



# **KPW-D48T12**

# **KPW-D48T24**

Industrial Isolated  
DC to DC Power Converters

48VDC to 12VDC series  
48VDC to 24VDC series

User's Guide



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## TRADEMARKS

Ethernet is a registered trademark of Xerox Corp.

## FCC NOTICE

This device complies with Class A Part 15 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 the interference that may cause.

## CE NOTICE

Marking by the symbol indicates compliance of this equipment to the EMC directive 2014/30/EU of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards:

EN 61000-6-4

EN 61000-3-2, EN 61000-3-3

EN 61000-6-2

IEC 61000-4-2 IEC 61000-4-3

IEC 61000-4-4 IEC 61000-4-5

IEC 61000-4-6 IEC 61000-4-8

IEC 61000-4-11

## VCCI

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI-A

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# Introduction

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This guide describes the specifications and installation information of the following DC-DC power converters:

Model	Converter	Input	Output	Power
KPW-D48T12-60	DC48V to DC12V	44 ~ 60VDC	12VDC	60W
KPW-D48T12-90	DC48V to DC12V	36 ~ 70VDC	12VDC	90W
KPW-D48T24-60	DC48V to DC24V	44 ~ 60VDC	24VDC	60W
KPW-D48T24-90	DC48V to DC24V	44 ~ 70VDC	24VDC	90W



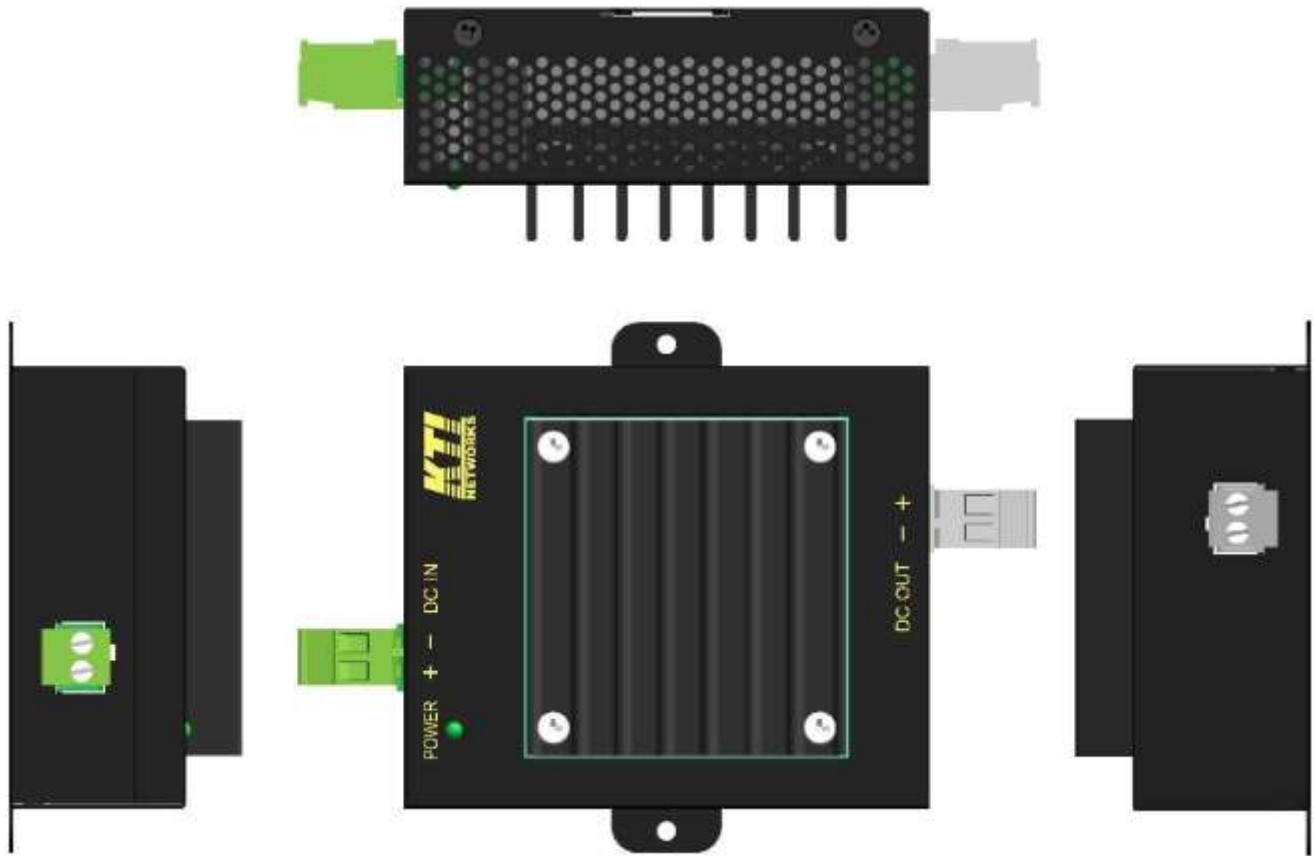
# Features

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- Industrial rating for EMC standard
- Isolated conversion between input and output
- Support din-rail mounting and panel mounting
- Support PoE powered devices for power conversion from the received PoE voltage to local voltages, 12V or 24V
- Support new PoE standard, PoE++ high power applications up to 90W

