



**ALLEN-BRADLEY
BULLETIN 1336
MACHINE STOP-ELECTRICAL**

APPLICATION NOTE #5

January 2, 1997

PURPOSE

This

ensure

to

guidelines

The purpose of this document is to provide guidelines for wiring and control schemes for the Bulletin 1336 AC Drive.

document is to be used as a suggestion only. Users must

that installations meet applicable codes and are suitable for the existing conditions.

The Bulletin 1336 User Manual should be used as a reference

ensure that proper wire selection, routing, and fusing

are followed.

**WHAT THIS NOTE
CONTAINS**

remains

the

logic

The electrical machine stop is utilized to rapidly decelerate the motor and connected load. This mode of stopping requires that the drive has line power applied at all times and

"logically enabled". The drive will not be able to control

stopping of the motor and load if power is removed or the

is disabled.

The Bulletin 1336 can be configured for different stopping modes. The Users will need to determine which mode best suits the application.

**INTENDED
AUDIENCE**

This application note is intended to be used by personnel familiar with the hardware components and programming procedure necessary to operate the Bulletin 1336/1336VT.

**WHERE IT
IS USED**

The diagrams, parameter settings, and auxiliary hardware used in this application note are designed to address specific issues in many different applications. Some changes by the Users may be necessary to apply the concepts of this document to a specific application.

DESCRIPTION

The 1336 drive is configured by digital programming. For a controlled stop, the choices are DC INJECTION BRAKING or RAMP TO STOP.

DC INJECTION BRAKING is selected by setting Parameter 10 to a value of 1. The Users can also select the amount of time the braking will be applied and the magnitude of the voltage used for braking with parameters 12 and 13. This mode of braking will generate up to 40% of rated motor torque for braking and is typically used for low inertia loads. Refer to table 1 for parameter settings.

of

(Decel

set

requires

RAMP TO STOP is selected by setting Parameter 10 to a value

2. The 1336 will ramp the frequency to zero based on the deceleration time programmed into parameter 8 and/or 31

Time #1 & #2). Parameter 11 (Decel Frequency Hold) must be

set to zero to allow the drive to follow the programmed deceleration rate. The "normal" mode of machine operation can utilize Decel Time #1. If the "Machine Stop" mode

requires a faster deceleration than Decel Time #1 allows, the "Machine Stop" can activate Decel Time #2 for a faster rate. Parameter 26 must be set to a value of 1 to access Decel Time #2. Refer to table 1 for parameter settings.

energy

command

"speed"

stator, and

brake

time.

to

DYNAMIC BRAKING is utilized to dissipate the regenerated

energy from the motor during a rapid deceleration. When a STOP

command is initiated and a short decel time is programmed, the motor operating mode changes from motoring to generating. The

"speed" of the rotor will be greater than the "speed" of the stator. This will cause energy to flow from the rotor to the

stator, and back into the drive in the form of dc-bus voltage. To prevent an over voltage on the dc-bus capacitor bank, the dynamic

brake will "turn on" and dissipate the excess voltage across a resistor bank. This mode of braking will generate 100% motor torque for a 20% duty cycle, and allows the fastest decel

time. To determine if a Dynamic Brake is required, the User must refer to the Bulletin 1336 Dynamic Brake Manual for specific details and calculations for correct brake selection. Refer

to figure 1 for diagram.

APPLICATION CONSIDERATIONS

levels.

with

exceed

DC INJECTION BRAKING - This mode of stopping can cause excessive motor heating when used in cyclical applications or with overhauling loads that require high brake voltage

It is recommended to use the ramp-to-stop for applications with these characteristics.

DYNAMIC BRAKING - The rating of the dynamic brake cannot exceed the rating of the drive.

