

# BRONCO VFD

October 2004

[www.DanaherMotion.com](http://www.DanaherMotion.com)



**Seco**  
AC/DC Drives

# Mechanical and Electro-Mechanical Product Solutions by Danaher Motion

## New Name, Established Brands

Danaher Motion's wide range of motion control systems and components offer customers an unprecedented choice in selecting the right solution to match their particular application requirements. Our product innovations have been improving the efficiency and productivity of complex manufacturing operations for over 60 years through trusted brand names such as Dover, Kollmorgen, Pacific Scientific, Portescap and Thomson in industries as diverse as semiconductor, aerospace and defense, mobile-off-highway, packaging, medical and robotics.

In addition, Danaher Motion, through Motion Engineering (MEI), offers powerful integrated motion control solutions with its industry-leading, multi-axis motion platforms and SynqNet™ communications network for ultra-reliable machine performance. From software and controller, through the communications network to drives and I/O devices, to mechanical and electro-mechanical products, Danaher Motion differentiates itself in the marketplace by designing standard and custom solutions to satisfy the most demanding application requirements.

Our growing family of leading motion control products and application expertise tells only half the story. With a worldwide service and support infrastructure, our field service engineers and support teams are available to assist whenever they are needed. It is part of Danaher Corporation's unrelenting focus on its customer. That's why more and more design engineers are turning to Danaher Motion to meet their motion control requirements.

### Danaher Motion Values

- Application Expertise
- Broad & Innovative Motion Control Products and Systems
- Customer Focus
- Customizable Products and Services
- Motion Control Pioneers with Global Staying Power
- Operational Excellence



**KOLLMORGEN**



**Portescap**

**THOMSON**

## Bronco VFD Series

The Bronco VFD series is a general purpose AC adjustable speed drive for three-phase and single phase induction motors. Key features include an isolated front end, DC injection braking, automatic or manual re-start, and voltage doubler circuit.

The Bronco VFD can accept a speed reference signal without a separate isolation card. Packed with features, the Bronco VFD series has a "doubling" jumper that can be set to output 230VAC to a motor when only 115VAC power supply is available. DC injection braking or coast-to-stop comes standard.

The compact Bronco VFD units are available in chassis or a choice of enclosures, including rugged NEMA 4/12 cast aluminum or NEMA 4X USDA rated white epoxy-coated aluminum with stainless hardware. Available to 1.5 HP, the Bronco VFD series has the features, flexibility and compact size expected in a full-featured AC drive.



## Standard Features

- 115V or 230VAC single phase input – One flexible unit works for both common power voltages.
- Doubled output (230VAC) with 115VAC input – A 230VAC motor can be used when only a 115VAC supply is available.
- Isolated front end for reliability – Speed reference and switch inputs do not have to be isolated from ground, and no additional isolation card needed.
- Accepts reference signals 0-10VDC, 0-5VDC or 4-20mA – Common, readily available analog signals.
- Slip Compensation – Improves speed regulation without a feedback device
- DC injection braking – Provides braking force to motor and more control than coast to stop. Can be adjusted to meet application needs.
- Adjustable brake current and brake time trimmer pots – Allows the amount of braking current and braking time to be specifically set for each application's needs.
- 200% peak starting torque – Enables the drive to overcome intermittent peak loads.
- Torque limiting – Protects equipment that could be damaged by reducing the torque to a safe level.
- 0-120Hz max frequency output – Can adjust output frequency to fit the application by running motor above base speed.
- Controls AC motors that are three-phase induction, single-phase permanent split capacitor (PSC), shaded pole and synchronous motors.
- Adjustable 4-16kHz carrier frequency. 16kHz switching frequency results in quiet motor operation. Capacitor kit to lower the frequency is available.
- NEMA 4X enclosure available – Protects drive from harsh environments including wash-down and corrosive applications.
- Minimum speed, maximum speed, torque limit, acceleration, deceleration, slip compensation, boost, zero set, brake current, and brake time – Easy calibration and setup of drive.
- Torque boost trimmer pot – Can provide extra torque (voltage) for start up of high inertial or frictional loads.
- Auto restart or manual restart – Can choose for the Bronco VFD to attempt restart after a fault, ideal for unattended remote applications.
- Power, Fault, Enable and Torque limit LEDs – Easy to troubleshoot and identify the status of the drive.
- 150% overload for 5 minutes – Longer overload time than competition.
- AC line fuses included in all styles – No need to add fusing at installation.
- Run multiple motors in parallel – Potential cost savings if only one drive is needed for more than one motor.
- Active inrush current limiter – Provides for smooth start up of the motor/drive system.
- Quick disconnect terminals for easy terminations and changes.



