VOLKTEK

7015-4P2T-T1L QIG

1. Overview

Ethernet communication and power delivery over a single twisted wire pair for industrial control networks. It enables data speeds of 10 Mbps over existing fieldbus cables, significantly longer than standard 100BASE-TX.

By utilizing existing Fieldbus wiring for simultaneous Ethernet traffic and power delivery, SPoE (SPE PoE) simplifies cabling and reduces costs. The 7015-4P2T-T1L expands Industrial Ethernet to the new sensors, actuators, and automation applications requiring low-speed connectivity, bridging the gap to existing Ethernet networks over standard CAT5/6 cabling.

2. Package Checklist

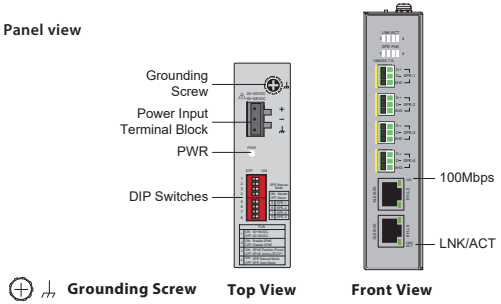
The switch is shipped with the following items*.

If any of these are missing or damaged, please contact your customer service representative for assistance.

- The Switch x 1
- DIN-Rail kit x 1
- Quick Installation Guide x 1

*Contents of the package can be adjusted based on customer demand.

Panel view



3. Mounting and Dismounting to DIN-Rail

ATTENTION:
The Switch is an open type device and shall be DIN-Rail mounted or wall mounted (optional) in the cabinet and the ambient temperature should not exceed the operating temperature.

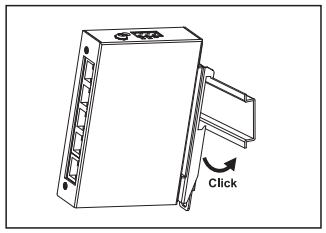
ATTENTION :
L'interrupteur est un dispositif ouvert et doit être monté sur rail DIN ou mural (en option) dans l'armoire. La température ambiante ne doit pas dépasser la température de fonctionnement.

Mounting the switch

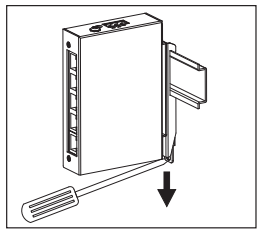
Place the switch on the DIN rail from above using the slot and push the front of the switch toward the mounting surface until it snaps into place with a click sound.

Dismounting the switch

Press the switch from top and pull out the lower edge of the switch and then remove the switch from the DIN rail.



Mounting the Switch (illustration)



Removing the Switch (illustration)

ATTENTION:
A corrosion-free mounting rail is advisable.
When installing, make sure to allow for enough space between devices to properly install the cabling. And provide ample space for air flow.

ATTENTION :
Il est recommandé d'utiliser un rail de montage résistant à la corrosion.
Lors de l'installation, veillez à laisser suffisamment d'espace entre les appareils pour installer correctement le câblage. Prévoyez également un espace suffisant pour la circulation de l'air.

4. Grounding the switch

Grounding and wire routing helps limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.

ATTENTION:
This product is intended to be mounted to a well-grounded mounting surface such as a metal panel.

ATTENTION:
Ce produit est destiné à être monté sur une surface de montage bien mise à la terre telle qu'un panneau métallique.

5. Wiring requirements

WARNING:
Safety measures should be taken before connecting the power cable. Turn off the power before connecting modules or wires.
The correct power supply voltage is listed on the product label.

Check the voltage of your power source to make sure that you are using the correct
voltage. DO NOT use a voltage greater than what is specified on the product label. Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If current exceeds the maximum rating, the wiring can overheat causing serious damage to your equipment.

AVERTISSEMENT:
Des mesures de sécurité doivent être prises avant de brancher le câble d'alimentation. Coupez l'alimentation avant de connecter des modules ou des fils. La tension d'alimentation correcte est indiquée sur l'étiquette du produit. Vérifiez la tension de votre source d'alimentation pour vous assurer que vous utilisez la bonne tension. NE PAS utiliser une tension supérieure à celle indiquée sur l'étiquette du produit. Calculez le courant maximum possible dans chaque fil d'alimentation et fil commun. Respectez tous les codes électriques dictant le courant maximum autorisé pour chaque taille de fil. Si le courant dépasse la valeur nominale maximale, le câblage peut surchauffer et endommager gravement votre équipement.

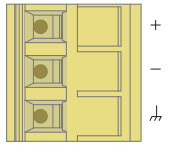
Please read and follow these guidelines:

- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross make sure the wires are perpendicular at the intersection point.

  NOTE: Do not run signal or communications wiring and power wiring through the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.
- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar electrical characteristics can be bundled together.
- You should separate input wiring from output wiring.
- We advise that you label the wiring to all devices in the system.

