

Adept Status Code Summary for Embedded Products

Update History:

2/16/2006		Rev 1	Initial version.
4/13/2006		Rev A	Added new codes and revised/completed message, explanation, and user action columns.
4/19/2006		Rev B	Minor changes to test descriptions.

Common Two-digit Status Codes				
Status Code	V+ Error Message	V+ Error Code	Explanation	User Action
OK	None	N/A	STATUS message - High Power OFF.	None
ON	None	N/A	STATUS message - High Power ON.	None
A#	*Motor amplifier fault*	-1018	A power amplifier fault is indicated on axis (#).	Check user motor power connections shorts or opens. Turn high power back on and restart the program. If the error persists, contact Adept Customer Service.
B#	None	N/A	IO-Blox communications error with IO-Blox (#).	Check user IOBlox connections for shorts or opens. Check IOBlox address switches for proper configuration. Cycle power to the control system. If the error persists, contact Adept Customer Service.
AC	*RSC Power Failure*	-670	A loss of AC power was detected.	Check user AC power connections for shorts or opens. Turn high power back on and restart the program. If the error persists, contact Adept Customer Service.
D#	*Duty-cycle exceeded* Mtr n	-1021	The indicated motor (#) has been driven hard for too long a period of time. The servo system has disabled power to protect the robot hardware.	Turn high power back on; reduce the speed and/or acceleration for the motion that was in progress or for motions that proceeded that motion; and repeat the motion that failed.
E#	*Encoder Fault*	-1025	The servo system has detected an encoder fault.	User actions vary by product. Please reference individual robot manuals for appropriate actions.
FM	None	N/A	Firmware version mismatch.	Contact Adept Customer Service.
FW	*1394 communications timeout*	-927	The IEEE 1394 communications system has failed to initialize or has lost communications with the SmartController.	This will occur normally if the SmartController is powered down separately from the robot systems. If it occurs unexpectedly, check the connections and integrity of the 1394 cabling.
I#	None	N/A	Servo initialization stages. These steps normally sequence (I0, I1, ...) on the display during normal system boot.	If any initialization code persists (greater than 30 seconds), it may indicate servo initialization has failed. Contact Adept Customer Service.
M#	*Motor stalled* Mtr n	-1007	A motor stall occurs when the maximum allowed torque for a given motor was applied for longer than the defined timeout period. This typically occurs when an obstacle is encountered.	Check for obstacles and free movement of all joints. Turn high power back on and repeat the motion that failed.
NV	None	N/A	Communication to a Non-Volatile memory device failed.	On MB-10 units, clean the contacts to the signature card mounted on the T-bracket and check for proper mounting of the MB-10. If the error persists, contact Adept Customer Service.
PR	None	N/A	A servo task has overrun its allotted execution window.	If the problem persists, contact Adept Customer Service.
SW	None	N/A	Software watchdog timer timeout. On some products it is normal for this to occur momentarily during a servo reset.	If the problem persists, contact Adept Customer Service.
V#	*Hard envelop error* Mtr n	-1027	The indicated motor was not tracking the commanded position with sufficient accuracy as set by SPEC.	Turn on high power and try to perform the motion at a slower speed. Make sure that nothing is obstructing the robot's motion. If the error recurs, contact Adept Customer Service.

