SmartLink

Configuration Manual

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1 Scope of this Manual

This Configuration manual describes the configuration of the SmartLink system by means of Engauge service tool.

The Engauge service tool (version 2.2 and higher) is required for SmartLink modules delivered from September 2007 with software version:

- HCM-GPU A1002 (and higher)
- FCM-BPM A1002 (and higher)

For the previous SmartLink versions, refer to the SmartLink Configuration Tool User Manual revision 1.

2 Configuration of the SmartLink system

2.1 The connection between the computer and the SmartLink

Before you can start to configure the SmartLink you have to connect the SmartLink to your computer with the service tool Engauge installed. The communication between the computer and the SmartLink takes place by means of a serial connection. The user must select a free serial port on the computer. The chosen port must be set in Engauge (refer to section 2.2), the maximum comport number is COM24. On the SmartLink side the communication takes place by using the Non Isolated RS232 interface on the HCM-GPU module (refer to figure 1).

Figure 1 HCM-GPU Module / SmartLink

2.2 Making new Site in Engauge

Start up the service tool Engauge on the PC to which the SmartLink is connected.

If Engauge starts up with a site (a tree in the left part), then close that site by: **File** and **Close Site** (refer to figure 2).

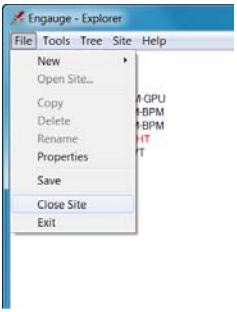

Figure 2 Close site

Open a new site by: **File**, **New** and **Site**.
In the Site control-Engauge window select **New**, enter the Site name and press the OK button (refer to figure 3).

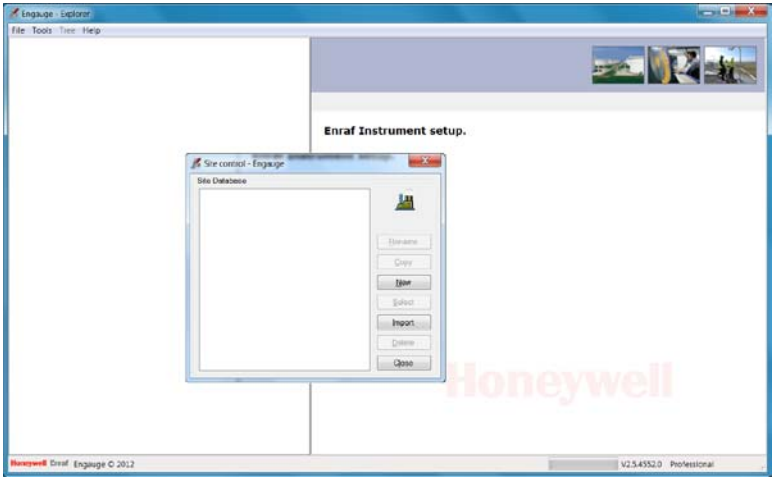

Figure 3 Site Database

Select the dimensions as required and press the OK button and confirm.

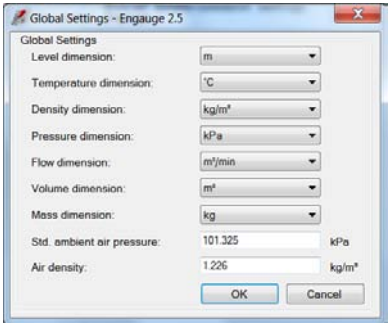

Figure 4 Global Settings

Select the site icon by the mouse and click the right mouse button (refer to figure 5).
Select: Add Device
Select: COM and select the Comport to which the SmartLink is connected.

