

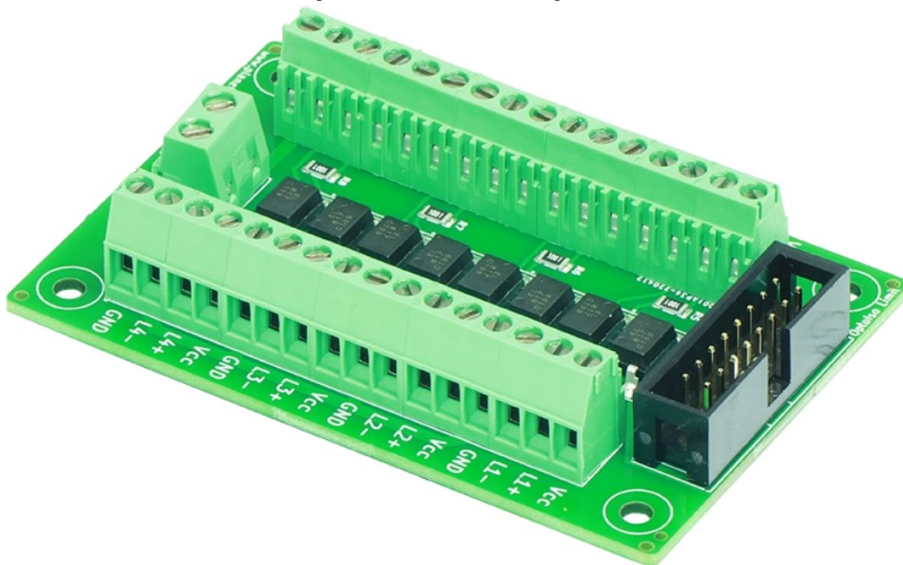
Planet CNC Optoliso Limit Adapter User Manual

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Planet CNC Optoliso Limit Adapter User Manual



Disclaimer

OPTOISO LIMIT ADAPTER IS PROVIDED TO YOU "AS IS," WITHOUT WARRANTY. THERE IS NO WARRANTY

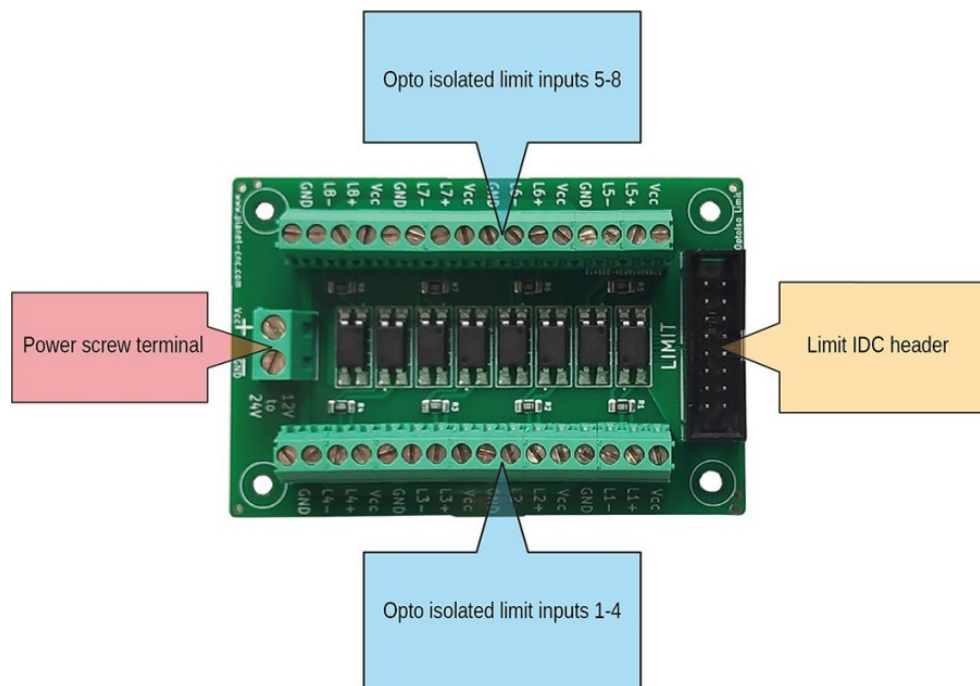
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Introduction

Overview

Optoliso Limit adapter is a device that opto-isolates Mk3 controller limit inputs from external devices such as limit proximity sensors, limit micro switches and similar devices. Its main function is to protect the limit input circuitry of Mk3 controller from any damage that may occur due to improper wiring or power surges at the side of externally connected device. Also, using this adapter reduces electrical noise influence at controller limit inputs and makes up for easy connection of proximity switches.

