Model B3HU PC CONFIGURATOR (model: B3HUCON)

Users Manual

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1. GETTING STARTED

1.1 HARDWARE REQUIREMENTS

• IBM PC/AT compatible PC; Pentium 120 MHz minimum (Pentium II 266 MHz or higher recommended) Windows 98SE, NT 4.0, 2000 or XP Pro

24 MB RAM for Windows 98SE; 48 MB for Windows NT4.0, 2000 or XP Pro

30 MB minimum free hard disk space

15-inch 800x600 Super VGA screen (17-inch 1024x768 Ultra VGA or higher recommended) CD-R/ROM Drive

Serial Port (COM1 or COM2)

HART Modem Cable

1.2 INSTALLING THE B3HUCON

This programming tool is based on Agilent VEE Pro. In order to operate the tool, the user must first install Agilent VEE Pro 6.2 RunTime Version [VEE Pro] and [IO Lib]. If you already have them installed on your PC, skip the installation procedure for them.

- (1) Start up Windows.
- (2) Insert B3HUCON Setup CD-ROM into the CD drive on your PC. The Setup program automatically starts and shows the setup dialog box on the screen.

⚠ If the program does not automatically start, install manually by starting up Disk:\Setup.exe.

A DO NOT change from the default setting the hard disk drive where the B3HUCON is to be installed.

(3) Choose "VEE Pro."

-> Windows starts the installation program for Agilent VEE Pro 6.2 RunTime. Follow instructions on the screen and click Next or Yes.

-> Click Finish and exit the installation program.

(4) Choose "IO Lib."

-> Windows starts the installation program for Agilent IO Libraries. Follow instructions on the screen and click Next or Yes.

During the process appears dialog boxes in which you should specify as follows:

"Select the Installation Option." -> Choose "Runtime Installation."

When "Agilent IO Libraries runtime have been successfully installed" is displayed on the screen, choose "RUN IO Config." and then click Finish.

"Agilent IO Libraries Configuration - IO Config" -> Choose "Auto config."

-> Click OK and exit the installation program.

(5) Choose "B3HUCON."

-> Windows starts the installation program for B3HUCON software. Follow instructions on the screen and click Next.

-> Click Finish and exit the installation program.

(6) Click Exit.

Now the B3HUCON program has been installed.

1.3 STARTING UP THE B3HUCON

Press Start on the task bar and choose B3HUCON from the Program menu. The model B3HU Universal Temperature Transmitter must be connected to the PC via a HART modem.

2. OPERATING THE B3HUCON PC CONFIGURATOR

Figure 1 shows the initial view of the B3HUCON PC Configurator window. In order to enable the tools shown on the screen, the model B3HU Universal Temperature Transmitter must be connected to the PC via a HART modem.

B3HU PC Configurator Ve	w2.00					
B3HU Configu	J rator	Comm Status	COB DE OVE	6	572 BOE 1112	
Monit	or	Device Status	HAL CFG CLD	AFE	AOS NPV PV	
Device Infor	mation	PV	PV %	Term.	AO	Functions
Sensor Type	Millivolt	1000	100	100	20	Connect
Sensor Serial Number	0			80	1	Diagnostics
Sensor Wires	2 Wires	800	80			
RV Unit	m∨	1	1		16	Analog Output
Upper	1000.000	- 003	1 0.0	40		Thm:DAC
Lower	0.000				10	Sensor Cal.
PV Upper Limit	1100.000	1	1		12	
PV Lower Limit	-100.000	400 -	40	0	1	Custom TC
PV Minimum Span	4.00				8	Custom RTD
PV Damping	0.000	200 -	20			Special Curve
Bumput	Upscale	- 1	1	-40		
CJC Switch	CJC OFF	o ¹			4	Burst Mode
Xfer Function LINEAR		0	0	-40	4	Poling Address
Term Unit	degC	m∨	%	degC	mA	
D splay Detail In	normation	PV Graph	PV % Graph	Term Graph	AO Graph	File

Figure 1. Initial View

2.1 CONNECTING THE DEVICE (B3HU)

On the initial view, click [Connect] and the Device Connection menu appears on the screen.

Figure 2. Device Connection



[Device Address]Specify the polling address of the device to be connected.[Search Device]Searches the connected devices among the ones whose polling address is
already set.[Disconnect Device]Disconnects the currently connected device.[Connect Device]Connects the device of which polling address is specified in the Device
Address. Once the connection is established, the program uploads the
device's configuration information and automatically calls up the Device
Information view. The Device Information view is the base for various op-
erations to configure the B3HU.

[Close Device Connection] Quits the Device Connection view.

2.2 MONITORING TRENDS

Once the device is connected, the Device Information menu and the trend monitors appears on the screen. The user can configure various parameters of the B3HU.

Figure 3. Device Information

ROHU PC Configurator Ver200								
B3H	U	Comm Status	CON PE OVE	E	SME BOE THE			
Monit	or	Device Status	RAL CTO CLU	AEX	A05 (E2V) (2V)			
Device Infor	mation	PV	PV %	Term.	AO	Functions		
Sensor Type	Milivolt	1000	100	100	20	Connect		
Sensor Serial Number	Sensor Serial Number 1		-	80	1	Diagnostics		
Sensor Wires	2 Wires		80 -		1			
PV Unit	mV	1	1		16	Analog Output		
DV Dance Upper	1000.000	600	1 00	40	-	Trim DAC		
Lower	-50.000	1			10	Sensor Cal.		
PV Upper Limit	1000.000				12			
PV Lower Limit	-50.000		40 -	0	-	Custom TC		
PV Minimum Span	4.00	200	1	1	8	Custom RTD		
PV Damping	0.000	200	20 -			Special Curve		
Burnout	Upscale	1	-	-40	1			
CJC Switch	CJC ON	-50	0		4	Burst Mode		
Xfer Function	LINEAR	500	52.38	33.89	12.38	Polling Address		
Term Unit	degC	mV	%	degC	mA			
Display Detail In	nformation	PV Graph	PV % Graph	Term Graph	AO Graph	File		

2.2.1 Communication Status

Comm Status summarizes the current communications status by lamps showing the communication status byte contents in the HART commands.

