

Protocol-Converter



Artistic Licence Engineering Ltd

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I N T R O D U C T I O N

Overview

The Protocol-Converter is a sophisticated rack mount unit designed to fix the most common and most difficult problems encountered in lighting control.

Input:

The product supports dual inputs which may be selected to receive any of the following protocols:

- ⇒ DMX512 (Both pre and post 1990)
- ⇒ AMX192 (The USI TT variation of the Strand original)
- ⇒ D54 (Strand's original lighting protocol)
- ⇒ Avab (Widely used in Scandinavia and Australia)
- ⇒ S20 (ADB protocol used in Europe)
- ⇒ CMX (Colortran protocol widely used in US)

Each input also provides a data receive indicator and an address switch that allows each input to be offset from channel one.

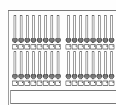
The DMX512, Avab and CMX inputs are optically isolated from the output and each other. This is a particular benefit in removing earth loop problems in large installations and outdoor events.

Output:

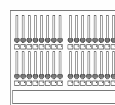
The output is formed by merging the two inputs. If the address switches are set such that the two incoming data streams overlap, the output is highest takes precedence. This means that the Protocol-Converter may be used to either allow two lighting desks control of the same dimmers or to combine two desks to a higher channel count. For example to allow two 60 channel desks to operate as a single 120 channel desk.

The output protocol can also be selected from any of those listed above.

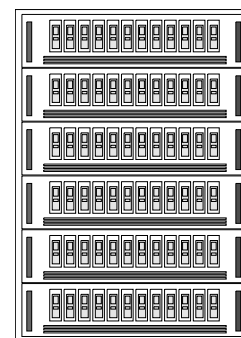
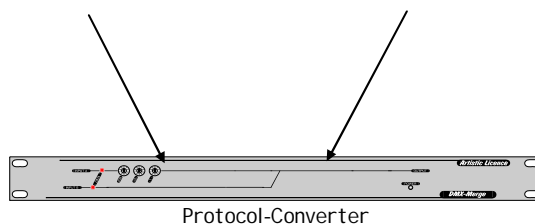
Application Example



D54 output
lighting console



Avab output
lighting console



DMX512 input dimming system

F R O N T P A N E L C O N T R O L S

Input Protocol Selection

The protocol used by each of the two inputs is shown by the two bands of LED's on the left side of the front panel. The six possible options are cycled through by repeatedly pressing the push button to the right of the LED's. The seventh key press will switch off all the LED's. This option disables the relevant input.

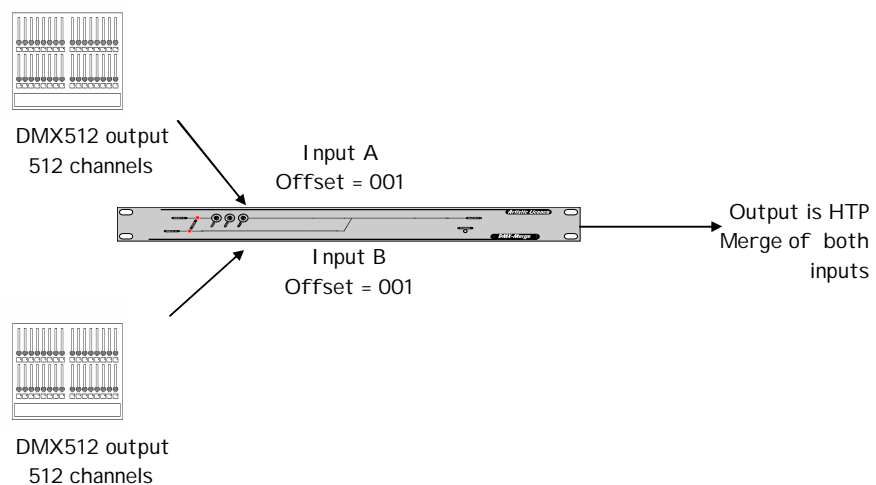
Input Offset Address

The Input Offset Address defines the output channel number at which input data will start. When this control is set to '001', input data starts at the first output channel. The maximum Input Offset Address is dependent upon the selected output protocol as shown below:

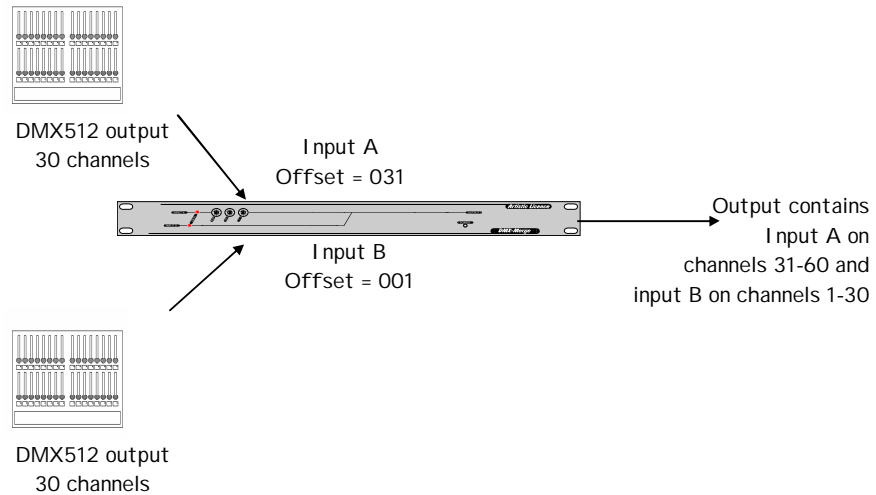
<u>Protocol</u>	<u>Maximum Input Offset Address</u>
DMX512	512
AMX192	384
D54	384
Avab	256
S20	480
CMX (Custom)	512

