Korenix JetNet 3210GP-2C

Industrial Power over Ethernet GbE Switch

User's Manual

Version: 1.0

www.korenix.com

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1. Introduction

Korenix JetNet 3210GP-2C is a power over Ethernet switch that is specially designed for industrial or commercial applications. The following topics are covered in this chapter:

1.1 Overview

JetNet 3210GP-2C, Industrial Power over Ethernet (PoE) GbE Switches, are designed with 8 Gigabit Ethernet PoE ports and 2 Gigabit SFP/Gigabit combo uplink ports to ensure high-bandwidth uplink connection for wide PoE markets. JetNet 3210GP-2C which is compliant with IEEE 802.3af/at PoE standard to deliver maximum 30Watts per 8 ports. For JetNet 3210GP-2C model, it integrates with power boost technology- Input DC 12~54V boosting to 54VDC built-in power booster which is the best solution for the vehicle PoE applications with standard DC 54V power supply unavailable. It also combines hot-swappable SFP fiber transceiver interfaces which can meet different specifications of fiber cable for extending transmission distance.

To ensure the high quality of video data transmission, JetNet 3210GP-2C not only provide Gigabit bandwidth uplink for large image traffic, but also support QoS to adjust the priority of data transfer. With the feature of Fault Relay, JetNet 3210GP-2C could automatically warn administrator if any abnormal situation happens. The compact size with IP-31 rigid aluminum case allows JetNet 3210GP-2C to be reliably operated in -40~75℃ extreme environment.

1.2 Product Features

Korenix JetNet 3210GP-2C have the following features:

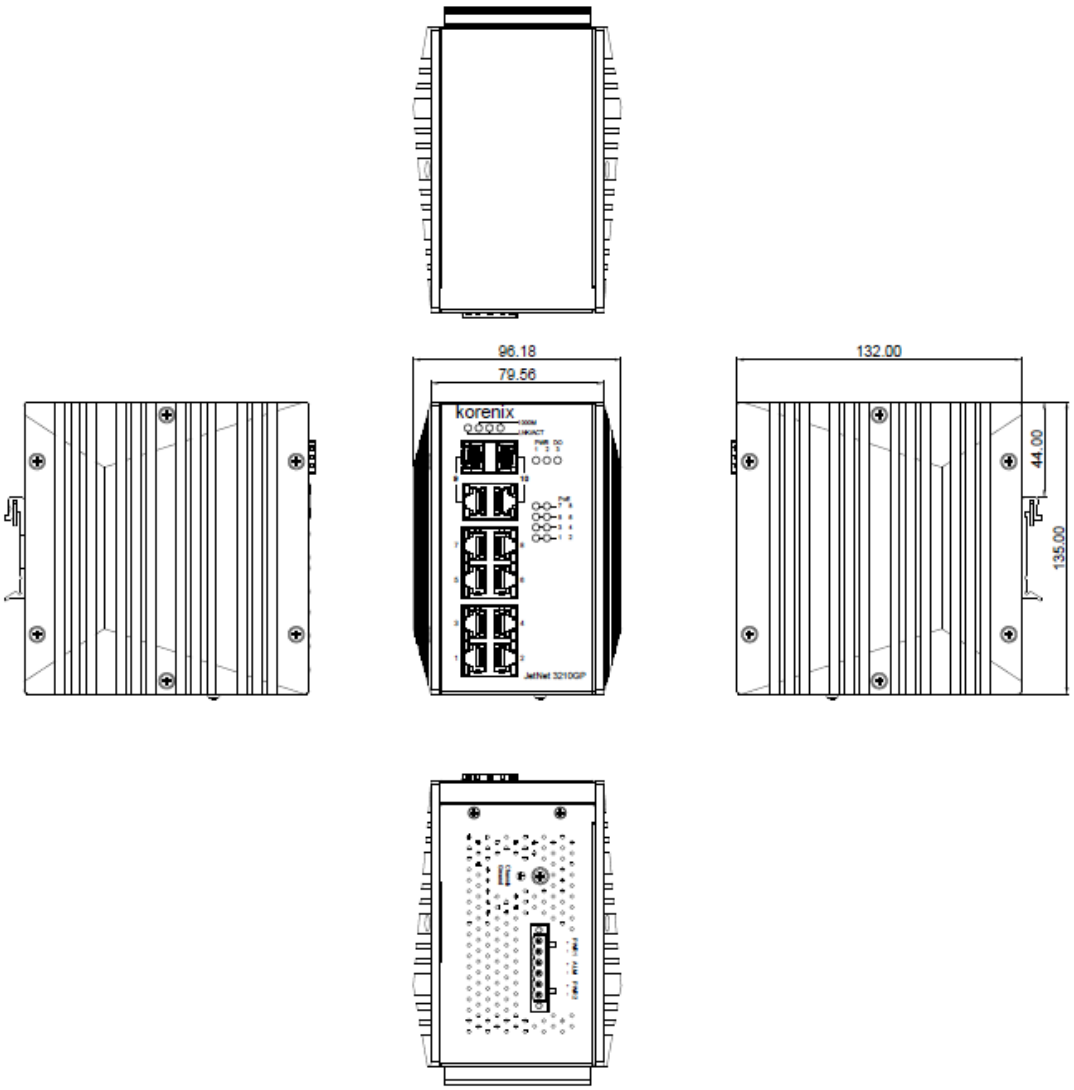
- 8 Gigabit Base TX ports and 2 Gigabit RJ-45/ SFP combo ports
- SFP ports support 100/1000 Mbps
- IEEE 802.3af 15.4W / IEEE 802.3at 30W High Power PoE
- Total PoE Budget 240W @ 75°C ambient temperature
- IEEE 802.1p Class of Service (CoS) for packet forwarding precedence
- 10K bytes Jumbo Frame for large file transmission
- Broadcast storm packet filtering
- Dual DC Power input 12~56V
- Embedded DC 54V Booster
- Traffic Standard: E-mark E13
- -40~75℃ operating temperature

