ALLEN-BRADLEY

Allen-Bradley
Heavy Duty Dynamic Braking
for use with
1336/1336VT/1336 PLUS/1336 FORCE Drives

Series D Cat. No. 1336-MOD-KA005, KB005 and KC005
Series D Cat. No. 1336-MOD-KA010, KB010 and KC010
Series D Cat. No. 1336-MOD-KB050 and KC050

Installation Data

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What This Option Provides

The Heavy Duty Dynamic Braking Option provides a self contained NEMA Type 1 enclosed assembly that is wired to a 1336, 1336VT, 1336 PLUS or 1336 FORCE Drive. Dynamic braking increases the braking torque capability of a drive from approximately 20 to 100%.

Where This Option Is Used

B003-B250 and C003-C250 1336 Drives

B003-B250 1336VT Drives

AQF05-A100, BRF05-B250 and C007-C250 1336 PLUS and 1336 FORCE Drives

Catalog Number Description

1336 — MOD — K B 005

K: 1336/1336VT/1336 PLUS/1336 FORCE Heavy Duty Dynamic Braking

B: Voltage Rating
A = 230V AC
B = 380/415/460V AC
C = 500/575V AC

005: Brake Kit Code
005 = Drive Ratings 003-005/F05-F50
010 = Drive Ratings 007-010
050 = Drive Ratings 040-060

What These Instructions Contain

These instructions contain the necessary information to select, configure and install Heavy Duty Dynamic Braking. By completing **How to Select a Brake** first you will be able to determine:

1. Whether or not Heavy Duty Dynamic Braking is required for your application.
2. If Heavy Duty Dynamic Braking is required, the rating and quantity of brakes required.

How Dynamic Braking Works

When a motor turns faster than the synchronous speed set by drive output frequency, the motor can generate power which is returned to the drive. Without heavy duty dynamic braking, power returned to the drive bus can cause bus voltage to rise above the rated limit of the drive. This condition can occur if power returned to the drive exceeds 20% of drive rating. 1336, 1336VT, 1336 PLUS & 1336 FORCE Drives have an overvoltage trip feature to detect this condition and shut down the drive if necessary.

When heavy duty dynamic braking is added to the drive, excessive power is dissipated in the brake resistors. Increased breaking (over 20%) can now take place and an overvoltage trip condition will not occur within the increased limits of the brake.

The dynamic brake monitors the drive DC bus. When the brake senses a rise in bus voltage and braking action is required, the brake will be activated. Activating the brake adds resistors across the DC bus, providing a load to dissipate motor power regenerated back to the drive during braking. When the DC bus voltage is lowered to within acceptable limits and braking is not longer required, the dynamic brake will be deactivated and the brake resistors will be disconnected from the DC bus.

Dynamic brakes are designed to permit parallel operation when more than one brake is needed. Brake modules can be interconnected to each other to obtain the required braking load. One brake module becomes the master control module, while the others can be programmed through jumper selection to be slave modules. Slave modules respond to a signal from the master brake module to switch on at the same time as the master module. Slave operation helps ensure that all brake modules operate at the same duty cycle. This helps minimize erratic operation and guards against excessive overheating of individual brakes.

The dynamic brake is designed to be activated only when required to dissipate excessive energy returned to the DC bus. Two indicating lights have been provided on the front of the enclosure — The DC Power Light and the Brake On Light.

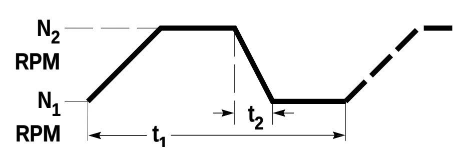
The DC Power Light will be lit when the drive DC bus voltage is greater than 40V DC.

The Brake On light will be lit when the brake is on. Typically the brake should be activated (on) only during drive deceleration or overhauling loads.

How to Select a Brake

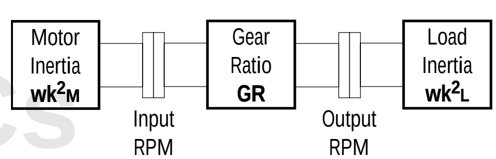
To begin selection, the following application information must be obtained.

1. The nameplate horsepower (**HP**) of the motor.
2. The nameplate base speed (**N**) of the motor in RPM.
3. The speed profile of the motor.



where: N_1 = The motor's minimum speed in RPM.
N_2 = The motor's maximum speed in RPM.
t_1 = The motor's cycle time in seconds.
t_2 = The motor's decel time in seconds.

4. The motor inertia, nameplate gear reduction ratio, and the load inertia.



How to Select a Brake (continued)

Step 1 — Determine the Rated Motor Torque

$$TQ_M = \frac{5250 \times HP}{N}$$

HP = The nameplate horsepower of the motor
N = The nameplate base speed of the motor

TQ_M = 5250 × ______________

TQ_M = __________ LB-FT

Step 2 — Determine the Total Inertia

$$wk^2t = wk^2_M + [wk^2_L \times (GR)^2]$$

wk^2_M = The motor inertia
wk^2_L = The load inertia
GR = The total reduction ratio $\frac{\text{Output RPM}}{\text{Input RPM}}$

wk^2t = ______ + [______ × (______)^2]

wk^2t = __________ LB-FT^2

Step 3 — Determine the Required Braking Torque

$$TQ_B = \frac{wk^2t \times [N_2 - N_1]}{308 \times t_2}$$

wk^2t = The total inertia
N_2 = The motor's maximum speed
N_1 = The motor's minimum speed
t_2 = The motor's decel time

$$TQ_B = \frac{[\quad\quad] \times [\quad\quad - \quad\quad]}{308 \times [\quad\quad]}$$

TQ_B = __________ LB-FT

Step 4 — Determine the Required Percent of Braking Torque

$$TQ\% = \frac{TQ_B}{TQ_M} \times 100$$

TQ_B = The required braking torque
TQ_M = The rated motor torque

$$TQ\% = \frac{[\quad\quad]}{[\quad\quad]} \times 100$$

$TQ\%$ = __________ %

If **TQ%** is less than 20%, heavy duty dynamic braking is not required. The inherent braking of the drive should be sufficient to handle the application requirements.

If **TQ%** is 20% or more, a heavy duty braking kit is required. Continue to **Step 5**.

How to Select a Brake (continued)

Step 5 — Determine the Maximum Generated Braking Torque

Three factors limit the application of Heavy Duty Dynamic Braking.

The first is the brake assembly rating **P_T** — The peak power the brake assembly can absorb at any instant regardless of the time limit.

The second is the average power that the break assembly can absorb during one braking duty cycle — **P_A**.

