Analogue DC Servo Drive

CA-5, 10, 20

Installation Manual

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MAIN FEATURES

- 24 to 100 volts Input Range
- Adjustable Current Limit
- Adjustable Zero Offset
- Adjustable Gain Control
- Enable, Power and Error Indicator
- Current Mode Operation
- Enable High or Enable Low
- +/- 10 volts Command Signal

Description

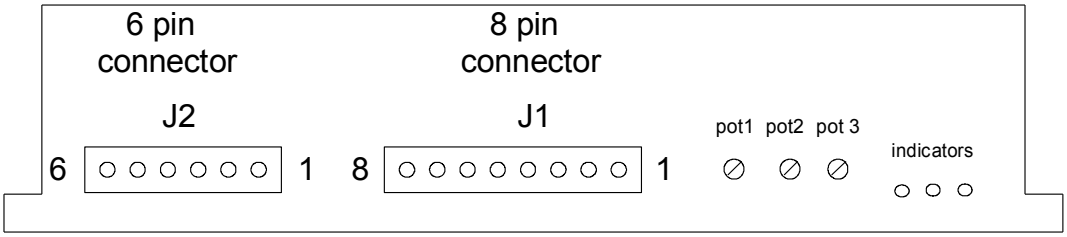
The TRM range of DC Servo Drives are designed to complete the range of Motion Control products to provide a whole and reliable solution to our customers. These drives are designed to power brushed DC servo motors at a high switching frequency in current mode.

Three LED's indicate operating status and a single power supply is required. Both models are protected against over-current, over-voltage, over-heating, and short circuits.

There are three multi-turn potentiometers: Gain, Current Limit and Offset. These can be adjusted easily with a small screwdriver or trimming tool.

SPECIFICATIONS

Power Stage Specifications	
Dc Supply Voltage	24-80 volts
Peak Current	Model Dependant
Maximum Continuous Current	Model Dependant
Minimum Load Inductance	200 uH
Switching Frequency	33 Khz
Heatsink Temperature Range	0 - 70 C
Over Voltage Protection	106 V
Bandwidth	Greater than 1 Khz



Connections

J1 Connector

PIN NUMBER	NAME	DESCRIPTION
1	Motor command + (input)	Differential analogue input +/- 10 V
2	Motor command - (input)	
3	Error output	It is a pull low signal when there is an error (5V 10K Pull-up)
4	Enable -	Digital input to enable the drive with 0 volts (ground)
5	Enable +	Digital input to enable the drive with + 5 volts
6	Current output	Analogue output proportional to the current, from 0 to 2.35 V
7	+ 5 volts output	Internal 5 volts supply
8	0 Volts output	Internal 0 Volts (ground)

J2 Connector**

PIN NUMBER	NAME	DESCRIPTION
1	0 Volts	Power Ground
2	0 Volts	Spare power ground to link with another drive
3	+Vcc Volts	DC voltage input
4	+Vcc Volts	Spare DC voltage to link with another drive
5	Motor output (to the motor)	Motor connection
6	Motor output (to the motor)	Motor connection

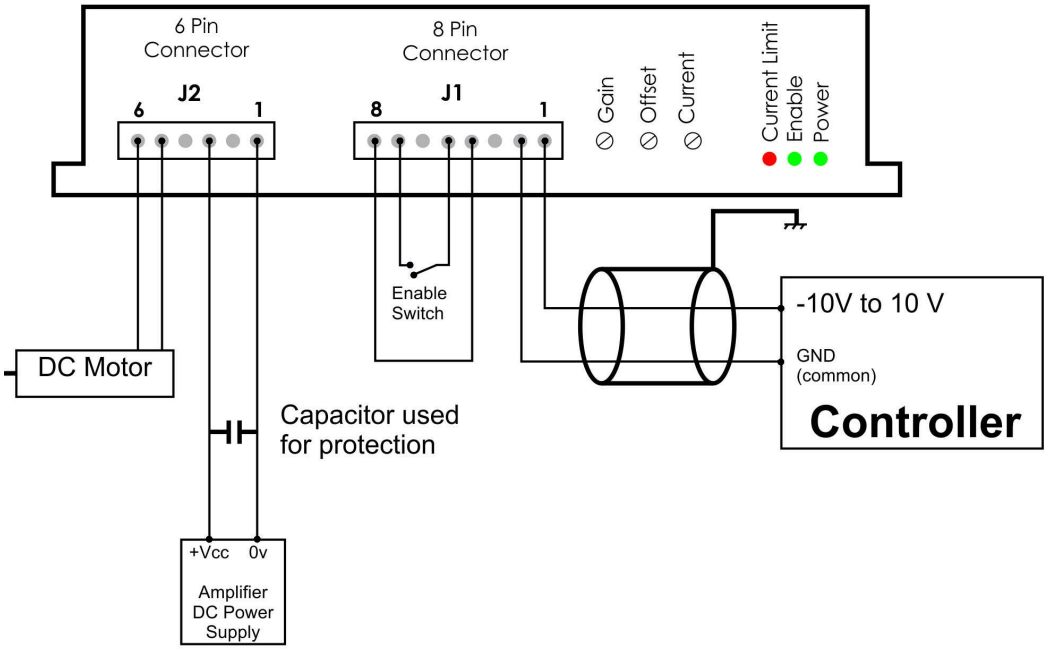
** Note: This is a plug on 5 and 10 amp drives and fixed screw terminal on 20A Drives.

