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PWM to 0-10VDC Interface board.

FUNCTION:

Converts a digital Pulse Width Modulated signal into a 0-10 volt DC analog signal for use with:

- Variable speed DC motor controls
- Variable output AC devices
- Variable Frequency Drives (VFD/ Inverters)
- Variable output vibratory feeders
- Variable light dimming applications
- Variable temperature controllers

DESCRIPTION:

This board provides an opto-isolated interface between digital PWM signals and industrial controllers that require an analog input signal. The interface output voltage can be offset using a std resistor or potentiometer for lower than 10VDC input requirements. The unit also offers two opto-isolated channels that provide a contact closure-to-ground output for start-stop function, or direction control of motor controllers. The unit was designed for direct ribbon-cable integration with the DeskCNC controller hardware. In this configuration the unit also provides isolated direct pass through of the remaining DeskCNC signals that reside on the ribbon cable connector. The unit is compatible with all digital PWM signals that fit the input criteria and is not limited to usage with DeskCNC. The input ribbon cable can be split into individual wires and connected to any digital PWM output source. This allows integration with other CNC control software's as well as robotics and other industrial applications.

INPUTS:

10 PIN HEADER:

PWM = opto-isolated from board supply and 0-10VDC output. Supports 1-50KHZ, 0-100% PWM, 3-6VDC pulse height, and 2-6mA current draw. Compatible with most parallel port output levels. Positive triggered.

CW & CCW = opto-isolated from board supply, 3-6VDC input voltage, 2-6mA current draw. Compatible with most parallel port output levels. Positive triggered.

MIST, FLOOD, AUX1, 2, 3 = Isolated from board supply, but not optically. Direct pass through from DeskCNC controller board to terminal blocks.

GND, 5VDC = Isolated from board supply, but not optically. GND input is necessary for PWM, CW, and CCW signal function. 5VDC input is not utilized on the board.

3 POSITION TERMINAL BLOCK:

12V REG = Input for isolated and regulated 12Volt DC power supply. Also provides a regulated 12VDC output if the 15-30VDC INPUT is powered. Current draw = @ 125mA

GND = Board supply ground terminal. Contact is common between the 12VDC input and 15-30VDC input.

15-30VDC = Input for an isolated and unregulated 15-30VDC power supply. Use instead of the 12V REG input if you do not have a regulated 12VDC supply to power the board with.

OUTPUTS:

DeskCNC SECTION:

MIST, FLOOD, AUX1, 2, 3 = Isolated from board supply, but not optically. Direct pass through from DeskCNC controller board to terminal blocks.

0-10V = Linear 0 to 10 volt DC output varies dependent upon the positive period of the PWM input signal. Source current to 30mA. Stable down to 500 ohm load resistance. !!!DO NOT SHORT 0-10V OUTPUT TO GROUND!!!

CW & CCW = Contact closure to ground signal. Supports 100VDC 500mA contact signal. Can be wired to external relays for motor direction control or to VFD CW & CCW inputs.

KDN Tool & Automation Engineering Co. LLC will not be held responsible for injuries sustained while operating CNC machinery retrofit by us or with one of our kits.

