

THC_TXRX User Guide

For Revision 240516

8/21/24

Overview

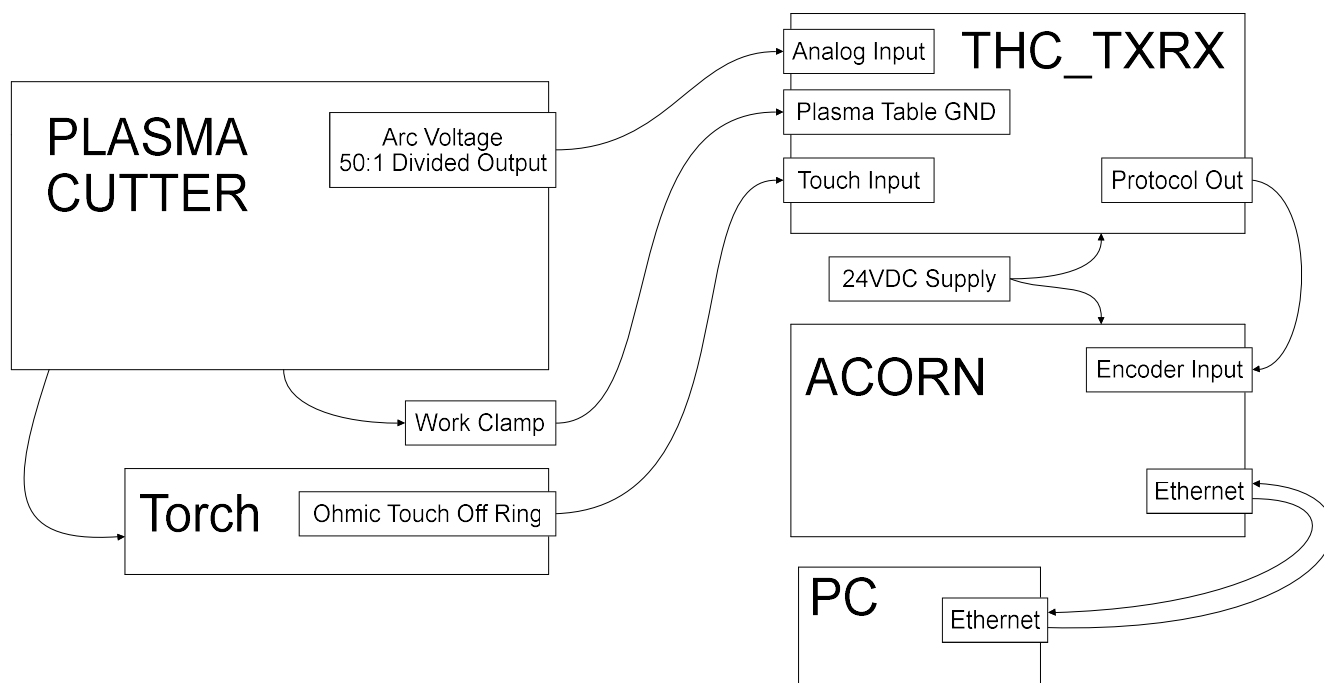
The THC_TXRX is a torch height measurement and conductive part touch interface. The inputs are transferred to an encoder input on the motion control board. The inputs are electrically isolated to protect the control board from excessive voltage levels or noise from a plasma cutter.

THC_TXRX Features

Application:	Plasma Table Interface
Digital Inputs:	1
Analog Inputs:	1
Control Interface:	Two word encoder protocol
Update Rate:	666 Hz
Dimensions (W*D*H):	3 * 6 * 0.75 inches

