Amphenol SOCAPEX

Rugged Ethernet Switch & Media Converters

TABLE OF CONTENT

NOTES

OUR COMPANY

Proven excellence in interconnect solutions

- Since **1947**, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for harsh environments, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions.

- Located in the **Mont Blanc region** of France and Pune in India, Amphenol Socapex serve customers in over 100 countries around the world.

- Amphenol Socapex is part of the leading supplier of interconnect systems **Amphenol.**

1400+
employees

175 M€
Net Sales 2024
75% Export - 25% France

Thyez, **France**
Pune, **India**

Our expertise has no boundaries

Integrated Production in France & India
- 24 000 m² manufacturing capacity on 2 sites
- Design and manufacturing centers in France and India
- State-of-the-art manufacturing technology

Our markets

Defense   **Commercial Aerospace**   **Space**   **Industry**

TECHNOLOGIES & INNOVATION

Engineering Laboratory

Product testing and qualification expertise in many fields:
- Environmental, mechanical, electrical, chemical, climatic skills
- RF and fiber optics expertise

High-Speed Expertise

Strong expertise in high-speed signals
- 3D EM simulation software & EM models
- Time Domain and frequency domain

Materials Expertise

Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products
- Advanced technology research and development: polymers, metals, platings, resins ...
- Cutting edge characterizations of interconnects: Radio Frequency, partial discharges ...
- 3D CAD mechanical software, simulation & analysis

Eco-responsibility

Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)
- New materials development, plating, and suitable processes
- Recycling and rational resources consumption

Our workshops

Our workshops located in France & India provide consistent quality adapted to your volume requirements.

Automation & Tooling : Tools for our different activities : molding, machining, assembly
Molding : Solid expertise in thermoplastic elastomer and thermoset molding
Machining : Manufacturing of cylindrical shells and rectangular shells
Screw Machining : Manufacturing of electrical contacts
Plating : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold
Assembly : Connector and harness assembly (electrical & optical)

Our certifications

Product certifications : MIL-DTL38999, EN3645, EN3155, VG (VG95328, VG95319, VG96944, VG95218, VG96949)

LRQA CERTIFIED ISO 9001 — Certified Management System
LRQA CERTIFIED AS 9100 — Certified Management System
LRQA CERTIFIED AQAP 2110 — Certified Management System
LRQA CERTIFIED ISO 14001 — Certified Management System

Our memberships

Member of CMG (Connecting Manufacturing Group) Consortium

GICAT MEMBER
GIFAS
acsiel
Réseau GREEN Arve Mont Blanc
CIMES Creating Integrated MEchanical Systems
CONVENTION DES ENTREPRISES POUR LE CLIMAT

CUSTOMER EXPERIENCE

► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.

A partner you can trust

Customer Proximity	Design Expertise	Quality Commitment	On Time Delivery Performance	Compliance management
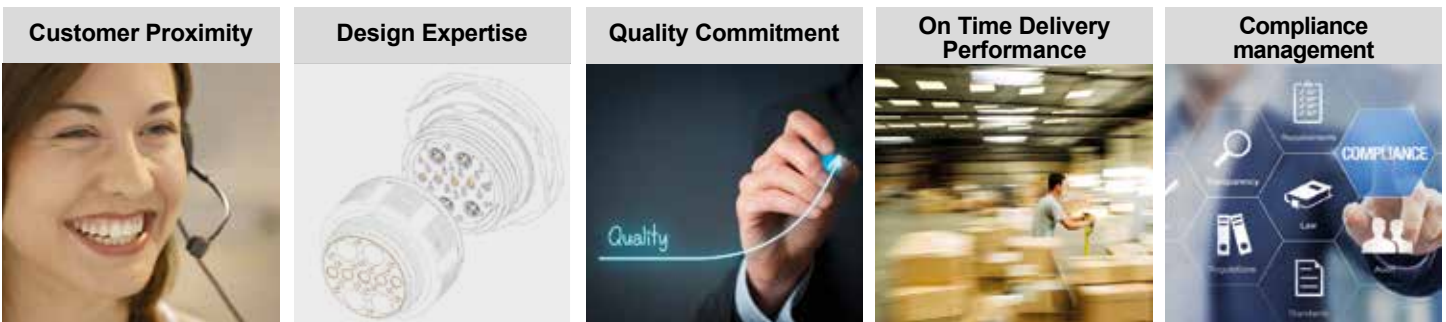
Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

Field Sales Team :
- 10 in France
- 15 in Europe
- 100+ in North America and rest of the world.
- 5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

Technical Advisement & Multilingual Customer Service :
20 people

Worldwide Distribution Network :
Our range of circular connectors, contacts, fiber optic connectors, PCB connectors and accessories are available thru our extensive distribution network.
It includes qualified distributors (QPL approved) for assembling MIL-DTL-38999 & derivatives and PT/451 (VG95328) connectors.

Check our product inventory

Product Selectors & 3D Files

NEW

OUR HISTORY

1947 🇫🇷

- **Socapex creation** in Suresnes, France
- 1st radio connector

1956-57

- **Manufacturing unit in Cluses** (74), France
- Thomson-CSF becomes primary shareholder

Early 1960's

Séries 127/HE8

Séries PT/451

- 1st board level connectors: HE8
- 1st "licence Bendix" manufactured connectors
- SL Series

1973

New factory in Thyez (74) France with 250 people, 13 000m²

1975
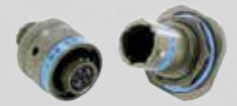
Production of 38999 connectors

1986

Amphenol
Socapex

Amphenol becomes primary shareholder

1995-96

- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyez

2004

RJ Field launch, "Award Electronica"

2005 🇮🇳

New factory in Pune, India

2010's

LuxBeam™

HDAS

LuxBeam™ and HDAS launch

2014-2017

High Speed Contacts

Cable Assembly

New workshops :
- Cable Assembly & Contact Manufacturing workshop

2019

Increased manufacturing capacity with 2nd building in Pune, India

2022

Harness in the box solution launch

Today & tomorrow

New technologies :
- Investment in automation & technical expertise

Amphenol SOCAPEX joins the "Convention des Entreprises pour le Climat ".
- Our goal: **to accelerate our transition to a more sustainable operation.**

MARKETS AND APPLICATIONS

Military vehicules

Ground radios shelters
Ground vehicles
Battlefield
Communication systems

C4ISR

Threat detection system
Soldier wearable equipment
Rugged computer & digital radio
Satellite reception unit

Military Avionics & Airframe

Power unit
Aircraft
Radar
Display unit
Flight control system

Commercial Avionics & Airframe

Landing gear
Cockpit
Ground power supply
Engine Flowmeter

Missiles & UAVS

Air missiles and UAVS
Ground control station & launchers

Navy

Navigation guidance

Industrial

Automation
Transportation
Nuclear power station
Robotics

NOTES

TABLE OF CONTENT

Table of contents

Markets & Applications

Battlefield, Ground vehicles, C4ISR

Missiles & UAVs

Avionics

Navy

Amphenol SOCAPEX

RES-GMC WITH EXPANDED BEAM TECHNOLOGY - Military Ethernet media converter

For harsh environment - Fully MIL-STD compliant

Description

Amphenol's RES-GMC is a MIL-STD rugged, unmanaged-military-grade Media converter, offering up to 2 Gigabit security gateways per device for total isolation between two network with different security classification.

The unit supports PoE on 2 ports (IEEE802.3af and IEEE802.3at).

Developed for military and harsh environment applications, the RES-GMC features mechanical packaging enhancements designed for MIL-STD-810F ground environmental compliance and high reliability.

The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling.

The fiber interface is a CTOS connector with expanded beam, designed for intensive use in severe environments.

Leveraging best-in-class switching technology, the RES-GMC series serves as a robust solution to extend your Tactical Gigabit Ethernet network connectivity over fiber.

The RES-GMC media converter with Expanded beam is particularly suitable for deployment of tactical systems on battlefield over long distances.

Main features

ETHERNET PORTS
- 1 or 2 ports 10/100/1000 or 10/100 Base TX
- 1 or 2 ports 1000 or 100 Base FX/SX/LX or WDM single fiber
- Version 2x2 ports: total isolation between the 2 networks

NETWORKING
- Full wire-speed forwarding rate
- Option for Up to 2 ports PoE - IEEE802.3af, IEEE802.3at
- Store-and-forward or Pass through mechanism
- Auto MDI-II, MDI-X, FDX, HDX, Flow control
- Auto-negotiation on copper LAN ports
- Jumbo frame support
- Link loss forwarding mechanism

CONNECTORS
- LAN connector type:
  - Models 1x1 ports: RJFTV
  - Models 2x2 ports: D38999/24WB35SN
- Fiber connector type:
  - CTOS 77PC or TACBeam EB4H8000.
  - 2 fibers are used for 1x1 ports versions.
  - 4 fibers are used for 2x2 ports versions.

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, matt texture, color:
  - Nato green FS24079

STANDARDS
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E,
- MIL-STD-810F GM, IP67/68

MILITARY RUGGED SWITCH
MIL-STD-1275B
MIL-STD-704A
MIL-STD-461A
MIL-STD-810F/GM
IP67/68

Amphenol SOCAPEX

RES-GMC WITH EXPANDED BEAM TECHNOLOGY - Military Ethernet media converter

Product specifications

Performance	• 26.8 Mpps wire speed forwarding rate • 2 Gbps maximum forwarding bandwidth • 4K MAC address • 2 LED indication (Speed, Link/Activity) per port • Wire-speed reception and transmission
Standards compliance	• IEEE 802.3, 10 Mbps 10BASE-T (Ethernet) • IEEE 802.3u, 100 BASE-TX 100 Mbps (Fast Ethernet) • IEEE 802.3ab, 1000Base-T • IEEE 802.3z, 1000Base-X • IEEE 802.3x Flow control
Voltage input	• VDC versions: 24VDC nominal (18-32VDC) • VAC versions: 90-265 VAC / 47-65 Hz • PoE versions: 48VDC
Electromagnetic	• MIL-STD-461E Electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Environmental: shock/vibration/ humidity	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516VI, 514.5, 512.4 • IP67/68
Physical	• Dimensions: 210mm (L) x 151mm (W) x 59mm (H), including connectors & hardware • Weight: 1.3 kg
Installation	• Set of Four 4x4.5 mounting holes on bottom for mounting to any flat surface. • Carrying handles
Cooling	• No moving parts. Passive cooling.
Operating temp	• -40°C to +85°C (-40°F to +185°F) - Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RES-GMC WITH EXPANDED BEAM TECHNOLOGY - Military Ethernet media converter

How to order

1.	2.	3.	4.	5.	6.	7.	8.
Series	Ports and type of optical fiber	Datarate	Copper LAN connectors	Optical fiber connectors (1 single connector)	Protection of connectors	Voltage input	Network configuration (only for 2x2 ports versions)
RESGMC	1M	G	RJF	1CTOS	OD	DC	SW

1. Series

RESGMC	Rugged Ethernet Media Converter

2. Ports and type of optical fiber

1M	1 copper port and 1 optical fiber port, Multimode 50/125 μm
1S	1 copper port and 1 optical fiber port, Singlemode
2M	2 copper ports and 2 optical fiber ports, Multimode 50/125 μm
2S	2 copper ports and 2 optical fiber ports, Singlemode

3. Datarate

G	1000 Mbps fixed fiber port, 10/100/1000TX auto-negotiation on copper port
100	100 Mbps fixed fiber port, 10/100/1000TX auto-negotiation on copper port
WA	WDMA TX 1310nm/RX1550nm, 1000BASE-LX, 20kms, BiDi over 1 single fiber
WB	WDMB TX 1550nm/RX1310nm, 1000BASE-LX, 20kms, BiDi over 1 single fiber

4. Copper LAN connectors

RJF	RJFTV connector, RJ45 with MIL-DTL-38999 III Thread coupling mechanism (for 1x1 ports versions)
TV	MIL-DTL-38999 III connector, arrangement 11-35S (for 1x1 ports versions)
2TV	MIL-DTL-38999 III connector, arrangement 11-35S (for 2x2 ports versions)

For specific cable harnesses, please consult us.

✓ : RoHS compliant

5. Optical fiber connectors (1 single connector)

1CTOS	CTOS connector with expanded beam, for intensive use in harsh environments, STANAG 4290
1TACB	TACBEAM connector with expanded beam, M83526/20&21

6. Protection of connectors

OD	All connectors and caps are plated with Olive drab Cadmium
ZN	All connectors and caps are plated with Black Zinc Nickel (✓ MC)
NI	All connectors and caps are plated with Nickel (✓ MC)

7. Voltage input

DC	Unit powered with 18-32 VDC
VAC	Unit powered with 90-265 VAC / 47-65 Hz
PD	Power over Ethernet, Powered Device mode
PSE	Power over Ethernet, Power Source Equipment

8. Network configuration (only for 2x2 ports versions)

2N	Total isolation between the 2 networks (configuration by default)
SW	Full communication between the 4 ports (Ethernet switch configuration)

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RES-GMC WITH BUTT JOINT FIBER CONNECTOR - Military Ethernet media converter

For harsh environment - Fully MIL-STD compliant

Description

Amphenol's RES-GMC is a MIL-STD rugged, unmanaged-military-grade Media converter, offering up to 2 Gigabit security gateways per device for total isolation between two network with different security classification.

The unit supports PoE on 2 ports (IEEE802.3af and IEEE802.3at).

Developed for military and harsh environment applications, the RES-GMC features mechanical packaging enhancements designed for MIL-STD-810F ground environmental compliance and high reliability.

The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-D-38999 circular connectors.

Leveraging best-in-class switching technology, the RES-GMC series serves as a robust solution to extend your Tactical Gigabit Ethernet network connectivity of up to 120Km over fiber.

The RES-GMC media converter with Butt Joint fiber connections is particularly suitable for extension of tactical systems over long distances. Typical applications are long connection on vessels up to the deck, as well as Ethernet extension for drones control station.

Main features

ETHERNET PORTS
- 1 or 2 ports 10/100/1000 or 10/100 Base TX
- 1 or 2 ports 1000 or 100 Base FX/SX/LX or WDM single fiber
- Version 2x2 ports: total isolation between the 2 networks

NETWORKING
- Full wire-speed forwarding rate
- Option for Up to 2 ports PoE - IEEE802.3af, IEEE802.3at
- Auto MDI-II, MDI-X, FDX, HDX, Flow control
- Auto-negotiation on copper LAN ports
- Jumbo frame support
- Link loss forwarding mechanism

CONNECTORS
- LAN connector type:
    - Models 1x1 ports: RJFTV
    - Models 2x2 ports: D38999/24WB35SN
- Fiber connector type:
    - TVOP arrangement 11-02
    - 2 fibers are used for 1x1 ports versions
    - 4 fibers are used for 2x2 ports versions.

