

# 250 Series Variable Speed DC Control

Chassis

NEMA 4/12



Washdown Duty

Speed Potentiometer  
Kit Included



The 250 Series offers superb flexibility, reliability, and value. A general purpose, economical control rated to 2 horsepower, it provides the ultimate in standard features and versatility including: **dual voltage (120/240 VAC), adjustable H.P. settings, packaged power bridge, barrier terminal strip, fully rated-no auxiliary heatsink required, and chassis or NEMA 4/12 enclosure.** Many options further extend the 250's capabilities.

A logical, easily accessible layout simplifies installation and adjustment. Clean design, quality components and careful assembly are trademarks of Dart Controls.

## 250 SERIES STANDARD FEATURES

- Dual voltage - 120/240 VAC, 50/60Hz
- Adjustable horsepower settings
- Barrier terminal strip
- Packaged bridge supply (fullwave)
- 1% speed regulation with armature voltage feedback;  $\pm 1/2\%$  with tach feedback
- Adjustable Minimum speed (0–30% of max)
- Adjustable Maximum speed (66–110% of base)
- Adjustable IR Compensation
- Adjustable Linear Acceleration (0.5-8 sec.)
- Adjustable Current Limit to 15 Amps
- Line voltage compensation
- 5K ohm speed potentiometer with 8" leads, knob and dial included
- Power on/off switch (enclosed models)
- 50:1 speed range
- Overload capacity: 150% for one minute
- Transient voltage protection
- Voltage following mode or DC tachometer follower by supplying ungrounded analog input signal (0–12 VDC)
- DC tachometer feedback (6V at base speed)
- Inhibit circuit - permits start & stop without breaking AC lines
- Remote start/stop via pot circuit or inhibit circuit
- Shunt field supply provided (1 Amp max; 100V for 120 VAC; 200V for 240 VAC input)
- AC line fuse
- Enclosed models rated NEMA 4/12 w/ threaded conduit holes

## 250 SERIES SELECTION GUIDE

H.P. RANGE	CHASSIS "C"	ENCLOSED "E"
<i>120 VAC Single Phase Input, 0-90 VDC Output</i>		
1/50 - 1/8	251G-12C	251G-12E
1/8 - 1.0	253G-200C	253G-200E
<i>240 VAC Single Phase Input, 0-180 VDC Output</i>		
1/25 - 1/4	251G-12C	251G-12E
1/4 - 2.0	253G-200C	253G-200E

Horsepower settings are adjustable, 1/50 thru 1/8 and 1/8 thru 2 - see installation manual. Control is tested and calibrated for maximum horsepower in its category.

## DIMENSIONAL SPECIFICATIONS

MODEL	WIDTH	LENGTH	DEPTH	WEIGHT
<i>English (inches)</i>				
Chassis	5.53	7.00	1.63	14.25 oz.
Enclosed	5.53	7.25	2.75	17.50 oz.
<i>Metric (centimeters)</i>				
Chassis	14.1	17.78	4.14	404 gm.
Enclosed	14.1	18.42	6.98	486 gm.

## OPERATING CONDITIONS

Temperature.....-10° to +45° C.  
 AC Input Voltage .....  $\pm 10\%$  Rated Line Voltage  
 Input Frequency ..... 50/60 Hz.

## ELECTRICAL SPECIFICATIONS AC INPUT 50/60 HZ

*120 VAC Single Phase Input, 0-90 VDC Output*

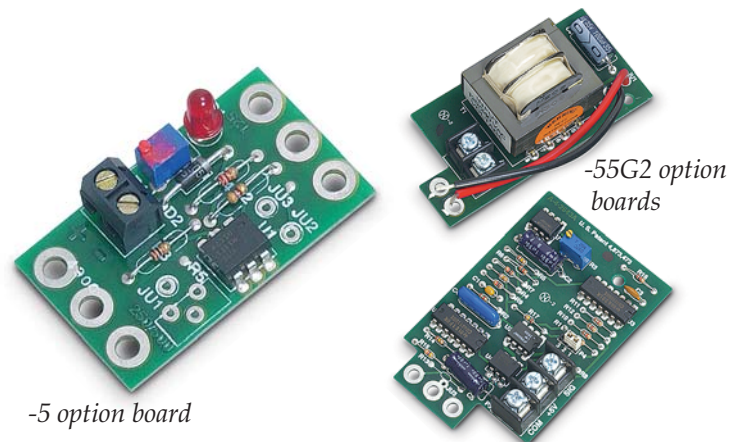
H.P.	MAX. AC AMPS	KVA	MAX. ARM* AMPS DC
1/50	0.5	0.06	0.4
1/20	1.0	0.12	0.8
1/8	2.0	0.24	1.6
1/4	3.5	0.42	2.7
1/3	4.4	0.53	3.4
1/2	6.5	0.78	5.0
3/4	9.3	1.12	7.2
1	13.2	1.58	10.2

*240 VAC Single Phase Input, 0-180 VDC Output*

H.P.	MAX. AC AMPS	KVA	MAX. ARM* AMPS DC
1/4	1.8	0.42	1.4
1/3	2.2	0.53	1.7
1/2	3.3	0.78	2.5
3/4	4.8	1.15	3.7
1	6.5	1.56	5.0
1 1/2	9.7	2.33	7.5
2	12.9	3.10	9.9

For dual voltage 250 series, use table for the input voltage you are using.  
 \* Minimum Armature Amps: 150mA D.C.

## POPULAR OPTIONS



## OPTION DESCRIPTION

OPTION	SUFFIX
NEMA 4X Enclosure.....	-4X
4-20mA isolated signal follower (chassis only).....	-5*
-5 option with Auto/Manual function.....	-7 <sup>1</sup>
Decel equals Accel time .....	-17B
Forward-Off-Reverse manual switch (center blocked, no Dynamic Brake-enclosed only) .....	-29
Forward-Off-Reverse manual switch (center blocked, no Dynamic Brake - chassis only) .....	-29B
Torque control (enclosed only) .....	-34A
Isolated voltage follower (120/240 VAC input) - controls speed from any external grounded or ungrounded signal: 0-5 VDC thru 0-250 VDC adjustable (chassis only).....	-55G2*
-55G2 option with Auto/Manual function.....	-56G2 <sup>1</sup>

*Other options are available, please consult factory for your requirement.*

\* Field installable

1-Enclosed version is factory installed only. Chassis version is field installed.