The third is the duty cycle or the number of times the brake assembly can be operated over a given period of time — **DC**.

$$P_M = \frac{TQ_B \times N_2}{7,000}$$

TQ_B = The required braking torque
N_2 = The motor's maximum speed

$$P_M = \frac{[\quad\quad] \times [\quad\quad]}{7,000}$$

P_M = ________ kW

P_M must be less than or equal to the **Brake Assembly Rating** listed in **tables 1a**, **2a** and **3a** on pages 5 & 6. If **P_M** exceeds the **P_T** value shown, the corresponding drive/brake configuration will not be able to produce the braking torque required for your application, and the drive will trip on an overvoltage fault. Increasing decel time **t_2**, reducing load inertia **wk_{2L}**, or doing both will lower **TQ_B** and **P_M**.

table 1a — 200-240V AC Drive Brake Assembly Ratings

for drive rating	to provide the maximum amount of braking torque use	to provide a brake assembly rating (P_T) of
AQF05-AQF50	(1) KA005	6kW
A007-A010	(1) KA010	12kW
A015	(1) KA005 + (1) KA010	18kW
A020	(2) KA010	24kW
A025	(1) KA005 + (2) KA010	30kW
A030	(3) KA010	36kW
A040-A060	(1) KA050	60kW
A075-A100	(2) KA050	120kW

How to Select a Brake (continued)

table 2a — 380-480V AC Drive Brake Assembly Ratings

for drive rating	to provide the maximum amount of braking torque use	to provide a brake assembly rating (P_T) of
BRF05-BRF50	(1) KB005	6kW
B003-B005	(1) KB005	6kW
B007-B010	(1) KB010	12kW
B015	(1) KB005 + (1) KB010	18kW
B020	(2) KB010	24kW
B025	(1) KB005 + (2) KB010	30kW
B030	(3) KB010	36kW
BX040	(1) KB050	60kW
BX060	(1) KB050	60kW
B040-B060	(1) KB050	60kW
B075-B100	(2) KB050	120kW
B125-B150	(3) KB050	180kW
B200	(4) KB050	240kW
B250	(5) KB050	300kW

table 3a — 500-600V AC Drive Brake Assembly Ratings

for drive rating	to provide the maximum amount of braking torque use	to provide a brake assembly rating (P_T) of
C003-C005	(1) KC005	6kW
C007-C010	(1) KC010	12kW
C015	(1) KC005 + (1) KC010	18kW
C020	(2) KC010	24kW
C025	(1) KC005 + (2) KC010	30kW
C030	(3) KC010	36kW
C040-C060	(1) KC050	60kW
C075-C100	(2) KC050	120kW
C125-C150	(3) KC050	180kW
C200	(4) KC050	240kW
C250	(5) KC050	300kW

Step 6 — Determine the Average Power Generated in One Cycle

$$P_A = \frac{TQ_B \times [N_1 + N_2]}{14{,}000}$$

TQ_B = The required braking torque
N_1 = The motor's minimum speed
N_2 = The motor's maximum speed

$$P_A = \frac{[\qquad] \times [\qquad + \qquad]}{14{,}000}$$

P_A = kW

How to Select a Brake (continued)

Step 7 — Determine the Ratio of the Average Power to the Brake Assembly Rating

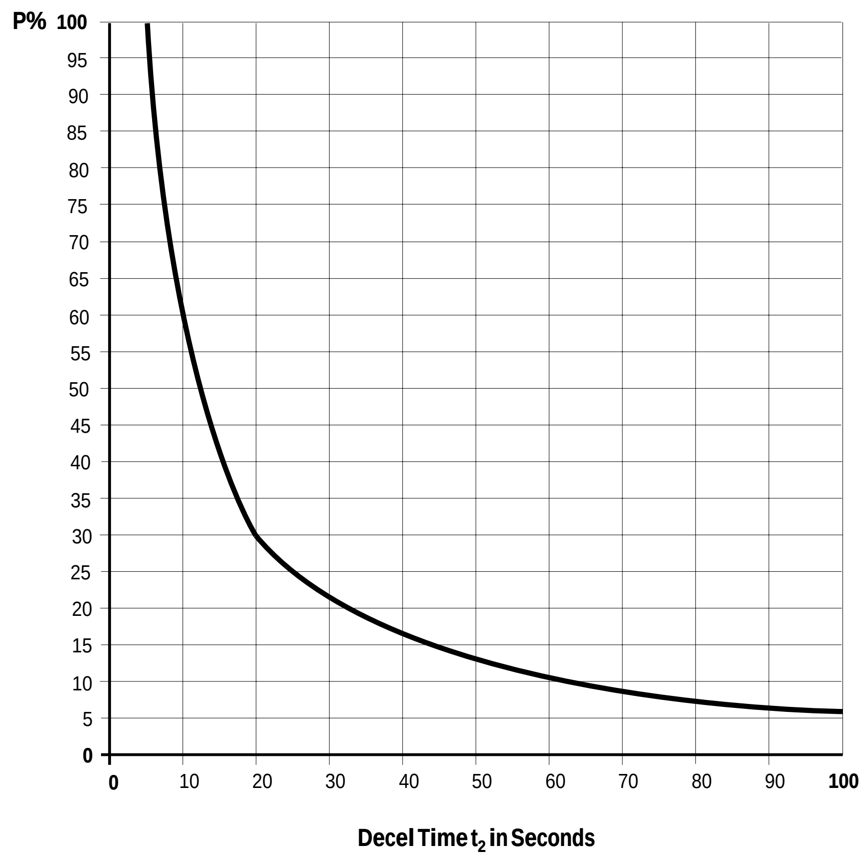
$$P\% = \frac{P_A}{P_T}$$

P_A = The average power generated in one cycle
P_T = The brake assembly rating from tables 1a-3a

$$P\% = \frac{[\quad\quad]}{[\quad\quad]}$$

$P\%$ = %

Find the intersection of **P%** and the motor's decel time t_2 in the chart below. If the point of intersection is below the curve, the average power of one cycle is within the brake's limits. If the point is above the curve, the average power is beyond the brake's limits but may be reduced by increasing the motor's decel time t_2, reducing the load inertia wk^2_L, or doing both.



How to Select a Brake (continued)