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, matt texture, color:
    - Nato green FS24079

STANDARDS
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E,
- MIL-STD-810F GM, IP67/68

MILITARY RUGGED SWITCH
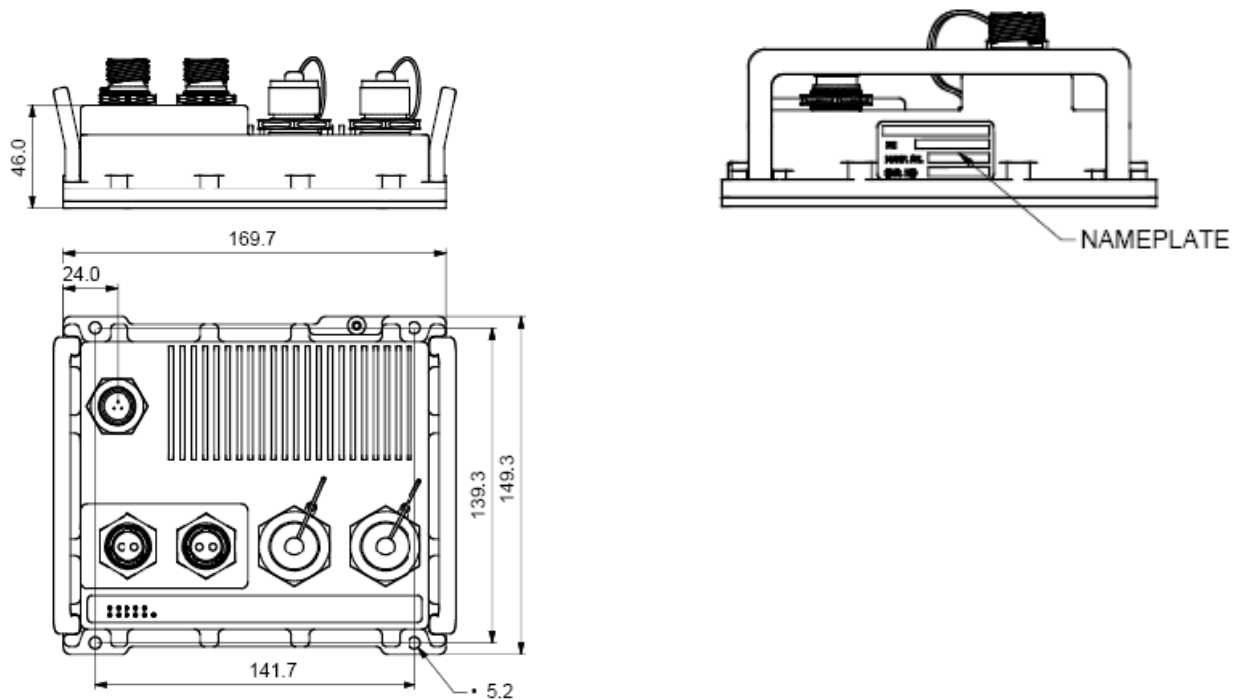MIL-STD-1275B
MIL-STD-704A
MIL-STD-461E
MIL-STD-810F/GM
IP67

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

Amphenol SOCAPEX

RES-GMC WITH BUTT JOINT FIBER CONNECTOR - Military Ethernet media converter

Product specifications

Performance	• 26.8 Mpps wire speed forwarding rate • 2 Gbps maximum forwarding bandwidth • 4K MAC address • 2 LED indication (Speed, Link/Activity) per port • Wire-speed reception and transmission
Standards compliance	• IEEE 802.3, 10 Mbps 10BASE-T (Ethernet) • IEEE 802.3u, 100 BASE-TX 100 Mbps (Fast Ethernet) • IEEE 802.3ab, 1000Base-T • IEEE 802.3z, 1000Base-X • IEEE 802.3af, IEEE802.3at
Voltage input	• VDC versions: 24VDC nominal (18-32VDC) • VAC versions: 90-265 VAC / 47-65 Hz • PoE versions: 48VDC
Electromagnetic	• MIL-STD-461E Electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Environmental: shock/vibration/ humidity	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516VI, 514.5, 512.4 • IP67/68
Physical	• Dimensions: 170mm(L) x 150(W) x 65(H), including connectors & hardware • Weight: 1.3 kg
Installation	• Set of Four 4x4.5 mounting holes on bottom for mounting to any flat surface • Carrying handles
Cooling	• No moving parts. Passive cooling
Operating temp	• -40°C to +85°C (-40°F to +185°F) - Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

RES-GMC WITH BUTT JOINT FIBER CONNECTOR - Military Ethernet media converter

How to order

1. Series	2. Ports and type of optical fiber	3. Datarate	4. Copper LAN connectors	5. Optical fiber connectors	6. Protection of connectors	7. Voltage input	8. Network configuration (only for 2x2 ports versions)
RESGMC	1M	G	RJF	1TVOP	OD	DC	SW

1. Series

RESGMC	Rugged Ethernet Media Converter

2. Ports and type of optical fiber

1M	1 copper port and 1 optical fiber port, Multimode 50/125µm
1S	1 copper port and 1 optical fiber port, Singlemode
2M	2 copper port and 2 optical fiber port, Multimode 50/125µm
2S	2 copper port and 2 optical fiber port, Singlemode

3. Datarate

G	1000 Mbps fixed fiber port, 10/100/1000TX auto-negotiation on copper port
100	100 Mbps fixed fiber port, 10/100/1000TX auto-negotiation on copper port
WA	WDMA TX 1310nm/RX1550nm, 1000BASE-LX, 20kms, BiDi over 1 single fiber
WB	WDMB TX 1550nm/RX1310nm, 1000BASE-LX, 20kms, BiDi over 1 single fiber

4. Copper LAN connectors

RJF	RJFTV connector, RJ45 with MIL-DTL-38999 III Thread coupling mechanism (for 1x1 ports versions)
TV	MIL-DTL-38999 III connector, arrangement 11-35S (for 1x1 ports versions)
2TV	MIL-DTL-38999 III connector, arrangement 11-35S (for 2x2 ports versions)

For specific cable harnesses, please consult us.

✔ : RoHS compliant

5. Optical fiber connectors

1TVOP	1x TVOP connector with butt joint, arrangement 11-02 (for 1x1 ports versions)
2TVOP	2x TVOP connectors with butt joint, arrangement 11-02 (for 2x2 ports versions)

6. Protection of connectors

OD	All connectors and caps are plated with Olive drab Cadmium
ZN	All connectors and caps are plated with Black Zinc Nickel (✔ MC)
NI	All connectors and caps are plated with Nickel (✔ MC)

7. Voltage input

DC	Unit powered with 18-36 VDC
VAC	Unit powered with 90-265 VAC / 47-65 Hz
PD	Power over Ethernet, Powered Device mode
PSE	Power over Ethernet, Power Source Equipment

8. Network configuration (only for 2x2 ports versions)

2N	Total isolation between the 2 networks (configuration by default)
SW	Full communication between the 4 ports (Ethernet switch configuration)

Amphenol SOCAPEX

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

17

RJS-GMC WITH EXPANDED BEAM TECHNOLOGY - Military Ethernet Media Converter

Description

Amphenol's RJS-GMC is a rugged, military-grade Ethernet media converter.

The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling. The interfaces are protected through sealed RJFTV MIL-DTL-38999 circular connectors and CTOS expanded beam fiber optics connectors.

The conductive cadmium plating is suitable for most demanding EMI-RFI environments. Black paint is also offered when RoHS is required (other colors available).

Leveraging industrial grade switching technology, the RJS-GMC series serves as a robust and cost efficient solution to extend your Tactical Gigabit Ethernet network connectivity over fiber optics.

The RJS-GMC is already widely use for training and combat simulation of troops.

Main features

ETHERNET PORTS
- 1, 2 or 4 ports 10/100/1000 BaseTX
- 1, 2 or 4 ports 1000 Base FX/SX/LX
- Versions 2x2 and 4x4 ports: total isolation between the networks

NETWORKING
- Full wire-speed forwarding rate
- Store-and-forward or Pass through mechanism
- Auto MDI-II, MDI-X, FDX, HDX, Flow control
- Auto-negotiation
- Jumbo frame support
- Link loss forwarding mechanism

CONNECTORS
- POWER connector: MIL-DTL-38999 III
- LAN connectors: MIL-DTL-38999 III RJFTV
- Fiber optic connectors: CTOS expanded beam

CHASSIS
- Rugged molded alumimium
- Cadmium or paint protection
- Conductively cooled with internal heat-sinks
- Ingress protection against sand, dust and moisture
- IP65/IP68 rated
- IEEE Ethernet standards
- IEEE 802.3/u: 10 Mbps & 100 Mbps Fast Ethernet
- IEEE 802.3ab: 1000 Mbps Gigabit Ethernet
- IEEE 802.3x: Full-Duplex with Flow Control

ENVIRONMENTAL SPECIFICATIONS
- EMI emissions: FCC Class A, CE, UL, CSA
- Operating Temperature: 0°C to +50°C
- Storage Temperature: -20°C to +60°C

MIL power protection for models DC-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

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RJS-GMC WITH EXPANDED BEAM TECHNOLOGY - Military Ethernet Media Converter

Product specifications

Ethernet features	• 1, 2 or 4 shielded RJ45 ports 10/100/1000 BaseT(X) • RJFTV connectors: jam nut receptacle based on MIL-DTL-38999 III • Full / Half Duplex, Automatic or Configurable • RJ45 MDI/MDIX Auto-crossover • RJ45 TD and RD Auto-polarity
Dimensions	• Version 1x1: 220 x 122 x 80 mm without connectors and caps • Version 2x2: 220 x 122 x 80 mm without connectors and caps • Version 4x4: 360 x 160 x 90 mm without connectors and caps
Weight	• Version 1x1: approx 1.9 kg • Version 2x2: approx 2.5 kg • Version 4x4: approx 4.5 kg
Installation	• All versions: set of 4 mounting holes fixed on the bottom • Version 4x4: carrying handles fixed on the top
Power supply	**Input voltage** • DC: 9-36 VDC • DC-704: 9-33 VDC, reverse voltage protection • VAC: 85/264 VAC, 47/63 Hz **Input power** • Version 1x1: 3W • Version 2x2: 6W • Version 4x4: 12W **Connectors for power** • MIL-DTL-38999 III jam nut receptacle, olive drab cadmium or nickel • DC & DC-704 TVx07xx0998PA: 3 cts # 20 (wire AWG 24 to 20) • VAC TVx07xx0998P

Overall dimension
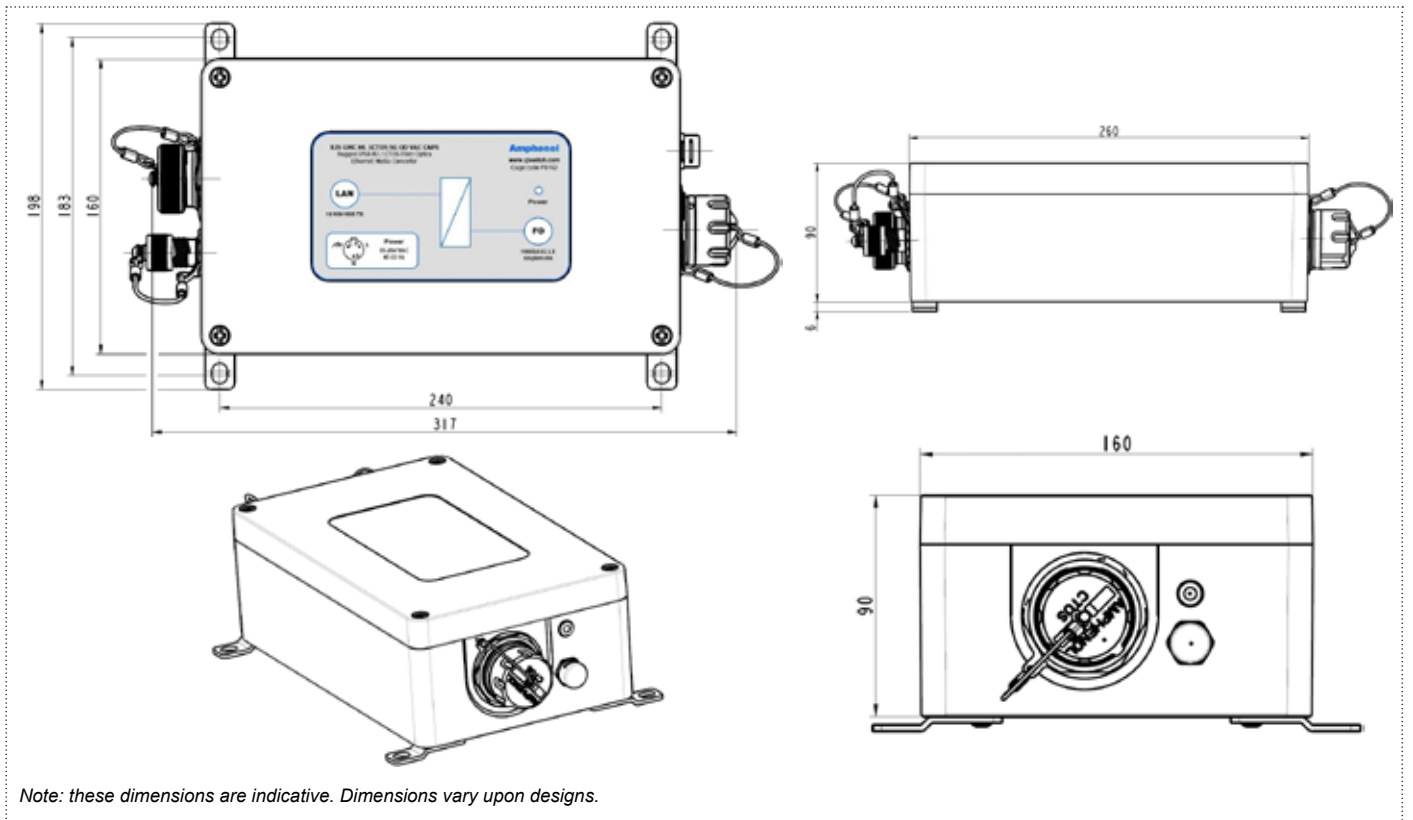
Note: these dimensions are indicative. Dimensions vary upon designs.

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

Ethernet Switch & Media Converter *(sidebar)*

RJS-GMC WITH EXPANDED BEAM TECHNOLOGY - Military Ethernet Media Converter

How to order

1.	2.	3.	4.	5.	6.
Series	Protection and color	Number of ports	Type of fiber and datarate	Protection of LAN and Power connectors and caps	Power supply and caps
RJS-GMC	ML	1CTOS	MG	OD	DC-CAPS

1. Series

RJS-GMC	Rugged Ethernet Media Converter

2. Protection and color

ML	Olive Drab Cadmium Plating on enclosure and receptacles
BKN	RAL 9005 (Jet Black) Paint on enclosure, Nickel plated receptacles, ROHS compliant
ML1019	RAL 1019 (Sand) Paint on enclosure, Olive Drab Cadmium plated receptacles
BKN9010	RAL 9010 (White) Paint on enclosure, Nickel plated receptacles, ROHS compliant

3. Number of ports

1CTOS	1 port LAN to 1 port fiber optics, 1 RJFTV and 1 CTOS connector
2CTOS	2 ports LAN to 2 ports fiber optics, 2 RJFTV and 2 CTOS connectors
4CTOS	4 ports LAN to 4 ports fiber optics, 4 RJFTV and 4 CTOS connectors

4. Type of fiber and datarate

MG	Multimode, 50/125, Gigabit Ethernet
SG	Singlemode, 9/125, Gigabit Ethernet
MF	Multimode, 50/125, Fast Ethernet

5. Protection of LAN and Power connectors and caps

OD	Olive drab cadmium plating
ZN	Black Zinc Nickel ✓
NI	Nickel plating, bright ✓

6. Power supply and caps

DC-CAPS	24VDC powered, attached caps on all receptacles
DC-704-CAPS	24VDC powered, with 704 filtering option, attached caps on all receptacles
VAC-CAPS	85-264 VAC, 47-63 Hz, attached caps on all receptacles

For specific cable harnesses, please consult us.

✓ : RoHS compliant

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

Amphenol SOCAPEX

20

RES-GMC-1M-FORC - Military Ethernet Media Converter with Remote Control

For fiber extension of existing systems on the field

Unit 1

Description

Amphenol's RES-GMC-1M-FORC is a MIL-STD rugged, unmanaged-military-grade Media converter, offering Gigabit communication.

Developed for network deployment in harsh environment applications, the RES-GMC-1M-FORC series serves as a robust solution to extend your Tactical Gigabit Ethernet network over fiber. The fiber interface is a CTOS connector with expanded beam, designed for intensive use in severe environments.

Combining the 2 units of RES-GMC-1M-FORC with a fiber drum, your network will be extended on the field and remote controlled from safe area through fiber optics.
> Simply add 2 media converters unit 1 and unit 2 + a fiber drum
Due to extreme low consumption of unit 2 in STANDBY mode, your battery on the field will operate longer.

Operation:
- Connect the unit 1 to a command or control post in a safe area.
- Install the unit 2 together with the deployed system directly on the field, powered by battery through DC IN.
- Link the 2 units with an optical fiber harness.
- The unit 2 is remote controlled by unit 1. Once unit 1 is powered, it will wake up the unit 2.
- The deployed system will be powered from the battery, through DC OUT connector of the unit 2.
- Up to 100A can be provided to the deployed system!