PARAMETER SETTINGS

TABLE 1

7	ACCEL TIME 1	0-600 SECONDS
8	DECEL TIME 1	0-600 SECONDS
10	STOP SELECT	0=COAST TO STOP 1=DC INJECTION

		2=RAMP TO STOP
12	DC HOLD TIME	0-15 SECONDS
13	DC HOLD VOLTS	0-115 VOLTS
26	PRESET/2ND ACCEL	0=PRESET SPEEDS 1=2ND ACCEL/DECEL
30	ACCEL TIME 2	0-600 SECONDS
31	DECEL TIME 2	0-600 SECONDS

BULLETIN 1336 WITH DYNAMIC BRAKING

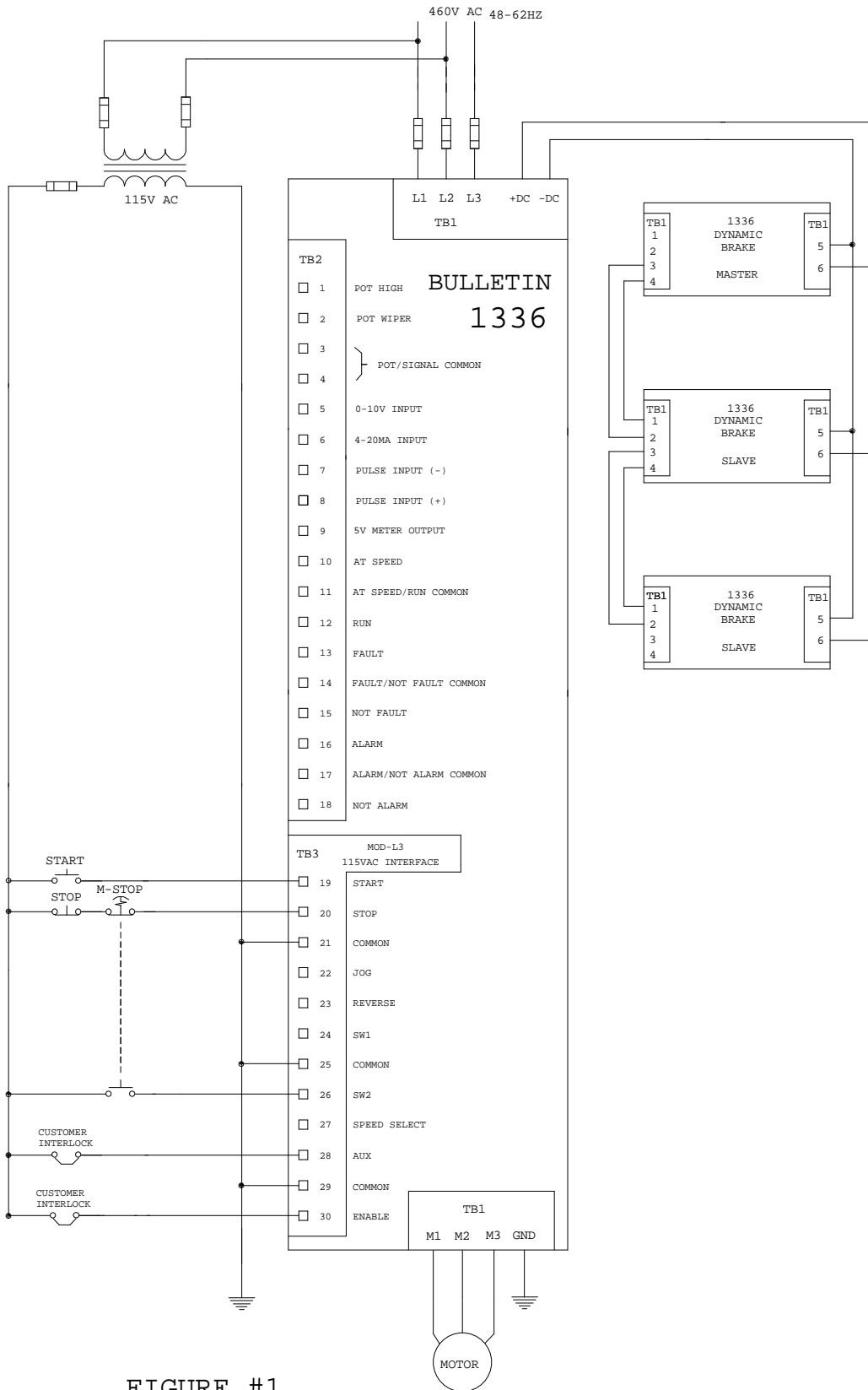


FIGURE #1