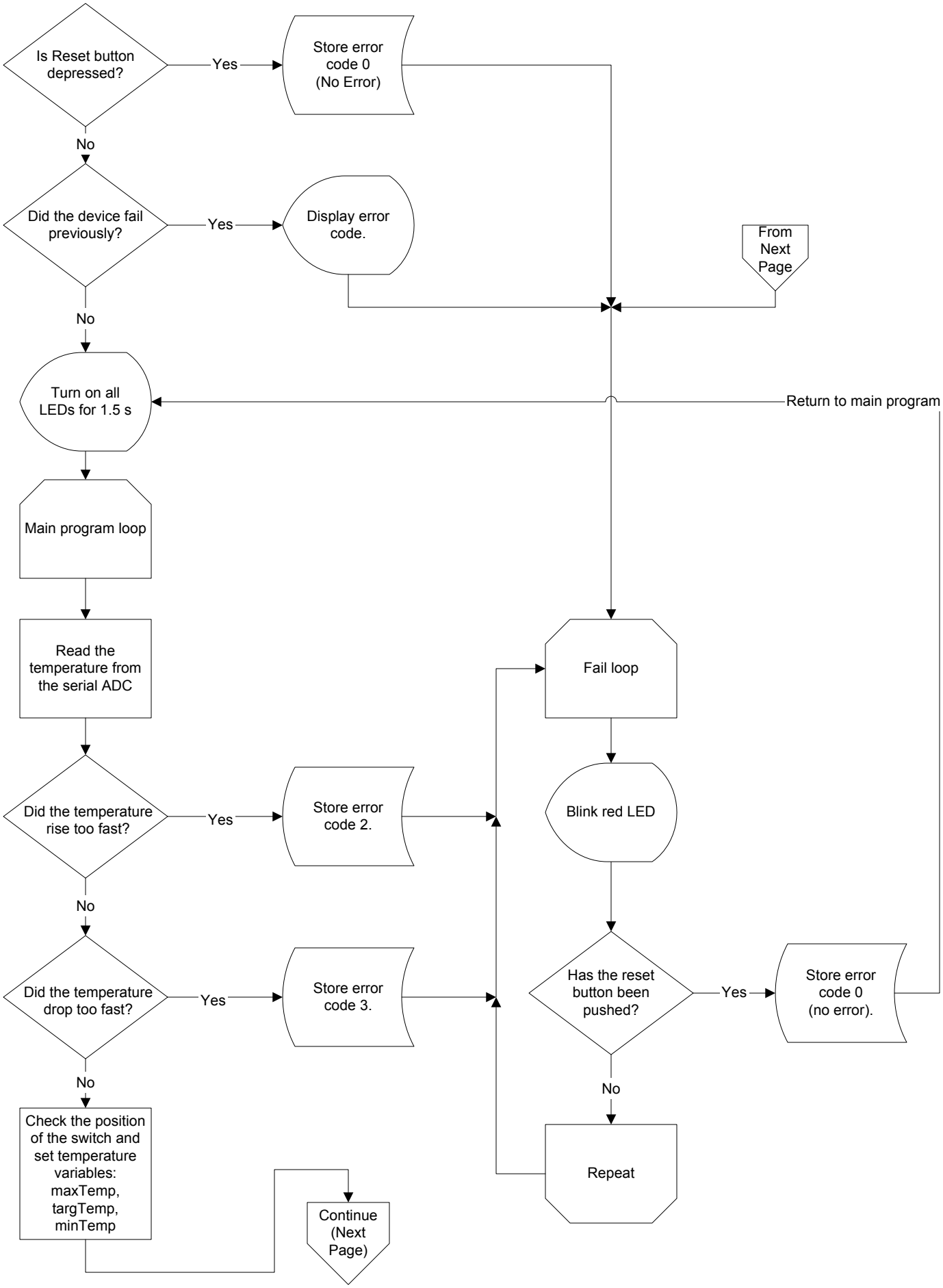
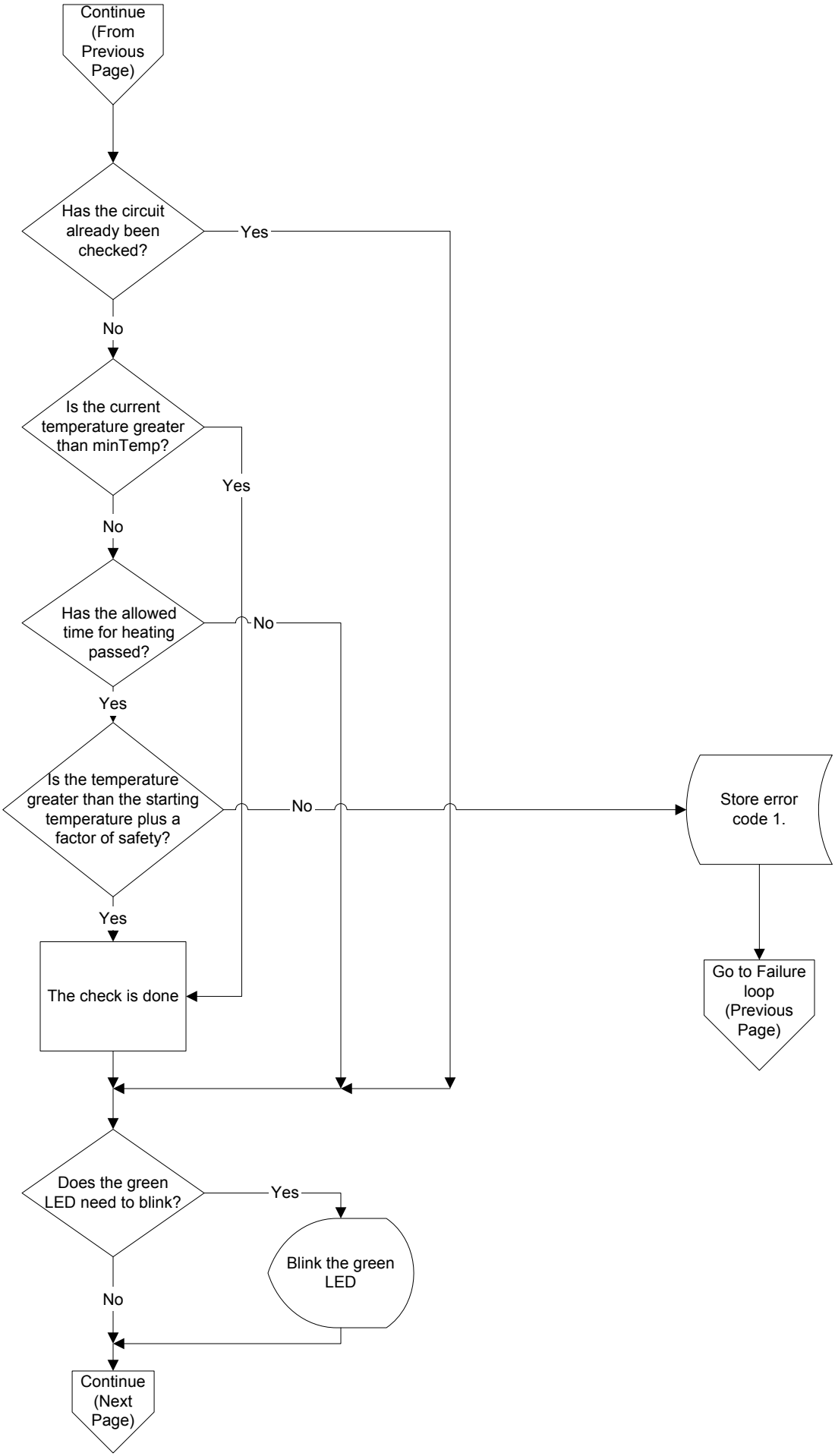
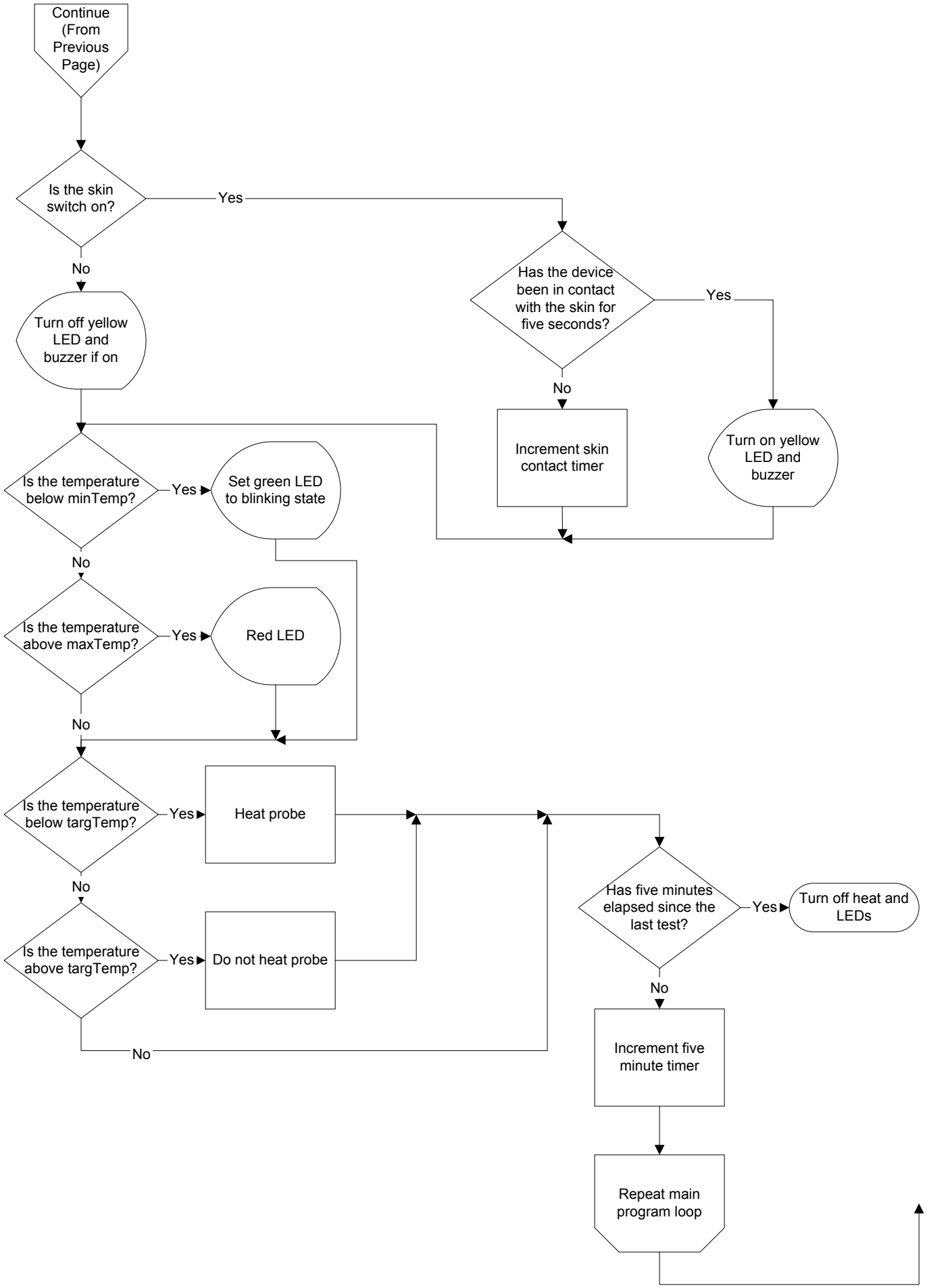

Is Reset button depressed?
Yes
Store error code 0 (No Error)
No
Did the device fail previously?
Yes
Display error code.
From Next Page
No
Turn on all LEDs for 1.5 s
Return to main program
Main program loop
Read the temperature from the serial ADC
Fail loop
Did the temperature rise too fast?
Yes
Store error code 2.
Blink red LED
No
Did the temperature drop too fast?
Yes
Store error code 3.
Has the reset button been pushed?
Yes
Store error code 0 (no error).
No
No
Check the position of the switch and set temperature variables: maxTemp, targTemp, minTemp
Repeat
Continue (Next Page)


Continue (From Previous Page)
Has the circuit already been checked?
Yes
No
Is the current temperature greater than minTemp?
Yes
No
Has the allowed time for heating passed?
No
Yes
Is the temperature greater than the starting temperature plus a factor of safety?
No
Yes
The check is done
Store error code 1.
Go to Failure loop (Previous Page)
Does the green LED need to blink?
Yes
Blink the green LED
No
Continue (Next Page)


Continue (From Previous Page)
Is the skin switch on?
Yes
No
Turn off yellow LED and buzzer if on
Has the device been in contact with the skin for five seconds?
Yes
No
Increment skin contact timer
Turn on yellow LED and buzzer
Is the temperature below minTemp?
Yes
Set green LED to blinking state
No
Is the temperature above maxTemp?
Yes
Red LED
No
Is the temperature below targTemp?
Yes
Heat probe
No
Is the temperature above targTemp?
Yes
Do not heat probe
No
Has five minutes elapsed since the last test?
Yes
Turn off heat and LEDs
No
Increment five minute timer
Repeat main program loop