Main features

ETHERNET PORTS
- 10/100/1000 Base TX to 100/1000 Base SX-(MM) Media converter

NETWORKING
- Full wire-speed forwarding rate
- Store-and-forward or Pass through mechanism
- Auto MDI-II, MDI-X, FDX, HDX, Flow control
- Auto-negotiation and fixed settings via DIP switch
- Jumbo frame support
- Link loss forwarding mechanism

CONNECTORS
- MIL-DTL-38999 (Power & Ethernet signals)
- Fiber connector type:
  • CTOS 77 PC (2 fibers for Ethernet, 1 fiber for remote control)
- Protective caps over each connector

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, semi-gloss, color:
  • Sand mate

STANDARDS
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E,
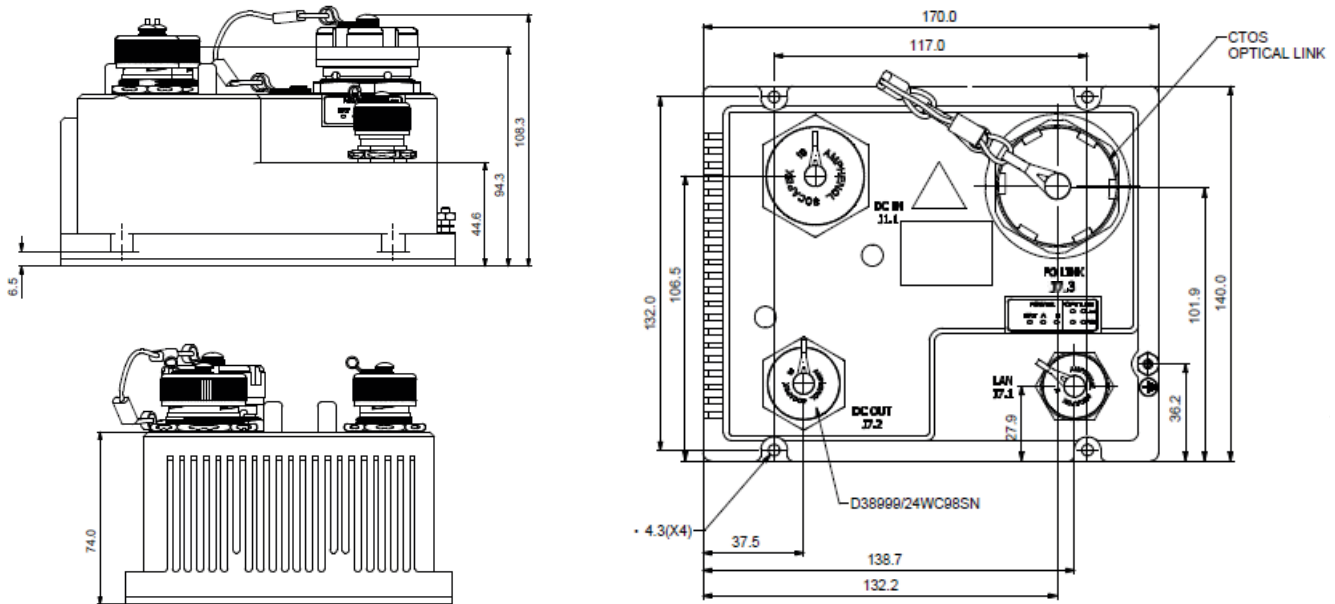- MIL-STD-810F GM, IP67/68

Unit 2

Fiber drum

MILITARY RUGGED SWITCH
MIL-STD-1275B
MIL-STD-704A
MIL-STD-461E
MIL-STD-810F/GM
IP67

Amphenol SOCAPEX

RES-GMC-1M-FORC - Military Ethernet Media Converter with Remote Control

Product specifications

Performance	• 26.8 Mpps wire speed forwarding rate • 2 Gbps maximum forwarding bandwidth • 4K MAC address • 2 LED indication (Speed, Link/Activity) per port • Wire-speed reception and transmission
Standards compliance	• IEEE 802.3, 10 Mbps 10BASE-T (Ethernet) • IEEE 802.3u, 100 BASE-TX 100 Mbps (Fast Ethernet) • IEEE 802.3ab, 1000Base-T • IEEE 802.3z, 1000Base-X • IEEE 802.3x Flow control
Power	• MIL-STD-1275B & MIL-STD-704A Surge and Spike protection • Voltage input: 24Vdc nominal (18-36V) • Power switching of the external DC input of unit 2 upon ON/OFF command from unit 1 • Maximum power consumption: 5W for unit 1, 10W for unit 2 • Standby consumption of unit 2: <0.1W • Chassis grounding • Max power at output of unit 2 (relay): 100A
Electromagnetic	• MIL-STD-461E Electromagnetic compatibility
Environmental: shock/vibration/humidity	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516VI, 514.5, 512.4 • IP67/68
Physical	• Dimensions: 170mm(L) x 140(W) x 110(H), including connectors & hardware • Weight: 1.55kg for unit 1, 1.80kg for unit 2
Installation	• Set of Four 4x4.3 mounting holes on bottom for mounting to any flat surface
Cooling	• No moving parts. Passive cooling
Operating temp	• -35°C to +75°C (-31°F to +167°F) / -35°C Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

RES-GMC-1M-FORC - Military Ethernet Media Converter with Remote Control

How to order

Part number	Description
RES-GMC-1M-FORC-1	MIL-STD Rugged Gigabit Media Converter unit 1, 1x RJF connector, 1x fiber CTOS connector, MM, SX
RES-GMC-1M-FORC-2	MIL-STD Rugged Gigabit Media Converter unit 2, 1x RJF connector, 1x fiber CTOS connector, MM, SX, remote controlled by unit 1
CTOS drum	Please consult us

For specific cable harnesses, please consult us.

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TABLE OF CONTENT

Table of contents

Markets & Applications

C4ISR, Battlefield, Ground vehicles

Missiles & UAVs

Avionics

Navy

Amphenol SOCAPEX

(side tab, right margin) Ethernet Switch & Media Converter

(side tab, right margin) Military Ethernet Switch for Harsh Environment

(side tab, right margin) Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RES-SCE-AC-8US - Unmanaged miniature portable Ethernet switch - 8 fast ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

Description

Amphenol's RES-SCE-AC-8US is a MIL-STD rugged, unmanaged-military-grade Ethernet switch, offering 8 Fast Ethernet 10/100 Ports. The portable rugged Ethernet switch is intended for unmanned vehicles or man packable command post.

Developed for SWaP (Size Weight and Power) and mobile portable military applications, the RES-SCE-AC-8US features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed SCE circular connectors.

Leveraging best-in-class switching technology, the RES-SCE-AC-8US serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RES-SCE-AC-8US is particularly useful for expanding port density in space-constrained airborne and ground vehicle environments.

Main features

ETHERNET PORTS
- 8 x switched 10/100 (Fast Ethernet) ports

NETWORKING
- Full wire-speed forwarding rate
- Store-and-forward mechanism
- Auto MDI-II, MDI-X
- Auto-negotiation protocol
- Address look-up

CONNECTORS
- Power + LAN connector: SCE2-B-76A06-07SN-001

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/ custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, matt texture, color:
    • Nato green FS24079

STANDARDS
- MIL-STD-461E, MIL-STD-810F/G/GM, IP67/68

VOLTAGE OPERATION
- 5VDC (USB) input, shared with LAN Port Number 1

ACTIVITY STATUS
- Indicators for Power and LAN activity (light off by default)
- STATUS pushbutton to turn on the indicators

MILITARY RUGGED SWITCH
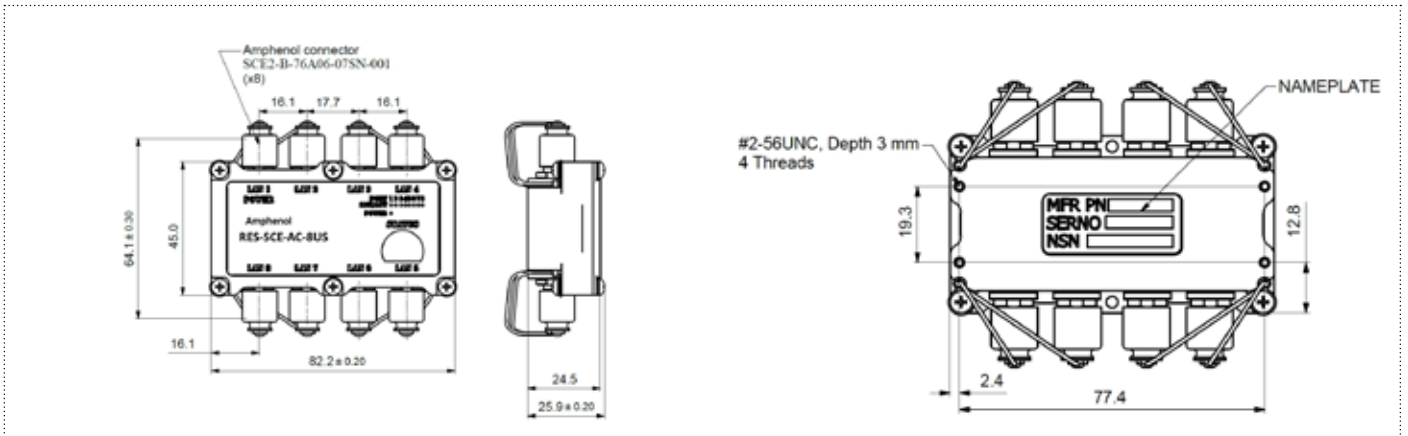### MIL-STD-461E
MIL-STD-810F/G/GM
IP68

Amphenol SOCAPEX

RES-SCE-AC-8US - Unmanaged miniature portable Ethernet switch - 8 fast ports

Product specifications

Performance	• 128K byte of SRAM for frame buffering • 2.0 Gbps high-performance memory bandwidth • LED indication (speed, link/activity) per port - Optional • Wire-speed reception and transmission • Integrated address look-up engine • Automatic address learning
Standards compliance	• IEEE 802.3 10 Mbps 10BASE-T (Ethernet) • IEEE 802.3u 100BASE-TX 100 Mbps (Fast Ethernet) • IEEE 802.3x flow control
Power	• Voltage input: 5Vdc nominal - Optional USB sourcing • Power consumption: 2W typical • Chassis grounding
Electromagnetic	• MIL-STD-461E electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Environmental: shock/vibration/ humidity	• MIL-STD-810F/G/GM • Random vibration (514.5I), Bench handling (516.6VI), High temp (501.5I, II), Low temp (502.5I), Humidity (507.5II), Air pressure (500.5I, II), Blowing rain (506.5I), Immersion (512.5I), Salt atmosphere (509.5I), Blowing dust (510.5I), Loose cargo vibration (514.6II), Wind analysis • IP67/68
Physical	• Dimensions: 82.2mm (L) x 64.1 (W) x 26 (H), Not including connectors Dust Caps • Weight: 140g - Not including dust caps
Installation	• Portable, flat for mounting to any flat surface
Cooling	• No moving parts. Passive cooling
Operating temp	• -35°C to +75°C (-31°F to +167°F) / -35°C Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional Line drawing for 8 ports models

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RES-SCE-AC-8US - Unmanaged miniature portable Ethernet switch - 8 fast ports

Overall dimension

Dimensional Line drawing for 4 ports models
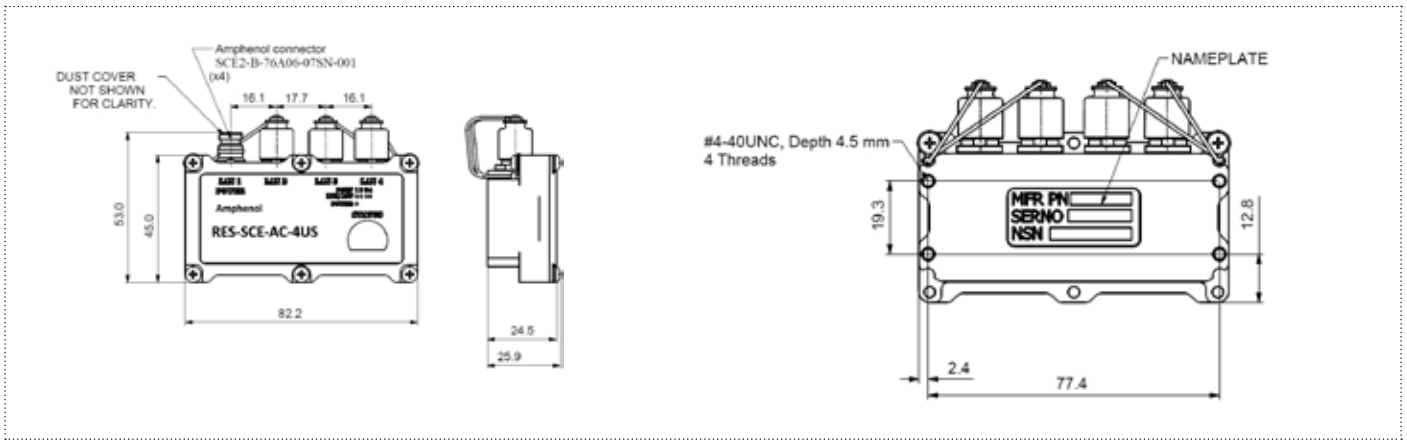
How to order

Part number	Description
Ethernet switches Part number	
RES-SCE-AC-8US	MIL-STD Portable Unmanaged Ethernet switch with 8 ports 10/100TX, Nato green color, with attached rubber caps ✓
RES-SCE-AC-4US	MIL-STD Portable Unmanaged Ethernet switch with 4 ports 10/100TX, Nato green color, with attached rubber caps ✓
Cable assemblies Part number	
RES-SCE-CBL-SCEL1K-PWR-3M	Power cordset for RES-SCE-AC-8US, 1 side with SCE2B-L1K-0607-PN Latch release, 1 side with 1 USB civilian for power supply, cable 3m long ✓
RES-SCE-CBL-SCEL1K-RJ45-1M5	LAN cordset for RES-SCE-AC-8US, valid for LAN 2 to 8, 1 side with SCE2B-L1K-0607-PN Latch release, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 1m50 long ✓
RES-SCE-CBL-SCEL1K-RJ45-3M	LAN cordset for RES-SCE-AC-8US, valid for LAN 2 to 8, 1 side with SCE2B-L1K-0607-PN Latch release, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 3m long ✓

For specific cable harnesses, please consult us.

Amphenol SOCAPEX

RES-SCE-8EMG - Enhanced Managed miniature portable Ethernet switch - 8 Gigabit ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's RES-SCE-8EMG is a MIL-STD rugged, managed-military-grade Ethernet switch, offering 8 or 4 Gigabit Ethernet 10/100/1000 Ports. The portable rugged Ethernet switch is intended for unmanned vehicles or man packable command post.

Developed for SWaP (Size Weight and Power) and mobile portable military applications, the RES-SCE-8EMG features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed miniature SCE circular connectors.

Leveraging best-in-class switching technology, the RES-SCE-8EMG serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RES-SCE-8EMG is particularly useful for expanding port density in space-constrained airborne and ground vehicle environments.

SWaP

Main features

ETHERNET PORTS
- Managed 8 or 4 x switched 10/ 100/ 1000 ports

NETWORKING
- Spanning Tree (802.1d), RSTP (802.1w) and multiple Spanning Tree (802.1S) for fast recovery rings
- Security via Radius Authentication 802.1x, Port Security, Port Mirroring
- Multicasting (IGMP Snooping), GARP, GMRP, and GVRP Broadcasting and flooding Control up to 8K Groups
- 802.1q Tagged based VLAN up to 4K VLAN groups
- QoS Multi-Layer Classifier, 802.1p, ToS/DSCP traffic classification. WFQ, Strict Queuing.
- Bridge support for Q-in-Q
- Link Aggregation 802.3AD
- WEB, CLI, Telnet Management
- L3 static routing *
- Rmirror *
- Port Protection: 1+1 port protection, 1:1 port protection, 1:N port protection *
- G.8032 ring protection *
- DHCP option 82 relay *
- L2CP tunnelling *
- Protocol-based VLAN *
- 1588v2 PTP with two-step clock *

CONNECTORS
- Power connector type: SCE2-B-76A06-07SN
- LAN connector type: SCE2-B-76A07-14SN-001
- LED indication per port (speed, link/activity)

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/ custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, matt texture, color:
    • Nato green or olive green or Stone RAL 7032

STANDARDS
- MIL-STD-1275D/E, MIL-STD-704A, MIL-STD-461F, MIL-STD-810F GM, IP67/68

PERFORMANCE
- 26.8 Mpps wire speed forwarding rate
- 20 Gbps maximum forwarding bandwidth
- 8K MAC address

VOLTAGE OPERATION
    • 16-36VDC

ACTIVITY STATUS
- Indicators for Power and LAN activity (light off by default)
- STATUS pushbutton to turn on the indicators

