**COMPASS for Pressure Calibration Software**

Global macro to specify Reference uncertainty by range in kPa

Macro code to ignore the uncertainty values that you have entered for your references (support devices and/or piston gauges) in COMPASS for Pressure software. This macro allows you to specify your reference uncertainty (in % Reading and/or % Span) according to ranges of pressure. This might correlate to having different standards for different ranges of pressures. This can be used with “Measurement Uncertainty in COMPASS for Pressure - Test Macro” and would be inserted after the degrees of freedom check, before the ExpUnc calculation.

Copy and Paste all of the following text into a new Global Macro.

*'Alternate Reference Uncertainty Calculation/Determination - by Pressure Range*

*'converting RefP to kPa for range check*

**Function** **UncRefByRange**(RefF, RefFunit, RefFunitTxt)

i=1 *'use For -> Next loop for multiple DUTs*

dUnit = cCOMPASS.cConfig.DUTPrs(i).RangeMain.UnitFinal

 cDebug.LogStatus "DUT Units = " & dUnit

RefP\_kPa = cCOMPASS.UnitConversion(**CDbl**(RefP), 3, **CInt**(dUnit), 0) *'3 is integer ID for kPa*

 cDebug.LogStatus "RefP\_kPa = " & RefP\_kPa

*'range specific coefs for calculation of reference uncertainty*

Delta = 0

**If** RefP\_kPa >= 7000 **Then** *'kPa, A20Ms*

 PctRdg = 0.01/100

**ElseIf** RefP\_kPa >= 3500 **Then** *'A7Ms*

 PctRdg = 0.01/100

**ElseIf** RefP\_kPa >= 700 **Then** *'A3.5Ms*

 PctRdg = 0.01/100

**ElseIf** RefP\_kPa >= 200 **Then** *'A700K*

 PctRdg = 0.01/100

**ElseIf** RefP\_kPa >=60 **Then** *'A200K*

 PctRdg = 0.01/100

**Else**

 PctRdg = 0.0 *'A200K*

 Delta = 21 *'Threshold Unc.*

**End If**

 cDebug.LogStatus "PctRdg = " & PctRdg

 cDebug.LogStatus "Delta = " & Delta & " " & "kPa"

*'converting Delta to test unit*

Delta = cCOMPASS.UnitConversion(**CDbl**(Delta), **CInt**(dUnit),1, 0)

 cDebug.LogStatus "Delta = " & Delta & " " & dUnit

URef = (RefP\*PctRdg) + Delta

 cDebug.LogStatus "Reference Tolerance (alt) = " & Uref

**End Function**