

Edition

08/2023

Reference Manual

SIMATIC NET

Networking components

RUGGEDCOM Modules

For RST2428P

<https://www.siemens.com/ruggedcom>

SIEMENS

SIMATIC NET

Networking components RUGGEDCOM Modules

Reference Manual

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For RST2428P

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 DANGER

indicates that death or severe personal injury will result if proper precautions are not taken.

 WARNING
--

indicates that death or severe personal injury may result if proper precautions are not taken.
--

 CAUTION
--

indicates that minor personal injury can result if proper precautions are not taken.
--

 NOTICE

indicates that property damage can result if proper precautions are not taken.
--

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

 WARNING
--

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.
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Trademarks

All names identified by ® are registered trademarks of Siemens Canada Ltd.. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Preface

This document details RUGGEDCOM power and media modules available for use with RUGGEDCOM RST2428P switches.

It is intended for use by network technical support personnel responsible for the installation, commissioning and maintenance of switches. It is also recommended for use by network and system planners, system programmers, and line technicians.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit <https://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under <https://www.siemens.com/cert>.

Related documents

Other documents that may be of interest include:

Document title	Link
RUGGEDCOM RST2428P Equipment Manual	https://support.industry.siemens.com/cs/ww/en/view/109816700

SIMATIC NET glossary

The SIMATIC NET glossary describes special terms that may be used in this document.

The glossary is available online via Siemens Industry Online Support (SIOS) at:

<https://support.industry.siemens.com/cs/ww/en/view/50305045>

Registered trademarks

The following and possibly other names not identified by the registered trademark sign ® are registered trademarks of Siemens Canada Ltd.:

- RUGGEDCOM
- ROS
- RCDP
- Discovery Protocol

Other designations in this manual might be trademarks whose use by third parties for their own purposes would infringe the rights of the owner.

Training

Siemens offers a wide range of educational services ranging from in-house training of standard courses on networking, Ethernet switches and routers, to on-site customized courses tailored to the customer's needs, experience and application.

Siemens' Educational Services team thrives on providing our customers with the essential practical skills to make sure users have the right knowledge and expertise to understand the various technologies associated with critical communications network infrastructure technologies.

Siemens' unique mix of IT/Telecommunications expertise combined with domain knowledge in the utility, transportation and industrial markets, allows Siemens to provide training specific to the customer's application.

For more information about training services and course availability, visit <https://www.siemens.com> or contact a Siemens Sales representative.

Customer support

Customer support is available 24 hours, 7 days a week for all Siemens customers. For technical support or general information, contact Siemens Customer Support through any of the following methods:

Online



Visit <http://www.siemens.com/automation/support-request> to submit a Support Request (SR) or check on the status of an existing SR.

Telephone



Call a local hotline center to submit a Support Request (SR). To locate a local hotline center, visit https://w3.siemens.com/aspa_app/?lang=en.

Mobile app



Install the Industry Online Support app by Siemens AG on any Android, Apple iOS or Windows mobile device and be able to:

- Access Siemens' extensive library of support documentation, including FAQs and manuals
- Submit SRs or check on the status of an existing SR
- Contact a local Siemens representative from Sales, Technical Support, Training, etc.
- Ask questions or share knowledge with fellow Siemens customers and the support community

Contacting Siemens

Address	Siemens Canada Ltd. Digital Industries Process Automation 300 Applewood Crescent Concord, Ontario Canada, L4K 5C7
Telephone	Toll-free: 1 888 264 0006 Tel: +1 905 856 5288 Fax: +1 905 856 1995
E-Mail	info.ruggedcom@siemens.com
Web	https://www.siemens.com

Introduction

This catalog details the various media modules available for the device. Modules allow network designers to quickly and cost effectively adjust their communications infrastructure to the needs of the facilities and the network.

It is intended to be used as a supplement to the "Installation Manual" for the device. For a list of related Installation Manuals, refer to "Related documents" (Page v).

NOTICE

Only qualified personnel should be allowed to install and work on this equipment. Qualified persons in the sense of the safety-related notices in this manual are defined as persons who are authorized to commission, to ground, and to tag circuits, equipment, and systems in accordance with established safety practices and standards.

1.1 Available modules

The following is a list of all power and media modules available for use in the device.

