```vbnet
Imports System.IO.Ports

Public Class Form1

    Shared _serialPort As SerialPort

    Dim P1_GR As New Integer
    Dim P1_YL As New Integer
    Dim P1_AR As New Integer
    Dim P2_GR As New Integer
    Dim P2_YL As New Integer
    Dim P2_AR As New Integer

    Dim Cy_Lnth As New Integer
    Dim Cal_Cy_Lnth As New Integer

    Dim Error_Msg As New Boolean

    Dim Flash As New Boolean
    Dim Stp As New Boolean
    Dim mal_func As New Boolean
    Dim E_X_T As New Boolean

    Dim count As New Integer
    Dim i As New Integer
    Dim x As New Integer
    Dim n As New Integer
    Dim Offset As New Integer
    Dim wait As New Integer

    Dim thread2 As New System.Threading.Thread(AddressOf Malfunction_Flash)

    Private Sub Start_Button_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Start_Button.Click

        Dim thread As New System.Threading.Thread(AddressOf Draw)
        Dim num_phases As New Integer
        Dim delta As New Integer
        Dim ts As TimeSpan = CDate(CDate(DateTime.Now)).Subtract(CDate("
0:00:00"))
        Dim current_time As Double = ((ts.Hours * 60) + ts.Minutes) * 60 +
ts.Seconds

        mal_func = True
        Stp = False

        Valid_Values()

        If i = 0 Then
            Assign_Values()

            If Cal_Cy_Lnth = Cy_Lnth Then
                delta = current_time Mod Cy_Lnth

                wait = (Cy_Lnth - delta) + Offset

                count = count + 1
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```vbnet
            System.Threading.Thread.Sleep(wait * 1000)

            Flash = True

            thread2.Abort()
            thread.Start()
        Else
            MessageBox.Show("Cycle length does not match the interval
                    values entered. Try Again!", "Cycle Length Error")
            Flash = False
        End If
    End If
    Flash = False

    If Stp = True Then
        thread.Abort()
        Label12.Text = "BOOOO!!!!"
    End If

End Sub

Sub Draw()


    Dim thread3 As New System.Threading.Thread(AddressOf
Malfunction_Flash)

    n = 1

    Do Until n = 2
        Phz_1_1.Image = ImageList1.Images.Item(4)
        Phz_1_2.Image = ImageList1.Images.Item(4)
        Phz_2_1.Image = ImageList1.Images.Item(2)
        Phz_2_2.Image = ImageList1.Images.Item(2)

        _serialPort.WriteLine("A" + Chr(12))

        System.Threading.Thread.Sleep((P1_GR) * 1000)
        mal_func = False

        If Stp = True Then
            Lights_Out()
            thread3.Start()
            Exit Do
        End If

        Phz_1_1.Image = ImageList1.Images.Item(3)
        Phz_1_2.Image = ImageList1.Images.Item(3)

        _serialPort.WriteLine("A" + Chr(10))

        System.Threading.Thread.Sleep((P1_YL) * 1000)

        If Stp = True Then
            Lights_Out()
            thread3.Start()
            Exit Do
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```vbnet
            End If


            Phz_1_1.Image = ImageList1.Images.Item(2)
            Phz_1_2.Image = ImageList1.Images.Item(2)

            _serialPort.WriteLine("A" + Chr(9))

            System.Threading.Thread.Sleep((P1_AR) * 1000)

            If Stp = True Then
                Lights_Out()
                thread3.Start()
                Exit Do
            End If


            Phz_2_1.Image = ImageList1.Images.Item(4)
            Phz_2_2.Image = ImageList1.Images.Item(4)

            _serialPort.WriteLine("A" + Chr(33))

            System.Threading.Thread.Sleep((P2_GR) * 1000)

            If Stp = True Then
                Lights_Out()
                thread3.Start()
                Exit Do
            End If

            Phz_2_1.Image = ImageList1.Images.Item(3)
            Phz_2_2.Image = ImageList1.Images.Item(3)

            _serialPort.WriteLine("A" + Chr(17))

            System.Threading.Thread.Sleep((P2_YL) * 1000)

            If Stp = True Then
                Lights_Out()
                thread3.Start()
                Exit Do
            End If


            Phz_2_1.Image = ImageList1.Images.Item(2)
            Phz_2_2.Image = ImageList1.Images.Item(2)

            _serialPort.WriteLine("A" + Chr(9))

            System.Threading.Thread.Sleep((P2_AR) * 1000)

            If Stp = True Then
                Lights_Out()
                thread3.Start()
                Exit Do
            End If
        Loop
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        Do While mal_func = False

            System.Threading.Thread.Sleep(500)

        Loop

        thread3.Abort()

    End Sub

    Sub Lights_Out()

        Phz_1_1.Image = ImageList1.Images.Item(1)
        Phz_1_2.Image = ImageList1.Images.Item(1)
        Phz_2_1.Image = ImageList1.Images.Item(1)
        Phz_2_2.Image = ImageList1.Images.Item(1)

        _serialPort.WriteLine("A" + Chr(0))

    End Sub

    Private Sub Stop_Button_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Stop_Button.Click

        Stp = True
    End Sub

    Sub Valid_Values()