10/19/06

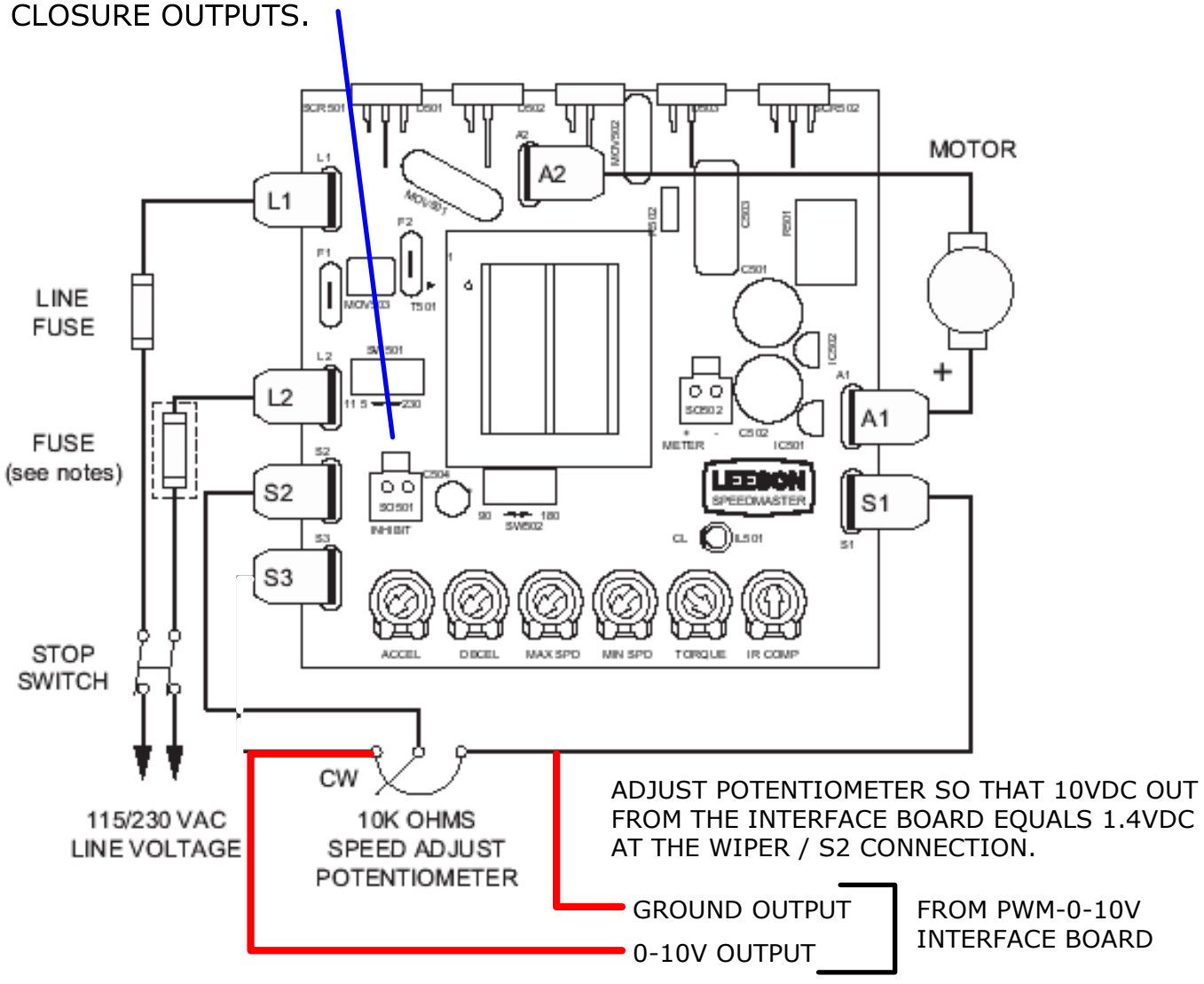
INTERFACING THE PWM - 0-10VDC INTERFACE BOARD WITH A:

LEESON SPEEDMASTER

SCR THYRISTOR MOTOR CONTROL

www.kdntool.com

CONNECT A SET OF NORMALLY OPEN RELAY CONTACTS ACROSS THE INHIBIT TERMINALS TO CONTROL MOTOR START / STOP FUNCTIONS. CONTROL RELAY WITH THE CW OR CCW CONTACT CLOSURE OUTPUTS.



Voltage follower

Instead of using a speed adjust potentiometer, the drive may be wired to follow a voltage signal that is isolated from earth ground (Figure 10). Connect the signal input (+) to S2. Connect the signal common (–) to S1. Make no connection to S3. A potentiometer can be used to scale the analog input voltage. For 90 VDC motors, the voltage range is 0 - 1.4 VDC. For 180 VDC motors, the voltage range is 0 - 2.8 VDC.