Power supply modules

RUGGEDCOM RPM2916-APS	Input range	10.5 to 15 VDC
	Maximum power consumption	77 W
	Article numbers	6GK6291-6AA00-0AA0 (Standard) 6GK6291-6AA00-0AA1 (Conformal coated)
RUGGEDCOM RPM2916-BPS	Input range	13 to 36 VDC
	Maximum power consumption	72 W
	Article numbers	6GK6291-6BA00-0AA0 (Standard) 6GK6291-6BA00-0AA1 (Conformal coated)
RUGGEDCOM RPM2916-CPS	Input range	36 to 72 VDC
	Maximum power consumption	72 W
	Article numbers	6GK6291-6CA00-0AA0 (Standard) 6GK6291-6CA00-0AA1 (Conformal coated)

1.1 Available modules

RUGGEDCOM RPM2916-DPS	Input range	DC	88 to 300 VDC
		AC	85 to 264 VAC
	Maximum power consumption	DC	77 W/ 76W
		AC	75 W/ 75W
Article numbers		6GK6291-6DA00-0AA0 (Standard)	
		6GK6291-6DA00-0AA1 (Conformal coated)	

Copper Ethernet modules

RUGGEDCOM RMM2973-4RJ45	Power consumption	3.5 W
	Ports	4
	Connector	RJ45
	Speed	10/100/1000 Mbps
	Interface	TX
	Distance	100 m (328 ft)
	Article numbers	6GK6297-3RD00-4AB0 (Standard) 6GK6297-3RD00-4AB1 (Conformal coated)
RUGGEDCOM RMM2973-4FC	Power consumption	3.5 W
	Ports	4
	Connector	FastConnect RJ45
	Speed	10/100/1000 Mbps
	Interface	TX
	Distance	100 m (328 ft)
	Article numbers	6GK6297-3FD00-4AB0 (Standard) 6GK6297-3FD00-4AB1 (Conformal coated)

Fiber optic Ethernet modules

RUGGEDCOM RMM2972-4SFP	Power consumption	3 W (no SFP transceivers)
		5 W (with SFP transceivers)
	Sockets	4
	Speed	100/1000 Mbps
	Article numbers	6GK6297-2SA00-4AA0 (Standard) 6GK6297-2SA00-4AA1 (Conformal coated)

Blank modules

RUGGEDCOM RMM2931-4	Article numbers	6GK6291-6EA00-0AA0
RUGGEDCOM RMM2931-4	Article numbers	6GK6293-1BA00-4AA0

1.2 Installing/removing modules

Always refer to the associated "Equipment Manual" for the device for instructions on how to install or remove a power or media module. The "Installation Manual" cites important, chassis-specific safety warnings that should be followed to avoid damage to the module and/or device.

Where needed, additional installation/removal instructions are provided in this Reference Manual for select modules. Make sure to review all information provided before installing or removing a module.

1.3 Dimensions

Power and media modules conform to the following dimensions:

Note

All dimensions are in millimeters (mm).

Power Supply Module Dimensions

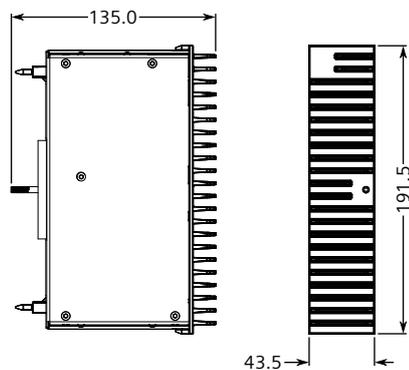


Figure 1.1 Power Supply Module Dimensions

Media Module Dimensions

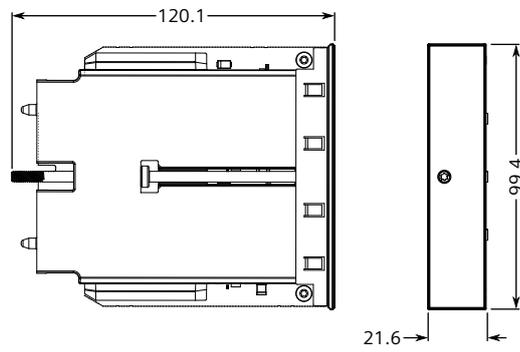


Figure 1.2 Media Module Dimensions

Power supply modules

The following power supply modules are available.

