

```

start:

    w6=200:w4=80:b4=1          ' w6=pwm, w4=adc for 4mA, b4=12mA loop
cnt.
    gosub raise                ' raise to 4mA
    gosub interrupt            ' and wait for push button

loop0:
    wait 2
    w4=444                      ' adc for 12mA
    gosub raise                ' raise to 12mA

    b3=2                        ' b3=led flash number
    if b4>5 then loop1          ' only stop at 12mA 5 times
    gosub flash

loop1:
    w4=408                      ' adc for 20mA
    gosub raise                ' raise to 20mA
    b3=3
    gosub flash

lower:
    wait 2
    w4=80
    for w6=w6 to 0 step -1      ' adc for 4mA
        for b1=1 to 10          ' decrease pwm
            pwmout 2,255,w6      ' pwm on output2
            readadc10 1,w5
            if w5<70 or w5>420 then fault
            if w5<=w4 then loop2
        next b1
    next w6

loop2:
    pulsout 4, 300              ' 1 flash for 4mA
    goto loop0

raise:
    for w6=w6 to 1024
        for b1=1 to 15
            pwmout 2,255,w6
            readadc10 1,w5
            if w5>=w4 then valueup
        next b1
    if w5<40 or w5>420 then fault
    next w6

valueup:
    return

flash:
    for b2=1 to b3
        pulsout 4,300            ' flash output4
        pause 800
    next b2
    return

```

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interrupt:
  pulsout 4,300          ' PB has been pressed
  b3=1
  pause 1000            ' wait for PB release

freeze:
  pwmout 2,255,w6        ' PWM on output2
  pause 10
  readadc10 1,w3
  if pin3=1 then loop3    ' has PB been pressed?
  if w3<70 or w3>420 then loop4 ' out of range?
  if w3>w5 then tweakdown ' has output drifted high?
  goto freeze            ' all ok

loop3:
  pulsout 4,300          ' indicate PB press
  pause 1000

loop4:
  setint %00001000,%00001000 ' enable interrupt for freeze control
  return

tweakup:
  w6=w6+1                ' adjust output up
  goto freeze

tweakdown:
  w6=w6-1                 ' adjust output down
  goto freeze

fault:
  setint %00000000,%00000000 ' disable interrupt
  pwmout 2,0,0              ' turn off output

loop5:
  ' LED fault routine
  for b5=0 to 30
    if pin3=1 then loop6    ' has PB been pressed?(reset)
    if b5>29 then loop5
    if b5>10 then led

loop7:
  pause 50
  next b5

led:
  pulsout 4,300            ' led fault indication
  goto loop7

loop6:
  pulsout 4,300            ' indicate PB press
  goto start

```