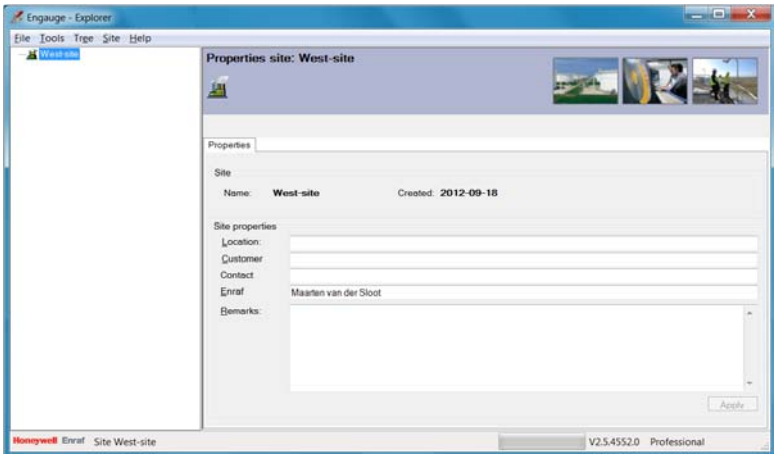

Figure 5 New Engauge Site

Select the com-port icon by the mouse and click the right mouse button
Select: Add FieldConnector
Select: SmartLink and enter a name; for instance: SmartLink-0
Press: OK

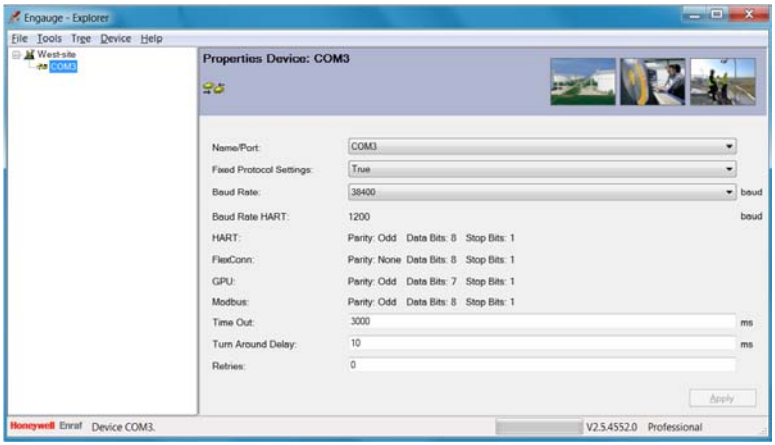

Figure 6 Com port settings

The default baud rate setting for the HCM-GPU module is: 38400

Note: *If the Baudrate needs to be changed, first change in the Board Specific TAB of the HCM-GPU module, then on this TAB.*
Do not alter the fields for Databit, Parity and Stopbits.

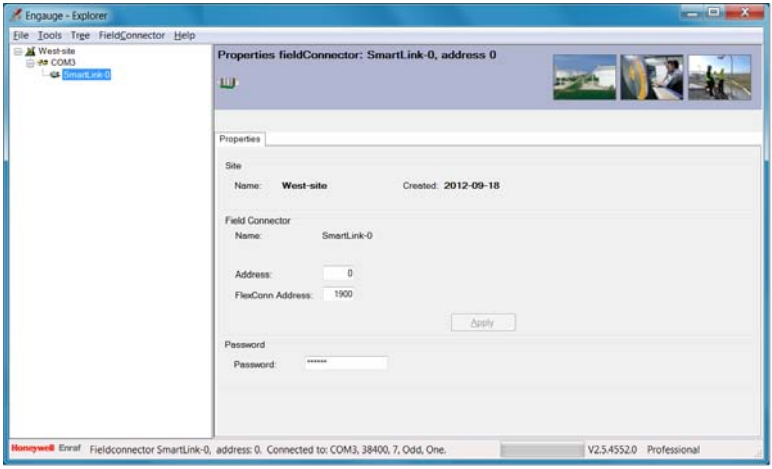

Figure 7 SmartLink properties

The SmartLink address ranges from 0 till 9 and is default set to 0. Each SmartLink, connected to the PC, must have a unique address.
The FlexConn Address is default 1900 and ranges from 1900 till 1999. Each FlexConn device, connected to the PC, must have a unique FlexConn address.

