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KBDF

Digital AC Drive with CSP™*

IP 20 Enclosure

Primary Features

Horsepower 1/8 to 5 HP, Programmable
1Ø & 3Ø Input 115/230/460 VAC, 50/60 Hz
3Ø Output 230/460 VAC
200% Starting Torque
Digital Display with LED Status Indicators
Class "A" (CE) RFI Filter**



Benefits

Saves Time

Easy to Install and Simple to Operate
Does not require commissioning
With CSP™ you are up and running in less than 10 minutes.

Motors Last Longer

Proprietary CL Software
Provides overload protection, prevents motor burnout and eliminates nuisance tripping.
UL approved as electronic overload protector for motors.

Energy Saving

Uses only the power the application requires
Energy savings is realized by using variable motor speed vs. constant speed motors.

Economical to Use

No need to derate drive for high starting torque applications.

Combines Soft Start with Variable Speed
Adjustable Soft Start.

KB Customization for OEM's

"You get exactly what you need. Nothing more, nothing less."
Includes: custom label, preset calibration, installing drive options and custom software. Ready to use "Out-of-the-Box."

GFCI software *allows equipment to operate with Ground Fault Circuit Interruption circuit breakers or outlets.*

RoHS COMPLIANT CE

*CSP™ = Common Sense Programming. Parameters are organized into easy-to-understand intuitive groups.
**Order "F" suffix for built in filter. KBDF-24F.

KB GENESIS® Automation and Control
KB Electronics, Inc.
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Designed and Assembled in USA

Additional Features

Sensorless Flux Vector Control
Flux Vector Compensation with Static Auto-Tune provides excellent speed regulation with high torque loads throughout the entire speed range. Auto energy saving at light loads. Smooth motor torque.

Local/Remote Operation
When used with process control, the Local/Remote key can be used to switch from process control to manual control if a process fault occurs.

Electronic Inrush Current Limit (EICL™) Protection
Eliminates harmful inrush AC line current during power up.

Inputs/Outputs
Seven isolated multi-function inputs with sink or source mode control logic, two analog inputs, two multi-function output relays and one analog output.

Built-in Potentiometer
Quickest way to change motor speed.

Ride-Through
Provides smooth recovery to the previous set speed during a momentary power loss.

Holding Torque at Zero Speed
Resists motor shaft rotation when the drive is in “Stop” mode.

Regeneration Protection
Eliminates tripping due to high bus voltage caused by rapid deceleration of high inertial loads.

Undervoltage and Overvoltage Protection
Shuts down the drive if the AC line input voltage goes above or below the operating range.

Short Circuit Protection
Shuts down the drive if a short circuit occurs at the motor (phase-to-phase).

Drive Options

Memory Module
The Memory Module can store up to four programs for cloning and archiving. The drive can also store up to four programs.

IODF Input/Output Multi-Function Expansion Module
Adds up to 5 points of additional I/O.

Drive-Link™ Programming Kit
Allows PC programming.

Modbus Serial Communication Module
See instruction manual for complete description.



Applications

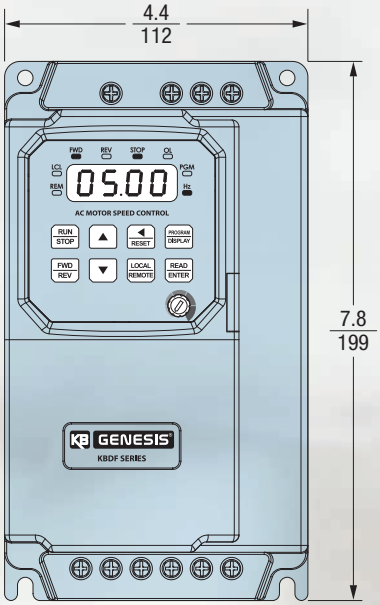
- Actuators • Air Cleaners • Amusement Rides
- Ball Pitching Machines • Blowers • Boat Lifts
- Bowling Alley Lane Cleaners • CNC • Conveyors
- Door and Gate Openers • Drilling • Duct Cleaners
- Dumbwaiters • Elevators and Hoists
- Exercise Equipment • Fabric Processing • Fans
- Feeders • Film Processing • Floor Cleaning
- Food Processing • Garment Cutting
- Grinding and Polishing • Hoppers • Horse Walkers
- HVAC • Indexers • Irrigation • Laminating
- Lift Station Pumps • Machine Tools
- Medical • Milling • Mixers • Oven Conveyors
- Packaging • Paint Blenders, Shakers, and Sprayers
- Paper Handling • Portable Equipment Used with GFCIs
- Pottery Wheels • Printing
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Automation and Control

