

OPTO 22

DATA SHEET

Form 469-021029

INTERFACES TRADITIONAL STANDALONE ADAPTER CARDS

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Part Numbers	Description
AC30A	4-wire RS-422/485 Multidrop Repeater 120 VAC
AC30B	4-wire RS-422/485 Multidrop Repeater 220 VAC

Description

The AC30A and AC30B adapter cards provide the ability to extend a multidrop RS-422/485 communications link beyond 5,000 feet and also allow branching from an RS-422/485 link. When used as a repeater, the AC30A/B retransmits data on the communications link, extending the total cable length an additional 5,000 feet. A star network topology can also be implemented using up to 100 AC30A/B adapter cards on a single RS-422/485 data link.

The AC30A/B operates at baud rates up to 38,400 in a half-duplex mode using two twisted pairs and a signal common.

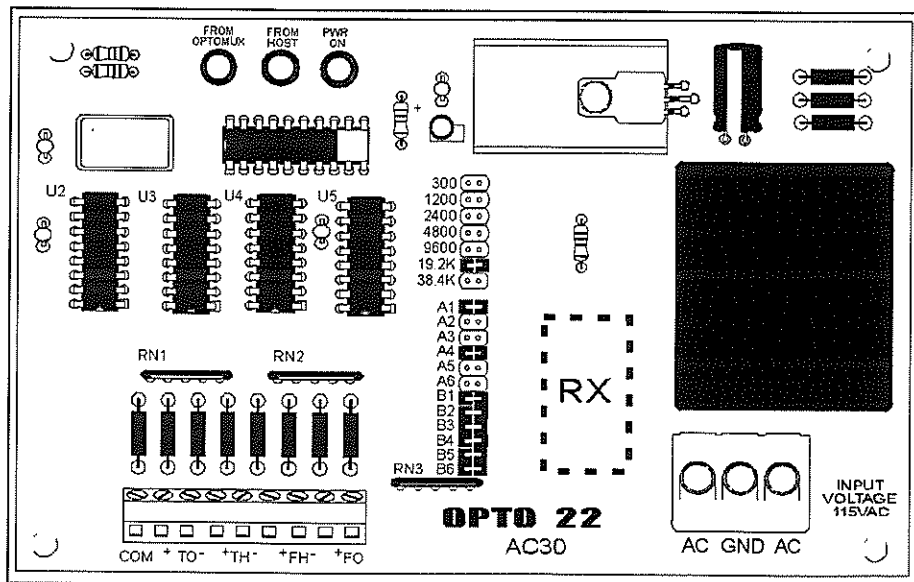
The AC30A includes an onboard 115 VAC power supply and the AC30B includes a 220 VAC power supply.

Introduction

The AC30A/B is an adapter card that extends or branches an Opto 22 RS-422/485 serial link. This allows the addition of up to 5,000 feet of cable for long runs. The AC30A/B uses four wires (two twisted pairs) on both the host (TO/FO) and slave (TH/FH) ports. The AC30A/B is not compatible with two-wire RS-485 communications links.

Summary of Features

- RS-422/485 balanced line drivers
- Operates with up to 5,000 feet of cable
- Visual transmit, receive and power indicators
- Transmission speeds from 300 to 38.4K baud
- Multidrop repeater station
- Network branching
- Onboard power supply
- Full termination and biasing options on all RS-422/485 lines



Opto 22 AC30 Adapter Card

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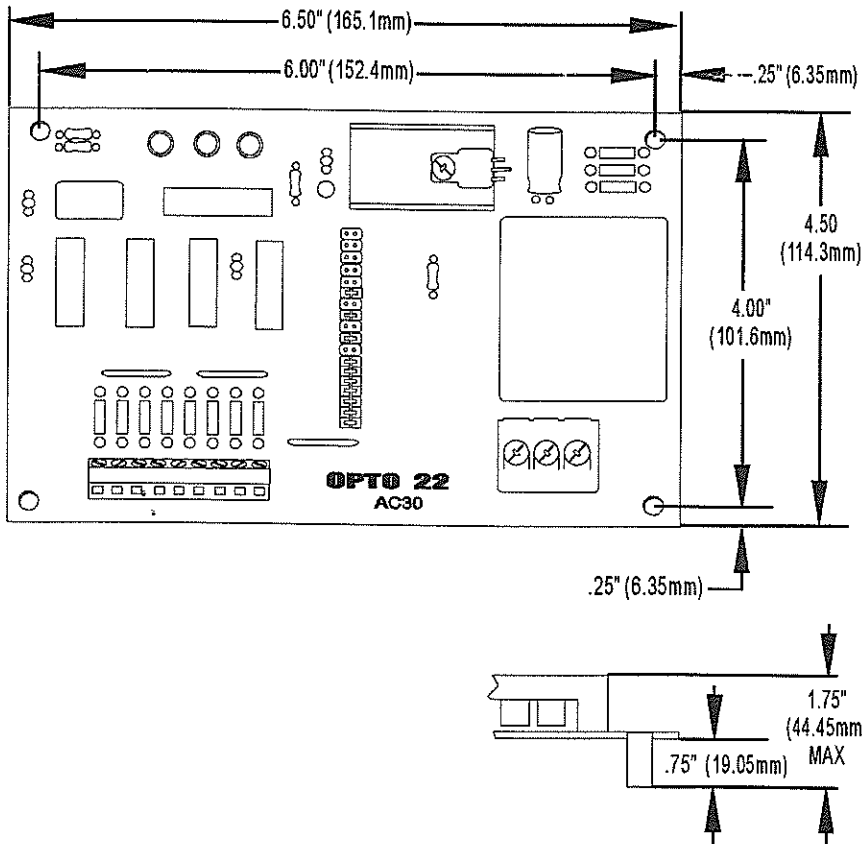
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Specifications

