User Manual

Industrial Gigabit Switch
4-Port 802.3at PoE
with 2-port SFP slot

v1.0

FCC MARKING

This Equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

CE MARKING

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class A for ITE, the essential protection requirement of Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information. No part of this document can be copied or reproduced in any form without written consent from the company.

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RoHS

(P/N: 41NE-IPG40212-A00)

Introduction

The Industrial Ethernet Switch with PoE+ feature complies with IEEE802.3af and IEEE802.3at. It delivers 30watts power per PoE port and generates a total of 120 watts power to PD devices and 2 SFP slots are supported.
The Industrial Ethernet Switch provides wide power input voltage range +12 ~ + 55Vdc, it not only boosts up Input Voltage, but also reduces the excessive heat problem to a minimum ,and that secures equipment against unregulated voltage and makes systems safer and more reliable.
The protection of IP-30 standard industrial case allows for either DIN rail or wall mounting for efficient use of cabinet space. Its wide operating temperature ranges from -40°C to 75°C under harsh environment.

Key Features

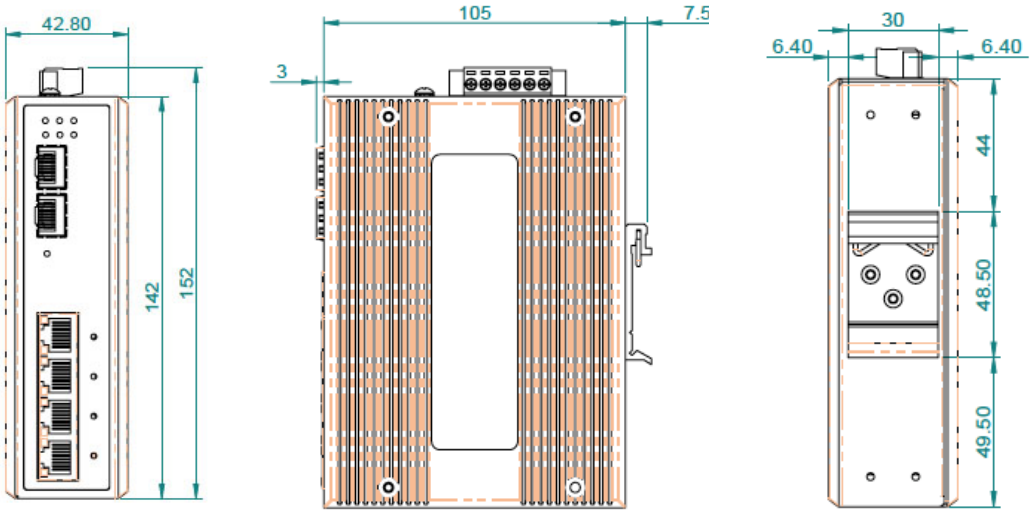
- Supports P.S.E. based on IEEE 802.3at up to 30 Watts per port
- SFP port supports 100Base-FX and 1000Base-X speed
- Support dual wide range12~55VDC power inputs for power redundancy
- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store and forward transmission
- Supports flow control
- Rigid IP-30 housing design
- DIN-Rail and wall mounting enabled

Package Contents

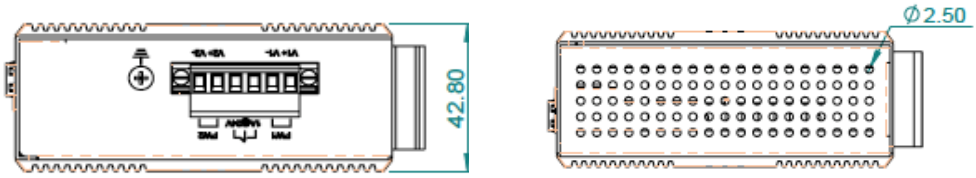
- 1 x Industrial Switch
- 1 x User Manual
- 1 x 3 pin Terminal Block
- 2 x Wall Mounting Bracket and 4 x Screws
- 1 x Din Rail Bracket

Compare the contents of the industrial switch with the standard checklist above. If any item is damaged or missing, please contact the local dealer for service.

Physical Dimension



Front view Side view Back view



Top view Bottom view

LED Indicators

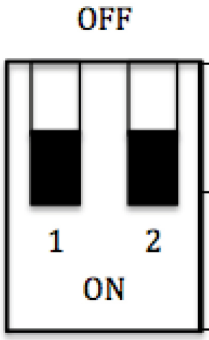
For definitions of LED indicators, please refer to the following table:

LED	Status	Indication
PW1	Green	when V1+, V1- is connected
	Off	Power is off
PW2	Green	when V2+, V2- is connected
	Off	Power is off
ERR	Amber	connect only PW1 or PW2.
	OFF	both PW1 and PW2 are connected
LNK	Green	TX link is detected
	OFF	TX port is not detected
	Flashing	TX port is active

SPD	Green	1000M speed is detected
	OFF	10M or 100M speed is detected
P1,P2,P3,P4	Green	PD is detected on designated port
	OFF	no PD is detected
F5	Green	port 5 SFP fiber is detected
	OFF	port 5 SFP fiber is not detected.
	Flashing	port 5 SFP fiber is active
F6	Green	port 6 SFP fiber is detected
	OFF	port 6 SFP fiber is not detected.
	Flashing	port 6 SFP fiber is active

