VOLKTEK

IMC-553 QIG

1. Overview

The IMC-553 Unmanaged Industrial SPE Media Converter: a state-of-the-art solution tailored for seamless integration into industrial control networks. This converter is encased in a robust metal housing with IP30 protection, ensuring exceptional reliability in challenging environments, underscored by its impressive wide operating temperature range.

With a configuration that includes a 10BASE-T1L SPE port and a 10BASE-T RJ45 port, the IMC-553 is adept at addressing diverse connectivity requirements. It provides clear visibility into the device's status through dedicated LED indicators. The inclusion of a DIP switch enables straightforward configuration, supporting both Auto mode and manual Master/Slave selection.

2. Package Checklist

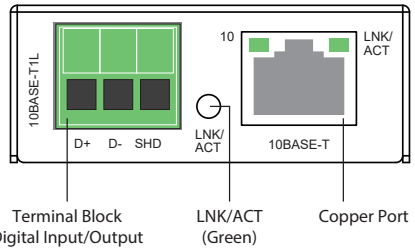
The converter is shipped with the following items*. If any of these are missing or damaged, please contact your customer service representative for assistance.

- IMC-553 Converter x 1
- DIN-Rail kit x 1
- Terminal block x 2
- RJ45 CAP x1
- Quick Installation Guide x 1

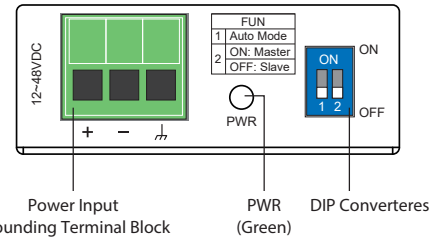
* Contents of the package can be adjusted based on customer demand.

Panel View

Front Panel View



Rear Panel View with DIP Converteres



3. Mounting and Dismounting to DIN-Rail

ATTENTION:
The Converter 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:
Le commutateur est un appareil de type ouvert et doit être monté sur rail DIN ou fixé au mur (en option) dans l'armoire et la température ambiante ne doit pas dépasser la température de fonctionnement.

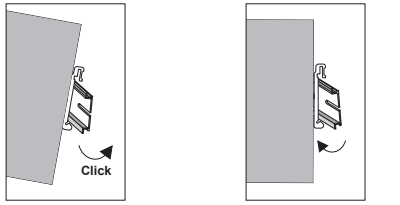
Mounting the converter

Place the converter on the DIN-Rail from above using the slot, push the front of the converter toward the mounting surface until it snaps into place with a click sound.

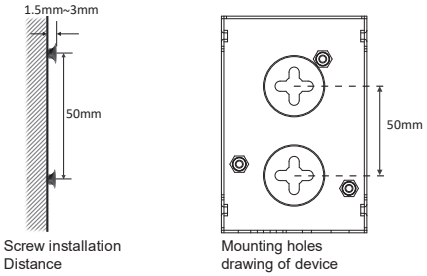
Dismounting the converter

Press the converter from top and pull out the lower edge of the converter and then remove the converter from the DIN-Rail.

A.



B.



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:
Un rail de montage sans corrosion est recommandé.
Lors de l'installation, assurez-vous de laisser suffisamment d'espace entre les appareils pour installer correctement le câblage. Et offrez suffisamment d'espace pour la circulation de l'air.

4. Grounding the converter

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:

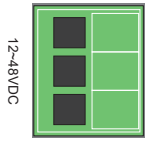
- Use separate paths to route wiring for power and devices. If power wiring and device wiring paths must cross make sure the wires are perpendicular at the intersection point.

  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

The converter with 3 terminal block

You can use "PWR" for 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 12~24 AWG

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 fil pour le bornier doit être compris entre 12 et 24 AWG

To insert power wire and connect the specied voltage and maximum electric current to the terminal block, follow the steps below:

1. Use a at-head screwdriver to loosen the wire-clamp screws.
2. Insert the negative/positive DC wires into the (- / +) terminals, respectively as shown on the label.
3. Tighten the wire-clamp by releasing the screwdriver to prevent the wires from loosening.

ATTENTION:
Please use a power supply from 12~48VDC, 0.25A (DC) maximum. The device power shall be supplied by SELV circuit.

ATTENTION:
Veuillez utiliser une alimentation de 12~48VDC, 0.25A (DC) maximum. L'alimentation de l'appareil doit être fournie par un circuit SELV.

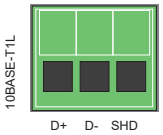
5.2 Cabling RJ45

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

- 1 x 10BASE-T Port.

Note: *Category 5e cable or above should be used.*

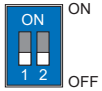
5.3 Cabling SPE



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 Converter Setting



1	ON	Set SPE to Auto Mode (default)
	OFF	Set SPE to Manual Mode
2	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

Power	PWR (Green)	Illuminated	Primary power on
		Off	Primary power failure or not available
10BASE-T	10 (Green)	Solid	Link speed at 10Mbps
		Off	Port disconnected, or link failed
	LNK/ACT (Green)	Illuminated	Copper port link-up
		Blinking	Data is transmitting / receiving
		Off	Link failed
10BASE-T1L	LNK/ACT (Green/Amber)	Solid (G)	Port link-up with good signal quality
		Solid (A)	Port link-up with poor signal quality
		Blinking	Activity (receiving ortransmitting 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 the 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.

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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