



Drives

AC Drives

KB Electronics

Low Voltage AC Drives



KBVF AC Drive

Chassis / IP20

The KBVF Series of Adjustable Frequency Drives are inverter models rated for 1/10 to 5 horsepower motors. These chassis / IP20 drives are ideal for OEM applications where digital programming and displays are not required for operation.



Options:

- SIVFR Signal Isolator and Run Fault Relay (Standard on 460 VAC models) (Item Numbers 9597 (2G) & 9651 (3G))
DIVF Modbus Serial Communication Module (Item Number 9568 (2G))
- Class A or B (CE) RFI Filter (Item Numbers 9509, 9484, 9511)
- DBM Dynamic Brake Module (Item Number 9598)
- Multi-Speed Board (Item Number 9503)
- Choke, 3 wire (installs between Control and AC Motor and has a maximum current rating of 14 Amps) (Item Number 9992)

Maximum Power		AC Line Voltage (50/60 Hz)	Phase Input	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight		Dim Ref. Code
HP	kW								Lbs.	kg	
0.5	0.37	115	1	KBVF-13	9957	9.6	0-230	2.4	1	0.6	D
1	0.75	115	1	KBVF-14	9977	14	0-230	4.0	2	1.0	E
0.5	0.37	208/230	1	KBVF-23	9958	6	0-230	2.4	1	0.6	D
1	0.75	208/230	1	KBVF-24	9978	10	0-230	4.0	2	1.0	E
0.1	0.07	115	1	KBVF-21D*	9581	4	0-230	1.0	0.7	0.3	F
		2.5				0-230					
0.3	0.18	115	1	KBVF-22D*	9572	6	0-230	1.5	1	0.6	D
		3.8	0-230								
0.5	0.37	115	1	KBVF-23D*	9959	9.7	0-230	2.4	1	0.6	D
		6				0-230					
0.5	0.37	115	1	KBVF-23D (GFCI)*	9795	9.7	0-230	2.4	1	0.6	D
		6				0-230					
1	0.75	115	1	KBVF-24D*	9979	14	0-230	4.0	2	1.0	E
		10				0-230					
1	0.75	115	1	KBVF-24D (GFCI)*	9796	14	0-230	4.0	2	1.0	E
		10				0-230					
1.5	1.1	115	1	KBVF-26D*	9496	22	0-230	5.5	3	1.3	G
		14				0-230					
1.5	1.1	115	1	KBVF-26D (GFCI)*	9797	22	0-230	5.5	3	1.3	G
		14				0-230					
0.5	0.37	208/230	3	KBVF-23P	9676	3.1	0-230	2.4	1	0.5	D
1	0.75	208/230	3	KBVF-24P	9677	5.2	0-230	4.0	2	1.0	E
2	1.5	208/230	1	KBVF-27	9591	17	0-230	6.7	4	1.9	H
			3			8.7	0-230				
2	1.5	208/230	1	KBVF-29	9593	16.7	0-230	6.7	5	2.1	H
3	2.2		3			11.7	0-230				
1	0.75	380/460	3	KBVF-42**	9645	2.6	0-460	2.0	3	1.3	I
3	2.2	380/460	3	KBVF-45**	9590	5.3	0-460	4.6	4	1.9	J
5	3.7	380/460	3	KBVF-48**	9592	11	0-460	8.3	5	2.1	J

*Models KBVF-21D, 22D, 23D, 24D and 26D are available in single voltage AC line input (115 or 208/230 VAC) and also contain a built-in Motor Filter to eliminate winding and bearing failures. **Contains SIVFR signal input isolation with Run/Fault output relay

KBWA AC Drive with Forward-Stop-Reverse Switch

NEMA 1 / IP50-IP20

The KBWA Series of Adjustable Frequency Drives are inverter models rated for 1/4 to 1/2 horsepower motors. These drives are housed in NEMA 1 enclosures. Both models include the On/Off AC illuminated Line Switch and a Main Speed Potentiometer.



