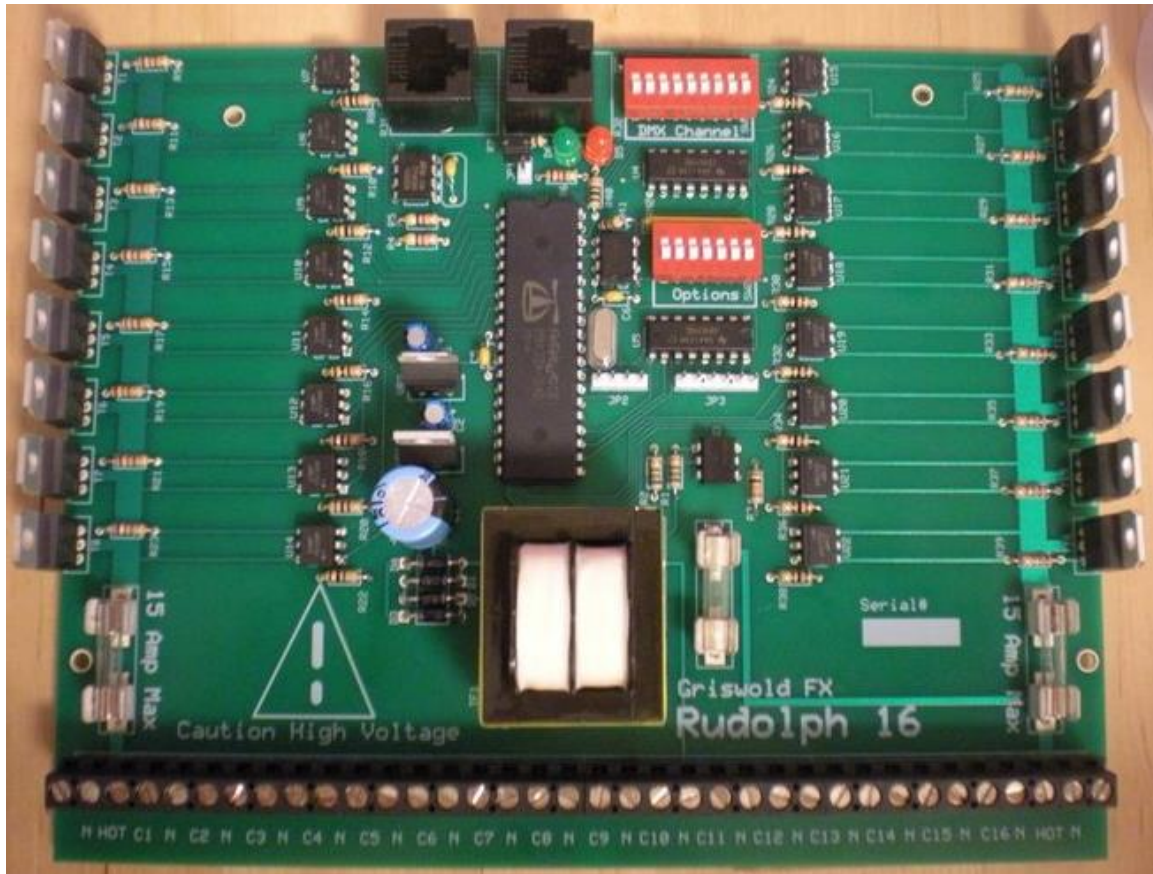# Griswold FX

Rudolph 16

Operation Manual v1.0

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Introduction

The Griswold FX model Rudolph 16 is a 16 channel dimming light controller. It is designed to control 110 and 220 volt holiday lights. The controller receives illumination level information via the DMX512 protocol. It can be controlled by a DMX512 enabled PC or a DMX512 lighting console. Up to 32 Rudolph 16s can be daisy-chained together to form a fully populated DMX512 universe. The Rudolph 16 is considered a "slave" device in a DMX512 network.

DMX512 is the de facto standard for industrial light control.