2. Hardware Installation

2.1 Hardware Introduction

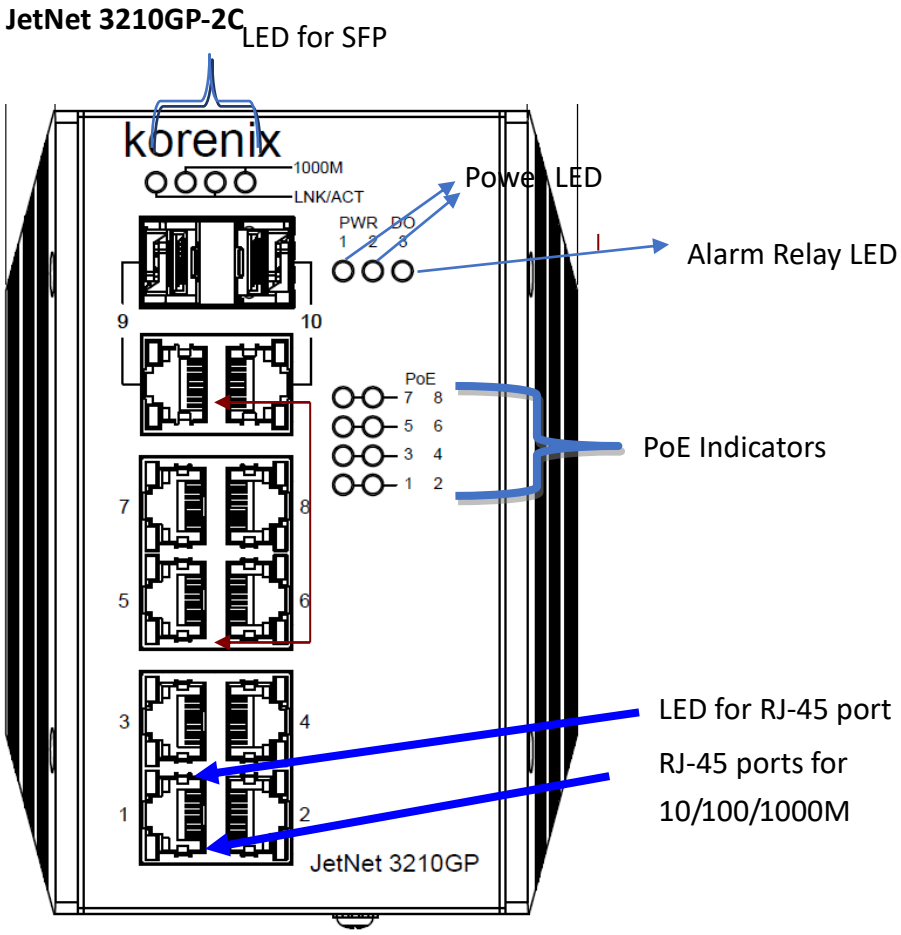
Dimensions

JetNet 3210GP-2C dimensions: 135(H) x 79.56(W) x132(D) (without Din-rail clip)

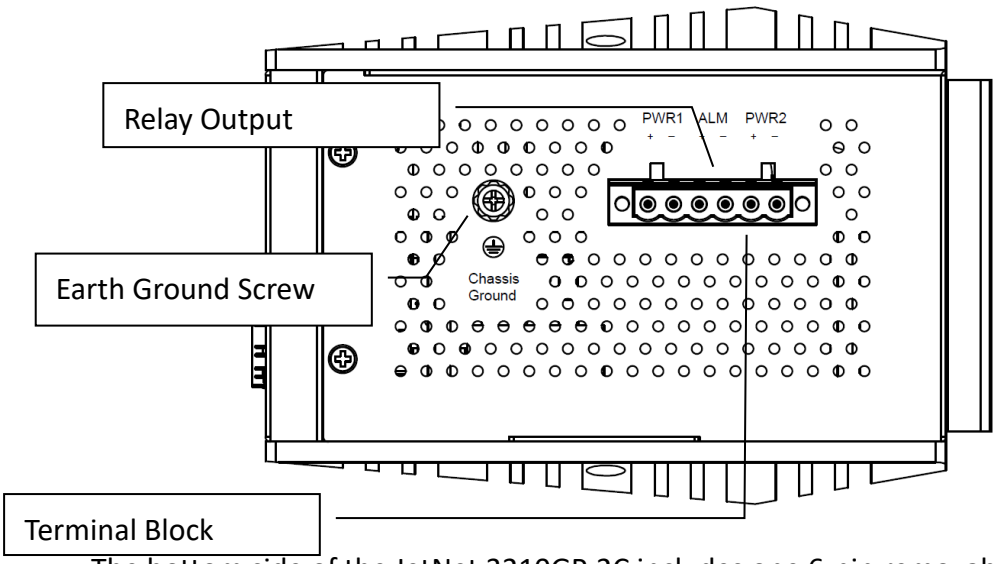


Front Panel

JetNet 3210GP-2C includes system power LED x1, alarm relay LED x1, PoE LED x8, 16 LEDs for RJ-45 port operating status, and 4 LEDs for SFP fiber port status.



Bottom View



The bottom side of the JetNet 3210GP-2C includes one 6-pin removable terminal block connector (with 2 power input & 1 relay alarm output) . There is also an earth ground screw to prevent interference.

LED Indicators

The following table describes the function of each LED indicator.

LED	Status	Description
PWR1	Green	DC-IN Power
	Off	No Power in DC-IN
PWR2	Green	DC-IN Power
	Off	No Power in DC-IN
Alarm	Red	Power1 or Power 2 Disconnect.
	Off	Power1 & 2 Connection

PoE LED	Status	Description
PoE 1~8	Yellow	The port is delivering PoE power.
	Off	No PD is attached.