Options:

- Replacement Forward-Stop-Reverse Switch (Item Number 9916)
- Replacement Potentiometer Kit (Item Number 9917)
- Replacement ON/OFF Line Switch Kit (Item Number 9918)
- Choke, 3 wire and installs between Control and AC Motor (Item Number 9992)

Maximum Power		AC Line Voltage (50/60 Hz)	Phase Input	Mode Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight		Dim Ref. Code
HP	kW								Lbs.	kg	
0.25	0.18	115	1	KBWA-22D*	9926	5.2	0-230	1.3	1.58	0.7	K
		208/230				3.8		1.5			
0.5	0.37	115	1	KBWA-23D**	9946	8.8	0-230	2.2	1.58	0.7	K
		208/230				6		2.4			

* Model KBWA-22D (IP50), **Model KBWA-23D (IP20)

KBMA AC Drive RFI AC Line Filter

NEMA 1 / IP50

The KBMA Series of Adjustable Frequency Drives are inverter models rated for 1/8 to 1 horsepower motors. These drives are housed in NEMA 1 / IP50 aluminum enclosures. All models include an On/Off AC Line switch, a main speed potentiometer and a power on indicator. The KBMA-24DF includes a built-in CE approved AC Line Class A Industrial Standard RFI (EMI) Filter.



Options:

- Forward-Stop-Reverse Switch Kit (Item Number 9519)
- 3 Phase AC Motor Choke (Item Number 9992)

Maximum Power		AC Line Voltage (50/60 Hz)	Phase Input	Model Number	Item Number	Max AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight		Dim Ref. Code
HP	kW								Lbs.	kg	
1	0.75	115	1	KBMA-24D	9533	14.4	0-230	3.6	2	1.1	C
		208/230				9.5					
1	0.75	115	1	KBMA-24DF*	9534	9.5	0-230	3.6	2	1.1	C
		208/230				9.5					
1	0.75	115	1	KBMA-24D w/FSR Switch	9640	14.4	0-230	3.6	2	1.1	C
		208/230				9.5					

**"F" Suffix for Built-In Class "A" (CE) RFI (EMI) AC Line Filter

KBAC AC Drive with Analog Interface

NEMA 4X / IP65

The KBAC Series of Adjustable Frequency Drives are inverter models rated for 1/8 to 5 horsepower motors. These drives are housed in heavy duty NEMA 4X / IP65 die-cast aluminum washdown/watertight enclosures for indoor or outdoor use. The KBAC Series also includes a Start/Stop Switch and Main Speed Potentiometer.



Options:

- SIAC-PS Signal Isolator with Power Supply (Item Numbers 9600 (2G) & 8890 (3G))
- SIAC-PS (2G) with Auto/Manual Switch Kit (Item Number 9605)
- Auto/ Manual Switch Kit, for use with SIAC-PS (Item Number 9481 (2G))
- Replacement Potentiometer Kit for NEMA-4X Controls (Item Number 9510)
- Seal Kit for NEMA-4X Controls when Start/Stop Switch is removed (Item Number 9518)
- Forward-Stop-Reverse Switch Kit (Item Number 9480)
- Run-Stop-Jog Switch Kit (Item Number 9340)
- On/Off AC Line Switch (Item Numbers 9482, 9523, 9532)
- AC Line Filters (Item Numbers 9507, 9512, 9479, 9515)
- Choke, 3 wire (installs between Control and AC Motor and has a maximum current rating of 14 Amps) (Item Number 9992)
- Liquid Tight Fittings (Item Number 9526)
- Lockout/Tagout Kit (Item Number 9904) for 15/32" Switch Bushing Thread: KBAC-24D, 29, 45, 48
- Lockout/Tagout Kit (Item Number 9905) for M12 Switch Bushing Thread: KBAC-27D, 29 (1P)

Maximum Power		AC Line Voltage (50/60 Hz)	Phase Input	Model Number	Item Number		Max AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight		Dim Ref. Code
HP	kW				Gray	White				Lbs.	kg	
1	0.75	115	1	KBAC-24D	9987	9988	14.4	0-230	3.6	6	2.7	A
		208/230					8.1					
1.5	1.1	115	1	KBAC-27D	9520	9521	22	0-230	5.5	10	4.7	B
2	1.5	208/230					16.7					
3	2.2	208/230	1	KBAC-29 (1P)	10001	10002	20.5	0-230	9	10	4.7	B
2	1.5	208/230	1	KBAC-29	9528	9529	16.7	0-230	6.7	10	4.7	B
3	2.2		3				11.7					
3	2.2	380/460	3	KBAC-45	9530	9531	7.2	0-460	5.5	10	4.7	B
5	3.7	380/460	3	KBAC-48	9540	9541	11	0-460	8.3	10	4.7	B

KBDA Digital AC Drive with Keypad

NEMA 4X / IP65

The KBDA Series of Digital Adjustable Frequency Drives are inverter models rated for 1/8 to 5 horsepower motors. These drives are housed in heavy duty NEMA 4X / IP65 die-cast aluminum washdown/watertight enclosures for indoor or outdoor use.