Features and specifications:



1-8 Opto-isolated Limit inputs:

- Single Optoliso Limit adapter offers 8 opto-isolated input channels
- Limit Inputs can be used with:
 - limit switches
 - PNP and NPN proximity sensors
 - other switching devices

Input IDC header:

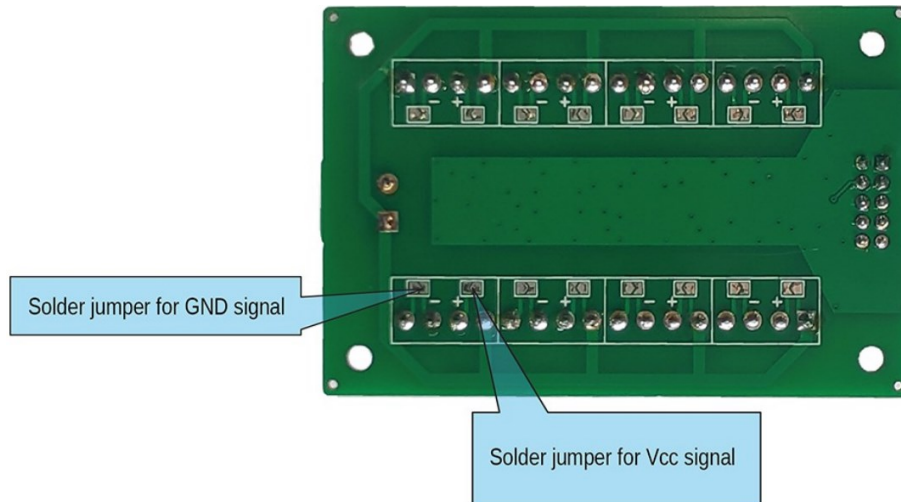
- this header is used to connect Optoliso Limit adapter with the Mk3 controller Limit header.

POWER screw terminal:

- **External power supply screw terminal connector.**
 - **Min voltage value:** 12VDC
 - **Max voltage value:** 24VDC

Solder jumpers:

Solder jumpers are located at the bottom side of the adapter. Instead of manually wiring the LI- or LI+ terminals of dedicated input, user can solder the jumper and achieve the same effect. For better explanation see connection diagrams in next chapter.



“+” solder jumpers:

Each opto isolated input uses dedicated “+” solder jumper. This jumper is used when you want to use e.g. NPN type of proximity sensor. So if you connect your switching device that will supply the LI- terminal with GND, you can solder “+” jumper so that LI+ terminal will have constant Vcc potential.

“-” solder jumpers:

Each opto isolated input uses dedicated “-” solder jumper. This jumper is used when you want to use e.g. PNP type of proximity sensor. So if you use your switching device that will supply the LI+ terminal with Vcc when triggered, you can solder “-” jumper so that LI- terminal will have constant GND potential. This is very useful when user wants to use both types of external switching devices with one board, e.g. PNP and NPN proximity sensor.

Input specification:

Each input uses opto-coupler and a resistor.

Terminals of single input are:

Vcc Vcc terminal

Limit Input + Limit Input for Vcc signal of opto input **Limit Input-** Limit Input for GND signal of opto input

