ProPlex 0-10V DMX Converter DIN Rail

Quick Start Guide

Introduction

0-10V DMX Converter DIN Rail Mount converts 0-10V to DMX or DMX to 0-10V. The device has four Input/Output ports and four operational modes: Theatre Out; Ballast Out; Theatre In; Ballast In. Assign DMX channels, link with analog ports, select analog modes via RDM.

- Bidirectional! Convert 0-10V to DMX or DMX to 0-10V
- Four operational modes: Theatre Out, Ballast Out, Theatre In, Ballast In
- 4x 0-10V inputs or outputs
- Assign DMX channels, link with analog ports, select analog modes via RDM
- Compatible with ANSI E1.3 (Theatre mode / 0-10V) and IEC Standard
- 60929 Annex E (Ballast mode / sink mode / 1-10V)
- Phoenix MSTB screw terminals for bare-wire, installation flexibility

Technical Data

| Part Number	PP010VCDIN
Control Channels	4
RDM support	Yes
Operating Voltage	12-24 VDC (Requires external power supply)
Power Consumption	3 W Max.
Isolation Voltage	3000 V
Output Current	10 mA per output
Output Setting Time	5 msec
Input impedance (Theatre mode)	1 MΩ
Input sink mode current	1 mA
Output short circuit current	60 mA
Output short restoring time	6 sec
DMX step value	40mV / DMX step
Power Input	Phoenix MSTB 2-terminal
Data Input	Phoenix MSTB 3-terminal
Data Thru	Phoenix MSTB 3-terminal
Control Input/Outputs	4x Phoenix MSTB 2-terminal
Operating Temp	-22 °F - 104 °F [-30 °C - +40 °C]
Dimensions (HxWxD)	1.55" x 4.1" x 3.63" [39.5 x 104 x 92.3 mm]
Weight	5.6 oz [159 g]

Dimensions
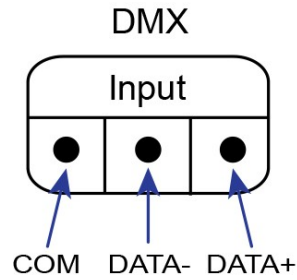

3.63 (92,3)

1.55 (39,5)

4.1(104)
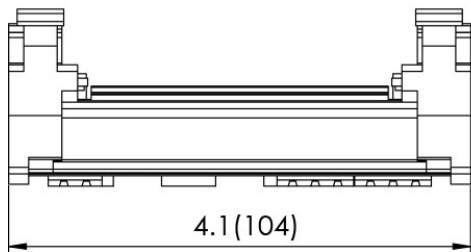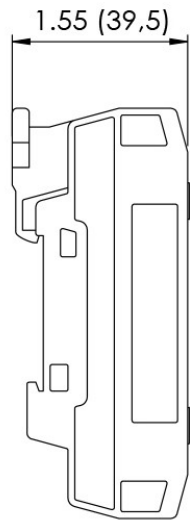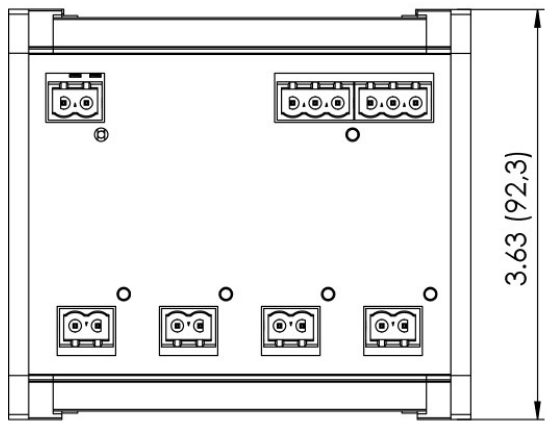
Overview
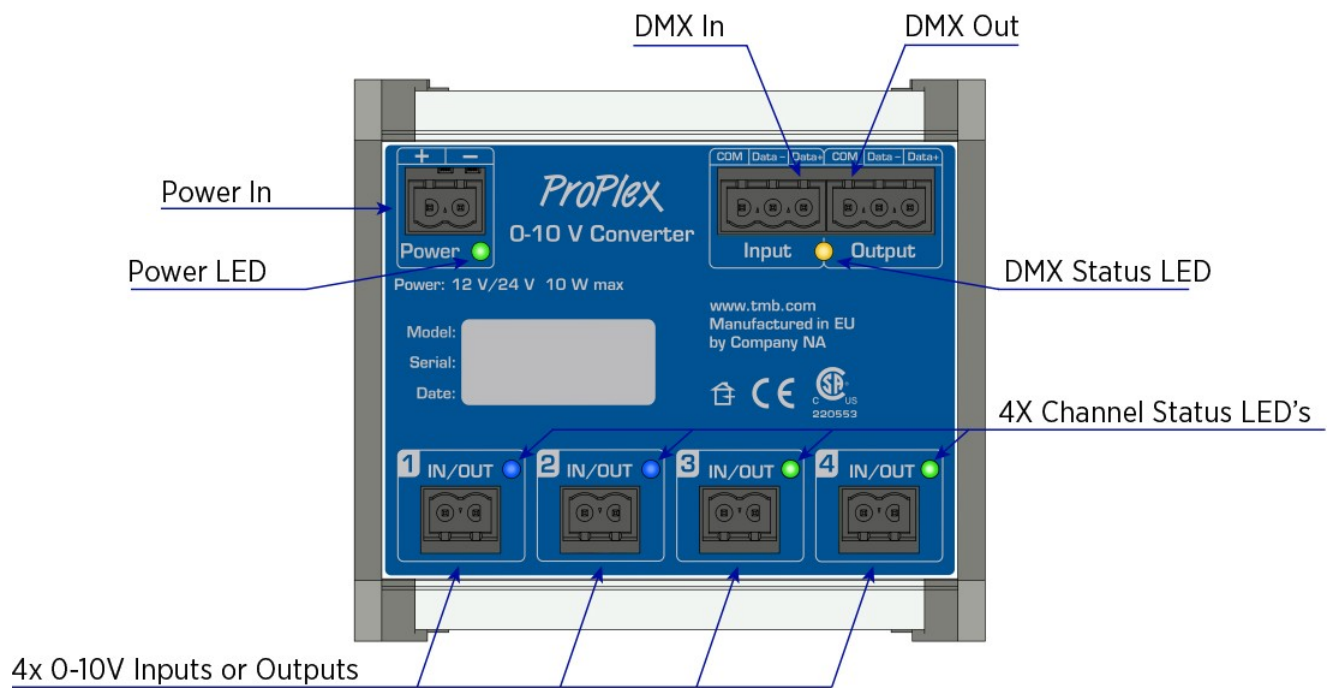
Setup

