CAMPBELL SCIENTIFIC
WHEN MEASUREMENTS MATTER

EmailRelay CRBasic Instruction

Introduction

Campbell Scientific dataloggers can send emails using **EmailSend()**, which allows the datalogger to issue notifications about the status of a station, transfer data files as attachments, or alert someone about an alarm condition.

EmailSend() requires the use of an SMTP server. Using publicly available free services such as Gmail or Yahoo, introduce inherent problems that can restrict the datalogger from sending emails. Campbell Scientific has no control over the development of these services, which becomes a moving target. None of these services are designed for the needs and limitations of a low-power embedded device. Their requirements are much better suited for a PC than a datalogger.

With **EmailRelay()**, the datalogger uses HTTPS instead of SMTP. The datalogger is basically posting a message to the service saying, "take this information and pass it along as an email." This eliminates the barriers that are common with these free services because we now control the connection and authentication process from the datalogger to the cloud. This also allows us to easily adapt to changes in email services without changing settings in your datalogger.

EmailRelay() Description

EmailRelay() gives the datalogger the ability to issue notifications about the status of the datalogger, transfer data files as attachments, and alert someone about an alarm condition, all via email. To successfully use **EmailRelay()**, the datalogger must have at least outbound Internet connectivity and be configured to use DNS.

EmailRelay() was introduced on the following operating systems:

- OS 31 for the CR1000, CR3000, and CR800-series dataloggers
- OS 6 for the CR6 datalogger
- OS 5 for the CR300-series dataloggers

EmailRelay() has four required parameters:

EmailRelay(ToAddr,Subject,Message,ServerResponse)

The *ToAddress* ***(ToAddr)*** parameter is the email address you would like the message sent to. The *FromAddress* of the email sent by the datalogger is ***emailrelay@konectgds.co****m*. This address reflects the server that is hosting Campbell Scientific's cloud-hosted data collection platform, Konect GDS.

EmailRelay() also has optional parameters that let you send attachments or send data directly from a data table, without first writing the data to a file (referred to as streaming).

With **EmailRelay()**, you can send up to 100 emails each day, and each message can be up to 1 MB in size, which includes the message itself, the message overhead, and any attachments. Sending the message to multiple addresses does not increase the number of email counts or the total size of the message. The message count is reset each day.

Example Programs

Below are example programs that send an email message when a low battery voltage occurs. The email@provider.com address used in the constant *ToAddr* needs to be changed to the actual email address where the message will be sent.

Example 1—Program that sends alarm on low-battery voltage measurement

```
'declare program variables and constants
Public batt_volt
Public alarm_sent As Boolean
Public email_result As String * 255

'main program
BeginProg
  alarm_sent = 0
  Scan (1,Sec,30,0)
    Battery (batt_volt)
  NextScan
  SlowSequence)
   Scan (10,Sec,0,0)
    If batt_volt < 10.5 Then
      If  alarm_sent = 0 Then
       alarm_sent = EmailRelay("email@provider.com", "Low Battery Warning", "Battery Voltage: " & batt_volt & "v", email_result)
      EndIf
    Else
      alarm_sent = 0
      Erase(email_result)
    EndIf
  NextScan
EndProg
```

Example 2—Test Program that sets the alarm trigger manually

```
'declare program variables and constants
Const ToAddr = "email@provider.com"
Const Subject = "Email Message Test"
Const CRLF =  CHR(13) & CHR(10)

Public Batt
Public AlarmTrigger As Boolean
Public Message As String * 250
Public EmailSuccess
Public ServerResponse As String * 50

'main program
BeginProg
  Scan (1,Sec,3,0)
    Battery (Batt)
  NextScan
  SlowSequence
   Scan (1,Sec,1,0)

 'set alarm trigger manually
      If  AlarmTrigger Then
       Message = "Hello!" & CRLF & CRLF
       Message = Message & "This is an automatic email message from our friendly datalogger named   " & Status.StationName & "."
       Message =  Message & "An alarm condition has been triggered."
       Message =  Message & "The battery voltage is" & Batt & "volts" & CRLF & CRLF & CRLF
        Message =  Message & "Datalogger time is" & Status.Timestamp
       EmailSuccess =  EmailRelay(ToAddr,Subject,Message,ServerResponse)
       AlarmTrigger  =  False
      EndIf
      Erase(Message)    'Erase the message after sending
  NextScan
EndProg
```

Helpful Tips

When creating and testing a program using **EmailRelay()**, use the manual trigger to run **EmailRelay()** and set the trigger back to *False* after its execution (Example 2). This ensures you won't exceed the daily email limit during the first test run of your program. Run **EmailRelay()** in a **SlowSequence** to avoid the delay of critical measurements and other important tasks executed in the main scan.