(*): Available on Enhanced units only

MILITARY RUGGED SWITCH
MIL-STD-1275D/E
MIL-STD-704A
MIL-STD-461E
MIL-STD-810F/GM IP67
RTCA/DO-160F

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RES-SCE-8EMG - Enhanced Managed miniature portable Ethernet switch - 8 Gigabit ports
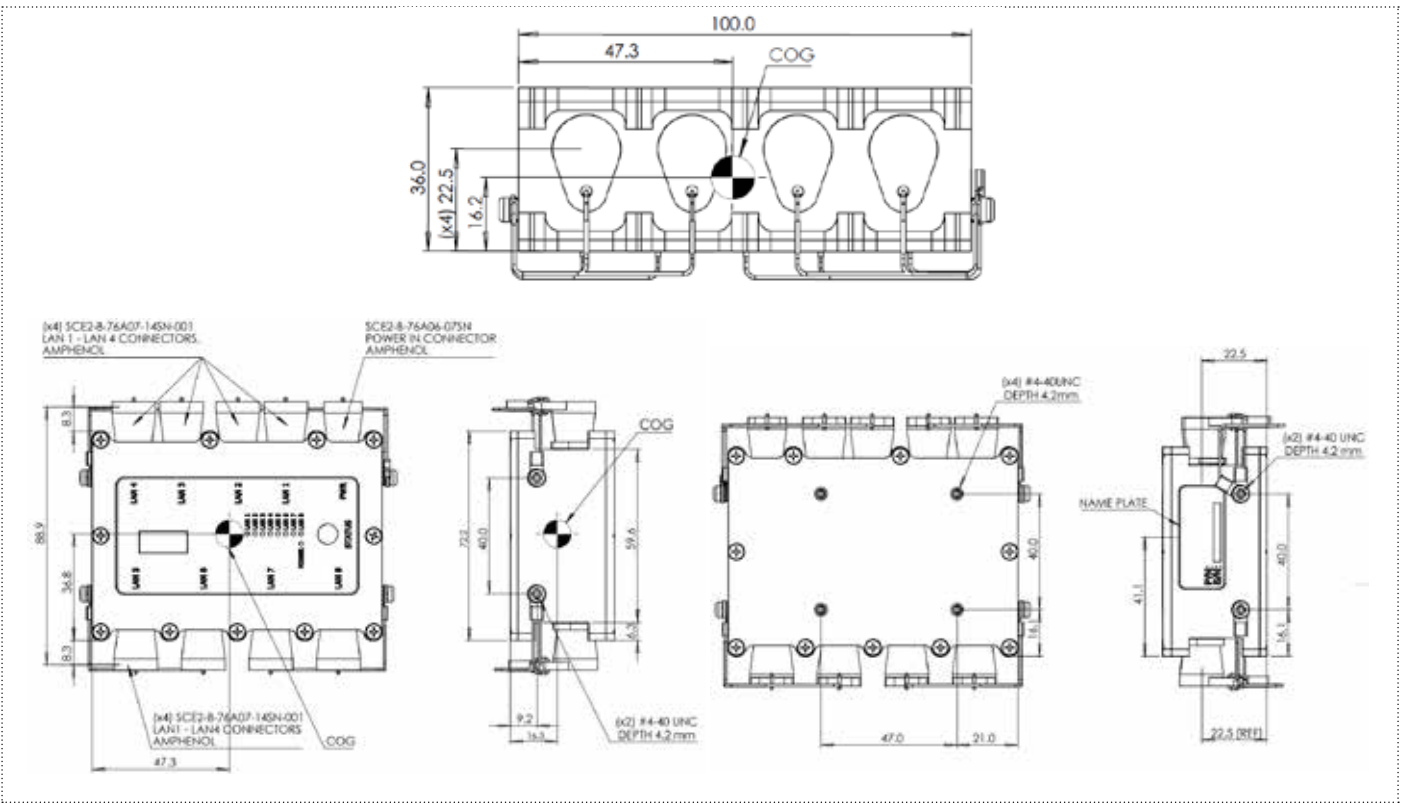
Product specifications

Standards compliance	• IEEE 802.1x MAC based Authentication • IEEE 802.1Q Vlan Tagging • IEEE 802.1P QoS • IEEE 802.1S Multiple STP • IEEE 802.1W Rapid STP • IEEE 802.3 AD Link Aggregation
Power	• Exceed MIL-STD-1275B Surge and Spike protection • Voltage Input: 24Vdc Nominal (16-36 VDC) • Power Consumption: 7.2W Max - 5W Typical • Chassis grounding
Electromagnetic	• EMI and Power protection • MIL-STD-461F Electromagnetic compatibility • CE101, CE102, RE101, RE102, RS101, RS103 • CS101, CS106, CS114, CS115, CS116 • MIL-STD-1275D • Steady-State input voltage, Ripples, Spikes +/- 250 V, Surges, Reverse Polarity • MIL-STD-1275E • Initial Engagement Surges, Cranking level
Environmental	• MIL-STD-810F/G/GM • Random vibration (514.5I), Bench handling (516.6VI), High temp (501.5I, II), Low temp (502.5I), Humidity (507.5II), Air pressure (500.5I, II), Blowing rain (506.5I), Immersion (512.5I), Salt atmosphere (509.5I), Blowing dust (510.5I), Loose cargo vibration (514.6II), Wind analysis • IP67/68 • RTCA/DO-160F • Low temperature 2 hours @ -55°C, operating, chap 4, cat B2 • Vibrations, section 8, cat. S, curve M • Shocks, cat. A, 6g, 11ms
Physical	• Dimensions: 100mm (L) x 89 (W) x 36 (H), including connectors & hardware. • Weight: 390g
Installation	• Set of Four 4-40 threads on bottom for mounting to any flat surface
Cooling	• No moving parts. Passive cooling.
Operating temp	• -55°C to +85°C (-67°F to +185°F)
Storage temp	• -55°C to +85°C (-67°F to +185°F)

Due to technical modifications, all information provided is subject to change without prior notice
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30

RES-SCE-8EMG - Enhanced Managed miniature portable Ethernet switch - 8 Gigabit ports

Overall dimension

Dimensional Line drawing for 8 ports models

Dimensional Line drawing for 4 ports models

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RES-SCE-8EMG - Enhanced Managed miniature portable Ethernet switch - 8 Gigabit ports

How to order

Part number	Description
Ethernet switches Part number	
RES-SCE-8MG	MIL-STD Portable Managed Ethernet switch with 8 ports 10/100/1000TX, Nato green color, with attached rubber caps ✓
RES-SCE-8EMG	MIL-STD Portable Managed Ethernet switch with 8 ports 10/100/1000TX with Enhanced features, Nato green color, with attached rubber caps ✓
RES-SCE-8MG-7032	MIL-STD Portable Managed Ethernet switch with 8 ports 10/100/1000TX, Stone RAL 7032 color, with attached rubber caps ✓
RES-SCE-4MG	MIL-STD Portable Managed Ethernet switch with 4 ports 10/100/1000TX, Olive green color, with attached rubber caps ✓
RES-SCE-4EMG	MIL-STD Portable Managed Ethernet switch with 4 ports 10/100/1000TX with Enhanced features, Olive green color, with attached rubber caps ✓
Cable assemblies Part number	
RESSCE8MG-CBL-PWR-2M	Power cordset for RES-SCE-8MG, 1 side with SCE2B-L1K-0607-PN Latch release, 1 side with 4mm plugs for power supply, cable 2m long
RESSCE8MG-CBL-ETH-RJ45-2M	LAN cordset for RES-SCE-8MG, valid for LAN 1 to 8, 1 side with SCE2B-L1K-0714-PN Latch release, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long
RESSCE8MG-CBL-MNG-1M	Management cable for RES-SCE-8MG, 1 side with SCE2B-L1K-0714-PN Latch release, 1 side with DB9, 1m long
Complete set Part number	
KIT RES-SCE-8MG with cables	Set including 1x RES-SCE-8EMG + 1x RESSCE8MG-CBL-PWR-2M + 4x RESSCE8MG-CBL-ETH-RJ45-2M + 1x RESSCE8MG-CBL-MNG-1M

For specific cable harnesses, please consult us.

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

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32

RESMLAC-8US-CAPS - Unmanaged military Ethernet switch, MIL-DTL-38999 connectors 8 fast ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's RESMLAC-8US-CAPS is a MIL-STD rugged, unmanaged-military-grade Ethernet switch, offering 8 Fast Ethernet 10/100 Ports.

Developed for military and harsh environment applications, the RESMLAC-8US-CAPS features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-DTL-38999 circular connectors.

Leveraging best-in-class switching technology, the RESMLAC-8US-CAPS serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RESMLAC-8US-CAPS is particularly useful for expanding port density in space-constrained airborne and ground vehicle environments.

Main features

ETHERNET PORTS

- 8 x switched 10/100 (Fast Ethernet) ports

NETWORKING
- Full wire-speed forwarding rate
- Store-and-forward mechanism
- Auto MDI-II, MDI-X
- Auto-negotiation protocol
- Address look-up

CONNECTORS
- MIL-DTL-38999 (Power & Ethernet signals)
- Power connector type: D38999/24WA98PA
- LAN connector type: D38999/24WA35SN

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/ custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, matt texture

STANDARDS
- MIL-STD-1275,
- MIL-STD-704A
- MIL-STD-461E
- MIL-STD-810F GM
- IP67/68

VOLTAGE OPERATION
- 24VDC (18VDC – 32VDC)

MILITARY RUGGED SWITCH
MIL-STD-1275
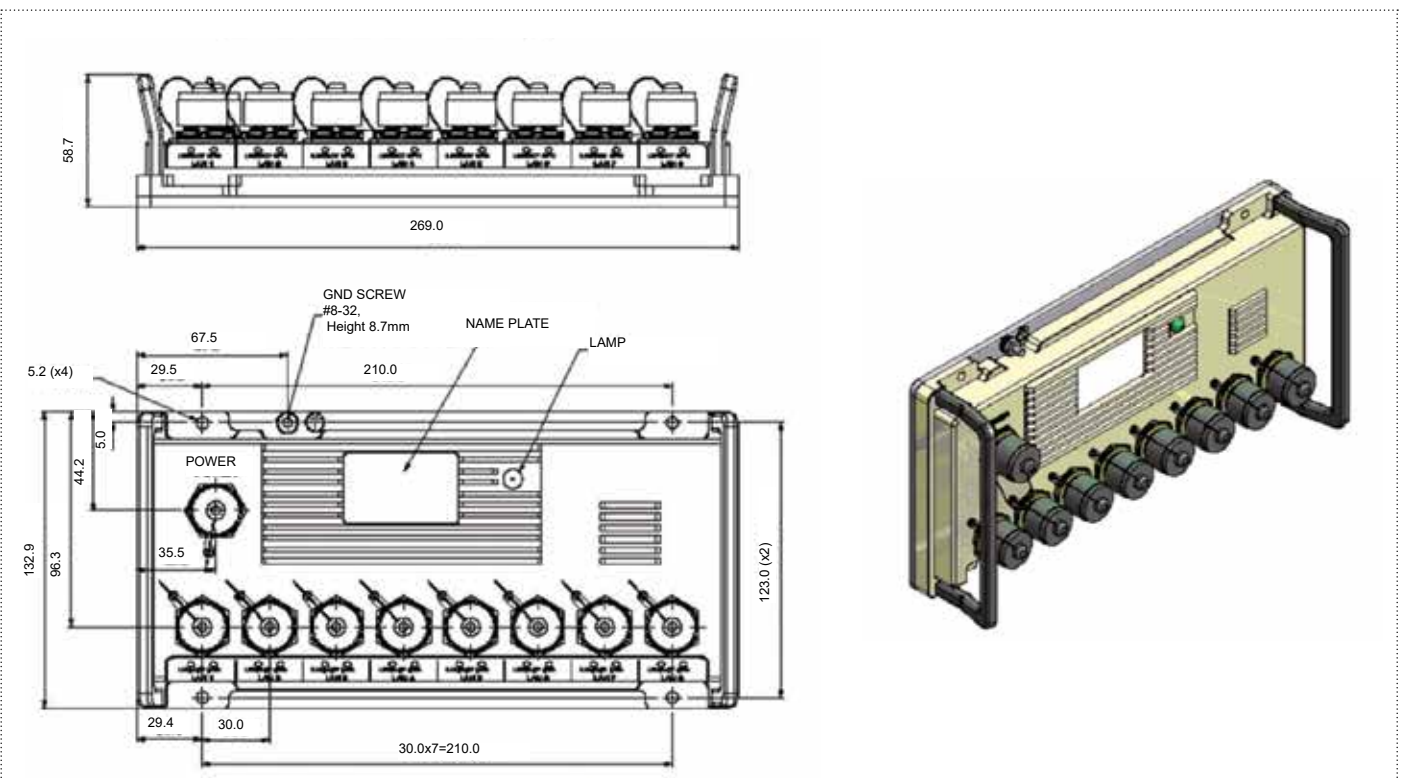MIL-STD-704A
MIL-STD-461E
MIL-STD-810F/GM
STANAG 4370
STANAG 2895

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RESMLAC-8US-CAPS - Unmanaged military Ethernet switch, MIL-DTL-38999 connectors 8 fast ports

Product specifications

Performance	• 128K byte of SRAM for frame buffering • 2.0 Gbps high-performance memory bandwidth • 2 LED indication (speed, link/activity) per port • Wire-speed reception and transmission • Integrated address look-up engine • Automatic address learning
Standards compliance	• IEEE 802.3 10 Mbps 10BASE-T (Ethernet) • IEEE 802.3u 100BASE-TX 100 Mbps (Fast Ethernet) • IEEE 802.3x flow control
Power	• MIL-STD-1275B & MIL-STD 704A surge and spike protection • Voltage input: 24Vdc nominal (18-32V) • Power consumption: 2.8W typical • Chassis grounding
Electromagnetic	• MIL-STD-461E electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Environmental	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516Vi, 514.5, 512.4 • IP67/68 • STANAG 4370, vibrations AECTP 400, method 401; cannon fire shocks, 6666 shocks up to 8.6g, half sine shape • STANAG 2895, altitude 10.000m, temperature -21°C / 71°C
Physical	• Dimensions: 269mm(L) x 133(W) x 65(H), including connectors & hardware • Weight: 1.5 kg
Installation	• Set of four 4x4.5 mounting holes on bottom for mounting to any flat surface
Cooling	• No moving parts. Passive cooling
Operating temp	• -35°C to +75°C (-31°F to +167°F) / -35°C Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

RESMLAC-8US-CAPS - Unmanaged military Ethernet switch, MIL-DTL-38999 connectors 8 fast ports

How to order

Part number	Description
Ethernet switches Part number	
RESMLAC-8US-CAPS	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, cadmium plated connectors, color dark green, no handles
RESMLAC-8US-CAPS-HND	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, cadmium plated connectors, color dark green, with handles
RESMLAC-8US-CAPS-SX	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, cadmium plated connectors, color black, no handles
RESMLAC-8US-CAPS-SX-HND	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, cadmium plated connectors, color black, with handles
RESMLAC-8US-CAPS-SX-ZN	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, Black Zinc Nickel plated connectors, color black, no handles ✓
RESMLAC-8US-CAPS-SX-ZN-HND	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, Black Zinc Nickel plated connectors, color black, with handles ✓
RESMLAC-8US-CAPS-SX-NI	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, Nickel plated connectors, color dark green, no handles ✓
RESMLAC-8US-CAPS-SX-NI-HND	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100TX, Nickel plated connectors, color dark green, with handles ✓
Cable assemblies Part number	
RJSMLAC-8MG-CBL-PWR-2M-B4	Power cordset for RESMLAC-8US-CAPS, 1 side with TV06RW0998SA, 1 side with 4mm plugs for power supply, cable 2m long (DC voltage option)
RESMLAC-8US-CBL-LAN-TV-2M	LAN cordset for RESMLAC-8US-CAPS, valid for LAN 1 to 8, 1 side with TV06RW0935P plug, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long (valid for all options)

For specific cable harnesses, please consult us.

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

Amphenol SOCAPEX

RJSMLAC-8UG-CAPS - Unmanaged military Ethernet switch, RJFTV D38999 connectors - 8 Gigabit ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's RJSMLAC-8UG-CAPS is a MIL-STD rugged, unmanaged-military-grade Ethernet switch, offering 8 triple speed Ethernet (10/100 /1000) ports. Ethernet connectors are RJFTV, using RJField patented system that allows easy and quick assembly of any standard RJ45 cordset without any tool.

Developed for military and harsh environment applications, the RJSMLAC features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling.

Leveraging best-in-class switching technology, the RJSMLAC serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RJSMLAC is particularly useful for expanding port density in space-constrained airborne and ground vehicle environments.