Platform-Dependent Two-digit Status Codes					Supported Platforms						
Status Code	V+ Error Message	V+ Error Code	Explanation	User Action	Adept Six (sMAI)	Adept Viper (sDAI)	AdeptOne (sEJI)	Cobra s600/800 i600/800	MB-40R MB-60R	MB-40L MB-60L	MB-10
Z4	*RSC power failure*	-670	The 24VDC input voltage is out of bounds (too high or low).	Check connections and voltage level from the user supplied 24VDC power supply.				●	●	●	●
BK	*Manual brake release*	-639	The manual brake release button was pressed while high power was enabled.	Ensure the brake button is released. The message will clear upon re-enabling power.	●	●		●	●	●	●
ES	*E-STOP detected by robot*	-643	An ESTOP condition has been detected by the robot.	This is a normal response to many ESTOP conditions. Remove the source of the ESTOP and re-enable high power.	●	●	●	●	●	●	
AR	*No air pressure*	-607	V+ detected that the air supply to the robot brakes and hand has failed.	Restore the air pressure, turn high power back on, and resume program execution. If the error persists, contact Adept Customer Service.			●				
F1	*E-STOP detected by robot*	-643	The End-Of-Arm Breakaway Sensor has tripped (open circuit). Reporting of this error can be enabled / disabled via a SPEC option.	Re-close the breakaway circuit and re-enable high power.				●			
F2	*E-STOP detected by robot*	-643	The End-Of-Arm "SHOCK" Sensor has tripped (open circuit). Reporting of this error can be enabled / disabled via a SPEC option. The shock sensor is an option on the AdeptSix robot line.	This is an expected response to impact with an obstacle on robots with the shock sensor option installed. Move the robot away from the obstacle and re-enable high power.	●	●					
F3	*E-STOP detected by robot*	-643	The "LIMIT" Sensor has tripped. Reporting of this error can be enabled / disabled via a SPEC option. A single common sensor is used to report a limit condition on J1 & J2/J3 if the option is installed.	This is an expected response when the joint limit switch has been activated. Move the robot away from the limit position and re-enable high power.	●	●					
hV	*RSC power failure*	-670	The high-voltage DC bus for the amplifiers is out of bounds (too high or low).	This may occur when AC power is unexpectedly removed. Check AC connections and re-enable high power. If the error persists, contact Adept Customer Service.				●	●	●	●
h0	*Robot overheated*	-606	The MB-10 internal regenerative dump resistor has reached its temperature limit.	Allow the amplifier to cool for a short time, re-enable power and retry the motion. It may be necessary to slow the motion or insert pauses to reduce the regenerative energy.							●
h0	*Robot overheated*	-606	The temperature sensor on the embedded processor board has reached its temperature limit.	Check for excessive ambient temperature, inadequate ventilation, and proper function of any cooling fans.				●	●	●	
h#	*Robot overheated*	-606	Amplifier overtemperature occurred on Joint (#). (Note: MB-10 systems only report 'h1'.)	Check for excessive ambient temperature, inadequate ventilation, and proper function of any cooling fans. It may be necessary to slow the motion or insert pauses to reduce overall heating.				●	●	●	●
H#	*Motor overheating* Mtr n	-1016	The motor encoder temperature sensor indicates an overtemperature.	Reduce the speed, acceleration and/or deceleration of the robot motions, or introduce delays in the application cycle to give the motor an opportunity to cool.				●	●	●	●
HR	*Motor overheating* Mtr n	-1016	The temperature sensor on the RSC card in the base of the robot indicates an overtemperature.	Reduce the speed, acceleration and/or deceleration of the robot motions, or introduce delays in the application cycle to give the motor an opportunity to cool.			●				
OT	*Positive overtravel* Mtr n	-1033	The hardware overtravel sensor for the indicated motor has tripped and robot power has been disabled.	Manually move the robot back into range and re-enable power. Use the SPEC utility to adjust the soft limits for the robot so they are inside the hard limits.			●				
P0	*Power system failure* Code 0	-1115	The dual-channel brake circuit has reported a cyclic check error.	Contact Adept Customer Service.	●		●	●	●	●	
P1	*Power system failure* Code 1	-1115	The power system has unexpectedly turned off power.	On PA-4 chassis, further information may be indicated on the PA-4 status lights. Refer to Adept PA-4 Power Chassis User's Guide for details. Contact Adept Customer Service if the error persists.	●	●	●	●	●	●	
P2	*Power system failure* Code 2	-1115	The high-voltage DC bus to the regenerative energy dump circuit has experienced an overvoltage.	Contact Adept Customer Service.	●	●					
P3	*Power system failure* Code 3	-1115	The regenerative energy dump circuit has exceeded its max short term dump rating.	Contact Adept Customer Service.	●	●					
P4	*Power system failure* Code 4	-1115	The high-voltage DC bus did not discharge its voltage when expected. (Note: This error is only relevant to legacy Cobra AIB systems.)	Contact Adept Customer Service.							

