

## COMPASS for Pressure

Application Note APN2115

---

# Logging data to a custom file with COMPASS for Pressure

## Summary

This article describes the setup requirements to log data to a custom file using an advanced test in **COMPASS for Pressure**. The file format and the frequency at which data is logged to the file is controlled by the macros.

The Test Definition and macro setups used in this article are available in the example database accessed through the **COMPASS** download page. Use the **[Database][Database Maintenance]** option to import the test setup named "Log Ready".

## Article Topics

- How to set up a test with an event macro, which logs data to a custom file
- How to transfer macro information from one database to another.

## See Also

N/A

## Requirements

The following items are required to implement this setup.

- **COMPASS for Pressure Enhanced** v.1.04 or higher.

## Add the Test and Macros to the Database

First download then Default.mdb file located at:

<http://www.dhainstruments.com/supp1/software/compexample.htm>

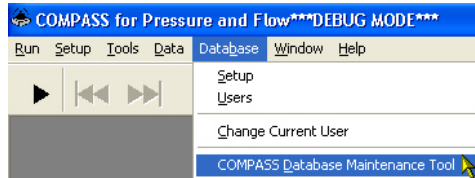
There are three setups in this database linked to this article: Global Macro **LogToTextFileExt**, Test Macro **LogReadyAndPressure** and the Test Definition **Log Ready**. The **Log Ready** Test Definition is linked to the **LogReadyAndPressure** macro. Therefore adding the **Log Ready** Test Definition to the active **COMPASS** database will automatically copy the **LogReadyAndPressure** Test Macro.

Although the **LogToTextFileExt** macro is used by the **LogReadyAndPressure** macro, the **LogToTextFileExt** macro is not automatically copied with it. This is because the database merge operation does not perform an analysis off the macro code. Any macro called by another macro must be manually added to the active database.

