Soigeneris LMTS-4I

4-Input Limits Junction Box

User's Manual V1.0

Soigeneris
Your Resource for Hi-Tech Hobbies

304 Fox Creek Road
Rolla, MO 65401 US
573-647-9294

A word about safety

We at Soigeneris take pride in providing high quality components for small scale CNC systems. While we make every effort to provide in depth and accurate technical information we cannot make any guarantees about their applicability to your particular application. In reality the only person who can keep you safe is you. We strongly suggest that you avail yourself of all the information available for the components you're putting into your CNC system and understand how they will all interact.

What's Included

1) Junction Box
2) 6' DB9 Cable
3) Mating Connectors

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Introduction

The Soigeneris LMTS-4I is a small junction box designed to make wiring up Home / Limit sensors to Gecko G540 based controls much easier while also keeping your wiring neat and clean. Connections from sensors are made through sturdy 3-pin locking connectors which can also provide power to the sensors. A jack is also included to allow use of a touch type probe. Connection to controller is made by a DB9 'serial' type cable.

While the LMTS-1 is designed to be 'Plug-and-Play' compatible with the STDR-4C it can also be used for any G540 based controller. The box is designed to be mounted near the machine while the DB9 cable is used to carry the signals back to your controller. You can order the STDR-4C with an auxiliary 12V power supply that can be used to provide power to sensors, all through the same DB9 cable.

Note: For controllers other than the STDR-4C we can provide a prewired DB9 that can be mounted to your controller and wired to the G540.

Wiring

Please refer to Page 4 for pin-outs of all the connectors and a complete schematic of the LMTS-1 is available on Page 5. The X, Y, and Z inputs are wired directly to the DB9 connector. The A input can be used for a slaved axis Home/Limit sensor, or as an input for a spindle index (tachometer) sensor, and/or probe. All inputs are pulled up to +12VDC by the G540.

When a probe is plugged in it disconnects the A/I input and only the Probe signal will be available. This configuration is possible as Mach 3 will allow multiple functions to be assigned to one physical input. Care must be taken however, sharing the probe input with the Index input works fine as you would typically not expect to be making use of both of these signals at the same time. If would not be recommend to use the Probe input if you have the A/I input configured for use with a limit switch.

Note: You must unplug the probe before doing an operation that makes use of the A/I input.

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Connecting Sensors and Extension Cables

Many types of sensors will come with a length of cable attached to the sensor itself. For example the inductive proximity sensors carreid by Soigeneris come with a 6’ cable. For smaller machines this may be a suffiecient length, for larger machines you may need to build extension cables. We have connectors sets and bulk three conductor cable available for this purpose. Extension cable wiring is shown in Figure 1 below.

The G540 has its four inputs pulled up to +12V so you must use NPN type sensors. This tpye of sensor pulls its output to common (GND) when triggered which will also pullhte G540 input LOW.

If you are using switches instead of sensors connect the switch across the Signal and Common wires. Wiring the switch Normally Closed (NC) is typically done to provide some supervision of the switch wiring.

Extension cable wiring

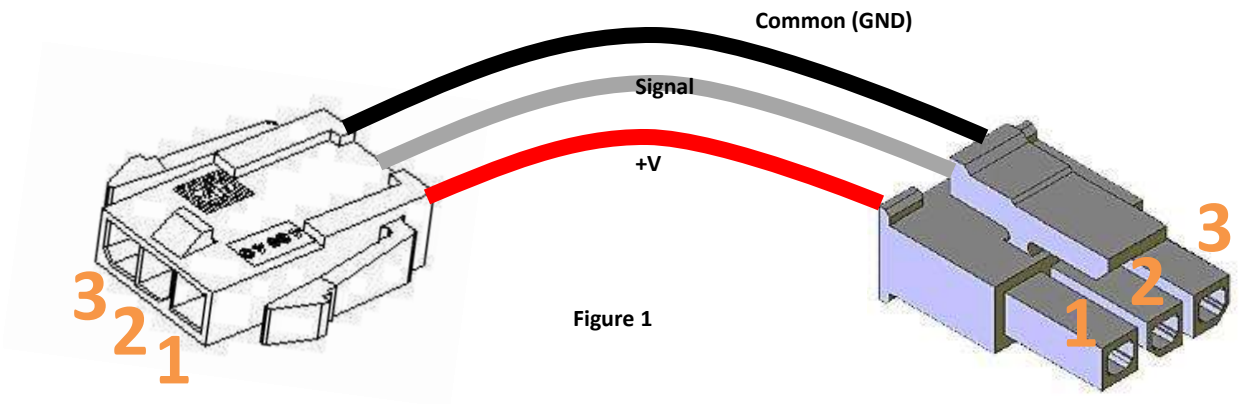

Figure 1

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The Panel

1 X Input

Pins 1:	+V
Pins 2:	Signal
Pins 3:	Common

2 Y Input

Pins 1:	+V
Pins 2:	Signal
Pins 3:	Common

3 Z Input

Pins 1:	+V
Pins 2:	Signal
Pins 3:	Common

2 A/I Input

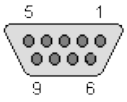
Pins 1:	+V
Pins 2:	Signal
Pins 3:	Common

