

EG1000-000

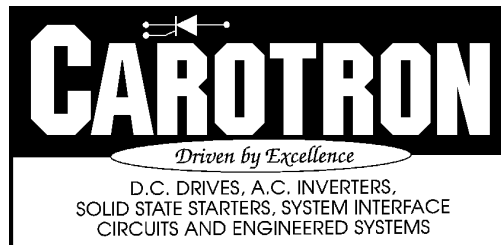
Instruction Manual

Proportional Edge Guider Control



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General Description

The EG1000-000 Regenerative control is designed to handle 90 VDC armature P.M. motors up to ½ HP and 180 VDC P.M. motors up to 1 HP, that are used to operate a linear actuator in a web edge guiding application.

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Specifications and Technical Data

1. Electrical

Note: The Motor Control section has a separate input from the control relay voltage supply.

Signal Inputs:

Note: The Sensor signal inputs are not electrically isolated.

1. 4-20 mA.
2. 0-5 VDC
3. ± 10 VDC

A.C. Input

1. 115 VAC ± 10%, 50/60 Hz ± 2 Hz at TB1-12 & 13 3 Amperes Max
2. 115 or 230 VAC ± 10%, 50/60 Hz ± 2 Hz at TB1-1&2 6 Amperes Max

Armature Output

0-90 VDC for 115 VAC input at TB1-1&2
0-180 VDC for 230 VAC input at TB1-1&2

Adjustments

Offset, Gain, Fwd Jog, Rev Jog, Integral Null, Fwd, C.L., Rev C.L.