Potentiometers

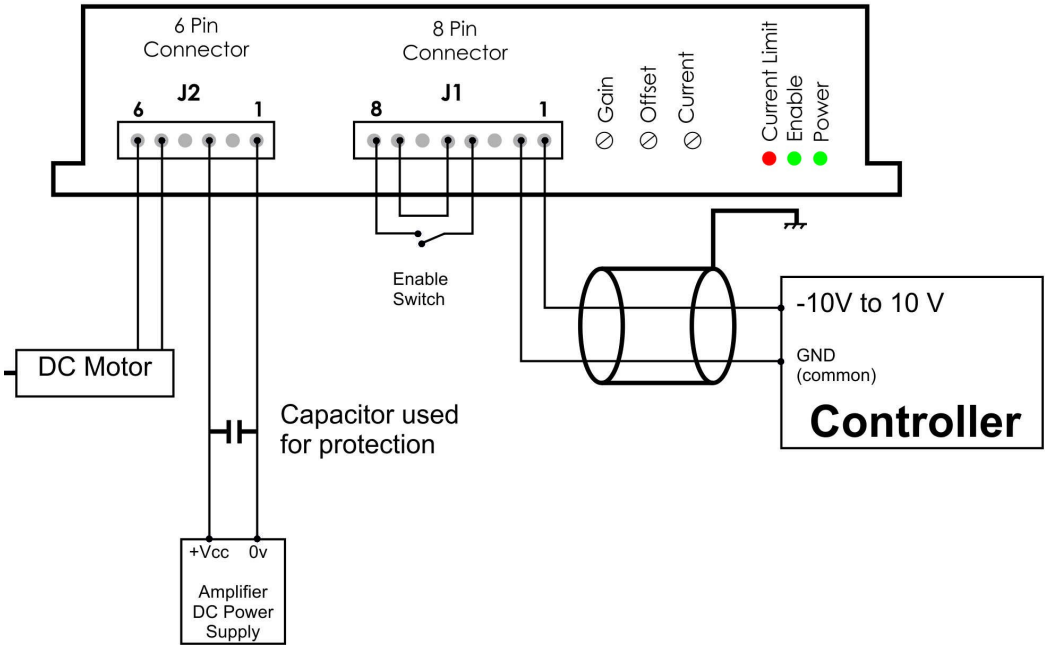
POTENTIOMETER	DESCRIPTION	TURNING CLOCKWISE
POT 1	Adjust the gain for the input	Increases reference input gain
POT 2	Offset, adjust the point 0 (no movement)	Moves 0 point
POT 3	Adjust the current limit	Increases current limit