Options:

- IODA Input/Output Multi-Function Module (Item Number 9668)
- On/Off AC Line Switch (Item Numbers 9482, 9523, 9532)
- AC Line Filters (Item Numbers 9507, 9512, 9479, 9515)
- Choke, 3 wire (installs between Control and AC Motor and has a maximum current rating of 14 Amps) (Item Number 9992)
- Liquid Tight Fittings (Item Number 9526)
- Lockout/Tagout Kit (Item Number 9904)
for 15/32" Switch Bushing Thread: KBDA-24D, 29, 42, 45, 48
- Lockout/Tagout Kit (Item Number 9905)
for M12 Switch Bushing Thread: KBDA-27D, 29 (1P)



Maximum Power		AC Line Voltage (50/60 Hz)	Phase Input	Model Number	Item Number		Max AC Line Current (Amps AC)	Output Voltage Range (Volts AC)	Max. Load Current (Amps/Phase)	Net Weight		Dim Ref. Code
HP	kW				Gray	White				Lbs.	kg	
1	0.75	115	1	KBDA-24D	9536	9537	14.4	0-230	3.6	6	2.7	A
		208/230					8.1					
1.5	1.1	115	1	KBDA-27D	9543	9544	22	0-230	5.5	10	4.7	B
2	1.5	208/230	1				16.7		6.7			
3	2.2	208/230	1	KBDA-29 (1P)	10003	10004	20.5	0-230	9	10	4.7	B
1	0.75	208/230	3	KBDA-24P	9766	9767	4.8	0-230	3.6	6	2.7	A
2	1.5	208/230	1	KBDA-29	9545	9546	16.7	0-230	6.7	10	4.7	B
3	2.2		3				11.7		9			
1	0.75	380/460	3	KBDA-42	9763	9764	2.1	0-460	2	6	2.7	A
3	2.2	380/460	3	KBDA-45	9659	9660	7.2	0-460	5.5	10	4.7	B
5	3.7	380/460	3	KBDA-48	9661	9662	11	0-460	8.3	10	4.7	B

AC Drive

Dimensions

Dimensions (H x W x D)

Ref. Code	Inches	Millimeters	Ref. Code	Inches	Millimeters
A	9.5 x 5.5 x 5.9	241 x 140 x 150	G	5.7 x 4.7 x 4.5	145 x 119 x 114
B	9.8 x 7.6 x 7.3	249 x 193 x 185	H	7.5 x 4.7 x 4.5	190 x 119 x 114
C	7.0 x 5.0 x 4.2	179 x 127 x 107	I	9.3 x 4.1 x 2.8	236 x 104 x 71
D	4.3 x 3.9 x 2.8	109 x 99 x 71	J	8.8 x 4.75 x 4.5	224 x 121 x 114
E	4.3 x 4.7 x 5.0	109 x 119 x 127	K	6.1 x 3.9 x 3.7	155 x 99 x 94
F	4.3 x 3.9 x 2.0	109 x 99 x 51			

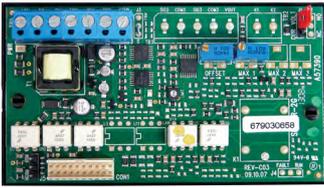
AC Drive

Accessories

SIVFR Signal Isolator and Run/Fault Relay Item Number 9597 (2G), 9651 (3G)

The SIVFR is used to isolate, amplify, and condition DC voltage and current signals from any source (power supplies, motors, tach-generators, transducers, and potentiometers). It also provides isolated inputs to control motor direction and an isolated power supply for transducer or potentiometer operation. All input connections are isolated from the AC line and motor wiring. The SIVFR installs easily onto the side of the drive with the mounting base and two screws (provided). An adapter bracket is provided for use with 1/2 HP model drives. The SIVFR is supplied with a finger-safe panel, which may be used with the enclosure cover to close the unused exposed area of the SIVFR between Terminal Blocks TB1 and TB2.