RUGGEDCOM RPM2916-APS	"RUGGEDCOM RPM2916-APS" (Page 6)
RUGGEDCOM RPM2916-BPS	"RUGGEDCOM RPM2916-BPS" (Page 8)
RUGGEDCOM RPM2916-CPS	"RUGGEDCOM RPM2916-CPS" (Page 10)
RUGGEDCOM RPM2916-DPS	"RUGGEDCOM RPM2916-DPS" (Page 12)

2.1 RUGGEDCOM RPM2916-APS

The RUGGEDCOM RPM2916-APS power supply module provides 12 VDC power to the device. The module accepts DC power inputs from an external power source.

Description



Figure 2.1 RUGGEDCOM RPM2916-APS

Technical specifications

Power supply	Input	Minimum	10.5 VDC
		Nominal	12 VDC
		Maximum	15 VDC
	Input current ^a	7.2 A	
	Maximum power consumption ^{ab}	86 W	
	Wire gauge	#14	
Internal fuse	Voltage rating	85 VDC/VAC	
	Ampere rating	12 A	
	Fuse type	Very fast acting	
	Fuse delay ^c	100 %	4 hours (minimum)
200 %		5 seconds (maximum)	
Environment	Operating temperature	-40 to 85 °C (-40 to 185 °F)	
	Operating relative humidity	5 to 95% (non-condensing)	
	Storage temperature	-40 to 85 °C (-40 to 185 °F)	

^a At nominal input voltage with 65 W output.

^b Power consumption varies based on the device configuration.

^c % of ampere rating

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances
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- **China RoHS (relating to SJ/T 11364)**
Management Methods for the Restriction of the Use of
Hazardous Substances in Electrical and Electronic Products

Declarations of conformity for each directive are available
online via [Siemens Industry Online Support \[https://
support.industry.siemens.com/\]](https://support.industry.siemens.com/).

Ordering information

Description	RST advanced rack series 12VDC power supply
Article numbers	6GK6291-6AA00-0AA0 (Standard)
	6GK6291-6AA00-0AA1 (Conformal coated)

2.2 RUGGEDCOM RPM2916-BPS

The RUGGEDCOM RPM2916-BPS power supply module provides 24 VDC power to the device. The module accepts DC power inputs from an external power source.

Description

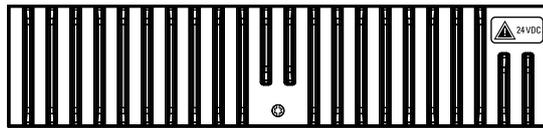


Figure 2.2 RUGGEDCOM RPM2916-BPS

Technical specifications

Power supply	Input	Minimum	13 VDC
		Nominal	24 VDC
		Maximum	36 VDC
	Input current ^a	3.4 A	
	Maximum power consumption ^{ab}	82 W	
	Wire gauge	#14	
Internal fuse	Voltage rating	125 VDC/VAC	
	Ampere rating	10 A	
	Fuse type	Very fast acting	
	Fuse delay ^c	100 %	4 hours (minimum)
200 %		5 seconds (maximum)	
Environment	Operating temperature	-40 to 85 °C (-40 to 185 °F)	
	Operating relative humidity	5 to 95% (non-condensing)	
	Storage temperature	-40 to 85 °C (-40 to 185 °F)	

^a At nominal input voltage with 65 W output.

^b Power consumption varies based on the device configuration.

^c % of ampere rating

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances
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Management Methods for the Restriction of the Use of
Hazardous Substances in Electrical and Electronic Products

Declarations of conformity for each directive are available
online via [Siemens Industry Online Support \[https://
support.industry.siemens.com/\]](https://support.industry.siemens.com/).

Ordering information

Description	RST advanced rack series 24VDC power supply
Article numbers	6GK6291-6BA00-0AA0 (Standard) 6GK6291-6BA00-0AA1 (Conformal coated)

2.3 RUGGEDCOM RPM2916-CPS

The RUGGEDCOM RPM2916-CPS power supply module provides 48 VDC power to the device. The module accepts DC power inputs from an external power source.

