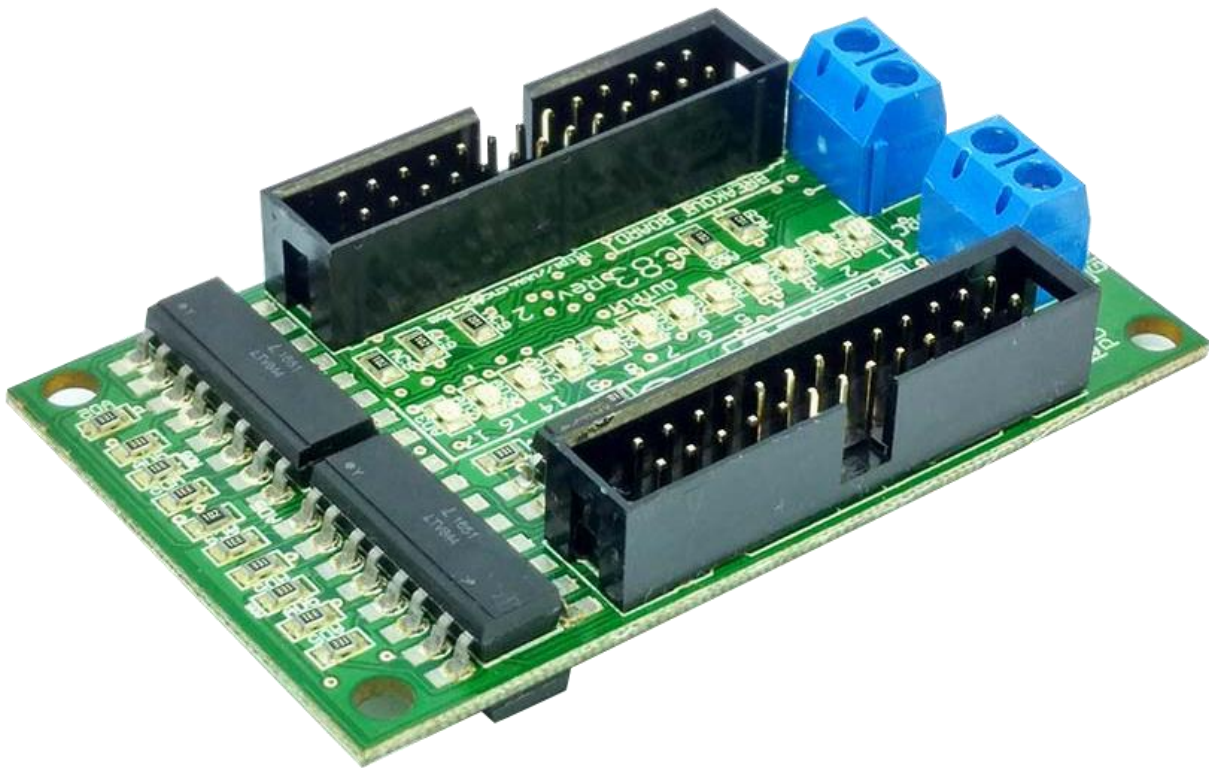


**C83 - OPTOISOLATED  
Rev.2**



MARCH, 2018

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# USER'S MANUAL

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## 1.0 OVERVIEW

This card has been designed to provide an Optoisolated interface between motion controller and breakout board.

## 2.0 FEATURES

- **Fully Optoisolated Inputs and Outputs.**

The card isolates connections to protect your computer from short-circuit. An opto-isolator is an integrated circuit that transmits the signal through an encapsulated LED and phototransistor. When the signal is on, the LED lights up, the phototransistor captures it and relays the signal. The signals are transmitted through light and not through physical connections. In this way, a power surge has no way of reaching your computer. That is the reason why this card has two power connections. One power connection is power powering the circuit that interacts with the PC; the other connection is for powering the circuit that interacts with your CNC system. Extra precautions have been taken when designing this circuit, by taking into consideration the extremely high voltages that stepper drivers can achieve and lack of experience that some users could have in wiring circuits of this kind. This board keeps the grounds of the PC isolated from the grounds of the rest of your CNC circuit.

