



DTD-480-0953-T

480W Industrial DC to DC Power Booster, 9~36VDC Power Input,
53VDC Power Output, -40°C ~ 75°C



Hardware Manual

Version 1.0
(April 2023)



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FCC Warning

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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Avertissement FCC

Cet équipement a été testé et déclaré conforme aux limites d'un appareil numérique de classe A, conformément à la partie 15 des règles de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l'énergie radiofréquence. Cela peut provoquer des interférences nuisibles aux communications radio si l'équipement n'est pas installé et utilisé conformément aux instructions. Cependant, il n'y a aucune garantie qu'aucune interférence ne se produira dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou télévision, ce qui peut être déterminé en éteignant puis en rallumant l'équipement, l'utilisateur est encouragé à essayer de corriger les interférences par une ou plusieurs des mesures suivantes:

- Réorientez ou déplacez l'antenne de réception.
- Augmentez la distance entre l'équipement et le récepteur.
- Connectez l'équipement à une prise sur un circuit différent de celui auquel le récepteur est connecté.
- Consultez le revendeur ou un technicien radio / TV expérimenté pour obtenir de l'aide.

CE Mark Warning

This is a Class-A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Avertissement de marque CE

Ceci est un produit de classe A. Dans un environnement domestique, ce produit peut provoquer des interférences radio, auquel cas l'utilisateur peut être amené à prendre des mesures adéquates.

Industrial DC to DC Power Booster

Industrial Grade DC to DC Power Booster

Hardware Manual

Version 1.0 (April 2023)

The manual supports the following model:

- DTD-480-0953-T

Antaira Technologies - Industrial Power Booster
DTD-480-0953-T - Hardware Manual - v1.0

This document is the current official release hardware manual. Please check our website (www.antaيرا.com) for any updated manual or contact us by e-mail (support@antaيرا.com).

Table of Contents

1 Overview	1
1.1 Product Hardware Features	1
1.2 Package Contents	1
1.3 Safety Precaution	2
2 Hardware Description	3
2.1 Physical Dimensions	3
2.2 Front View Panel	4
2.3 Top View Panel	4
2.4 LED Indicators	5
2.5 Wiring the Power Inputs	5
2.6 Wiring the Power Outputs	6
2.7 Grounding Note	7
3 Mounting Installation	8
3.1 DIN-Rail Mounting	8
3.2 Wall Mounting	9
4 Hardware Installation	11
4.1 Installation Steps	11
4.2 Maintenance and Service	12
4.3 Troubleshooting	12

1 Overview

Antaira Technologies' DTD-480-0953-T is a DIN Rail mounted DC/DC converter that takes the low voltage power source common in many control cabinets and boost the output to 53VDC which can be used for standard PoE applications, and provides up to 480 watts of power. It is designed in a compact IP30 metal housing, with a wide operating temperature range of -40°C to 75°C. This unit is ideal for applications like automation, security or transportation where rugged, reliable products are required.

1.1 Product Hardware Features

Interface and Performance

- Featuring the booster technology from 9~36VDC (up to 55VDC) power input to 53VDC
- Output voltage adjustable (48~55V) via built-in SVR
- Protection: short circuit (Output) / overload (Input)
- Protection: Input / Output reverse polarity protection
- Protection: Input Under Voltage
- LED power indicator (Input / Output)

Power Input

- Power inputs contact interface are on the front
- Support DC power inputs through 3-pin terminal block interface

Power Output

- Support DC power outputs through removable 4-pin terminal block interface
- DC output voltage is adjustable from 48 to 55 VDC by the adjusting knob

Operating Temperature

- DTD-480-0953-T: -40°C to 75°C

Case / Installation

- IP30 protection metal housing
- DIN-Rail and wall-mount design
- Installation in a Pollution Degree 2 industrial environment
- Standalone Installation

1.2 Package Contents

- DTD-480-0953-T
- Quick Installation Guide
- Wall mounting bracket set with screws

1.3 Safety Precaution

Attention: If the DC voltage is supplied by an external circuit, please use a protection device on the power supply input. The industrial power booster's hardware specs, ports, cabling information, and wiring installation will be described within this hardware manual.

Attention: Si la tension continue est fournie par un circuit externe, veuillez utiliser un dispositif de protection sur l'entrée d'alimentation. Les spécifications matérielles du booster de puissance industriel, les ports, les informations de câblage et l'installation du câblage seront décrits dans ce manuel du matériel.