Note: *If the addresses are to be changed, first change on the TAB GPU Slave of the HCM-GPU module.*

Note: *An alternative way for the manual site built-up is to 'scan' the field (refer to description below).*
As soon as the new site is created (after the selection of the Global Settings), select the site icon by the mouse and click the right mouse button (refer to figure 8).
Select: Site Scan and press the 'Scan' button

Note: *If the scan button is not visible, maximize the Site Scan window (□).*

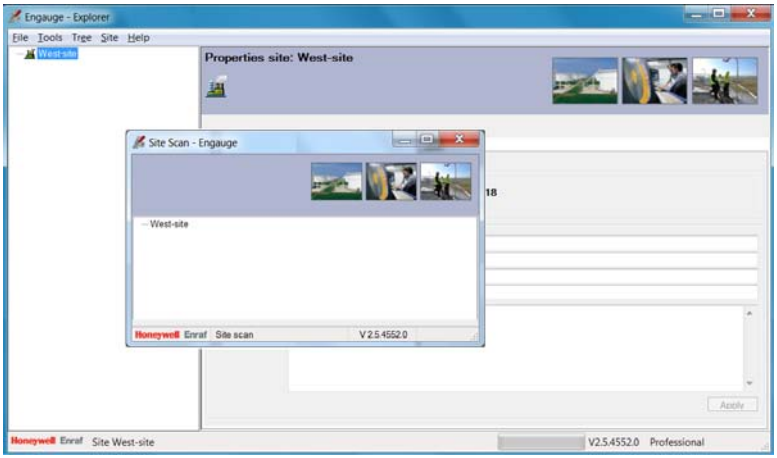

Figure 8 Site Scan

Continue with Scan FlexConn boards (refer to figure 9):

Select the SmartLink icon by the mouse and click the right mouse button
Select: Scan FlexConn boards.

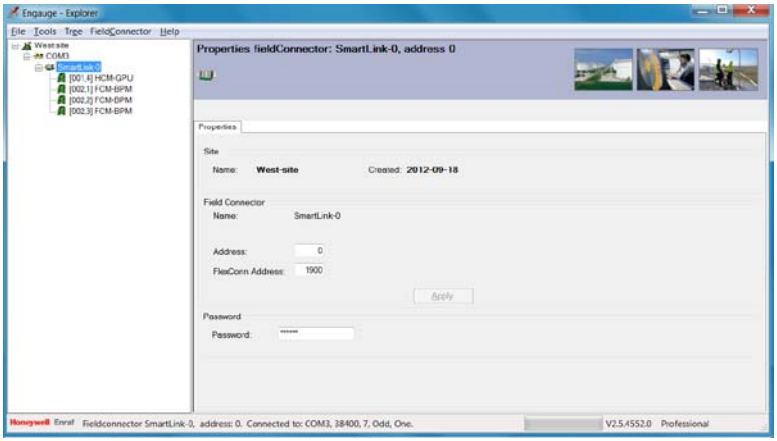

Figure 9 SmartLink modules

2.3 HCM-GPU Module

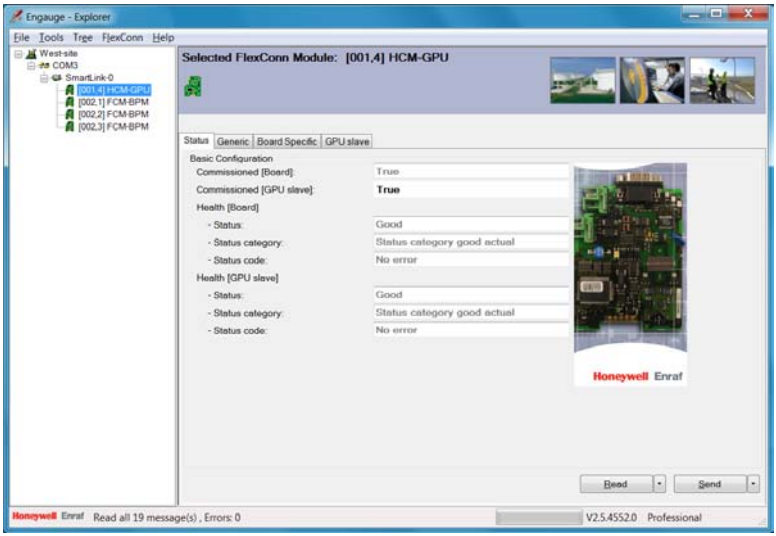

Figure 10 HCM-GPU Status

Select the HCM-GPU icon by the mouse and double click the left mouse button. The proper board descriptor will appear. To read the current data of this TAB sheet, press the Read button. Instead, you can also select to press the Read All button (available when extending the read function by the arrow at the right side of the read button). Then the current data of all TAB sheets are read.