### BVFD161 - CHASSIS MOUNT

Suitable for mounting in a control panel or enclosure, the chassis mount configuration is an economical and compact solution for motor speed control needs. No additional fuses, heat sink, power supplies, or isolation cards are required. The chassis mount unit will run with a 10K-ohm speed potentiometer (supplied separately) or from a 0-10 volt, 0-5 volt, or 4-20 mA process signal as a speed reference.



### BVFD163 - NEMA 4/12 ENCLOSED

The BVFD163 is ready to install in most industrial environments, indoor or outdoor. It's cast aluminum enclosure and front cover will resist dust, dirt, fiber flyings, non-corrosive liquids, and water - even hose directed. No additional heat sink, power supplies, or isolation cards are required. Booted operator devices for Start/Stop, Run/Jog, and Forward/Reverse are provided, as is internal fuse protection.



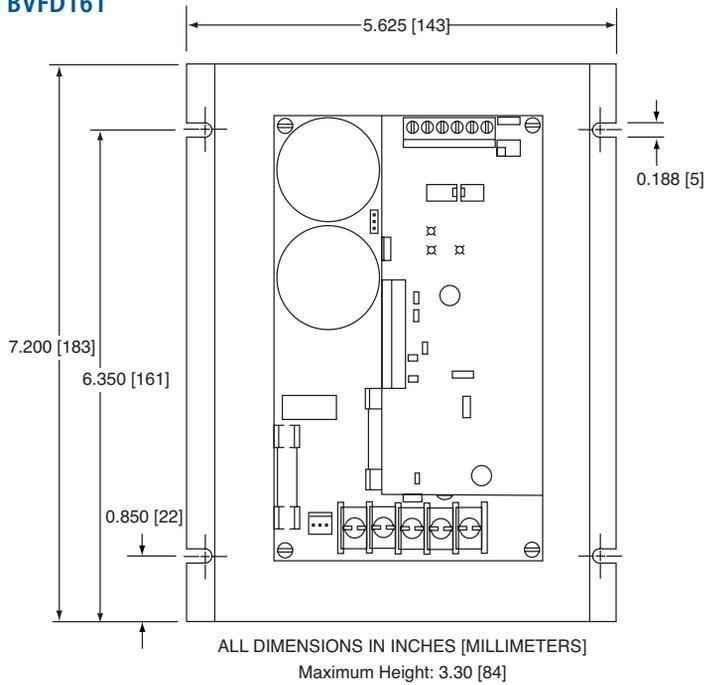
### BVFD163WD - NEMA 4X ENCLOSED

The BVFD163WD includes all of the protective features of the BVFD163, plus it is corrosion resistant, by virtue of stainless steel hardware and a coating of white epoxy. Perfect for heavy washdown applications, including food and beverage. No additional heat sink, power supplies, or isolation cards are required. Booted operator devices for Start/Stop, Run/Jog, and Forward/Reverse are provided, as is internal fuse protection.