Main features

ETHERNET PORTS
- 8 x switched 10/100/1000 (Gigabit Ethernet) ports on RJFTV connectors

NETWORKING
- Full wire-speed forwarding rate
- Store-and-forward mechanism
- Auto MDI-II, MDI-X
- Auto-negotiation protocol
- Address look-up

CONNECTORS
- Power connector type: MIL-DTL-38999/24WA98PA
- LAN connector type: RJFTV (coupling mechanism from MIL-DTL-38999)
- LED indication per port (speed, link/activity)

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/ custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane paint per MIL-C-83286 type II, matt texture, color:
  • Green FS24084

STANDARDS
- MIL-STD-1275,
- MIL-STD-704A,
- MIL-STD-461E,
- MIL-STD-810F GM,
- IP67/68

VOLTAGE OPERATION
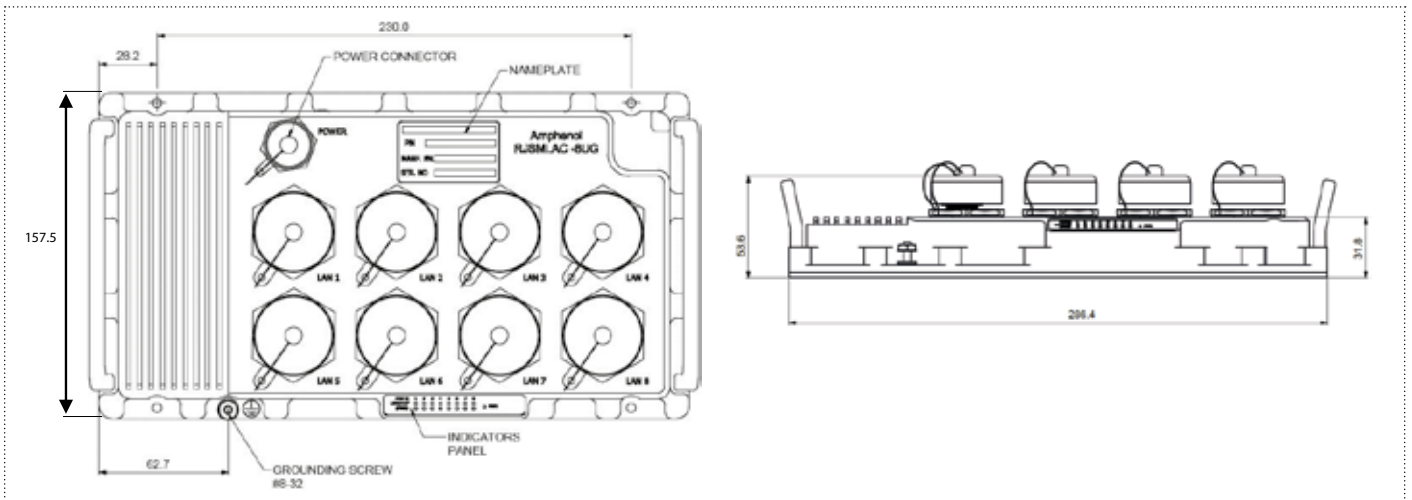- 24VDC (18VDC – 32VDC)

MILITARY RUGGED SWITCH
MIL-STD-1275
MIL-STD-704A
MIL-STD-461E
MIL-STD-810F/GM
IP67

Amphenol SOCAPEX

RJSMLAC-8UG-CAPS - Unmanaged military Ethernet switch, MIL-DTL-38999 connectors 8 Gigabit ports

Product specifications

Performance	• 128K byte of SRAM for frame buffering • 2.0 Gbps high-performance memory bandwidth • 2 LED indication (speed, link/activity) per port • Wire-speed reception and transmission • Integrated address look-up engine • Automatic address learning
Standards compliance	• IEEE 802.3 10BASE-T (Ethernet) • IEEE 802.3u 100BASE-T (Fast Ethernet) • IEEE 802.3ab 1000BASE-T (Gigabit Ethernet) • IEEE 802.3x flow control
Power	• MIL-STD-1275B & MIL-STD 704A surge and spike protection • Voltage input: 24Vdc nominal (18-32V) • Power consumption: 7W typical • Chassis grounding
Electromagnetic	• MIL-STD-461E electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Environmental	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516Vi, 514.5, 512.4 • IP67/68
Physical	• Dimensions: 269mm(L) x 133(W) x 65(H), including connectors & hardware • Weight: 1.8kg
Installation	• Set of four 4x4.5 mounting holes on bottom for mounting to any flat surface
Cooling	• No moving parts. Passive cooling
Operating temp	• -35°C to +75°C (-31°F to +167°F) / -35°C Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RJSMLAC-8UG-CAPS - Unmanaged military Ethernet switch, RJFTV D38999 connectors - 8 Gigabit ports

How to order

Part number	Description
Ethernet switches Part number	
RJSMLAC-8UG-CAPS-CD-DC	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100/1000TX, cadmium plated connectors, powered with 18-32VDC, with attached metallic caps
RJSMLAC-8UG-CAPS-ZN-DC	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100/1000TX, Black Zinc Nickel plated connectors, powered with 18-32VDC, with attached metallic caps ✓
RJSMLAC-8UG-CAPS-NI-DC	MIL-STD Rugged Unmanaged Ethernet switch with 8 ports 10/100/1000TX, Nickel plated connectors, powered with 18-32VDC, with attached metallic caps ✓
Cable assemblies Part number	
RJSMLAC-8MG-CBL-PWR-2M-B4	Power cordset for RJSMLAC-8UG-CAPS, 1 side with TV06RW0998SA, 1 side with 4mm plugs for power supply, cable 2m long (DC voltage option)
RJSMLAC-8MG-CBL-ETH-RJ45-2M	LAN cordset for RJSMLAC-8UG-CAPS, valid for LAN 1 to 8, 1 side with RJFTV6MG plug, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long (valid for all options)

For specific cable harnesses, please consult us.

Amphenol SOCAPEX

RJSMLAC-8EMG-CAPS - Enhanced managed military Ethernet switch, RJFTV connectors - 8 Gigabit ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's RJSMLAC-8EMG-CAPS is a MIL-STD Fully managed Military-grade network switch offering 8 triple speed (10/100/1000) ports. Ethernet connectors are RJFTV, using RJField patented system that allows easy and quick assembly of any standard RJ45 cordset without any tool.

Developed for military and harsh environment applications, the RJSMLAC-8EMG-CAPS features mechanical packaging enhancements designed for MIL-STD-810F maritime and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-DTL-38999 circular connectors.

Leveraging best-in-class switching technology, the RJSMLAC-8EMG-CAPS serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RJSMLAC-8EMG-CAPS is particularly useful for expanding port density in space-constrained maritime and ground vehicle environments.

Main features

ETHERNET PORTS
- Managed 8 x switched 10/100/1000 ports on RJFTV connectors

NETWORKING
- Spanning tree (802.1d), RSTP (802.1w) and multiple
- Spanning tree (802.1S) for fast recovery rings
- Security via Radius Authentication 802.1x, port security, port mirroring
- Multicasting (IGMP Snooping), GARP, GMRP, and GVRP, Broadcasting and flooding control up to 8K groups.
- 802.1q tagged based VLAN up to 4K VLAN groups.
- QoS multi-layer classifier, 802.1p, ToS/DSCP traffic classification. WFQ, Strict Queuing.
- Bridge support for Q-in-Q.
- Link aggregation 802.3AD.
- WEB, CLI, Telnet management.
- L3 static routing
- Rmirror
- Port Protection: 1+1 port protection, 1:1 port protection, 1:N port protection
- G.8032 ring protection
- DHCP option 82 relay
- L2CP tunnelling
- Protocol-based VLAN
- 1588v2 PTP with two-step clock

CONNECTORS
- Power connector type: MIL-DTL-38999/24WA98PA
- LAN connector type: RJFTV (coupling mechanism from MIL-DTL-38999)
- LED indication per port (speed, link/activity)

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, matt texture, color:
  • Green FS24084

STANDARDS
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E/F
- MIL-STD-810F GM, IP67/68

VOLTAGE OPERATION
- 24VDC (18VDC-32VDC)
- VAC models: 90-265VAC/47-65Hz

MILITARY RUGGED SWITCH
MIL-STD-1275
MIL-STD-704A
MIL-STD-461E/F
MIL-STD-810F/GM
IP68
MIL-F-18870-E
MIL-STD-167-1A
MIL-S-901D

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RJSMLAC-8EMG-CAPS - Enhanced managed military Ethernet switch, RJFTV connectors - 8 Gigabit ports

Product specifications

Voltage operation	• Standard model: 24VDC (18VDC ~ 32VDC) • VAC model: 90-265 VAC / 47-65 Hz powered
Performance	• 26.8 Mpps wire speed forwarding rate • 20 Gbps maximum forwarding bandwidth • 8K MAC address
Standards compliance	• IEEE 802.1x MAC based authentication • IEEE 802.1Q Vlan tagging • IEEE 802.1P QoS • IEEE 802.1S Multiple STP • IEEE 802.1W Rapid STP • IEEE 802.3AD Link aggregation
Power	• Exceed MIL-STD-1275B surge and spike protection • Power consumption: 7W typical • Chassis grounding
Electromagnetic	• MIL-STD-461E electromagnetic compatibility • CE102, CS114, CS115, CS116, RE102, RS103 • MIL-STD-461F • RE101, RS101
Environmental	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516VI, 514.5, 512.4 • IP67/68 • MIL-F-18870-E, Temperature shock test 72 hours @ -55°C, Storage • MIL-STD-167-1A Low frequencies Vibrations • MIL-S-901D Lightweight shocks
Physical	• Dimensions: 287mm(L) x 147(W) x 50(H), including connectors & hardware • Weight: 1.8 kg
Installation	• Set of four 4.5 mounting holes on bottom for mounting to any flat surface. • Carrying handles
Cooling	• No moving parts. Passive cooling.
Operating temp	• -35°C to +75°C (-31°F to +167°F) / -35°C Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

RJSMLAC-8EMG-CAPS - Enhanced managed military Ethernet switch, RJFTV connectors - 8 Gigabit ports

How to order

1.	2.	3.	4.	5.
Series	Electronics type	Protective caps	Protection of connectors	Voltage input
RJSMLAC	8EMG	CAPS	-	-

1. Series

RJSMLAC	Rugged Managed Ethernet Switch

2. Electronics type

8EMG	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX with Enhanced features

3. Protective caps

CAPS	Metallic caps attached to each connector

4. Protection of connectors

-	All connectors and caps are plated with Olive drab Cadmium
ZN	All connectors and caps are plated with Black Zinc Nickel ✓
NI	All connectors and caps are plated with Nickel ✓

5. Voltage input

-	Unit powered with 18-32 VDC
VAC	Unit powered with 90-265 VAC / 47-65 Hz

Part number	Description
Cordsets Part number	
RJSMLAC-8MG-CBL-PWR-2M-B4	Power cordset for RJSMLAC-8MG-CAPS, 1 side with TV06RW0998SA, 1 side with 4mm plugs for power supply, cable 2m long (DC voltage option)
RJSMLAC-8MG-CBL-PWR-2M-EU	Power cordset for RJSMLAC-8MG-CAPS-VAC, 1 side with TV06RW0998SA, 1 side with European outlet plug, cable 2m long (AC voltage option)
RJSMLAC-8MG-CBL-PWR-2M-US	Power cordset for RJSMLAC-8MG-CAPS-VAC, 1 side with TV06RW0998SA, 1 side with North American outlet plug, cable 2m long (AC voltage option)
RJSMLAC-8MG-CBL-ETH-RJ45-2M	LAN cordset for RJSMLAC-8MG-CAPS, valid for LAN 1 to 8, 1 side with RJFTV6MG plug, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long (valid for all options)
RJSMLAC-8MG-CBL-MNG-1M	Management cable for RJSMLAC-8MG-CAPS, 1 side with SCE2B-L1K-0607-PN plug, 1 side with DB9, 1m long (valid for all options)
Complete set Part number	
KIT RJSMLAC-8EMG-CAPS with cables	Set including 1x RJSMLAC-8EMG-CAPS + 1x RJSMLAC-8MG-CBL-PWR-2M-B4 + 4x RJSMLAC-8MG-CBL-ETH-RJ45-2M + 1x RJSMLAC-8MG-CBL-MNG-1M

For specific cable harnesses, please consult us.

✓ : RoHS compliant

Amphenol SOCAPEX

RESMLAC-8EMG-CAPS - Enhanced Managed Gigabit Ethernet Switch, MIL-DTL-38999 connectors

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's RESMLAC-8EMG-CAPS is a MIL-STD fully managed Military-grade network switch offering 8 triple speed (10/100/1000) ports.

Developed for military and harsh environment applications, the RESMLAC-8EMG-CAPS features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-DTL-38999 circular connectors.

Leveraging best-in-class switching technology from Amphenol, the RESMLAC-8EMG-CAPS serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RESMLAC-8EMG-CAPS is particularly useful for expanding port density in space-constrained airborne and ground vehicle environments.

Main features

ETHERNET PORTS
- Managed 8 x switched 10/100/1000 ports

NETWORKING
- Spanning tree (802.1d), RSTP (802.1w) and multiple
- Spanning tree (802.1S) for fast recovery rings
- Security via Radius authentication 802.1x, port security, port mirroring
- Multicasting (IGMP Snooping), GARP, GMRP, and GVRP, Broadcasting and flooding control up to 8K groups.
- 802.1q tagged based VLAN up to 4K VLAN groups.
- QoS multi-layer classifier, 802.1p, ToS/DSCP traffic classification. WFQ, Strict Queuing.
- Bridge support for Q-in-Q.
- Link aggregation 802.3AD.
- WEB, CLI, Telnet management.
- L3 static routing
- Rmirror
- Port Protection: 1+1 port protection, 1:1 port protection, 1:N port protection
- G.8032 ring protection
- DHCP option 82 relay
- L2CP tunnelling
- Protocol-based VLAN
- 1588v2 PTP with two-step clock

CONNECTORS
- Power connector type: MIL-DTL-38999/24WA98PA
- LAN connector type: MIL-DTL-38999/24WB35SN
- LED indication per port (Speed, Link/Activity)

CHASSIS
- Low profile rugged aluminium extrusion
- Conductively cooled w/custom internal heat-sinks
- Ingress protection against sand, dust and moisture
- Polyurethane Paint, Per MIL-C-83286 type II, semi-gloss

STANDARDS
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E,
- MIL-STD-810F GM, IP67/68

VOLTAGE OPERATION
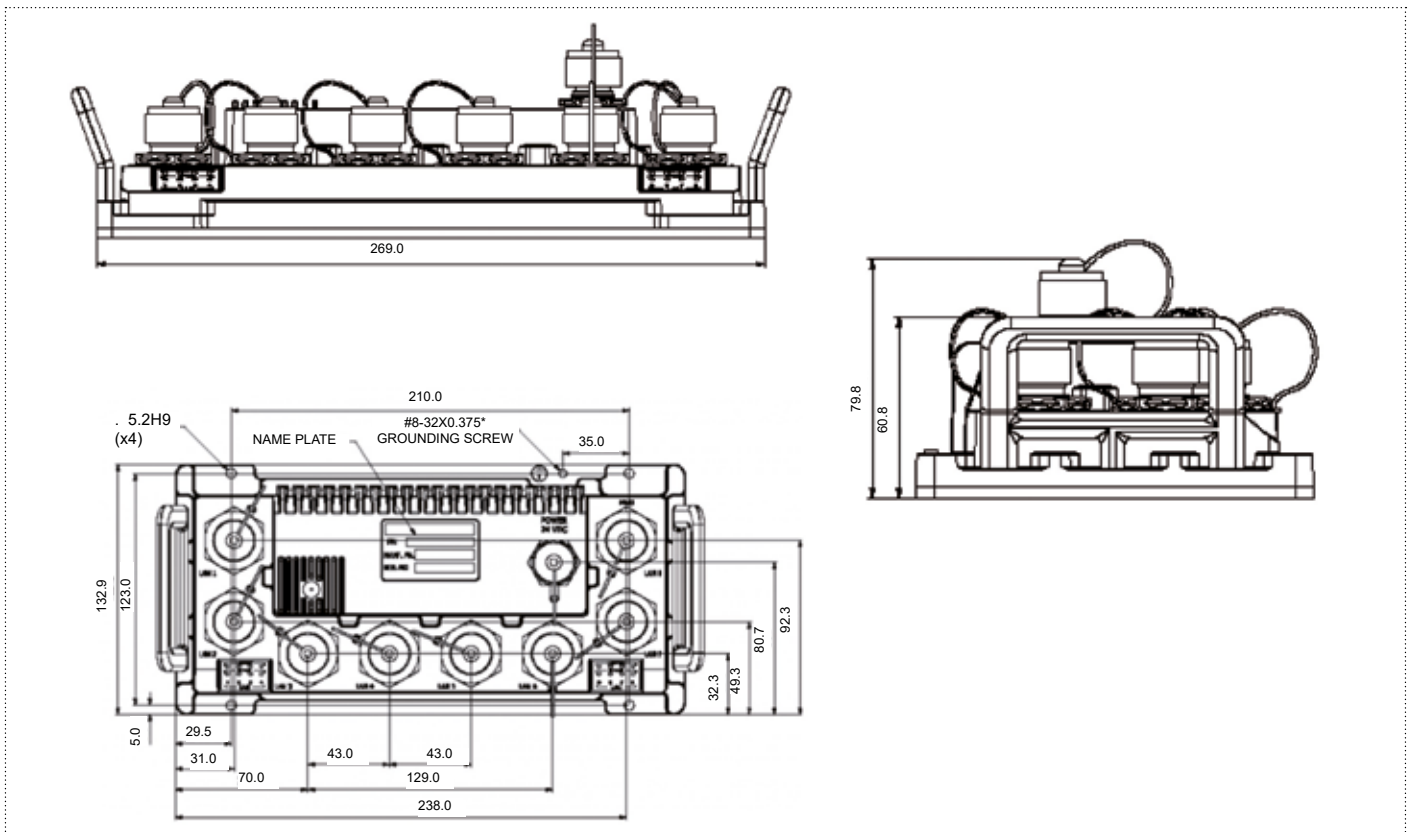- 24VDC (18VDC ~ 32VDC)