- [COM] lampBlinks with the normal communications condition.[PE] lampRed light turns on when the device detects Parity Error.
- [OVE] lamp Red light turns on when the device detects I any Error.
- [FE] lamp Red light turns on when the device detects Eventin Error.
- [SME] lamp Red light turns on when the device detects Sum Check Error.
- [BOE] lamp Red light turns on when the device detects Buffer Over Flow Error.
- [TME] lamp Red light turns on when the device detects the communications time out.

2.2.2 Device Status

Device Status summarizes the current device status by lamps showing the device status byte contents in the HART commands.

- [MAL] lampRed light turns on when malfunction(s) occur(s) in the device.[CFG] lampRed light turns on when the device configuration is modified.
This lamp can be turned off by [Reset Configuration Change Flag] in the Diagnostics
view.[AFX] lampRed light turns on when the analog output entered in Fixed Output mode.
Green light turns on when the analog output is diagnosed to be normal. Red light
- [PV] lamp[PV] lampGreen light turns on when the sensor input is in the specified range. Red light turns on when it is out of the range.

2.2.3 Bargraph & Trend Graph

Four bargraphs indicating PV in engineering unit, PV in % of the selected range, the terminal temperature and analog output current are available.

The graph scales can be modified except for the PV in engineering unit of which the scales are automatically determined and fixed according to the selected range.

At the bottom of each bargraph is [Graph] button which opens a trend graph for the item. The example below shows the trend graph for [Term Graph]. Use [Start] and [Stop] buttons to activate/deactivate trending, and click [Close] to quit the graph view.



Figure 4. Trend Graph

2.3 DEVICE CONFIGURATION

In Figure 3, the Device Information menu on the left shows the basic configuration information of the connected device. When you need to change configurations, click the left button for the required item to modify the setting.

[Sensor Type] Specifies the sensor type and number of extension wires. When a new sensor type is chosen, other default settings are automatically selected.

[Sensor Serial Number] Specifies a serial number for the sensor.

- [PV Unit] Specifies the engineering unit for the PV. When this setting is changed, other related items such as PV Range, Upper/Lower Limits, PV Minimum Span are automatically shown in the new unit.
- [Burnout] Specifies either the output should go upscale or downscale in case that a burnout is detected.
- [CJC Switch]Enables/disables the cold junction compensation for thermocouple input. When a
thermocouple is specified as the input sensor, the CJC Switch is set to ON at default.[Xfer Function]Enables/disables the Xfer Function, specifying either the output should be linear to
- the input signal or linearized to a custom curve data. Selecting this function without a pre-defined Special_Curve is defined as Error.
- [Term Unit] Specifies the temperature unit at the cold junction terminal.

2.4 **DEVICE DETAIL INFORMATION**

In Figure 3, clicking [Display Detail Information] on the left bottom opens the [Device Detail Information] menu as shown in Figure 5.

60

40

20

0

52.38

%

PV % Graph

BIHU PC Configuration	Ver200				
B3	HU	Comm Status	COB JE OVE		STE BO
Mor	itor	Device Status	RAL (10) (11	AFX	ACS NP
Device Detail	Information	PV	PV %	Term.	A
Manufacturer	M-System Co	1000	100	100	20
Device Type	B3HU		1	80	
Device ID	197	1	80		
Number of Preamble	5 5	1			16

600

200

-50-

500

m٧

PV Graph

Figure 5. Device Detail Information

Universal Crnd Revision

Transmiller-Spec Revision

Hardware Revision

Software Revision

Final Assembly No.

Tag

Descriptor

Date

The menu shows the following items: Manufacturer, Device Type, Device ID, Number of Preambles, Universal Command Revision, Transmitter-Specific Revision, Hardware Revision, Software Revision, Final Assembly No., Tag, Descriptor, Date and Message.

[Tag] You can enter a tag name and descriptor name. Date is automatically set at the data modified date.

[Message] You can enter a memo in this area.

5

1

1

1

1

SAMPLE

TEST SAMPLE

2007/05/19

Message

Close Detail Information

[Close Detail Information] Quits the view.

Functions

Connect Diagnostics

Analog Output

Trim DAC

Sensor Cal.

Custom TC

Custom RTD

Special Curve

Burst Mode

Polling Address

File

12

8

4

12.38

mA

AO Graph

40

0

-40

33.97

degC

Term Graph

2.5 **DIAGNOSTICS**

Click [Diagnostics] button to open the Diagnostics view as shown in Figure 6.

Figure 6. Diagnostics



[Execute Diagnostics]

Activates the diagnostics program and the results are displayed under the Additional Status.

The Additional Status section shows each Additional Status item and its status: green in normal status, while red in error.

[Read Additional Status] Calls up the current contents of Additional Status.

[Reset Configuration Change Flag] Turns off the CFG lamp in Device Status. [Close Diagnostics] Quits the view.

2.6 FIXED ANALOG OUTPUT

Click [Analog Output] button to open the Analog Output view as shown in Figure 7.

Figure 7. Analog Output



[Set AO for current PV output] The output current is held at the current value.

[Set AO for specified value] [Exit Fixed AO Mode] You can set a specific value to fix the output.

Cancel the fixed output mode to return the device into normal output mode. It is recommended to fix the analog output signal while those parameters affecting the output signal are configured, and then to reset the device to normal mode after the setting is done. Quits the view.

[Close Analog Output]

2.7 DAC TRIMMING

Click [Trim DAC] button to open the Trim DAC view as shown in Figure 8.

Figure 8. Trim DAC



2.7.1 Enter 4mA Trim Mode

- (1) Click [Enter 4mA Trim Mode]. The device outputs a fixed 4mA signal.
- (2) Measure the actual output current at the receiving instrument to which the device output should be matched.
- (3) Click [Trim by actual measured value] to set the measured value. The actual value can be set from 3.8mA up to 4.2mA.
- (4) Repeat setting [Trim by actual measured value] until the measured output shows 4mA.