Warning Labels

The caution label means that you should check certain information on the user manual when working with the device. (Shown in *Figure 1.1*)

Étiquettes d'avertissement

L'étiquette d'avertissement signifie que vous devez vérifier certaines informations du manuel d'utilisation lorsque vous travaillez avec l'appareil. (Illustré à la *figure 1.1*)



Figure 1.1 - Caution Label
Figure 1.1 - Étiquette de mise en garde



Figure 1.2 - Hot Surface Warning Label
Figure 1.2 - Étiquette d'avertissement de surface chaude

2 Hardware Description

2.1 Physical Dimensions

Figure 2.1, below, shows the physical dimensions of this product series:

(W x D x H) is 38mm x 75mm x 95mm

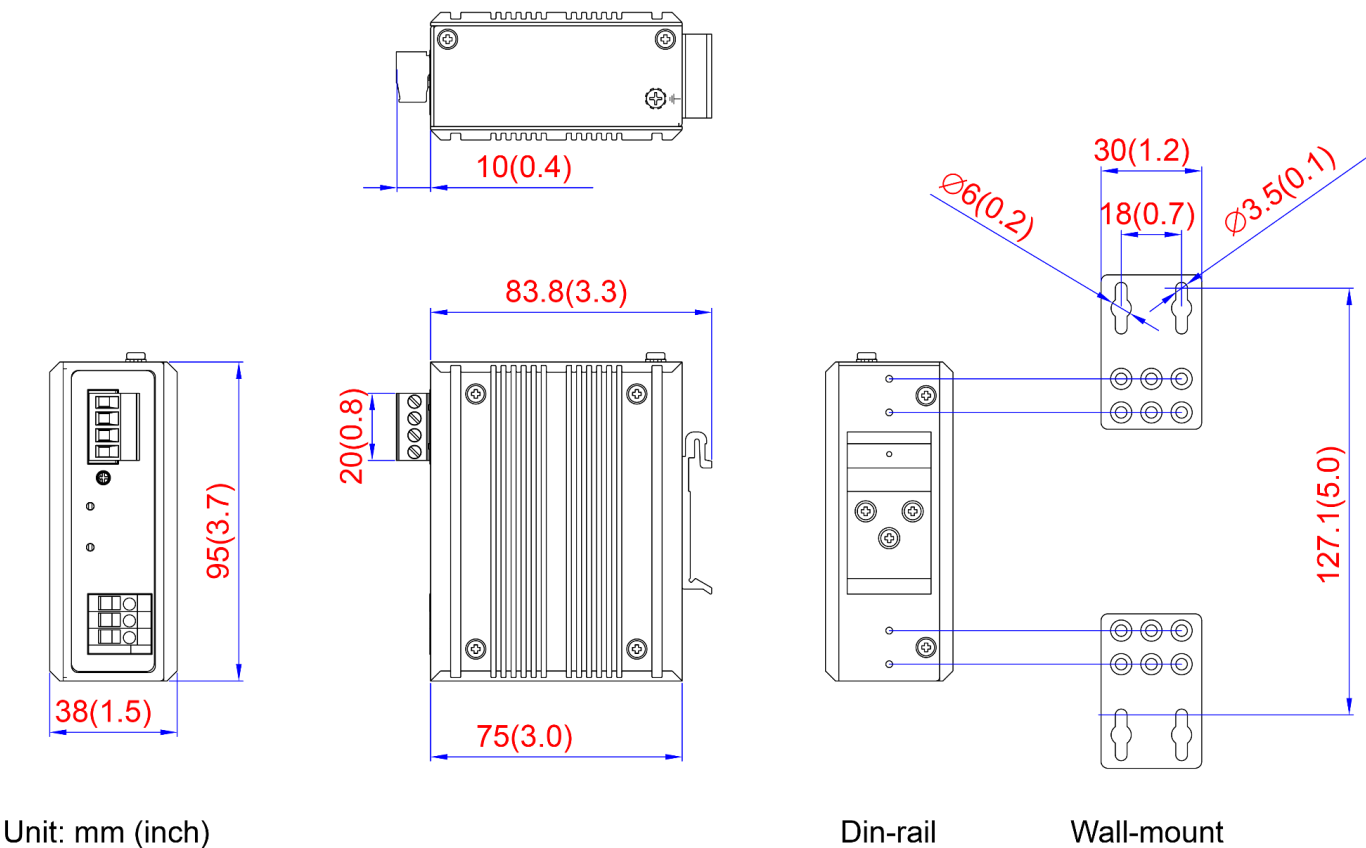


Figure 2.1 - Physical Dimensions

2.2 Front View Panel

Figure 2.2, below, shows the front panel of the product series:



Figure 2.2 - Front View Panel

2.3 Top View Panel

Figure 2.3, below, shows the top panel of the product series:



Figure 2.3 - Top View Panel

2.4 LED Indicators

There are LED light indicators located on the front panel of the industrial power booster that display the power status. Each LED indicator has a different color and has its own specific meaning, see below in *Table 2.1*.

