature range of -40°C to 70°C
- MIL-STD-810F Altitude 50,000 ft 15,000 m

ETHERNET FEATURES

- 3 ports 10/100/1000-BaseT(X) + 7 ports 10/100-BaseT(X)
- Full-Duplex operation with flow control (no collisions!)
- Auto-detecting, auto-crossover and auto-polarity
- MIL-STD-810F shocks
- RSTP for redundant rings
- QoS and CoS priority queuing
- SNMPv3 authentication and encryption
- IGMP for multicast filtering
- VLAN for traffic segregation
- And much more !

IEEE Ethernet standards

Models	Features	802.3/u	802.3x	802.3z	802.1 p	802.1D	802.1w	802.1Q
RJS XX MG7F3G XX	Managed - 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							
IEEE 802.1p	Priority queuing - QoS, CoS, ToS/DS							
IEEE 802.1D/w	Rapid spanning tree for redundant rings							
IEEE 802.1Q	VLAN for traffic segregation							

RJSML-MG7F3G - Managed military Ethernet switch - 7 fast ports + 3 Gigabit ports

Ethernet features

RJ45 Ports	<ul style="list-style-type: none"> 10 shields RJ45 ports 10/100 BaseT(X) or 1000 Base T(X)
Connectors for RJ45 ports	<ul style="list-style-type: none"> RJFTV: jam nut receptacle based on MIL-DTL-38999 III Olive drab cadmium or Nickel plated
RJ45 speed	<ul style="list-style-type: none"> 10 or 100 Mbps auto -negotiation
Typical latency	<ul style="list-style-type: none"> 16 us + frame time @ 10 Mbps (varies on load and settings) 5 us + frame time @ 100 Mbps
Full / Half duplex	<ul style="list-style-type: none"> Automatic or Configurable
RJ45 MDI/MDIX	<ul style="list-style-type: none"> Auto-crossover
RJ45 TD and RD polarity	<ul style="list-style-type: none"> Auto-polarity
MAC addresses supported	<ul style="list-style-type: none"> 8192
Memory bandwidth	<ul style="list-style-type: none"> 32 Gbps (gigabit) ; 3.2 Gbps for all other models
Ring features (for Ring model only)	<ul style="list-style-type: none"> Link loss recovery time: 30 ms plus 5 ms per hop Maximum switches in ring: 50+ Dual Ring support

Environmental specifications

EMI emissions	<ul style="list-style-type: none"> EN55022 class A, FCC part 15, IC ES-003
EMC immunity	<ul style="list-style-type: none"> IEC61326-1, IEEE C37.90
Shocks	<ul style="list-style-type: none"> MIL-STD-810F: 40g, 11ms, 18 saw tooth shocks
Vibrations	<ul style="list-style-type: none"> RTCA/DO-160C sinusoidal vibrations 5-55 Hz: 0.01 inch ; 55-500 Hz: 1.5 g
Altitude	<ul style="list-style-type: none"> MIL-STD-810F: 50.000 ft - 15.000 m
Temperature	<ul style="list-style-type: none"> Operating -40°C to +70°C Storage -40°C to +85°C

Weight

Weight	<ul style="list-style-type: none"> Approx 2.8 kg
---------------	---

Power supply

Input voltage	<ul style="list-style-type: none"> MG7F3G: 10-30 VDC, redundant power input (P1 and P2) MG7F3G-704: 10-30 VDC, single power input (P1 only) MG7F3G-PSM: single power input AC or DC: <ul style="list-style-type: none"> - AC voltage: 85-264 VAC/Frequency 47-63 Hz - DC voltage: 120-370 VDC
Input power	<ul style="list-style-type: none"> 5 W typical (all ports active)
Connectors for power	<ul style="list-style-type: none"> MIL-DTL-38999 III jam nut receptacle, olive drab cadmium or nickel plated 1 connector TVx07xx0935P: 6 cts # 22D (wire 0.4 mm² maxi)
"OK" contact output	<ul style="list-style-type: none"> Sourcing power ; Maximum current: 0.5 A MG7F3G: ON if P1 and P2 have power and switch software is running MG7F3G-704: ON when software is running MG7F3G-PSM: ON when software is running; output power: 24VDC

Additional power protection for models MG7F3G-704 (option-704)

MIL-STD-461E/F	CE102 conducted emission
MIL-STD-461E/F/G	CS101, CS114, CS115 & CS116 conducted susceptibility
MIL-STD-704A	600V input transient, applied for 10 μs
MIL-STD-1275A/B/C/D	Spikes: +/- 250 V for 50 μs 15 mJ Surges: 100 V for 50 ms at 0.5 Ω