2.7.2 Enter 20mA Trim Mode

- (1) Click [Enter 20mA Trim Mode]. The device outputs a fixed 20mA signal.
- (2) Measure the actual output current at the receiving instrument to which the device output should be matched.
- (3) Click [Trim by actual measured value] to set the measured value. The actual value can be set from 19.8mA up to 20.0mA.
- (4) Repeat setting [Trim by actual measured value] until the measured output shows 20mA.

2.7.3 Resetting to the Default

Click [Clear Trim DAC Data] to return the device to the factory default trimming values. [Close Trim DAC] quits the view.

2.8 SENSOR CALIBRATION

The input sensor can be calibrated with Zero and Span: the Zero is represented as offset at the calibration point, while the Span is represented as gain against the zero point. The gain must be set from 0.1 to 10.0.

Calibration points can be specified to any point within the measuring range. The mV and thermocouple inputs are calibrated against the measured voltage; while the RTD input is against the measured resistance. Errors caused by extension wire resistance for 2-wire RTDs and by imbalance in that for 3-wire RTDs can be calibrated by the Zero adjustment.

Click [Sensor Cal] button to open the Sensor Calibration view as shown in Figure 9.

Figure 9. Sensor Calibration

B3HU PC C	anfigurator Ver2.00						_ 🗆 ×
	B3HU Configurator Monitor		Comm Status Device Status	CON PE OVE	PE AFX	SHE BOE THE	**
Se	nsor Calibration	1	PV	PV %	Term.	AO	Functions
Rea	d Calibration Dat	а	1000	100	100	20	Connect
Clear S	ensor Calibration	Data	1		80	-	Diagnostics
2	Zero Calibration		1	80 -		16	Analog Output
S	Span Calibration			60 -	40		Trim DAS
PV	500.051331	mV		-	1	12	Sensor Cal.
Zero Point	0.0000	m٧	1	40	0		Custom TC
Zero Value	0.0000	mV	200			8	Custom RTD
Gain	1.0000			20 -			Special Curve
			-50	0	-40-	4	Burst Mode
			500	52.39	34.18	12.38	Polling Address
			mV	%	degC	mA	
Close	e Sensor Calibrat	on	PV Graph	PV % Graph	Term Graph	AO Graph	File

The present measured value is indicated in the middle. Refer to this value when calibrating the sensor. It takes 5 or 6 seconds for the calibration result affects the measured value on the display.

Apply the zero calibration point input signal and click [Zero Calibration] to open the field where you can enter the target value. The result is shown in the PV display field. The data before calibration is shown in the Zero Point field, while the data after calibration is shown in the Zero Value field.

Apply the span calibration point input signal and click [Span Calibration] to open the field where you can enter the target value. The result is shown in the PV display field. The gain between the zero point and the span point is shown in the Gain field.

[Read Calibration Data] calls up and display the present calibrated values in these fields.

Click [Clear Sensor Calibration Data] to return the device to the factory default status.

Factory Default	
DC and thermocouple inputs	Zero Point = Zero Value = 0mV
	Gain = 1.0
RTD input	Zero Point = Zero Value = Resistance (Ω) at 0°C
	Gain = 1.0

When the sensor type is changed, the calibration data are reset to these factory default values. [Close Sensor Calibration] quits the view.

2.9 CUSTOM TC

The B3HU supports the user-specific thermocouple table function. In order to use a user-specific table, the data in text format must be defined and registered.

The file format is as following.

Define the minimum temperature value in Celsius at Minimum TC Temperature.

Specify the Temperature Steps used in the table, from 1°C to 50°C.

Describe the characteristics data within { }. Data must be entered in mV. Up to 1000 points can be specified.

```
/*
   Custom TC Table Definition
/*
   Ti=f(Xi) (0<=i<Size)
/*
        Temperature Step (1 to 50 degC)
/*
        -100<=Xi<1000mV
/*
        Xi<Xi+1
/*
        2<=Size<=1000
Minimum TC Temperature=0
                          <- Minimum temperature T0 (°C)
Step=10
                          <- Temperature step (°C)
{
10.0000
                          <- Voltage value for T0 (mV)
20.0000
                          <- Voltage value for Tmax (mV)
}
```

Once the data file is ready, register the file on the B3HUCON. Click [Custom TC] button to open the Custom TC as shown in Figure 10.

Figure 10. Custom TC

B3HU PC Contigurator	Ver2.00						
B3H	IU		Comm Status	COB JE OVE	E I	STE BOE THE	
Configu Moni	urator itor		Device Status	RAL CFG CLI	AFS	ADS NPV PV	
Custon	n TC		PV	PV %	Term.	AO	Functions
Read table fro	m Device	9	1000	100	100	20	Cornect
Write table t	Write table to Device				80	-	Diagnostics
Write table to File				80		16	Analog Cutput
Read table f	Read table from File			60	40		Trim DAC
Display graph of	f Custom	TC		-		12	Sensor Cal.
Custom TC Tab	ole Conte	nts		40	0		Custom TC
Status	Config	ured					Custom RTD
Min. Temperature	0	degC	200	20 -		°	Special Curve
Max. Temperature	10	degC		1	-40		
Temperature Step 10 degC		-50			4	Burst Mode	
Table Size	2	Max Size 1000	500.1	52.39	34.23	12.38	Poling Address
			mV	%	degC	mA	
Close Cus	Close Custom TC			PV % Graph	Term Graph	AO Graph	File

[Read table from File]	The program uploads a file stored in the PC. When uploaded, the file con- tents summery is indicated under Custom TC Table Contents. The I/O char- acteristic data longer than 1000 points are ignored.
[Display graph of TC table]	The I/O characteristics data can be shown in a graph.
[Write table to File]	The program saves the currently displayed I/O characteristics data to a file.
[Write table to Device]	The program downloads the currently displayed I/O characteristics to the B3HU.
	When the downloading is successfully complete, Status under Custom TC table Contents shows 'Configured.' Then the option 'TC Spec (Custom TC)' become available to choose among the Sensor Type selections. If 'TC Spec' has been already selected before this setting is done, you can not download a particular data file.
[Read table from Device]	The program uploads the I/O characteristics cable registered in the B3HU. If there is no file registered, Status under Custom TC table Contents shows 'Non configured.'
[Close Custom TC]	Quits the view.