Step 8 — Determine if the Duty Cycle is within the Brake's Capability

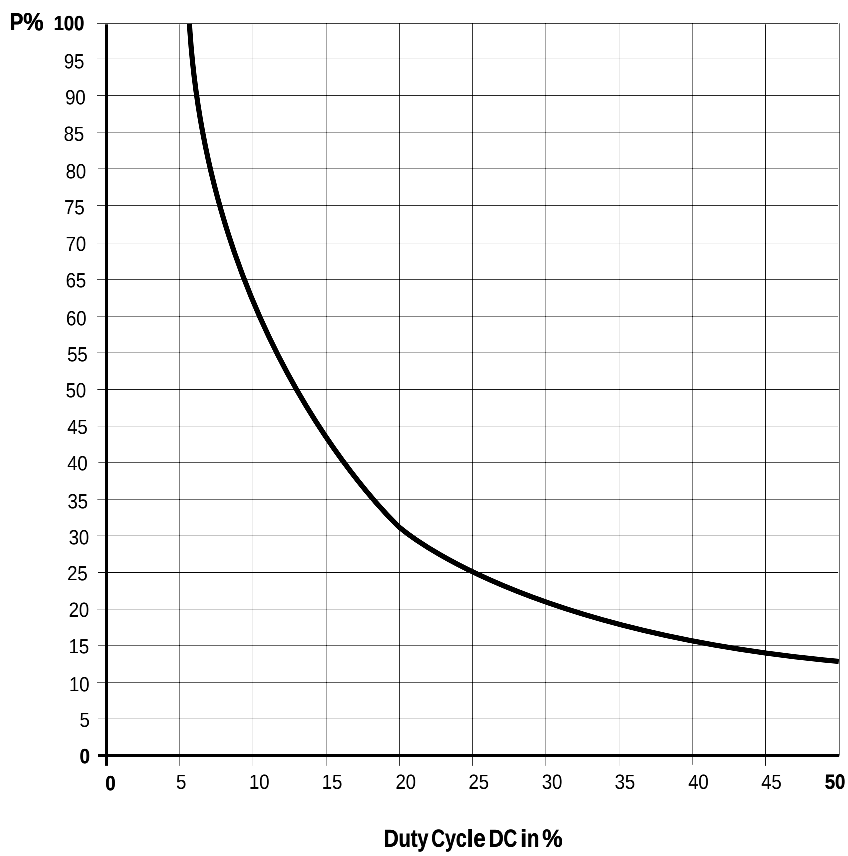
$$DC = \frac{t_2}{t_1} \times 100$$

t_2 = The motor's decel time
t_1 = The motor's cycle time

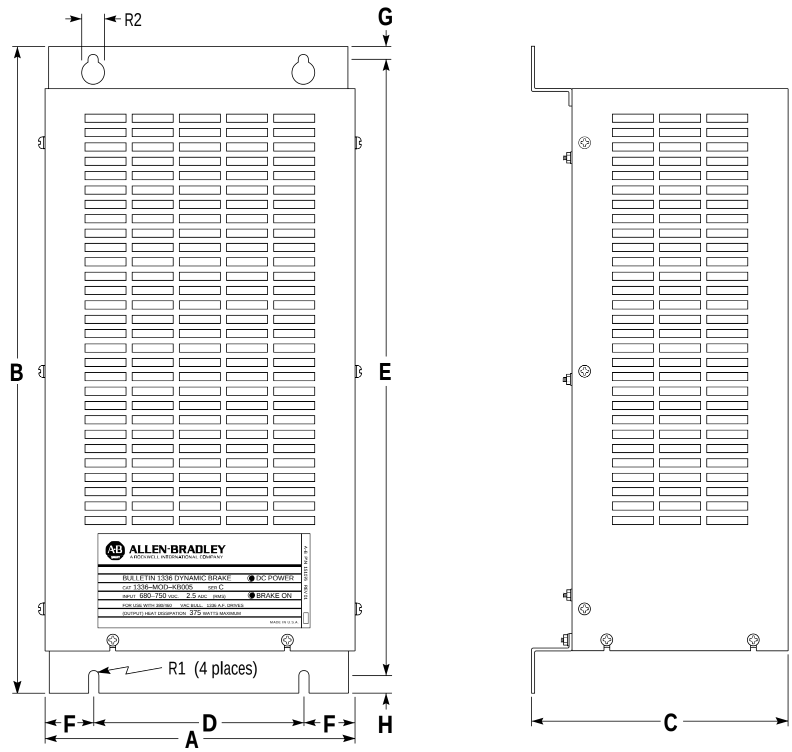
$$DC = \frac{[\quad\quad]}{[\quad\quad]} \times 100$$

DC = %

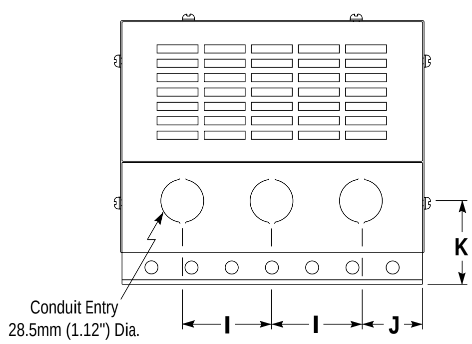
Find the intersection of **P%** and the motor's duty cycle **DC** in the chart below. If the point of intersection is below the curve, the duty cycle is within the brake's limits. If the point is above the curve, the duty cycle is beyond the brake's limits but may be modified by increasing the motor's cycle time t_1.



KA005-KA010, KB005-KB010 and KC005-KC010 Dimensions, Weights and Conduit Entry Locations



(Front) **(Side)**

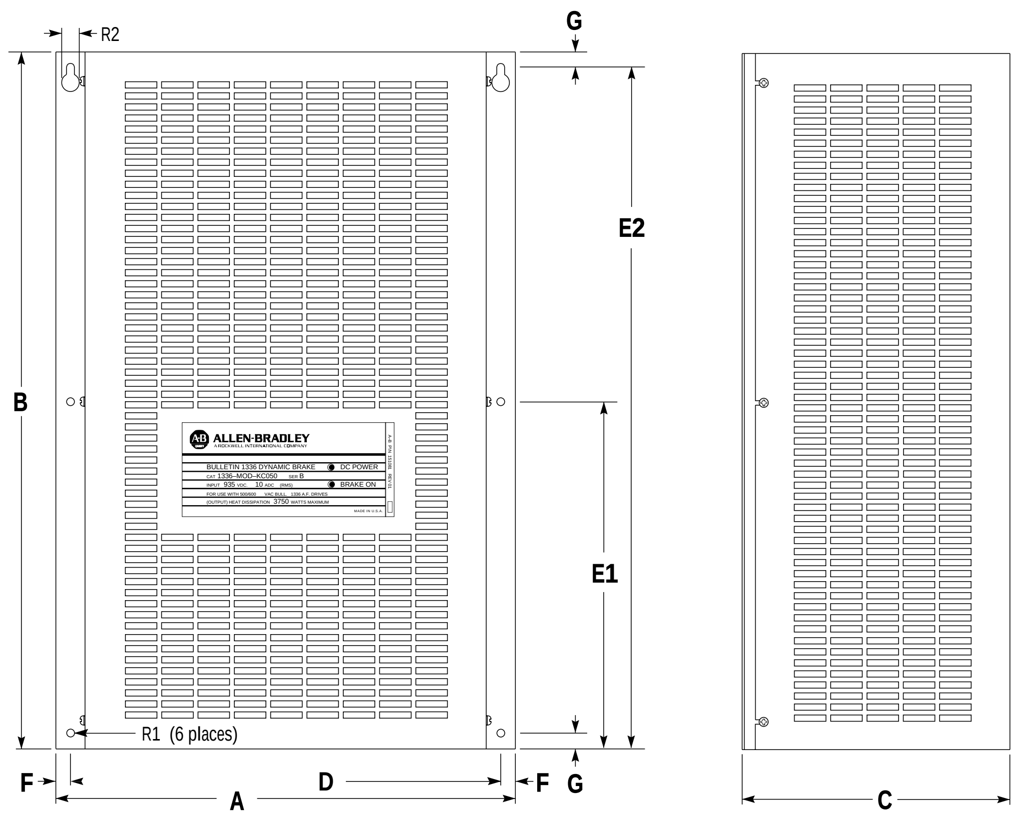


(Bottom)

