

AXISSTATUS

Type:

Axis Parameter (Read Only)

Description:

The AXISSTATUS axis parameter may be used to check various status bits held for each axis fitted. A description of each bit can be found below.

Value:

32 bit value, each bit represents a different status state.

Bit	Description	Value	char
0	Speed limit active	1	l
1	Following error warning range	2	w
2	Communications error to remote drive	4	a
3	Remote drive error	8	m
4	In forward hardware limit	16	f
5	In reverse hardware limit	32	r
6	Datuming in progress	64	d
7	Feedhold active	128	h
8	Following error exceeds limit	256	e
9	FS_LIMIT active	512	x
10	RS_LIMIT active	1024	y
11	Cancelling the move	2048	c
12	Pulse output axis over-speed	4096	o
13	MOVETANG decelerating	8192	t
15	VOLUME_LIMIT active	32768	v

16	AXIS_FS_LIMIT active	65536	i
17	AXIS_RS_LIMIT active	131072	j
18	Encoder power supply overload	262144	p
19	HW_PSWITCH FIFO not empty	524288	n
20	HW_PSWITCH FIFO full	1048576	b
21	Kinematic FRAME stopped	2097152	K
22	BISS encoder warning flag	4194304	
23	WORLD_FS_LIMIT active	8388608	
24	WORLD_RS_LIMIT active	16777216	
25	Mode 3 CANCEL status	33554432	
26	Remote node status error	67108864	
27	HW_PSWITCH FIFO half full	134217728	
28	MOVEADD additional offset is active	268435456	
29	MOVEADD is being cancelled	536870912	
30	EtherCAT emergency message received from remote drive	1073741824	
31	Not used		

Motion Perfect uses the characters to display the error in the Axis Parameters window.

Kinematic FRAMEs run for 1 hour after power up. To continue after 1 hour, add Feature Enable Code 22.

Bit 27 for P874/P879 only.

Function:

L - The axis [VP_SPEED](#) is controlled by [MOVESP/MOVEABSSP/MOVECIRCS](#) and so on. It is not at the [SPEED](#) setting.

W - The [FE](#) value is outside the warning value set in [FE_RANGE](#).

A - A communications error has occurred on the axis. EtherCAT, RTEX or an Absolute Encoder (EnDat, BiSS) has a communication problem.

M - The remote drive (EtherCAT, RTEX etc.) has signalled that it has an internal error. Check the drive display and software.

F - The axis has triggered the forward limit switch that is set by [FWD_IN](#).

R - The axis has triggered the reverse limit switch that is set by [REV_IN](#).

D - A [DATUM](#) procedure is in progress.

H - The feedhold input is active and axis [VP_SPEED](#) is set to [FHSPEED](#). This does not apply to [MOVESP](#) type or linked moves.

E - The following error [FE](#) has exceeded the limit set by [FE_LIMIT](#).

X - The axis [DPOS](#) is greater than the limit set by the [FS_LIMIT](#) axis parameter.

Y - The axis [DPOS](#) is less than the limit set by the [RS_LIMIT](#) axis parameter.

C - The move has been cancelled and is ramping down at either the [DECEL](#) or [FASTDEC](#) rate.

O - The [DEMAND_SPEED](#) for the axis exceeds the capability of the step pulse hardware to produce pulses. Typical maximum pulse rates are 2 MHz and 8 MHz depending on product.

T - The [MOVETANG](#) on the axis is decelerating.

V - The axis has 3D volumetric limits set up using the [VOLUME_LIMIT](#) command and the robot end-effector position is outside the set limits.

I - In a robotic [FRAME](#), [AXIS_DPOS](#) is greater than [AXIS_FS_LIMIT](#). This usually refers to joint angle limits.

J - In a robotic [FRAME](#), [AXIS_DPOS](#) is less than [AXIS_RS_LIMIT](#). This usually refers to joint angle limits.

P - The 5V supply to connected encoders or other hardware powered from the encoder connector has shut down due to overload. There is one power source shared by all encoder ports. P will therefore show for all axes running on the same hardware.

N - Indicates that the hardware PSwitch FIFO buffer on the axis is not empty. It has 1 or more positions in the buffer.

B - Indicates that the hardware PSwitch FIFO buffer on the axis is full. A new [HW_PSWITCH](#) command cannot be run when the buffer is full.

K - Kinematic [FRAME](#) has stopped running. The [WDOG](#) has been set to OFF and the [FRAME](#) value set back to 0. This occurs after 1 hour from each reset if either the Kinematic or Robotic FEC is not present.

22 - BISS encoder status flag. When using Renishaw Resolute this bit indicates unreliable data due to dirt on the scale.

23 - In a robotic [FRAME](#), [WORLD_DPOS](#) is greater than [WORLD_FS_LIMIT](#).

24 - In a robotic [FRAME](#), [WORLD_DPOS](#) is less than [WORLD_RS_LIMIT](#).

25 – Mode 3 [CANCEL](#) occurred. Move cancelled and immediately merged to the next move.

26 - Indicates a user defined error, for example on EtherCAT, the [ETHERCAT](#) function \$79 will define bits in the [DRIVE STATUS](#) that will combine to set this AXISSTATUS bit.

27 - Set when the [HW_PSWTICH](#) FIFO is half full or more. Requires hardware support. Only available on certain Motion Coordinators.

28 - Set when the axis is offset by a [MOVEADD](#) running on top of the main move.

29 - Set when the [MOVEADD](#) has been cancelled and is ramping down. Cleared once the ramp-down is completed.

30 - Set when the EtherCAT remote drive sends an EtherCAT Emergency Message. See [ETHERCAT](#) function \$E0 for further information about the Emergency Message response.

[ERRORMASK](#) is a bit-wise mask which determines which [AXISSTATUS](#) bits will generate a [MOTION ERROR](#) and set the [WDOG](#) or [AXIS ENABLE](#) to OFF

Examples:

Example 1:

Check bit 4 to see if the axis is in forward limit.

```
IF (AXISSTATUS AND 16)>0 THEN
  PRINT "In forward limit"
ENDIF
```

Example 2:

Check bit 3 to see if there is a remote drive error. Attempt to reset the EtherCAT drive fault.

```
BASE(ecat_axis_1)
IF AXISSTATUS.3 = 1 THEN
  PRINT "Remote drive error"
  ETHERCAT($64, ecat_axis_1)
  WA(50)
  DATUM(7)
  IF AXISSTATUS.3 = 0 THEN
    PRINT "Error was cleared"
  ENDIF
ENDIF
```

Example 3:

When motion error occurs, check the axis status for each axis in error.

```
IF MOTION_ERROR <> 0 THEN
  FOR a = 0 to 23
```

```
IF MOTION_ERROR.a = 1 THEN
  IF AXISSTATUS AXIS(a).2 = 1 THEN
    PRINT "Communication error on axis ";a[0]
  IF AXISSTATUS AXIS(a).3 = 1 THEN
    PRINT "Remote drive error on axis ";a[0]
  IF AXISSTATUS AXIS(a).8 = 1 THEN
    PRINT "FE exceeded FE_LIMIT on axis ";a[0]
  ENDIF
ENDIF
NEXT a
ENDIF
```

See Also:

[ERRORMASK](#), [DATUM\(0\)](#), [DATUM\(7\)](#), [MOTION ERROR, DISABLE GROUP, ETHERCAT\(\\$64, axis_number\)](#)