Horsepower Range

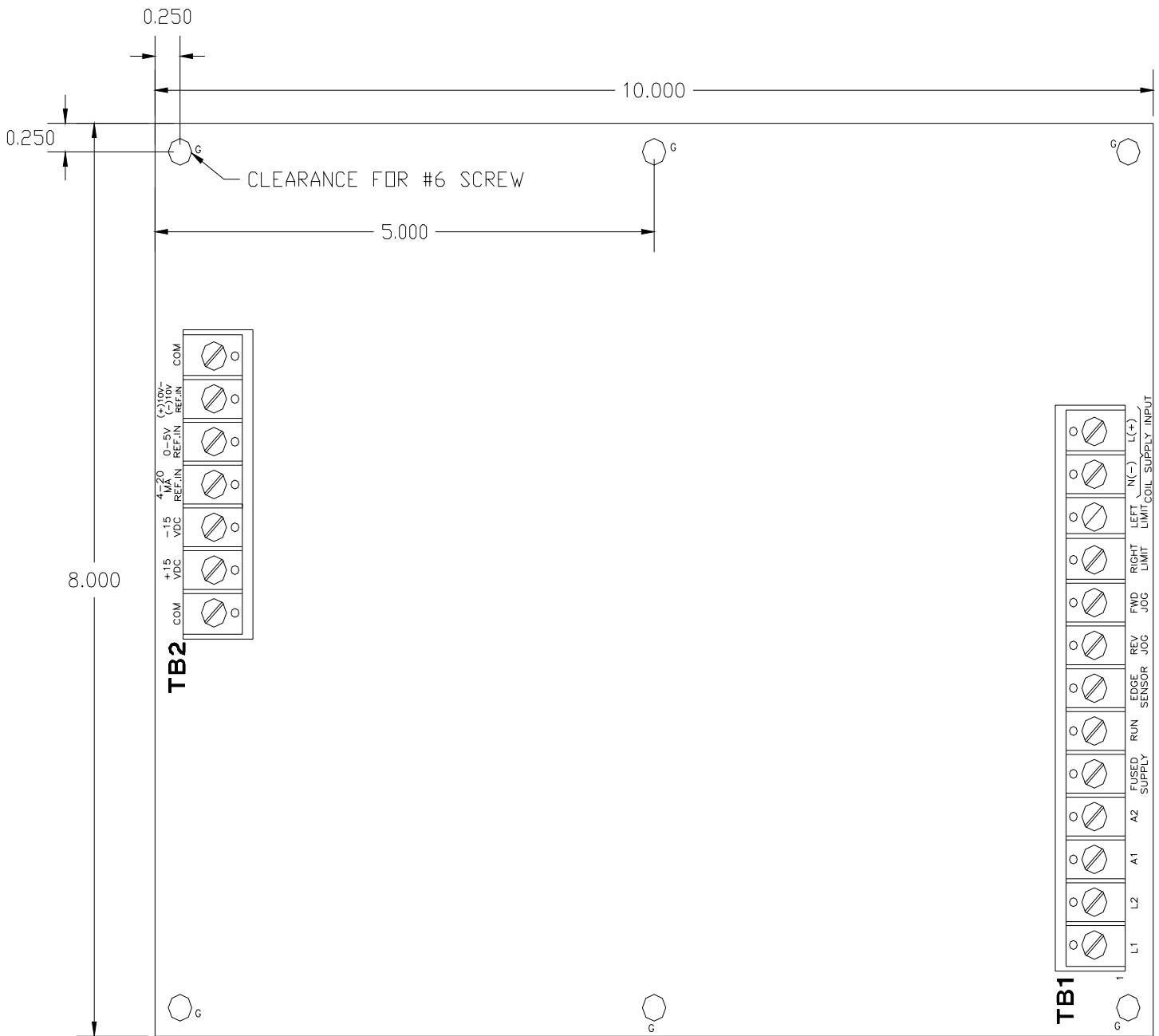
¼ - ½ HP @ 90 VDC
½ - 1 HP @ 180 VDC

Temperature Range

0-55°C in EG1000-000 enclosure.

2. Physical

Width: 10"
 Length: 8"
 Height: 2.125"



EG1000-000

1. Circuit Protection

WARNING:

CIRCUIT COMMON ON THE EG1000-00 IS NOT EARTH OR CHASSIS GROUND. HIGH VOLTAGE POTENTIALS CAN BE PRESENT BETWEEN EARTH GROUND AND ANY POINT IN THE CIRCUIT. ALL TEST INSTRUMENTS SHOULD BE ISOLATED FROM EARTH GROUND TO PREVENT DAMAGE TO THE INSTRUMENT OR THE CONTROL. ANY INSTRUMENT CONNECTED TO THE CIRCUIT IS FLOATING AT POTENTIALS THAT APPROACH THE A.C. LINE VOLTAGE AND SHOULD BE HANDLED WITH CARE.

2. Connection Information

Terminal Connections

TB1-1 & 3 - (L1 & L2)

These terminals are used for AC line input. Either 115 VAC or 230 VAC can be connected to these terminals. NOTE: Jumpers J1, J2, and J3 must be placed in the positions corresponding to the A.C. line voltage used.

TB1-3 & 4 - (A1 & A2)

The motor armature leads, A1 and A2, connect to these terminals. When the drive is engaged in the forward direction, these connections will produce CCW motor rotation when viewed from the commutator end, The armature leads should be switched if reversed rotation is desired.

TB1-5 – Fused supply input to Operators and/or Control Logic

TB1-6 – Run contact

TB1-7 – Edge Sensor Control / Manual Select

TB1-8 – Rev. Jog

TB1-9 – Fwd. Jog

TB1-10 – Right Limit

TB1-11 – Left Limit

TB1-12 & 13 – AC(DC) Coil supply input
Note: Standard Coil Supply is 120 VAC, Consult Factory for Options.

TB2-1 – Com

This terminal is the common connecting point for all reference input signals and reference wiring shields. Any reference input signals can be disabled by connecting them to this point.

TB2-2 & 3 \pm 15 VDC

TB2-4 4-20 mA Ref. In

TB2-5 0-5V Ref. In

TB2-6 (+) 10V – (-)10V Ref. In

TB2-7 – Com

This terminal is the common connecting point for all reference input signals and reference wiring shields. Any reference input signals can be disabled by connecting them to this point.

