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'
'           Program name: Vi rgi ni a Ave_0. 4g. CR3
'           Written by: Jason B. Li oyd
'           I .D. number:
'           Date wr itten: 09-07-2012
'           Ti me wr itten: 10: 37: 36
'
' RT5GEN Versi on: 6. 0. 0066
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' \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ TIMING CONSTANTS \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\'
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Const PERIOD = 40           ' Scan interval number
Const P_UNITS = 1          ' Scan interval uni ts (mSecs)

Const INTERVAL3 = 10       ' Table 3 interval number
Const UNITS3 = 3           ' Table 3 interval uni ts (Mi ns)
Dim bStartTrigger As Boolean
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' \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ VOLTAGE CONSTANTS \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\'
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' _____ Volt Block 1 _____
Const VRNG1 = 0            ' Block1 measurement range (5000 mV)
Const VREP1 = 1           ' Block1 repetitions
Const VSETL1 = 200        ' Block1 settling time (usecs)
Const VINT1 = 250         ' Block1 integration time (usecs)
Const VMULT1 = 0.00141    ' Block1 unit conversion multiplier
Const VOSET1 = 0          ' Block1 default offset
Dim VBIk1(VREP1)          ' Block1 dimensioned source
Units VBIk1 = g           ' Block1 default uni ts (g)

' _____ Volt Block 2 _____
Const VRNG2 = 0            ' Block2 measurement range (5000 mV)
Const VREP2 = 1           ' Block2 repetitions
Const VSETL2 = 200        ' Block2 settling time (usecs)
Const VINT2 = 250         ' Block2 integration time (usecs)
Const VMULT2 = 0.01       ' Block2 unit conversion multiplier
Const VOSET2 = 0          ' Block2 default offset
Dim VBIk2(VREP2)          ' Block2 dimensioned source
Units VBIk2 = Volts      ' Block2 default uni ts (Volts)
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' \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ ALIASES & OTHER VARIABLES \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\'
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Alias VBIk1(1) = Accmeter ' Assign alias name "Accmeter" to VBIk1(1)
Alias VBIk2(1) = BattVolt ' Assign alias name "BattVolt" to VBIk2(1)
Public Flag(8)           ' General Purpose Flags
Dim Excite1              ' Declare Excitation variable
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' \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ EMAIL VARIABLES \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\'
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Const ServerAddr="smtp.gmail.com: 587"
Const ToAddr1="PHONENUMBER@messaging.sprintpcs.com" ' This address will send text messages
Const ToAddr2="EMAIL@purdue.edu, EMAIL@indot.IN.gov"
Const FromAddr1="EMAIL@gmail.com"
Const FromAddr2="EMAIL@gmail.com"
Const Subject1=""
Const Subject2="Virginia Ave Bridge: Notification of Possible Impact"
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Const Attach=""
Const UserName="USERNAME@gmail.com"
Const Password="PASSWORD"
Const CRLF = CHR(13)+CHR(10) ' Carriage Return (13) + Line Feed (10)
Public Result As String * 50
Public AlarmTrigger As Boolean
Public Message1 As String * 250
Public Message2 As String * 250
Public EmailSuccess As Boolean
Public Counter1=0
Public Counter2=0

' \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ OUTPUT SECTION \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

' ----- Table 1-----
DataTable(LIVE, True, -1) ' Trigger, size auto
    DataInterval (0, 0, 0, 100) ' Synchronous, 100 lapses, autosize
    CardOut(1, -1) ' PC card , size auto
    ' _____ Vol tage Bl ocks _____
    Sample (VREP1, VBIk1(), IEE4) ' 1 Reps, Source, Res
    Sample (VREP2, VBIk2(), IEE4) ' 1 Reps, Source, Res
EndTable ' End of table LIVE

' ----- Table 2-----
DataTable(TRIGGER, True, -1) ' Trigger, auto size
    DataInterval (0, 0, 0, 100) ' Synchronous, 100 lapses, autosize
    DataEvent (125, bStartTrigger, True, 250)
    CardOut(1, -1) ' PC card , size Auto
    ' _____ Vol tage Bl ocks _____
    Sample (VREP1, VBIk1(), IEE4) ' 1 Reps, Source, Res
EndTable ' End of table TRIGGER

' ----- Table 3-----
DataTable(MAX_MIN, True, -1) ' Trigger, auto size
    DataInterval (0, INTERVAL3, UNITS3, 100) ' 10 Min interval, 100 lapses, autosize
    CardOut(1, -1) ' PC card , size Auto
    ' _____ Vol tage Bl ocks _____
    Maximum(VREP1, VBIk1(), IEE4, False, False) ' 1 Reps, Source, Res, Enabled, Time of Max
    Minimum(VREP1, VBIk1(), IEE4, False, False) ' 1 Reps, Source, Res, Enabled, Time of Min
EndTable ' End of table MAX_MIN

Sub TriggerCall TRIGGER
    bStartTrigger = (Accmeter > 0.40)
End Sub

' \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ PROGRAM \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

BeginProg ' Program begins here
    MainSequence
    Scan(PERIOD, P_UNITS, 0, 0) ' Scan every 40 mSecs

' _____ Vol t Bl ocks _____
    VoltDff(VBIk1(), VREP1, VRNG1, 1, False, VSETL1, VINT1, VMULT1, VOSET1)
    VoltDff(VBIk2(), VREP2, VRNG2, 2, False, VSETL2, VINT2, VMULT2, VOSET2)

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' _____ Excitation Control _____
If Accmeter >= 0.40 Then
    Excite1 = 5000
Elseif Accmeter < 0.40 Then
    Excite1 = 0
End If
ExciteCA0(CA01, Excite1, True)
' Set value
' Set excitation channel

' _____ Output Table Control _____
If Flag(1) Then CallTable LIVE
Call TriggerCallTRIGGER
CallTable TRIGGER
CallTable MAX_MIN

' _____ Counter Resets _____

'RESET COUNTER FOR NORMAL VIBRATIONS
If Accmeter < 0.40 Then
    Counter2=0
EndIf
If Accmeter >= 0.40 Then
    If Counter2 = 0 Then
        Counter2 = Counter2 + 1
        Message1 = "Possible impact at Virginia Ave Bridge. Acceleration was "+ Accmeter + "g."
        Message2 = "Warning!" + CRLF + CRLF
        Message2 = Message2 + "An alarm condition for impact has been identified. "
        Message2 = Message2 + "The measured acceleration was " + Accmeter + "g." + CRLF
        Message2 = Message2 + "The video will be available here shortly:" + CRLF
        Message2 = Message2 + "http://bi gboy. ecn. purdue. edu/Vi rgi ni aAve/MP4/i ndex. htm" + CRLF
        Message2 = Message2 + "Data logger time was " + Status.Timestamp
        Email Success= EMail Send (ServerAddr, ToAddr1, FromAddr1, Subject1, Message1, Attach, UserName, Password, Result)
        Email Success = EMail Send (ServerAddr, ToAddr2, FromAddr2, Subject2, Message2, Attach, UserName, Password, Result)
    EndIf
EndIf
Next Scan
' Loop up for the next scan

EndProg
' Program ends here

' ***** Program End *****

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