

Dancer Duty Potentiometer

Instruction Manual

Model DDP01-K010

Model DDPS1-K010

Model DDP01-K005

Model DDPS1-K005

Model DDP02-K010

Model DDPS2-K010

Model DDP02-K005

Model DDPS2-K005



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1 General Description

The Carotron model DDP01-K0XX and stainless steel model DDPS1-K0XX, Dancer Duty Potentiometer without limits, and the model DDP02-K0XX and stainless steel model DDPS2-K0XX, Dancer Duty Potentiometer with limits, are designed for use in harsh environments in a large variety of industrial applications.

The design begins with a potentiometer rigidly mounted within a NEMA 12 enclosure. A high quality coupling is used to link the potentiometer to the dancer shaft, eliminating lost motion and excessive loading to the potentiometer shaft. The dancer shaft is faced on one side to aid in mechanical connections. Two normally closed limit switches and two adjustable cams, to set extreme travel limits, may also be accommodated within the enclosure. Wiring connections are made easy by a prewired terminal strip within the enclosure.

Quality components, precision and modular construction all combine to produce dependability, simplified installation and competitive pricing. Standard potentiometers of 10K and 5K ohms are available.

Standard Features (Model DDP01-K0XX, and DDPS1-K0XX)

- Conductive plastic potentiometer for

infinite resolution.

- High quality coupling to eliminate lost motion and excessive loading to the potentiometer shaft.
- NEMA 12 enclosure to provide protection against oil and dust.
- DDPS1-K0XX models include corrosion resistant stainless steel enclosures.
- Steel construction.
- External mounting feet.
- Internal prewired terminal strip for easy electrical connections.
- ½-inch diameter faced dancer shaft for easy mechanical connections.

Standard Features (Model DDP02-K0XX, and DDPS2-K0XX)

- Same as DDP01-K0XX and DDPS1-K0XX models.
- Two normally closed limit switches which open for extreme travel limit settings
- Two adjustable cams to change counter clock-wise (CCW) and (CW) limit settings.

Potentiometer

Resistance5K or 10K Ohms $\pm 10\%$
 Linearity $\pm 1\%$
 ResolutionInfinite
 Electrical rotation $340^\circ \pm 3\%$
 Mechanical rotationContinuous
 Power rating1.5 watts @ 70°C
 Dielectric strength750 VAC
 MIN.
 Operating temperature -65°C TO $+125^\circ\text{C}$
 Rotation life10,000,000 revolutions

Limit Switches (Models DDP02-K0XX and DDPS2-K0XX only)

Ampere rating5Amps
 Voltage rating250 VAC

Bearing

Radial load530 lbs. @ 50 RPM
 Average life75,000 hours.

Enclosure

Construction16 gauge steel
 FinishANSI 61 gray
 Industry standardNEMA 12
 DDPSX-K0XX models16gauge
304 stainless steel

Dancer Shaft

ConstructionStainless Steel
 Diameter..... $\frac{1}{2}$ -inch

2.1 Physical

Refer to drawing C10450 in section 5 for complete mounting dimension information for DDP01-K0XX and DDP02-K0XX models

Refer to drawing C11749 in section 5 for complete mounting dimension information for DDPS1-K0XX and DDPS2-K0XX models

Wiring Precautions

All wiring should be routed away from any moving parts within the enclosure. Use cable ties to insure that wiring is secure.

Terminal Connections (Model DDP01-K0XX and DDPS1-K0XX)

- TB-1, TB-2 and TB-3 (Potentiometer): These terminals connect to the potentiometer. The counter clockwise (CCW) lead connects to TB1-1. The wiper lead connects to TB1-2 and the clockwise (CW) lead connects to TB1-3. See drawing C10450 in section 5 for further details.
- NOTE: TB1-4 through TB1-7 are not used on models DDP01-K0XX and DDPS1-K0XX.

Terminal Connections (Models DDP02-K0XX and DDPS2-K0XX)

- TB-1, TB-2 and TB-3 (Potentiometer): Same as the DDP01-K0XX and DDPS1-K0XX models
- TB1-4 and TB1-5 (CCW Limit Switch): These terminals connect to a normally closed (NC) cam operated limit switch. See adjustment procedures in section 4 for details.
- TB1-6 and TB1-7 (CW Limit Switch): These terminals connect to a NC cam operated limit switch. See adjustment procedures in section 4 for details.

Grounding

If grounding is required, connect a ground wire under one of the mounting screws.

Mechanical

The dancer shaft on both models is ½-inch in diameter. It is designed for set screw type connecting drives.

