



**Industrial MACsec Encoder
RPT-E2004G-T-X2 Series**

Hardware User Manual

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Overview

This user manual is for "RPT-E2004G", including "RPT-E2004G-T-X2", RPT-E2004G-2F-T-X2", and "RPT-E2004G-4F-T-X2". The "E" implies this is a MAC Sec device, the first 2 digits "02" implies there are 2 channels for the encoder, and the following 2 digits implies the number of SFP slots. This is an industrial gigabit MACSec encoder with the following hardware features:

Interface

- MDI/MDI-X function supported on all copper ports
- 2 Channels for MACSec encryption/decryption, including
 - ◆ RPT-E2004G-T-X2: 4x 10/100/1000T(x) Ethernet Ports
 - ◆ RPT-E2004G-2F-T-X2: 2x 100/1000T(x) Ethernet Ports + 2x 100/1000F(x) SFP Slots
 - ◆ RPT-E2004G-4F-T-X2: 4x 100/1000F(x) SFP Slots
- Store-and-forward switching architecture

Power Input

- Redundant 12-48VDC power

Temperature

- Extended operating temperature: -40°C ~ 75°C (-40°F ~ 167°F)
- Storage temperature: -40°C ~ 85°C (-40°F ~ 185°F)

Mechanical Construction

- Class IP30 protection
- DIN-Rail Mounting, Optional Wall Mounting

PACKAGE CHECK LIST

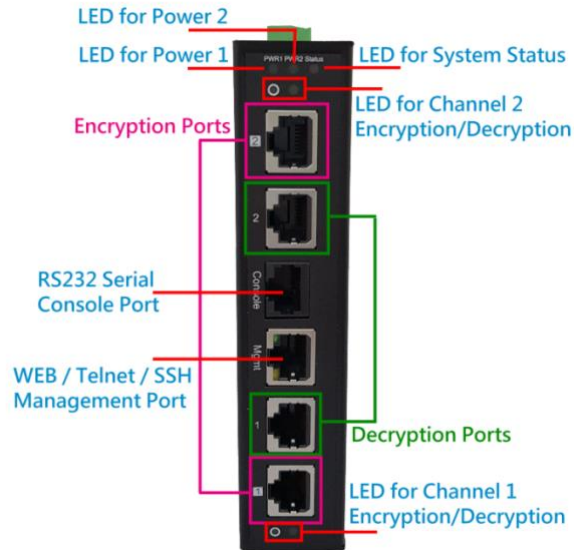
The "RPT-E2004G" is shipped with the following items. Ensure that all the items are in the box. If any item is missing or damaged, contact us for assistance.

- RPT-E2004G/RPT-E2004G-2F/RPT-E2004G-4F-T-X2 MACSec encoder x 1
- Protective caps for 2x encryption ports, 2x decryption ports, 1x management port, and 1x RJ45 console port
- RJ45 to RS232 Serial console cable x 1

