This module will monitor e-stop switches and operate a led beacon.

The e-stop inputs are dry contacts that are normally closed, that is an open contact indicates an e-stop condition.

The module prioritizes the e-stop where the order of priority is remote, local and pc.

If a remote e-stop is active then the beacon flashes at a fast rate.

If a local e-stop is active the beacon flashes at a slow rate.

A pc e-stop will cause the beacon to be constant on.

A remote or local e-stop will generate an e-stop to the pc by way of an opto output transistor.

Any e-stop will drop the run permissive relay (labeled as MCR) which can be wired into the rudimentary controls to de-energize the motors and other potential hazards.
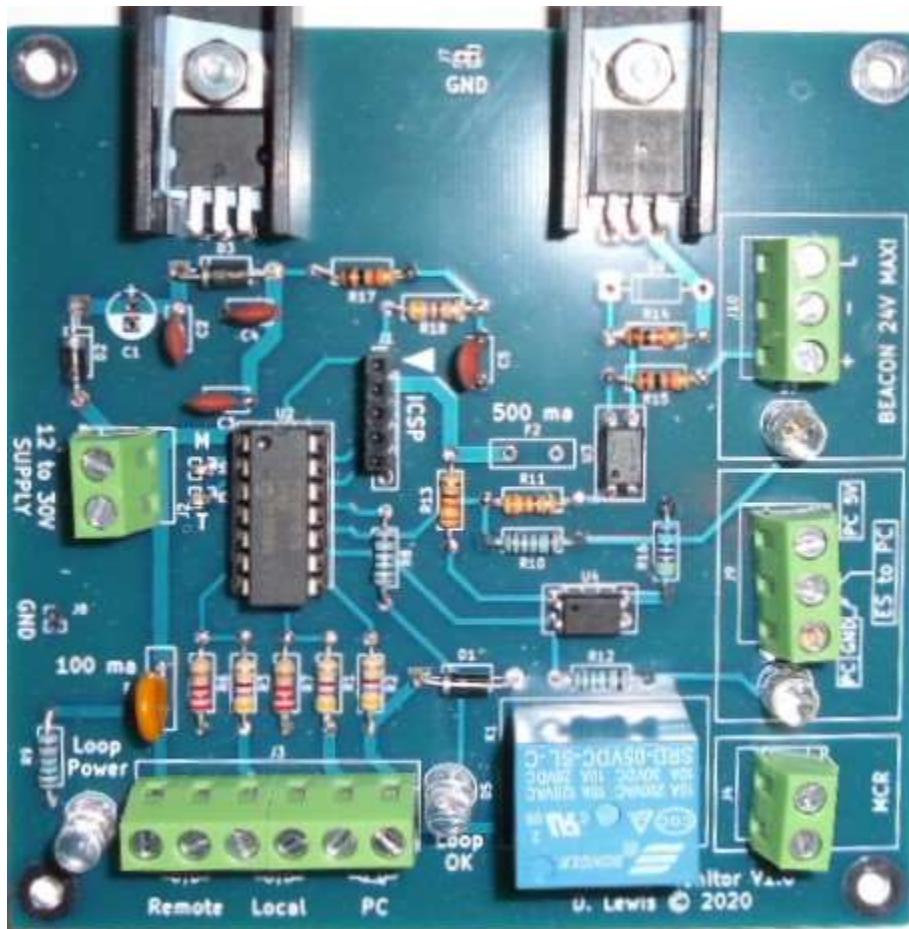
Here is a photo of the completed board. The board is 100mm X 100mm

Connections to the board:

INPUTS

DC in marked as SUPPLY 12 – 24 volts at ~ 100ma, note polarity

Remote – Normally closed remote e-stop switch

Local – normally closed local e-stop switch

PC – normally closed e-stop relay contacts from the LinuxCnc controller.

OUTPUTS – The outputs are electrically isolated

MCR a normally closed set of relay contacts to provide run permissive signal to the rudimentary controls.

PC Gnd – connects to LinuxCnc e-stop negative input
ES to PC – connects to LinuxCnc e-stop input signal
PC 5V – if necessary this provides a pullup resistor to the ES to PC.

The beacon is intended to operate a LED beacon. Keep the led current below 2 (two) amps.
Beacon + connects to the beacon positive power source, 48 volts max
Beacon – connects to the beacon negative power source
Beacon L connects to the cathode of the beacon led. The anode of the beacon led connects to Beacon +

Please note that the module has not been tested at the higher voltage levels. It has been tested at 12 volts.