For use with Drive Model: KBVF



Multi-Speed Board Item Number 9503

The KBVF Multi-Speed Board (MSB) provides four user selectable preset speeds to control a motor connected to the KBVF Adjustable Frequency Drive. The motor speed for each preset speed is adjustable via trimpot settings which can be fine-tuned by using the Hi-Lo range jumpers. Motor direction is set by the position of Jumper R/F (reverse/forward) which is provided for each preset. Connections to the Multi-Speed Board are made with a barrier terminal block. The MSB mounts onto the side of the KBVF.

For use with Drive Model: KBVF





DIVF Digital Interface Module, ModBus, RS485, Item Number 9568

The DIVF Isolation board is an isolated digital communication interface for the KBVF family of controls. The KBVF communicates through a DB-8 serial cable connected to a serial port and also can be used in a MODBUS in the two-wire RS-485 modes.



Potentiometer Kits Item Numbers 9111, 9114, and 9831

The Potentiometer Kits consist of a 5k ohm (1W) linear potentiometer with mounting hardware and front panel insulator. Item Number 9111 contains a conductive plastic element and is fitted with a nylon shaft and isolated brass mounting bushing. Item Number 9114 is the same as Item Number 9111 except that it contains an On/Off Switch. Item Number 9831 contains a 5 watt rated wire wound potentiometer with excellent linearity.

For use with Drive Model: KBVF



Knob and Dial Kits Item Number 9832 (Large) and 9815 (Small)

Two Knob/Dial Kits are available. Both contain black knobs with silver inserts. Dial Plates are .040" aluminum with 3/8" mounting hole. Dimensions (L x W approx.): large dial plate: 2.25" x 2.06", small dial plate: 1.62" x 1.50".

For use with Drive Model: KBVF







KBRF-250 CE Approved AC Line Filter (Class A) Item Number 9509

The KBRF-250 is an RFI filter used to suppress electronic interference caused by motor speed controls. The KBRF-250 is designed as an integral mounting base for speed controls with industry standard mounting requirements such as the KBVF Series Inverter, PWM DC Speed Controls, and SCR Speed Controls. Installation is easily accomplished with quick-connect terminals. It is housed in a plated steel case which is to be grounded with the external ground screw or mounting tab. Rated 10 Amps at 230 Volts AC. CE approved meets (Class A) industrial.

For use with Drive Model: KBVF series up to 2 HP, single phase input only.



KBRF-300 CE Approved AC Line Filter (Class B) Item Numbers 9484

The KBRF-300 is an RFI filter used to suppress electronic interference caused by motor speed controls to within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to EMC. Rated 16 Amps at 115 or 208/230 Volts AC – 115/230 VAC, 50/60 Hz. CE approved meets (Class B) residential.

For use with Drive Model: KBVF



KBRF-350 CE Approved AC Line Filter (Class B) Item Number 9511

The KBRF-350 is an RFI filter used to suppress electronic interference caused by motor speed controls. The KBRF-350 is primarily designed as an integral mounting base for speed controls with industry standard mounting requirements such as the KBVF Series Inverter, PWM DC Speed Controls, and SCR Speed Controls. Installation is easily accomplished with quick-connect terminals. It is housed in a plated steel case which is to be grounded with the external ground screw or mounting tab. Rated 10 Amps at 230 Volts AC. CE approved meets (Class B) residential.

For use with Drive Model: KBVF series up to 2 HP, single phase input only.



Dynamic Brake Module Item Number 9598

The DBM is a dynamic brake module that includes both a transistor control and braking resistor. The DBM increases the standard braking torque of the KBVF from 25% to over 100%.

For use with Drive Model: KBVF drives up to 2 HP with 230 VAC output voltage (Item numbers: KBVF13, 14, 21D, 22D, 23, 23D, 24, 24D, 26D 2G, 3G, and 4G Drives.)



Auto/Manual Switch Kit Item Number 9481 (2G)

The Auto/Manual Switch is designed for installation on the front cover of the drive. It is used with the SIAC-PS to select a signal input from either the SIAC-PS or the Main Speed Potentiometer of the drive.

For use with Drive Model: KBAC



Forward-Stop-Reverse Switch Kit Item Numbers 9480

The Forward-Stop-Reverse Switch Kit is designed for installation on the front cover of the inverters and provide electronic reversing.