Hardware Description

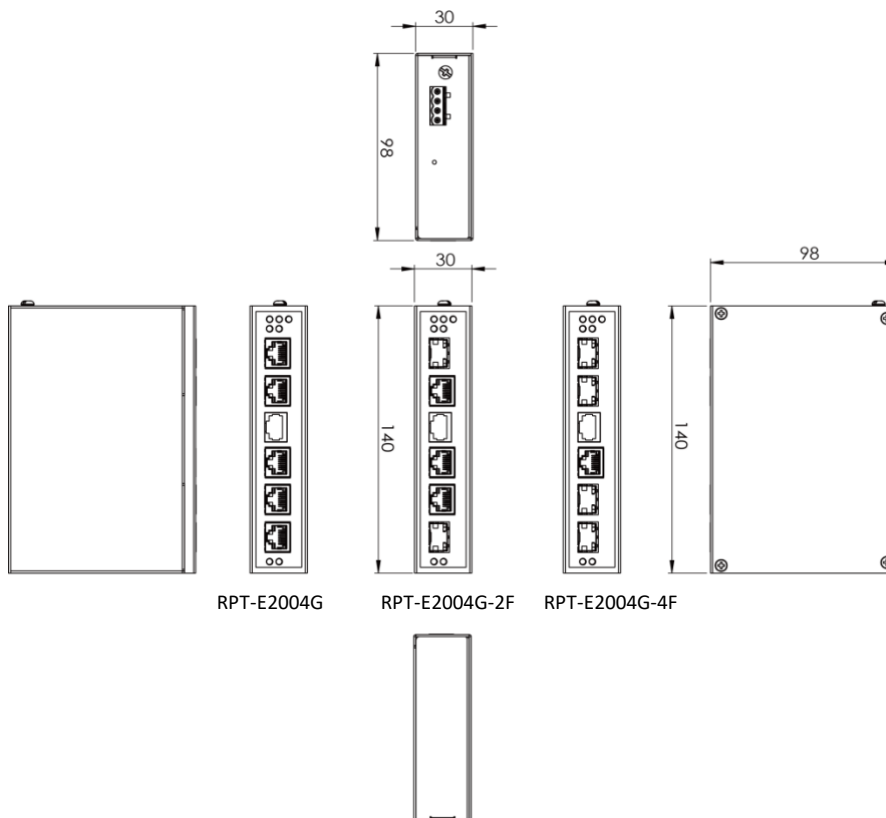
FRONT PANEL INSTRUCTION

The following picture is the front panel for "RPT-E2004G-T-X2".



DIMENSIONS

WxHxD: 30x140x98 mm



TOP VIEW



This is the top view of the RPT-E2004G-T-X2 series, containing the ground and power inputs.

LED INSTRUCTION

System LEDs

LED	Color	Status	Description
PWR1	Green	On	Power is supplied on the power input 1.
		Off	Power is not supplied on the power input 1.
PWR2	Green	On	Power is supplied on the power input 2.
		Off	Power is not supplied on the power input 2.
Status	Green	On	The system boots up and in normal operation.
		Off	The system is powered off or during booting.

Interface Status LEDs

LED	Color	Status	Description
Encryption Port P1 to P2	Green	On	The link of the encryption port is active.
		Flashing	Data is transmitted on the encryption port.
		Off	The link of the encryption port is inactive.
Decryption Port P1 to P2	Green	On	The link of the decryption port is active.
		Flashing	Data is transmitted on the decryption port.
		Off	The link of the decryption port is inactive.
Mgmt Port (Link/Act)	Green	On	The 10/100Mbps link of the management port is active.
		Flashing	Data is transmitted on the port at 10/100Mbps.
		Off	The 10/100Mbps link of the management port is inactive.
Mgmt Port (Speed)	Amber	On	The 100Mbps link of the port is active.
		Off	The 10Mbps link of the port is active.

Hardware Installation

SFP CABLING

There are 2x 100/1000 SFP Slots on the "RPT-E2004G-2F-T-X2" and 4x 100/1000 SFP Slots on the "RPT-E2004G-4F-T-X2". The following table is the SFP modules that is recommend to the users.

Part No.	SFP Type	Vender	Fiber Mode	Distance
125Mbps (Fast Ethernet/ 100Base-X SFP)				
AXFE-1314-0521	SFP-100FX	AXCEN	Multi-Mode	2km
AXFE-1314-0531	SFP-100LX-10	AXCEN	Single-Mode	10km
LS38-A3S-TI-N	155Mbps	APAC	Single-Mode	30km
125Mbps (100Base-BX, Single Fiber Bi-Directional SFP)				
AXFT-1724-0531	SFP-100BX10-D5	AXCEN	Single-Mode	10km
AXFT-1624-0531	SFP-100BX10-U5	AXCEN	Single-Mode	10km
1.25Gbps (Gigabit Ethernet/ 1000Base-X/ Fiber Channel SFP)				
AXGE-5854-0511	SFP-1000SX	AXCEN	Multi-Mode	550m
AXGE-1354-0531	SFP-1000LX	AXCEN	Single-Mode	10km
AXGD-1354-0531	SFP-1000LX-DD	AXCEN	Single-Mode	10km
1.25Gbps (1000Base-BX, Single Fiber Bi-Directional SFP)				
AXGE-3454-0531	SFP-1000BX10-D4	AXCEN	Single-Mode	10km
AXGE-1254-0531	SFP-1000BX10-U4	AXCEN	Single-Mode	10km

