9.4 Status Tests

Introduction

When required, the results of these tests can be checked to determine the reason the controller has gone to Failsafe.

How to check the status tests

The procedure in Table 9-4 tells you how to display the results of the status tests. Table 9-5 lists the tests, the reason for the failure, and how to correct the problem.

Table 9-4 Procedure for Displaying the Status Tests Results

Step	Operation	Press	Action
1	Select STATUS Set Up Group	SET UP	until you see: Upper Display: READ Lower Display: STATUS
2	Read the status tests results	FUNCTION LOOP 1/2	until you see: Upper Display: NO or YES (YES indicates a failure) Lower Display: FAILSAFE Successive presses of the [FUNCTION] key will display the results of the status tests in the following order: RAM TEST CONF TEST CAL TEST FACT CRC Identify the problem and correct the failure as shown in Table 9-5.

Status Tests

Table 9-5 lists the Status tests, the reason for their failure, and how to correct the failure.

Table 9-5 Status Tests

Test (Lower Display)	Definition	Upper Display	Reason for Failure	How to Correct the Failure
FAILSAFE **FAILSF2 (Loop 2)**	Failsafe Fault	NO	No Failure	
		YES	Burnout configured for none and input fails. –RAM TEST failed –CONFTEST failed –CALTEST failed	1. Step through the rest of the STATUS check to identify the particular failure. Also see Table 9-6, Background tests
RAM TEST	RAM test run at power-up	PASS	No Failure	RAM test passed.
		FAIL	RAM Failure	1. Power cycle to see if the error clears.
CONF TEST	Configuration Checksum	PASS	No Failure	Configuration checksum passed.
		FAIL	Configuration data is in error.	1. Step through STATUS tests – the controller will recalculate the checksum. 2. Check all configuration prompts for accuracy. See *Section 3 - Configuration*
CAL TEST	Working Calibration	PASS	No Failure	Working calibration checksum passed.
		FAIL	The working calibration constants in the controller are in error.	1. If the controller has not been field calibrated, see *Section 3 - Configuration* and change the input to a different type. Enter it, loop through the status tests, then return the input type to the original one. 2. If the controller has been field calibrated, recalibrate the controller.
FACT CRC	Factory calibration test	PASS	No Failure	Factory calibration cyclic redundancy test passed
		FAIL	Factory set input constants have been changed due to the change in input type.	1. Cycle through Status to clear the error. 2. Check the calibration. Make sure 0 % and 100 % are correct values. 3. Recalibrate if step 1 is unsatisfactory. Refer to *Section 7 - Input Calibration*.

9.5 Background Tests

Introduction

The UDC 3300 performs on-going background tests to verify data and memory integrity. If there is a malfunction, an error message will be displayed (blinking) in the lower display.

Background tests

In the case of more than one simultaneous malfunction, only the one with the highest priority will appear in the lower display. Table 9-6 lists these background tests, the reason for their failure, and how to correct the problem.

Table 9-6 Background Tests

Lower Display	Reason for Failure	How to Correct the Problem
EE FAIL	Unable to write to non-volatile memory. Anytime you change a parameter and it is not accepted, you will see EE FAIL.	1. Check the accuracy of the parameter and re-enter. 2. Try to change something in configuration. 3. Run through STATUS tests to re-write to EEPROM.
FAILSAFE or **FAILSF2 (Loop 2)**	This error message shows whenever the controller goes into a failsafe mode of operation. This will happen if: • RAM test failed • Configuration test failed • Calibration test failed • Burnout configured for none and the input failed.	1. Run through STATUS check to determine the reason for the failure. 2. Press the [SET UP] key until STATUS appears in the lower display. 3. Press the [FUNCTION] key to see what tests pass or fail, then run through the STATUS codes a second time to see if the error cleared. Correct according to the recommendations given in Table 9-5.
INP1FAIL	Two consecutive failures of input 1 integration. i.e., cannot make analog to digital conversion. This will happen if: • Upscale or Downscale burnout is selected • Input not configured correctly	1. Make sure the actuation is configured correctly. See *Section 3 - Configuration*. 2. Make sure the input is correct. 3. Check for gross over-ranging. 4. Replace factory calibration. See *Section 7.6*. 5. Replace the cold junction assembly.
INP2FAIL	Two consecutive failures of input 2 integration. i.e., cannot make analog to digital conversion.	Same as INP1FAIL above.
INP3FAIL	Two consecutive failures of input 3 integration, i.e., cannot make analog to digital conversion.	Same as INP1FAIL above.
SW FAIL	Position Proportional input slidewire failure	1. Check motor slidewire connections. 2. Recalibrate the slidewire motor position. see the calibration section *(Section 8.3)*.
CAL MTR	Position Proportional or 3 Position Step Control with Motor Position Indication, Auto Cal never performed.	1. Calibrate the controller for Position Proportional output. Refer to *Subsection 8.3 – Position Proportional and 3 Position Step Output Calibration*.
CONF ERR	• PV low limit is > PV high limit • SP low limit is > SP high limit • Output low limit > Output high limit	1. Check the configuration for each item and reconfigure if necessary.

Lower Display	Reason for Failure	How to Correct the Problem
INP1 RNG	Input 1 out of range. The process input is outside the range limits.	1. Make sure the range and actuation are configured properly. 2. Check the input source. 3. Restore the factory calibration. *(See Section 7.6.)* 4. Field calibrate. See *Section 7 - Input Calibration.*
INP2 RNG	Input 2 out of range. The remote input is outside the range limits.	Same as INP1 RNG above.
INP3 RNG	Input 3 out of range. The remote input is outside the range limits.	Same as INP1 RNG above.
PV LIMIT	PV out of range. PV = INP1 + INP1 BIAS	1. Make sure the input signal is correct. 2. Make sure the Bias setting is correct 3. Recheck the calibration. Use Bias of 0.0
RV LIMIT	The result of the formula shown below is beyond the range of the remote variable. RV = INP2 X RATIO + BIAS	1. Make sure the input signal is correct. 2. Make sure the Ratio and Bias settings are correct. 3. Recheck the calibration. Use a Ratio of 1.0 and a Bias of 0.0.