2.10 CUSTOM RTD

The B3HU supports the user-specific RTD table function. In order to use a user-specific table, the data in text format must be defined and registered.

The file format is as following.

Define the minimum temperature value in Celsius at Minimum RTD Temperature.

Specify the Temperature Step used in the table, from 1°C to 50°C.

Describe the characteristics data within { }. Data must be entered in ohms. Up to 500 points can be specified.

```
/*
   Custom RTD Table Definition
/*
   Ti=f(Xi) (0<=i<Size)
/*
        Temperature Step (1 to 50 degC)
/*
        -100<=Xi<4000 Ohm
/*
        Xi<Xi+1
/*
        2<=Size<=500
Minimum RTD Temperature=0 <- Minimum temperature T0 (°C)
                           <- Temperature step (°C)
Step=10
{
100.000000
                           < – Resistance value for T0 (\Omega)
200.000000
                           <- Resistance for Tmax (\Omega)
}
```

Once the data file is ready, register the file on the B3HUCON. Click [Custom RTD] button to open the Custom RTD as shown in Figure 11.

Figure 11. Custom RTD

B3HU PC Contigurator 1	Ver2.00						_ 🗆 ×
B3H	IU		Comm Status	COM PE OVE		SHE BOE THE	
Configu Moni	irator tor		Device Status	EAL CPG CLE	AF2	A03 (117) (17	
Custom	RTD		PV	PV %	Term.	AO	Functions
Read table fro	m Device	•	1000	100	100	20	Connect
Write table to Device Write table to File			1	1	80	1	Diagnostics
				80		16	Analog Output
Read table f	Read table from File			60	40	-	Trim DAC
Display graph of	Custom F	RTD		-		12	Sensor Cal.
Custom RTD Ta	ble Cont	ents	-	40 -	0	1	Custom TC
Status	Config	ured		1	1	8	Custom RTD
Min. Temperature	0	degC	200 -	20 -		° i	Special Curve
Max. Temperature	10	degC	1	1	-40		
Temperature Step	10	degC	-50			4	Burst Mode
Table Size	2	Max Size 500	500.1	52.39	34.25	12.38	Polling Address
			m∨	%	degC	mA	
Close Cust	orn RTD		PV Graph	PV % Graph	Term Graph	AO Graph	File

The program uploads a file stored in the PC. When uploaded, the file con-[Read table from File] tents summery is indicated under Custom RTD table Contents. The I/O characteristic data longer than 500 points are ignored. [Display graph of RTD table] The I/O characteristics data can be shown in a graph. [Write table to File] The program saves the currently displayed I/O characteristics data to a file. [Write table to Device] The program downloads the currently displayed I/O characteristics to the B3HU. When the downloading is successfully complete, Status under Custom RTD table Contents shows 'Configured.' Then the option 'RTD Spec (Custom RTD)' become available to choose among the Sensor Type selections. If 'RTD Spec' has been already selected before this setting is done, you can not download a particular data file. [Read table from Device] The program uploads the I/O characteristics cable registered in the B3HU.

[Read table from Device] The program uploads the I/O characteristics cable registered in the B3HO. If there is no file registered, Status under Custom RTD table Contents shows 'Non configured.' [Close Custom RTD] Quits the view.

2.11 LINEARIZATION TABLE SETTING

The B3HU supports the user-specific linearization table function (Special_Curve). In order to use the Special_Curve, the data in text format must be defined and registered.

The file format is as following.

Describe the characteristics data within { }. Sets of X and Y values must be entered in %. Up to 128 points can be specified.

```
/*
   Linearization Table (Special Curve) Definition
/*
   Yi=f(Xi) (0<=i<Size)
/*
       -15<=X,Y<115
/*
       Xi<Xi+1
/*
       2<=Size<=128
    *******
/****
{
0.000000, 0.000000
                        <- The minimum X and Y values
1
100.000000, 100.000000 - The maximum X and Y values
}
```

Once the data file is ready, register the file on the B3HUCON. Click [Special Curve] button to open the Special Curve as shown in Figure 12.

Figure 12. Special Curve

B3HU PC Configurator	Ver2.00						_ 0 ×
B3H Configu	IU		Comm Status	COB PE OVE		SHE BOE THE	
Moni	itor		Device Status	RAL CPG CLO	AFX	AOS (EFV) FV	
Special	Curve		PV	PV %	Term.	AO	Functions
Read table fro	om Device	,	1000	100	100	20	Connect
Write table to Device			1		80		Diagnostics
Write table to File				80 -		16	Analog Output
Read table	Read table from File Display graph of Special Curve			60 -	40	1	Trim DAC
Display graph of				-		12	Sensor Cal.
Special Curve Ta	able Cont	ents	1	40	0	1	Custom TC
Status	Config	ured			1	8-	Custom RTD
Minimum Value	0	%	200 -	20 -		° i	Special Curve
Maxmum Value	100	%	1	1	-40	-	
Table Size	2	Max Size 129	-50	0		4	Burst Mode
			500.1	52.39	34.27	12.38	Polling Address
				%	degC	mA	
Close Spec	ial Curve		PV Graph	PV % Graph	Term Graph	AO Graph	File

The program uploads a file stored in the PC. When uploaded, the file con-[Read table from File] tents summery is indicated under Special Curve Table Contents. The I/O characteristic data longer than 128 points are ignored. [Display graph of Special Table] The I/O characteristics data can be shown in a graph. [Write table to File] The program saves the currently displayed I/O characteristics data to a file. [Write table to Device] The program downloads the currently displayed I/O characteristics to the B3HU. When the downloading is successfully complete, Status under Special Curve Table Contents shows 'Configured.' Then the option 'Special_Curve' become available to choose among the Xfer Function selections. If 'Special_Curve' has been already selected before this setting is done, you can not download a particular data file. [Read table from Device] The program uploads the I/O characteristics cable registered in the B3HU. If there is no file registered, Status under Special Curve Table Contents shows 'Non configured.' [Close Special Table] Quits the view.

2.12 BURST MODE

Click Burst Mode button to open the Burst Mode Control view as shown in Figure 13.