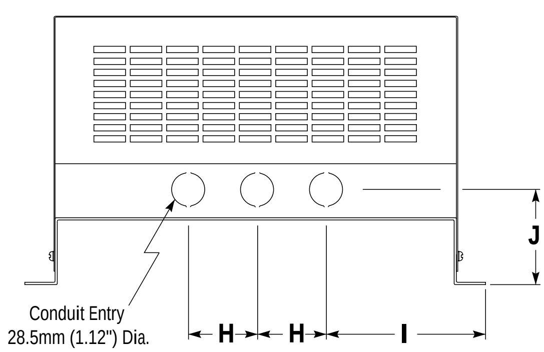
Dimensions and Weights in Millimeters (Inches) and Kilograms (Pounds)

Option Code	A	B	C	D	E	F	G	H	I	J	K	R1 Dia.	R2 Dia.	Weight
KA005-KA010 KB005-KB010 KC005-KC010	193.5 (7.62)	441.4 (17.38)	174.5 (6.87)	133.4 (5.25)	425.4 (16.75)	30.0 (1.18)	6.4 (0.25)	9.7 (0.38)	50.8 (2.00)	46.0 (1.81)	50.8 (2.00)	7.1 (0.28)	14.3 (0.56)	6.8 (15.00)

KA050, KB050 and KC050
Dimensions, Weights and Conduit Entry Locations



(Front) (Side)



(Bottom)

Dimensions and Weights in Millimeters (Inches) and Kilograms (Pounds)

Option Code	A	B	C	D	E1	E2	F	G	H	I	J	R1 Dia.	R2 Dia.	Weight
KA050, KB050 and KC050	406.4 (16.00)	609.6 (24.00)	247.7 (9.75)	381.0 (15.00)	304.8 (12.00)	592.3 (23.32)	12.7 (0.50)	17.3 (0.68)	50.8 (2.00)	152.4 (6.00)	79.3 (3.12)	8.4 (0.33)	14.3 (0.56)	33.8 (75.00)

Specifications

Braking Torque	100% torque for 20 seconds (typical).
Duty Cycle	20% (typical).
Input Power	DC power supplied from DC Bus. Customer supplied 115V AC, 1Ø, 50/60 Hz required for KA050, KB050 & KC050 brake operation. Enable Signal: 50mA Fan Power: 600mA
Optional Brake Fault Contact	(1) N.C. contact, TTL compatible, closed when 115V AC is applied, open when a brake fault or loss of power occurs. Customer supplied 115V AC, 50mA required for KA005, KB005, KC005, KA010, KB010 & KC010 optional brake fault contact monioring. UL/CSA Rating: 0.6 Amps, 125V AC. 0.6 Amps, 110V AC. 2.0 Amps, 30V AC. Initial Contact Resistance: 50mΩ maximum.
Temperature	–10°C to 50°C (14°F to 122°F).
Humidity	5% to 95% non-condensing.
Atmosphere	NEMA Type 1 — Cannot be used in atmospheres having corrosive or hazardous dust, vapor or gas.
Altitude Derating	1,000 meters (3,300 feet) maximum without derating.
Enclosure Type	KA005, KB005, KC005 — IP20 (NEMA Type 1) KA010, KB010, KC010 — IP20 (NEMA Type 1) KB050, KC050 — IP00 (Open)

Installation Requirements

ATTENTION: Electric Shock can cause injury or death. Remove all power before working on this product.

For all Dynamic Brake ratings, DC brake power is supplied from the drive DC BUS. In addition:

1. Dynamic Brakes KA050, KB050 and KC050 have fans and an enable circuit that requires a 115V AC user power supply.
2. Optional brake fault contact monitoring also requires a 115V AC user power supply. For KA050, KB050 and KC050 brakes, the same AC power supply may be used.

Hazards of electrical shock exist if accidental contact is made with parts carrying bus voltage. A bus charged indicator on the brake enclosures provides visual indication that bus voltage is present. Before proceeding with any installation or troubleshooting activity, allow at least one minute after input power has been removed for the bus circuit to discharge. Bus voltage should be verified by using a voltmeter to measure voltage between the +DC and –DC terminals on the drive power terminal block. Do not attempt any servicing until bus charged indicating lights have extinguished and bus voltage has diminished to zero volts.

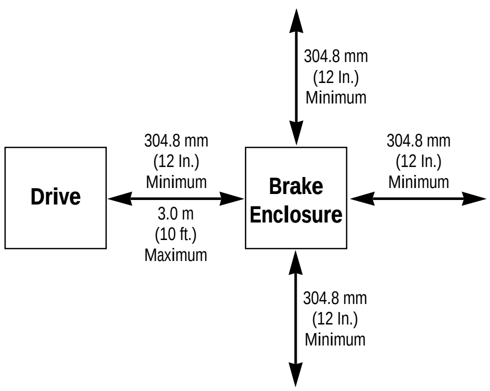
Mounting Requirements

Dynamic brake enclosures must only be installed in the vertical position. Select a location using the guidelines below and information provided in the **Recommended Brake Configurations** section.

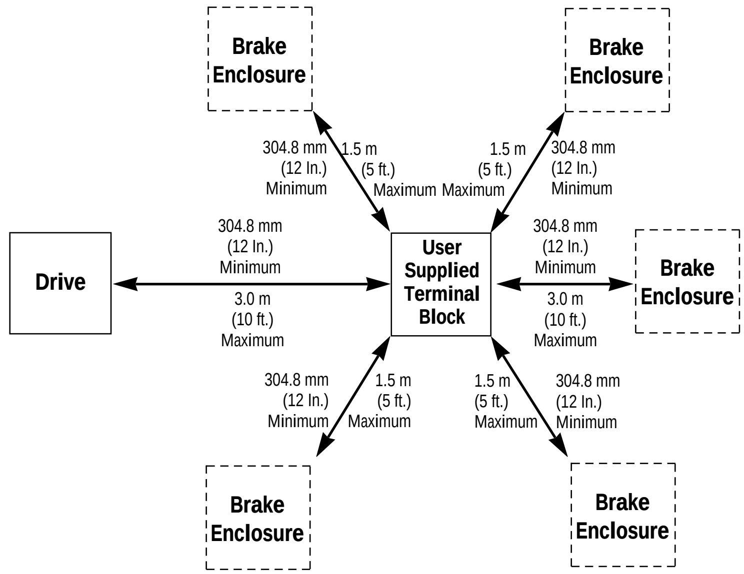
- Each dynamic brake enclosure must be mounted outside of any other enclosure or cabinet and exposed to unrestricted circulating air for proper heat dissipation. Allow a minimum of 304.8 mm (12 in.) between brake enclosures and all other enclosure or cabinets including the drive.
- Each enclosure must be mounted in an area where the environment does not exceed the values listed in the specification section of this publication.
- If only one dynamic brake enclosure is required, the enclosure must be mounted within 3.0 m (10 ft.) of the drive.
- If more than one KA050, KB050 or KC050 brake enclosure is required, a separate user supplied terminal block must be mounted within 3.0 m (10 ft.) of the drive. Allow a maximum distance of 1.5 m (5 ft.) between each brake enclosure and the terminal block.
- If more than one KA005-KA010, KB005-KB010 or KC005-KC010 brake enclosure is required, the first enclosure must be mounted within 3.0 m (10 ft.) of the drive. Allow a maximum distance of 1.5 m (5 ft.) between each remaining brake enclosure.
- Separate conduit must be provided for the control connections between multiple brake enclosures.
- Separate conduit must be provided for the DC power connections between brake enclosures, the terminal block (if required) and the drive. For AC power connection and conduit requirements, refer to your 1336, 1336VT, 1336 PLUS, or 1336 FORCE User Manual.