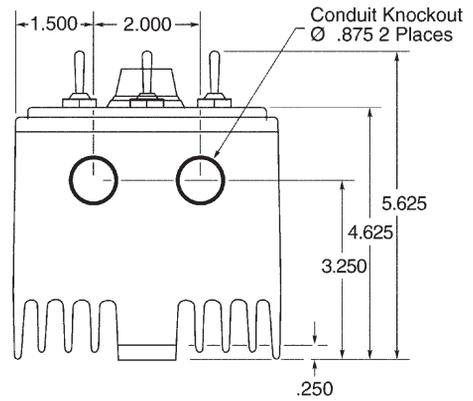
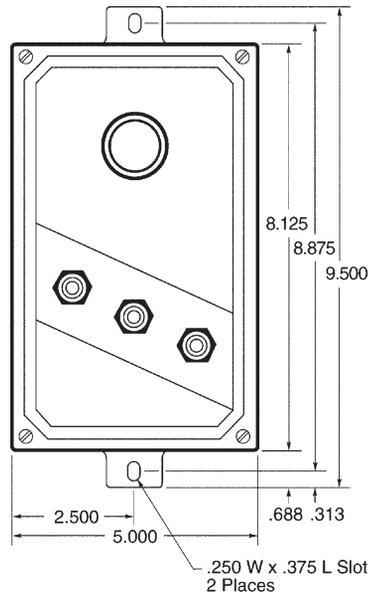
SPECIFICATIONS	
1-Phase Input	115/230 VAC, 50/60 Hz
1 or 3 -Phase Output	230 VAC, 50/60 Hz
Maximum Horsepower - BVFD161	1.5 HP
Maximum Horsepower - BVFD163/BVFD163WD	1 HP
Maximum Continuous Output Current - BVFD161	5.0 amps AC
Maximum Continuous Output Current - BVFD163/BVFD163WD	4.0 amps AC
Input current	18/10 amps
AC Voltage Input Range	115/230 VAC±10% 50/60 Hz single phase
Standard Carrier Frequency	16 KHz
Adjustable Braking Current	0 - 5 ADC
Adjustable Braking Time	1 - 10 Sec.
Adjustable Minimum Speed	0 - 30 Hz
Output Frequency Range	0 - 120 Hz
Adjustable Maximum Output Frequency Range	30 - 120 Hz
Acceleration Time Range	1 - 12 secs
Deceleration Time Range	1 - 12 secs
Analog Input Voltage Range	0-5 VDC, 0-10 VDC, 4-20 mA
Analog Input Impedance	~ 100K ohms
Vibration	0.5G max (20-50 Hz) 0.1G max (>50 Hz)
Weight	Chassis: 1.2 lbs. Enclosed: 9 lbs.
Ambient Operating Temperature Range	10° - 40°C

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**BVFD161**



**BVFD163/163WD**

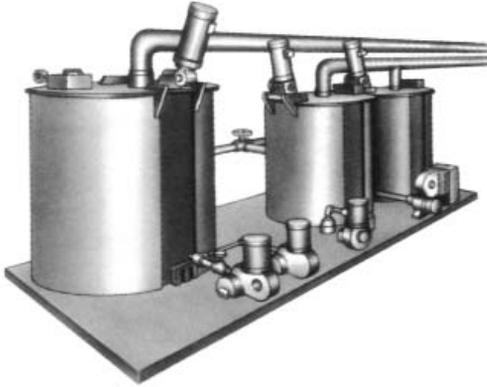


**Inverter Duty Motors – 20:1 constant torque speed range**

Model Number	HP	Base speed (RPM)	NEMA Frame/Type	FL Amps at 230V	Shipping Weight (lb)
MM0025	1/4	1800	56C/TENV	1.0	18
MM003	1/3	1800	56C/TENV	1.2	18
MM005	1/2	1800	56C/TENV	1.8	20
MM0075	3/4	1800	56C/TEFC	2.8	23
MM01	1	1800	56C/TEFC	3.2	28
MM015*	1.5	1800	145TC/TENV	4.8	49