Connection Diagrams

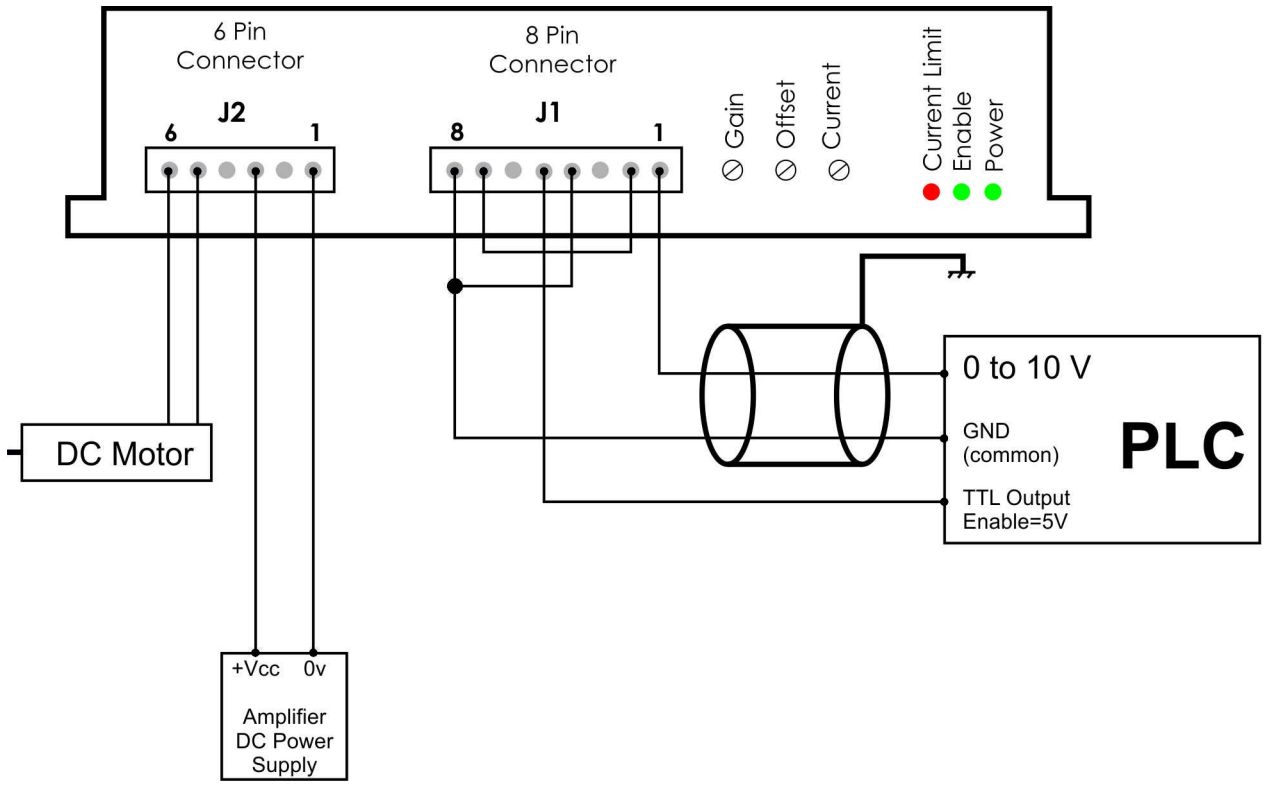
Enable High

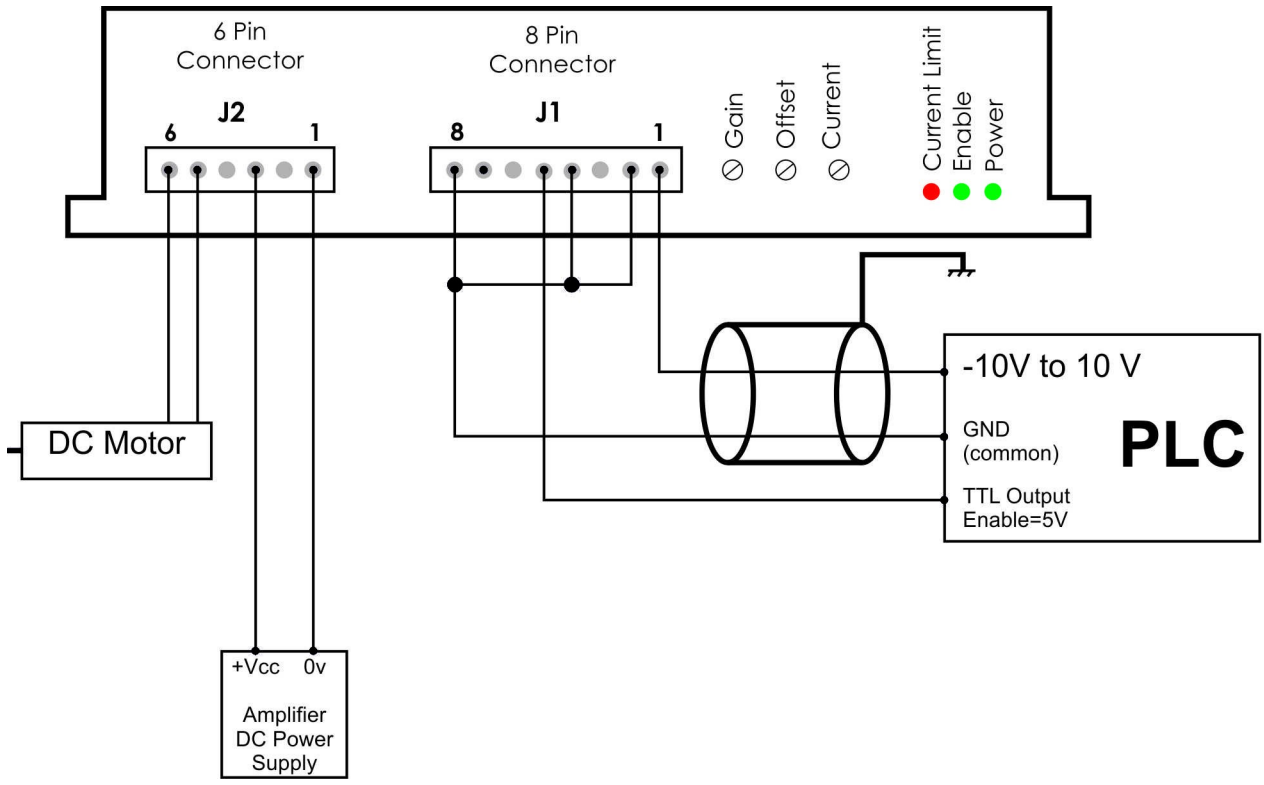


Enable Low



The above connections show two methods of providing an enable signal for switching high or low. Most systems will provide a positive signal to enable a drive as the grounding method is not considered safe under current HSE regulations.





A 5V enable signal can be provided from another source however it must be ensured that the 0V of that supply is also connected to the drive.

CURRENT LIMIT ADJUSTMENTS

Pot 3 'I' adjusts current limit. It has 25 active turns and it is approximately linear. Thus, to adjust the current limit, turn the potentiometer fully anticlockwise, then turn clockwise to the appropriate value.

If the desired limit is, for example, 5 amps, and the servo drive current is 10 amps, turn the potentiometer 12 turns clockwise from the fully counter-clockwise position. When the drive is limiting