

Digital Inverter Selection Guide

GENESIS™

Automation and Control

Digital Inverters for 3-Phase AC Induction Motors thru 30 HP

*KBE2 Series (IP-20, NEMA-4) • 1/4 – 3 HP • 115, 230, and 460 VAC Line Input**

The KBE2 Series Drives are compact in size and easy to install and operate. The 3-digit LED display and digital keypad facilitate programming. Remote control operation is achieved with isolated terminals for Start/Stop, Forward/Reverse, and analog signal input/output. They provide a simple low-cost solution for applications thru 3 HP. The KBE2 is available in IP-20 and NEMA-4 (indoor) enclosures.



*KBN2 Series (NEMA-1) • 1/2 – 30 HP • 230 and 460 VAC Line Input**

The KBN2 Series are full featured drives rated thru 30 HP. The remote mountable keypad with 4-digit LED display provides full programming features and custom readouts. The KBN2 contains preset speeds, process timers, and sequence control functions. The PC based RS-232/485 communications options facilitate programming.



*KBV2 Series (NEMA-1) • 1 – 30 HP • 230 and 460 VAC Line Input**

The KBV2 Series Drives are advanced versions of the KBN2 Series Drives. The sensorless flux-vector operation mode provides over 200% torque down to 1 Hz. Closed Loop flux vector operation is also available. Process control is accomplished with the programmable PID functions. Built-in RS-485 communication along with DeviceNet, PROFIBUS, and Lon-Works communication protocol adds to the KBV2 flexibility.

* Actual AC line input voltage operating range is listed in general performance specifications



KB Electronics, Inc.

"The Right Control For Your Application"



LISTED 16KJ.
POWER CONV.EQ
E177007



N998

STANDARD FEATURES AND SPECIFICATIONS

Description	KBE2 Series	KBN2 Series	KBV2 Series
Enclosure Type	IP-20 & NEMA-4	NEMA-1	NEMA-1
LED Digital Display with Keypad (Number of Digits)	3	4	4
Multifunction Control Inputs (Number of Inputs)	2	3	3
Preset Speeds and Jog (Number of Speeds)	3	7	7
Isolated Remote Signal Inputs	✓	✓	✓
Manual or Automatic Start	✓	✓	✓
Regenerative and DC Injection Braking	✓	✓	✓
Preset V/Hz Curves with Program Modification	✓	✓	✓
Diagnostics with Fault Codes	✓	✓	✓
Output Relay	✓	✓	✓
DIN Rail Mounting ¹	✓	-	-
3-Wire Remote Start/Stop	-	✓	✓
Remote Mountable Keypad ²	-	✓	✓
Multifunction Output Signal (Open Collector)	-	✓	✓
Windows 95/98 Based Software for PC/Inverter Communications ³	-	✓	✓
Custom Readouts	-	✓	✓
Process Control with PID Loop	-	-	✓
DeviceNet, PROFIBUS and LonWorks Communication Protocol	-	-	✓
Sensorless and Closed Loop Flux Vector Control	-	-	✓
Auto Tuning/Motor Characteristics	-	-	✓
Process Timers	-	✓	✓
Overvoltage/Undervoltage Protection	✓	✓	✓
Regeneration Protection	✓	✓	✓
Stall Protection	✓	✓	✓
Phase-to-Phase Short Circuit Protection	✓	✓	✓
Phase-to-Ground Short Circuit Protection	✓	✓	✓
1½ Motor Overload Protection	✓	✓	✓
Overtemperature Protection	✓	✓	✓
Horsepower Range (HP, (kW))	1/4 - 3 (0.18 - 2.3)	1/2 - 30 (0.37 - 23)	1 - 30 (0.75 - 23)
Frequency Range (Hz)	0.1-200	0.1-400	0.5-400
Switching Frequency Range (kHz)	4-16	1-12	2-16
Frequency Resolution (Hz)	0.1	0.01	0.01
Accel/Decel Range (Seconds)	0.1-999	0.1-3600	0.1-3600
Overvoltage Trip Point @ 230 VAC, @ 460 VAC (VAC) ⁴	290, 580	300, 600	300, 600
Undervoltage Trip Point @ 230 VAC, @ 460 VAC (VAC) ⁴	140, 280	140, 280	140, 280
Maximum Vibration (G)	1	0.5	0.5
AC Line Input Voltage Range (VAC)	115 and 208/230 (+/- 15%), 380-460 (+/- 10%)		
Input Line Frequency Range (Hz)	48-62		
Output Waveform	Sine Coded PWM		
Overload Rating (%)	150% for 1 Minute		
Operating Temperature Range (°C)	-10 to 50		
Humidity (Relative %)	0-95 (Non Condensing)		
Remote Analog Signal Input	0-10 VDC, 4-20 mA, 0-20 mADC		
Output Relay Contact Rating	1 Amp @ 30 VDC, 250 VAC		
Analog Output Voltage (VDC)	0-10		
Approvals	CE, cULus, N998 (C-Tick), ISO-9002		

Notes: 1. Requires optional DIN Rail Mounting Kit. 2. Requires remote keypad adaptor and extension cable. 3. KBN2 Series Drives require optional RS-232 or RS-485 Communication Kit. KBV2 Series Drives have RS-485 built-in (requires optional RS-232 Communication Kit). 4. Based on 115/230 Volts AC or 230/460 Volts nominal AC line input voltage.