4

Adjustment Procedure

Models DDP01-K0XX and DDPS1-K0XX

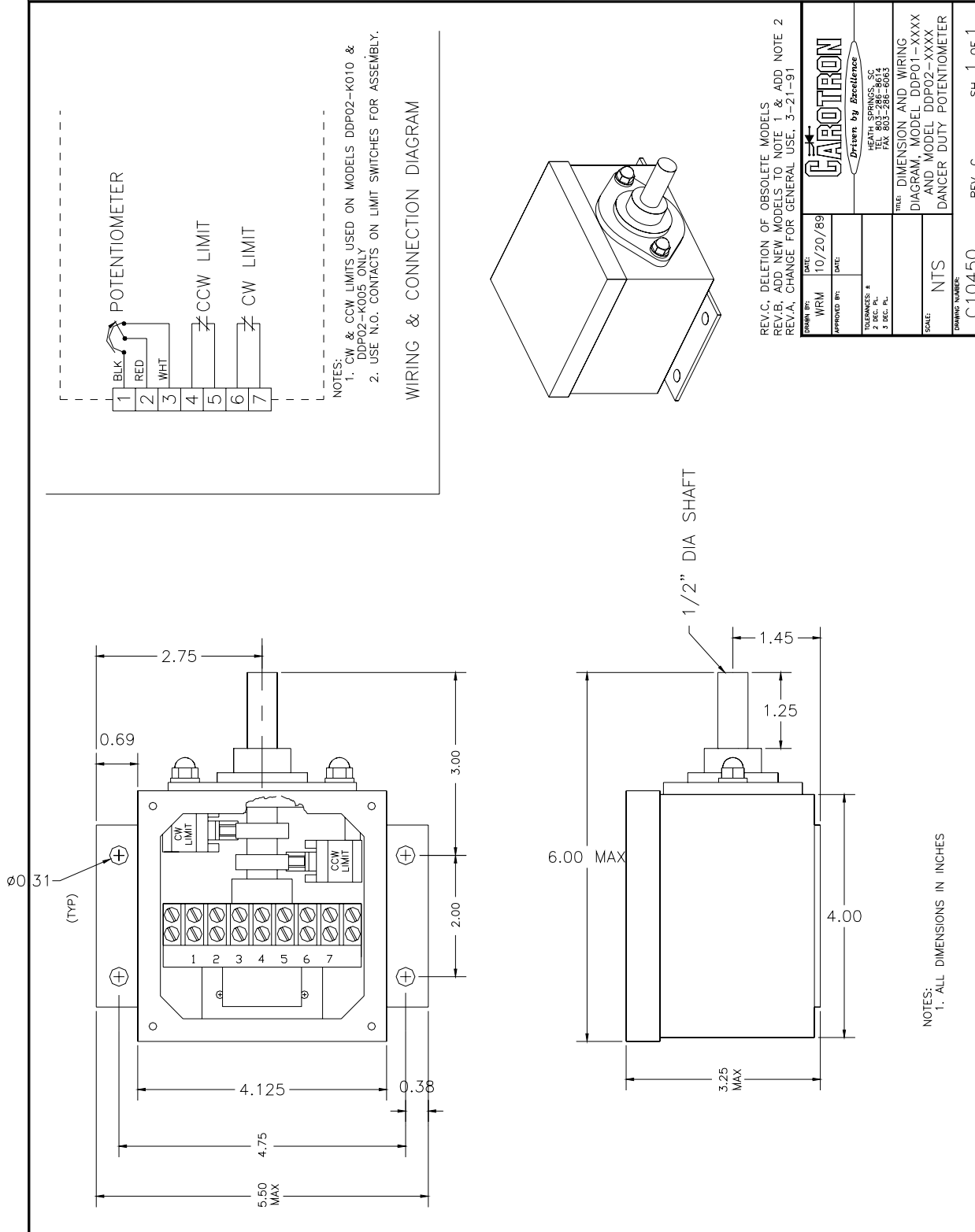
No internal adjustments are required for these models. When the faced side of the dancer shaft is in the upward position, the potentiometer is factory set for approximately ½ the total resistance range. This can be verified by placing an ohm meter between TB1-2 and TB1-1 or TB1-3. The ohm meter should indicate approximately 5K ohms at this point for the 10K unit, and 2.5K ohms for the 5 K unit.