[Burst Mode ON] Enables the burst mode as specified in the menu. [Burst Mode OFF] Disables the burst mode.

[Close Burst Mode Control] Quits the Burst Mode Control view.

2.13 POLLING ADDRESS

Click Polling Address button to open the Device Address view as shown in Figure 14.



[Device Address]	Shows the polling address of currently connected device.
[Req. Preamble]	Shows the required number of preambles for HART communications. Can- not be changed.
[Write Device Address]	Write to the device a new polling address. Selectable addresses are from 0 to 15. The device operates in multi-drop mode when addresses other than 0 is selected. The output current is fixed to 4mA, and [Analog Output] or [Trim DAC] functions become unavailable.
[Close Device Address]	Quits the Device Address view.

Figure 14. Device Address

2.14 FILE MANAGEMENT

The B3HU's configurations can be saved in a file and then read out to be downloaded to multiple modules.

Click [File] button to open the File Management view as shown in Figure 15-1.

While this view is active, the device connection is severed, therefore the B3HU device can be connected and disconnected freely except during Upload or Download operations.

The view is separated in two areas: 'File Configuration' and 'Device Configuration.' 'File Configuration' shows data transfer (Read or Write) between the PC Configurator and the PC, while 'Device Configuration' shows data transfer (Upload or Download) between the configurator and the B3HU device.

The B3HUCON's configuration views consist of two pages. Click [Page] button to switch between pages. The second page appears as follows (Figure 15-2).

Click [Exit] to complete the file management operations. The device will remain disconnected and must be 'Connected' to start monitoring.

Note:

The validity of the selected range values is not verified in this view. Please make sure to set them according to the described specifications.

Custom TC, Custom RTD or Linearization Table data are not handled in this view but in each specific function view.

Figure 15-1. File, 1st Page

B3HU PC Cor	ntigurator Ver200								_ 0 ×
Evit	Page		Read File Write File		Upload		Download		
Exit	1	Comp	are	All Copy	/ <<	>>	All Copy	Compa	re
Prop	perties		File Con	figuration			Device Co	nfiguration	
Т	ag	CHG			<	>			CHG
Des	criptor	CHG			<	>			CHG
D	ate	CHG			<	>			CHG
Mes	isage	CHG			<	>			CHG
Device Id	lentification	CHG			1	>			CHG
Sense	or Type								
Senso	or Wires	CHG			<	>			CHG
PV	Unit	CHG							CHG
PV Upp	er Range				<	>			-
PV Low	er Range	CHG							CHG
PV D	amping	CHG		Sec	<	>		Sec	CHG
Transfer	Function	CHG			<	>			CHG
Burnout	Detection	CHG			<	>			CHG

Figure 15-2, File, 2nd Page

BOHU PC Co	ntigurator Ver2.00								- 0 ×
Evit	Page	R	ead File	Write File		Upload		Download	
EXIL	2	С	ompare	All Copy	<<	>> All Copy		Compar	6
Prop	perties		File Cont	figuration			Device Co	nfiguration	
Term Temp	perature Unit	CHG			<	>			CHG
CJC Mo	de Switch	CHG			<	>			CHG
Sensor	Serial No	CHG			<	>			CHG
Final Asse	mbly Number	CHG			<	[>]			CHG

2.14.1 TRANSFERRING DATA TO/FROM DEVICE

Click [Upload] button to connect to the B3HU device, to read out its configuration data and to show it in 'Device Configuration' area on the screen (Figure 16). COM port and Device Address can be changed in 'Connect' view. Once the uploading is complete, all background colors are back to the initial state. 'Description' indicates the serial number of the product, which cannot be modified or copied from 'File

Configuration' area. Click [Download] button to connect and write the configuration data in 'Device Configuration' area to the

B3HU device. If an error occurs and downloading is stopped during the process, erred data field is highlighted in med pale red background color.

When the downloading is successfully complete, the configuration data is automatically uploaded and the background color returns to the initial state.

Connection to the device is automatically severed after each uploading or downloading, to allow it removed.

Note:

'Device Identification' is an identifier inherent to each device. It cannot be changed or downloaded to a device.

B3HU PC Configurator Ver200								_ 🗆 🗙	
	Page	Read File Write File		le		Upload	Download		
EXIL 1		Compare		All Copy <<		>>	All Copy	Compare	
Prop	perties	File Configuration			Device Configuration				
Т	ag	CHG			<	>	SAM	CHG	
Des	criptor	CHG		<	>	TEST SAMPLE		CHG	
D	late	CHG			<	>	2007)	2007/05/19	
Message		CHG		<	>	TEBT MESBAGE		CHG	
Device Identification		0HG <			<	>	> 197 CH		
Sens	or Type	010					Pt1	100	
Senso	or Wires	CHG				~	4 Wires		CHG
PV	Unit	CHG					de	gC	CHG
PV Upp	er Range	and			<		850.000	degC	an
PV Lower Range		CHG					-200.000	degC	CHG
PV Damping		CHG		Sec	<	>	0.000	Sec	CHG
Transfer Function		CHG			<	>	LIN	EAR	CHG
Burnout Detection CHG				<	>	Ups	cale	CHG	

Figure 16. Data Uploaded

2.14.2 READING/WRITING FILES

Click [Read File] button to read the configuration data from a specified file and to show it in 'File Configuration' area on the screen (Figure 17). All background colors are back to the initial state. Click [Write File] button to write the configuration data in 'File Configuration' area to a specified file. You can write down some reference to the specific information in 'Description' field.