- **Support for up to 150 KHz optoisolation on step and direction signals.**

- *All TTL 5VDC signals*

- *Buffered outputs.*

- *Status LEDs on all inputs and output connections.*

- **IDC26 Connections.**

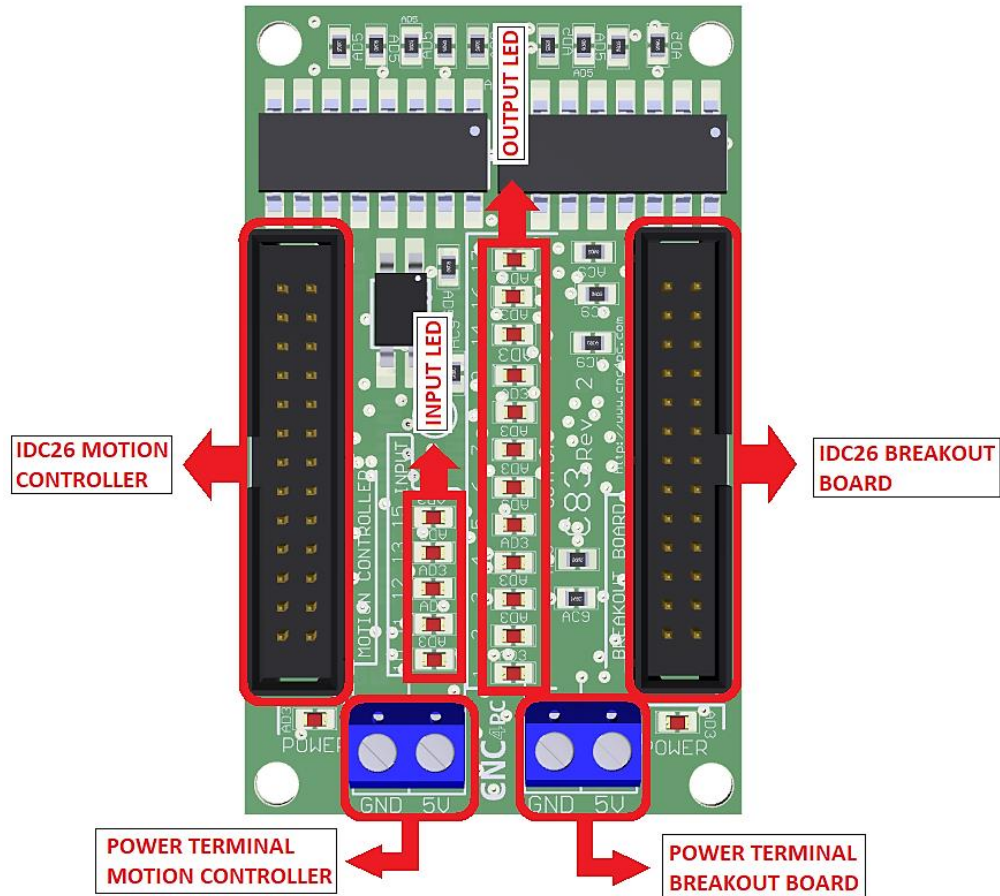
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### 3.0 SPECIFICATIONS

DIGITAL INPUT SPECIFICATIONS	
Numbers of inputs	5
On-state voltage range	2 to 5V DC
Maximum off-state voltage	0.8V
Typical signal delay	2.8uS

DIGITAL OUTPUT SPECIFICATIONS	
Number of outputs	12
Maximum output voltage	(5V power supply voltage) + 0.5V
Typical output current	20mA
Maximum off-state voltage	0.44 V
Typical signal delay	3uS
Time of transition to high impedance state	120mS*

## 4.0 BOARD DESCRIPTION



## 5.0 REQUIREMENTS

### 5.1 Power Requirements

It requires two +5VDC@250mA power supply to operate

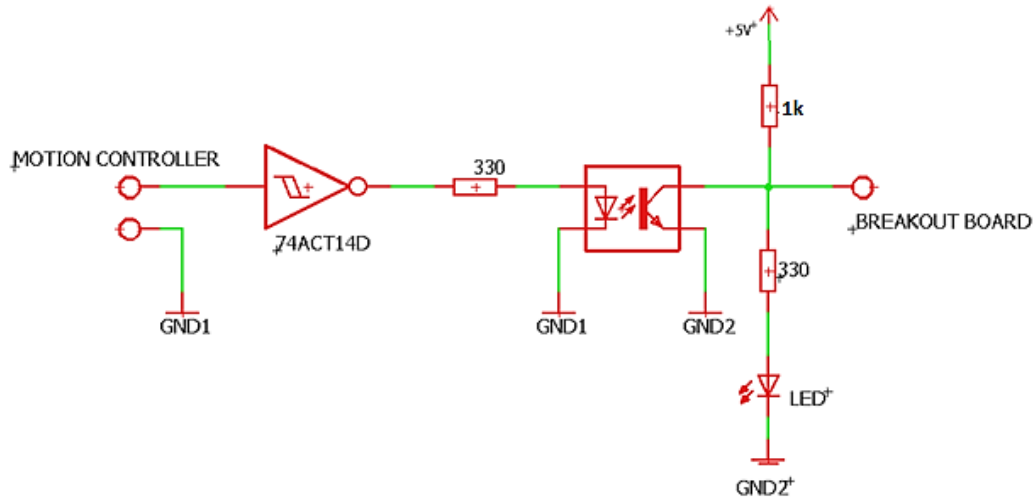


#### WARNING

Check the polarity and voltage of the external power source and connect the 5VDC and GND. Overvoltage or reverse-polarity power applied to these terminals can cause damage to the board, and/or the power source.