1. Programming Jumpers

- J1, J2, & J3 – used for programming L1 & L2 AC input level.
- J4 – Motor full load Amp Rating 3amps or 6amps

2. Potentiometers

Note: The Gain should initially be adjusted to minimum (full CCW 20 turns or until clicking is heard) before making any other adjustments.

OFFSET

- (10 TURN) Used to zero control output when an input signal up to +/- 3.75 VDC or 13.5 mA is present.
- Apply zero output reference signal, i.e. 12 mA at TB2-4 or +2.5 VDC at TB2-5 or 0.0 VDC at TB2-6. Energize ESK1, Run Relay, and ESK2, Auto Relay, and adjust OFFSET for zero RPM motor speed

Note: ESK5 and ESK6, Right and Left Limit relays should automatically energize when control AC power is applied.

Gain

- (10 TURN) Used to set motor maximum speed when full reference is applied.
- Apply full speed Forward reference signal, i.e. 20 mA at terminal TB2-4 or +5 VDC at TB2-5 or +10 VDC at TB2-6. Energize ESK1 and ESK2 and adjust the GAIN clockwise to give the desired motor maximum speed of full rated armature voltage. Apply full speed Reverse reference signal, i.e. 4 mA at TB2-4 or 0.0 VDC at TB5 or -10 VDC at TB2-6 and verify desired maximum

motor speed or full rated armature voltage. Re-adjust GAIN if required

- Note: The Gain Pot has the greatest affect on operating response
- Higher (CW) Gain gives faster response.

FWD JOG and REV JOG

- Energize ESK3, REV JOG or ESK4, FWD JOG, and adjust the respective pot. for desired motor speed.

FWD CURRENT LIMIT and REV CURRENT LIMIT

- Used to set maximum allowable motor armature current for each direction. They are factory set at 150% of amperage range selected.

DEADBAND

- Used to set amount of input signal required to produce armature characteristics of the motor. When adjusted to minimum full CCW, may cause motor to hum or even creep when in stop mode. Factory setting is ¼ turn clockwise.