Description

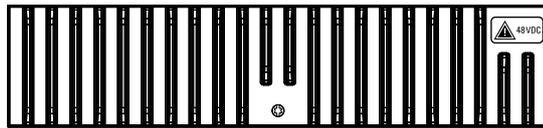


Figure 2.3 RUGGEDCOM RPM2916-CPS

Technical specifications

Power supply	Input range	Minimum	36 VDC
		Nominal	48 VDC
		Maximum	72 VDC
	Input current ^a	1.6 A	
	Maximum power consumption ^{ab}	76 W	
	Wire gauge	#16	
Internal fuse	Voltage rating	125 VDC/VAC	
	Ampere rating	5 A	
	Fuse type	Slow blow	
	Fuse delay ^c	100 %	4 hours (minimum)
200 %		1 second (minimum)	
		60 seconds (maximum)	
Environment	Operating temperature	-40 to 85 °C (-40 to 185 °F)	
	Operating relative humidity	5 to 95% (non-condensing)	
	Storage temperature	-40 to 85 °C (-40 to 185 °F)	

^a At nominal input voltage with 65 W output.

^b Power consumption varies based on the device configuration.

^c % of ampere rating

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances
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- **China RoHS (relating to SJ/T 11364)**
Management Methods for the Restriction of the Use of
Hazardous Substances in Electrical and Electronic Products

Declarations of conformity for each directive are available
online via [Siemens Industry Online Support \[https://
support.industry.siemens.com/\]](https://support.industry.siemens.com/).

Ordering information

Description	RST advanced rack series 48VDC power supply
Article numbers	6GK6291-6CA00-0AA0 (Standard)
	6GK6291-6CA00-0AA1 (Conformal coated)

2.4 RUGGEDCOM RPM2916-DPS

The RUGGEDCOM RPM2916-DPS power supply module provides high VDC or VAC power to the device. The module accepts either AC or DC power inputs from an external power source.

Description

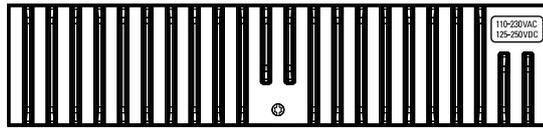


Figure 2.4 RUGGEDCOM RPM2916-DPS

Technical specifications

Power supply	HI VDC	Input range	Minimum	88 VDC
			Nominal	125 to 250 VDC
			Maximum	300 VDC
		Internal fuse ampere rating	3.15 A	
		Input current ^a	0.66 to 0.33 A	
		Maximum power consumption ^{ab}	82 W	
	Wire gauge	#18		
	HI VAC	Input range	Minimum	85 VAC
			Nominal	110 to 230 VAC
			Maximum	264 VDC
		Internal fuse ampere rating	3.15 A	
		Input current	0.76 to 0.37 A	
Maximum power consumption ^c		83 W		
Wire gauge	#18			
Internal fuse	Voltage rating		400 VDC	
			500 VAC	
	Ampere rating		3.15 A	
	Fuse type		Surge withstand	
	Fuse delay ^d	150 %		60 minutes (minimum)
		210 %		30 minutes (maximum)
		275 %		0.75 seconds (minimum)
			80 seconds (maximum)	
400 %		0.095 seconds (minimum)		

		5 seconds (maximum)
	1000 %	0.01 seconds (minimum)
		15 seconds (maximum)
Environment	Operating temperature	-40 to 85 °C (-40 to 185 °F)
	Operating relative humidity	5 to 95% (non-condensing)
	Storage temperature	-40 to 85 °C (-40 to 185 °F)

^a At nominal input voltage with 65 W output.

^b Power consumption varies based on the device configuration.

^c Power consumption varies based on the device configuration.

^d % of ampere rating

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances • China RoHS (relating to SJ/T 11364) Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products <p>Declarations of conformity for each directive are available online via Siemens Industry Online Support [https://support.industry.siemens.com/].</p>
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Ordering information

Description	RST advanced rack series HI voltage power supply, 88-300VDC/85-264VAC
Article numbers	6GK6291-6CA00-0AA0 (Standard) 6GK6291-6CA00-0AA1 (Conformal coated)

Copper Ethernet modules

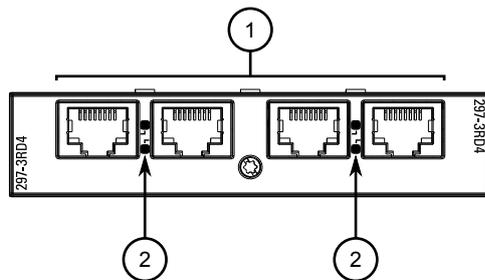
The following copper Ethernet modules are available.