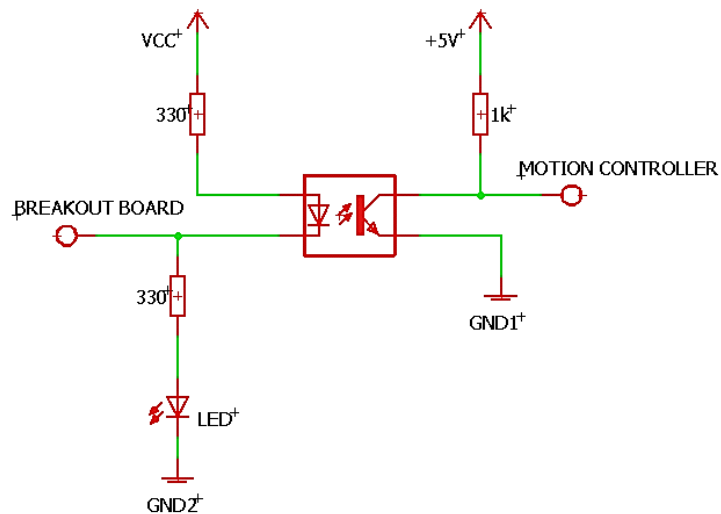
## 6.0 SIMPLIFIED FUNCTIONAL

### 6.1 Outputs 1,2,3,4,5,6,7,8,9,14,16,17.



Simplified functional block diagram for the outputs.

### 6.2 Input 10,11,12,13 and 15.



Simplified functional block diagram for the inputs.

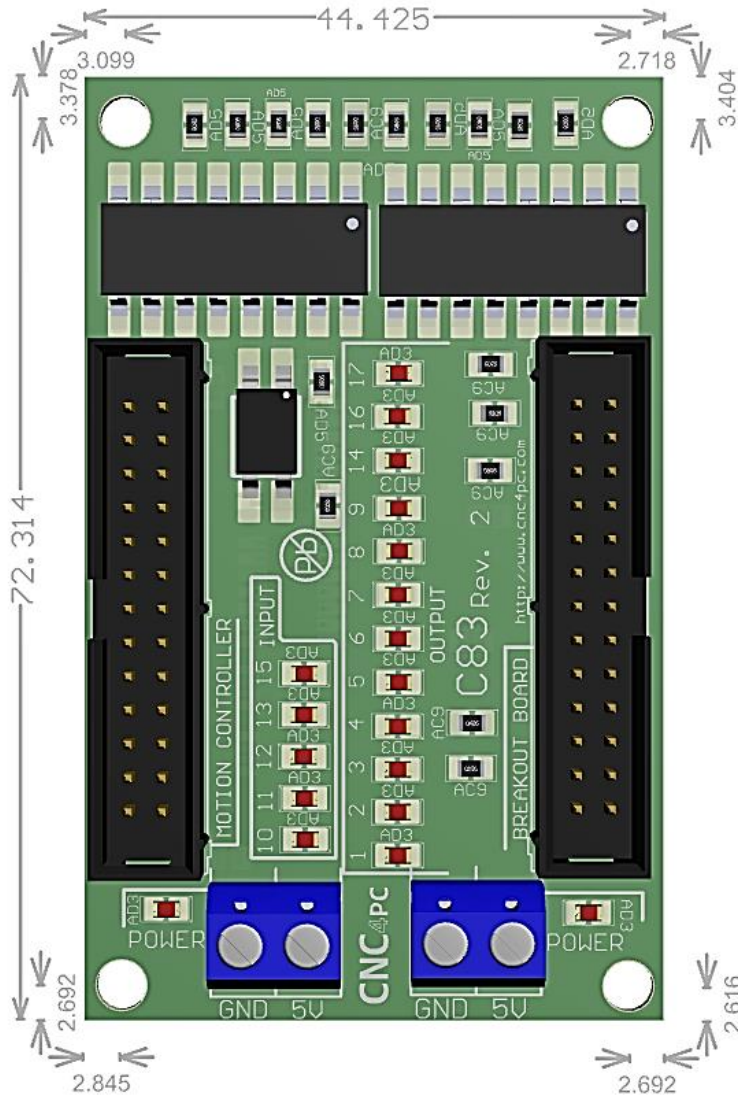
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## 7.0 TYPICAL CONNECTIONS

### 7.1 Optoisolated connection with UC100, C84 and C83.



## 8.0 DIMENSIONS



All dimensions are in Millimeters.

**Fixing holes (4mm).**

### DISCLAIMER

Use caution. CNC machines can be dangerous machines. Neither DUNCAN USA, LLC nor Arturo Duncan are liable for any accidents resulting from the improper use of these devices. This product is not a fail-safe device and it should not be used in life support systems or in other devices where its failure or possible erratic operation could cause property damage, bodily injury or loss of life.