For use with Drive Model: KBAC



Run-Stop-Jog Switch Kit Item Number 9340

The Run-Stop-Jog Switch provides selection between the Main Speed Potentiometer setting or a momentary jog speed, which can be used to index a machine into position.

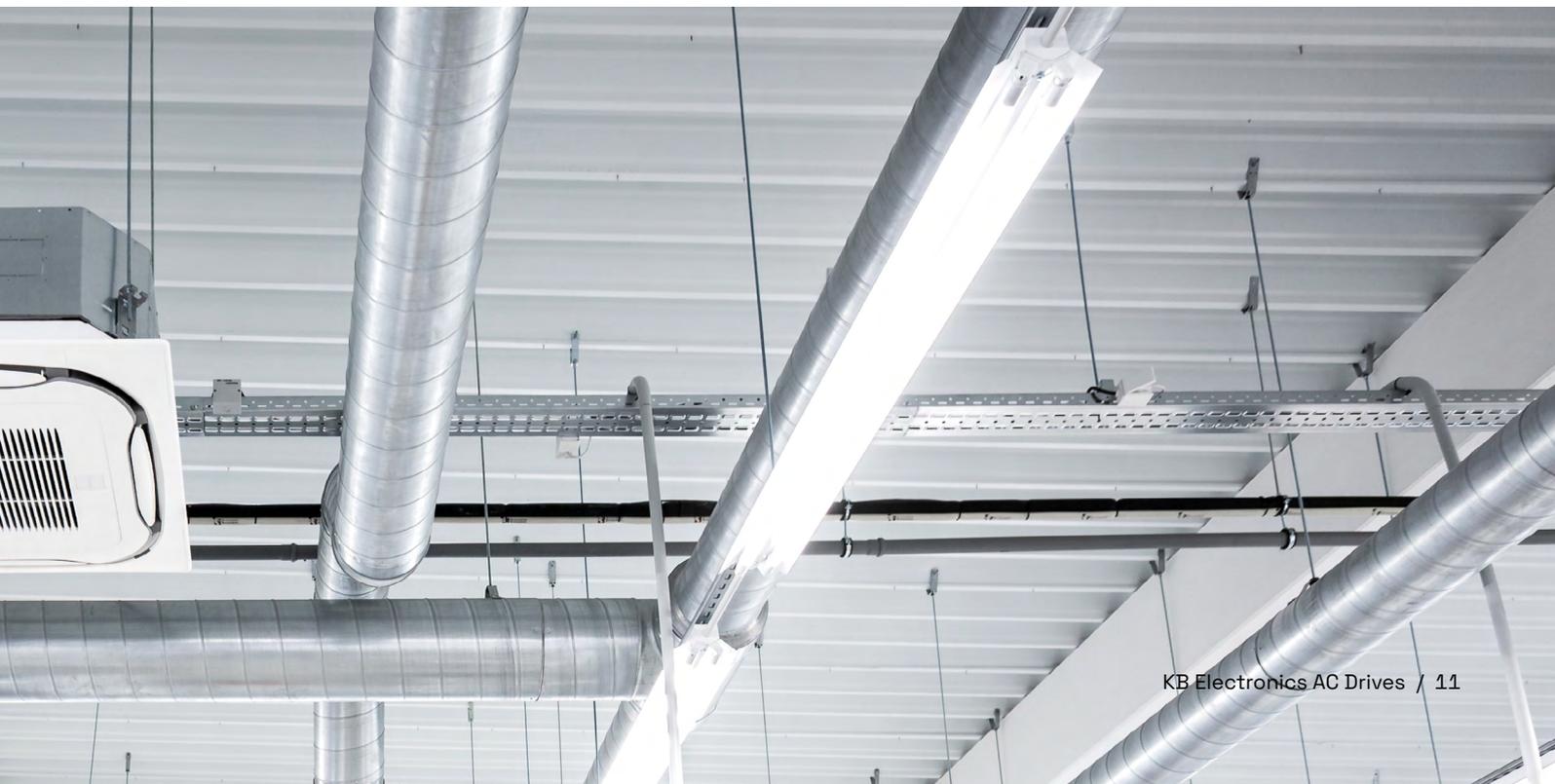
For use with Drive Model: KBAC

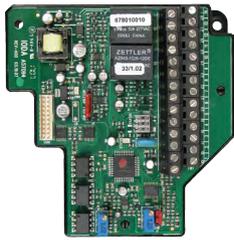


Replacement Potentiometer Kit for NEMA-4X Controls Item Number 9510

The Potentiometer Kits consist of a 5k Ohm linear potentiometer with wires and quick disconnect connectors assembled. Also included is the potentiometer shaft seal, insulator and knob.

