Purpose:
To advise customers of the solution to a problem that may cause the COUNT statement to misinterpret the CW.FWD@ setting for the axis whose encoder is being used as the source for counting. As a consequence the statement may count in the wrong direction.

Description:
A code error in MotionBASIC firmware relating to the COUNT statement uses an incorrect pointer to determine the CW.FWD@ setting of the source encoder. The pointer identifies the last axis from which data has been read rather than the axis whose encoder is to be counted. If the CW.FWD@ setting for the last axis read is different from the desired source axis, it will count in the wrong direction, i.e. up instead of down or vice versa. In multi-threaded applications the last axis from which data has been read will be random resulting in unpredictable operation.

Products Affected:
All versions of MotionBASIC® from 4.0.0 to 4.1.2.
Since there is an effective work-around, we do not anticipate a special release to correct this problem. It is assumed that it will be corrected in release 4.1.3 (scheduled February/March 1999) and/or 5.0.0 (scheduled late spring 1999). Users should consult the release notes for these versions when they are available to determine whether the problem has been corrected.

Solution:
The problem can be avoided by forcing the program to read data from the desired source axis before executing the COUNT statement.

For example, if you want to count the encoder data coming from axis 4:

```
hold                'hold the scheduler so no other threads run
tmp =cw.fwd@((4))  'read some data from the desired source axis
count {4} for 500   'execute the count statement
release             'release the scheduler so other threads can run
```

The above example will cause the counter to count down from 500 to 0 user units when the axis is rotating in the direction specified by its CW.FWD@ parameter. When it reaches 0, the
DELAY@ variable for axis 4 will be set true. Rotation in the opposite direction will cause the counter to count up.

The COUNT statement allows you to specify one axis to indicate which DELAY@ variable to set and the other axis on the DSP card as the encoder whose data is to be counted.

For example, to count data from axis 3 and then set DELAY@ for axis 4 when the counter reaches zero:

```
hold                         'hold the scheduler
  tmp = cw.fwd@({3})         'read data from the desired source axis
  count {4} for 500 using {3}'execute the count statement
release                      'release the scheduler
```

*These work-arounds do not need to be removed when you upgrade MotionBASIC® to a version in which the problem has been corrected.*