RUGGEDCOM RMM2973-4RJ45	"RUGGEDCOM RMM2973-4RJ45" (Page 16)
RUGGEDCOM RMM2973-4FC	"RUGGEDCOM RMM2973-4FC" (Page 18)

3.1 RUGGEDCOM RMM2973-4RJ45

The RUGGEDCOM RMM2973-4RJ45 module features four 10/100/1000Base-TX copper RJ45 Ethernet ports.

Description



- ① Ethernet ports
- ② Link/activity LED

Figure 3.1 RUGGEDCOM RMM2973-4RJ45

Ethernet ports	Fixed 10/100/1000Base-TX copper RJ45 Ethernet ports.												
Port LEDs	Each port features an LED that indicates its link/activity state.												
	<table border="1"> <thead> <tr> <th>State</th> <th>Color</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Solid</td> <td>Green</td> <td>Link established</td> </tr> <tr> <td>Blinking</td> <td>Green</td> <td>Activity</td> </tr> <tr> <td>Off</td> <td>—</td> <td>No link detected</td> </tr> </tbody> </table>	State	Color	Description	Solid	Green	Link established	Blinking	Green	Activity	Off	—	No link detected
State	Color	Description											
Solid	Green	Link established											
Blinking	Green	Activity											
Off	—	No link detected											

Pin-out description

The following are the pin-out descriptions for the RJ45 ports:

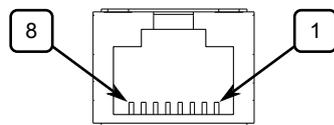


Figure 3.2 RJ45 Ethernet port pin configuration

Pin	Name		Description
	100Base-TX	1000Base-TX	
1	RX+	BI_DB+	Receive Data+ or Bi-Directional
2	RX-	BI_DB-	Receive Data- or Bi-Directional
3	TX+	BI_DA+	Transmit Data+ or Bi-Directional

Pin	Name		Description
	100Base-TX	1000Base-TX	
4	Reserved (Do Not Connect)	BI_DD+	Bi-Directional
5	Reserved (Do Not Connect)	BI_DD-	Bi-Directional
6	TX-	BI_DA-	Transmit Data- or Bi-Directional
7	Reserved (Do Not Connect)	BI_DC+	Bi-Directional
8	Reserved (Do Not Connect)	BI_DC-	Bi-Directional

Technical specifications

General	Power consumption	3.5 W
Interface/cable	Cable type	> CAT-5
	Connector	RJ45
	Speed	1000 Mbps
	Duplex	FDX/HDX
	Wiring standard	TIA/EIA T568A/B
	Maximum distance	100 m (328 ft)
	Isolation	1.5 kV
Environment	Operating temperature	-40 to 85 °C (-40 to 185 °F)
	Operating relative humidity	5 to 95% (non-condensing)
	Storage temperature	-40 to 85 °C (-40 to 185 °F)

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances • China RoHS (relating to SJ/T 11364) Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products <p>Declarations of conformity for each directive are available online via Siemens Industry Online Support [https://support.industry.siemens.com/].</p>
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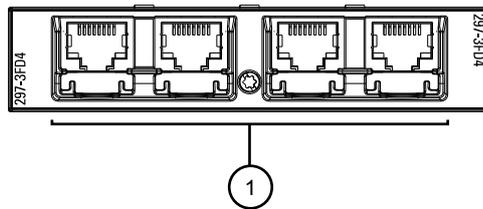
Ordering information

Description	Media Module for RUGGEDCOM RST2428P, 4 x RJ45, 10/1000/1000 BASE-TX
Article numbers	6GK6297-3RD00-4AB0 (Standard)
	6GK6297-3RD00-4AB1 (Conformal coated)

3.2 RUGGEDCOM RMM2973-4FC

The RUGGEDCOM RMM2973-4FC module features four 10/100/1000Base-TX copper FastConnect RJ45 Ethernet ports.