LED	Color	Description	
Input OK	Green	On	DC Input is active
		Off	DC Input is inactive
Output OK	Green	On	DC Output is active
		Off	DC Output is inactive

Table 2.1 - LED Indicators

2.5 Wiring the Power Inputs



Caution: Please follow the steps below when inserting the power wire.



Attention: Veuillez suivre les étapes ci-dessous lors de l'insertion du câble d'alimentation.

1. Insert the positive and negative wires into the V+ and V- contacts on the terminal block connector as shown below in *Figure 2.4*.

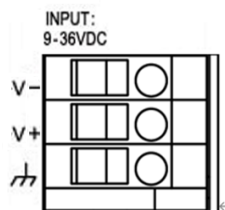


Figure 2.4 - Power Terminal Block

2. Tighten the wire-clamp screws to prevent the wires from loosening, as shown below in *Figure 2.5*.

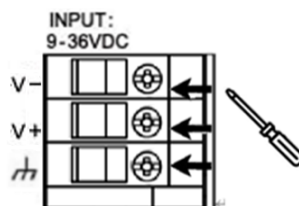


Figure 2.5 - Wire-Clamp Screws on the Side Panel

Caution:



Only use copper conductors, **125°C**, tighten to **7 lbs.**

The wire gauge for the terminal block should range between **18~20 AWG**.

Attention:



Utilisez uniquement des conducteurs en cuivre, **125°C**, serrez à **7 lb.**

Le calibre des fils du bornier doit être compris entre **18 et 20 AWG**.

2.6 Wiring the Power Outputs



Caution: Please follow the steps below when inserting the power wire.



Attention: Veuillez suivre les étapes ci-dessous lors de l'insertion du câble d'alimentation.

1. Insert the positive and negative wires into the PWR (V-, V-, V+, V+) contacts on the terminal block connector as shown below in *Figure 2.6*.

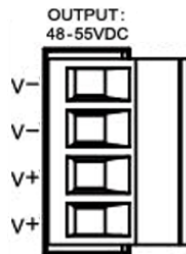


Figure 2.6 - Power Terminal Block

2. Tighten the wire-clamp screws to prevent the wires from loosening, as shown below in *Figure 2.7*.

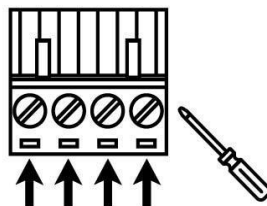


Figure 2.7 - Wiring the Copper Conductors to the Terminal Block

3. Rotate the knob to adjust power output voltage from 48~55VDC, as shown in *Figure 2.8*.

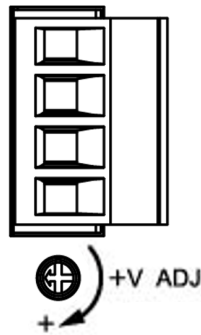


Figure 2.8 - Adjustable Knob for Power Output Voltage

2.7 Grounding Note

Grounding and wire routing help 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. The grounding screw symbol is shown below in *Figure 2.9*.

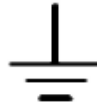


Figure 2.9 - Grounding Screw Symbol



Caution: Using a shielded cable achieves better electromagnetic compatibility.



Attention: L'utilisation d'un câble blindé permet une meilleure compatibilité électromagnétique

3 Mounting Installation

3.1 DIN-Rail Mounting

The DIN-Rail is pre-installed on the industrial power booster from the factory. If the DIN-Rail is not on the industrial power booster, please see *Figure 3.1* to learn how to install the DIN-Rail on the switch.

Follow the steps below to learn how to hang the industrial power booster:

1. Use the screws to install the DIN-Rail bracket on the rear side of the industrial power booster.



Caution: The torque for tightening the screws on the device is 3.5 in-lbs.



Attention: Le couple de serrage des vis sur l'appareil est de 3.5 pouces-livres.