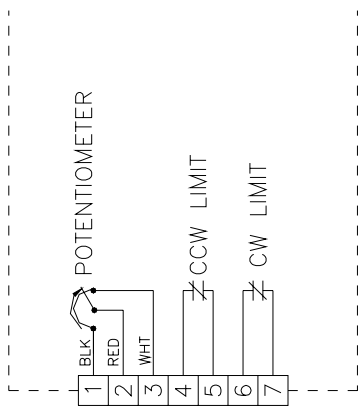
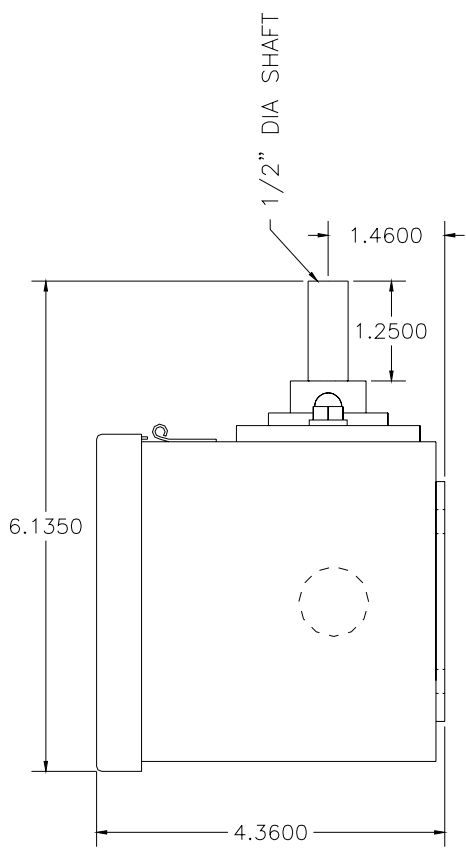
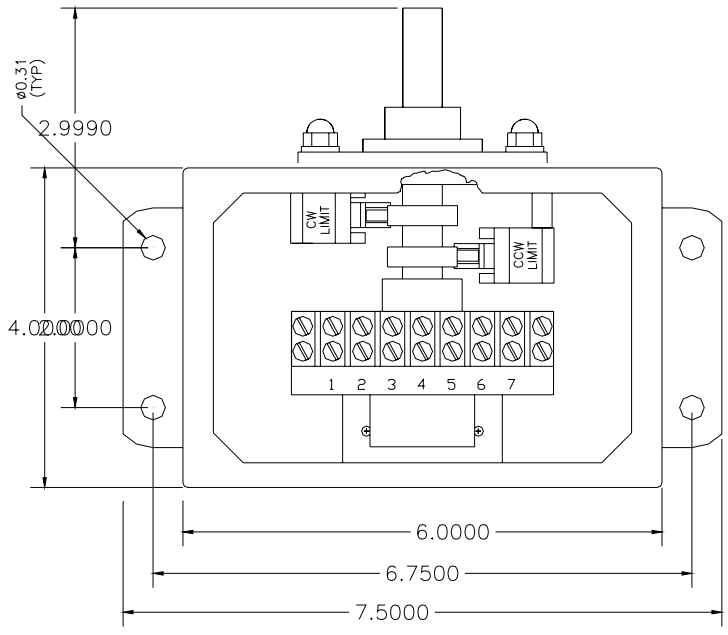
Models DDP02-K0XX and DDPS2-K0XX

The only adjustments required for these models are the settings for the extreme travel limits. When the faced side of the dancer shaft is in the upward position, the potentiometer is factory set for approximately ½ the total resistance range. This can be verified as described for the DDP01-K0XX and DDPS1-K0XX models. Here after this point will be referred to as the midpoint.

Rotating the dancer shaft approximately 165° in the CCW direction from the midpoint will open the CCW limit contacts between TB1-4 and TB1-5. Rotating the dancer shaft approximately 165° in the CW direction from the midpoint will open the CW limit contacts between TB1-6 and TB1-7.

If factory set points for the extreme travel limit switches are not desirable, they may be easily changed. To change the CCW limit set point, simply rotate the dancer shaft CCW to the desired set point. Loosen the set screw for the associated cam and rotate the cam until the CCW limit switch contacts between TB1-4 and TB1-5 open. After setting the CCW limit, rotate the dancer shaft CW to the desired CW limit set point and adjust the cam in the same manner. The NC contacts between TB1-6 and TB1-7 will open when the cam is in position.





NOTES:
 1. CW & CCW LIMITS USED ON MODELS DDPS2-K010 & DDPS2-K005 ONLY
 2. USE N.O. CONTACTS ON LIMIT SWITCHES FOR ASSEMBLY.

WIRING & CONNECTION DIAGRAM

NOTES:
 1. ALL DIMENSIONS IN INCHES

REV.A, DELETION OF OBSOLETE MODELS

DATE	12-7-95
DRAWN BY	HJH
APPROVED BY	
TOLERANCES - DIM	
1 DEC PL = .005	
SCALE	
DRAWING NUMBER	C1749
REV.	A
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TITLE: DIMENSION AND WIRING DIAGRAM, MODEL DDPS1-XXXX AND MODEL DDPS2-XXXX DANGER DUTY POTENTIOMETER

Standard Terms and Condition 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

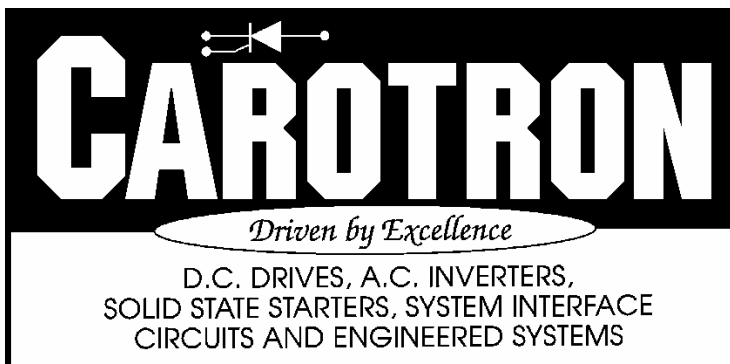
If the Purchaser desires to return any product or part, written authorization thereof must first be obtained from the Company which will advise the Purchaser of the credit to be allowed and restocking charges to be paid in regard to such return. No product or part shall be returned to the Company without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