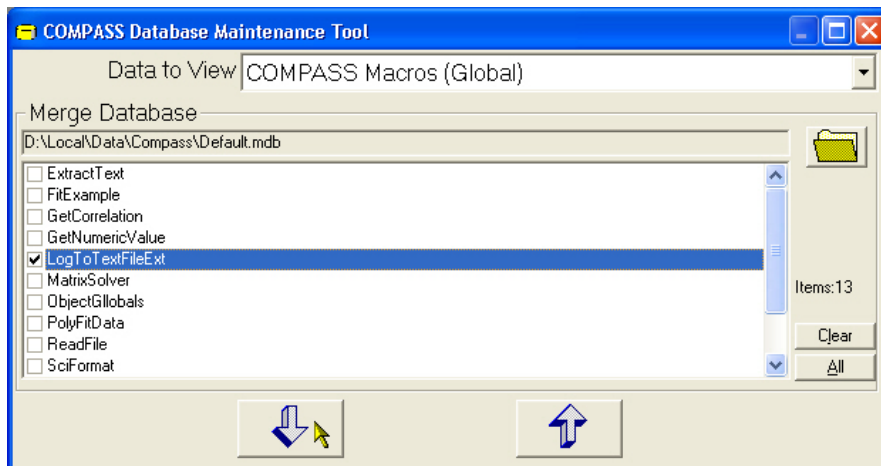
# COMPASS for Pressure

## Application Note APN2115

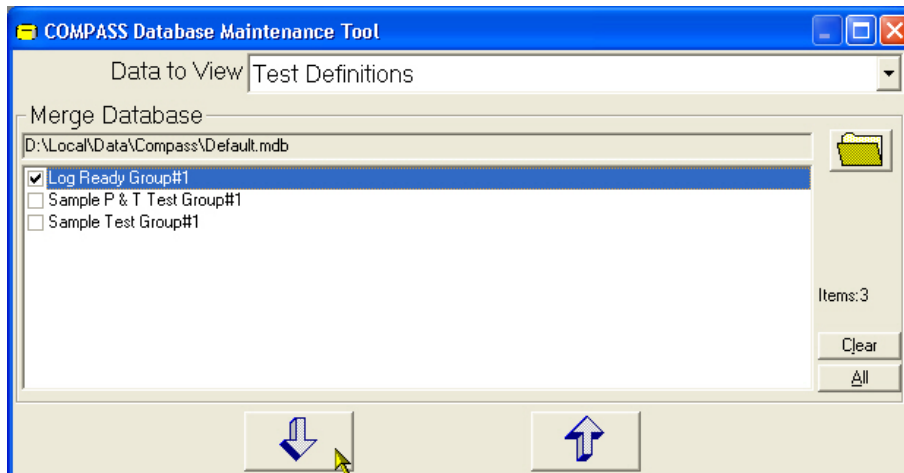
1. Open the **COMPASS Database Maintenance Tool**



2. Select the downloaded **Default.mdb** file as the **<Merge Database>** on the top portion of the form.
3. Select **COMPASS Macro (Global)** as the **<Data to View>**.
4. Select **LogToTextFileExt** and press the down arrow to transfer the setup to the active database.



5. Select **Test Definitions** in the **<Data to View>** field.
6. Select the **Log Ready Test Definition** and press the down arrow to transfer the setup to the active database.



7. Close the **Database Maintenance Tool** to return to **COMPASS**. All setups are now available for use.

# COMPASS for Pressure

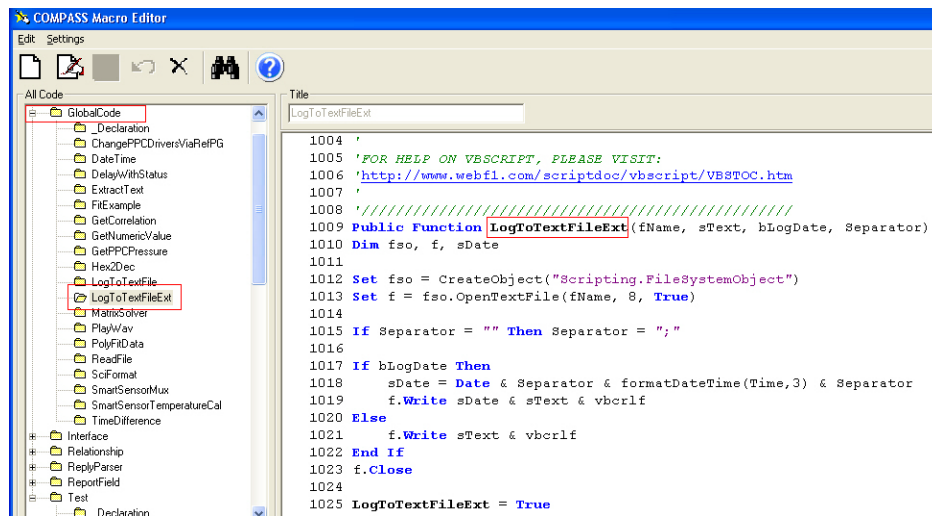
## Application Note APN2115

### Create the File Logging Macros

Custom macros are required to log custom file data. For this task a Global Macro and Test Macro are created. Global Macros are not directly accessed by **COMPASS**. However, all macros can access a Global Macro function. For this reason a Global Macro is used to generically write file data. The Test Macro defines what data to write and when to write it.

#### Global Macro to Write to the File

Open the **COMPASS Macro Editor** by using the [Tools][COMPASS Macro Editor] option on the **COMPASS** main run screen. Select the <GlobalCode> macro section and press the [New] toolbar option to create a new Global Macro. Copy the text in the **Log Text File Macro Code** section of this article and paste the text into the macro editor overwriting the default macro text in the newly created macro. Press the [Save] toolbar option to save the macro.