Figure	17.	File	Read	Out
--------	-----	------	------	-----

PageRead FileWrite FileUploadDownload1CompareAll Copy <<>> All CopyComparePropertiesFile ConfigurationDevice ConfigurationDevice ConfigurationDevice ConfigurationTagCHGSAMPLE<>CHGDescriptorCHGTEST SAMPLE<>CHGDateCHG2007/05/19<>CHGMessageCHGTEST MESSAGE<>CHGDevice IdentificationCHG17<>CHGSensor TypeCHGMillwot>CHGPV UnitCHGmillref>CHGPV Upper RangeCHG1000.000mill>>PV DampingCHG0.000Sec>SecSecPV DampingCHGUNEAR<>CHGTransfer FunctionCHGUNEAR>CHG	R BOHU PC Configurator Ver200									
LAIL1CompareAll Copy <<> All CopyComparePropertiesFile ConfigurationDevice ConfigurationDevice ConfigurationTagCHGSAMPLE<	Evit	Page	R	ead File	Write File		Upload		Download	
$\begin{tabular}{ c c c c } \hline Properties & File Configuration & Device Configuration & CHG & SAMPLE & < > & > & CHG & CHG & Descriptor & CHG & TEST SAMPLE & < > & > & CHG & CHG & Date & CHG & 2007/05/19 & < & > & & & CHG & CHG & 0.000 & TEST MESSAGE & < > & & & & & & & & & & & & & & & & &$	Exit	1	C	ompare	All Copy <<		>> All Copy		Compare	
$\begin{array}{c c c c c c } \hline Tag & CHG & SAMPLE & < & > & & & CHG \\ \hline Descriptor & CHG & TEST SAMPLE & < & > & & CHG \\ \hline Date & CHG & 2007/05/19 & < & > & & CHG \\ \hline Date & CHG & 2007/05/19 & < & > & & & CHG \\ \hline Message & CHG & TEST MESSA0E & < & > & & & CHG \\ \hline Device Identification & OHO & 17 & < & > & & & & & OHO \\ \hline Device Identification & OHO & 17 & < & > & & & & & & OHO \\ \hline Device Identification & OHO & 17 & < & > & & & & & & & & & \\ \hline Device Identification & OHO & 17 & & < & > & & & & & & & & & & & \\ \hline Device Identification & OHO & 17 & & < & > & & & & & & & & & & & & & \\ \hline Device Identification & OHO & 17 & & < & > & & & & & & & & & & & & & \\ \hline Device Identification & OHO & 17 & & < & > & & & & & & & & & & & & & & &$	Prop	perties		File Configuration			Device Configuration			
$ \begin{array}{c c c c c c } \hline \mbox{Descriptor} & \mbox{CHG} & ${\rm TEST SAMPLE} & < & > & & & & & & & \\ \hline \mbox{Date} & ${\rm CHG} & $2007/05/19 & < & > & & & & & & & \\ \hline \mbox{Message} & ${\rm CHG} & ${\rm TEST MESSA0E} & < & > & & & & & & & \\ \hline \mbox{Message} & ${\rm CHG} & ${\rm TEST MESSA0E} & < & > & & & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $17 & & < & > & & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $17 & & < & > & & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $17 & & & < & > & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $17 & & & & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $17 & & & & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $17 & & & & & & & & & \\ \hline \mbox{Device Identification} & ${\rm CHG} & $100 & $17 & & & & & & & \\ \hline \mbox{Sensor Type} & $$CHG & $CHG & $CHG & $$CHG & $$CHG & $$CHG & $$CHG & $$CHG & $$CHG & $CHG & $CHG & $CHG & $CHG & $$CHG & $CHG & $$CHG & $CHG & $$$	Т	ag	CHG	SAMPLE		<	>			CHG
DateCHG2007/05/19<>CHGMessageCHGTEST MESSAGE<	Des	criptor	CHG	G TEST SAMPLE		<	>			CHG
$\begin{array}{c c c c c c } \begin{tabular}{ c c c c } \hline Message & CHG & TEST MESSAOE & < & > & CHG \\ \hline Device Identification & CHG & 17 & < & > & CHG \\ \hline Device Identification & CHG & 17 & < & > & CHG \\ \hline Sensor Type & \\ \hline Sensor Wires & CHG & 2Wires & < & > & \\ \hline DV Unit & CHG & mW & < & & \\ \hline PV Unit & CHG & mW & & & \\ \hline PV Upper Range & \\ \hline PV Lower Range & CHG & 1000.000 & mV & < & > & \\ \hline PV Damping & CHG & 0.000 & Sec & < & > & \\ \hline PV Damping & CHG & UNEAR & & < & > & \\ \hline Transfer Function & CHG & UNEAR & & < & > & \\ \hline \end{array}$	D	ate	CHG	2007/05/19		<	>			CHG
$ \begin{array}{c c c c c c } \hline \mbox{Device Identification} & \mbox{OHS} & 17 & \mbox{IIIvot} & \mbox{Sensor Type} & \\ \hline \mbox{Sensor Wires} & \mbox{CHG} & \\ \hline \mbox{Sensor Wires} & \mbox{CHG} & \\ \hline \mbox{2 Wires} & \mbox{CHG} & \\ \hline \mbox{PV Upper Range} & \\ \hline \mbox{PV Upper Range} & \\ \hline \mbox{CHG} & \\ \hline \mbox{II 000,000} & \mbox{mV} & \mbox{CHG} & \\ \hline \mbox{PV Lower Range} & \\ \hline \mbox{PV Damping} & \\ \hline \mbox{CHG} & \mbox{0.000} & \mbox{sec} & \mbox{CH} & \\ \hline \mbox{PV Damping} & \\ \hline \mbox{CHG} & \\ \hline \mbox{LINEAR} & \mbox{CHG} & \\ \hline \mbox$	Mes	ssage	CHG	TEST MESSAGE		<	>			CHG
$ \begin{array}{c c c c c c c } \hline Sensor Type & \\ \hline Sensor Wires & CHG & 2Wires & \\ \hline Sensor Wires & 2Wires & \\ \hline PV Unit & CHG & mV & \\ \hline PV Upper Range & \\ \hline PV Lower Range & \\ \hline PV Lower Range & \\ \hline PV Damping & CHG & 0.000 & mV & \\ \hline FV Damping & CHG & 0.000 & Sec & < > \\ \hline Sec & < > & \\ \hline Sec & < > & \\ \hline Sec & < > & \\ \hline Sec & < & \\ \hline Sec & CHG & \\ \hline Sec & < & \\ \hline Sec & CHG & $	Device Id	entification	CHG	17		<	>			CHG
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			-			-	-	1		() () () () () () () () () ()
Sensor Wires CHO 2 Wires CHO CHO CHO PV Unit CHG mV CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG CHG </td <td>Senso</td> <td>or type</td> <td>CHG</td> <td>Milliv</td> <td>olt</td> <td>-</td> <td>~</td> <td></td> <td></td> <td>CHG</td>	Senso	or type	CHG	Milliv	olt	-	~			CHG
PV Unit CHG mV CHG PV Upper Range 1000.000 mV > CHG CHG PV Lower Range CHG -50.000 mV > CHG CHG PV Damping CHG 0.000 Sec <	Senso	or Wires	CHO	2 Win	es					CHO
PV Upper Range CHG 1000.000 mV > CHG CHG PV Lower Range CHG -50.000 mV > CHG CHG PV Damping CHG 0.000 Sec > Sec CHG Transfer Function CHG LINEAR > CHG CHG	PV	'Unit	CHG	mV	1					CHG
PV Lower Range CHG -50.000 mV CHG CHG PV Damping CHG 0.000 Sec <	PV Upp	er Range	CHO	1000.000	W	<	>			040
PV Damping CHG 0.000 Sec < > CHG Transfer Function CHG LINEAR <	PV Low	er Range	CHG	-50.000	Wm					CHG
Transfer Function CHG LINEAR < > CHG	PV D	amping	CHG	0.000 Sec		<	>		Sec	CHG
	Transfer	Function	CHG	LINE	NR	<	>			CHG
Burnout Detection CHG Upscale < > CHG	Burnout	Detection	CHG	Upscale		<	>			CHG

