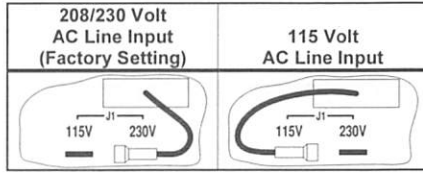


5 - JUMPER SETTINGS

The drive has selectable jumpers which must be set before it can be used.

WARNING! HIGH VOLTAGE! Disconnect the AC Line before changing position of jumpers.

J1 (KBAC-24D, 27D ONLY) (AC LINE INPUT VOLTAGE): J1 is factory installed on Terminal 230V for 208/230 Volt AC Line input. For 115 Volt AC Line input, the jumper must be removed and installed on Terminal 115V.



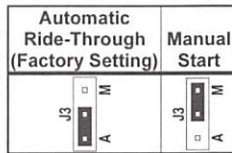
J2 (MOTOR HORSEPOWER): Set J2 to the corresponding position for the motor being used.

KBAC-	24D	27D	29*	29 (1P)*	45*	48*	217 Series*	416 Series*
<input type="checkbox"/>	1	2**	A	3***	3	5	5	10
<input type="checkbox"/>	3/4	1 1/2**	B	2***	2	3	3	7.5
<input type="checkbox"/>	1/2	1	C	1 1/2	1 1/2	2	2	5
<input type="checkbox"/>	1/4	3/4	D	1	1	1 1/2	—	—
<input type="checkbox"/>	1/8	1/2	E	3/4	3/4	3/4	—	—

The factory setting is shown in bold.

*J2 on KBAC-29, 29 (1P), 45, 48 is labeled "A, B, C, D, E" and on KBAC-217, 416 Series is labeled "A, B, C". **KBAC-27D is rated 1 1/2 HP maximum with 115 Volt AC Line input and 2 HP maximum with 208/230 Volt AC Line input. ***KBAC-29 is rated 2 HP maximum with 1-phase AC Line input and 3 HP maximum with 3-phase AC Line input.

J3 (AUTOMATIC RIDE-THROUGH OR MANUAL START): J3 is factory set to the "A" position for Automatic Ride-Through. If the power is interrupted for up to 2 seconds, the drive will shut down and then "ride-through" and automatically return to the set frequency. If J3 is set to the "M" position, the drive will have to be manually restarted for a momentary power loss using the Start/Stop Switch.

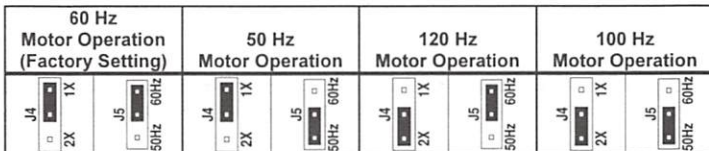


*On KBAC-217, 416 Series and Model KBAC-24D J3 is labeled "AUTO" and "MAN".

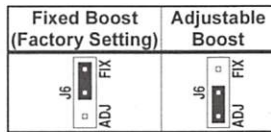
J4 AND J5 (60 HZ AND 50 HZ MOTOR OPERATION AND DRIVE OUTPUT FREQUENCY): Both jumpers must be set for the appropriate motor nameplate frequency rating.

60 Hz and 50 Hz Motor Operation: The drive is factory set to operate 60 Hz motors. J4 is factory set to the "1X" position and J5 is factory set to the "60Hz" position. For 50 Hz motors, set J5 to the "50Hz" position, and J4 to the "1X" position.

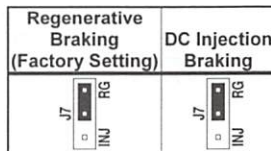
Two Times Rated Motor RPM: The drive can operate motors up to two times the rated RPM. However, constant horsepower will result when operating the drive in the "2X" mode above the motor rated frequency. For 120 Hz output with 60 Hz motor, set J4 to the "2X" position and J5 to the "60Hz" position. For 100 Hz output with 50 Hz motor, set J4 to the "2X" position and J5 to the "50Hz" position.



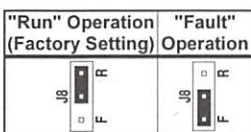
J6 (BOOST MODE): J6 is factory set to the "FIX" position for Fixed Boost. For Adjustable Boost using the BOOST Trippot, set J6 to the "ADJ" position.



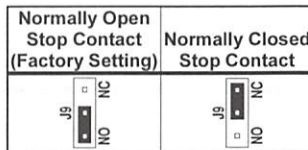
J7 (BRAKING MODE): J7 is factory set to the "RG" position for Regenerative Braking. For DC Injection Braking, set J7 to the "INJ" position. When the Injection Brake Mode is selected, the DECEL Trippot is used to set the amount of time the DC current is applied to the motor.