IMPORTANT: The National Electrical Codes (NEC) and local regulations govern the installation and wiring of the Heavy Duty Dynamic Brake. DC power wiring, AC power wiring, control wiring and conduit must be sized and installed in accordance with these codes and the information supplied on the following pages.

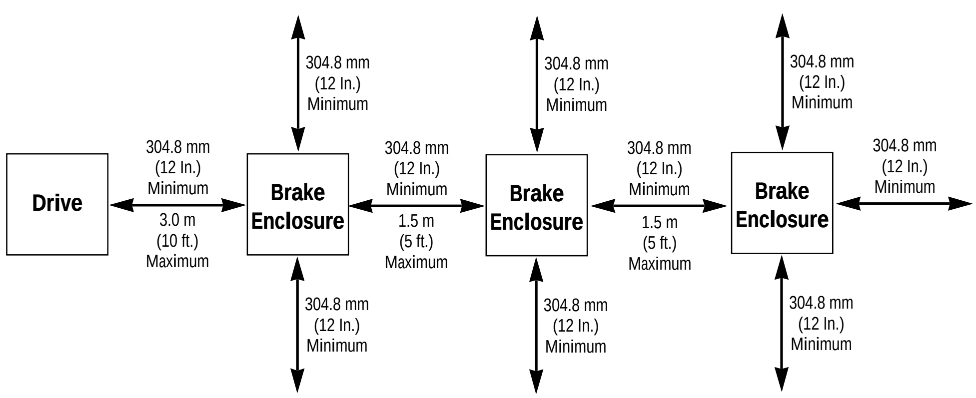
Recommended Brake Configurations



Single Brake Enclosure



KA050, KB050 and KC050
Multiple Brake Enclosures
— Recommended Maximum (5) —



KA005-KA010, KB005-KB010 and KC005-KC010
Multiple Brake Enclosures
— Recommended Maximum (3) —

Brake Fault Contact Monitoring

For all brake ratings a fault contact has been provided to provide a remote output signal to an Allen-Bradley 1336-MOD-L3, L6 or PLC. Should a brake fuse fail, the brake thermostat trip (or for KA050, KB050 & KC050 units the brake enable signal be lost), the brake fault contact will open. Interconnection wiring for remote brake monitoring is provided in the **Wiring Schemes** on pages 17 & 18.

Brake Fuses

All dynamic brakes are internally fused to protect brake components. When replacing brake fuses, use only the type and size specified below.

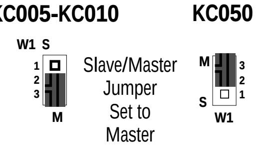
Dynamic Brake	Fuse	Type	Rating
KA005	F1	A50P10 or Equivalent	10A, 500V
KB005	F1	A60Q or Equivalent	5A, 600V
KC005	F1	FWP-5 or Equivalent	5A, 700V
KA010	F1	A50P20 or Equivalent	20A, 500V
KB010	F1	A60Q or Equivalent	10A, 600V
KC010	F1	FWP-10 or Equivalent	10A, 700V
KA050	F1 & F2	A50P50-4 or Equivalent	50A, 500V
KB050	F1 & F2	A70QS35 or Equivalent	35A, 700V
KC050	F1 & F2	A70QS35 or Equivalent	35A, 700V

Brake Module Jumper Settings

For the **Recommended Brake Configurations** shown on the previous page as well as the interconnection diagrams shown on the following pages, there can be only one master brake to control dynamic braking. When multiple brakes are used, only one brake can serve as the master brake to control the remaining slave brakes.

KA005-KA010
KB005-KB010
KC005-KC010

KA050
KB050
KC050

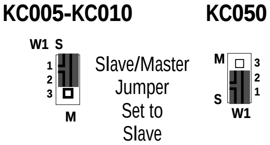


Master Brake Module Jumper Settings

For the master brake, leave sub/master jumper W1 factory set to master — Between jumper positions 2 & 3.

KA005-KA010
KB005-KB010
KC005-KC010

KA050
KB050
KC050

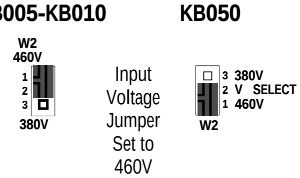


Slave Brake Module Jumper Settings

In each slave enclosure, reset jumper W1 to slave — Between jumper positions 1 & 2.