2.14.3 MODIFYING PARAMETERS

Click [CHG] button at the left of each field to modify the parameter. The field in which the parameter has been changed will be highlighted in light yellow background color. [CHG] buttons placed across multiple fields indicate that these parameters can be modified in single sequence.

When one parameter has been changed, related fields are also affected. For example, when 'Sensor Type' is modified, 'Sensor Unit' and 'PV Range' may be automatically changed.

Parameters can be copied between 'File Configuration' and 'Device Configuration' using [<] and [>] buttons. Copied fields will be highlighted in light yellow background color.

Using [All Copy <<] or [All Copy >>] buttons enables transferring all parameters between the areas. Copied fields will be highlighted in light yellow background color.

Note:

'Date' is automatically set to the day when 'Tag' and/or 'Descriptor' are changed. 'Date' can be modifiable.

Only capital letters are used as 'Tag', 'Descriptor' and 'Message.' Small letters will be automatically converted to capital letters.

'Device Identification' is an identifier inherent to each device. It cannot be copied from 'File Configuration' to 'Device Configuration' area.

BBHU PC Configurator Ver200								_ 🗆 🗆	
Evit	Page	R	ead File	Write File		Upload		Download Compare	
1		С	ompare	All Copy <<		>>	All Copy		
Properties			File Confi	guration		Device Configuration			
Т	ag	CHG	IG SAMPLE2		<	>	SAM	IPLE	CHG
Descriptor CHG TEST SAMPLE		<	N	TEST SAMPLE		CHG			
D	Date CHG 2007/05/26		<	>	2007)	05/19	CHG		
Mes	sage	CHG	G TEST MESSAGE		<	>	TEMP		CHG
Device Id	entification	CHG	17		<	>	197		CHG
Senso	or Type		Туря	9J			Pt1	Pt100	
Senso	r Wires	CHG	2 Wi	2 Wires		>	4 W	Ires	CHG
PV	Unit	CHG	deg	ic .			de	gC	CHG
PV Upp	er Range	CHO	1200	degC	<	>	100.000	degC	CHO
PV Low	er Range	CHG	-180	degC			0.000	degC	CHG
PV Da	amping	CHG	0.000 Sec		<	>	1.000	Sec	CHG
Transfer	Function	CHG	LINE	AR	<	>	LIN	EAR	CHG
Burnout	Detection	CHG	Upsc	Upscale		>	Ups	cale	CHG

Figure 18. Parameters Modified

2.14.4 COMPARING FILE TO DEVICE

You can compare the configuration data in 'File Configuration' area and 'Device Configuration' area. Click [Compare] button in 'Device Configuration' area to compare its data to those in 'File Configuration' area. Deviations will be highlighted in med pale red background color.

Click [Compare] button in 'File Configuration' area to compare its data to those in 'Device Configuration' area. Deviations will be highlighted in med pale red background color.

B3HU PC Cor	BBHU PC Configurator Ver200										
Evit	Page	R	ead File	Write File			Upload	Download		d	
1		50	ompare	All Copy <<		>> All Copy		Compare		е	
Prop	oerties	File Configuration				Device Configuration			tion		
Т	Tag CHG SAMPLE2		<	> SAMPLE			CHG				
Descriptor CHG TEST SAMPLE		AMPLE	<	>	TEST SAMPLE		CHG				
D	ate	CHG	CHG 2007/05/26		<	>	2007)	9 1/20		CHG	
Mes	sage	CHG	TEST MESSAGE		<	>	TEMP			CHG	
Device Id	entification	CHG	HG 197		<	>	197			CHG	
Sens	or Type		Typ	eJ			Pt1	00			
Senso	or Wires	CHG	2 W	2 Wires		>	4 17	Ires		CHG	
PV	Unit	CHG	dej	уC			de	gC		CHG	
PV Upp	er Range	CHO	1200	degC	<	>	100.000		degC		
PV Low	er Range	CHG	-180	degC	1		0.000		degC	CHG	
PV D	amping	CHG	0.000	Sec	<	>	1.000		Sec	CHG	
Transfer	Function	CHG	LINEAR		<	>	LINEAR			CHG	
Burnout	Detection	CHG	Ups	Upscale		>	Upscale			CHG	

Figure 19. Parameters Compared

3 TROUBLESHOOTING

3.1 COM PORT CONFIGURATION

COM Port No. 1 or 2 are selectable with this configuration tool. Hardware and software configurations must be correct to each other in order to communicate, especially in the case of USB. If the communication is not established, confirm the right configuration by the following procedures:

[Example] Connecting a USB HART Modem to COM Port 2.