# COMPASS for Pressure

## Application Note APN2115

### Log Text File Macro Code

```

'*****
'Global Macros are available to all other macros.
'All parameters and return values are user defined.
'NOTE:
'COMPASS does not directly call Global Macros.
'
'*****

'////////////////////////////////////
'Open/Create a text file for Append and add the
'passed-in text to the file.  Optionally date/time
'stamp each entry, based on the boolean bLogDate
'parameter.  Separator defines how the fields are
'separated, a ; is used by default.
'Close the file after each write, so it is available
'from multiple processes.
'
'FOR HELP ON VBSCRIPT, PLEASE VISIT:
'http://www.webfl.com/scriptdoc/vbscript/VBSTOC.htm
'
'////////////////////////////////////
Public Function LogToTextFileExt(fName, sText, bLogDate, Separator)
Dim fso, f, sDate

Set fso = CreateObject("Scripting.FileSystemObject")
Set f = fso.OpenTextFile(fName, 8, True)           ''' 8 = open for append

If Separator = "" Then Separator = ";"           ''' default separator to semi-colon

If bLogDate Then
    sDate = Date & Separator & formatDateTime(Time,3) & Separator           ''' 3 = vbLongTime
    f.Write sDate & sText & vbcrLf
Else
    f.Write sText & vbcrLf
End If
f.Close

LogToTextFileExt = True

End Function

```

### Test Macro to Define File Structure

Create a Test Macro to define what data to log. For this example the date, time, pressure, Ready/Not Ready status and the result of a custom remote command are saved in a comma-delimited file. This information is written to the file each time the macro is accessed after test initialization is complete.

Select the <Test> macro section and press the **[New]** toolbar option to create a new Test Macro. Copy the text in the **LogReadyAndPrs Macro Code** section of this article and paste the text into the macro editor overwriting the default macro text in the newly created macro. Notice that the Test Macro calls the **LogToTextFileExt** macro to write the file data. Press the **[Save]** toolbar option to save the macro.

# COMPASS for Pressure

## Application Note APN2115

```

1459
1460 Function LogReadyAndPrs(iT, iL, iC, iP, cTest, cConfig)
1461
1462 On Error Resume Next
1463
1464 Dim sText, sHeader, temp, LogReadyFile
1465
1466 ''' COMPASS Run State (see Macro Editor help file)
1467 ''' 0 - Set for common operations, Run, Edit, Options, etc.
1468 ''' The bit is cleared when operation is complete
1469 ''' 1 - A COMPASS setup is being edited
1470 ''' 2 - Test initialization is active.
1471 ''' 3 - Running a Test Definition
1472 ''' 4 - Running a Manual Test
1473 ''' 5 - Test initialization is complete and all instruments have been initialized.
1474 ''' The value is set before a Pre-Test macro is executed.
1475 ''' 6 - Data files have been created as part of a Test Definition or a Manual Test.
1476 If (cCOMPASS.COMPASSRunState And 2 ^ 6) = 0 Then
1477
1478 ''' Data files have not yet been created, exit.
1479 Exit Function
1480

```

### LogReadyAndPrs Macro Code

```

'////////////////////////////////////
'Test Macros do not have a return value. Manipulate
'the test or device collection as desired.
'iT The current temperature point in the test
'iL The current line pressure point in the test.
'iC The current pressure cycle in the test.
'iP The current pressure point in the test.
'cTest The test class .
'cConfig Configuration class that holds all active devices.
'
'FOR HELP ON VBSCRIPT, PLEASE VISIT:
'http://www.webfl.com/scriptdoc/vbscript/VBSTOC.htm
'////////////////////////////////////
Function LogReadyAndPrs(iT, iL, iC, iP, cTest, cConfig)

On Error Resume Next
Dim sText, sHeader, temp, LogReadyFile

LogReadyFile = cConfig.RefPrs(1).RangeMain.GetParent.Extra1

''' COMPASS Run State (see Macro Editor help file)
''' 0 - Set for common operations, Run, Edit, Options, etc.
''' The bit is cleared when operation is complete
''' 1 - A COMPASS setup is being edited
''' 2 - Test initialization is active.
''' 3 - Running a Test Definition
''' 4 - Running a Manual Test
''' 5 - Test initialization is complete and all instruments have been initialized.
''' The value is set before a Pre-Test macro is executed.
''' 6 - Data files have been created as part of a Test Definition or a Manual Test.
''' Could also use cCOMPASS.CurrentTestStep to decide when to collect

