OPTOELECTRONICS INC

CX12 OPERATORS MANUAL

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INTRODUCTION

This document describes the operation of the Optoelectronics, Inc. Model CX12 RS-232C Interface Converter. The CX12 converts TTL serial interface signal levels to RS-232C levels compatible with most personal computers. In addition, the CX12 allows up to four different Optoelectronics devices equipped with serial ports to be connected to one RS-232C personal computer serial port in a star network configuration.

EXTERNAL CONNECTIONS

The CX12 has two external connections located on the rear panel, and four external connections located on the front panel. The functions of each of the interfaces are briefly described below. A more detailed discussion of the functions of the external connections is given in the OPERATION section.

Power

DC power is supplied to the CX12 through the POWER connector, a standard 2.1 mm DC power jack located on the rear panel (9 - 15 VDC, 100 mA max., center positive).

RS-232C

The RS-232C connector, located on the rear panel, is a DB25S (25-pin female) connector used to connect the CX12 to a personal computer serial port. The connector pinout is such that a "straight-through" cable is required for the connection (i.e., connection does not require a null modem adapter).

Serial Data

There are four identical serial data connectors, labeled (1) through (4), located on the front panel. These miniature stereo phone jacks are used to connect up to four Optoelectronics devices equipped with serial ports to the CX12. The "TIP" carries TTL transmit data from the CX12, the "RING" carries TTL receive data to the CX12, and the "SHIELD" provides the return for both. This pinout convention is such that a standard stereo audio patch cable can be used to connect the CX12 to other Optoelectronics devices equipped with serial ports.

FRONT PANEL INDICATOR

The PWR indicator, located on the front panel, illuminates whenever DC power is supplied to the unit.

OPERATION

In this section, connection and operation of the CX12 are described in detail.

RS-232C Serial Ports

Most personal computers are equipped with at least one, and usually two, RS-232C asynchronous serial ports. In the case of IBM PC compatibles, these RS-232C ports are usually referred to as COM1 and COM2. Often, a mouse is connected to one of these ports. Although this type of personal computer is most common, the CX12 can be connected to any computer with an RS-232C port. However, the OptoLog™ software supplied with the CX12 runs only on IBM PC compatible personal computers.

Optoelectronics TTL serial ports

Many Optoelectronics products are equipped with a TTL asynchronous serial interface which allows the unit to be connected to a personal computer for the purpose of remote control and/or automatic data logging. This three-wire interface has different voltage levels and data polarity than the standard RS-232C interface. The CX12 can connect to as many as four different Optoelectronics devices equipped with serial ports.

Connection

To connect an Optoelectronics product equipped with a TTL serial port to a personal computer equipped with an RS-232C serial port, perform the following steps:

1. Connect the male end of the supplied RS-232C cable to the RS-232C connector located on the rear panel of the CX12.

2. Connect the female end of the RS-232C cable to the RS-232C connector on your personal computer. Consult your personal computer manual if necessary.

3. Connect one end of the supplied miniature serial data cable to one of the four serial data connectors located on the front panel of the CX12.

4. Connect the other end of the miniature serial data cable to the serial data connector on the Optoelectronics product.

5. If more than one device is to be connected to the CX12, repeat steps 3 and 4 above for each additional device using optional miniature serial data cables. Up to four devices can be connected to the CX12.

6. Connect the cable plug of the supplied AC adapter to the POWER jack on the rear panel of the CX12.

7. Plug the AC adapter into a working 120V AC outlet. The PWR indicator on the front panel of the CX12 should be illuminated. The system is now ready for use.

Using the CX12

At this point, operation of the CX12 is really the operation of the personal computer and the devices connected to it via the CX12. If one of the Optoelectronics frequency counters equipped with a serial port is connected, then the OptoLog™ frequency logging software included with the CX12 may be used. As mentioned earlier, OptoLog™ only runs on IBM PC compatible personal computers. Consult the "README.DOC" file on the distribution disk for information on how to install and run OptoLog™. As new products are introduced, and existing products improved, Optoelectronics will develop new software to help make the most of their powerful features. Consult the factory for more information.

Another way to make use of the serial port on Optoelectronics products is to use a terminal emulator program running on your personal computer. This is the same type of program that is used to communicate with another computer via a modem. With this setup, the user can type commands to the Optoelectronics product or products connected to the computer, and observe the responses. Here are some hints to help you get started:

1. Be sure that you have selected the correct COM port on your terminal emulator program.

2. Be sure that the communications parameters (baud rate, data bits, parity, and stop bits) selected on your terminal emulator program match the parameters of the connected device.

3. You may want to enable "local echo" on your terminal emulator program so that you can see your typed commands, as well as the responses.