3. Adjustment Procedure

Step 1

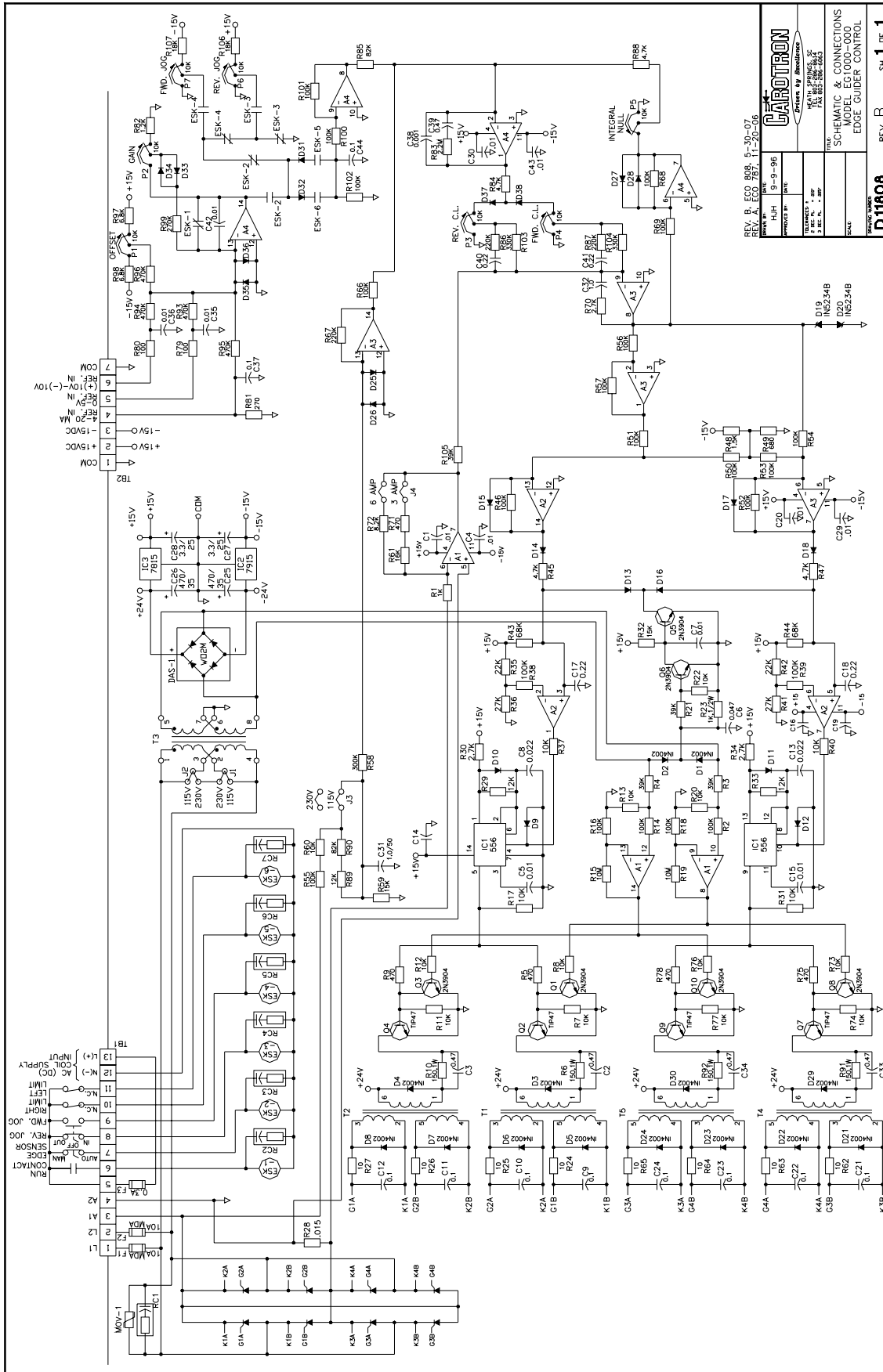
Note the motor nameplate's armature voltage and current ratings. Place the Armature Amps jumper, J4, in the appropriate current range. For 90 VDC armature motors, the control will be connected to 115 VAC and for 180 VDC armature motors, the control will be connected to 230 VAC input. Place J1, J2, and J3, in the proper voltage range.

Step 2

Contacts and limit switches should be connected to TB1 as shown in Figure 1. The reference input signal should be an isolated signal and will connect to TB1 as follows:

- A.) 0 to 5 VDC with zero speed at 2.5 VDC. Full speed Reverse is given at 0V and full speed Forward is given at 5 volts input. Connect the positive input lead at TB2-5 and the negative or common lead to TB2-7. If a shield is used, also connect to TB2-7. The other end of the shield should be cut-off and insulated.

- B.) 4 to 20 mA with zero speed at 12 mA. Full speed Reverse is given at 4 mA and full speed Forward is given at 20 mA. Connect incoming positive current signal to TB2-4. The return signal will connect to TB2-7.
- C.) +/- 10 VDC with zero speed at 0.0 VDC. Full speed Reverse is given at -10 VDC and full speed Forward is given at +10 VDC. Connect the input signal lead to TB2-6 and input common lead to TB2-7.