Power Requirements AC30A AC30B	115 VAC \pm 10 VAC @ 50-60 Hz 220 VAC \pm 20 VAC @ 50-60 Hz
Power Consumption	0.1 amps @ 115 VAC 5 watts (dissipation)
Operating Temperature Range	0° to 70° C 0 to 95% Humidity (non-condensing)
Isolation	None
Interface	RS-422/485 (4-40 screw terminals)
Baud Rate	Up to 38,400 baud
Distance	Up to 5,000 feet (RS-422/485)
Communications	Half-duplex over two twisted pairs plus a signal common with automatic transmit enable for multidrop
Indicators	Transmit, receive, and power

Dimensions



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Configuration

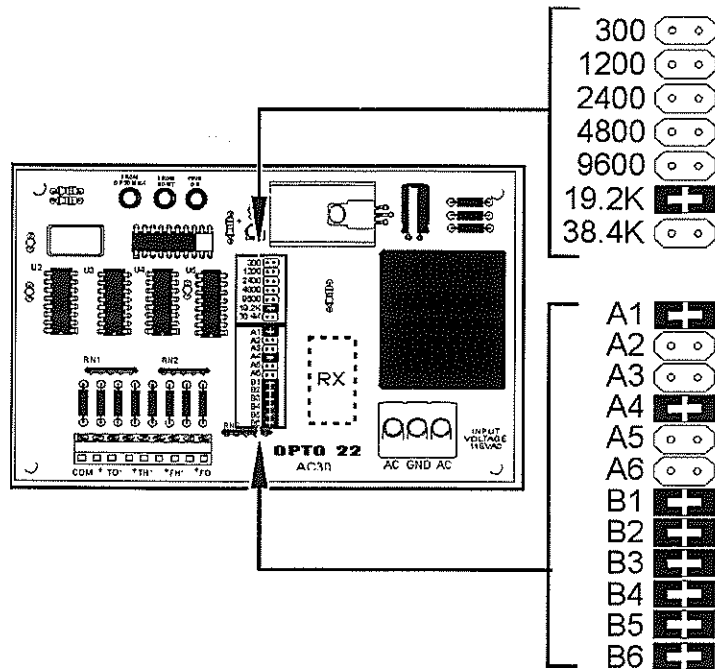
Before using the AC30A/B, it must be configured by selecting the appropriate termination, biasing, and baud rate jumpers. To set the baud rate, install jumper of desired setting. The options are 300, 1200, 2400, 4800, 9600, 19200 and 38400 baud.

Installing Jumpers B1 and B4 connects 220 Ohm terminating resistors from + to - on the transmitter (to Optomux) and receiver (from Optomux), respectively. In a normal Optomux network these jumpers should both be installed.

Installing Jumpers A1 and A4 connects 220 Ohm terminating resistors from + to - on the transmitter (to Host) and receiver (from Host), respectively. In a normal Optomux network these jumpers should both be installed.

The passive pull up/pull down resistors (A2, A3, B5, B6, A5, A6, B2, B3) should be installed only if no other device on the links have pull up/pull down resistors active.

On an Optomux link, if the AC30A/B is used as a repeater, the jumper setting should be A1, A4, and B1 through B6.



