Programming: System State Flags

The following binary values can be tested by IF and WHILE control flow expressions, or assigned to any variable reported using RB(bit) commands. Some may be reset using Z(bit) commands. The first 8 states are reported using the RS command. RW reports sixteen of these flags in combination.

By writing your program to periodically test these bits, you can make your SmartMotor application very “smart” about its inner-workings and doings.

- **Bo**: Motor OFF status bit 7
- **Bh**: Excessive temperature status bit 6
- **Be**: Excessive position error status bit 5
- **Bw**: Wraparound occurred status bit 4
- **Bi**: Index report available status bit 3
- **Bm**: Real time negative limit status bit 2
- **Bp**: Real time positive limit status bit 1
- **Bt**: Trajectory in progress status bit 0
- **Ba**: Over current state occurred
- **Bb**: Parity error occurred
- **Bc**: Communication overflow occurred
- **Bd**: User math overflow occurred
- **Bf**: Comm framing error occurred
- **Bk**: Program check sum/EEPROM failure
- **Bl**: Historical left limit
- **Br**: Historical right limit
- **Bs**: Syntax error occurred
- **Bu**: User array index error occurred
- **Bx**: Hardware index input level

If you do take action based on some of the error flags, you will need to reset the flag in order to look out for the next occurrence, or in some cases depending on how your code is written, in order to keep from acting over and over again, on the same occurrence.

The flags that need to be reset are listed. Their letter designator is preceded with the letter ‘Z’.