J8 (RUN/FAULT RELAY OPERATION): J8 is factory set to the "R" position for "Run" operation. For "Fault" operation, set J8 to the "F" position.

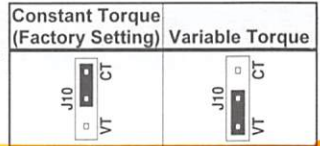


J9 (STOP CONTACT): J9 is factory set to the "NO" position for a normally open stop contact. For remote normally closed stop contact, set J9 to the "NC" position.



Jumper Settings are continued at the top right column of this page.

J10 (TORQUE MODE): J10 is factory set to the "CT" position for Constant Torque Mode, which is desirable for most machine applications. For Variable Torque Mode, used for HVAC and fan applications, set J10 to the "VT" position.



J11: Not used.

J12 (SWITCHING FREQUENCY AND GFCI) (Third Generation (3G) Models Only): J12 is set to the "8K" position for a switching frequency at the motor of 8 kHz. For 12 kHz switching frequency, set J12 to the "12K" position. This jumper also allows the drive to be used on standard ("G1"/"GF1" position) or sensitive ("G2"/"GF2" position) GFCIs. **Note:** GFCI operation may increase audible noise.

Third Generation (3G) Models	
<input type="checkbox"/> 8K	8 kHz Switching Frequency*
<input type="checkbox"/> 12K	12 kHz Switching Frequency
<input type="checkbox"/> G1	Standard GFCI
<input type="checkbox"/> G2	Sensitive GFCI
<input type="checkbox"/> E	Not Used

KBAC-217, 416 Series	
<input type="checkbox"/> GF2	Sensitive GFCI #2
<input type="checkbox"/> GF1	Standard GFCI #1
<input type="checkbox"/> 12K	12 kHz Switching Frequency #4
<input type="checkbox"/> 8K	8 kHz Switching Frequency #3

*Factory setting.

Factory setting. Start w/ #2 + work through until you find a setting that's compatible with your GFI outlet

6 - OPTIONAL ACCESSORIES

See the KBAC Series Installation and Operation Manual for a complete list and description of optional accessories that are available.

To Validate the 18 Month Warranty, Register this Product Online

↓ ↓ ↓ ↓ ↓
KBelectronics.com/registration.htm

HIGH VOLTAGE DIELECTRIC WITHSTAND TEST (HI-POT TEST)



WARNING! Disconnect all AC power before performing hi-pot test.

Testing agencies such as UL, CSA, etc., usually require that equipment undergo a Hi-Pot Test. In order to prevent catastrophic damage to the control, which has been installed in the equipment, it is recommended that the procedure outlined in the Installation and Operation Manual (viewable online and downloadable) be followed.

Do not exceed 1500 VAC for 115 VAC controls.
 Control damage may result if hi-pot voltage is exceeded.

Note: Controls have been factory hi-pot tested in accordance with UL508C Standard.

CE INFORMATION

This product complies with all CE directives pertinent at the time of manufacture. Contact our Sales Department for Declaration of Conformity. Installation of a CE approved RFI filter is required. Additional shielded cable and/or AC Line cables may be required.

Note: To meet CE requirements, a separate CE approved filter must be installed.

UL NOTICE

230 Volt Drives: Suitable for use on a circuit capable of delivering not more than 5 kA RMS symmetrical Amperes. 230 Volts maximum. Use copper conductors rated 75 °C. Suitable for operation in a maximum surrounding air temperature of 40 °C.

460 Volt Drives: Suitable for use on a circuit capable of delivering not more than 5 kA RMS symmetrical Amperes. 460 Volts maximum. Use copper conductors rated 75 °C. Suitable for operation in a maximum surrounding air temperature of 40 °C.



SAFETY WARNING! - PLEASE READ CAREFULLY!

This product must be installed and serviced by a qualified technician, electrician, or electrical maintenance person familiar with its operation and the hazards involved. Proper installation, which includes electrical connections, fusing or other current protection, and grounding, can reduce the chance of electrical shocks, and/or fires, in this product or products used with this product, such as electric motors, switches, coils, solenoids, and/or relays. Do not use this drive in an explosion-proof application. Eye protection must be worn and insulated adjustment tools must be used when working with drive under power. This product is constructed of materials (plastics, metals, carbon, silicon, etc.) which may be a potential hazard. Proper shielding, grounding, and filtering of this product can reduce the emission of radio frequency interference (RFI) which may adversely affect sensitive electronic equipment. It is the responsibility of the equipment manufacturer and individual installer to supply this Safety Warning to the ultimate end user of this product. (SW 8/2012)

The control contains electronic Start/Stop circuits, which can be used to start and stop the control. However, these circuits are never to be used as safety disconnects since they are not fail-safe. Disconnect the input power for this purpose. Be sure to read and follow all instructions carefully. Fire and/or electrocution can result due to improper use of this product.