FACTORY SETTING FOR REPEATER OPTOMUX

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Installation

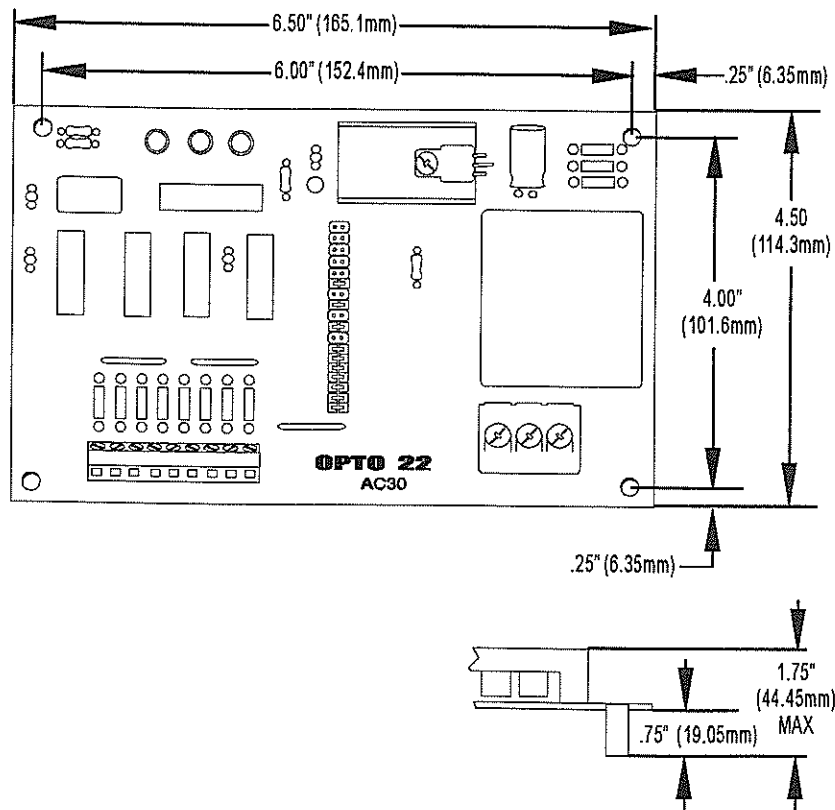
Equipment Required

The following should be available during AC30A/B installation.

- Medium size flat-blade screwdriver
- Small size flat-blade screwdriver
- Wire stripper
- Variety of color-coded wires
 - 22-gauge for data link
 - 18-gauge stranded for power supply wiring.

Mounting the AC30A/B

The AC30A/B can be mounted in any attitude on any flat surface. The AC30A/B is supplied with $\frac{3}{4}$ " standoffs. All the standoffs should be using #6 hardware to provide maximum physical strength. Leave sufficient space around the AC30A/B for data link and power wiring.

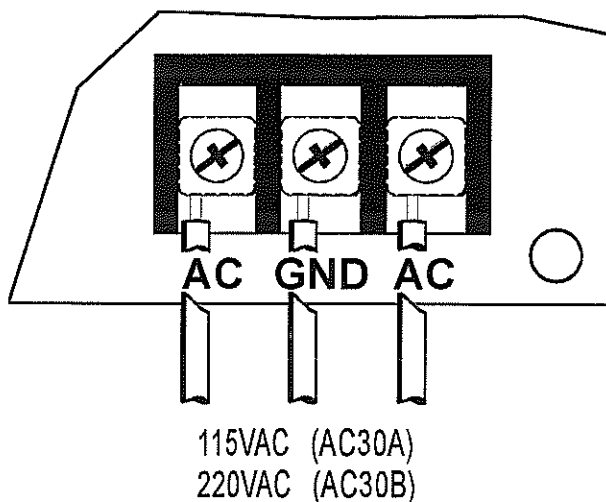


Power Supply Requirements

The AC30A and AC30B contain onboard DC power supplies. The AC30A requires 110 VAC and AC30B requires 220 VAC.

Connecting AC Power to AC30A and AC30B

Caution: Ensure that AC power is OFF while making or removing all connection to the AC30A/B.



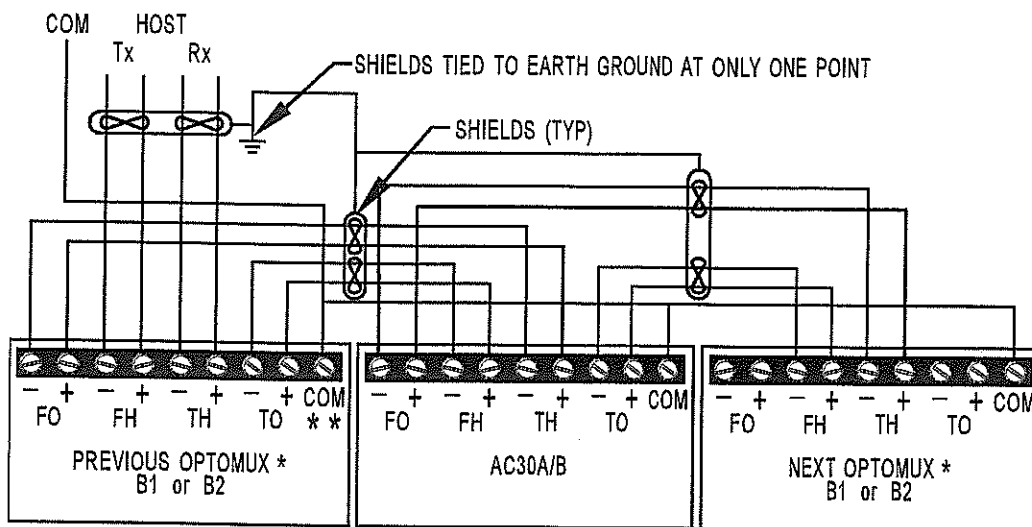
Connecting Common to Ground on AC30A and AC30B