Platform-Dependent Two-digit Status Codes					Supported Platforms							
P5	*Power system failure* Code 5	-1115	An inrush error was detected by the power sequencer. This means the high-voltage DC bus failed to rise at the expected rate when power was enabled.	This can occur if AC power is abruptly removed during the high power enable sequence. If it occurs unexpectedly, contact Adept Customer Service.					●	●	●	●
P6	*Power system failure* Code 6	-1115	The MAI-2 / sMAI / sDAI regenerative energy circuit temperature sensor indicates an overtemp condition.	Contact Adept Customer Service.	●	●						
RC	*RSC communications failure*	-651	There is a failure to communicate with the Robot Signature Card.	Contact Adept Customer Service.		●	●					
R0	*RSC hardware failure*	-669	The RSC has reported an internal failure. Because RSC failures almost always cause the RSC to stop communicating altogether (rendering it incapable of reporting the failure), this error message may be due to some other cause, such as electrical noise at the RSC or within or around the arm signal cable.	If the problem persists, contact Adept Customer Service.			●					
R1	*RSC power failure*	-670	The RSC has reported that its power is failing. Because a power failure on the RSC almost always causes it to stop communicating altogether (rendering it incapable of reporting the failure), this error message may be due to some other cause, such as electrical noise or an intermittent connection.	If the problem persists, contact Adept Customer Service.			●					
S0	*Safety System Fault* Code 0	-1109	The robot hardware did not detect that the front-panel high-power button was pressed prior to the servo system attempting to enable power.	Contact Adept Customer Service.	●			●				
S1	*Safety System Fault* Code 1	-1109	The SmartController has signaled a power off condition to the robot via the HIPWR_DIS line on the XSYS interface. This fault indication typically accompanies other fault conditions that cause "fatal error" on the SmartController (such as a loss in IEEE-1394 communication).	Check for other messages on the SmartController that may indicate a fatal error. If the error source can be eliminated, re-enable power.	●	●	●	●	●	●	●	●
S2	*Safety System Fault* Code 2	-1109	The safety system experienced a failure on channel 1 during the cyclic check of dual-channel power system. This may indicate a welded relay contact or other hardware failure.	If the problem persists, contact Adept Customer Service.	●	●	●	●	●	●	●	●
S3	*Safety System Fault* Code 3	-1109	The safety system experienced a failure on channel 2 during the cyclic check of dual-channel power system. This may indicate a welded relay contact or other hardware failure.	If the problem persists, contact Adept Customer Service.	●	●	●	●	●	●	●	●
S4	*Safety System Fault* Code 4	-1109	The internal ESTOP delay timer timed out and power has been turned off. Under normal circumstances, software sequences the shutdown prior to the time out, averting this message.	If the problem persists, contact Adept Customer Service.	●	●	●	●	●	●	●	●
S5	*Safety System Fault* Code 5	-1109	The power system was not properly unlocked by software during a power sequence while in manual mode.	Contact Adept Customer Service.	●		●	●				
S6	*Safety System Fault* Code 6	-1109	The CAT-3 hardware safety system detected an encoder OVERSPEED and power has been turned off. This circuitry is active in manual mode only, on select robots which have the CAT-3 teach mode option installed.	This fault is triggered on purpose during specific commissioning tests for the CAT-3 system. If the fault occurs during normal operation, contact Adept Customer Service.	●			●				
S7	*Safety System Fault* Code 7	-1109	The CAT-3 hardware safety system detected an accelerometer error on channel 1 or 2. This circuitry is active in manual mode only, on select robots which have the CAT-3 teach mode option installed. The robot (joint 1 or 2) is moving or accelerating too fast, there is a fault with the accelerometer system, or the accelerometer's built-in test function failed.	If the error occurred while a program was moving the robot, try changing the program to move the robot less quickly or with a lower rate of acceleration or deceleration. For faults with cables or sensors, consult your Robot Instruction Handbook or contact Adept Customer Service.			●					

Platform-Dependent Two-digit Status Codes				Supported Platforms								
S8	*Safety System Fault* Code 8	-1109	<p>The CAT-3 hardware safety system detected an error. This circuitry is active in manual mode only, or select robots which have the CAT-3 teach mode option installed.</p> <p>This fault will occur in response to multiple sources: 1) The amplifier 3 or 4 voltage restrict sensor error channel 1 or 2. The robot (joint 3 or 4) is moving or accelerating too fast, there is a fault with the voltage restrict sensor, or the voltage restrict sensor's built-in test function failed. 2) The dual-channel sensor circuits disagree or multiple sensors are simultaneously indicating a fault</p>	<p>If the error occurred while a program was moving the robot, try changing the program to move the robot less quickly or with a lower rate of acceleration or deceleration. For faults with cables or sensors, consult your Robot Instruction Handbook or contact Adept Customer Service.</p>			●					
S9	*Safety System Fault* Code 9	-1109	<p>A watchdog circuit that cross checks the clocks for the dual-channel safety system is reporting an error.</p>	Contact Adept Customer Service.	●	●	●	●	●	●		
T0	*Safety System Fault* Code 10	-1109	<p>An error was detected during a software self test of a secondary safety & monitoring circuit (SRV_DIRECT / SRV_STAT).</p>	Contact Adept Customer Service.	●		●	●				
T1	*Safety System Fault* Code 11	-1109	<p>A failure (open circuit) of the arm-mounted high power lamp has been detected. The lamp is probably burned out. This is considered a safety hazard and high power cannot be enabled until the lamp is replaced.</p> <p>The arm-mounted high power lamp is currently only an option on the AdeptSix 600 robot.</p>	Replace the bulb in the arm-mounted high power lamp.	●							