GND GND terminal

Min voltage supplied to input : 12 VDC

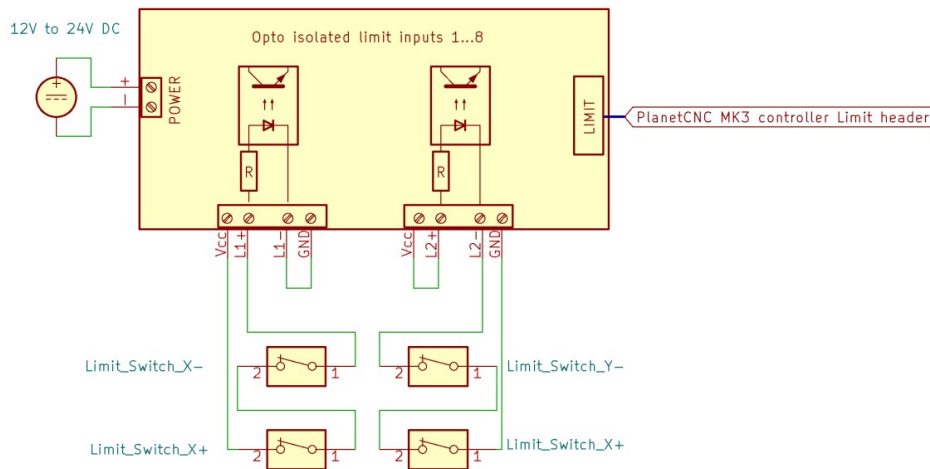
Max voltage supplied to input: 24 VDC

Connection diagrams

***NOTE:** Type of connection and switches used, as also limit input used for desired axis, needs to be configured in settings accordingly: File/Settings/Motors/Limit Switches

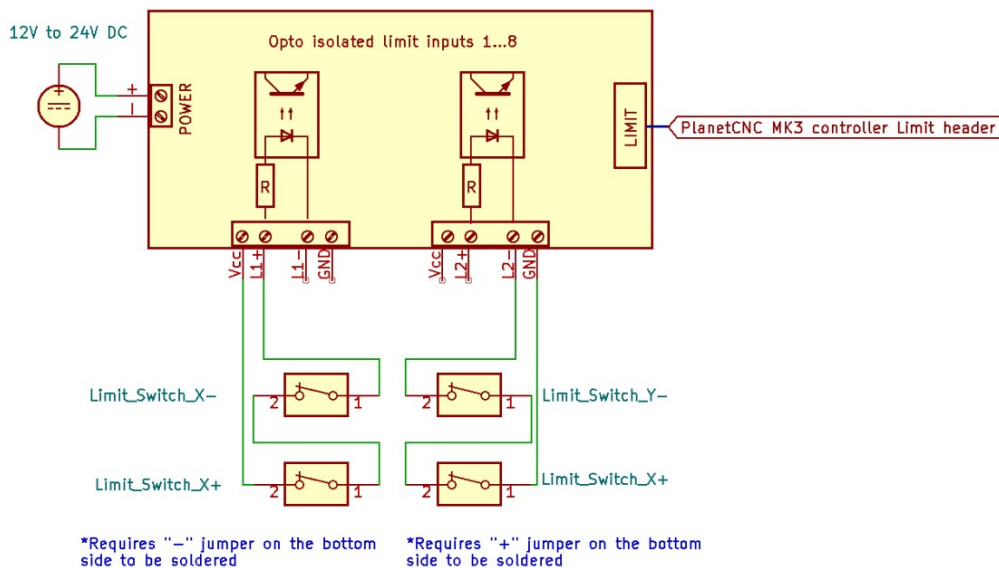
Schematic below describes:

- Single input wiring method of NC (normally closed) limit switches.
- X axis NC limit switches are connected in series at L1+ input
- Y axis NC limit switches are connected in series at L2- input
- X axis switches supply Vcc to L1+ input, therefore user needs to connect GND at L1 terminal
- Y axis switches supply GND to L2- input, therefore user needs to connect Vcc at L2+ terminal



Schematic below describes:

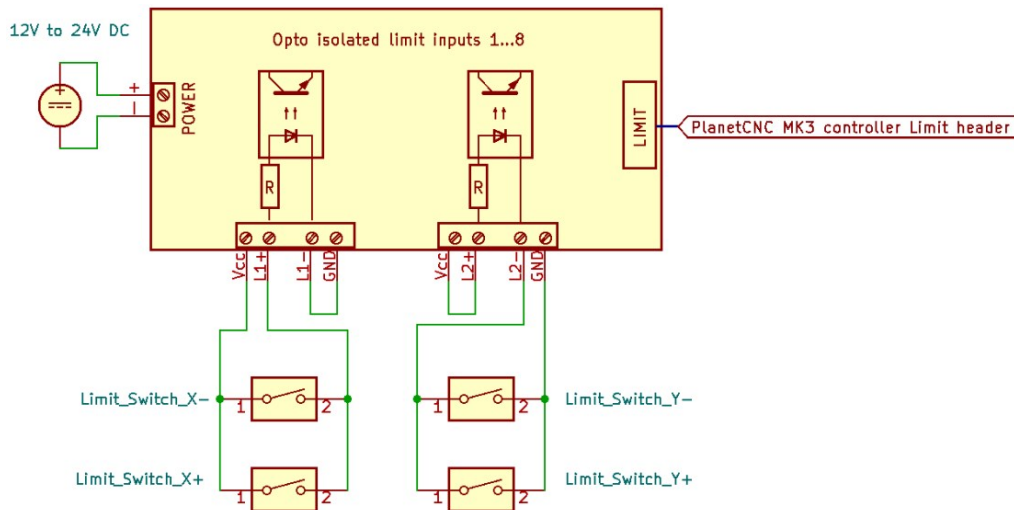
- Single input wiring method of NC (normally closed) limit switches.
- X axis NC limit switches are connected in series at L1+ input
- Y axis NC limit switches are connected in series at L2- input
- X axis switches supply Vcc to L1+ input, therefore user needs to solder “-” jumper at the bottom side of the input
- Y axis switches supply GND to L1- input, therefore user needs to solder “+” jumper at bottom side of the input



Schematic below describes:

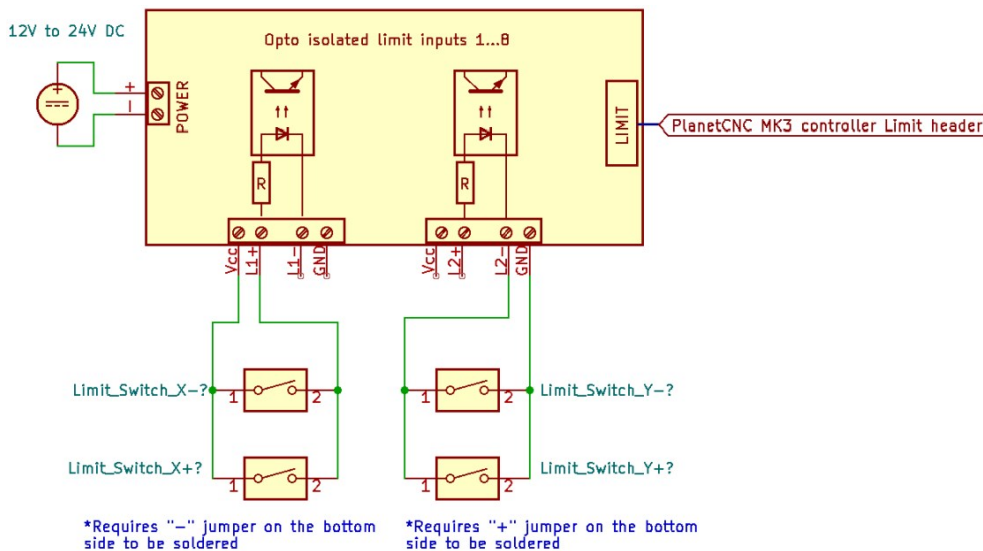
- Single input wiring method of NO (normally open) limit switches.
- X axis NO limit switches are connected in parallel at L1+ input
- Y axis NO limit switches are connected in parallel at L2- input

- X axis switches supply Vcc to L1+ input, therefore user needs to connect GND at L1- terminal
- Y axis switches supply GND to L2- input, therefore user needs to connect Vcc at L2+ terminal



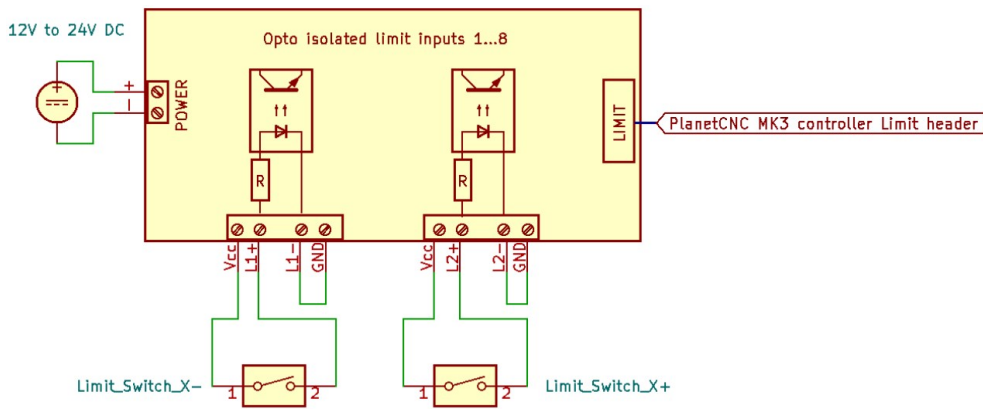
Schematic below describes:

- Single input wiring method of NO (normally open) limit switches.
- X axis NO limit switches are connected in parallel at L1+ input
- Y axis NO limit switches are connected in parallel at L2- input
- X axis switches supply Vcc to L1+ input, therefore user needs to solder “-” jumper at the bottom side of the input
- Y axis switches supply GND to L2- input, therefore user needs to solder “+” jumper at bottom side of the input



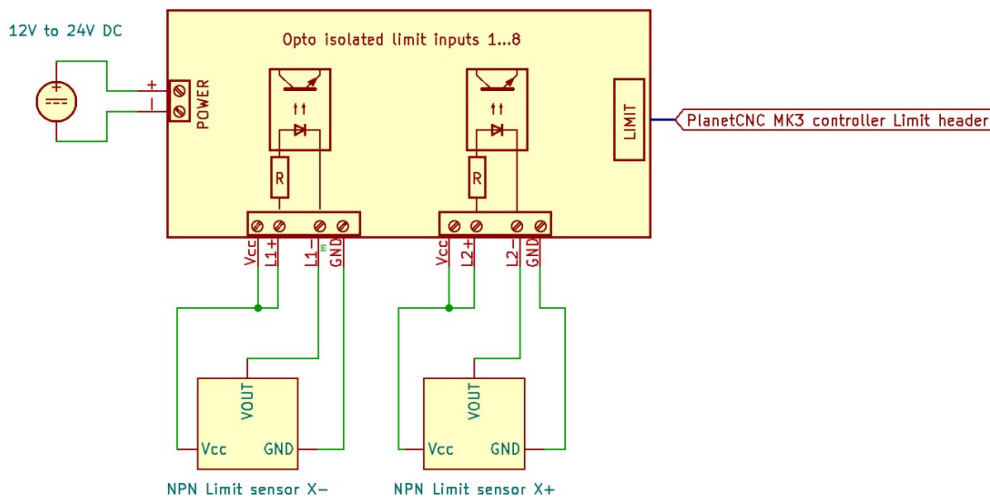
Schematic below describes:

- Normal input wiring method of NO (normally open) limit switches.
- X- axis NO limit switch is connected at L1+ input
- X+ axis NO limit switch is connected at L2+ input
- X axis switches supply Vcc to L1+ input, therefore user needs to connect GND at L1terminal
- Y axis switches supply GND to L2- input, therefore user needs to connect GND at L1terminal



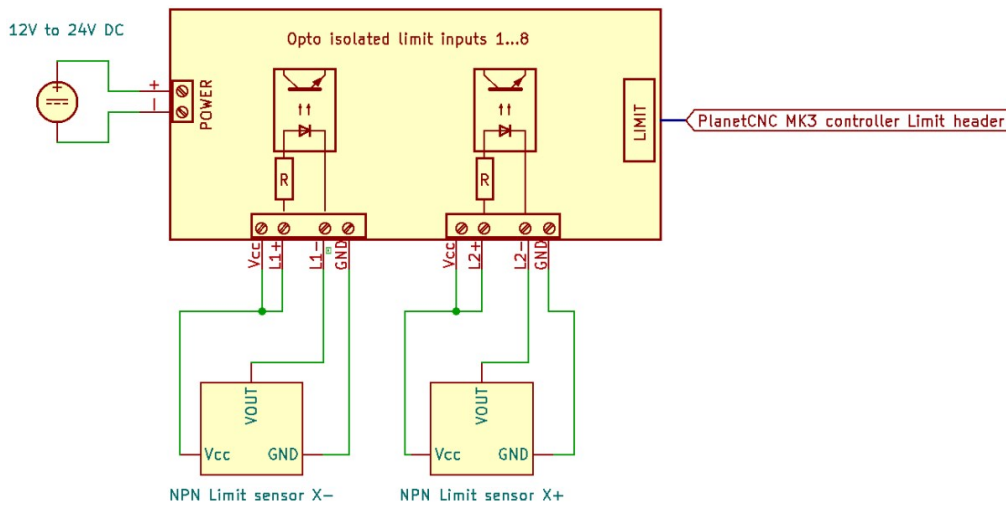
Schematic below describes:

- Wiring of PNP proximity limit sensors
- X+ axis PNP limit sensor is connected at L1+ input
- X- axis PNP limit sensor is connected at L2+ input
- X+ axis sensor supplies Vcc to L1+ input, therefore user needs to connect GND at L1- terminal
- X- axis sensor supplies GND to L2+ input, therefore user needs to connect GND at L2terminal



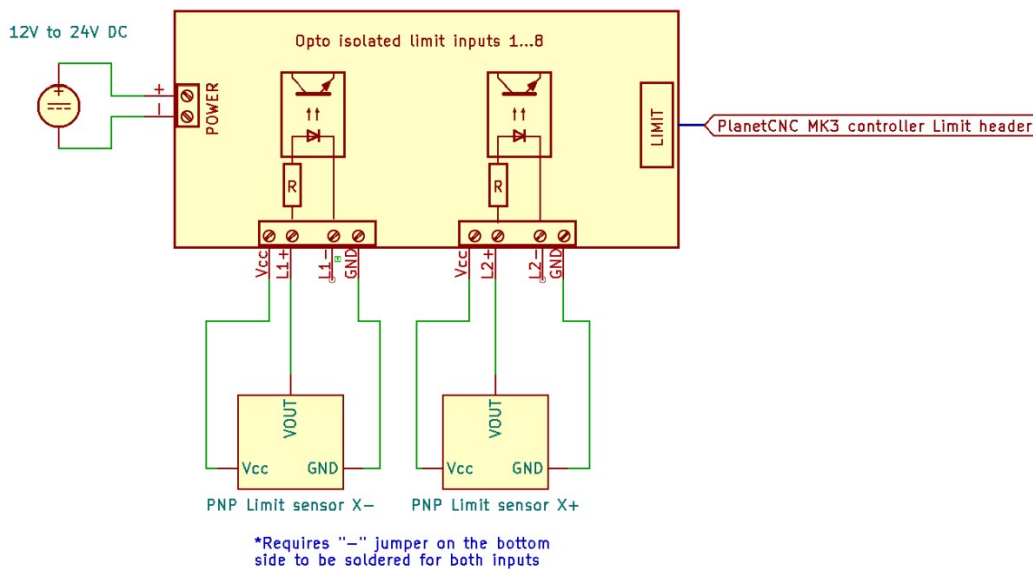
Schematic below describes:

- Wiring of NPN proximity limit sensors
- X- axis NPN limit sensor is connected at L1- input
- X+ axis NPN limit sensor is connected at L2- input
- X- axis sensor supplies GND to L1- input, therefore user needs to connect Vcc at L1+ terminal
- X+ axis sensor supplies GND to L2- input, therefore user needs to connect Vcc at L2+ terminal