KB005-KB010

KB050

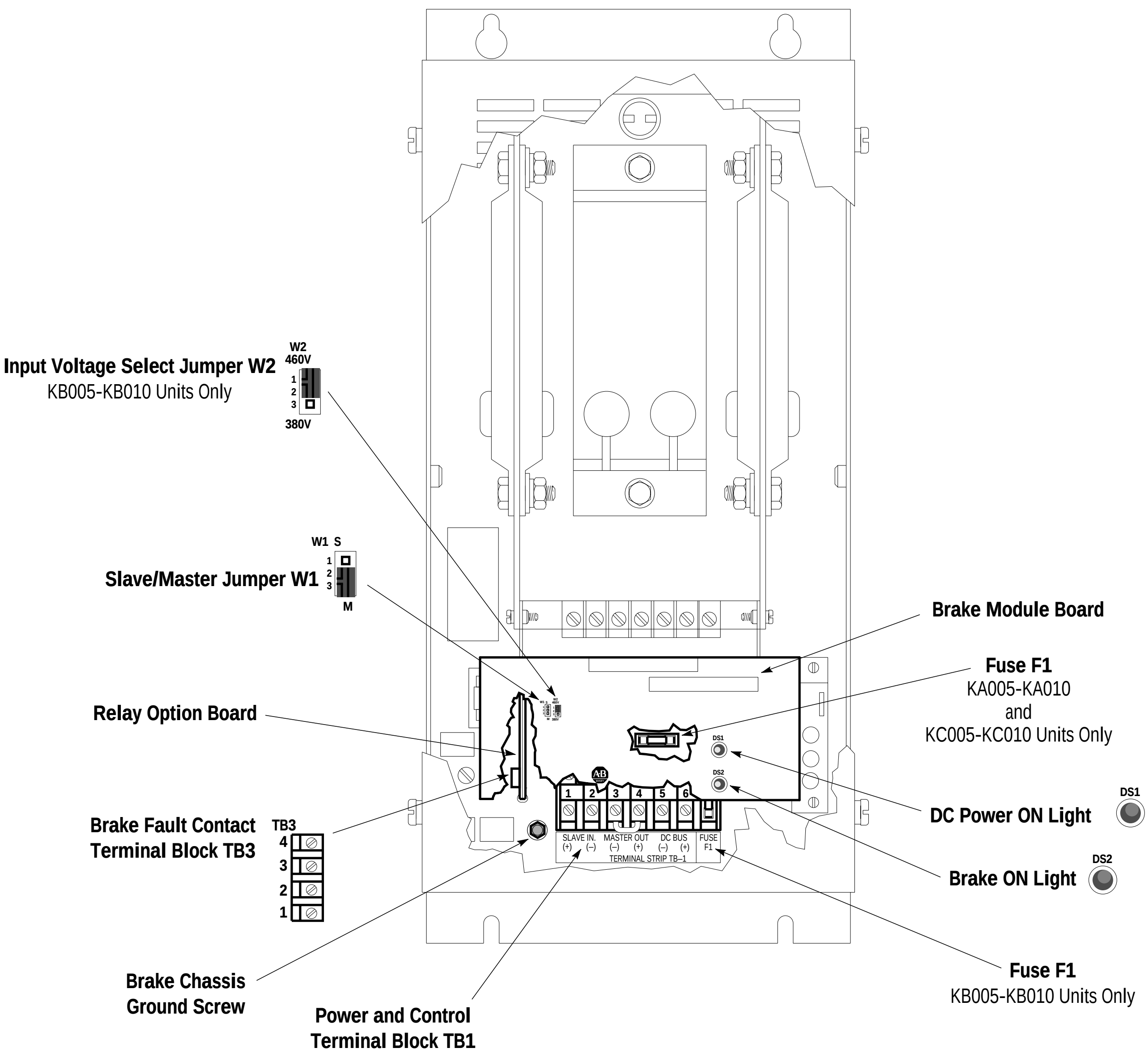


Input Voltage Jumper Settings

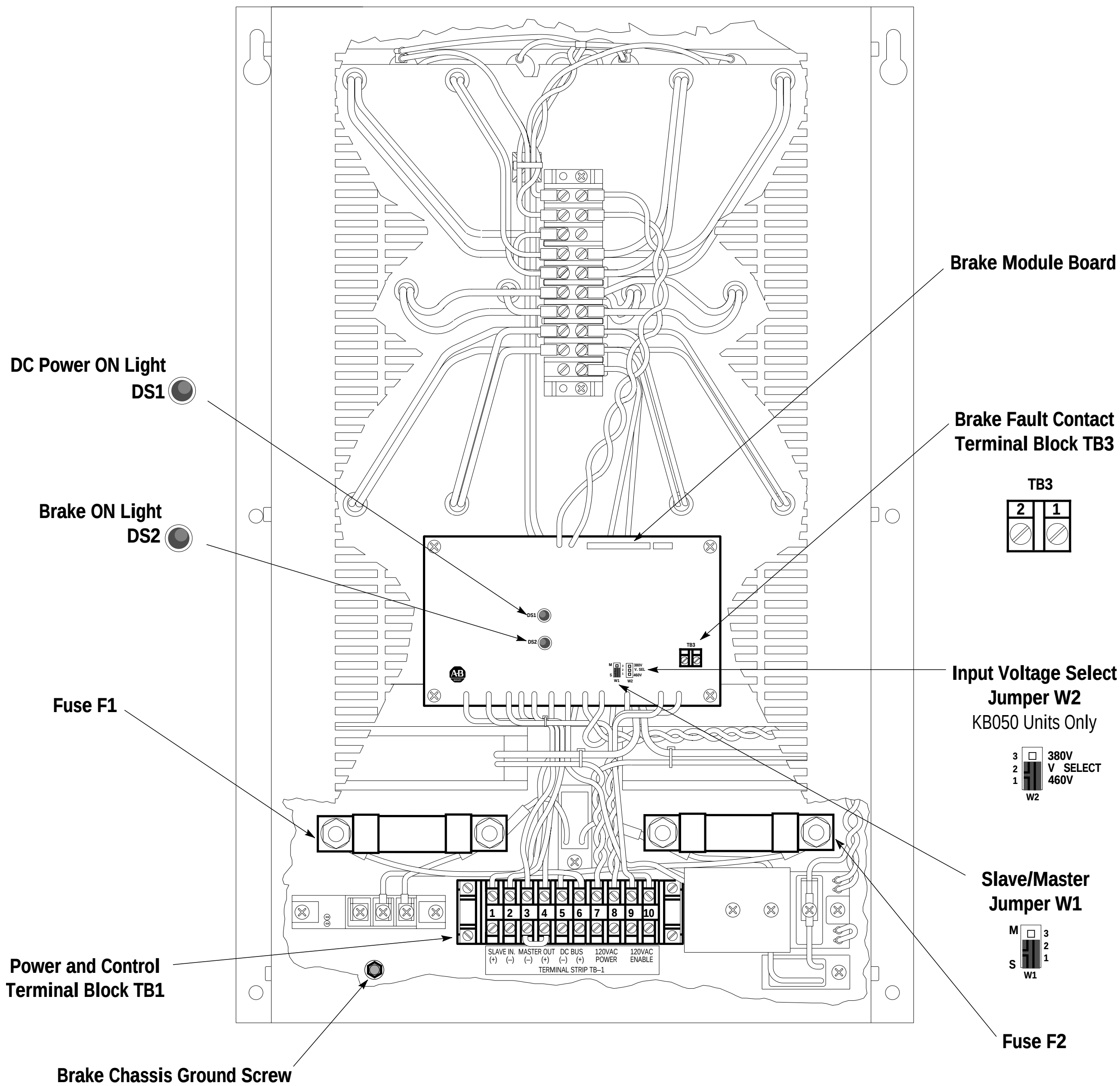
For KB brakes, remember to set jumper W2 in all enclosures to correspond to the nominal drive input voltage. Setting the jumper between positions 1 & 2 will select an input voltage of 415/460 volts. Setting the jumper between positions 2 & 3 will select an input voltage of 380 volts.

KA and KC brakes do not have input voltage jumpers.

