

700/Commutrol™ Series DC Brushless Motor Control



703BDC



Speed Potentiometer
Kit Included

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 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	For 730 Series	
Model 700BDC	Model 710ADC	Model 730	Open Loop
Model 701BDC	Model 711ADC	Model 731	Closed Loop
Model 703BDC		Model 733	Closed Loop

700/COMMUTROL™ OPTION DESCRIPTION

OPTION	SUFFIX
Pluggable terminal strip (700/730 Series only).....	-PA
Current limit shutdown (Model 733BDC only)	-CL

DIMENSIONAL SPECIFICATIONS

MODEL	WIDTH	LENGTH	DEPTH	WEIGHT
<i>English (inches) Metric (centimeters)</i>				
700BDC/730	3.63 9.21	4.25 10.80	1.30 3.30	6 oz. 170 gm.
701BDC/731	3.63 9.21	4.25 10.80	1.30 3.30	6 oz. 170 gm.
703BDC/733	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.
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700/COMMUTROL™ SPECIFICATIONS

	700B SERIES	730 SERIES	710A SERIES
Input Voltage	11–40 VDC ¹	10.5–54 VDC ^{2,3}	10–54 VDC ²
Output Voltage	0–Input Voltage	0–Input Voltage	0–Input Voltage
Load Current	5 Amps continuous	8 Amps continuous ⁴	20 Amps continuous
Overload Current	150% for 30 seconds	150% for 30 seconds	200% for 30 seconds
Speed Adjustment	Potentiometer or 0–5 VDC Analog Input Signal	Potentiometer or 0–5 VDC Analog Input Signal	Potentiometer or 0–6.2 VDC Analog Input Signal
Speed Range	50:1	50:1	50:1
Current Limit	Adjustable Trimpot	Adjustable Trimpot	Adjustable Trimpot
Motor Hall Spacing (electrical degrees)	60 or 120 degrees (field selectable)	60 or 120 degrees (field selectable)	60 or 120 degrees (field selectable)
Acceleration	Fixed, fast start Adjustable 0–10 Sec (703 only)	Fixed, fast start Adjustable 0–10 Sec (733 only)	Fixed, fast start
Deceleration	Fixed Adjustable 0–10 Sec (703 only)	Fixed, fast start Adjustable 0–10 Sec (733 only)	Fixed: fast stop
Min Speed	Adjustable; 0–30% of max.	Adjustable; 0–30% of max.	Adjustable; 0–30% of max.
Max Speed	Adjustable; 60–100% of max.	Adjustable; 60–100% of max.	Adjustable; 60–100% of max.
Input/Output Connections	Terminal Strip; optional pluggable	Terminal Strip; optional pluggable	Terminal block
Speed Regulation	Open loop (700BDC) Closed loop (701BDC, 703BDC) ±1/2% of base speed	Open loop (730) Closed loop (731, 733) ±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.

3 - Load Current is 5 Amps continuous above 40VDC supply.
4 - 9.5A with use of Auxillary Heat Sink HS2

700/730 SERIES HOOK-UP