The TAB sheet **Status** gives information about the health of the HCM-GPU module (refer to figure 10).

The TAB sheet **Generic** gives information on the installed software version and from there two commands can be given (refer to figure 11).

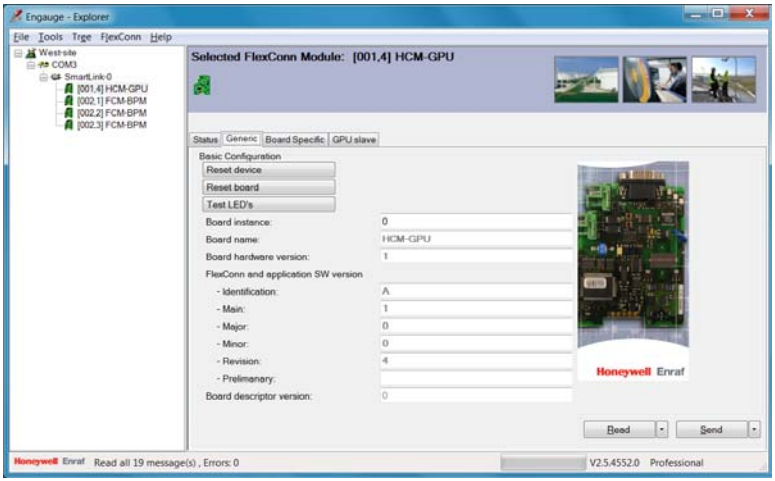

Figure 11 HCM-GPU Generic

Reset device button:	all modules of the SmartLink are reset
Reset board button:	only the HCM-GPU module is reset
Software version:	current installed software version for the HCM-GPU module.

The TAB sheet **Board Specific** provides host communication information as baud rate and turn around delay time (refer to figure 12).

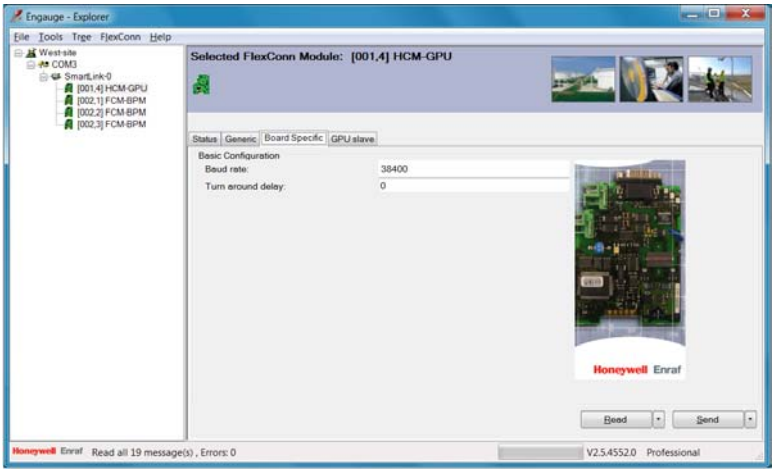

Figure 12 HCM-GPU Board Specific

Baud rate: Host communication baud rate of the SmartLink. The default setting is 38400. When required, the baud rate can be changed. The following settings are possible:

- 38400
- 19200
- 9600
- 4800
- 2400
- 1200

To make the change effective, press the Send button. When the baud rate is changed, also change the baud rate at the COM port icon (two levels higher).

Turn around delay:

This setting is used for host systems that cannot switch directly from sending to receiving. The delay time can be set between 0 and 2000 msec.

On the TAB sheet **GPU-slave** communication parameters can be set such as: GPU and FlexConn interface addresses, parity and modem control type (refer to figure 13).