THC_TXRX Connection Overview

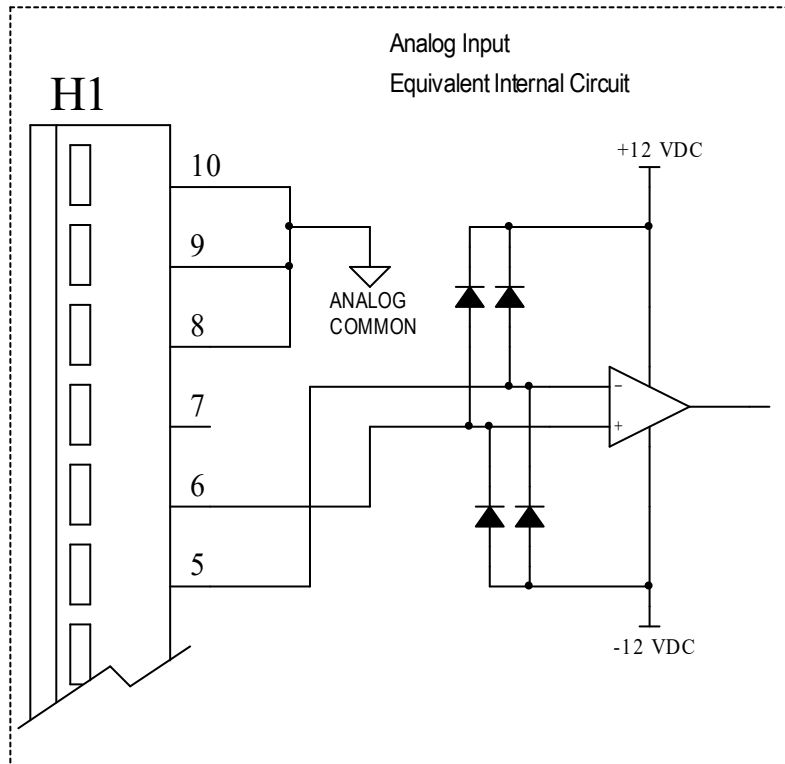
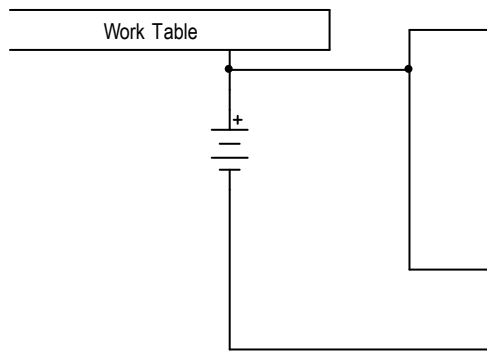
THC_TXRX receives a 10V arc voltage signal and torch touch off signal from the plasma cutter. These signals are optically isolated in THC_TXRX. The isolated signals are transformed into a protocol that can be connected to an encoder input on a motion control board such as ACORN or HICKORY.



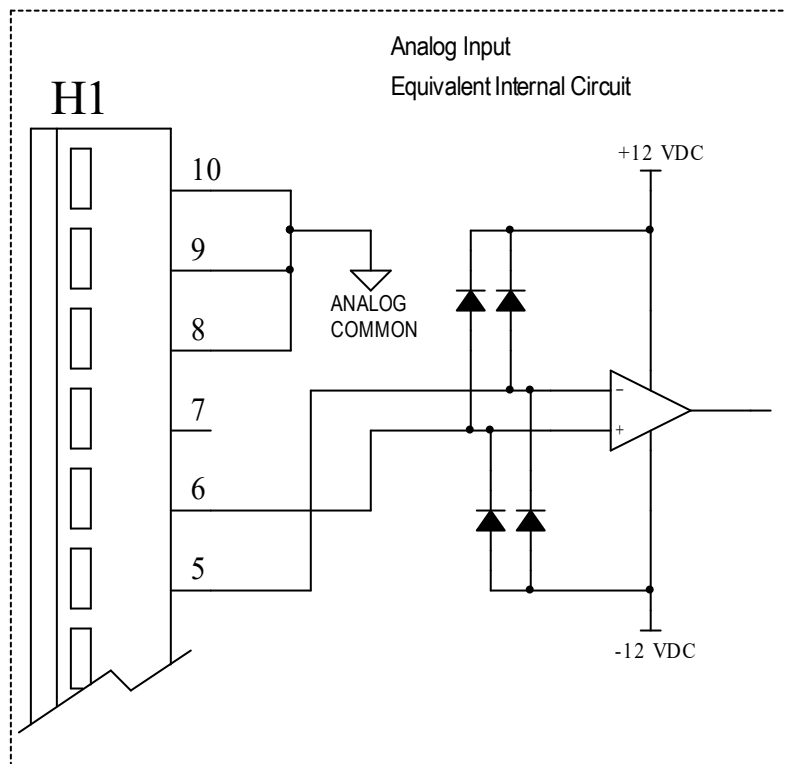
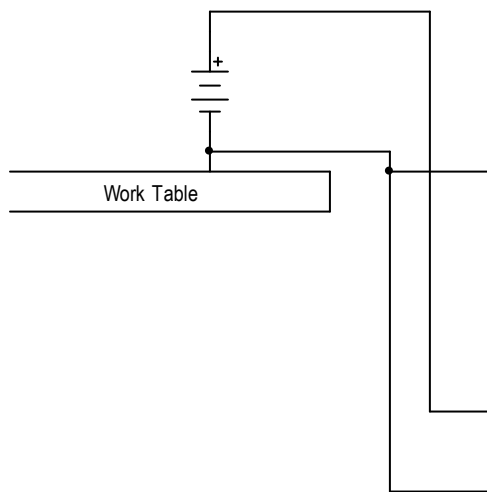
THC_TSRX Analog Input

The analog input may be wired to measure positive or negative 10V relative to the table and work piece ground. Often the arc voltage is negative relative to the work and a voltage divider (typically 50:1) outputs a negative arc voltage approximately 0 to -10V for height control. Some plasma voltage divider outputs are inverted, in which case the signal to measure is 0 to +10V. Laser cutter height sensors are another 0 to +10V source that may be used with THC_TSRX. The following examples demonstrate wiring for either positive or negative going analog input.