```

# COMPASS for Pressure

## Application Note APN2115

```

''' data. It is possible to log to the file during dwell and averaging only. Or
''' log data only 1 time per average by not using an Event Macro Time in the Test
If (cCOMPASS.COMPASSRunState And 2 ^ 6) = 0 Then
    ''' Data files have not yet been created, exit.
    Exit Function

''' LogReadyFile variable must be declared in _Declaration section of
''' the GlobalCode module in Macro Editor.
ElseIf LogReadyFile = "" Then
    ''' We need a filename, Use the DUT
    ''' Data file and change to a *.log extension
    ''' using the same file name. Store the name in
    ''' the refernece object. Alternatively make a module
    ''' level variable for the file name or an array of
    ''' file names when more than 1 DUT is used.
    temp = Trim(cCOMPASS.DataCollection(1).FileName)
    LogReadyFile = Left(temp, Len(temp)-3) & "log"

    ''' Create data headers and write to file.
    sHeader = "Date;Time;Reference;DUT;Ready;Resulting Value;Auxiliary"
    LogToTextFileExt LogReadyFile, sHeader, False, ";"

    'Create a unit row under the header.
    UnitRef = cConfig.RefPrs(1).RangeMain.UnitFinalText
    UnitDUT = cConfig.DUTPrs(1).RangeMain.UnitFinalText
    UnitAux = cConfig.Auxiliar(1).RangeMain.UnitFinalText
    sHeader = ";" & UnitRef & ";" & UnitDUT & ";;;" & UnitAux
    LogToTextFileExt LogReadyFile, sHeader, False, ";"

    'Set the File Name to the Reference Device
    cConfig.RefPrs(1).RangeMain.GetParent.Extral = LogReadyFile
End If

''' Date;Time;Reference;DUT;Ready;Resulting Value;Aux1
With cConfig.RefPrs(1)
    sText = .FinalOutput & ";" & cConfig.DUTPrs(1).FinalOutput & ";"
    sText = sText & Abs(cConfig.SetPrs(1).Ready) & ";"
    sText = sText & .FinalOutput * Abs(cConfig.SetPrs(1).Ready) & ";"
    sText = sText & cConfig.Auxiliary(1).FinalOutput
End With

LogToTextFileExt LogReadyFile, sText, True, ";"

End Function

```

## Create a Test Definition

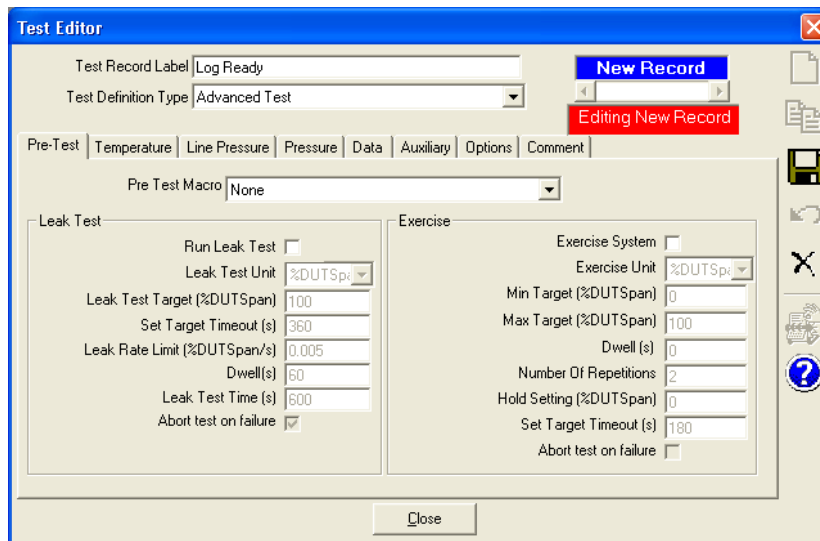
An advanced Test Definition is required to run the **LogReadyAndPrs** macro. The only required selections are those related to using a Test Macro. All other test options such as test points and averaging time can be changed as required.