the current the LED with the 'I' label will turn ON in red showing the current has been limited. If the LED is blinking this will be intermittently limiting the current, if it is fully on then the drive is in permanent limit mode.

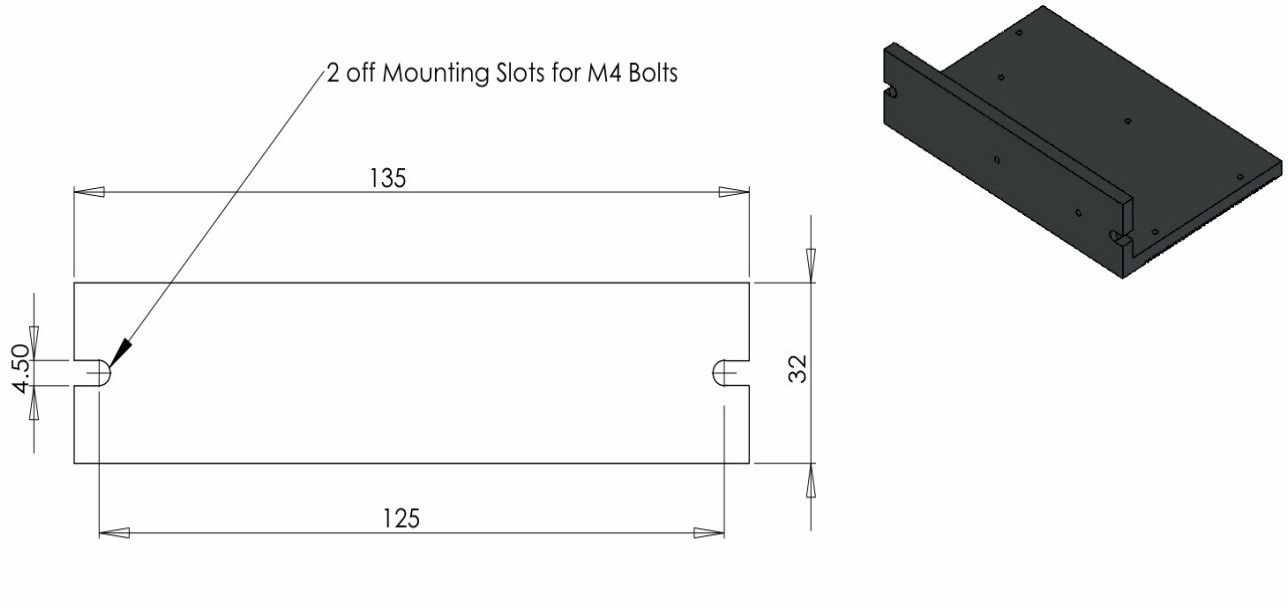
OFFSET ADJUSTMENTS

Offset 'O' Pot 2 is used to adjust the drive for no motor movement. It is always useful when doing the installation to verify that when the analogue input signal is '0' volts the output is also '0' volts. If it is not then use this Potentiometer to move the offset until the desired value.

GAIN ADJUSTEMENTS

Gain 'G' Pot 1 is used to adjust the ratio between input control signal and the output current. By default the gain is preset at TRM's factory at its maximum gain.

Mechanical Specifications



*All dimensions are in mm.

POWER CONNECTOR	Screw terminals
SIGNAL CONNECTOR	Screw terminals
SIZE	135 x 89 x 32 millimetres
WEIGHT	395 g
MOUNTING	4.5 mm slots