Description



- ① Ethernet ports
- ② Link/activity LED

Figure 3.3 RUGGEDCOM RMM2973-4FC

Ethernet ports	Fixed 10/100/1000Base-TX copper FastConnect RJ45 Ethernet ports.												
Link/activity LEDs	Each port features an LED that indicates its link/activity state.												
	<table border="1"> <thead> <tr> <th>State</th> <th>Color</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Solid</td> <td>Green</td> <td>Link established</td> </tr> <tr> <td>Blinking</td> <td>Green</td> <td>Activity</td> </tr> <tr> <td>Off</td> <td>—</td> <td>No link detected</td> </tr> </tbody> </table>	State	Color	Description	Solid	Green	Link established	Blinking	Green	Activity	Off	—	No link detected
State	Color	Description											
Solid	Green	Link established											
Blinking	Green	Activity											
Off	—	No link detected											

Pin-out description

The following are the pin-out descriptions for the RJ45 ports:

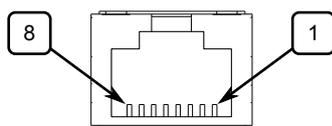


Figure 3.4 RJ45 Ethernet port pin configuration

Pin	Name		Description
	10/100Base-TX	1000Base-TX	
1	RX+	BI_DB+	Receive Data+ or Bi-Directional
2	RX-	BI_DB-	Receive Data- or Bi-Directional
3	TX+	BI_DA+	Transmit Data+ or Bi-Directional
4	Reserved (Do Not Connect)	BI_DD+	Bi-Directional
5	Reserved (Do Not Connect)	BI_DD-	Bi-Directional

Pin	Name		Description
	10/100Base-TX	1000Base-TX	
6	TX-	BI_DA-	Transmit Data- or Bi-Directional
7	Reserved (Do Not Connect)	BI_DC+	Bi-Directional
8	Reserved (Do Not Connect)	BI_DC-	Bi-Directional

Technical specifications

General	Power consumption	3.5 W
Interface/cable	Cable type	> CAT-5
	Connector	FastConnect RJ45
	Speed	1000 Mbps
	Duplex	FDX/HDX
	Wiring Standard	TIA/EIA T568A/B
	Maximum distance	100 m (328 ft)
	Isolation	1.5 kV
Environment	Operating temperature	-40 to 85 °C (-40 to 185 °F)
	Operating relative humidity	5 to 95% (non-condensing)
	Storage temperature	-40 to 85 °C (-40 to 185 °F)

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances • China RoHS (relating to SJ/T 11364) Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products <p>Declarations of conformity for each directive are available online via Siemens Industry Online Support [https://support.industry.siemens.com/].</p>
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Ordering information

Description	Media Module for RUGGEDCOM RST2428P, 4 x FastConnect (RJ45), 10/100/1000 BASE-TX
Article numbers	6GK6297-3FD00-4AB0 (Standard)
	6GK6297-3FD00-4AB1 (Conformal coated)

Fiber optic Ethernet modules

The following fiber optic Ethernet modules are available.

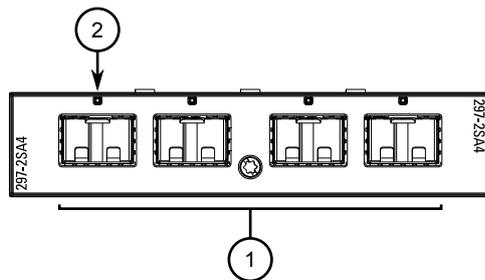
RUGGEDCOM RMM2972-4SFP

"RUGGEDCOM RMM2972-4SFP" (Page 22)

4.1 RUGGEDCOM RMM2972-4SFP

The RUGGEDCOM RMM2972-4SFP module features sockets for up to four Small Form-factor Pluggable (SFP) transceivers.

Description



- ① SFP transceiver sockets
- ② Port LED

Figure 4.1 RUGGEDCOM RMM2972-4SFP

SFP transceiver sockets	Sockets available for up to two SFP transceivers. For information about which SFP transceivers are compatible with this module, as well as instructions for ordering and installation/removal, refer to the "RUGGEDCOM SFP Transceiver Catalog [https://support.industry.siemens.com/cs/ca/en/view/109482309]".								
Port LEDs	Each transceiver socket features a dedicated LED that indicates the link/activity state of the associated SFP transceiver.								
	<table border="1"> <thead> <tr> <th>State</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Green (Solid)</td> <td>Link established</td> </tr> <tr> <td>Green (Blinking)</td> <td>Activity</td> </tr> <tr> <td>Off</td> <td>No link detected</td> </tr> </tbody> </table>	State	Description	Green (Solid)	Link established	Green (Blinking)	Activity	Off	No link detected
State	Description								
Green (Solid)	Link established								
Green (Blinking)	Activity								
Off	No link detected								