Dip switch function

This unit is equipped with dip switches, located on the front panel. Adjusting the dip switches will change the default function of this unit. This unit has set to manufacturer default as: Port 5 SFP and the speed is set to 1000M for both port 5 and port 6 SFP ports. you may adjust dip switch setting to select port 5 as TX (disable port 5 SFP) or set SFP speed to 100M. The detail setting as shown below:



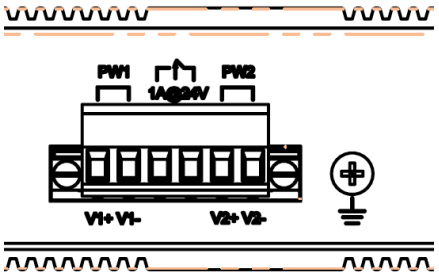
DIP1 to select port 5 SFP	ON	F5 OFF
	OFF	F5 ON (default)
Dip 2 to select SFP speed	ON	100M
	OFF	1000M(default)

Warning:

Dip switch function will not work if it is changed when power is connected. Always turn off or disconnect power supply to change dip switch settings.

Power connection

This unit provides 6 pin terminal block. And it can be operated using either 12 VDC, 24 VDC, or 48VDC power source. Input voltage varies by models, please check the label on the side of this unit to determine the exact power input voltage for each model. The VDC power range can be 48VDC only, or wide range from 12VDC to 55VDC. Always Make sure your input voltage is within this supported voltage range for each model.



WARNING:
Any exceeded input voltage will not make this unit function and may damage this unit.

To make power connection –
Follow the printed polarity for V1+, V1-, V2+, V2-, and ground. Connect positive wire to V+ , connect negative wire to V-, also connect neutral wire to the ground screw as shown .

Relay –
You may use 24V@1A relay connection to your external device for special purpose. When 2 powers are connected, the relay is in SHORT mode. When any power source fails, the relay change to OPEN status.

Power connecting procedure:
STEP 1 – Pull out 6 pin terminal block.
STEP 2 – Connect wire to V1+, V1-, or V2+, V2-, and Ground the neutral wire to the ground screw.
STEP 3– Plug back 6 pin terminal block to its place.

WARNING:
Always ground the power source to maintain a clean power input. Due to too many cheap made power supplies, it creates too much noise, and it will cause the power input fluctuates when connect to this unit. To avoid this, always ground the power source to gain a clean power input.

Specification

Standards	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3z 1000Base-X Gigabit Ethernet IEEE802.3x Flow Control and Back Pressure, IEEE802.3af for POE; IEEE802.3at for POE+
Switch Architecture	Back-plane (Switching Fabric): 12Gbps
Data Processing	Store and Forward
Flow Control	IEEE 802.3x Flow Control and Back Pressure
Jumbo Frame	10KB
MAC Table Size	1K
Packet Buffer Size	1Mbits
Network Connector	4 RJ-45 Port: 10/100/1000BaseT(X) auto negotiation, 4 Giga POE+ 802.3at/af PSE port, Auto MDI/MDI-X function, Full/Half duplex 2 SFP slots: 100/1000M Base-X
Network Cable	UTP/STP above Cat.5e Cable, EIA/TIA-568 100-ohm (100m) Fiber Cable (Multi-mode):50/125um,62.5/125um Fiber Cable (Single-mode): 9/125um
Protocol	CSMA/CD
LED	PW1(Power 1) Green, PW2(Power 2) Green, ERR(Fault) Amber TX/RJ-45 port: LNK (Link/Active) Green, SPD(Speed) 10/100(OFF) ,1000 (Green) SFP Fiber Per port: Link (Green) , Active Flash
DIP Switch	DIP 1: OFF: Port 5 SFP ON (DEFAULT) ; ON: Port 5 SFP OFF DIP 2: OFF: SFP 1000M (DEFAULT) ; ON: SFP 100M
Reserve polarity protection	Present
Overload current protection	Present
Power Supply	Redundant Dual DC 9V-57V Power Input
Power Consumption	5.76W@12/24/48 VDC full load, Without POE
Alarm Relay Contact	Relay outputs with current carrying capacity of 1A @24VDC Relay in short circuit mode when 2 powers are connected. in open circuit mode when only one power supply is connected

PoE power budget	Per port 30W, Max.36W per port at 12/24/48VDC input Max. 126W @24VDC and 48VDC power input Max. 85W @12VDC power input (at 75°C) Max. 95W @12VDC power input (at 70°C)
Removable Terminal Block	Provide 2 Redundant power ,Alarm relay contact ,6 Pin
POE efficiency	Voltage boost efficiency up to 97% from 12VDC to 55VDC
Surface temperature	Surface temperature rises 6°C full load in a 75°C chamber
Operating Temperature	-40°C ~75°C
Storage Temperature	-40°C~85°C
Operating Humidity	5% to 95% (Non-condensing)
Housing	Rugged Metal ,IP30 Protection
Dimension	142 x 43 x 105mm (LxWxD)
Installation mounting	DIN Rail mounting and Wall Mounting
EMC/EMS	CE, FCC
EMI	FCC Part 15 Subpart B Class A, CE EN 55022 Class A