INTERFACING THE PWM - 0-10VDC INTERFACE BOARD
WITH AN:

AUTOMATION DIRECT GS-SERIES VFD

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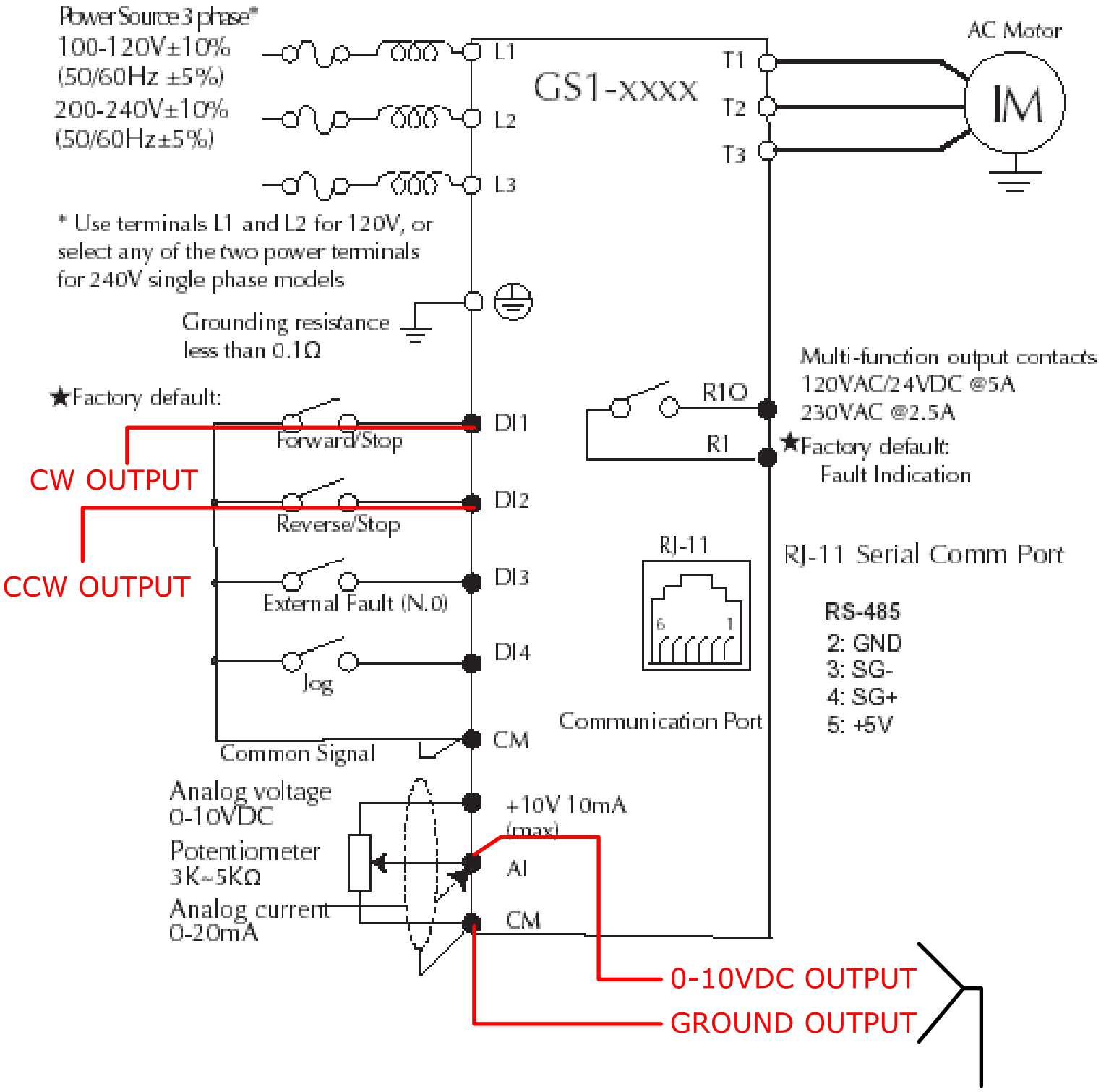

YOU WILL NEED TO CALIBRATE THE DRIVE TO THE INPUT. FOLLOW THE PROCEDURES IN THE GS-SERIES OPERATORS MANUAL.