The settings of the two Input Offset Address switches define how the two inputs are merged to the output. If the addresses are set such that the two inputs overlap, the output is formed from a highest takes precedence merge. If the inputs do not overlap, the two inputs are concatenated to form the output.

Example of HTP Merged Inputs



Example of Concatenated Inputs



Data Received Indicator

The red LED's to the left of the front panel show the status of received data. A constant red light shows that correct data for the selected protocol is being received.

Output Protocol Selection

The output protocol is shown by the band of LED's on the right side of the front panel. The six possible options are cycled through by repeatedly pressing the push button to the right of the LED's.

Digital Filter

The Protocol-Converter feature a sophisticated digital filter which significantly reduces the analogue 'flicker' inherent in many protocols. The digital filter operates for all input protocol selections except DMX512.

Custom Protocol

The default protocol assigned to Custom is Colortran CMX. Other protocols are available by special order. Please contact your distributor for details.

R E A R P A N E L C O N N E C T I O N S

The Protocol-Converter signal connections are as follows: (from left most connector of rear panel)

DMX512, CMX & Avab Input A

Pin 1	Isolated OVDC (Connect to cable screen)
Pin 2	Isolated Data complement
Pin 3	Isolated Data true
Pin 4	N/C
Pin 5	N/C

DMX512, CMX, Avab Loop Through Input A (Passive connection to Input)

Pin 1	Isolated OVDC (Connect to cable screen)
Pin 2	Isolated Data complement
Pin 3	Isolated Data true
Pin 4	N/C
Pin 5	N/C

DMX512, CMX, Avab Input B

Pin 1	Isolated OVDC (Connect to cable screen)
Pin 2	Isolated Data complement
Pin 3	Isolated Data true
Pin 4	N/C
Pin 5	N/C

DMX512, CMX, Avab Loop Through Input B (Passive connection to Input)

Pin 1	Isolated OVDC (Connect to cable screen)
Pin 2	Isolated Data complement
Pin 3	Isolated Data true
Pin 4	N/C
Pin 5	N/C

DMX512, CMX & Avab Output

Pin 1	Isolated OVDC (Connect to cable screen)
Pin 2	Isolated Data complement
Pin 3	Isolated Data true
Pin 4	N/C
Pin 5	N/C

AMX192 & D54 Input A

Pin 1	Internal OVDC (Connect to cable screen)
Pin 2	Clock + (AMX192)
Pin 3	Analogue Data (AMX192 &D54)
Pin 4	Clock - (AMX192)

AMX192 & D54 Input B

Pin 1	Internal OVDC (Connect to cable screen)
Pin 2	Clock + (AMX192)
Pin 3	Analogue Data (AMX192 &D54)
Pin 4	Clock - (AMX192)

AMX192 & D54 Output

Pin 1	Internal OVDC (Connect to cable screen)
Pin 2	Clock + (AMX192)
Pin 3	Analogue Data (AMX192 &D54)
Pin 4	Clock - (AMX192)

S20 Input A

Pin 1	Clock
Pin 2	Internal OVDC (Connect to cable screen)
Pin 3	Analogue Data
Pin 4	N/C
Pin 5	N/C

S20 Input B

Pin 1	Clock
Pin 2	Internal OVDC (Connect to cable screen)
Pin 3	Analogue Data
Pin 4	N/C
Pin 5	N/C

S20 Output

Pin 1	Clock
Pin 2	Internal OVDC (Connect to cable screen)
Pin 3	Analogue Data
Pin 4	N/C
Pin 5	N/C

Power Supply

The internal power supply accepts 90VAC to 250VA and requires an earthed supply. The mains fuse should only be replaced with the type indicated on the rear panel.

Compatibility Issues

Some users have experienced problems when connecting the S20 output of the Protocol-Converter to the '1226' revision S20 Demux manufactured by ADB (This type is identified by the use of metal DIN connectors for the S20 input).

This problem is caused by pickup of electrical noise by the S20 Demux.

The problem is solved by a simple modification to the S20 Demux:

It is necessary to remove the capacitor C12 and to solder a wire link across the top of D8, thereby shorting out the component.

You should also confirm that the screen of your cable is connected to the ground pin and not the chassis of the connector.

No other compatibility issues are known at this time.

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