2. To remove the DIN-Rail bracket, do the opposite from step 1.
3. After the DIN-Rail bracket is installed on the rear side of the switch, insert the top of the DIN- Rail on to the track as shown below in *Figure 3.2*.
4. Lightly pull down the bracket onto the rail as shown below in *Figure 3.3*.
5. Check if the bracket is mounted tightly on the rail.
6. To remove the industrial power booster from the rail, do the opposite from the above steps.

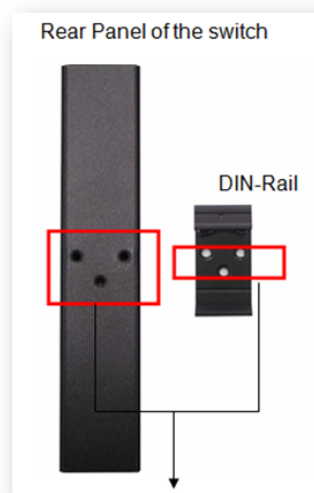


Figure 3.1 - Rear View of the Switch and DIN-Rail



Figure 3.2 - Insert the Switch on the DIN-Rail

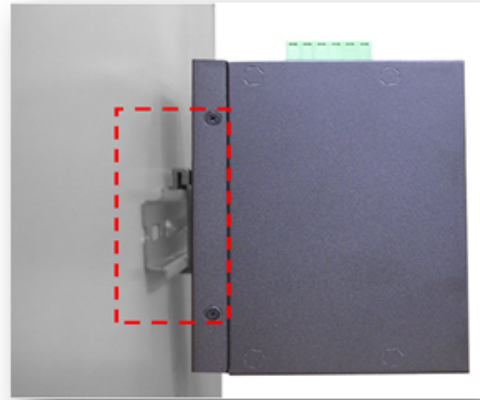


Figure 3.3 - Stable the Switch on the DIN-Rail

3.2 Wall Mounting

Follow the steps below to mount the industrial power booster using the wall mounting bracket as shown below in *Figure 3.4*.



Caution: "Wall" means industrial control panel wall



Attention: "Wall" signifie mur de panneau de commande industriel

1. Remove the DIN-Rail bracket from the industrial power booster by loosening the screws.
2. Place the wall mounting brackets on the top and bottom of the industrial power booster.
3. Use the screws to screw the wall mounting bracket on the industrial power booster.



Caution: The torque for tightening the screws on the device is 3.5 in-lbs.



Attention: Le couple de serrage des vis sur l'appareil est de 3.5 pouces-livres.

4. Use the hook holes at the corners of the wall mounting bracket to hang the industrial power booster on the wall.
5. To remove the wall mount bracket, do the opposite from the steps above.

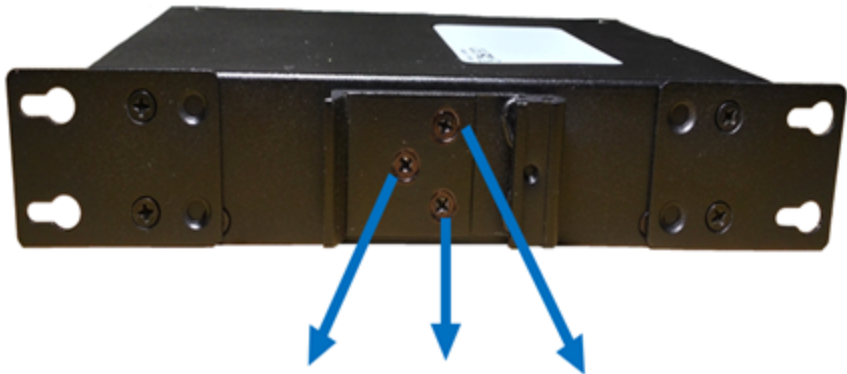


Figure 3.4 - Remove DIN-Rail bracket from the Power Booster

Below, in Figure 3.5 are the dimensions of the wall mounting bracket.