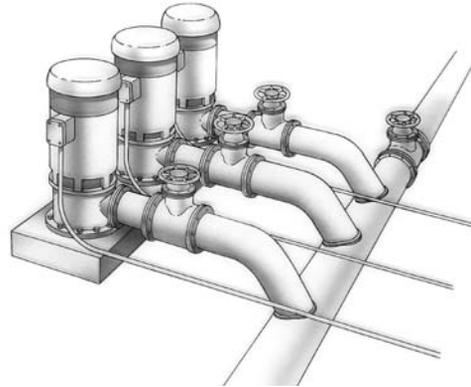
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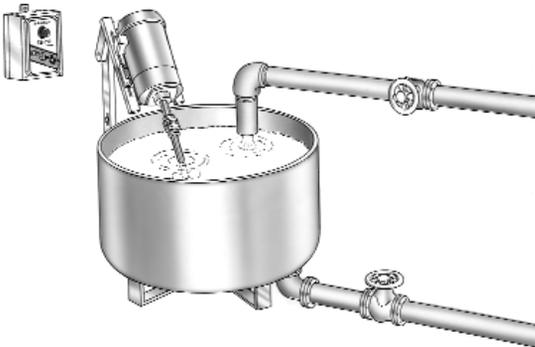
### Waste Water Treatment

- Wet environment
- Automatic re-start
- Minimal maintenance



### Chemical Processing

- Corrosive atmosphere
- Frequently wet
- Process signal control



### Mixers

- Variable speed
- Rugged and industrially tough
- Built-in braking

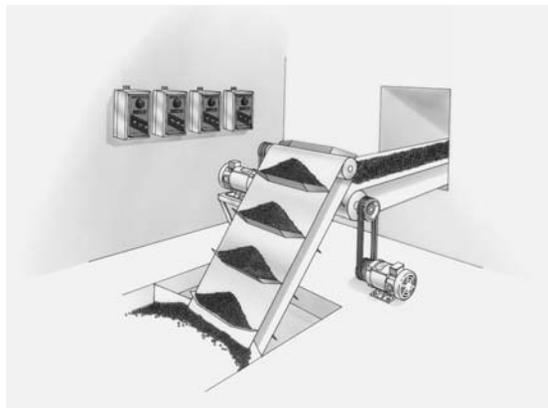


### Conveyors

- Simple, variable speed control
- Forward or reverse direction
- Compact and rugged for on machine mounting

### Food Processing

- Washdown is frequent
- Cleanliness is critical
- Rugged, tough environment





### SE2000 DC Drives

This non-regenerative DC drive is designed to control shunt wound or permanent magnetic field DC motors from 1/4 to 5 HP. It offers isolated 4-20mA or 0-10 VDC control signal, tachometer generator feedback, circuit protection, diagnostic capabilities, control relay, torque and slope control, and overcurrent protection. Jumper selectable to program drives for specified motor or application. Horsepower range 115 VC to 230 VAC. Open chassis or NEMA 4/12 enclosures available and UL listed.



### Quadraline 7000 DC Drives

Designed for full wave, regenerative applications, the Quadraline 7000 is designed for either permanent magnet or wound field DC motors from 1/4 to 5 HP. It features fullwave 4-quadrant operation, seven selectable performance features, electronic reversing and seven control adjustments, positioning accuracy. Chassis or NEMA 4/12 enclosures available and UL listed.



### M4000 digital 3-Phase DC Drives

The M4000 Series digital 3-Phase Dc Drive is a programmable, micro-processor-based variable speed DC drive. It allows keypad control of each parameter. Digital readout provides on-line monitoring of drive operation. Ideal for many drive applications including wire and cable, packaging/converting, machinery and material handling. Improved circuit board technology has added standard features, including serial communications and a field-weakening controller for constant power and extended speed range applications.



### AC Adjustable Speed Drives, SV Flux Vector Drive Series

The AC drive that performs like a DC drive at no additional cost. SECO SV3000 Series flux vector drives can achieve the same performance as DC drives but are equally at home in machines usually driven by conventional AC drives. By using a motor-mounted encoder and encoder interface card, the performance of the SV3000 surpasses that of most DC drives and approaches that of servo.

Its versatility makes it ideal for many drive applications including wire and cable, packaging/converting machinery, material handling, metal forming, plastics, textiles, food processing equipment, spindles, cut-offs, winders, and unwinders.



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AC/DC Drives

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