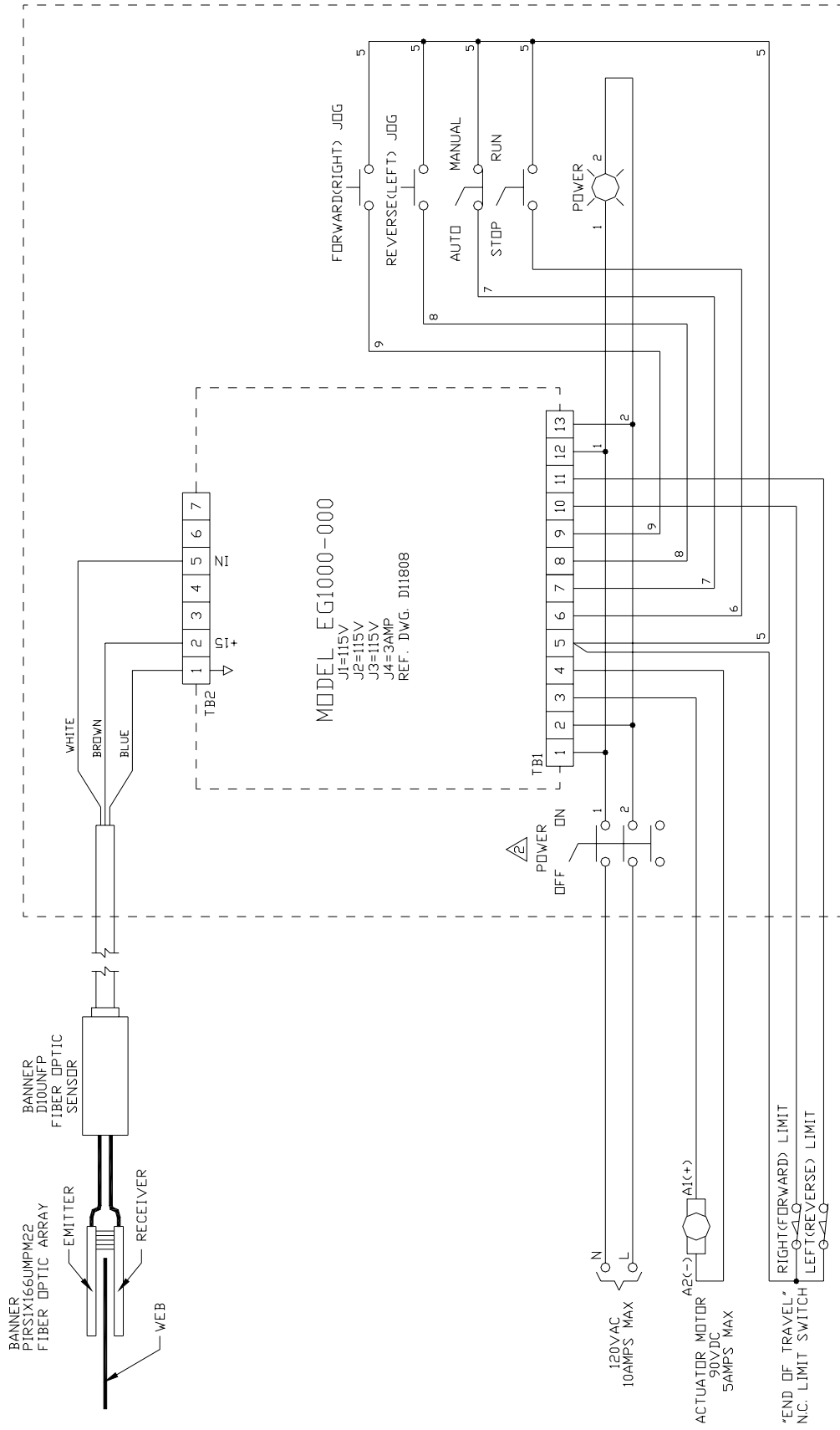
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|-------------|---------|---------|
| REV. B | ECO 988 | 5-26-07 |
| REV. A | ECO 789 | 1-20-06 |
| DESIGNED BY | DATE | DATE |
| REV. B | 5-26-07 | |
| REV. A | 1-20-06 | |
| DESIGNED BY | DATE | DATE |
| REV. B | 5-26-07 | |
| REV. A | 1-20-06 | |