The information contained in these instructions is intended to be accurate. However, the manufacturer retains the right to make changes in design which may not be included herein.



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 (A40810) - Rev. B00 - 1/24/2018

KBAC SERIES QUICK-START INSTRUCTIONS

FOR TECHNICAL ASSISTANCE
CONTACT OUR SALES DEPARTMENT AT 954-346-4900
CALL TOLL FREE 800-221-6570

For Complete Details and Instructions, See the
KBAC Installation and Operation Manual Online



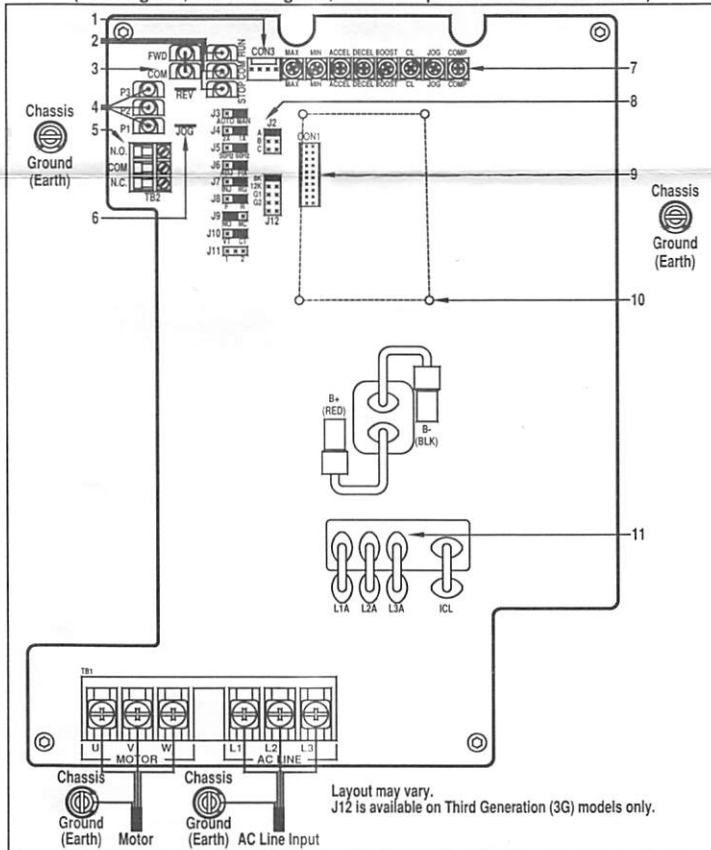
Scan this QR Code

1 - INITIAL SETUP AND CONNECTIONS

Wire the drive in accordance with National Electrical Code requirements and other local codes that may apply to the application. [Factory jumper settings shown in bold.]

1. Set Jumper J1 (Models KBAC-24D, 27D only) to the corresponding AC Line Input voltage (230V, 115V).
2. Set Jumper J2 to the corresponding position for the motor being used.
3. Set Jumper J3 for Automatic Ride-Through or Manual Start Mode (A, M).
4. Set Jumper J4 to the motor frequency multiplier (1X, 2X).
5. Set Jumper J5 to the rated motor frequency (60 Hz, 50 Hz).
6. Set Jumper J6 to the desired Boost Mode (FIX, ADJ).
7. Set Jumper J8 to the desired Run/Fault Output Relay Operation (R, F).
8. Set Jumper J9 for the Stop Contact type being used (NO, NC).
9. Set Jumper J10 to the desired Torque Mode (CT, VT).
10. Jumper J11 is for factory use only.
11. Set Jumper J12 (Third Generation (3G) models only) to the desired Switching Frequency or GFCI selection (8K, 12K, G1, G2).
12. Connect the AC Line input to Terminals L1, L2 (1-phase) or L1, L2, L3 (3-phase).
13. Connect the motor to Terminals U, V, W.
14. Connect the ground(s) (earth) to the green ground screw(s) (chassis).

DRIVE LAYOUT AND GENERAL CONNECTION DIAGRAM
(See Legend, Below Diagram, for Description of Numbered Items)



LEGEND: 1. Connector for diagnostic LED board. 2. Terminals for factory installed Start/Stop Switch. 3. Terminals for optional Forward-Stop-Reverse Switch. 4. Terminals for factory installed Main Speed Potentiometer. 5. Terminal block for Run/Fault Relay Output Contacts. 6. Terminal for optional Run-Stop-Jog Switch. 7. Adjustable trimpots. 8. Selectable jumpers. 9. Interface connector for accessories. 10. Four mounting holes for accessories. 11. Terminals for factory installed On/Off AC Line Switch and RFI Filter.

