



Optically Isolated Analog and Digital I/O Module Rack On EPIC-Footprint OPTO104



Features

- ✓ Accepts up to eight G4 or G5 OPTO modules for isolated digital and analog I/O
- ✓ Remote slave OPTO104 boards can be added via a ribbon cable
- ✓ Rotary encoder input
- ✓ LCD/keypad interface
- ✓ CAN bus
- ✓ Wide supply voltage range
- ✓ General-purpose status LEDs
- ✓ Onboard temperature sensor

The OPTO104 is a user-configurable I/O board ideal for use in industrial systems requiring high voltage isolation for analog and digital I/O. Standard PC/104 CPU boards plug onto the OPTO104. It accepts up to eight optically-isolated I/O modules. The G4 module series provides either AC or DC I/O with a wide range of voltages. The G5 module series provides an analog interface for voltage or temperature measurements.

The OPTO104 has a CAN bus interface and an onboard temperature sensor. The CAN interface allows digital I/O, analog I/O, control commands, and temperature data to be easily communicated in a factory.

The OPTO104 also provides hardware interfaces to a wide variety of industrial-user interface devices. These devices include a rotary encoder, an alphanumeric LCD, a keypad, and onboard general-purpose LEDs.

Software Support

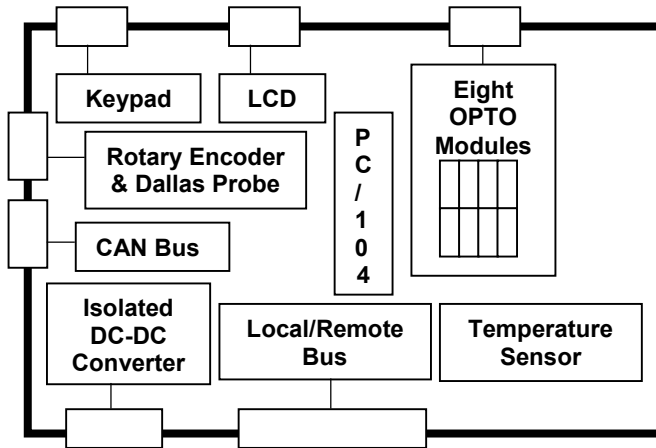
Example software included for DOS, Linux

Compatible Hardware

Any Micro/sys CPU with PC/104 expansion connector

Mounting/Packaging

*Enclosure, ENC104-4
Standoffs, STDOFF104*



Specifications:

Mechanical:

- ❑ EPIC-footprint board size with corner mounting holes
- ❑ 4.53" x 6.50" x 0.6" (If OPTO modules are installed, the height may be as much as 2.55")

Power Requirements:

OPTO104 +5v \pm 5% at 300mA Max, plus current needed for installed I/O modules. Board with 8 modules installed 500mA Max.

OPTO104-12 9-18V
 OPTO104-24 18-36V
 OPTO104-48 36-75V

Environmental:

- ❑ -40 - +85°C operating
- ❑ -40 - +85°C storage
- ❑ 5%-95% relative humidity, non-condensing

PC/104 Interface:

- ❑ 8-bit PC/104 transfers with 16-bit pass-through connector
- ❑ Jumper selectable base address range from 000h to 3F0h
- ❑ Occupies 16 byte-wide addresses

DC-DC Converter Input:

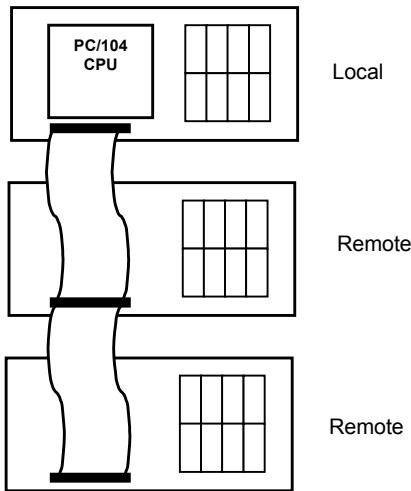
- ❑ DC-DC converter option at power input allows wide voltage ranges (9-18V, 18-36V, 36-75V)
- ❑ Isolates OPTO104 from power supply input voltage
- ❑ On-board jumper can bleed off static charge from the output (caused by common-mode leakage current) to the safety ground or the -IN. This lowers the susceptibility to ESD.

OPTO Modules:

- ❑ Accepts eight G4 or G5 modules
- ❑ Digital and analog modules may be mixed
- ❑ Up to 4000 volts of opto-isolation
- ❑ Remote (having no CPU) OPTO104 boards may be connected with 26-wire ribbon cable

Alphanumeric LCD Interface:

- ❑ Connects to a wide variety of alphanumeric displays
- ❑ 8-data lines and RS, RW, and CE control lines
- ❑ On-board or off-board contrast adjustment



Keypad Interface:

- 4 x 4 matrix keypad
- 10k pull-ups to +5V

CAN Bus:

- Uses Intel 82527 CAN controller
- Supports CAN specification 2.0, Parts A and B
- Jumper selectable termination

Rotary Encoder Interface:

- Provides general-purpose quadrature input
- Connects to Grayhill 61K128-050 or equivalent

Watchdog Timer:

- 1.6 second timeout
- Resets all output modules upon timeout

Dallas Probe Interface:

- Connects to Dallas iButton Probe
- 1-Wire interface

Onboard Temperature Sensor:

- Dallas DS75U temperature sensor
- Measures board temperatures of -40° to $+85^{\circ}$ C

External Connections:

- Two 8-point screw terminal strips for isolated I/O
- Two 5-point screw terminal strips for non-isolated I/O
- One 26-pin header for local/remote OPTO bus
- One 6-point screw terminal strip for a rotary encoder and Dallas iButton Probe
- One 16-pin header for a matrix keypad
- One 34-pin header for an alphanumeric LCD
- One 3-pin header for off-board LCD contrast potentiometer
- One 3-point screw terminal strip for CAN bus

Ordering Information:

OPTO104	8 G4/G5 module sockets, CAN bus, 5V input voltage
OPTO104-12	8 G4/G5 module sockets, CAN bus, 9-18V input voltage
OPTO104-24	8 G4/G5 module sockets, CAN bus, 18-36V input voltage
OPTO104-48	8 G4/G5 module sockets, CAN bus, 36-75V input voltage

Related Products:

CA5050	34-pin to 34-pin ribbon cable
CA5051	26-pin to 26-pin ribbon cable
LC0240	2 line by 40 character LCD
CA4129	OPTO104 to LC0240 cable
KEYPAD16	Keypad, 4 x 4, Customizable Legends
CA4130	OPTO104 to KEYPAD16 cable
STDOFF104	Two .6" nylon standoffs, machine screws, and nuts for mounting
OMD-xxx	Opto-isolated digital modules from Opto 22 and Grayhill. See OMD-xxx data sheet for details

OMA-xxx Opto-isolated analog
modules from Grayhill. See
OMA-xxx data sheet for
details