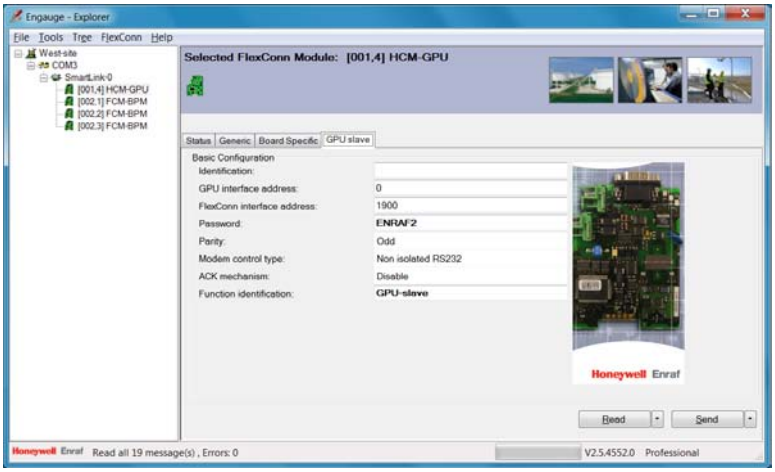

Figure 13 HCM-GPU slave

Identification: An 8 character long name for the HCM-GPU board.

GPU interface address: The address of the SmartLink, ranging from 0 till 9 (similar as the CIU address). Each SmartLink, connected to the same PC ComPort, must have a unique address. If the GPU interface address is changed from default, and the new address has been sent to the HCM-GPU module, then also change the address at the SmartLink icon Properties TAB sheet (one level higher).

FlexConn interface address: The address for FlexConn communication, ranging from 1900 till 1999. Each SmartLink, connected to the same PC ComPort, must have a unique address. Similar as with the GPU interface address, if changed from default, also alter this FlexConn address at the SmartLink icon (one level higher).

Password:	6 alpha-numerical characters. Changing of some entities requires a password. Default, ENRAF2 (or with newer software versions: AAAAAA) is used as password. Unless it is changed in this entity; then is requested for the password.
Parity:	Can be set to: Odd, Even or None. Standard Enraf GPU protocol (and FlexConn protocol) uses Odd parity.
Modem control type:	Can be: - Isolated RS232 (uses connector CN2, marked 1 to 4) - Isolated RS485 (uses connector CN3, marked 5 to 8) - Non isolated RS232 (uses 9 pin D-type connector) - Non isolated RS422 (uses 9 pin D-type connector) - Non isolated RS232 (handshake) (uses 9 pin D-type connector) When changed from default, make sure to adapt the communication line according to the new setting.
ACK mechanism:	Can be set to Enable or Disable. When enabled, the SmartLink transmits ACK characters about every 50 msec. after a host request is received and the reply message is not yet ready.
Function identification:	In the SmartLink, the HCM-GPU module has the function of: GPU-slave (the host is the GPU-master).

2.4 FCM-BPM Module

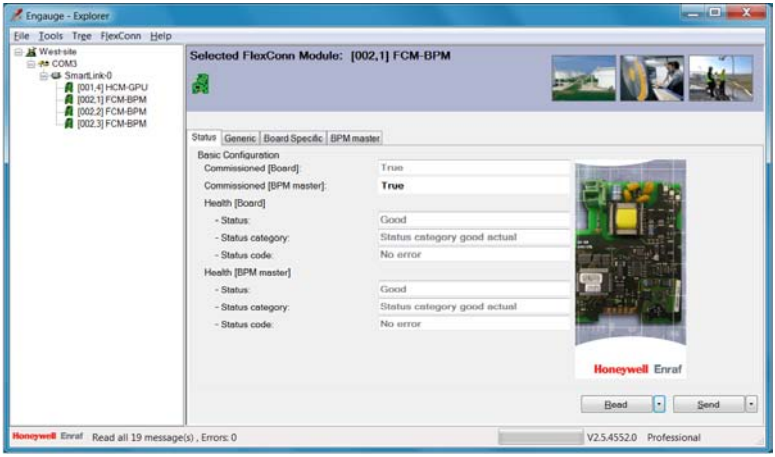

Figure 14 FCM-BPM Status

Select the FCM-BPM icon by the mouse and double click the left mouse button. The proper board descriptor will appear. The TAB sheet **Status** gives information about the health of the HCM-GPU module (refer to figure 14).