MILITARY RUGGED SWITCH
MIL-STD-1275
MIL-STD-704A
MIL-STD-461E
MIL-STD-810F/GM
IP67

Amphenol SOCAPEX

RESMLAC-8EMG-CAPS - Enhanced Managed Gigabit Ethernet Switch, MIL-DTL-38999 connectors

Product specifications

Performance	• 26.8 Mpps wire speed forwarding rate • 20 Gbps maximum forwarding bandwidth • 8K MAC address
Standards compliance	• IEEE 802.1x MAC based authentication • IEEE 802.1Q Vlan Tagging • IEEE 802.1P QoS • IEEE 802.1S Multiple STP • IEEE 802.1W Rapid STP • IEEE 802.3AD Link aggregation
Power	• Exceed MIL-STD-1275B surge and spike protection • Voltage input: 24Vdc nominal (18-32V) • Power consumption: 7W typical • Chassis grounding
Electromagnetic	• MIL-STD-461E electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Environmental	• MIL-STD-810F, 501.4I, 501.4II, 502.4I, 502.4II, 507.4, 500.4II, 514, 516I, 516VI, 514.5, 512.4 • IP67/68
Physical	• Dimensions: 269mm(L) x 133(W) x 79(H), including connectors & hardware • Weight: 1.5 kg
Installation	• Set of four 4.5 mounting holes on bottom for mounting to any flat surface. • Carrying handles
Cooling	• No moving parts. Passive cooling.
Operating temp	• -35°C to +75°C (-31°F to +167°F) / -35°C Cold start-up
Storage temp	• -45°C to +85°C (-49°F to +185°F)

Overall dimension

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

- Harsh Environment
With Industrial EMI Compliancy

RESMLAC-8EMG-CAPS - Enhanced Managed Gigabit Ethernet Switch, MIL-DTL-38999 connectors

How to order

Part number	Description
Ethernet switches Part number	
RESMLAC-8EMG-CAPS-CD	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX, M38999 connectors, cadmium plated connectors, powered with 18-32VDC, with attached metallic caps with enhanced features
RESMLAC-8EMG-CAPS-ZN	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX, M38999 connectors, Black Zinc Nickel plated connectors, powered with 18-32VDC, with attached metallic caps with enhanced features ✓
RESMLAC-8EMG-CAPS-NI	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX, M38999 connectors, Nickel plated connectors, powered with 18-32VDC, with attached metallic caps with enhanced features ✓
Cable assemblies Part number	
RJSMLAC-8MG-CBL-PWR-2M-B4	Power cordset for RESMLAC-8EMG-CAPS, 1 side with TV06RW0998SA, 1 side with 4mm plugs for power supply, cable 2m long (DC voltage option)
RESMLAC-8EMG-CBL-ETH-RJ45-2M	LAN cordset for RESMLAC-8EMG-CAPS, valid for LAN 1 to 8, 1 side with TV06RW1135P, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long (valid for all options)
RESMLAC-8EMG-CBL-MNG-1M	Management cable for RESMLAC-8EMG-CAPS, 1 side with TV06RW1135P plug, 1 side with DB9, 1m long (valid for all options)

For specific cable harnesses, please consult us.

Amphenol SOCAPEX

RESMLAC-12EMG-F35 - Enhanced Managed Ethernet switch, D38999 connectors - 12 Gigabit ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's **RESMLAC-12EMG-F35 is a MIL-STD rugged, Enhanced Managed-military-grade Gigabit Ethernet switch, offering 12 Gigabit Ethernet Ports.**

Developed for harsh environment applications, the **RESMLAC-12EMG-F35** features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability.

The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-DTL-38999 Series III circular connectors.

Leveraging best-in-class switching technology, the **RESMLAC-12EMG-F35** serves as a robust solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the **RESMLAC-12MG-F35** is particularly useful for expanding port density to tactical IP routers in space-constrained airborne and ground vehicle environments.

The **RESMLAC-12EMG-F35** is specifically designed for Data Acquisition & Transmission, Battlefield Communication C4ISR, Rugged Networks, Mobile Communications, Combat vehicles and Avionic & Shipboard Systems.

Main features

ETHERNET PORTS
- Enhanced Managed 12 x switched 10/100/1000 ports

NETWORKING
- Spanning Tree (802.1d), RSTP (802.1w) and multiple Spanning Tree (802.1S) for fast recovery rings
- Security via Radius Authentication 802.1x, Port Security, Port Mirroring
- Multicasting (IGMP Snooping), GARP, GMRP, and GVRP Broadcasting and flooding Control up to 8K Groups
- 802.1q Tagged based VLAN up to 4K VLAN groups
- QoS Multi-Layer Classifier, 802.1p, ToS/DSCP traffic classification. WFQ, Strict Queuing.
- Bridge support for Q-in-Q.
- ink Aggregation 802.3AD
- WEB, CLI, Telnet
- 3 static routing
- Rmirror
- Port Protection: 1+1 port protection, 1:1 port protection, 1:N port protection
- G.8032 ring protection
- DHCP option 82 relay
- L2CP tunneling
- Protocol-based VLAN
- 1588v2 PTP with two-step clock

CONNECTORS
- Power Connector Type: TV07 RW 11-35 P
- LAN Connector Type: TV07 RW CI 19-35 P
    • 12x ports spread among 2x connectors J2 & J3
- Serial Interface: Shared among J3 connector
- LED Indication Per Port (Speed, Link/Activity)

STANDARDS
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E
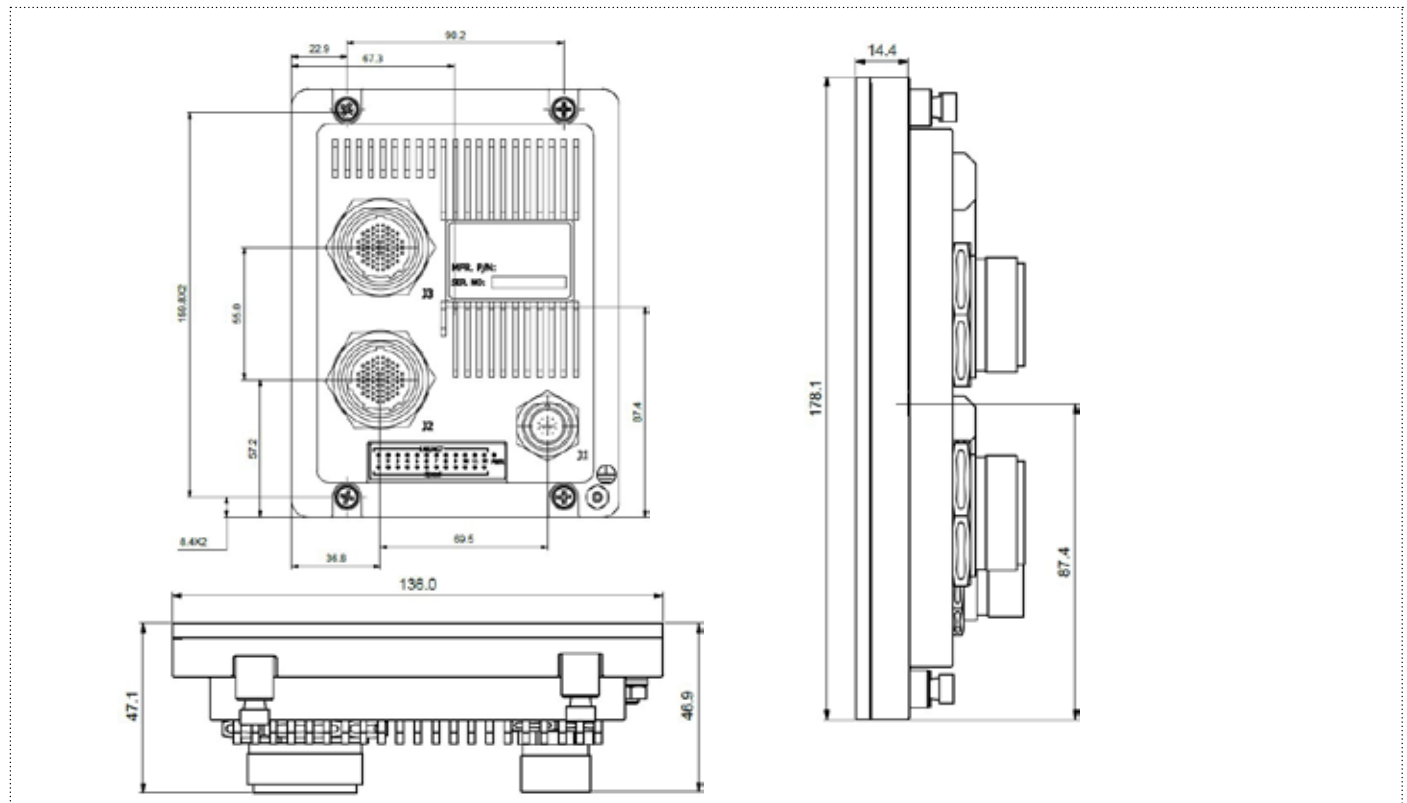- MIL-STD-810F GM
- IP67

VOLTAGE OPERATION
- 24VDC (16VDC - 36VDC)

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RESMLAC-12EMG-F35 - Enhanced Managed Ethernet switch, D38999 connectors - 12 Gigabit ports

Product specifications

Chassis	• Low profile rugged aluminum extrusion • Conductively cooled w/custom internal heat-sinks • Ingress protection against sand, dust and moisture • Conductive internal finish per MIL-DTL-5541F • Polyurethane paint, per MIL-C-83286 type II green, matt texture
Performance	• 26.8 Mbps wire speed forwarding rate • 52 Gbps maximum forwarding bandwidth • 8K MAC Address
Standards compliance	• IEEE 802.1X MAC based Authentication • IEEE 802.1Q Vlan Tagging • IEEE 802.1P QoS • IEEE 802.1S Multiple STP • IEEE 802.1W Rapid STP • IEEE 802.3AD Link Aggregation
Power	• Exceed MIL-STD-1275B Surge and Spike protection • Voltage Input: 24Vdc Nominal (16-36 VDC) • Power Consomption: 7W Max • Chassis grounding
Electromagnetic	• MIL-STD-461E Electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Shock / Vibration / Humidity	• MIL-STD-810F/G/GM: • Random vibration (514.5I), Bench Handling (516.6VI), High Temp. (501.5I,II), • Low Temp. (502.5I), Humidity (507.5II), Air Pressure (500.5I,II), • Blowing Rain (506.5I), Immersion (512.5I), Salt Atmosphere (509.5I), • Blowing Dust (510.5I), Loose Cargo Vibration (514.6II), Wind Analysis. • IP67
Physical	• Dimensions: 178mm (L) x 136(W) x 47(H), including connectors • Weight: 1150 g
Installation	• Set of Four #10-32UNF captive screws for mounting.
Temperature	• Operational temp.: -45ºC to +85ºC (-49ºF to +185ºF) – -45°C Cold Start-Up • Storage temp.: -45ºC to +85ºC (-49ºF to +185ºF)

Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

RESMLAC-12EMG-F35 - Enhanced Managed Ethernet switch, D38999 connectors - 12 Gigabit ports

How to order

Part number	Description
Ethernet switches Part number	
RESMLAC-12EMG-F35-CD	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX, M38999 connectors, cadmium plated connectors, powered with 16-36VDC
RESMLAC-12EMG-F35-ZN	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX, M38999 connectors, Black Zinc Nickel plated connectors, powered with 16-36VDC ✓
RESMLAC-12EMG-F35-NI	MIL-STD Rugged Managed Ethernet switch with 8 ports 10/100/1000TX, M38999 connectors, Nickel plated connectors, powered with 16-36VDC ✓
Cable assemblies Part number	
RESMLAC-12EMG-F35-CBL-PWR-2M-B4	Power cordset for RESMLAC-12EMG-F35, 1 side with TV06RW1135S, 1 side with 4mm plugs for power supply, cable 2m long
RESMLAC-12EMG-F35-CBL-J2-RJ45-2M	8x LAN - J2 - cordset for RESMLAC-12EMG-F35, 1 side with TV06RW1935S, 1 side with 8x RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long
RESMLAC-12EMG-F35-CBL-J3-RJ45-2M	4x LAN and MNG - J3 - cordset for RESMLAC-12EMG-F35, 1 side with TV06RW1935S, 1 side with 4x RJ45 civilian and 1 DB9, cable RJFSFTP5E cat 5E, 2m long

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

Amphenol SOCAPEX

47

RESMLAC-8MG-CAPS-POE - Managed Ethernet switch, D38999 conn. – 8 Gigabit PoE+ ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

Amphenol's RESMLAC-8MG-CAPS-POE is a MIL-STD rugged, Managed-military-grade Ethernet switch, offering 8 Gigabit Ethernet Ports with up to 60W per port (PoE+ compliant per IEEE 802.3af Type 1 & 802.3at Type 2 & 802.3bt Type 3 « 4PPoE »). The switch provides a total PoE power budget of 330W.

Developed for harsh environment applications, the RESMLAC-8MG-CAPS-POE features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability.

The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-DTL-38999 Series III circular connectors.

The RESMLAC-8MG-CAPS-POE is fully managed with advanced network features such as switching protocols, virtual LANS (VLANS), traffic prioritization, and bandwidth aggregation. The RESMLAC-8MG-CAPS-POE is is ideal for mobile Ethernet-equipped platforms, such as vetronics, ground vehicles and aerial applications where traditional power sources have limited availability and supports COTS guidelines for PoE-enabled cameras, WiFi access points, mesh nodes and other devices.