# Panels

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## Specifications

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DC IN	2P European Terminal Block - $V_{in+}/ V_{in-}$
DC OUT	2P European Terminal Block - $V_{out+}/ V_{out-}$
Power Wires	12AWG ~ 22 AWG (1 meter max.)
Isolation	$V_{in}$ lines vs. $V_{out}$ lines 1.5KV
LED Display	Input power status
Housing	Enclosed metal with no fan
Case Dimension	96 x 42.3 x 95 mm (LxWxH)
Mounting Support	DIN-Rail, Panel mounting
Environmental	Operating Temperature: $-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$ Storage Temperature: $-30^{\circ}\text{C} \sim +85^{\circ}\text{C}$ Relative Humidity: 5% ~ 95% non-condensing
Approval	FCC Part 15 Class A, CE Mark Class A, VCCI

## Power Rating

Model	DC IN	DC OUT *1	Output Power	Conversion Efficiency*2	Power Derating *3
KPW-D48T12-60	44 ~ 60VDC	12VDC±2%	60W	87%	100%(50°C), 75%(60°C), 55%(70°C)
KPW-D48T12-90	36 ~ 70VDC	12VDC±1%	90W	86%	100%(50°C), 80%(60°C), 60%(68°C)
KPW-D48T24-60	44 ~ 60VDC	24VDC±2%	60W	88%	100%(40°C), 80%(50°C), 50%(70°C)
KPW-D48T24-90	44 ~ 70VDC	24VDC±1%	90W	83%	100%(50°C), 80%(60°C), 60%(68°C)

\*1 Measured at the connector end. Power wire may cause voltage drop at the other end under high current load due to cable and connection resistance.

\*2 Measured with full load at  $V_{in}$  48V and up

\*3 Measured with air flow 1m/s

## Safety Cautions

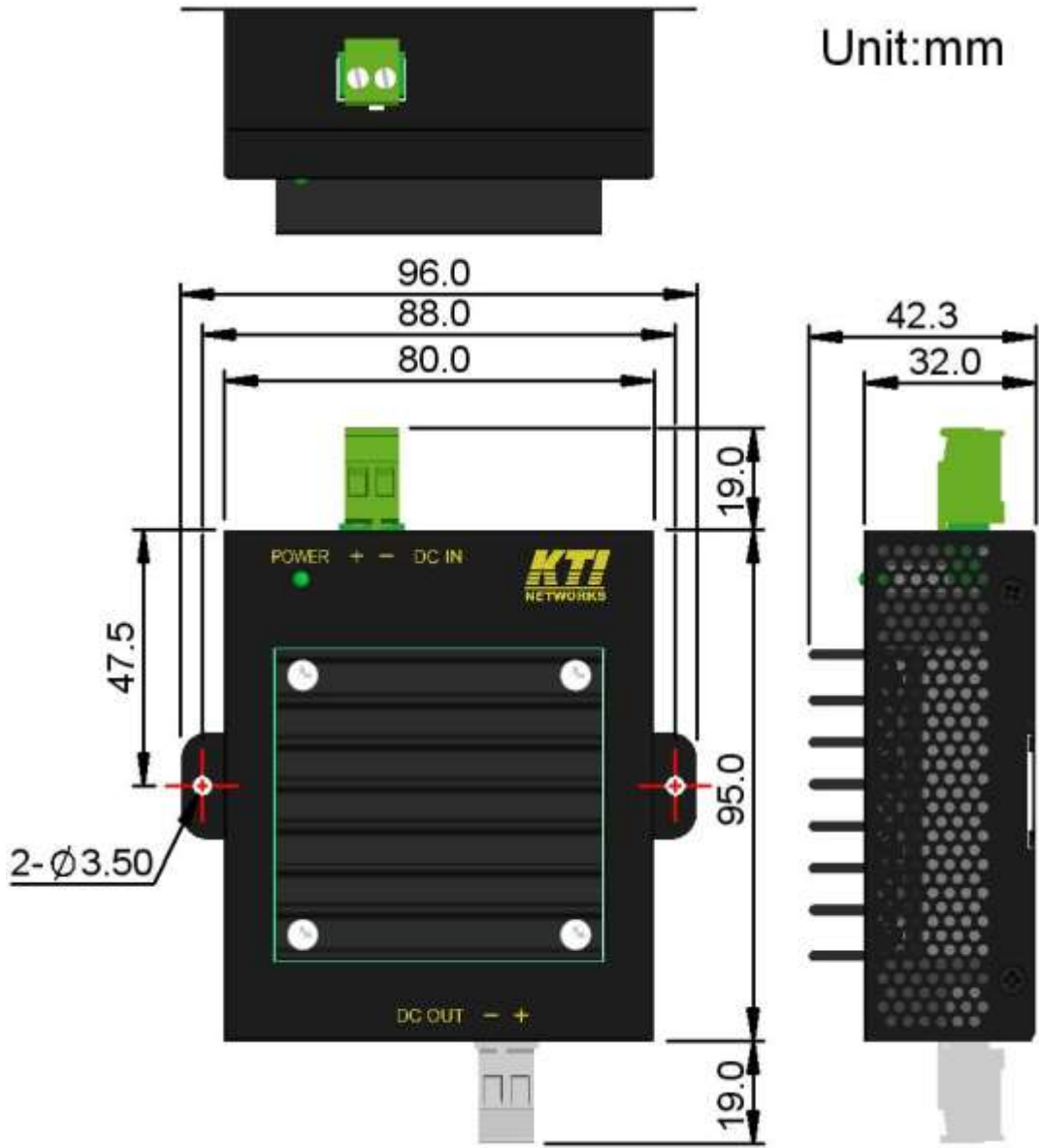
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To reduce the risk of bodily injury, electrical shock, fire and damage to the product, observe the following precautions.