The AC30A and AC30B provide the ability to tie the RS-422/RS-485 Common terminal to ground by installing a ½ watt, 100 ohm resistor at location RX. This is not normally necessary. Note that RS-422 communication links should only be grounded on one end, if at all, to avoid ground loops.

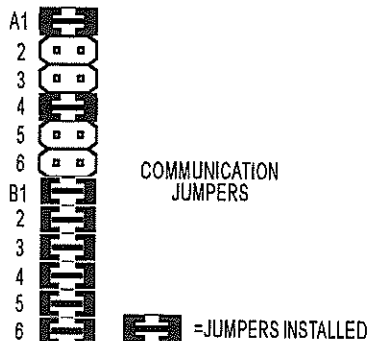
Connecting the Data Link

Multidrop Repeater Station

Examine the diagram below for installing the AC30A/B in your Optomux network as a multidrop repeater station.



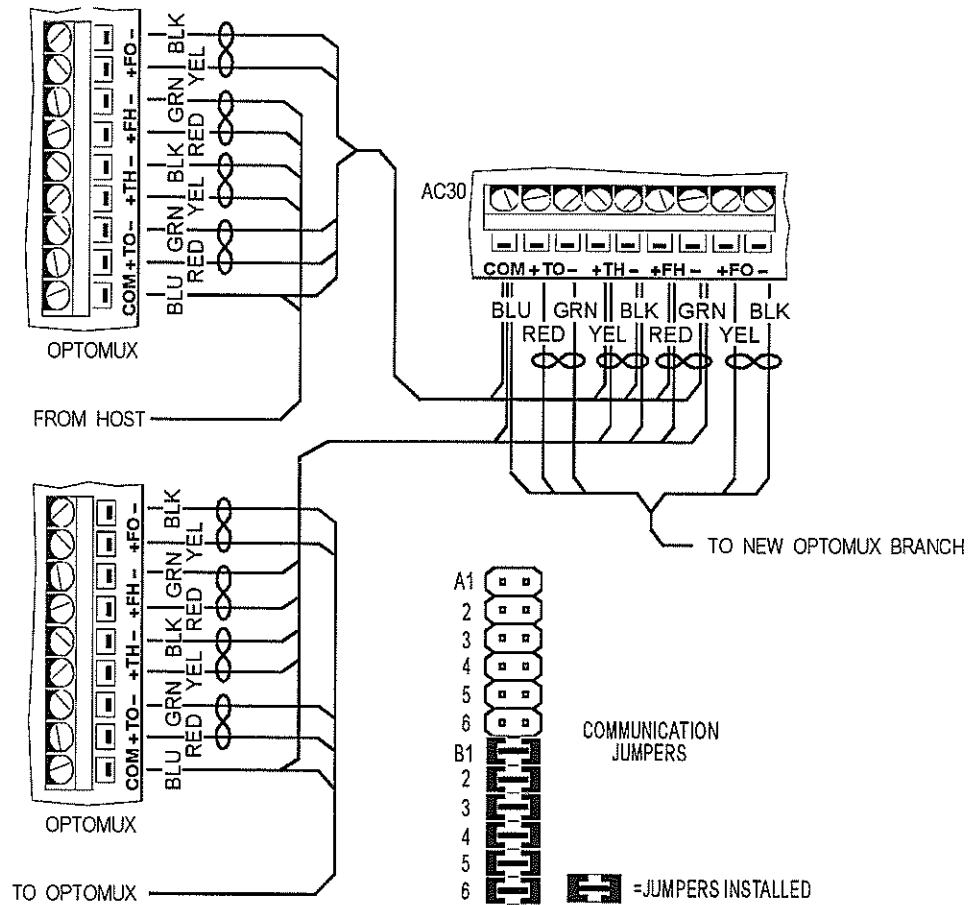
* B2 COMMUNICATION CONNECTIONS ARE MADE TO THE RACK (PB4AH, PABAH OR PB16AH), NOT TO THE BRAIN BOARD.
 ** DO NOT CONNECT ANY *COM* POINT TO EARTH GROUND.



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Network Branch

Examine the diagram below for installing the AC30A/B in your Optomux network as a network branch.



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AC30A/B Schematic