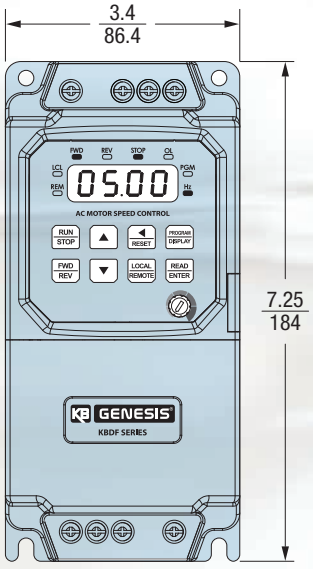
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Case "B" – (Inches/mm)



Maximum Depth: 6.1 / 155

Case "A" – (Inches/mm)



Maximum Depth: 5.1 / 130

Ratings

115 VAC 1-Phase Input • 230 VAC 3-Phase Output

Model No.	Part No.	Ratings		Net Weight		Case
		HP, (kW)	Amps	Lbs.	kg	
KBDF-13	9623	0.5, (0.37)	2.4	2.8	1.27	A
KBDF-14	9624	1, (0.75)	4.0	2.8	1.27	
KBDF-16	9625	1.5, (1.2)	5.5	2.8	1.27	

115/230 VAC 1-Phase Input • 230 VAC 3-Phase Output

Model No.	Part No.	Ratings		Net Weight		Case
		HP, (kW)	Amps	Lbs.	kg	
KBDF-23D	9673	0.5, (0.37)	2.4	2.8	1.27	A
KBDF-24D	9674	1, (0.75)	4.0	2.8	1.27	
KBDF-27D*	9675	2, (1.5)	6.7	2.8	1.27	
**115 VAC Ratings: 1.5 HP, (1.2 kW), 5.5 Amps*						

230 VAC 1-Phase Input • 230 VAC 3-Phase Output

Model No.	Part No.	Ratings		Net Weight		Case
		HP, (kW)	Amps	Lbs.	kg	
KBDF-23*	9688	0.5, (0.37)	2.4	2.8	1.27	A
KBDF-24*	9689	1, (0.75)	4.0	2.8	1.27	
KBDF-27*	9690	2, (1.5)	6.7	2.8	1.27	
**Order "F" Suffix for Built-In Class "A" (CE) RFI (EMI) AC Line Filter. Ex. KBDF-24F*						

230 VAC 3-Phase Input • 230 VAC 3-Phase Output

Model No.	Part No.	Ratings		Net Weight		Case
		HP, (kW)	Amps	Lbs.	kg	
KBDF-23P	9694	0.5, (0.37)	2.4	2.8	1.27	A
KBDF-24P	9695	1, (0.75)	4.0	2.8	1.27	
KBDF-27P	9696	2, (1.5)	6.7	2.8	1.27	
KBDF-29	9641	3, (2.25)	9.0	4.2	1.93	B