THESE QUICK-START INSTRUCTIONS COVER MODELS

KBAC-24D 2G and 3G⁴ (Part Nos. 9987¹ / 9988²), KBAC-27D 2G and 3G⁴ (Part Nos. 9520¹ / 9667^{1,3} / 9521² / 9669^{2,3}), KBAC-29 (Part Nos. 9528¹ / 9529²), KBAC-29 (1P) (Part Nos. 10001¹ / 10011^{1,3} / 10002³), KBAC-45 (Part Nos. 9530¹ / 9531²), KBAC-48 (Part Nos. 9540¹ / 9541²), KBAC-217 (Part Nos. 8868^{1,4} / 8879^{2,4}), KBAC-217S (Part Nos. 8863^{1,4} / 8855^{2,4}), KBAC-217F (Part Nos. 8861^{1,4} / 8853^{2,4}), KBAC-217SF (Part Nos. 8869^{1,4} / 8880^{2,4}), KBAC-416 (Part Nos. 8870^{1,4} / 8881^{2,4}), KBAC-416S (Part Nos. 8864^{1,4} / 8856^{2,4}), KBAC-416F (Part Nos. 8874^{1,4} / 8883^{2,4}), KBAC-416SF (Part Nos. 8871^{1,4} / 8882^{2,4})

Notes: 1. Gray case. 2. White case (FDA approved finish). 3. Factory programmed for GFCI operation. 4. Third Generation (3G) models have selectable Jumper (J12) for frequency and GFCI selection.

2 - AC LINE FUSING

All fuses should be Littelfuse 312/314, Bussmann ABC, or equivalent.

CAUTION! Do not fuse motor leads.

The drive does not contain AC Line fuses. Most electrical codes require that each ungrounded conductor contain circuit protection. Do not fuse neutral or ground connections. It is recommended to install a fuse or a circuit breaker (Square D QOU or equivalent) in series with each ungrounded conductor.

3 - AC LINE, MOTOR, AND GROUND CONNECTIONS

See the Drive Layout and General Connection Diagram. Download the Installation and Operation Manual by scanning the QR Code at the top left column of this page.

WARNING! High Voltage! Read Safety Warning before using the drive. Disconnect the main power before making connections to the drive. To avoid electric shock, be sure to properly ground the drive.

CAUTION! The rated AC Line voltage of the drive must match the actual AC Line input voltage. On Models KBAC-24D, 27D the setting of Jumper J1 must match the AC Line input voltage.

AC LINE INPUT: Wire the AC Line input to Terminals L1, L2 (1-phase) or L1, L2, L3 (3-phase).

MOTOR: Wire the motor to TB1 Terminals U, V, W.

GROUND: Connect the ground(s) (earth) to the green ground screw(s) (chassis).

4 - ADJUSTABLE TRIMPOTS

The drive contains trimpots which have been factory set for most applications. Some applications may require readjustment of the trimpots in order to tailor the drive for a specific requirement.

Read Safety Warning.

MAXIMUM SPEED (MAX): Sets the maximum speed of the motor when the Main Speed Potentiometer is set fully clockwise. **Units:** % Frequency Setting

MINIMUM SPEED (MIN): Sets the minimum speed of the motor when the Main Speed Potentiometer is set fully counterclockwise. **Units:** % Frequency Setting

ACCELERATION (ACCEL): Sets the time for the motor to accelerate from zero speed to full speed. **Units:** Seconds

DECELERATION (DECEL): Sets the time for the motor to decelerate from full speed to zero speed. **Units:** Seconds

DC INJECTION BRAKE (DECEL): When the drive is set for DC Injection Brake (J7 set to the "INJ" position), the DECEL Trimpot is used to set the amount of time the DC current is applied to the motor. **Units:** Seconds

BOOST (BOOST): When the drive is set for Adjustable Boost (J6 set to the "ADJ" position), the BOOST Trimpot can be used to adjust the amount of boost voltage to the motor. **Units:** Volts

MOTOR OVERLOAD (I²t) WITH RMS CURRENT LIMIT (CL): Sets the current limit (overload), which limits the maximum current to the motor, which prevents motor burnout and eliminates nuisance trips. **Units:** % Full Load

JOG (JOG): Provides a jog speed, which can be used to index a machine into position. It can also be used as a secondary speed setting. Must be used with the optional Run-Stop-Jog Switch (Part No. 9340 or 8889). **Units:** % Frequency Setting

SLIP COMPENSATION (COMP): Sets the amount of Volts/Hz to maintain set motor speed under varying loads. **Units:** Volts/Hz

Maximum Speed Trimpot



Minimum Speed Trimpot



Acceleration Trimpot



Deceleration Trimpot



DC Injection Brake Trimpot



Boost Trimpot



CL Trimpot



Jog Trimpot



Slip Compensation Trimpot