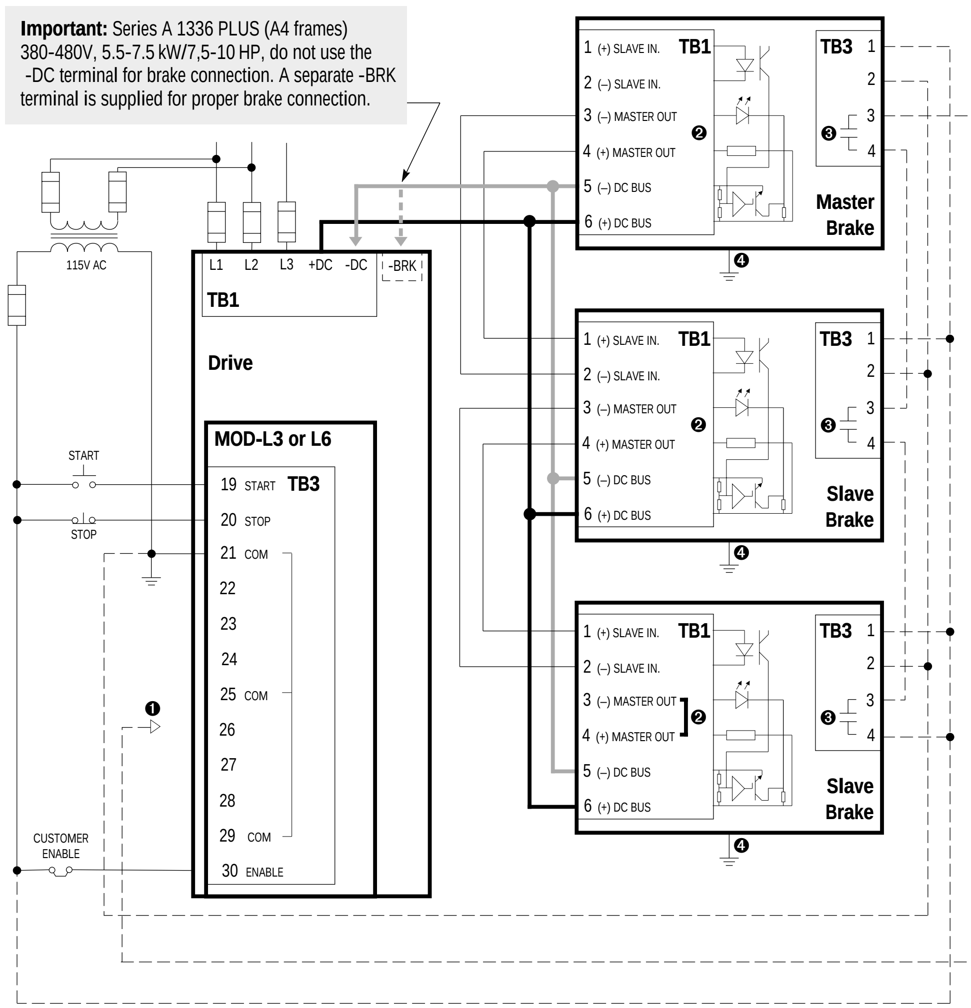
KA005-KA010, KB005-KB010 and KC005-KC010 Terminal Block, Fuse and Jumper Locations



KA050, KB050 and KC050
Terminal Block, Fuse and Jumper Locations



KA005-KA010, KB005-KB010 and KC005-KC010 Wiring Scheme



Brake Power Wiring

Brake Power Wiring

All DC Brake Power Wiring must be twisted pair and run in conduit separate from Control Wiring.
Minimum required DC Brake Power Wiring sizes are listed in **tables 1b**, **2b** and **3b** on page 19.

Control Wiring

All Control Wiring must be twisted pair and run in conduit separate from DC Brake Power Wiring.
Interconnection Control Wiring between the brake terminals must be twisted pair, 1 mm^2 (18 AWG) minimum.

Optional Brake Fault Contact Wiring

A separate 115V AC power supply is required if the brake fault contacts are to be monitored.
Refer to your 1336, 1336VT, 1336 PLUS, or 1336 FORCE User Manual for wire selection and installation details.

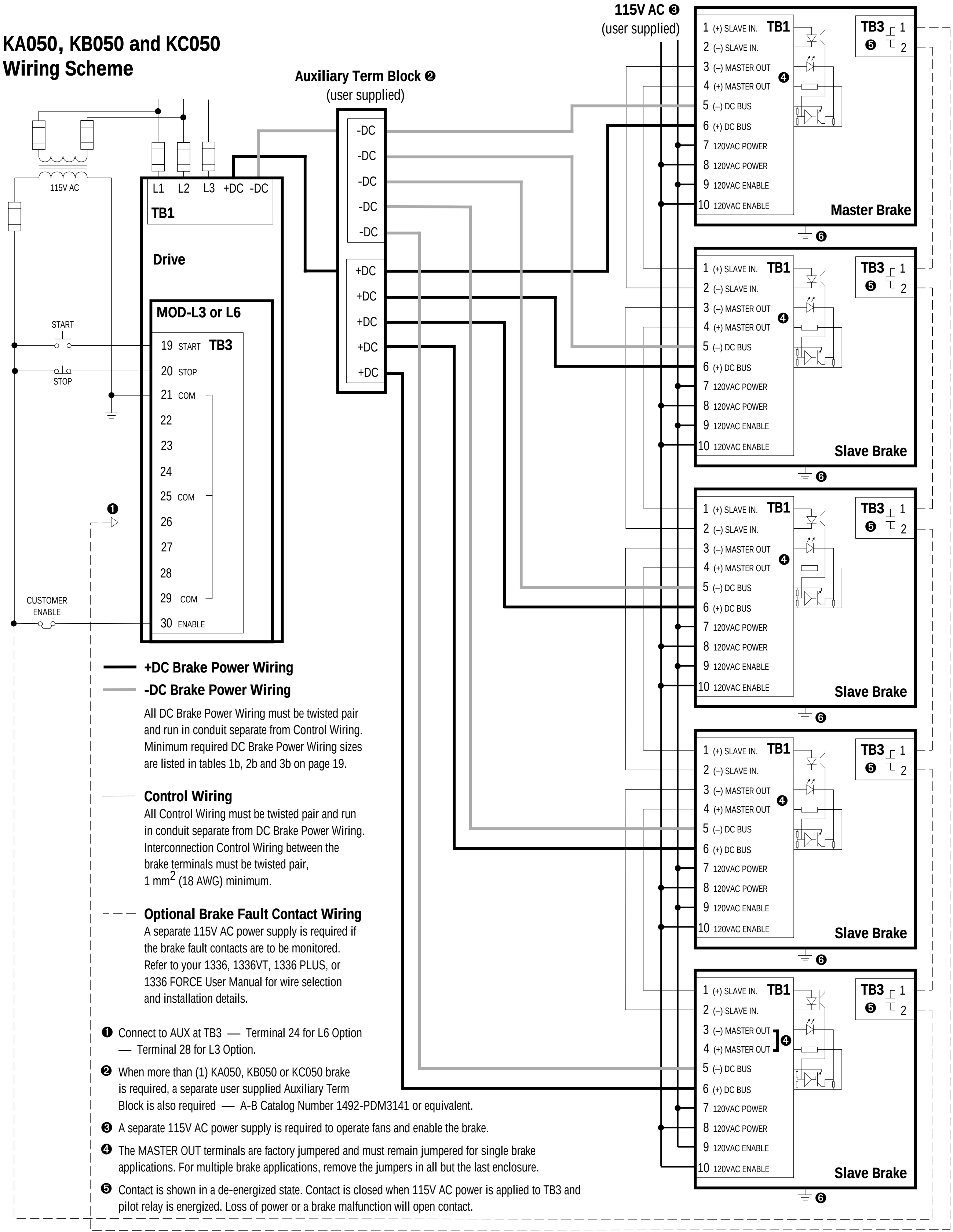
❶ Connect to AUX at TB3 — Terminal 24 for L6 Option — Terminal 28 for L3 Option.