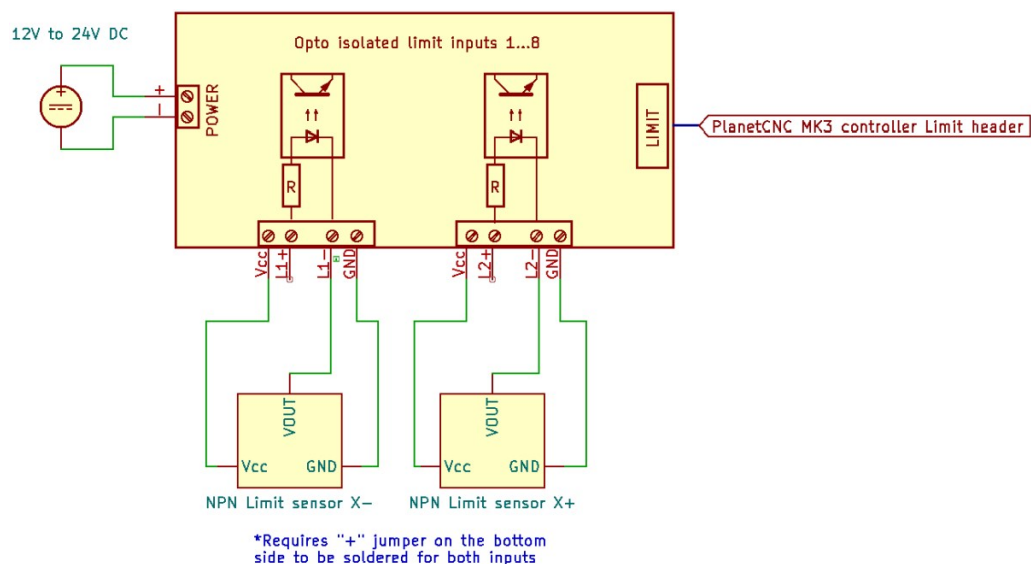
Schematic below describes:

- Wiring of PNP proximity limit sensors
- X- axis PNP limit sensor is connected at L1+ input
- X+ axis PNP limit sensor is connected at L2+ input
- X- axis sensor supplies Vcc to L1+ input, therefore user needs to solder “-” jumper at the bottom side of the input
- X+ axis sensor supplies Vcc to L2+ input, therefore user needs to solder “-” jumper at the bottom side of the input

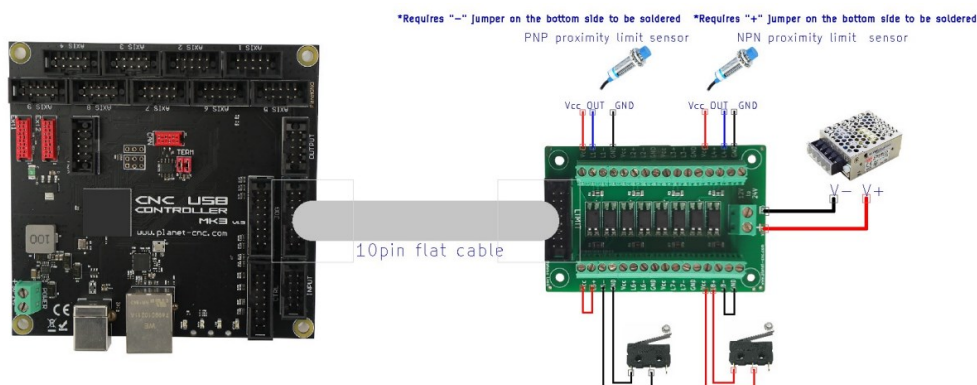


Schematic below describes:

- Wiring of NPN proximity limit sensors
- X- axis NPN limit sensor is connected at L1- input
- X+ axis NPN limit sensor is connected at L2- input
- X- axis sensor supplies GND to L1- input, therefore user needs to solder “+” jumper at the bottom side of the input
- X+ axis sensor supplies GND to L2- input, therefore user needs to solder “+” jumper at the bottom side of the input



Illustrative diagram of limit proximity sensors and micro limit switches:



Optoliso Limit adapter's use with PlanetCNC TNG software

Limit status lights under IO state panel:

Limit IO LED settings are located under: File/Settings/User Interface/State/LED Limit "Show" Row displays 8 Limit inputs:



Limit switch configuration settings:

User can configure limit switch inputs depending on hardware and wiring used (NO/NC switches, single input/normal input etc) under: File/Settings/Motors/Limit Switches


We also recommend to read a tutorial regarding limit switch configuration in TNG software:

How to configure limit switch inputs of controller in PlanetCNC TNG software

Dimensions:

DXF file is available at link below: Optolso Limit DXF file

Documents / Resources

 <p>Planet CNC Optolso Limit adapter version 1.0.1</p>	<p>Planet CNC Optolso Limit Adapter [pdf] User Manual Optolso Limit Adapter, Optolso, Limit Adapter, Adapter</p>
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References

- [🔧 How to configure limit switch inputs of controller in PlanetCNC TNG software - Planet CNC](#)
- [🔧 planet-cnc.com/wp-content/uploads/sw/doc/OptolsoLimit.dxf](#)