Insert SFP Module

1. Insert the SFP module. A triangle is available on the switch and SFP module.



2. Push the SFP module down.



Remove SFP Module

1. Press and remove the SFP cable.
2. Open the SFP module and remove it.



WIRING POWER INPUTS



1. Insert the positive and negative wires into the PWR1 (+,-) and PWR2 (+,-) on the 4-contact terminal block connector.
2. Tighten the screws to prevent the wires from loosening.

MOUNTING

Din-Rail Mounting

- a. Screw the DIN-Rail bracket to the switch.
- b. Insert the top of the DIN-Rail bracket to the DIN-Rail track.



- c. Pull down the DIN-Rail bracket to the DIN-Rail track and check if it is mounted tightly on the DIN-Rail track.



INSTALLATION STEPS

1. Unpack
The switch is well packed and shipped to our customers. Unpack it from the box.
2. Check Content Items
Please make sure all the items listed in the "**Package Check List**" are in the box.
3. Mounting
The DIN-Rail is screwed on the switch by default. If the DIN-Rail is not screwed to the switch, refer to the "**DIN-Rail Mounting**" section to install it manually.
4. Power On
To power on the switch, users must prepare a power supply and wire the power input. Refer to the "**Wiring Power Inputs**" section.
The power LEDs are described in the "**LED Instruction**" section.
5. Connect
To connect to the switch, users need a **RJ45 cable**. Insert the RJ45 cable into one of the switch ports and insert the other end to the host such as PC.
The link LEDs are described in the "**LED Instruction**" section.
6. Check LEDs
We recommend the users to check the status of LEDs in the "**LED Instruction**" section. If all the LEDs are in the normal state, the installation is completed.

Specification

Technology	
Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3z 1000Base-X IEEE 802.1AE-2006 MACsec Encry IEEE 802.1AEbn-2011 Encry AES-256 IEEE 802.1AEbw-2013 Encry 64bit PN
Feature	
Encryption	GCM-AES-256
Tag Detection	802.1q VLAN, Q-in-Q
Queue	Ingress, Egress, Global
Interface	
RJ45 Port	10/100/1000BASE-T(x), auto negotiation speed duplex mode, auto MDI/MDI-X
Fiber Port	100/1000BASE-FX SFP Slot
LED Indicators	Per unit: PWR1, PWR2, Status Ports: Link/Active
Serial Console	1x RS232 in RJ45 connector with console cable, 115.2Kbps, 8N1
Out Band Control	1x 10/100BASE-T(x) Ethernet, auto negotiation
Power Requirements	
Operation Voltage	12-48VDC, redundant dual inputs
Connection	1x removable 4-contact terminal block
Power Consumption	5W
Protection	Overload Current Protected, Reverse Polarity Protected
Mechanical Construction	
Enclosure	Steel met

Protection Class	IP30
Dimensions	30x140x98 mm (WxHxD)
Weight	0.45 kg
Mounting	DIN-Rail Mounting
Environmental Limits	
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Ambient Relative Humidity	5 to 95%, (Non-Condensing)
Regulatory Approvals	
EMI	FCC Part 15 Subpart B Class A CE EN 55022 Class A
EMS	IEC61000-4-2 (ESD) IEC61000-4-3 (RS) IEC61000-4-4 (EFT) IEC61000-4-5 (Surge) IEC61000-4-6 (CS) IEC61000-4-8 (Magnetic Field)
Free Fall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6
Green	RoHS Compliant
MTBF	>100,000 hours
Warranty	5 Years