Main features

ETHERNET PORTS
- Managed 8x switched 10/100/1000 ports
- 4PPoE (60W per port), PoE+ (30W per port)

NETWORKING
- Spanning Tree (802.1d), RSTP (802.1w) and multiple Spanning Tree (802.1S) for fast recovery rings
- Security via Radius Authentication 802.1x, Port Security, Port Mirroring
- Multicasting (IGMP Snooping), GARP, GMRP, and GVRP Broadcasting and flooding Control up to 8K Groups.
- 802.1q Tagged based VLAN up to 4K VLAN groups.
- QoS Multi-Layer Classifier, 802.1p, ToS/DSCP traffic classification. WFQ, Strict Queuing.
- Bridge support for Q-in-Q.
- L3 static routing
- Link Aggregation 802.3AD.
- WEB, CLI, Telnet Management.
- Rmirror
- Port Protection: 1+1 port protection, 1:1 port protection, 1:N port protection
- G.8032 ring protection
- DHCP option 82 relay
- L2CP tunnelling
- Protocol-based VLAN
- 1588v2 PTP with two-step clock

CONNECTORS AND INDICATORS
- Power: TV07RW 1304 PN
- LAN : TV07WCI 9-9S
- Serial Interface: TV07WCI 9-9S
- LED Indication Per Port (Link/Activity, Speed, PoE)

ENVIRONMENTAL COMPLIANCE
- MIL-STD-1275, MIL-STD-704A, MIL-STD-461E
- MIL-STD-810F GM; IP68
- Operational temp.: -40ºC to +85ºC ; -40°C Cold Start-Up
- Storage temp.: -45ºC to +85ºC

STANDARDS COMPLIANCE
- IEEE 802.3af, IEEE 802.3at , IEEE 802.3bt
- IEEE 802.1X Access control
- IEEE 802.1x MAC based Authentication
- IEEE 802.1Q VLAN Tagging
- IEEE 802.1P QoS
- IEEE 802.1S Multiple STP
- IEEE 802.1W Rapid STP
- IEEE 802.1AD Link Aggregation

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RESMLAC-8MG-CAPS-POE - Managed Ethernet switch, D38999 conn. – 8 Gigabit PoE+ ports

Product specifications

Chassis	• Low profile rugged machined aluminum • Conductively cooled w/custom internal heat-sinks • Ingress protection against sand, dust and moisture • Polyurethane Paint, Per MIL-C-83286 type II, matt texture, color: Green FS24084
Performance	• 8K MAC addresses • 20 Gbps forwarding Bandwidth • LED indication (Speed, Link/Activity) per port • 26.8 Mbps Wire-Speed forwarding rate
Power	• Exceed MIL-STD-1275B & MIL-STD-704A Surge and Spike protection • Voltage Input: 24Vdc Nominal (18-32 VDC) • Power Consumption: 2,8W Typical (without PoE) • Chassis grounding
Power over ethernet	• Total PoE Budget 330W • Maximum Consumption per port 60W • Dynamic Power Allocation • PoE Priority per port • Full compliance to IEEE 802.3af, IEEE 802.3at, IEEE 802.3bt • No Power Degradation at +85°C • Operates from Regular Military 24VDC; No need for additional PoE 48VDC Input • Optional GUI/Web Application for PoE Management
Electromagnetic	• MIL-STD-461E Electromagnetic compatibility • CE-102, CS-114, CS-115, CS-116, RE-102, RS-103
Shock / Vibration / Humidity	• MIL-STD-810F/G/GM: • Random vibration (514.5I), Bench Handling (516.6VI), High Temp. (501.5I,II), • Low Temp. (502.5I), Humidity (507.5II), Air Pressure (500.5I,II), • Blowing Rain (506.5I), Immersion (512.5I), Salt Atmosphere (509.5I), • Blowing Dust (510.5I), Loose Cargo Vibration (514.6II), Wind Analysis. • IP68
Physical	• Dimensions: 269mm (L) x 133mm(W) x 71mm(H), including connectors • Weight: 1,2 kg
Installation	• Set of Four holes 5,2mm for mounting to any flat surface. • Carrying handles in option
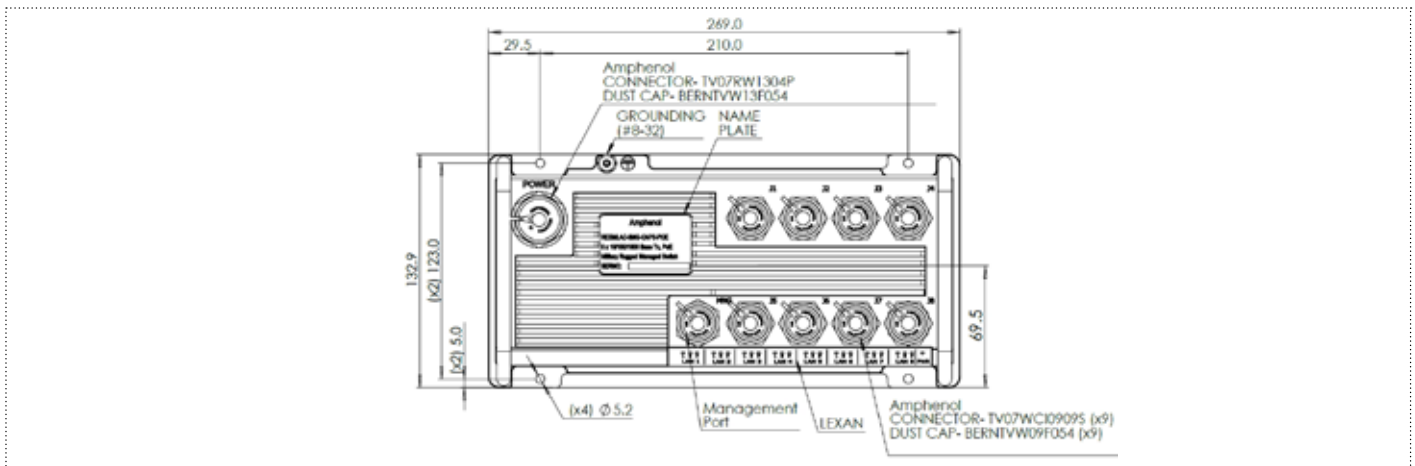
Ordering information

Part Number	Description
RESMLAC-8MG-CAPS-POE	MIL-STD Rugged, Managed PoE+ Ethernet Switch, 8 x 10/100/1000TX, Delivered without handles
RESMLAC-8MG-POE-CBL-PWR-2M	Power cordset for RESMLAC-8MG-CAPS-POE, 1 side with TV06RW1304S, 1 side with 4mm plugs for power supply, cable 2m long
RESMLAC-8MG-POE-CBL-LAN-RJ45-2M	LAN cordset for RESMLAC-8MG-CAPS-POE, valid for LAN 1 to 8, 1 side with TV06RW0909P plug, 1 side with RJ45 civilian, cable RJFSFTP5E cat 5E, 2m long
RESMLAC-8MG-POE-CBL-MNG-2M	Management cable for RESMLAC-8MG-CAPS-POE, 1 side with TV06RW0909P plug, 1 side with DB9, 1,7m long

RESMLAC-28MG - Managed military Ethernet switch - 24 Gigabit + 4 combo 10G ports

Military ethernet switch for harsh environment - Fully MIL-STD compliant

Description

The RESMLAC-28MG is a MIL-STD Fully managed Military-grade network switch offering 24 triple speed (10/100/1000) ports + 4 optional x 10G fiber ports.

The RESMLAC-28MG is compatible with all the newest military industry network protocols for redundant link topology, security, multi-cast and management requirements.

Developed specifically for military and harsh mobile applications, the RESMLAC-28MG features mechanical packaging enhancements designed for MIL-STD-810F airborne and ground environmental compliance and high reliability. The unit has been especially hardened to improve ingress, impact, and shock/vibration protection, as well as eliminate all moving parts through passive cooling, and interface through sealed MIL-DTL-38999 circular connectors and SCE.

Leveraging best-in-class switching technology, the RESMLAC-28MG serves as a robust COTS solution for providing local area network (LAN) connectivity to IP-enabled computing and net-centric devices. Compact in size, the RESMLAC-28MG is particularly useful for expanding port density to tactical IP routers in space-constrained airborne and ground vehicle environments.

Main features

ETHERNET PORTS

- Managed 24x to 28x switched ports
- 24x 10/100/1000 ports + Optional 4x10Gbps Fiber optic ports
- The 4 optional ports provide 100/1000Base-FX/SX/LX

NETWORKING

- Wire-speed hardware-based 28 ports gigabit ethernet switch
- Multicasting (IGMP Snooping), GARP, GMRP, MLD and GVRP
- Multicast groups up to 8K for both IPv4 and IPv6
- Broadcasting and flooding control up to 8K groups
- 802.1q tagged based VLAN up to 4K VLAN groups
- Link Aggregation 802.3ad, up to 16 members in group
- Link Aggregation mechanism based on L2/ L3/ L4 parameters
- Jumbo Frame support up to 10K
- WEB, CLI, Telnet Management

QUALITY OF SERVICE

- QoS Multi-Layer Classifier: 802.1p, EtherType, VLAN-ID, IPv4/ 6 DSCP/ToS, and UDP/TCP ports & ranges traffic classification
- Per port WFQ and Strict Queuing scheduling
- DSCP remarking for both IPv4 and IPv6 frames
- Ingress policer and ingress shaper per port with 500Kbps granularity
- Egress shaper per port with 500Kbps granularity
- Full-duplex flow control (IEEE802.3X) and half-duplex backpressure, symmetric and asymmetric.

VOLTAGE OPERATION

- DC versions: 24VDC (18VDC - 32VDC)
- VAC versions: 90-265 VAC / 47-65Hz

MILITARY RUGGED SWITCH

MIL-STD-1275B
MIL-STD-704A
MIL-STD-461F
MIL-STD-810F/GM
IP67
RTCA-DO160
MIL-STD-167-1A

Amphenol SOCAPEX

RESMLAC-28MG - Managed military Ethernet switch - 24 Gigabit + 4 combo 10G ports

Main features

SECURITY

- Security via Radius authentication 802.1x, Port/ MAC access control
- Port security
- Per port ingress and egress port mirroring
- Mirroring per VLAN and per content awareness match
- Private VLAN support per VLAN (Isolated and Promiscuous ports)
- Content Aware Policers:

    • 128 Content Aware Policers

    • 16 Content Aware rate policers with rates from 1fps to 32 million fps

    • 8 UDP/TCP port range policers

    • Advanced ACL through hardware based match patterns

    • Content Aware Policers for generic MAC, ARP, IPv4, IPv6 protocols

    • No restriction on any mix of entries to Content Aware Policers

    • Contente Aware Policers actions are permit/ deny, police, count, snoop and mirror
Special support for IP fragments, UDP/TCP port ranges and ARP

    • Extensive CPU DoS prevention

    • Surveillance functions by Content Aware Policers counters

    • Multiple ACLs per port for optimal usage of Content Aware Policers

- Storm controllers for flooded broadcast, multicast and unicast

REDUNDANCY AND RING PROTECTION

- Spanning tree (802.1d), RSTP (802.1w) and multiple Spanning tree (802.1S) for fast recovery rings
- RPR for up to 30 units per ring with recovery time <50ms hardware based
- RPR for up to 30 units per ring with recovery time <50ms hardware
- 20-Gbps bandwidth for ring topology
- QoS consistency across stack / ring
- Mirroring across stack / ring
- Link aggregation groups spanning multiple switches in stack/ring

CONNECTORS

- 2 x Power connector type: MIL-DTL-38999/24WC4P (1 optional)
- 24 x LAN connector type: SCE2-B-76A07-14SN-001
- Optional fiber optic connectors:

    • TVOP (MIL-DTL- 38999)

    • CTOS (STANAG 4290)

    • TACBEAM (M83526/20&21)

- 1 x Serial interface, shared with LAN port #1
- LED indication per Port (Speed, Link/Activity) per Unit (Power A, Power B)

Product specifications

Chassis	• Low profile rugged aluminium extrusion • Conductively cooled w/custom internal heat-sinks • Ingress protection against sand, dust and moisture • Polyurethane Paint, Per MIL-C-83286 type II, color : Nato green, FS24079, semi-gloss
Standards	• MIL-STD-1275B, MIL-STD-704A, MIL-STD-461F, MIL-STD-810F GM, IP67
Performance	• 96.8 Mbps wire speed forwarding rate • 56 Gbps maximum forwarding bandwidth • 8K MAC address

Power	• Exceed MIL-STD-1275B and MIL-STD-704A Surge and Spike protection
	• Voltage input:
	  - DC versions: 24VDC nominal (18-32VDC)
	  - VAC versions: 90-265 VAC / 47-65 Hz
	• Power consumption: 20W typical
	• Chassis grounding

Electromagnetic	• MIL-STD-461F : CS-114, CS-115, CS-116, RE-101, RE-102, RS-101, RS-103 • RTCA-DO160 sec 25 : +/- 15KV 150pF 330Ohm
Shock / Vibration / Humidity / Altitude	• MIL-STD-810F G, 507.5, 500.4 I & II, 501.5 I & II, 502.5 I & II, 516.6 I, 514.6 cat 4 & 10, 509.5 • MIL-STD-167-1A, type I, shipboard vibration
Physical	• Dimensions: 440mm (L) x 200mm (W) x 88(H), including connectors & hardware, 2U, 19" rack • Weight: 5.6 kg

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RESMLAC-28MG - Managed military Ethernet switch - 24 Gigabit + 4 combo 10G ports

Product specifications

Installation	• 19" standard mounting ears • Other options available (rear mount or ears for mounting to any flat surface)
Cooling	• No moving parts. Passive cooling.
Operating temp	• -40°C to +70°C (-40°F to +158°F)
Storage temp	• -46°C to +71°C (-51°F to +160°F)

Overall dimension
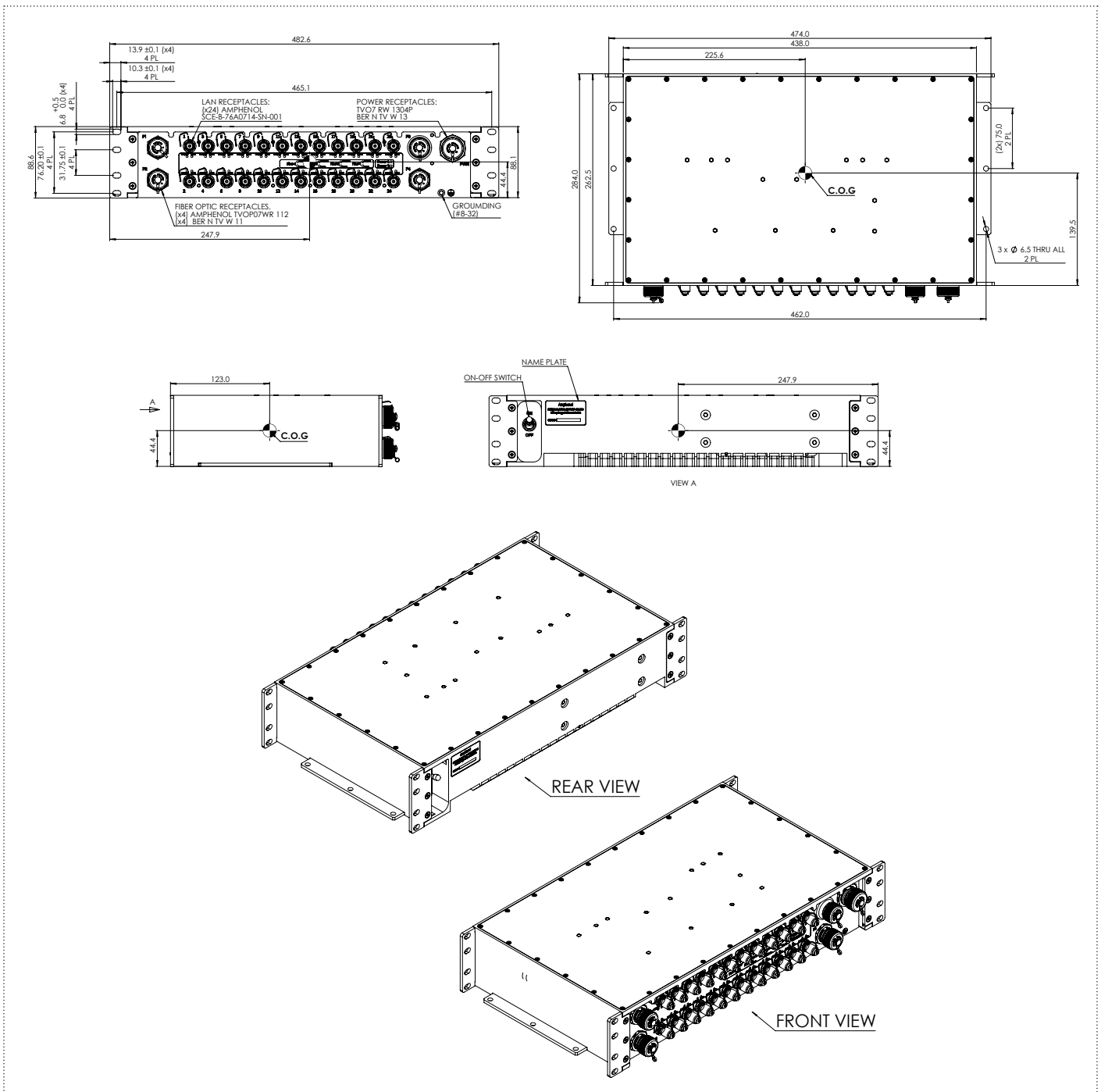
Dimensional line drawing - All measurements are in millimeters

Amphenol SOCAPEX

RESMLAC-28MG - Managed military Ethernet switch - 24 Gigabit + 4 combo 10G ports

How to order

1.	2.	3.	4.	5.	6.
Series	Fiber optics ports	Type of fiber optic	Fiber optic connectors	Datarate for fiber optic ports	Voltage input
RESMLAC-28MG	4	M	TVOP	10G	DC

1. Series

RESMLAC-28MG	Rugged Managed Ethernet Switch

2. Fiber optics ports

(empty)	No fiber optic ports
2	2 fiber optic ports
4	4 fiber optic ports

3. Type of fiber optic

M	Multimode fiber optic, 2 ways, 50/125µm
S	Singlemode fiber optic, 2 ways, 9/125µm

4. Fiber optic connectors

TVOP	TVOP connector with butt joint, MIL-DTL-38999
CTOS	CTOS connector with expanded beam, for intensive use in harsh environments, STANAG 4290
TACB	TACBEAM connector with expanded beam, M83526/20&21

5. Datarate for fiber optic ports

G	1000 Mbps
10G	10 Gbps

6. Voltage input

DC	Unit powered with 18-36VDC
VAC	Unit powered with 90-265 VAC / 47-65 Hz

Part number	Description
RESMLAC-28MG-CBL-PWR-2M	Power cordset for RESMLAC-28MG, 1 side with MIL-DTL-38999 plug, 1 side with 4mm plugs for power supply, cable 2m long
RESMLAC-28MG-CBL-MNG-2M	Management Cordset for RESMLAC-28MG, SCE2B-L1K-0714PN on one side, DB-9 female plug on the other side, length 2m
RESMLAC-28MG-CBL-LAN-2M	LAN Cordset for RESMLAC-28MG, 1 termination with SCE2B-L1K-0714PN, 1 termination with RJ45, RJFSFTP5E cat 5E cable 2m

For specific cable harnesses, please consult us.