The TAB sheet **Generic** gives information on the installed software version, the board instance number and from there three commands can be given (refer to figure 15).

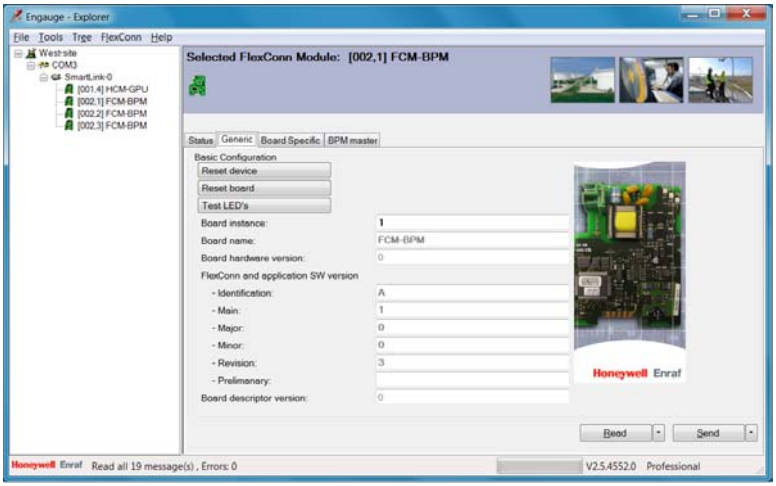

Figure 15 FCM-BPM Generic

Reset device button:	All modules of the SmartLink are reset
Reset board button:	Only the FCM-BPM module is reset
Test LED's button:	The TxD and RxD led's are switched on for 10 seconds. The selected FCM-BPM Module is identified. This is useful incase more than one FCM-BPM Module is present.
Board Instance:	If more than one FCM-BPM Module is present in the SmartLink, each FCM-BPM Module needs to have a unique board instance number. Range: 0 till 9.
Software version:	Current installed software version for the FCM-BPM module.

The TAB sheet **Board Specific** provides field communication information as baud rate and sensitivity (refer to figure 16).

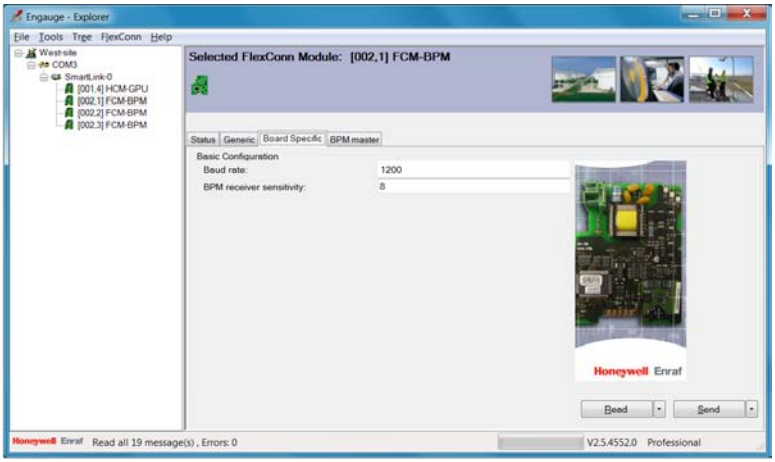

Figure 16 FCM-BPM Board Specific

Baudrate: The field baud rate on the BPM transmission line (Enraf field bus) can be set to:

- 1200
- 2400
- 4800

Note: *Baud rate selection of 4800 is only possible with 990 SmartRadar FlexLine connected to the Enraf Fieldbus.*

BPM receiver sensitivity: This entity ranges from 1 to 8, whereby 8 represent the highest receiver sensitivity (5 mV). Each step down represents an attenuation of approximately 5 to 6 dB.

On the TAB sheet **BPM-master** communication parameters can be set such as: GPU and FlexConn instrument start and stop addresses and a time-out (refer to figure 17).