Example Wiring for 0 to -10V Measurement



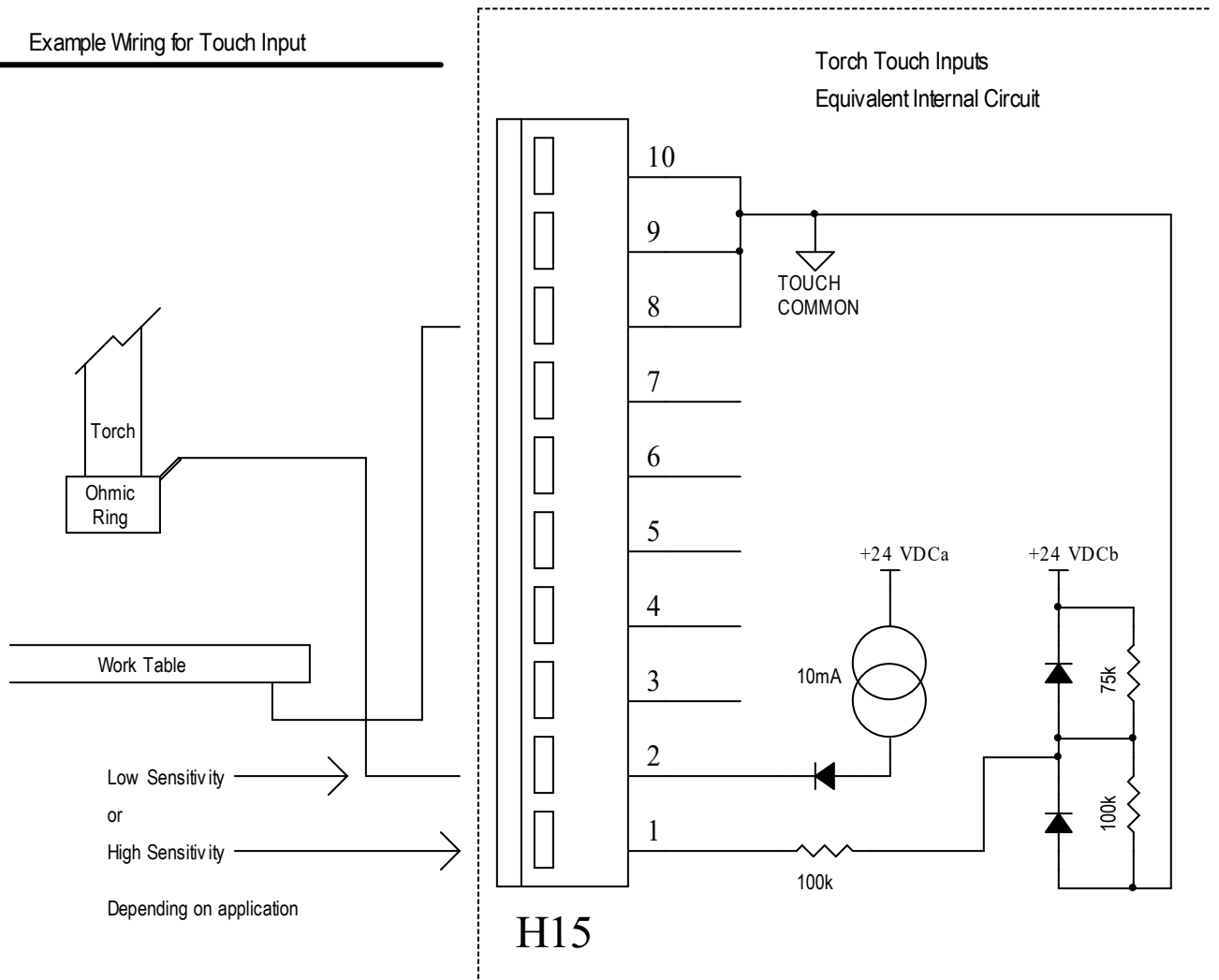
Example Wiring for 0 to +10V Measurement



Touch Input Wiring

Two conductive part touch off (“ohmic”) inputs are available. The high sensitivity input is optimized for setting height with minimal pressure on thin or slightly dirty metal. On some machines, water collects between the torch electrode and shield, the shield is submerged, or the work piece gets wet. If water is causing undesirable input triggers, the low sensitivity input should be used instead. The low sensitivity input is designed specifically to resist false triggers from water.