        Error_Msg = False

        i = 0

        If P1_GR_Txt.Text = Nothing Then
            Error_Msg = True
            i = 1
        End If
        If P1_GR_Txt.Text <> Nothing Then
            If P1_GR_Txt.Text <= 0 Or P1_GR_Txt.Text >= 1000 Then
                Error_Msg = True
                i = 1
            End If
        End If

        If P1_YL_Txt.Text = Nothing Then
            Error_Msg = True
            i = 1
        End If
        If P1_YL_Txt.Text <> Nothing Then
            If P1_YL_Txt.Text <= 0 Or P1_YL_Txt.Text >= 1000 Then
                Error_Msg = True
                i = 1
            End If
        End If

        If P1_AR_Txt.Text = Nothing Then
            Error_Msg = True
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            i = 1
    End If
    If P1_AR_Txt.Text <> Nothing Then
        If P1_AR_Txt.Text <= 0 Or P1_AR_Txt.Text >= 1000 Then
            Error_Msg = True
            i = 1
        End If
    End If

    If P2_GR_Txt.Text = Nothing Then
        Error_Msg = True
        i = 1
    End If
    If P2_GR_Txt.Text <> Nothing Then
        If P2_GR_Txt.Text <= 0 Or P2_GR_Txt.Text >= 1000 Then
            Error_Msg = True
            i = 1
        End If
    End If

    If P2_YL_Txt.Text = Nothing Then
        Error_Msg = True
        i = 1
    End If
    If P2_YL_Txt.Text <> Nothing Then
        If P2_YL_Txt.Text <= 0 Or P2_YL_Txt.Text >= 1000 Then
            Error_Msg = True
            i = 1
        End If
    End If

    If P2_AR_Txt.Text = Nothing Then
        Error_Msg = True
        i = 1
    End If
    If P2_AR_Txt.Text <> Nothing Then
        If P2_AR_Txt.Text <= 0 Or P2_AR_Txt.Text >= 1000 Then
            Error_Msg = True
            i = 1
        End If
    End If

    If Cyl_Lnth.Text = Nothing Then
        Error_Msg = True
        i = 1
    End If
    If Cyl_Lnth.Text <> Nothing Then
        If Cyl_Lnth.Text <= 0 Or Cyl_Lnth.Text >= 1000 Then
            Error_Msg = True
            i = 1
        End If
    End If

    If Offset_Txt.Text = Nothing Then
        Error_Msg = True
        i = 1
    End If
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```vbnet
            If Offset_Txt.Text <> Nothing Then
                If Offset_Txt.Text >= 1000 Then
                    Error_Msg = True
                    i = 1
                End If
            End If

            If Error_Msg = True Then
                Error_Message()
            End If

    End Sub

    Private Sub Assign_Values()

        P1_GR = P1_GR_Txt.Text
        P1_YL = P1_YL_Txt.Text
        P1_AR = P1_AR_Txt.Text

        P2_GR = P2_GR_Txt.Text
        P2_YL = P2_YL_Txt.Text
        P2_AR = P2_AR_Txt.Text

        Cy_Lnth = Cyl_Lnth.Text
        Offset = Offset_Txt.Text
        Cal_Cy_Lnth = P1_GR + P1_YL + P1_AR + P2_GR + P2_YL + P2_AR

    End Sub

    Private Sub Form1_Load(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load

        _serialPort = New SerialPort()

        _serialPort.PortName = "COM15"

        _serialPort.Open()

        Phz_1_1.Image = ImageList1.Images.Item(1)
        Phz_1_2.Image = ImageList1.Images.Item(1)
        Phz_2_1.Image = ImageList1.Images.Item(1)
        Phz_2_2.Image = ImageList1.Images.Item(1)

        PictureBox3.Image = ImageList1.Images.Item(0)

        thread2.Start()

    End Sub

    Private Sub Error_Message()

        MessageBox.Show("One or more of the input values are either missing
or invalid", "Invalid Input")

    End Sub

    Private Sub Malfunction_Flash()
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```vbnet
        Do Until Flash = True
            Phz_1_1.Image = ImageList1.Images.Item(1)
            Phz_1_2.Image = ImageList1.Images.Item(1)
            Phz_2_1.Image = ImageList1.Images.Item(1)
            Phz_2_2.Image = ImageList1.Images.Item(1)

            _serialPort.WriteLine("A" + Chr(0))

            System.Threading.Thread.Sleep(1000)

            Phz_1_1.Image = ImageList1.Images.Item(2)
            Phz_1_2.Image = ImageList1.Images.Item(2)
            Phz_2_1.Image = ImageList1.Images.Item(2)
            Phz_2_2.Image = ImageList1.Images.Item(2)

            _serialPort.WriteLine("A" + Chr(9))

            System.Threading.Thread.Sleep(1000)

        Loop
        If E_X_T = True Then
            Exit Sub
        End If
        Phz_1_1.Image = ImageList1.Images.Item(1)
        Phz_1_2.Image = ImageList1.Images.Item(1)
        Phz_2_1.Image = ImageList1.Images.Item(1)
        Phz_2_2.Image = ImageList1.Images.Item(1)

    End Sub

    Private Sub Timer1_Tick(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Timer1.Tick
        Label12.Text = TimeOfDay
    End Sub

    Private Sub Exit_Button_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles Exit_Button.Click
        Flash = True
        n = 2
        E_X_T = True
        System.Threading.Thread.Sleep(1000)

        _serialPort.WriteLine("A" + Chr(0))
        _serialPort.Close()
        Close()
    End Sub

End Class
```