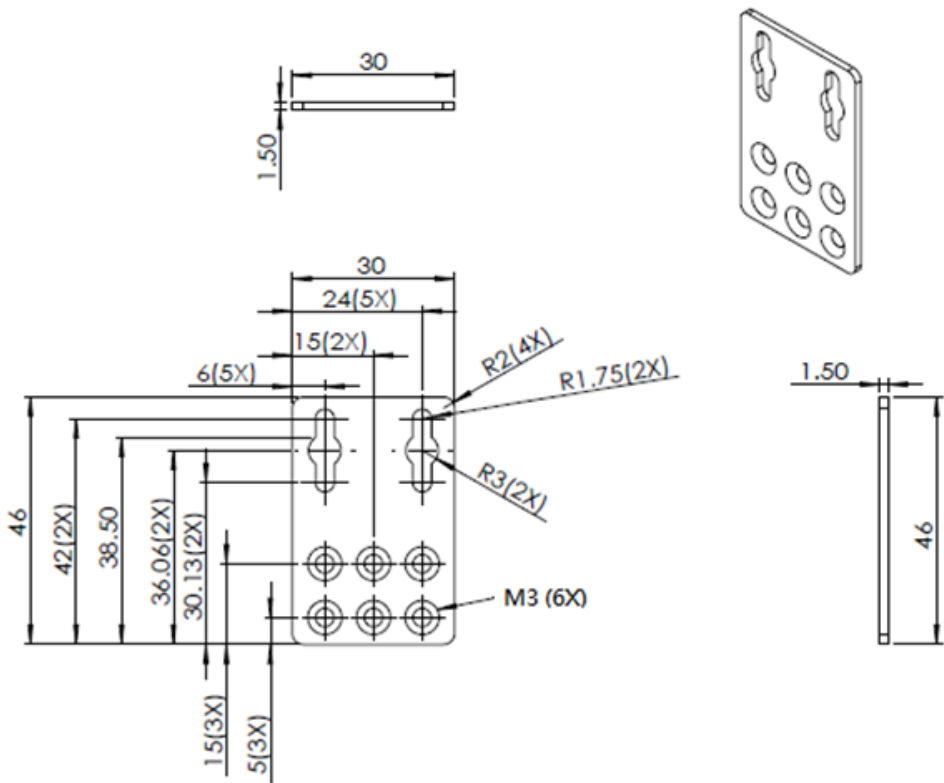


Figure 3.5 - Wall Mounting Bracket Dimensions

4 Hardware Installation

4.1 Installation Steps

This section will explain how to install the industrial power booster:



Caution: This device is intended for indoor use.



Attention: Cet appareil est destiné à une utilisation en intérieur.



Caution: The device is intended to be installed in an industrial control enclosure and panel.



Attention: L'appareil est destiné à être installé dans une armoire de commande et un panneau industriels.

Installation Steps

1. Unpack the industrial power booster from the original packing box.
2. Check if the DIN-Rail bracket is screwed on the industrial power booster.
 - If the DIN-Rail is not screwed on the industrial power booster, please refer to the **DIN-Rail Mounting** section for DIN-Rail installation.
 - If you want to wall mount the industrial power booster, please refer to the **Wall Mounting** section for wall mounting installation.
3. To hang the industrial power booster on a DIN-Rail or wall, please refer to the **Mounting Installation** section.
4. Connect the power source equipment to the industrial power booster and then the power input LED light will turn on.
 - If you need help on how to wire power, please refer to the **Wiring the Power Inputs** section.
 - Please refer to the **LED Indicators** section for LED light indication.
5. Connect the industrial power booster to the powered device, e.g.: Ethernet switch...etc., and the power output LED light will turn on.

- Please refer to the **LED Indicators** section for LED light indication.

6. When all connections are set and the LED lights all show normal, the installation is complete.

4.2 Maintenance and Service

- If the device requires servicing of any kind, the user is required to disconnect and remove it from its mounting. The initial installation should be done in a way that makes this as convenient as possible.
- Voltage / Power lines should be properly insulated as well as other cables. Be careful when handling them so as to not trip over.
- Do not under any circumstance insert foreign objects of any kind into the heat dissipation holes located in the different faces of the device. This may not only harm the internal layout, but might cause harm to users as well.
- Do not under any circumstance open the device for any reason. Please contact your dealer for any repair needed or follow the instructions within the manual.
- Clean the device with dry soft cloth.

4.3 Troubleshooting

- Verify you have the right power cord or adapter. Never use a power supply or adapter with a non-compliant DC output voltage or it will burn the equipment.
- If the power indicator LED does not turn on when the power cord is plugged in, the user may have a problem with the power cord. Check for loose power connections, power losses or surges at the power outlet.
 - ◆ Please contact Antaira for technical support service, if the problem still cannot be resolved.
- If the industrial power booster LED indicators are normal and the connected cables are correct, the packets still cannot transmit. Please check the Ethernet devices' configuration or status of the system.

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