(1) Install the USB HART modem and confirm the right configuration using Device Manager. In the example below, the hardware is connected correctly to COM Port 2.

Figure 20-1. Device Manager



(2) Start the program Agilent IO Libraries – IO Config tool (Figure 20-2). Figure 20-3 shows IO Config window.

Figure 20-2. Starting IO Config Tool

5	6	Programs P	Ģ	Accessories	۲	
5	1		E.	Aglent IO Libraries	•	🔛 10 Config
SS	-	Documents	6	AMS MICon	1	10 Control
Ę	-	Settings •	0	JICON		ISCPI Readme
e		Search	Z	27HUCFG		LAN Server
8	0	Help	90	Agilent VEE Pro 6.2		SUCL Help
1¥	-	Pup	ē	MACTek VIATOR		VISA Help
ĮŽ	2	PLATIT.		¥		VXI Resource Manager
ŝ	9	Shut Down				

Figure 20-3. IO Config Window

File Options Help 10 Config configures and edits Agilent 10 interfaces. To configure a new interface, select the interfa- To edit a configured interface, select the interfa To automatically configure the interfaces identified	Fig ce in "Available Interface Types" and click "Configure" ice in "Configured Interfaces" and click "Edif" ied with "", click "Auto Config"	
Available Interface Types VISA Type MSRL "RS-232 COM Ports ASRL "RS-232 COM Ports ASRL VISA LAN Client (e.g. E5010) GPIB "82350 PCI GPIB Card GPIB 82357 USB to GPIB GPIB VISA LAN Client (e.g. E5010) GPIB-V00 Command Module TOPIP TOPIP "LAN Client (LAN Instruments) VAI "EB451 IEEE-1364 to VA0 n/a LAN Server (PC as Server)	Configured Interfaces VISA Name SICL Name ASRL1 COM1 ASRL4 CDM4 TCPIPO Ian	* Auto Conlig OK Help
Denfigure * NDTE: Auto Config will configure interfaces identi	Edt. <u>A</u> errove	

(3) Select all COM devices (COMx under SIDL Name) in Configured Interfaces field and remove them. Configured Interfaces field is now blank (Figure 20-4).

Figure 20-4. Configured Interfaces (removed)

YIJH HERE	SILL Name	* Auto Co
		OK.

(4) Click [Auto Config] button. Currently available COM devices are configured automatically. Figure 20-5 shows COM2 under Configured Interfaces, available for use.

Figure 20-5. IO Config Window after Reconfiguration

Agilent 10 Li	braries Configuration - TO Confi	9	_101.
Options H	elp		
Conlig conlig • To configur • To edit a co • To automat	uses and edits Agilent ID interfaces. e a new interface, select the interface nigured interface, select the interface cally configure the interfaces identifie	e in Xwailable Interface Types' and click 'Configure' e in 'Configured Interfaces' and click 'Edit' d with ''', click 'Auto Config'	
Available Inte	flace Types	- Conligured Interfaces	
VISA Type	Interface Description	VISA Name SICL Name	
ASFIL ASFIL GPIB GPIB GPIB GPIB GPIB-WOI TCPIP WOI IN/IA	185-232 CDM Parts VISA LAN Client (e.g. E5810) 182350 PCI GPIB Card B2341 ISA GPIB Card B2357 USB to GPIB VISA LAN Client (e.g. E5810) GPIB-V01 Command Module "LAN Client (LAN Instruments) 162091 ISCP1 LAN Server (PC as Server)	ASRL1 00M1 ASRL2 00M2 TCPIP0 lan	<u>C Auto Contig</u>
	Gontgure	Edt Benove	

M-SYSTEM WARRANTY

1. What is covered.

M-System Co., Ltd. ("M-System") warrants, only to the original purchaser of new M-System products purchased directly from M-System, or from M-System's authorized distributors or resellers, for its own use not for resale, that the M-System products shall be free from defects in materials and workmanship and shall conform to the specifications set forth in the product catalogue applicable to the M-System products for the Warranty Period (see Paragraph 5 below for the Warranty Period of each product).

THE ABOVE WARRANTY IS THE ONLY WARRANTY APPLI-CABLE TO THE M-SYSTEM PRODUCTS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ALL IMPLIED WARRANTIES OF MER-CHANTABILITY OR OF FITNESS FOR A PARTICULAR PUR-POSE.

2. What is not covered.

This warranty does not cover any M-System product which has been: (1) modified, altered or subjected to abuse, misuse, negligence or accident; (2) improperly installed or installed in conjunction with any equipment for which it was not designed; or (3) damaged or destroyed by disasters such as fire, flood, lightning or earthquake.

In no event shall M-System be liable for any special, incidental, consequential or other damages, costs or expenses (including, but not limited to, loss of time, loss of profits, inconvenience or loss of use of any equipment).

3. Remedies.

If a defective product is returned to M-System in accordance with the procedures described below, M-System will, at its sole option and expense, either: (1) repair the defective product; (2) replace the defective product; or (3) refund the purchase price for the defective product paid by the purchaser. Except as otherwise provided by applicable state law, these remedies constitute the purchaser's <u>sole and</u> <u>exclusive</u> remedies and M-System's sole and exclusive obligation under this warranty.

4. Warranty Procedure.

If the purchaser discovers a failure of the M-System products to conform to the terms of this warranty within the Warranty Period, the purchaser must promptly (and, in any event not more than 30 days after the discovery of such failure) notify the relevant party as described below either by telephone or in writing at the below address to obtain an Authorized Return (AR) number and return the defective product to the relevant party. The designated AR number should be marked on the outside of the return package and on all correspondence related to the defective product. The purchaser shall return, at purchaser's expense, defective products only upon receiving an AR number. In order to avoid processing delays, the purchaser must include: copies of the original purchase order and sales invoice; the purchaser's name, address and phone number; the model and serial numbers of the returned product; and a detailed description of the alleged defect.

5. Warranty Period.

Signal Conditioner:	36 months from the date of purchase.
M-Rester:	12 months from the date of purchase.
Valve Actuator:	18 months from the date of shipment from
	M-System or 12 months from the date of its
	installation, whichever comes first.
Other Products:	36 months from the date of purchase.

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