LED	Status	Description
RJ-45 ports	Green on	Link
	Blinking	RJ-45 port is transmitting or receiving packets.
	Off	RJ-45port's link is inactive
	Amber On	Link with Speed 1000Mbps
	Amber Off	Link with Speed 10/100Mbps

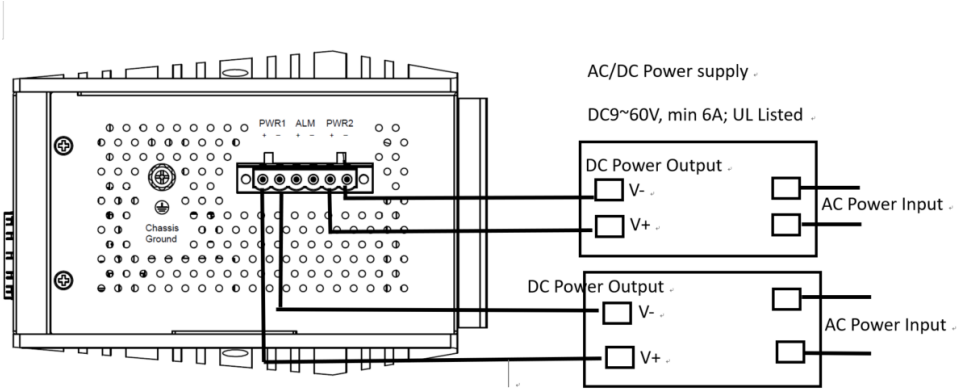
Fiber Port LED	Status	Description
LNK/ACT	Green on	Fiber port is attached with partner.
	Blinking	Fiber port is transmitting or receiving packets.
	Off	Fiber port's link is inactive
Speed	Amber on	Gigabit Speed
	Amber off	100Mbps speed

2.2 Wiring the Power Inputs

JetNet 3210GP-2C accepts 12~56V DC power input and boosts to 54~56VDC output for 802.3af/at standard PoE devices.

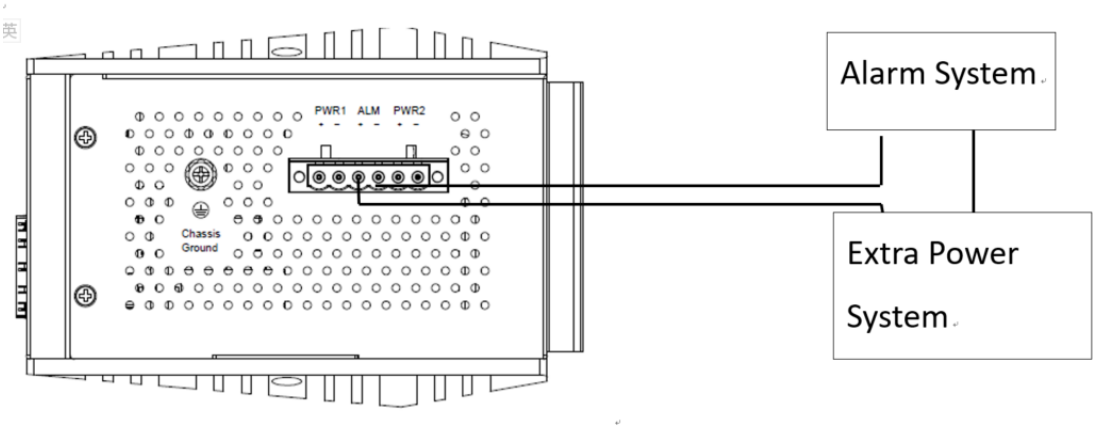
1. Insert the positive and negative wires of your DC supply into the V+ and V- contacts of the terminal block connector. The acceptable wire range is 12 AWG.

