

## Programming: System State Flags

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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 by 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'.