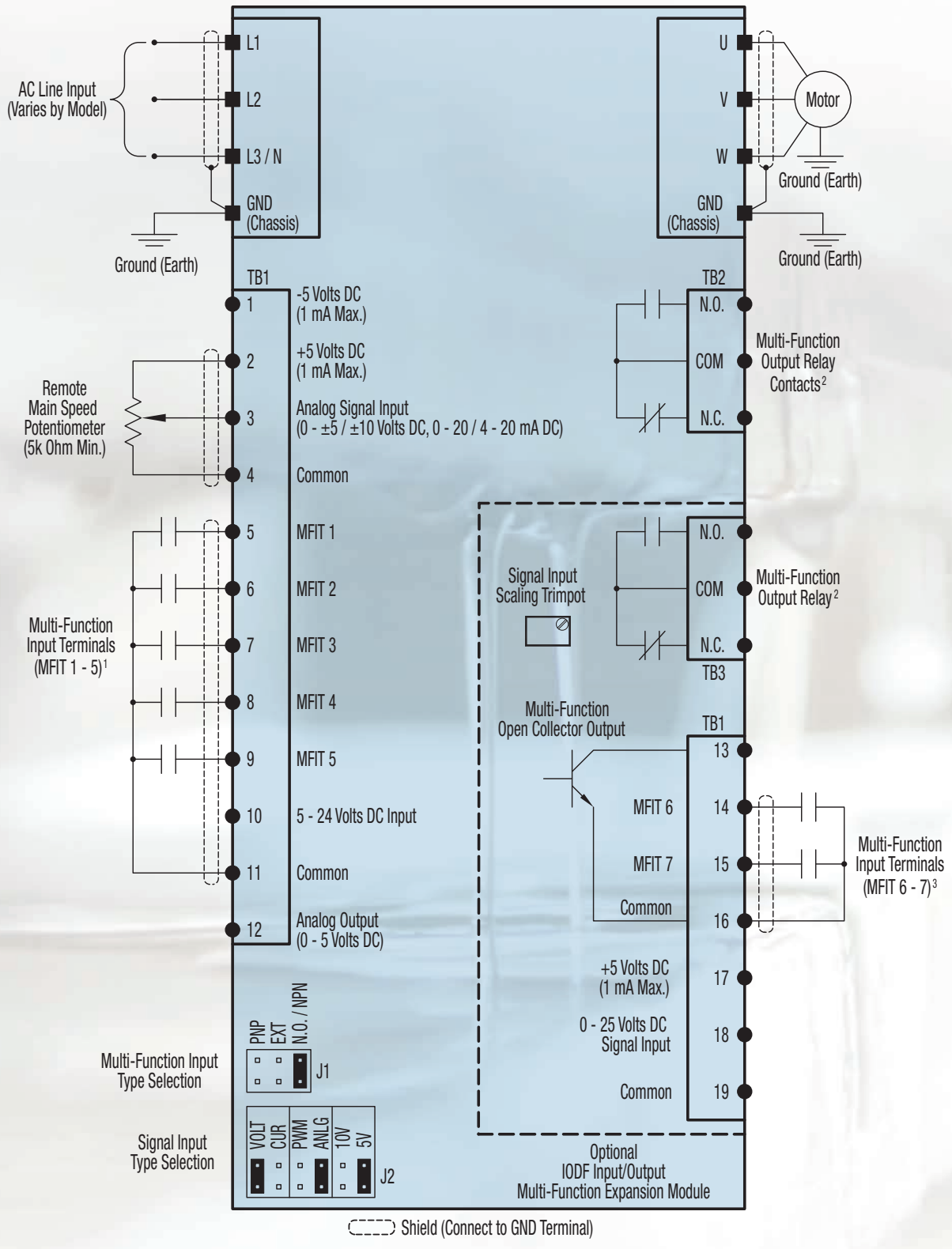
460 VAC 3-Phase Input • 460 VAC 3-Phase Output

Model No.	Part No.	Ratings		Net Weight		Case
		HP, (kW)	Amps	Lbs.	kg	
KBDF-42	9642	1, (0.75)	2.0	4.2	1.93	B
KBDF-45	9643	3, (2.25)	4.6	4.2	1.93	
KBDF-48	9644	5, (3.75)	8.3	4.2	1.93	

Specifications

Maximum Load (% of Current Overload for 2 Minutes)	150
Switching Frequency (kHz)	8, 10, 12, 14, 16
Output Frequency Resolution (Hz)	0.06
Minimum Output Frequency to Motor (Hz)	0.3
Acceleration Time (Seconds)	0.1 – 180.0
Deceleration Time (Seconds)	0.3 – 180.0
Speed Range (Ratio)	50:1
Speed Regulation (30:1 Speed Range, 0 – Full Load) (% Base Speed)	2.5
Stalled Motor Trip Time (Seconds)	6
Braking	DC Injection
Operating Temperature Range (°C / °F)	0 – 40 / 32 – 104
Storage Temperature (°C / °F)	-25 – +85 / -13 – +185

General Connection Diagram



Notes: 1. *Multi-Function Input Terminals (MFIT 1 – 5 on TB1of the drive) are factory set for N.O. Contacts or NPN Transistors (J1 set to the "N.O. / NPN" position), which use the internal power supply. For NPN Transistors, which use an external power supply (5 – 24 Volts DC), set Jumper J1 to the "EXT" position. For PNP Transistor circuits, which use the internal power supply or an external power supply (5 – 24 Volts DC), set Jumper J1 to the "PNP" position.* ***2.*** *Multi-Function Output Relay Contact Ratings: 1 Amp at 30 Volts DC, 0.5 Amp at 125 Volts AC, and 0.25 Amp at 250 Volts AC.* ***3.*** *Multi-Function Input Terminals (MFIT 6 – 7 on TB4 of the IODF) only accept N.O. Contacts or NPN Transistors (which use the internal power supply).*

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