- ✓ Do not service any product except as explained in your system documentation.
- ✓ Opening or removing covers may expose you to electrical shock.
- ✓ Only a trained service technician should service components inside these compartments.
- ✓ If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
  - The power cable, extension cable, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- ✓ Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.

# Mounting Support

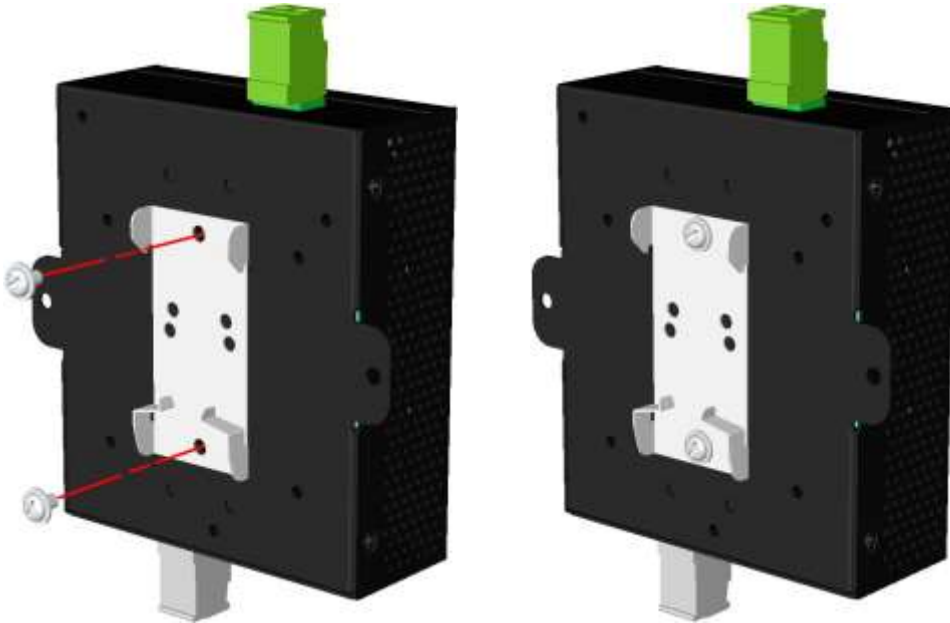
## Panel mount & Dimension



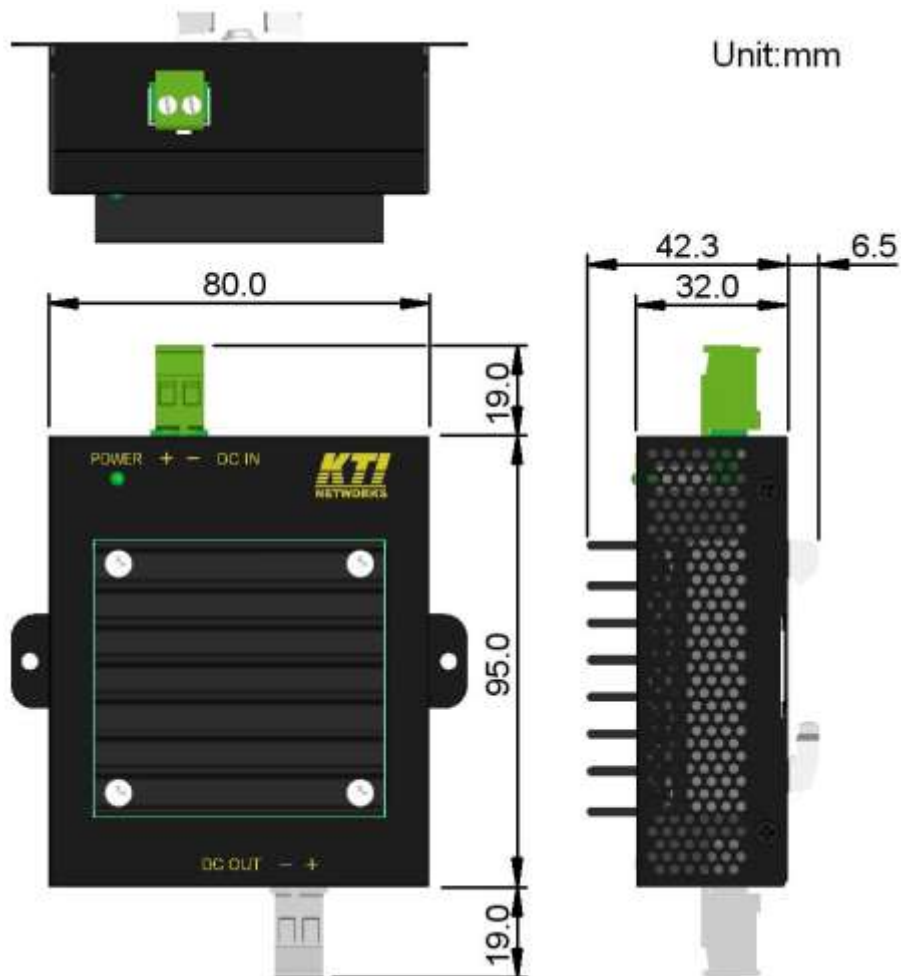


## Din-Rail mounting bracket installation

The din-rail mounting bracket is supplied in the product package.

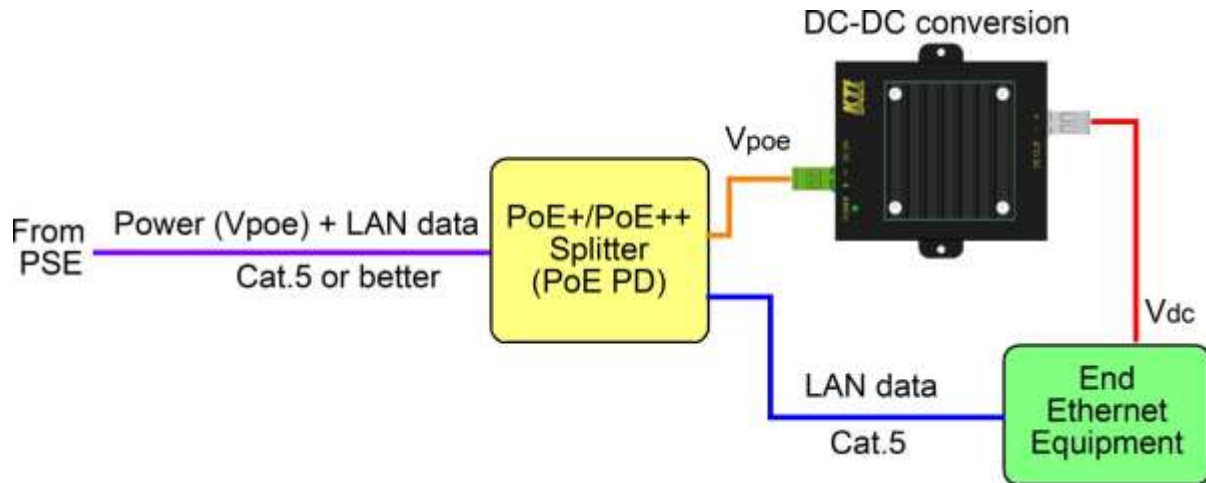


## Dimension



# Application Example

The converters can support and accept PoE voltage range. They also support popular output voltage options, 12V and 24V. The typical connection in a PoE installation is shown as follows:



## Reference

The protection information provided by the converters

Model \ Protection	KPW-D48T12-60	KPW-D48T12-90	KPW-D48T24-60	KPW-D48T24-90
Short Circuit	Yes	Yes	Yes	Yes
Over Current	—	110% ~ 140%	—	110% ~ 140%
Over Power	145% ~ 252%	—	150% ~ 256%	—
Over Voltage	118% ~ 132%	115% ~ 140%	118% ~ 132%	115% ~ 140%
Over Temperature	100°C max.	95°C ~ 105°C	100°C max.	95°C ~ 105°C

Note:

1. Auto-recovery for short circuit, OCP, OPP, OTP and zener diode clamp for OVP.
2. OTP by internal power module case temperature thermal shutdown.