Connect the DC power (12/24V) to the power input located in the left top corner. The connector should be wired as follows:
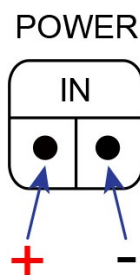
Connect the DMX signal input to the DMX input located in the right top corner of the unit. The connector should be wired as follows:

DMX

Input
● ● ●

COM   DATA- DATA+

Connect the DMX signal output to the DMX output located in the right top corner of the unit. The connector should be wired as follows:

DMX

Output
● ● ●

COM   DATA- DATA+
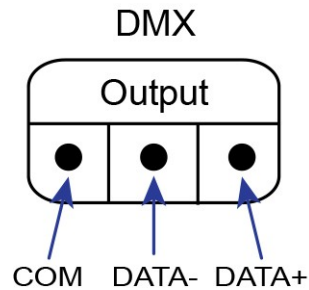
LED Status

The Power LED has two states: ON and OFF

ON   Unit is receiving power.

OFF   Unit is not receiving power.

🔴 No incoming DMX signal

🟢 DMX is active

* blinking

If there is no DMX signal, the Input LED will glow red. If there is an incoming DMX, the LED will flash green and orange.

Input/Output LEDs indicate signal level or fault conditions:

🟢 Green – DMX signal level to 0-10V

🔵 Blue – 0-10V signal level to DMX

🔴 Red – output overload

🟣 Magenta – warning for output sink load not connected (ballast mode)

Operation

Each mode coverts either DMX to 0-10V or 0-10V to DMX control. 0-10V inputs are numbered 1-4 at the bottom of the unit and correspond with sequential DMX addresses depending on the set starting address. DMX starting address can only be changed via RDM compatible controllers.

For Example:

If the DMX starting address is 1, then each 0-10V input/output will correspond with exactly the same DMX address as follows:

- 0-10V Input/Output #1 corresponds with DMX channel 1
- 0-10V Input/Output #2 corresponds with DMX channel 2
- 0-10V Input/Output #3 corresponds with DMX channel 4
- 0-10V Input/Output #4 corresponds with DMX channel 4

If DMX starting address is 37, then each 0-10V input/output will correspond with the DMX starting address in sequence:

- 0-10V Input/Output #1 corresponds with DMX channel 37
- 0-10V Input/Output #2 corresponds with DMX channel 38
- 0-10V Input/Output #3 corresponds with DMX channel 39
- 0-10V Input/Output #4 corresponds with DMX channel 40

Operational Modes

- **Output Theatre (source 0-10V)**
  - o Incoming DMX signal converted to 0-10V current source.
- **Output Ballast (sink)**
  - o Incoming DMX signal converted to 0-10V current sink.
- **Input Theatre (hi-Z input)**
  - o Incoming 0-10V current source converted to DMX.
- **Input Ballast (source current 1 mA/10V)**
  - o Incoming 0-10V current sink converted to DMX.

Current Source and Current Sink

ProPlex 0-10V DMX Converter is an analog lighting control protocol whereby a control voltage between 0-10V DC produces varying intensity levels in a lighting fixture.

There are two 0-10V standards that are not compatible with each other:

1) Current Source was originally used for controlling theatrical lighting, standardized by ANSI E1.3;
2) Current Sink is a method of 0-10V control used mainly in controlling ballasts, and more recently, LED Drivers. This method is standardized by IEC Standard 60929 Annex E.

The fundamental difference between the two protocols is where the control voltage is coming from. Current Source requires the controller to generate or "source" the low voltage signal. In the case of current sinking, the device under control (ballast, driver or dimmer) supplies the voltage, which "sinks" through the controller. When specifying 0-10V controls, you must be certain that both the controller and the lighting device being controlled utilize the same protocol.

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