For use with Drive Models: KBAC

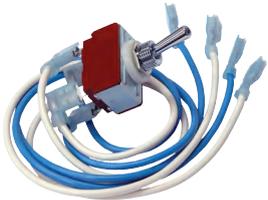




IODA Item Number 9668

The IODA Input/Output Multi-Function Board provides a variety of functions which include preset frequency, up/down frequency control, signal isolation, isolated output voltage for controlling auxiliary devices, two output relay contacts, and two open collector outputs. The IODA mounts on the drive's PC board with two snap-ins (located on the bottom of the mounting base) and two screws (provided). All of the IODA inputs and outputs are isolated from the AC line.

For use with Drive Model: KBDA



On/Off Switch Kit Item Numbers 9482, 9523, 9532, 9768, 9762

The Power On/Off Switch Kit is designed to provide a positive AC line power disconnect. It can be installed in lieu of, or in addition to, the factory installed Start/Stop Switch assembly. For Models KBAC or KBDA -24D, 27D, the switch is double pole, which is used to disconnect both AC line wires. If only one AC line is to be disconnected, a single pole can be used. Refer to local electrical codes that apply. For Models KBAC or KBDA-29, 45, 48, the switch is triple pole, which is used to disconnect all three AC line wires.

For use with Drive Model: KBAC or KBDA-24D (Item Number 9482); KBAC or KBDA-27D, 29 (1P) (Item Number 9523); KBAC or KBDA-29, 45, 48 (Item Number 9532), KBDA-24P,42 no filter (Item Number 9768), KBDA 3 phase input power connected to filter (Item Number 9762)



Lockout/Tagout Kit Item Number 9904 and 9905

The Lockout/Tagout kit includes a yellow Lockout/tagout bracket, red rubber switch boot, round sealing gasket and label.

For use with Drive Models: Item Number 9904 (15/32" Switch Bushing Thread) is used on models KBAC-24D, 29, 45 and 48 and KBDA-24D 29, 42, 45, 48. Item Number 9905 (for M12 Switch Bushing Thread) is used on the KBAC-27D, 29 (1P) and KBDA-27D, 29 (1P)



AC Line Filters Item Numbers 9507, 9512



The RFAC Line Filters are used to suppress electrical interference within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to the Class A Industrial Standard. The RFAC-24D (Item number 9507) is rated for 10 Amps at 230 Volts AC. The RFAC-27D (Item number 9512) is rated for 22 Amps at 230 Volts AC. Both filters can be used with or without the On/Off AC Line Switch Kit.

For use with Drive Model: KBAC or KBDA-24D (Item Number 9507), KBAC or KBDA-27D (Item Number 9512)

AC Line Filters Item Numbers 9479, 9515



The RFAC Line Filters are used to suppress electrical interference within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to the Class A Industrial Standard. The RFAC-3PS (Item number 9479) is rated 10 Amps at 460 VAC and requires the On/Off AC Line Switch Kit. The RFAC-3PNS (Item number 9515) is rated 10 Amps at 460 VAC does not require the On/Off AC Line Switch Kit.

For use with Drive Model: KBAC or KBDA-29, 45, 48 (Item Number 9479), KBAC or KBDA-29, 45, 48 (Item Number 9515)

3 Phase AC Motor Choke Item Number 9992



RFI Filters are used to suppress electronic interference caused by motor speed controls. They have been designed to limit the interference to within acceptable levels as determined by the CE Council Directive 89/336/EEC relating to the Class A Industrial Standard and Class B Residential Standard. The AC Line / DC Motor Choke is used to provide supplemental RFI filtering, if required. Maximum current rating is 14 Amps.

For use with Drive Model: KBVF, KBAC

Liquid Tight Fittings Item Number 9526



The fittings are designed to provide a liquid tight seal when using cables to wire the drive.

For use with Drive Model: KBAC, KBDA

The Nidec logo is displayed in white, italicized font within a green trapezoidal shape.

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