D11908 REV. B SH. 1 OF 1

SCHEMATIC & CONNECTIONS
 MODEL EC1000-000
 EDGE GUIDER CONTROL

Typical Connection



Notes:

Standard Terms & Conditions of Sale

1. General

The Standard Terms and Conditions of Sale of Carotron, Inc. (hereinafter called "Company") are set forth as follows in order to give the Company and the Purchaser a clear understanding thereof. No additional or different terms and conditions of sale by the Company shall be binding upon the Company unless they are expressly consented to by the Company in writing. The acceptance by the Company of any order of the Purchaser is expressly conditioned upon the Purchaser's agreement to said Standard Terms and Conditions. The acceptance or acknowledgement, written, oral, by conduct or otherwise, by the Company of the Purchaser's order shall not constitute written consent by the Company to addition to or change in said Standard Terms and Conditions.

2. Prices

Prices, discounts, allowances, services and commissions are subject to change without notice. Prices shown on any Company published price list and other published literature issued by the Company are not offers to sell and are subject to express confirmation by written quotation and acknowledgement. All orders of the Purchaser are subject to acceptance, which shall not be effective unless made in writing by an authorized Company representative at its office in Heath Springs, S.C. The Company may refuse to accept any order for any reason whatsoever without incurring any liability to the Purchaser. The Company reserves the right to correct clerical and stenographic errors at any time.

3. Shipping dates

Quotation of a shipping date by the Company is based on conditions at the date upon which the quotation is made. Any such shipping date is subject to change occasioned by agreements entered into previous to the Company's acceptance of the Purchaser's order, governmental priorities, strikes, riots, fires, the elements, explosion, war, embargoes, epidemics, quarantines, acts of God, labor troubles, delays of vendors or of transportation, inability to obtain raw materials, containers or transportation or manufacturing facilities or any other cause beyond the reasonable control of the Company. In no event shall the Company be liable for consequential damages for failure to meet any shipping date resulting from any of the above causes or any other cause.

In the event of any delay in the Purchaser's accepting shipment of products or parts in accordance with scheduled shipping dates, which delay has been requested by the Purchaser, or any such delay which has been caused by lack of shipping instructions, the Company shall store all products and parts involved at the Purchaser's risk and expense and shall invoice the Purchaser for the full contract price of such products and parts on the date scheduled for shipment or on the date on which the same is ready for delivery, whichever occurs later.

4. Warranty

The Company warrants to the Purchaser that products manufactured or parts repaired by the Company, will be free, under normal use and maintenance, from defects in material and workmanship for a period of one (1) year after the shipment date from the Company's factory to the Purchaser. The Company makes no warranty concerning products manufactured by other parties.

As the Purchaser's sole and exclusive remedy under said warranty in regard to such products and parts, including but not limited to remedy for consequential damages, the Company will at its option, repair or replace without charge any product manufactured or part repaired by it, which is found to the Company's satisfaction to be so defective; provided, however, that (a) the product or part involved is returned to the Company at the location designated by the Company, transportation charges prepaid by the Purchaser; or (b) at the Company's option the product or part will be repaired or replaced in the Purchaser's plant; and also provided that (c) the Company is notified of the defect within one (1) year after the shipment date from the Company's factory of the product or part so involved.

The Company warrants to the Purchaser that any system engineered by it and started up under the supervision of an authorized Company representative will, if properly installed, operated and maintained, perform in compliance with such system's written specifications for a period of one (1) year from the date of shipment of such system.

As the Purchaser's sole and exclusive remedy under said warrant in regard to such systems, including but not limited to remedy for consequential damages, the Company will, at its option, cause, without charges any such system to so perform, which system is found to the Company's satisfaction to have failed to so perform, or refund to the Purchaser the purchase price paid by the Purchaser to the Company in regard thereto; provided, however, that (a) Company and its representatives are permitted to inspect and work upon the system involved during

reasonable hours, and (b) the Company is notified of the failure within one (1) year after date of shipment of the system so involved.