1. Use the **[Setup][Test Definition]** option to open the **Test Definition Editor**.
2. Press the **[New]** toolbar button to create a new Test Definition.

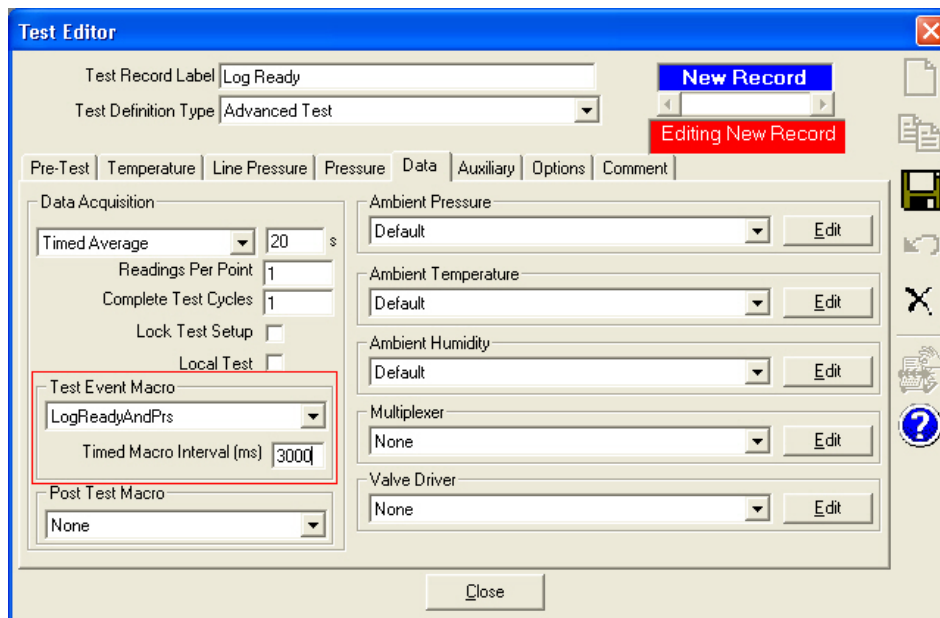
# COMPASS for Pressure

## Application Note APN2115

3. Select **Advanced Test** as the **<Test Definition Type>**.



4. Define any sequence of test points and use any test reference and controller. This article was created using a DH Instruments PPC3. However any pressure controller and reference combination can be used.
5. On the **[Data]** tab, select the **LogReadyAndPrs** macro as the **<Test Event Macro>**. The **<Timed Macro Interval (ms)>** defines the frequency at which the macro is accessed. Three seconds or 3000 ms is used in this example.



6. Save the Test Definition. There are no other required selections.

# COMPASS for Pressure

## Application Note APN2115

### Running a Test

Run the **Log Ready** Test Definition just like any other test. In addition to the standard **COMPASS** data file, a custom data file with the macro defined information is also created.

Alternatively run a Manual Test to access the custom file creation macros. Manual Tests are a convenient way to troubleshoot Test Macros. Do not use Test Macros that access information within a Test Definition or rely on specific test states for Manual Tests. To access a Test Macro from a Manual Test, enable the **[Tools][Options][Initialize Test]<Support manual test timed macro selection>** option. When initializing the Manual Test, the ability to select the macro and define a time interval is provided. The Manual Test will create the file just like running a Test Definition. The key difference is that it is up to the user to change test pressure when running the Manual Test. Use the controller or conditions run screens to set a new target pressure.

