



BREATHING LIFE INTO MACHINES

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Application Note

Using the FlashStick on the MC206 Motion Coordinator
These notes require system software version 1.6119 or higher

1. Writing Programs to FlashStick:

- EPROM(1) - Writes programs to FlashStick and clears EPROM request bit on FlashStick
EPROM(2) - Writes programs to FlashStick and sets EPROM request bit on FlashStick
EPROM(3) - Deletes programs (not data sectors) from FlashStick

2. Checking Programs on FlashStick:

DIR F - Lists a directory of FlashStick and prints EPROM request status

3. Reading Programs from FlashStick:

Programs will be copied on power up or EX from the FlashStick into the Motion Coordinator if a FlashStick containing programs is inserted and the controller is not locked.

If a FlashStick is inserted and the controller is unlocked the action taken depends on the POWER_UP system variable in the controller and the EPROM request bit on the FlashStick:

Table with 3 columns: POWER_UP status, EPROM Request OFF, EPROM Request ON. It details program transfer and writing to internal controller EPROM based on these variables.

Notes:

The programs on the FlashStick have auto/manual run settings in the same way as programs in internal flash EPROM do.

In all cases if programs transferred from the FlashStick are set to autorun this occurs in a similar way

4. Methods of Use:

A machinery builder could use a FlashStick with programs loaded and the EPROM request bit set to install programs on to a series of machines.

If an application update is sent out on a FlashStick to a machinery customer the EPROM request bit could be left OFF [Using EPROM(1)]. In this way if the update does not do what is required the old program will be copied from internal EPROM when the FlashStick is removed.

5. Reading and Writing Data to and from FlashStick:

The NX26M160-5C-R FlashSticks have 4096 sectors. Half of these sectors (2048 sectors) are reserved for data storage by application programs. Each sector is able to store 128 floating point values which are copied to and from the TABLE memory in the Motion Coordinator.

There are 2 commands available:

```
check=STICK_WRITE(sector,table start)
```

```
check=STICK_READ(sector,table start)
```

The STICK_WRITE and STICK_READ commands always copy blocks of 128 values in or out of the TABLE memory. The application programmer can choose which sector to read/write and where to read and write from TABLE memory using the "table start" parameter. The "check" parameter returns TRUE (-1) if the STICK_WRITE command was successful. 0 is returned if the command was unsuccessful, if for example the FlashStick is not present.

Example:

```
IF STICK_WRITE(10,1000) THEN
    PRINT "Table values 1000..127 written successfully to sector 10"
ELSE
    PRINT "Flashstick not present or write failed"
ENDIF
```