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Form 464-960930

Part Number	Description
B2	16-Channel Analog Brain Board, Optomux Protocol

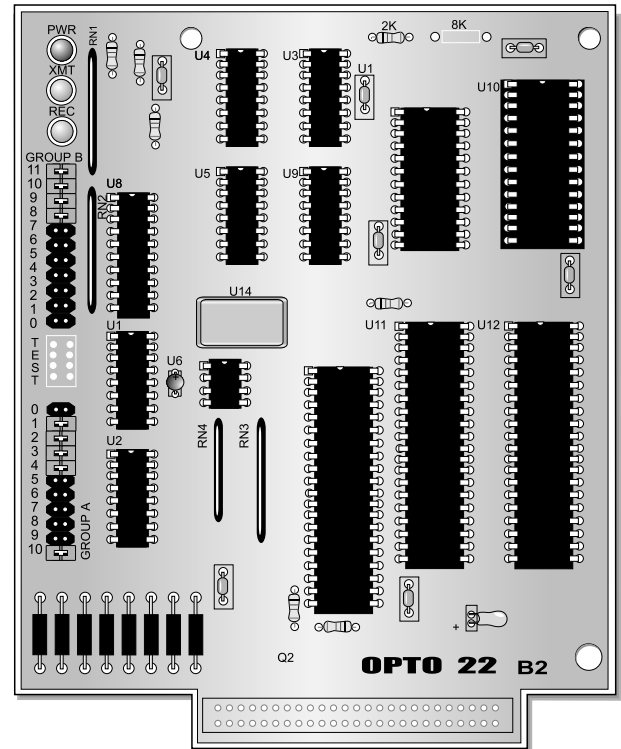
description

The B2 Analog Optomux brain board is an intelligent analog controller that operates as a slave device to a host computer. Each B2 brain board contains a microprocessor that provides the necessary intelligence to carry out serial communications with a host computer and also perform control functions at each channel of I/O. The B2 brain boards are designed to mount onto any Opto 22 standard analog I/O mounting rack.

When combined with an I/O mounting rack, the B2 brain board can perform the following functions:

- Read Analog
- Write Analog
- Input Averaging
- High/Low Limit Monitoring
- Peak and Valley Recording
- Gain and Offset Calculations
- Output Waveform Generation

Communication with a host computer is via an RS-422/485 serial link composed of a dual twisted pair cable that connects to each Optomux station. The serial data link operates at selectable baud rates from 300 to 38.4k baud. Optomux stations can be configured for either multidrop or repeat mode operation. In multidrop mode, up to 100 Optomux stations can be networked over a total line length of up to 5,000 feet. In repeat mode operation, up to 256 Optomux stations can be networked with up to 5,000 feet between stations.



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specifications

B2 specifications

Power Requirements	5 VDC \pm 0.1 V @ 0.5 amps
Operating Temperature	0° to 70°C 95% humidity, non-condensing
Interface	RS-422/485 communication 50-pin female header connector to I/O mounting racks
Data Rates	300, 600, 1200, 2400, 4800, 9600, 19200, and 38400 baud
Range Multidrop Repeat	up to 5,000 feet total length* 100 Optomux stations maximum* up to 5,000 feet between stations 256 Optomux stations maximum
Communications	Full duplex, two twisted pairs, and a ground
Indicators	Power, transmit, and receive
Options Jumper selectable	Address (0 to 255) Baud rates Multidrop or repeat mode 2 or 4-pass protocol

* Extend line length and/or number of Optomux stations with the AC30A/B network adapter.

ERROR CODES

Optomux Detected Errors:

- 1 Power Up Clear Expected
- 2 Undefined Command
- 3 Checksum Error
- 4 Input Buffer Overrun
- 5 Non-printable ASCII Character Received
- 6 Data Field Error
- 7 Serial Watchdog Timeout
- 8 Invalid Limit Set

OptoWare Driver Detected Errors:

- 20 Invalid Command Number
- 21 Invalid Module Position
- 22 Data Range Error
- 23 Invalid First Modifier
- 24 Invalid Second Modifier
- 25 Invalid Address
- 27 Not Enough Return Data
- 28 Invalid Return Data
- 29 Turnaround time out (Optomux did not respond within the specified time interval)
- 30 Input Buffer Overrun
- 31 Checksum Error
- 33 Send Error (Message cannot be sent out; probable serial port problem)
- 34 Incorrect Command Echo In Four-Pass

specifications **ANALOG COMMAND SET**

System Commands

POWER UP CLEAR
RESET
SET TURNAROUND DELAY
SET ANALOG WATCHDOG DELAY
SET ANALOG WATCHDOG TIMEOUT
SET OPTOMUX PROTOCOL
IDENTIFY OPTOMUX TYPE

Configure Commands

CONFIGURE POSITIONS
CONFIGURE AS INPUTS
CONFIGURE AS OUTPUTS
SET TEMPERATURE PROBE TYPE

Read And Write Commands

WRITE ANALOG OUTPUTS
READ ANALOG OUTPUTS
READ ANALOG INPUTS
AVERAGE AND READ INPUT
UPDATE ANALOG OUTPUTS
START AVERAGING INPUTS
READ AVERAGE COMPLETE BITS
READ AVERAGED INPUTS
READ CONFIGURATION
READ TEMPERATURE INPUTS
READ AVERAGE TEMPERATURE INPUTS

Input Range Commands

SET INPUT RANGE
READ OUT-OF-RANGE LATCHES
READ AND CLEAR OUT-OF-RANGE LATCHES
CLEAR OUT-OF-RANGE LATCHES
READ LOWEST VALUES
READ AND CLEAR LOWEST VALUES
CLEAR LOWEST VALUES
READ PEAK VALUES
READ AND CLEAR PEAK VALUES
CLEAR PEAK VALUES

Gain And Offset Commands

CALCULATE INPUT OFFSETS
SET INPUT OFFSETS
CALCULATE AND SET INPUT OFFSETS
CALCULATE GAIN COEFFICIENTS
SET GAIN COEFFICIENTS
CALCULATE AND SET GAIN COEFFICIENTS

Waveform Commands

SET OUTPUT WAVEFORM
TURN OFF EXISTING WAVEFORMS
ENHANCED OUTPUT WAVEFORM
CANCEL ENHANCED WAVEFORMS

Driver Commands

IBM PC SOFTWARE DRIVER
DRIVER COMMANDS
SET DRIVER PROTOCOL
SET TURNAROUND DELAY
SET SERIAL PORT NUMBER
SET NUMBER OF RETRIES
CONFIGURE SERIAL PORT