Example Wiring for Touch Input



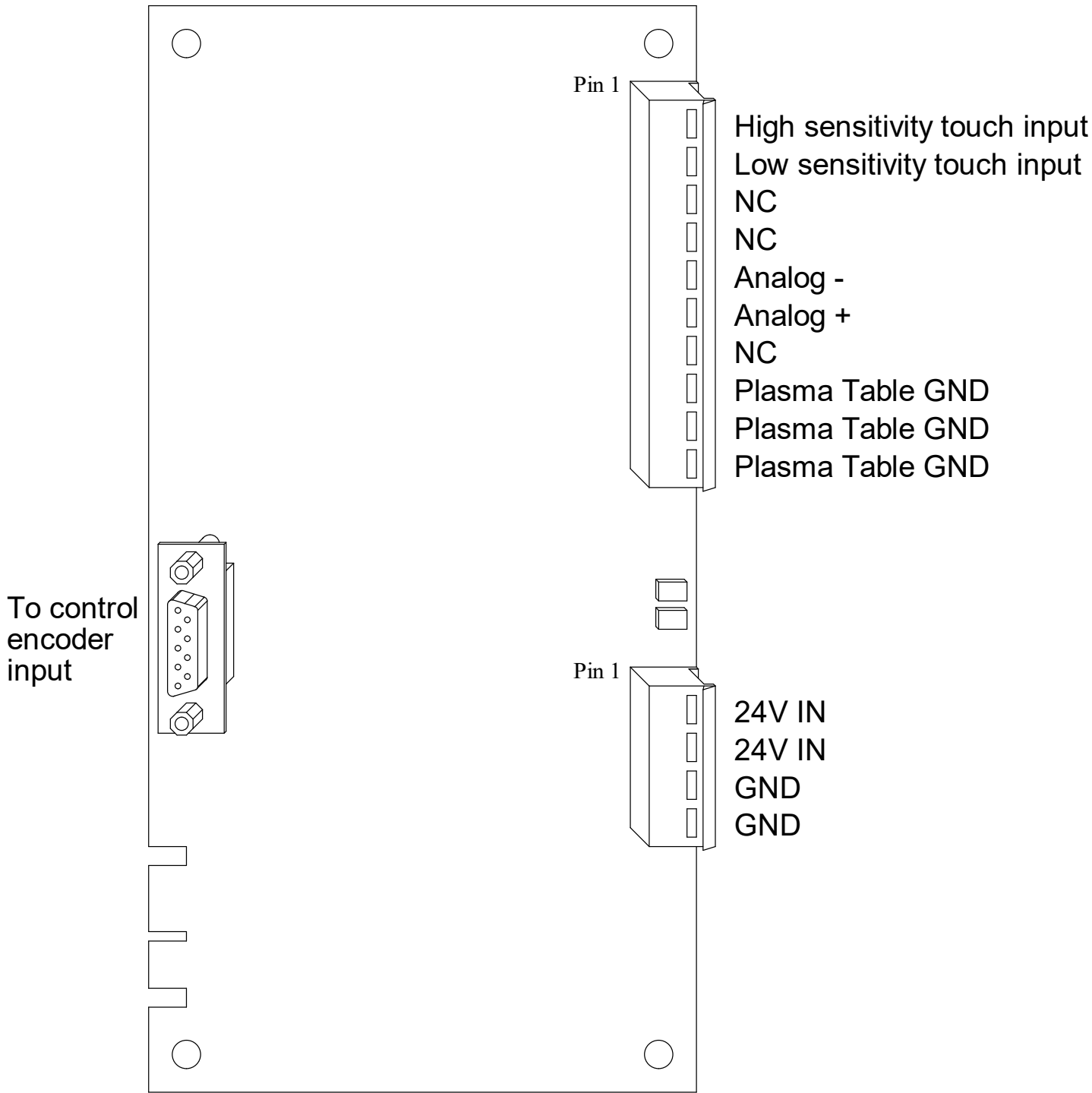
THC_TXRX Specifications

Characteristic	Min.	Typ.	Max.	Unit
Supply Voltage	19	-	26	V
Supply Current		-	-	A
TIN (HI or LOW) momentary withstand	-575	-	575	V
TIN HI activation current	-	< 0.25	-	mA
TIN LOW activation current	-	10	-	mA
Size: 3 * 6 * 0.75 (W*D*H)				Inches

THC_TXRX Troubleshooting

Symptom	Possible Cause	Corrective Action

THC_TXRX Connections



THC_TXRX Mounting Dimensions