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53

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54

Table of contents

Markets & Applications

C4ISR, Battlefield, Ground vehicles

Missiles & UAVs

Avionics

Navy

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Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

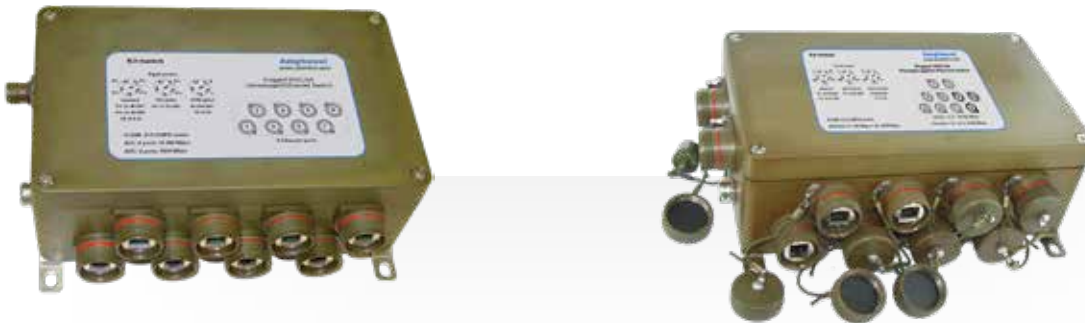Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RJSML-8US1 & RJSML-8UG1 - Unmanaged military Ethernet switch - Fast or Gigabit

Military ethernet switch for harsh environment with industrial EMI compliancy

Description

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.

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 µs 15 mJ
- 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			

Amphenol SOCAPEX

RJSML-8US1 & RJSML-8UG1 - Unmanaged military Ethernet switch - Fast or Gigabit

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

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 mm² maxi) • 1 connector TVx07xx0935PA (for PSM option)
"OK" contact output	• Sourcing power ; maximum current: 1 A @ 24VDC • Not available for -704 and -PSM options

Additional power protection for models 8US1-704 & 8UG1-704 (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

Amphenol SOCAPEX

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RJSML-8US1 & RJSML-8UG1 - Unmanaged military Ethernet switch - Fast or Gigabit

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
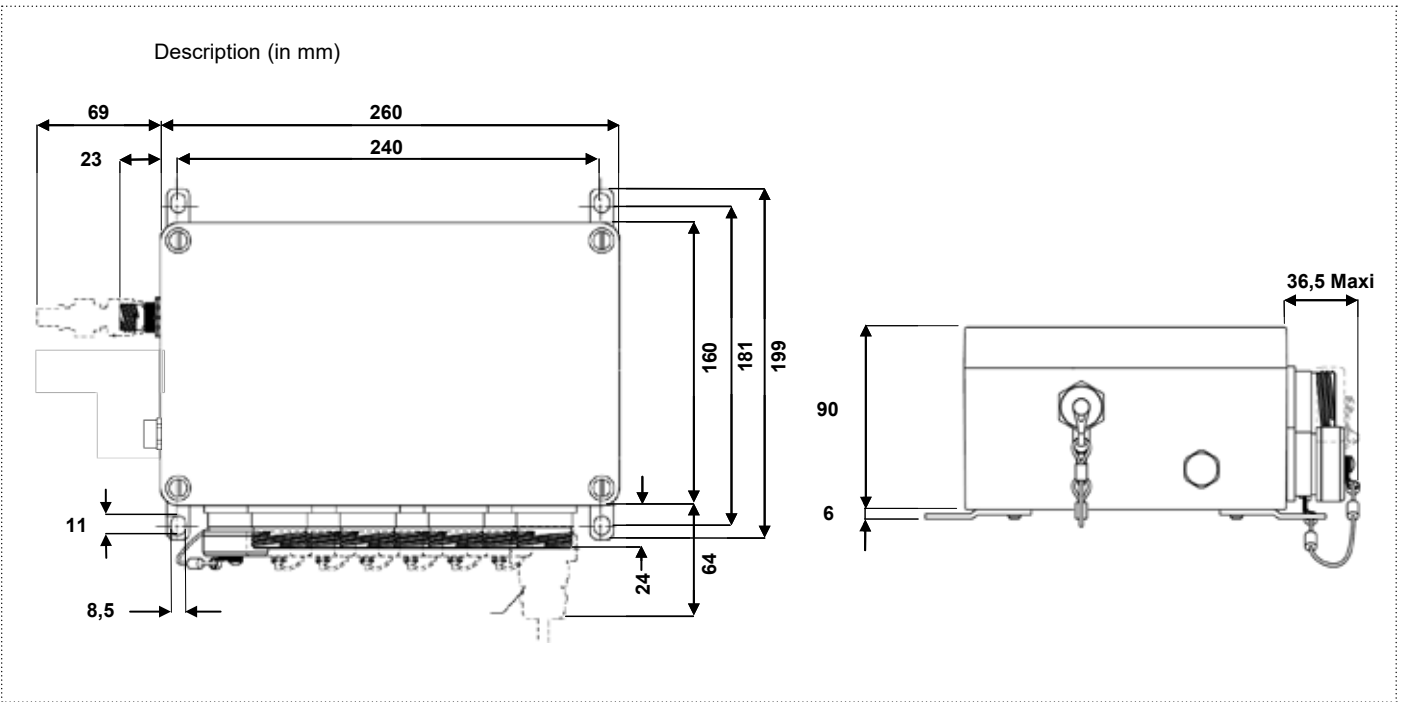
5 Fixture for vertical mounting
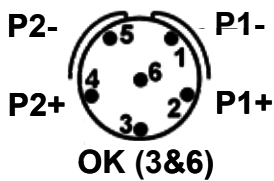
Optional caps available

IMPORTANT NOTE
This model has no LED indicator.

Overall dimension

Description (in mm)

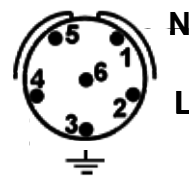*Dimensional line drawing - All measurements are in millimeters*

Pin-out for the power connector

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
4, 5, 6: not connected

Amphenol SOCAPEX

RJSML-8US1 & RJSML-8UG1 - Unmanaged military Ethernet switch - Fast or Gigabit

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	8US1	-	-	CAPS

1. Series

RJS	Rugged Unmanaged Ethernet Switch

2. 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 ✓

3. 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

✓ : RoHS compliant

4. Optional: transient suppression module; 600V spike suppressor

-	No transient suppression module
704	Switch equiped with transient suppression module

5. Optional: AC power supply

-	Standard model
PSM	Switch powered with 85-264VAC 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 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

Due to technical modifications, all information provided is subject to change without prior notice
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59

Amphenol SOCAPEX

RJSML-8ELMG - Managed military Ethernet switch – 8 gigabit ports

Military Ethernet switch for harsh environment with industrial EMI compliancy

Description

SEALED, RUGGED & MANAGED SWITCH

Amphenol offers a managed Ethernet switch with 8 gigabit ports RJSML-8ELMG.

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

Data Acquisition & Transmission

Battlefield communication C4ISR

Rugged Networks

Mobile communications

Main features

KEY FEATURES

- 8 gigabit Ethernet (10/100/1000 Mbps) ports
- Rugged environmental feature
    • Rugged metal packaging with cadmium or paint protection
    • MIL-DTL-38999 III connectors for power
    • MIL-DTL-38999 III RJFTV connectors for Ethernet ports
    • IP65/IP68 rated when mated
- Power filtering and protection (-704 option only)
    • MIL-STD-461E (CE03) 600V spike suppression
    • MIL-STD-704A
    • MIL-STD-1275A
  RTCA/DO-160B
- MIL-STD-810F shocks
- RTCA/DO-160C Vibrations
- Wide operating temperature range of -40°C to +75°C
- MIL-STD-810F Altitude 50,000 ft (15.000 m)

ETHERNET FEATURES

- Full-Duplex operation with flow control (no collisions!)
- Auto-detecting, auto-crossover and auto polarity
- RSTP redundant rings, Couple rings
- QoS and CoS priority queuing
- Link Aggregation: Dynamic and Static port Trunking
- SNMP v1/V2C authentification
- IGMP Snooping for multicast filtering
- VLAN
- Storm control: Broadcast, Multicast, Unknown
- Port Security: Static, Dynamic, MAC address filtering
- Security: Authentication
- And much more!

IEEE Ethernet standards

Models	Features
IEEE 802.3/u/ab	10/100/1000 Mbps gigabit Ethernet
IEEE 802.1p	Priority queuing - QoS, CoS, ToS/DS
IEEE 802.3x	Full-Duplex with Flow Control
IEEE 802.1D/w	Rapid Spanning Tree for redundant rings
IEEE 802.1Q	VLAN for traffic segregation
IEEE 802.1X	Authentication
IEEE 802.3AD	Link Aggregation
IEEE 802.3az	Energy-Efficient Ethernet (EEE)

Amphenol SOCAPEX

RJSML-8ELMG - Managed military Ethernet switch – 8 gigabit ports

Ethernet features

RJ45 Ports	• 8 shielded RJ45 ports 10/100/1000 BaseT(X)
Connectors for RJ45 ports	• RJFTV: jam nut receptacle based on MIL-DTL-38999 III • Olive drab cadmium or Nickel plated
RJ45 speed	• 10/100/1000 Mbps auto –negotiation
MAC Table size	• 8K
Memory bandwidth	• 1.6 Gbps (backplane)
Jumbo frame	• 9216 Bytes
Ethernet isolation	• 1500 Vrms 1 minute
Ring features	• Advantech X-Ring Elite, ultra highspeed recovery time less than 20ms

Environmental specifications

EMI emissions	• CE, FCC Class A
EMC immunity	• EN 61000-4-2 • EN 61000-4-3 • EN 61000-4-4 • EN 61000-4-5 • EN 61000-4-6 • EN 61000-4-8
Shocks	• MIL-STD-810F: 40g, 11ms, 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 -40°C to +75°C • Storage -40°C to +85°C

Weight

Weight	• Approx 2.8 kg

Power supply

Input voltage	• 8ELMG	12-48 VDC, redundant power input (P1 and P2)
	• 8ELMG-704	12-33 VDC, single power input (P1 only)
	• 8ELMG-PSM	85-264 VAC single power input
Input power	• 5.2 W typ	
Connectors for power	• MIL-DTL-38999 III jam nut receptacle, olive drab cadmium or nickel • 1 connector TVx07xx0935P: 6 cts # 22D (wire 0.38 mm2 maxi)	
"OK" contact output	• Sourcing power ; Maximum current: 1 A @ 24VDC • Not available for -704 and -PSM options	

Additional power protection for models 8ELMG-704 (option-704)	
MIL-STD-461E	CE102 conducted emission
DEF-STAN-59-41	CS101, CS114, CS115 & CS116 conducted susceptibility
DEF-STAN-61-5	600V input transient, applied for 10 µs
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

Due to technical modifications, all information provided is subject to change without prior notice
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61

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

RJSML-8ELMG - Managed military Ethernet switch – 8 gigabit ports

Description

1. IP68 Aluminum enclosure
2. Redundant power inputs
3. Balance pressure vent
4. 8 Rugged IP68 RJFTV Ethernet ports
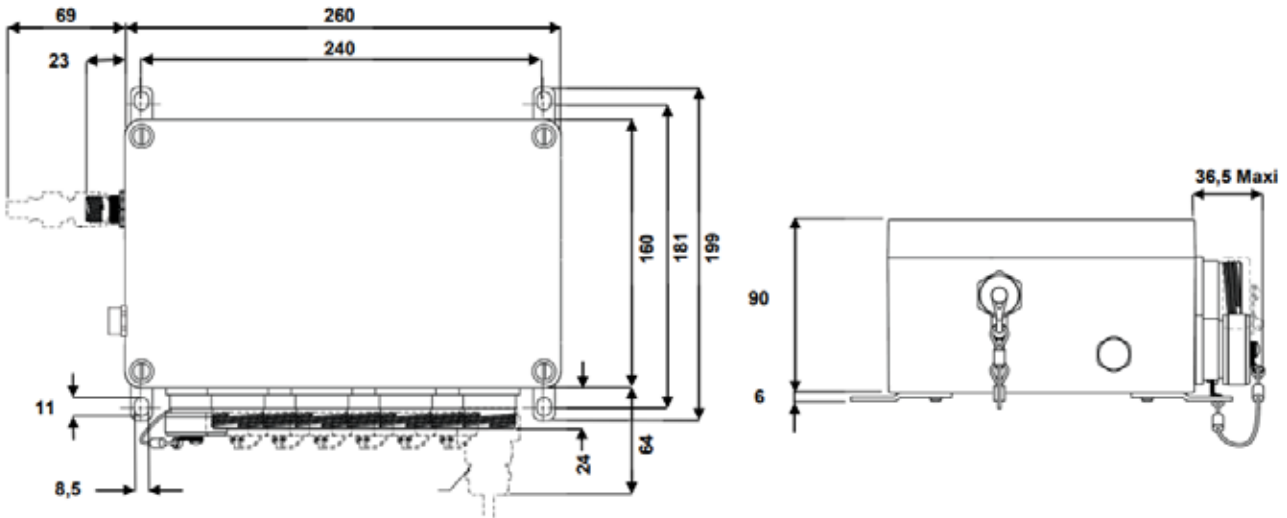5. Fixture for vertical mounting

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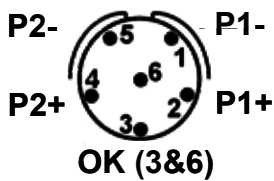Management is done through a web browser

Overall dimension

Description (in mm)

Dimensional line drawing - All measurements are in millimeters
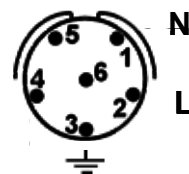
Pin-out for the power connector

8ELMG
P1 and/or P2: 12-48VDC

8ELMG-704
P1: 12-33VDC
3, 4, 5, 6: Not connected

8ELMG-PSM
L: 85-264 VAC
4, 5, 6: Not connected

Amphenol SOCAPEX

RJSML-8ELMG - Managed military Ethernet switch – 8 gigabit ports

How to order

1.	2.	3.	4.	5.	6.
Series	Protection & color	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	8ELMG	-	-	CAPS

1. Series

RJS	Rugged Ethernet Switch

2. Protection & color

ML	Olive Drab Cadmium Plating on enclosure and receptacles
BKN	RAL 9005 (Jet Black) Paint on enclosure, Nickel plated receptacles ✓
ML1019	RAL 1019 (Sand) Paint on enclosure, Olive Drab Cadmium plated receptacles
BKN9010	RAL 9010 (White) Paint on enclosure, Nickel plated receptacles ✓

3. Type of electronics

8ELMG	Managed 8 ports 10/100/1000 BaseT(X) Ethernet switch

✓ : RoHS compliant

4. Optional: transient suppression module; 600V spike suppressor

(blank)	No transient suppression module (standard model)
704	Switch equiped with additional transient suppression module

5. Optional: AC power supply

(blank)	DC powered (standard model)
PSM	Switch powered with 85-264VAC instead of DC power

6. 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 can be ordered separately.
CAPS	Attached caps for both power and data included (standard model)

Example RJS ML 8ELMG CAPS: Managed Ethernet switch in an aluminum enclosure with olive drab green conductive cadmium plating over enclosure and receptacles, 8 gigabit ports RJFTV threaded coupling receptacles, caps screwed to the switch.

> Remark: All BKN and BKN9010 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 airborne 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

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

Amphenol SOCAPEX

63

Ethernet Switch & Media Converter

Military Ethernet Switch for Harsh Environment

Military Ethernet Switch for Harsh Environment with Industrial EMI Compliancy

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Founded in 1932, **Amphenol** is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures, and markets electrical, electronic, and fiber optic connectors, interconnect systems, and coaxial and specialty cables.

Amphenol has a diversified presence as a leader in high growth areas of the interconnect industry and provides solutions for customers in the automotive, broadband, industrial, information technology and data communications, military and aerospace, mobile devices, and mobile networks markets.

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