Technical specifications

General	Power consumption	3 W (no SFP transceivers) 5 W (with SFP transceivers)					
	Environment	<table border="1"> <tr> <td>Operating temperature</td> <td>-40 to 85 °C (-40 to 185 °F)^a</td> </tr> <tr> <td>Operating relative humidity</td> <td>5 to 95% (non-condensing)</td> </tr> <tr> <td>Storage temperature</td> <td>-40 to 85 °C (-40 to 185 °F)^a</td> </tr> </table>	Operating temperature	-40 to 85 °C (-40 to 185 °F) ^a	Operating relative humidity	5 to 95% (non-condensing)	Storage temperature
Operating temperature	-40 to 85 °C (-40 to 185 °F) ^a						
Operating relative humidity	5 to 95% (non-condensing)						
Storage temperature	-40 to 85 °C (-40 to 185 °F) ^a						

^a Temperature range may be reduced depending on the installed SFP transceiver.

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none">• EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances• China RoHS (relating to SJ/T 11364) Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products <p>Declarations of conformity for each directive are available online via Siemens Industry Online Support [https://support.industry.siemens.com/].</p>
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Ordering information

Description	Media Module for RUGGEDCOM RST2428P, 4 x SFP-slot, Supporting 100BASE-FX, 1000BASE-X SFPs, SFPs are not included
Article numbers	6GK6297-2SA00-4AA0 (Standard) 6GK6297-2SA00-4AA1 (Conformal coated)

Blank modules

The following blank modules are available.

RUGGEDCOM RPM2916-EPS	"RUGGEDCOM RPM2916-EPS" (Page 26)
RUGGEDCOM RMM2931-4	"RUGGEDCOM RMM2931-4" (Page 27)

 **NOTICE**

Blank modules should be installed in empty slots to prevent the ingress of dirt or debris in the chassis.

5.1 RUGGEDCOM RPM2916-EPS

The RUGGEDCOM RPM2916-EPS is a blank module designed to occupy empty power module slots in the RUGGEDCOM RST2428P chassis.

Description



Figure 5.1 RUGGEDCOM RPM2916-EPS

Certification

This module has been certified to comply with the requirements of the following standards.

<p>RoHS</p>	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances • China RoHS (relating to SJ/T 11364) Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products <p>Declarations of conformity for each directive are available online via Siemens Industry Online Support [https://support.industry.siemens.com/].</p>
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Ordering information

<p>Description</p>	<p>RST advanced rack series blank power supply cover</p>
<p>Article numbers</p>	<p>6GK6291-6EA00-0AA0</p>

5.2 RUGGEDCOM RMM2931-4

The RUGGEDCOM RMM2931-4 is a blank module designed to occupy empty media module slots in the RUGGEDCOM RST2428P chassis.

Description

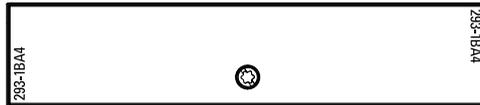


Figure 5.2 RUGGEDCOM RMM2931-4

Certification

This module has been certified to comply with the requirements of the following standards.

RoHS	<p>This module is declared by Siemens Canada Ltd. to meet the requirements of the following RoHS (Restriction of Hazardous Substances) directives for the restricted use of certain hazardous substances in electrical and electronic equipment:</p> <ul style="list-style-type: none"> • EU RoHS Directives (EU) 2011/65 and (EU) 2015/863 European Directive for Restriction of Hazardous Substances • China RoHS (relating to SJ/T 11364) Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products <p>Declarations of conformity for each directive are available online via Siemens Industry Online Support [https://support.industry.siemens.com/].</p>
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Ordering information

Description	Blank media module
Article numbers	6GK6293-1BA00-4AA0

For more information

Siemens RUGGEDCOM

<https://www.siemens.com/ruggedcom>

Industry Online Support (service and support)

<https://support.industry.siemens.com>

Industry Mall

<https://mall.industry.siemens.com>

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