Dimensions (W X H X D)



Ref. Code	Inches	mm	Ref. Code	Inches	mm
A	2.83 x 5.20 x 4.65	72 x 132 x 118	E	5.87 X 7.24 X 6.22	149 X 184 X 158
B	4.65 x 5.63 x 6.77	118 x 143 x 172	F	7.28 X 8.46 X 6.57	185 X 215 X 167
C	5.55 x 8.50 x 7.01	141 x 216 x 178	G	7.87 X 11.81 X 7.83	200 X 300 X 199
D	4.21 x 6.38 x 5.51	107 x 162 x 140	H	9.84 X 15.75 X 9.45	250 X 400 X 240

ELECTRICAL RATINGS

		Rated Horsepower		Nominal AC Line Input Voltage (Volts AC - 50/60 Hz)	Input Phases (ø)	Maximum Continuous Output Load Current (RMS Amps/Phase)	Model No.	Part No.	Dimensions Ref. Code
		HP	kW						
KBE2 Series Drives ^{1,2}	Panel Mount IP-20	.25	.18	115	1	1.4	KBE2-1125-P	11000	A
		.50	.37	115	1	2.3	KBE2-1150-P	11010	
		1	.75	115	1	4.0	KBE2-1101-P*	11016	
		.25	.18	230	1	1.4	KBE2-2125-P	11020	
		.50	.37	230	1	2.3	KBE2-2150-P	11030	
		1	.75	230	1	4.2	KBE2-2101-P	11040	
	NEMA-4 (Indoor)	2	1.5	230	1,3	7.5	KBE2-2202-P	11050	B
		3	2.3	230	1,3	10.5	KBE2-2203-P	11060	
		1	.75	460	3	2.3	KBE2-4301-P	11070	
		2	1.5	460	3	3.8	KBE2-4302-P	11080	
		3	2.3	460	3	5.2	KBE2-4303-P	11090	
		.50	.37	115	1	2.3	KBE2-1150-4*	11510	
1	.75	115	1	4.0	KBE2-1101-4*	11516			
1	.75	230	1	4.2	KBE2-2101-4*	11540			
KBN2 Series Drives ³ (NEMA-1)	.50	.37	230	1,3	3.1	KBN2-2250-1	12000	D	
	1	.75	230	1,3	5.0	KBN2-2201-1	12010	E	
	2	1.5	230	1,3	7.5	KBN2-2202-1	12020	E	
	3	2.3	230	1,3	10.5	KBN2-2203-1	12030	F	
	5	3.8	230	3	17.5	KBN2-2305-1	12040	F	
	7.5	5.6	230	3	26.0	KBN2-2307-1	12050	G	
	10	7.5	230	3	35.0	KBN2-2310-1	12060	G	
	15	11	230	3	49.0	KBN2-2315-1	12070	H	
	20	15	230	3	64.0	KBN2-2320-1	12080	H	
	30	23	230	3	87.0	KBN2-2330-1	12090	H	
	1	.75	460	3	2.3	KBN2-4301-1	12100	E	
	2	1.5	460	3	3.8	KBN2-4302-1	12110	E	
	3	2.3	460	3	5.2	KBN2-4303-1	12120	F	
	5	3.8	460	3	8.8	KBN2-4305-1	12130	F	
	7.5	5.6	460	3	13.0	KBN2-4307-1	12140	G	
	10	7.5	460	3	17.5	KBN2-4310-1	12150	G	
	15	11	460	3	25.0	KBN2-4315-1	12160	H	
	20	15	460	3	32.0	KBN2-4320-1	12170	H	
30	23	460	3	48.0	KBN2-4330-1	12180	H		
KBV2 Series Drives ³ (NEMA-1)	1	.75	230	3	5.0	KBV2-2201-1	13010	E	
	2	1.5	230	3	7.5	KBV2-2202-1	13020	E	
	3	2.3	230	3	10.5	KBV2-2203-1	13030	F	
	5	3.8	230	3	17.5	KBV2-2305-1	13040	F	
	7.5	5.6	230	3	26.0	KBV2-2307-1	13050	G	
	10	7.5	230	3	35.0	KBV2-2310-1	13060	G	
	15	11	230	3	49.0	KBV2-2315-1	13070	H	
	20	15	230	3	64.0	KBV2-2320-1	13080	H	
	25	19	230	3	76.0	KBV2-2325-1	13090	H	
	30	23	230	3	87.0	KBV2-2330-1	13100	H	
	1	.75	460	3	2.3	KBV2-4301-1	13110	E	
	2	1.5	460	3	3.8	KBV2-4302-1	13120	E	
	3	2.3	460	3	5.2	KBV2-4303-1	13130	F	
	5	3.8	460	3	8.8	KBV2-4305-1	13140	F	
	7.5	5.6	460	3	13.0	KBV2-4307-1	13150	G	
	10	7.5	460	3	17.5	KBV2-4310-1	13160	G	
	15	11	460	3	25.0	KBV2-4315-1	13170	H	
	20	15	460	3	32.0	KBV2-4320-1	13180	H	
25	19	460	3	40.0	KBV2-4325-1	13190	H		
30	23	460	3	48.0	KBV2-4330-1	13200	H		