2. Tighten the terminal screws to prevent the DC wires from coming loose.



2.3 Wiring the Relay Output

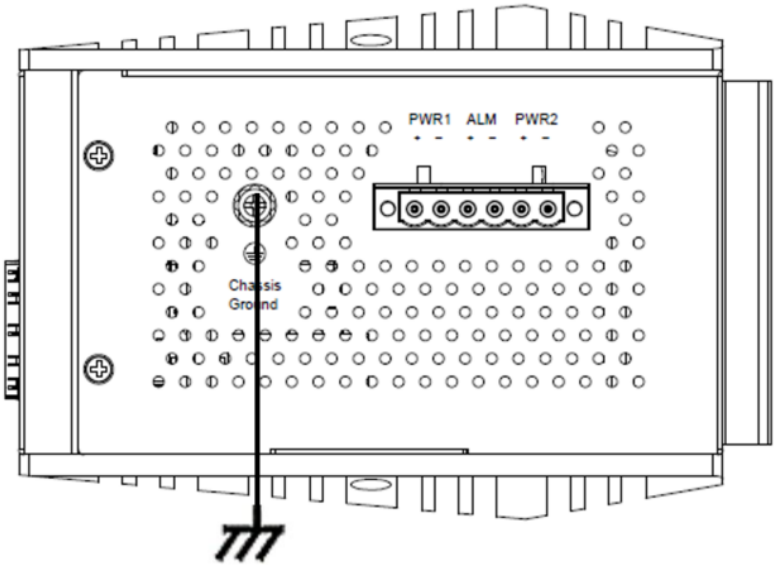
JetNet 3210GP-2C provides Relay Output. The relay contacts are energized (open) for normal operation and will close under faulty condition such as Ethernet port link break.



2.4 Wiring Earth Ground

To ensure the system will not be damaged by noise or electric shock, we suggest making a direct connection between the JetNet 3210GP-2C and earth ground to avoid system damage. (Please refer to the upside photo)

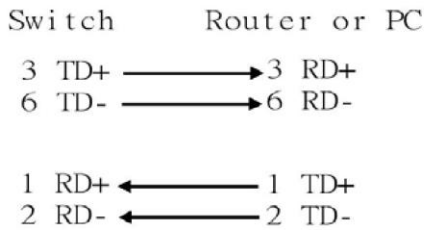
1. On the bottom of the JetNet 3210GP-2C, there is one earth ground screw.
2. Loosen the earth ground screw with a screwdriver
3. Tighten the screw after the earth ground wire is connected.



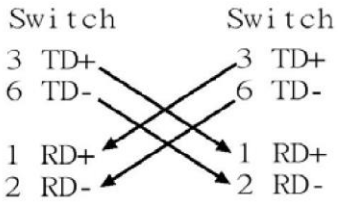
2.6 Wiring the Ethernet Ports

JetNet 3210GP-2C Industrial Gigabit PoE Switch support 8 ports with automatic MDI/MDI-X crossover, PoE Injector, and automatic 10/100Mbps data rate sensing for 10Base-T or 100Base-TX connections. Automatic MDI/MDI-X crossover allows you to connect to other switches, hubs, or workstations, without regard to using straight-through or crossover cabling.
Port 1 to port 8 also provides Power over Ethernet function that delivers DC 54V power through the spare pairs to power the PD.

The following figures depict the schematic diagram of straight-through and crossover cabling. Note that crossover cables simply cross-connect the transmit lines at each end to the receive lines at the opposite end.