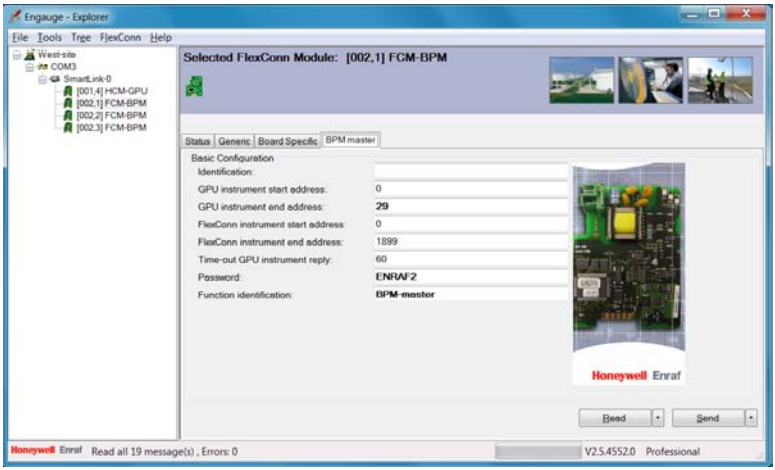

Figure 17 FCM-BPM master

Identification: An 8 character long name for the FCM-BPM board.

GPU instrument start address:
GPU instrument stop address:

When one FCM-BPM Module is used in the SmartLink, the default start and stop addresses (0 and 99) can be used.
When two or three FCM-BPM Modules are used in the SmartLink, a division must be made of the full range; for instance:
0 till 49 for the first FCM-BPM Module
50 till 99 for the second FCM-BPM Module
or
0 till 29 for the first FCM-BPM Module
30 till 59 for the second FCM-BPM Module
60 till 99 for the third FCM-BPM Module

FlexConn instrument start address:
FlexConn instrument stop address:

When one FCM-BPM Module is used in the SmartLink, the default start and stop addresses can be used.
When two or three FCM-BPM Modules are used in the SmartLink, a division must be made, like described above.

Note: *This is only required when FlexConn gauges are connected (like the SmartRadar FlexLine).*

Time-out GPU instrument reply:

A time-out can be specified on the instrument's reply record. The time-out can be set between 10 and 2000 msec.

Password: Refer to the password description of the HCM-GPU module.

Function identification: In the SmartLink, the FCM-BPM module has the function of: BPM-master (the instrument is the BPM-slave).

2.5 Configuring a service (second) HCM-GPU module

A second HCM-GPU can be installed as a service port. For instance, a PC with the service tool Engauge can be connected, for all service purposes, without interrupting the Host computer.

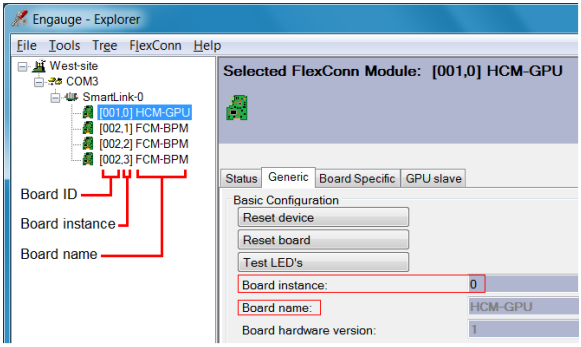

Figure 18 Board instance number

With identical boards installed, each HCM-GPU board must have a unique Board instance number.
The recommended way is to alter the Board instance number from the first HCM-GPU module (the one which is connected to Engauge at the moment), from default (0) to for instance: 1.
Then the second (service) HCM-GPU module can be installed (refer to installation guided HCM-GPU module). As this will have the default number, the two board instance numbers are unique.

Continue to configure all required entities as explained in section 2.3.

The test LED's button now has a function to identify the module.
(the TxD and RxD led's are switched on for 10 seconds, thereby identifying the selected HCM-GPU module).

Via the service HCM-GPU module, the first (main) HCM-GPU module (and also the FCM-BPM modules) can be reset in case that is required.

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