❷ The MASTER OUT terminals are factory jumpered and must remain jumpered for single brake applications.
For multiple brake applications, remove the jumpers in all but the last enclosure.

❸ Contact is shown in a de-energized state. Contact is closed when 115V AC power is applied to TB3 and pilot relay is energized.
Loss of power or a brake malfunction will open contact.

❹ Connect the brake frame to earth ground. Refer to the connected drive's User Manual for grounding instructions.

KA050, KB050 and KC050 Wiring Scheme



+DC Brake Power Wiring

-DC Brake Power Wiring

All DC Brake Power Wiring must be twisted pair and run in conduit separate from Control Wiring. Minimum required DC Brake Power Wiring sizes are listed in tables 1b, 2b and 3b on page 19.

Control Wiring

All Control Wiring must be twisted pair and run in conduit separate from DC Brake Power Wiring. Interconnection Control Wiring between the brake terminals must be twisted pair, 1 mm^2 (18 AWG) minimum.

Optional Brake Fault Contact Wiring

A separate 115V AC power supply is required if the brake fault contacts are to be monitored. Refer to your 1336, 1336VT, 1336 PLUS, or 1336 FORCE User Manual for wire selection and installation details.

❶ Connect to AUX at TB3 — Terminal 24 for L6 Option — Terminal 28 for L3 Option.

❷ When more than (1) KA050, KB050 or KC050 brake is required, a separate user supplied Auxiliary Term Block is also required — A-B Catalog Number 1492-PDM3141 or equivalent.

❸ A separate 115V AC power supply is required to operate fans and enable the brake.

❹ The MASTER OUT terminals are factory jumpered and must remain jumpered for single brake applications. For multiple brake applications, remove the jumpers in all but the last enclosure.

❺ Contact is shown in a de-energized state. Contact is closed when 115V AC power is applied to TB3 and pilot relay is energized. Loss of power or a brake malfunction will open contact.

❻ Connect the brake frame to earth ground. Refer to the connected drive's User Manual for grounding instructions.

DC Power Wiring Tables

Required Minimum DC Power Wiring Sizes in mm² and (AWG)

table 1b — DC Brake Power Wiring for 200-240V AC Drives

for drive rating	with	Drive – Auxiliary Term Block wire size	Drive – Master or Auxiliary Term Block – Master wire size	Master – Slave wire size	Slave – Slave wire size
AQF05-AQF50	(1) KA005	—	6 (10)	—	—
A007-A010	(1) KA010	—	6 (10)	—	—
A015	(1) KA005 + (1) KA010	—	6 (10)	6 (10)	—
A020	(2) KA010	—	6 (10)	6 (10)	—
A025	(1) KA005 + (2) KA010	—	6 (10)	6 (10)	6 (10)
A030	(3) KA010	—	6 (10)	6 (10)	6 (10)
A040-A060	(1) KA050	—	16 (6)	—	—
A075-A100	(2) KA050	50 (1)	16 (6)	16 (6)	—

table 2b — DC Brake Power Wiring for 380-480V AC Drives

for drive rating	with	Drive – Auxiliary Term Block wire size	Drive – Master or Auxiliary Term Block – Master wire size	Master – Slave wire size	Slave – Slave wire size
BRF05-BRF50 B003-B005	(1) KB005	—	4 (12)	—	—
B007-B010	(1) KB010	—	4 (12)	—	—
B015	(1) KB005 + (1) KB010	—	4 (12)	4 (12)	—
B020	(2) KB010	—	4 (12)	4 (12)	—
B025	(1) KB005 + (2) KB010	—	4 (12)	4 (12)	4 (12)
B030	(3) KB010	—	4 (12)	4 (12)	4 (12)
BX040 BX060 B040-B060	(1) KB050	—	6 (10)	—	—
B075-B100	(2) KB050	16 (6)	6 (10)	—	—
B125-B150	(3) KB050	25 (3)	6 (10)	6 (10)	6 (10)
B200	(4) KB050	50 (1)	6 (10)	6 (10)	6 (10)
B250	(5) KB050	70 (00)	6 (10)	6 (10)	6 (10)

table 3b — DC Brake Power Wiring for 500-600V AC Drives

for drive rating	with	Drive – Auxiliary Term Block wire size	Drive – Master or Auxiliary Term Block – Master wire size	Master – Slave wire size	Slave – Slave wire size
C003-C005	(1) KC005	—	4 (12)	—	—
C007-C010	(1) KC010	—	4 (12)	—	—
C015	(1) KC005 + (1) KC010	—	4 (12)	4 (12)	—
C020	(2) KC010	—	4 (12)	4 (12)	—
C025	(1) KC005 + (2) KC010	—	4 (12)	4 (12)	4 (12)
C030	(3) KC010	—	4 (12)	4 (12)	4 (12)
C040-C060	(1) KC050	—	6 (10)	—	—
C075-C100	(2) KC050	16 (6)	6 (10)	—	—
C125-C150	(3) KC050	25 (3)	6 (10)	6 (10)	6 (10)
C200	(4) KC050	50 (1)	6 (10)	6 (10)	6 (10)
C250	(5) KC050	70 (00)	6 (10)	6 (10)	6 (10)

Setup

ATTENTION: The heavy duty dynamic brake unit contains a thermostat to guard against overheating and component damage.

If the duty cycle, torque setting and/or ambient temperature exceeds the specifications listed in this publication, the thermostat is designed to trip and disable the brake units until components cool to rated temperature. During the cooling period, only 20% braking torque will be available to the motor.

If reduced braking torque represents a potential hazard to personnel, auxiliary stopping methods must be considered in the machine and/or control circuit design.

1336 and 1336VT Parameter Settings

Parameter 11 — Decel Frequency Hold — must be set to OFF when heavy duty dynamic braking is installed. Refer to your 1336 or 1336VT Programming Manual for programming procedures and record the changes for future reference.

1336 PLUS Parameter Settings

When heavy duty dynamic braking is installed:

- Parameter 11 [Bus Limit En] must be set to “Disabled”.
- Braking for deceleration requires that the drive be programmed for “Ramp-to-Stop”. Braking for overhauling loads may or may not be stop mode specific. Program Parameters 10 and 52 per the application.

Refer to your 1336 PLUS User Manual for programming procedures and record the changes for future reference.

1336 FORCE Parameter Settings

When heavy duty dynamic braking is installed:

- Parameter 178 [Regen Power Lim] typically should be set to the required negative % of torque.

Refer to your 1336 FORCE User Manual for programming procedures and record the changes for future reference.

Notes

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