Straight-through Cabling Schematic



Cross-over Cabling Schematic

Note: that Ethernet cables use pins 1, 2, 3, and 6 of an 8-pin RJ45 connector. The

signals of these pins are converted by the automatic MDI-X function, as shown in the table below:

Pin MDI-X	Signals	MDI Signals
1	RD+	TD+
2	RD-	TD-
3	TD+	RD+
6	TD-	RD-

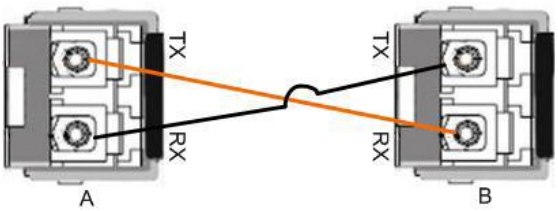
Connect one side of an Ethernet cable into any switch port and connect the other side to your attached device. The green LNK LED will light up when the cable is correctly connected. Refer to the LED Indicators section for descriptions of each LED indicator. Always make sure that the cables between the switches and attached devices (e.g. switch, hub, or workstation) are less than 100 meters (328 feet).

2.7 Wiring the Fiber Ports

JetNet 3210GP-2C equips 2 gigabit SFP fiber ports. The speed of the SFP port supports up to 100/1000Base F(X). The SFP ports accept standard MINI GBIC SFP transceiver. The way to connect the SFP transceiver is to plug in SFP fiber transceiver fist. Cross-connect the transmit channel at each end to the receive channel at the opposite end as illustrated in the figure below.

Note: This is a Class 1 Laser/LED product. Don't stare at the Laser/LED Beam.

Note: 100Base-FX SFP transceiver is optional and can be supported by different settings



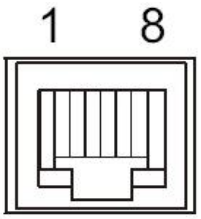
Note: The unit has to use UL recognized Laser Class 1 SFP transceiver.

2.8 Connecting Powered Device (PD)

Port 1 to port 8 provide PoE inject function with maximum 30w ability to power up the powered device use the straight or cross-over Ethernet cable.

The JetNet 3210GP-2C follow the IEEE802.3af/at Alternative A mode connector assignment.
Be sure the twisted pair cable is bound with the standard RJ-45 pin

If the RJ-45 is bound with the wrong pin number, JetNet will not recognize the PD and won't forward DC 54 power to PD, since the JetNet 3210GP-2C switch following A mode.

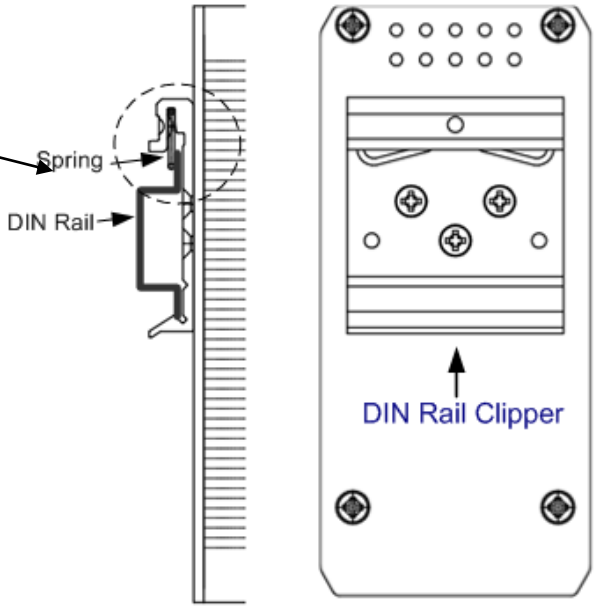


Note: This product is designed for in building installation only and is not intended to be connected to exposed (outside plant) networks.

2.9 DIN-Rail Mounting Installation

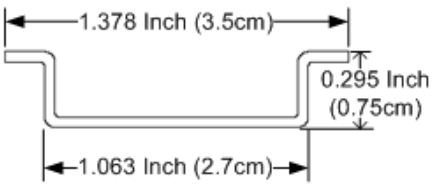
The DIN-Rail clip is already attached on the rear side of JetNet 3210GP-2C. It supports EN 50022 standard DIN Rail, in the following diagram includes the dimension of EN 55022 DIN Rail for your reference.