5.1 Wiring Power Input

Top view of Terminal Block is shown in the figure below:



Terminal Block

Caution:
- Use copper conductors only
- Wiring cable temperature should support at least 105˚C
- Tighten the wire to a torque value 5lb
- The wire gauge for the terminal block should range between AWG12-18

ATTENTION:
- Utilisez uniquement des conducteurs en cuivre
- La température du câble de câblage doit supporter au moins 105°C
- Serrer le fil à une valeur de couple de 5lb
- Le calibre du l pour le bornier doit être compris entre AWG12 et 18

To insert power wire and connect the 20~30VDC (Class 10~12) or 50~58VDC (Class 13~14) at a maximum of 2.5A DC power to the power terminal block, follow the steps below:

- Use a flat-head screw driver to loosen the wire-clamp screws
- Insert the negative/positive DC wires into the PWR-/PWR+ terminals, respectively
- Tighten the wire-clamp screws to prevent the wires from loosening

NOTE: If the position of the power class DIP switch does not match the power class of the PD(powered device), power can not be supplied.

ATTENTION:
Please use a power supply from 20~30VDC (Class 10~12) or 50~58VDC (Class 13~14), the device power shall be supplied by SELV circuit.

ATTENTION:
Veuillez utiliser une alimentation de 20~30VDC (Class 10~12) or 50~58VDC (Class 13~14), l'alimentation de l'appareil doit être fournie par un circuit SELV.

5.2 Cabling RJ45

Connect one end of an Ethernet/RJ45 cable into Ethernet port of the converter and other end to attached networking device.

- 2 x 10/100Mbps speeds.

NOTE: Category 5e cable or above should be used.

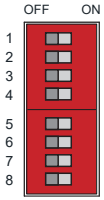
5.3 Cabling SPE



To connect SPE cables to a 10BASE-T1L port, follow these steps:

- Use a flathead screwdriver to loosen the wire-clamp screws.
- Insert the exposed data wires into the D- and D+ terminals.
- When using a shielded cable, connect the shield to the SHD terminal.
- Tighten the screws and plug the connector into a 10BASE-T1L port.

6. DIP Switch Setting



1	ON	50~58 VDC, SPoE Class 13-14
	OFF	20~30 VDC, SPoE Class 10-12 (default)
2	ON	Enable SPoE
	OFF	Disable SPoE (default)
3	ON	SPoE Passive (Force) Mode
	OFF	SPoE Active (SCCP) Mode (default)
4	ON	SPE Manual Mode
	OFF	SPE Auto Mode (default)
5-8	ON	Manually set role to Master (default)
	OFF	Manually set role to Slave

Note:

- When Manual mode is enabled, a link can only be established between a Master and a Slave.
- After changing the DIP switch setting, unplug and plug back the power source to apply the new setting.

7. LED Indicators

PWR (Green)	Illuminated	Primary Power on
	Off	Primary power off or failure
SPE 1-4 LNK/ACT (Green/Amber)	Solid GREEN	Port link-up with good link signal quality
	Solid AMBER	Port link-up with poor signal quality
	Blinking	Activity (receiving or transmitting data)
	Off	Port disconnected, or link failed
SPE 1-4 SPoE (Green)	Solid	Supplying power to a powered device (PD)
	Off	Power feeding is off or not supplied
100 (Green)	Illuminated	Link speed at 100Mbps
	Off	Link speed at 10Mbps
ETH 5-6 LNK/ACT (Green)	Illuminated	Port link-up
	Blinking	Activity (receiving or transmitting data)
	Off	Port disconnected or link failed

8. 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)

ATTENTION:
This device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

ATTENTION:
Cet appareil est conforme à la partie 15 des règles de la FCC. Le fonctionnement est soumis aux conditions suivantes :
1. Cet appareil ne doit pas causer d'interférences nuisibles.
2. Cet appareil doit accepter toute interférence reçue, y compris les interférences susceptibles de provoquer un fonctionnement indésirable.

ATTENTION:
If the equipment is used in a manner not specified by VOLKTEK, the protection provided by the equipment may be impaired.

ATTENTION:
Si l'équipement est utilisé d'une manière non spécifiée par VOLKTEK, la protection fournie par l'équipement peut être altérée.

ATTENTION:
Please leave at least 5cm of space at the left and right of the unit for ventilation.

ATTENTION:
Veuillez laisser au moins 5 cm d'espace à gauche et à droite de l'appareil pour la ventilation.

9. FCC Compliance Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

Limited Warranty

VOLKTEK Corporation warrants this product against defect in materials and workmanship for a period of FIVE (5) YEARS to the original purchaser.

If you discover a defect, VOLKTEK will, at its sole option, repair or replace the product at no additional charge, provided that you contact VOLKTEK technical support to obtain a Return Merchandise Authorization Number (RMA) and instruction on how and where repairs can be made. This warranty does not apply if the product has been damaged by accident, abuse, misuse, misapplication, neglect, fire, water, lightning or other acts of nature, failure to follow supplied instructions, installation or removal, have been repaired or have undergone attempted repair by unauthorized personnel without written consent from VOLKTEK, modified, defaced, or has its serial numbers removed. VOLKTEK reserves the right to use remanufactured, refurbished, or used parts and components in making warranty repairs.

All expressed or implied warranties for this product, including the implied warranties of merchantability and fitness for a particular purpose are limited in duration to the warranty period. No warranties expressed or implied will applied after this period. VOLKTEK shall not be liable for lost profits, damage to other property caused by any defects of this product, or damages based upon inconvenience, loss of product use, loss of time, commercial use, incidental and/or consequential damages for the breach of any expressed or implied warranty, including damages to property, and to the extent permitted by law, damages for personal injury, even if VOLKTEK has been advised of the responsibilities of such damages.

If you have any further questions, please contact Customer Support:

Address of the manufacturer.

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