The warranties hereunder of the Company specifically exclude and do not apply to the following:

a. Products and parts damaged or abused in shipment without fault of the Company.

b. Defects and failures due to operation, either intentional or otherwise, (1) above or beyond rated capacities, (2) in connection with equipment not recommended by the Company, or (3) in an otherwise improper manner.

c. Defects and failures due to misapplication, abuse, improper installation or abnormal conditions of temperature, humidity, abrasives, dirt or corrosive matter.

d. Products, parts and systems which have been in any way tampered with or altered by any party other than an authorized Company representative.

e. Products, parts and systems designed by the Purchaser.

f. Any party other than the Purchaser.

The Company makes no other warranties or representation, expressed or implied, of merchantability and of fitness for a particular purpose, in regard to products manufactured, parts repaired and systems engineered by it.

5. Terms of payment

Standard terms of payment are net thirty (30) days from date of the Company invoice. For invoice purposed, delivery shall be deemed to be complete at the time the products, parts and systems are shipped from the Company and shall not be conditioned upon the start up thereof. Amounts past due are subject to a service charge of 1.5% per month or fraction thereof.

6. Order cancellation

Any cancellation by the Purchaser of any order or contract between the Company and the Purchaser must be made in writing and receive written approval of an authorized Company representative at its office in Heath Springs, S.C. In the event of any cancellation of an order by either party, the Purchaser shall pay to the Company the reasonable costs, expenses, damages and loss of profit of the Company incurred there by, including but not limited to engineering expenses and expenses caused by commitments to the suppliers of the Company's subcontractors, as determined by the Company.

7. Changes

The Purchaser may, from time to time, but only with the written consent of an authorized Company representative, make a change in specifications to products, parts or systems covered by a purchase order accepted by the company. In the event of any such changes, the Company shall be entitled to revise its price and delivery schedule under such order.

8. Returned material

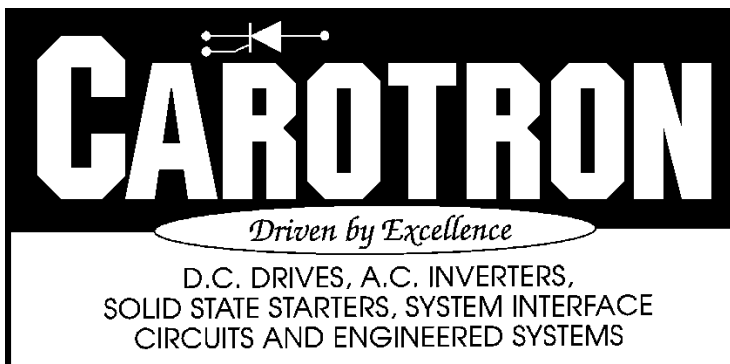
If the Purchaser desires to return any product or part, written authorization thereof must first be obtained from the Company which will advise the Purchaser of the credit to be allowed and restocking charges to be paid in regard to such return. No product or part shall be returned to the Company without a "RETURN TAG" attached thereon which has been issued by the Company.

9. Packing

Published prices and quotations include the Company's standard packing for domestic shipment. Additional expenses for special packing or overseas shipments shall be paid by the Purchaser. If the Purchaser does not specify packing or accepts parts unpacked, no allowance will be made to the Purchaser in lieu of packing.

10. Standard transportation policy

Unless expressly provided in writing to the contrary, products, parts and systems are sold f.o.b. first point of shipment. Partial shipments shall be permitted, and the Company may invoice each shipment separately. Claims for non-delivery of products, parts and systems, and for damages thereto must be filed with the carrier by the Purchaser. The Company's responsibility therefor shall cease when the carrier signs for and accepts the shipment.



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