Notes: 1. Model KBE2 is available with optional built-in Class A Industrial Standard RFI Filter. Add suffix "F" to model number (example: KBE2-2101-PF). See Optional Accessories table for Class B Residential Standard RFI Filter. 2. The KBE2 NEMA-4 models are available with an option package which contains an On/Off AC Switch, a Forward/Reverse Switch, and a Main Speed Potentiometer. Add suffix "S" to model number (example: KBE2-2101-4S). 3. Models KBN2 and KBV2 are also available in NEMA-4 enclosures (indoor use only). *Models available approximately June, 2002.

Optional Accessories

Description	Part No.	Rating
E2 DIN Rail Mounting Kit	14000	-
E2 RFI Filter	14010	230 V - 10 A
N2/V2-2102 RFI Filter	14020	230 V - 10 A
N2/V2-2202A RFI Filter (2 HP)	14030	230 V - 20 A
N2/V2-2202B RFI Filter (3 HP)	14040	230 V - 20 A
N2/V2-4103A RFI Filter (1, 2 HP)	14050	460 V - 10 A
N2/V2-4103B RFI Filter (3, 5 HP)	14060	460 V - 10 A
N2/V2-4203 RFI Filter (7 1/2, 10 HP)	14070	460 V - 20 A
N2/V2-4603 RFI Filter (15, 20, 25, 30 HP)	14080	460 V - 60 A
N2/V2 (1/2 - 5 HP) 3 Ft. Keypad Ext. Cable Kit	14090	-
N2/V2 (1/2 - 5 HP) 10 Ft. Keypad Ext. Cable Kit	14110	-
N2/V2 (7.5 - 30 HP) 3 Ft. Keypad Ext. Cable Kit	14120	-
N2/V2 (7.5 - 30 HP) 10 Ft. Keypad Ext. Cable Kit	14140	-
N2/V2 RS-232 Communication Kit	14150	-
N2 RS-485 Communication Kit	14160	-



Automation and Control

Description	Part No.	Rating
230 V - 1 HP Brake Resistor Kit	14170	200 Ω - 60 W
230 V - 2 HP Brake Resistor Kit	14080	100 Ω - 150 W
230 V - 3 HP Brake Resistor Kit	14190	70 Ω - 200 W
230 V - 5 HP Brake Resistor Kit	14200	40 Ω - 300 W
230 V - 7 1/2 HP Brake Resistor Kit	14210	25 Ω - 500 W
230 V - 10 HP Brake Resistor Kit	14220	20 Ω - 600 W
460 V - 1 HP Brake Resistor Kit	14230	750 Ω - 60 W
460 V - 2 HP Brake Resistor Kit	14240	400 Ω - 150 W
460 V - 3 HP Brake Resistor Kit	14250	250 Ω - 200 W
460 V - 5 HP Brake Resistor Kit	14260	150 Ω - 300 W
460 V - 7 1/2 HP Brake Resistor Kit	14270	100 Ω - 500 W
460 V - 10 HP Brake Resistor Kit	14280	80 Ω - 600 W

Additional Digital Products



Monochromatic and Color LCD Touch Screen Displays

Programmable Relays



AC and DC 20 - 60 I/O PNP, NPN and Relay Programmable Logic Controllers



Dist. By:



KB Electronics, Inc.

12095 N.W. 39th Street • Coral Springs, FL 33065-2516
 954 346-4900 • Fax: 954 346-3377 • Outside Florida 800 221-6570
 www.kbelectronics.com • Email: info@kbelectronics.com