5 Probe Connection

(3.5mm -1/8" Mono Phone Jack)

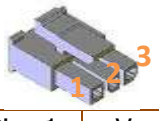
Tip:	Signal
Barrel:	Common

6 VFD Connector (Female)



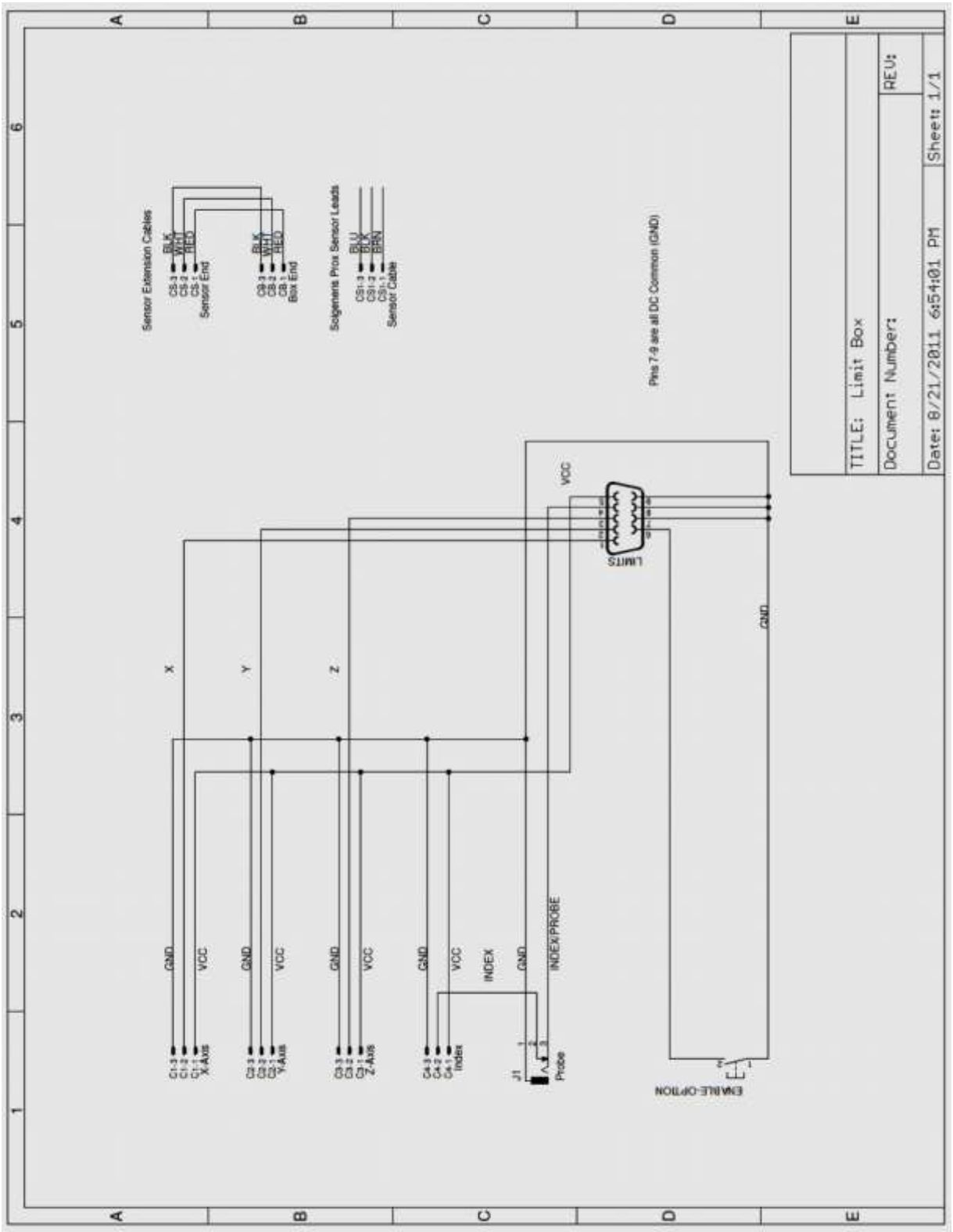
Pin	Function
1	X Axis
2	Y Axis
3	Z Axis
4	A Axis / Index
5	+V
6-7	STDR-4C Enable (option)
8-9	DC Common

2 Sensor Connector



Pins 1:	+V
Pins 2:	Signal
Pins 3:	Common

Schematic


Sensor Extension Cables
CS-3 BLK
CS-2 WHT
CS-1 RED
Sensor End
CB-3 BLK
CB-2 WHT
CB-1 RED
Box End
Solgenera Prox Sensor Leads
CSI-3 BLU
CSI-2 BLK
CSI-1 BRN
Sensor Cable
Pins 7-9 are all DC Common (GND)
TITLE: Limit Box
Document Number:
REV:
Date: 8/21/2011 6:54:01 PM
Sheet: 1/1
VCC
LIMITS
GND
X
Y
Z
GND
VCC
X Axis
Y Axis
Z Axis
INDEX
Index
J1
INDEX/PROBE
Probe
ENABLE-OPTION