The DIN rail should behind the spring when install the JetNet 3210GP-2C onto the standard DIN Rail.



Follow the steps below to mount the JetNet 3210GP-2C on the DIN-Rail track.

1. Insert the upper end of the DIN-Rail clip into the back of the DIN-Rail track from its upper side
2. Lightly push the bottom of the DIN-Rail clip into the track.
3. Check if the DIN-Rail clip is tightly



DIN EN 50022 DIN Rail Dimension

attached to the track.

To remove the JetNet 3210GP-2C from the track, reverse the steps above.

3. Appendix

3.1 Product Specification

Technology	
Standard	IEEE 802.3u 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-TX Gigabit Ethernet IEEE 802.3z 1000Base-X Gigabit Ethernet IEEE 802.3af Power over Ethernet IEEE 802.3at High Power PoE with 2-Event clasificación IEEE 802.3x Flow control and back-pressure
Network Performance	
Switch Technology	Store and Forward technology
System Throughput	23.8Mega packets per second, 64Bytes packet length
Transfer packet size	64Bytes ~1518Bytes
MAC Address	16K MAC address table
Packet Buffer	2 Mega bits shared packet buffer
Broadcast storm control:	Default enabled Traffic threshold: 25M bps@1000Mbps; 10M bps@100Mbps; 1M bps@10 Mbps
Jumbo frame	Up to 10K Bytes

Transfer performance	14,880 pps @10Mbps 148,800 pps @100Mbps 1,488,100 pps @1000Mbps
Quality of Service	Compliance with IEEE802.1p with WRR 8:4:2:1 for 4 queues - Highest/High/Low/Lowest. Packets are classified as Highest(6,7), High(4,5), Low(0,3), Lowest(1,2), default Low(0).
Power over Ethernet	
Power over Ethernet	IEEE 802.3af/at, End-Span wiring architecture
PoE forwarding conductor	RJ-45: V+(1,2), V- (3,6)
Power forwarding capability	IEEE 802.3af:15.4 W, IEEE802.3at:30W
PoE System Power Budget	Power Budget Reserve by PD declaration. The power budget control system will reserve power for connected PD device. Once the latest PD device claimed power over the system surplus power budget, the highest port of PoE will not be active due to port order mechanism. System Power Budget: 240Watts at DC 24V/ 120 Watts at DC 12V
Mechanical	
Installation	DIN-Rail mounting
Case	Steel metal
Ingress Protection	IP31
Dimension (mm)	96.18 (W) x 132(D) x 135 (H) – w/o DIN Rail Clip
Installation	DIN-rail mounting
Weight	2Kg
Power Requirement	
System power	Input voltage: DC 12V or DC 24V, variation range DC 12- 56V 2x DC power input with polarity reverse protection
Input Range	DC 12-56V
Power Consumption	12V AF: PoE 120W 24V AT: PoE 240W

Environmental	
Operating Temperature	-40 ~75°C
Operating Humidity	0% ~ 95%, non-condensing
Storage Temperature	-40 ~ 85°C, 0% ~90% Humidity
Hi-Pot	DC 2.25KV for power to chassis ground, Ethernet port to chassis ground
Regulatory Approvals	
Railway Standard	EN 50121-4
Traffic	E-mark E13
EMC	EMI: EN50121-3-2, FCC Class A, IEC/EN61000-6-4 EMS:EN50121-3-2/EN50121-1, IEC/EN61000-6-2 IEC/EN61000-4-2, IEC/EN61000-4-3, IEC/EN61000-4-4, IEC/EN61000-4-5, IEC/EN61000-4-6, IEC/EN61000-4-8, IEC/EN61000-4-9
Variation/Shock	IEC 61373
Free Fall	IEC 60068-2-32 with package Note-1
Warranty	5 Years

*Specifications may change without prior notice

**pending

3.2 Revision History

Edition	Date	Modifications
V1.0	09/14/2019	