RJSML-MG7F3G - Managed military Ethernet switch - 7 fast ports + 3 Gigabit ports

Description

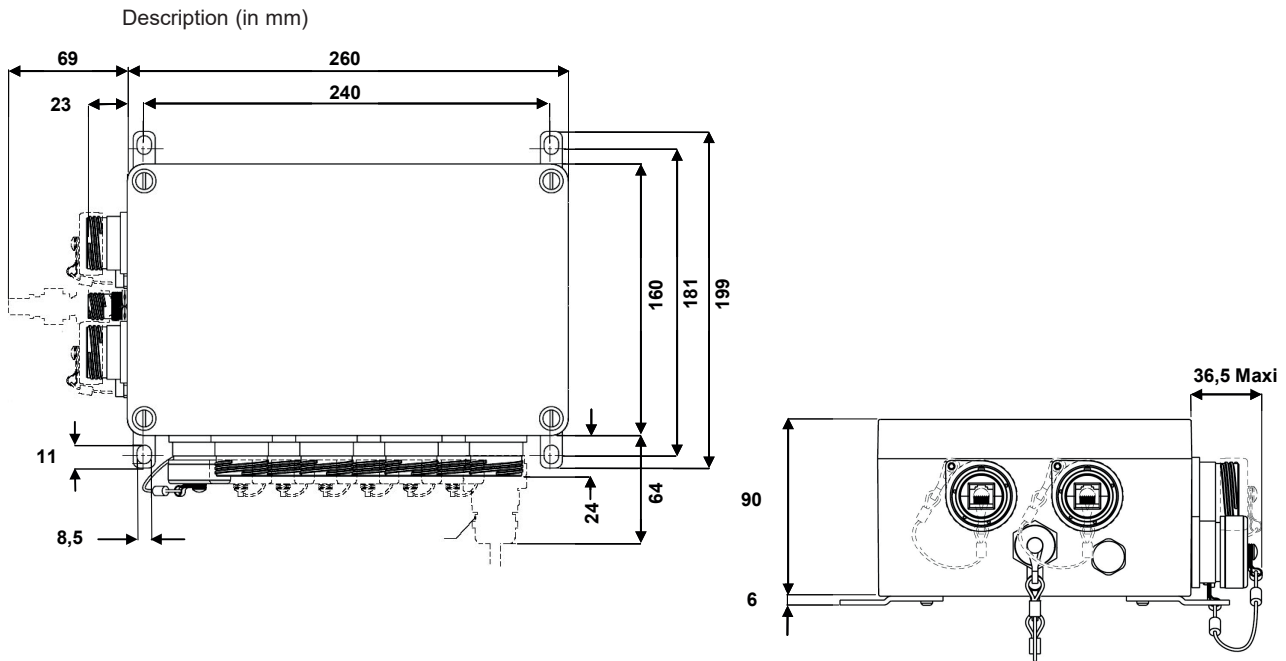
- 1 IP68 aluminium enclosure with cadmium conductive plating or black paint (RoHS)
- 2 Redundant power inputs
- 3 Balance pressure vent
- 4 10 rugged IP68 RJ45 Ethernet ports
- 5 Fixture for vertical mounting
- 6 Optional caps available



IMPORTANT NOTE

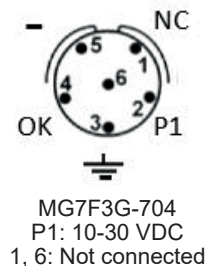
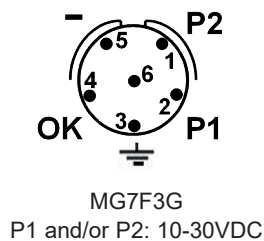
This model has no LED indicator.
Management is done through a web browser

Overall dimension



Dimensional line drawing - All measurements are in millimeters

Pin-out for the power connector



RJSML-MG7F3G - Managed military Ethernet switch - 7 fast ports + 3 Gigabit ports

How to order

1.	2.	3.	4.	5.	6.
Series	Type of enclosure	Type of electronics	Optional: transient suppression module; 600V spike suppressor	Optional: AC power supply	Optional: Caps for receptacles fixed with cord directly to the receptacle
RJS	ML	MG7F3G	-	-	-

1. Series	
RJS	Rugged Managed Ethernet Switch

2. Type of enclosure	
ML	MIL-DTL-38999 (series III) Receptacles, OD Cadmium Plating
BKN	AL 9005 (jet black) paint on aluminium box, nickel plated 38999 (series III) receptacles ✓

3. Type of electronics	
MG7F3G	Managed 7 ports 10/100 BaseT(X) + 3 ports 10/100/1000 BaseT (X)

4. Optional: transient suppression module; 600V spike suppressor	
-	No transient suppression module
704	Switch equipped with additional transient suppression module

5. Optional: AC power supply	
-	DC powered
PSM	Switch powered with 85-264 VAC instead of DC power

6. Optional: Caps for receptacles fixed with cord directly to the receptacle	
-	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 MG7F3G 704 CAPS

Managed switch in an aluminium enclosure with olive drab green conductive cadmium plating, 7 ports 10/100 Base T(X) + 3 gigabit ports, RJF TV threaded coupling receptacles, additional transient suppression module, caps are added to the switch.

Remark: All BKN Ethernet switches and nickel plated accessories are RoHS compliant.
 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 comes 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 MG7F3G 704 CAPS

With a RJSML MG7F3G 704 CAPS switch, we suggest to use hereafter accessories:
 RJF TV 6 M G (up to 10) for Ethernet ports
 TV 06 RW 0935S + TVNSA 09 014 + 804221 for power ports