

# 700/Commutrol™ Series DC Brushless Motor Control

710ADC



703BDC

Dart's 700/Commutrol™ Series is a family of brushless DC motor controls designed to provide commutated power and variable speed control for standard 3 phase brushless (BLDC) motors. The controls operate in a basic open loop or closed loop configuration with either 60° or 120° brushless D.C. motors. Compact, economical, and efficient, the 700/Commutrol™ Series is ideal where high torque, high speed and quiet operation are needed.

The latest addition to the 700 Series, the 703BDC, has the same compact surface mount layout as the 701BDC with the following added features: Adjustable Accel/Decel plus a bi-directional speedpot control capability (wig-wag).

The 700/Commutrol™ Series controls can also be provided with a pluggable connector and fixed settings for OEM applications.

## 700/COMMUTROL™ STANDARD FEATURES

- Open loop or integrated closed loop models
- Quiet 15KHz. PWM switching frequency
- MOSFET power devices
- Directional control - forward/reverse
- Internal +6.2, VDC 20 mA supply for motor Hall-Effect sensors
- 5K ohm speedpot w/leads, knob and dial for remote mounting
- Anodized chassis mount heatsink

## OPERATING CONDITIONS

Temperature ..... -10° to +45° C.

## 700/COMMUTROL™ SELECTION GUIDE

For 700B Series	For 710A Series	
Model 700BDC	Model 710ADC	Open Loop
Model 701BDC	Model 711ADC	Closed Loop
Model 703BDC		Closed Loop

## 700/COMMUTROL™ OPTION DESCRIPTION

**OPTION** ..... **SUFFIX**  
 Pluggable terminal strip (700B Series only) ..... -PA

## DIMENSIONAL SPECIFICATIONS

MODEL	WIDTH	LENGTH	DEPTH	WEIGHT
<i>English (inches) Metric (centimeters)</i>				
700BDC	3.63 9.21	4.25 10.80	1.30 3.30	6 oz. 170 gm.
701BDC	3.63 9.21	4.25 10.80	1.30 3.30	6 oz. 170 gm.
703BDC	3.63 9.21	4.25 10.80	1.30 3.30	6 oz. 170 gm.
710ADC	3.62 9.20	7.00 17.78	2.00 5.08	16 oz. 453 gm.
711ADC	3.62 9.20	7.00 17.78	2.00 5.08	16 oz. 453 gm.

## 700/COMMUTROL™ SPECIFICATIONS

	700B SERIES	710A SERIES
<b>Input Voltage</b>	11–40 VDC Input <sup>1</sup>	10–54 VDC Input <sup>2</sup>
<b>Output Voltage</b>	0–Input Voltage	0–Input Voltage
<b>Load Current</b>	5 Amps continuous	20 Amps continuous
<b>Overload Current</b>	150% for 30 seconds	200% for 30 seconds
<b>Speed Adjustment</b>	Potentiometer or 0–6.2 VDC Analog Input Signal	Potentiometer or 0–6.2 VDC Analog Input Signal
<b>Speed Range</b>	50:1	50:1
<b>Current Limit</b>	Adjustable Trimpot	Adjustable Trimpot
<b>Motor Hall Spacing (electrical degrees)</b>	60 or 120 degrees (field selectable)	60 or 120 degrees (field selectable)
<b>Acceleration</b>	Fixed, fast start Adjustable 0–10 Sec (703 only)	Fixed, fast start
<b>Deceleration</b>	Fixed Adjustable 0–10 Sec (703 only)	Fixed
<b>Min Speed</b>	Adjustable; 0–30% of max.	Adjustable; 0–30% of max.
<b>Max Speed</b>	Adjustable; 60–100% of max.	Adjustable; 60–100% of max.
<b>Input/Output Connections</b>	Terminal block	Terminal block
<b>Speed Regulation</b>	Open loop (700BDC) Closed loop (701BDC, 703BDC) ±1/2% of base speed	Open loop (710ADC) Closed loop (711ADC) ±1/2% of base speed

1 - Field selectable voltage range 11-14 VDC input or 18-40 VDC input.

2 - Field selectable voltage range 10-13.5 VDC input or 18-54 VDC input.

## 700B SERIES HOOK-UP