Getting Started

The first thing you should do when setting up your light show is to perform a logical channel layout of your DMX512 network. Each channel of your Rudolph 16 is mapped to a DMX512 channel. Channel 1 of your Rudolph 16 is mapped to the channel that is set by the "DMX Channel" selector switch. Each of the next 15 channels is mapped between the DMX512 network and the Rudolph 16 in ascending order. It is a good idea to choose a particular lighted feature, such as a window, and assign it to a channel. See the back of this manual for a worksheet to keep track of what features map to what channels.

The DMX channel selector is a DIP switch module with 9 switches on it. There are 512 different combinations that can be selected by this switch. Here is a list of common DMX Channel settings used for the Rudolph 16. 0=Off 1=On

DMX Channel	Switch Settings 123456789	DMX Channel	Switch Settings 123456789
1	100000000	257	100000001
17	100010000	273	100010001
33	100001000	289	100001001
49	100011000	305	100011001
65	100000100	321	100000101
81	100010100	337	100010101
97	100001100	353	100001101
113	100011100	369	100011101
129	100000010	385	100000011
145	100010010	401	100010011
161	100001010	417	100001011
177	100011010	433	100011011
193	100000110	449	100000111
209	100010110	465	100010111
225	100001110	481	100001111
241	100011110	497	100011111

Network Wiring

The physical network connection for the Rudolph 16 is Category-5 cable terminated with RJ-45 connectors. Each Rudolph 16 is daisy chained. **The last controller located at the end of the chain must have the termination jumper enabled.** The maximum total cable length is 3937 feet (1200 meters).

Terminated
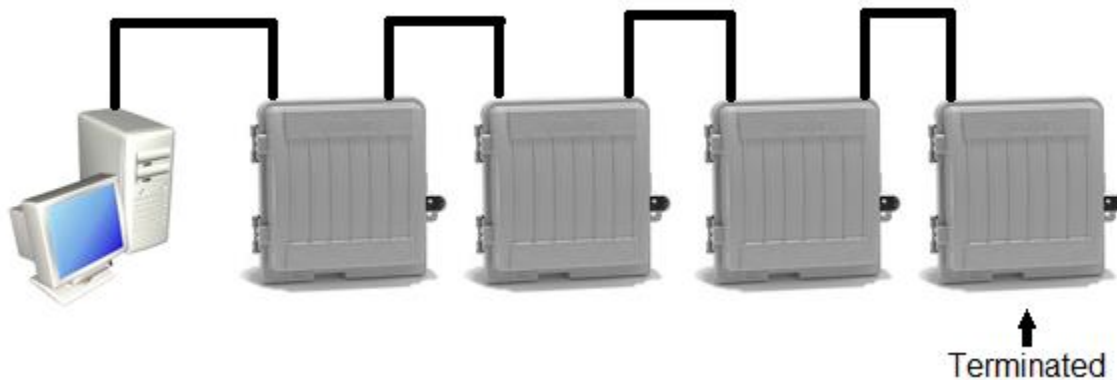
High Voltage Wiring

The Rudolph 16 has two separate banks of channels that receive power from two separate power inputs. Bank #1 consists of channels 1 through 8. Bank #2 consists of channels 9 though 16. Bank #2 powers the microprocessor and related components. Each bank is capable of delivering up to 15 Amps of current total to its 8 channels. Each channel is limited to 8 Amps of current. If any single channel passes more than 8 Amps of current, it will cause permanent damage to the Rudolph 16.

The power input for Bank#1 is located at the far left of the power terminal strip. (Pictured above) The neutral (white) power wire connects to the very 1st "N" terminal. The hot (black) power wire connects to the terminal marked "HOT". It is the 2nd from the left.

Ensure that you do not have a load of more than 2 amp per channel without a heatsink.

Mains power can be deadly! Mains power can cause fires!
Be smart. Think about what you are doing. Play it safe!

We are not responsible for your wiring, soldering, mounting, or assembly of the Griswold FX Rudolph 16.