

Masoneilan™ SVI™ II AP

Advanced Performance Digital Positioner
Bench Quick Start

Instruction Manual (Rev. F)



About this Guide

This instruction manual applies to the following instruments and approved software:

- SVI II AP
 - SVI II AP DTM version 2.10 or later
 - ValVue 3.10 or later

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Bench Quick Start

The goal of this procedure is to perform a configuration of the SV II AP up to running Find Stops and Autotune on a bench. Additionally, this document also provides guidance on when to run signatures and produce associated reports. This procedure uses Baker Hughes' ValVue™ 3 software (ver. 3.20 or later) and the SVI II AP DTM (ver. 2.10.1 or later).

WARNING



Changing the Application to Normal mode may move the valve. It may be dangerous if someone is still working with the valve.

This procedure consists of the following major steps:

- “1. Physical Setup” on page 4
- “2. Software Install and Configuration” on page 6
- “3. Perform Setup Wizard” on page 11
- “4. Save Settings and Device Baseline” on page 12

1. Physical Setup

1. Buy a kit similar to the one shown in Figure 1. This kit contains a HART[®] Loop Calibrator (with wall power supply and loop test lead wires) and either a USB connector or a serial port connector for your laptop. The setup shown in Figure 1 is a GE product and can be purchased at:
<https://www.gemeasurement.com/test-calibration/calibrators/ups-iii-loop-calibrator-ma-v>
2. Download and install software to use HART[®] loop on your PC. For example, MACTek[®] USB or RS232 software (Universal VIATOR Installer v3.1.9 with drivers for 32 bit Windows XP/Vista/7/8) available at software <https://www.mactekcorp.com/download.php>. When installed this software should the serial or USB port into which it is plugged. If it does not, the VIATOR installation includes a utility called *USB View* for viewing USB connections. For a serial connection, you can check using Windows Device Manager.
3. Prepare the HART[®] hardware by:
 - a. Plugging the HART[®] Loop Power Calibrator power supply in and setting up the calibrator as per its manual, ensuring the mode is correct to supply a 4 - 20 mA.
 - b. Plugging the USB plug or serial connector into the appropriate connector on the laptop/PC. Opening the cover on the SVI II AP and connecting the other end of the USB/Serial connector to the 4 - 20 mA IN connections.
 - c. Connecting the loop calibrator cables to the 4 - 20 mA IN. Maintain polarity + and -, respectively.

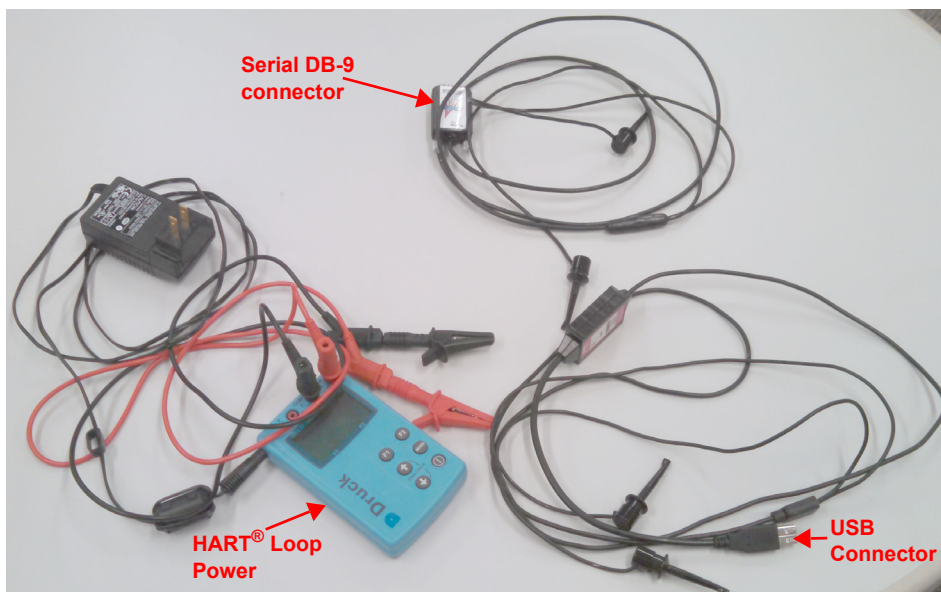


Figure 1 Bench Setup Equipment

4. Mount the SVI II AP on the actuator per instructions in the SVI II AP Quick Start Guide (GEA19679) or Instruction Manual (GEA19681). These manuals are available for download at <https://valves.bakerhughes.com/resource-center>.
5. Pipe the SVI II AP to the actuator. Ensure:
 - √ The airset provides the SVI II AP with at least 5-10 psig more supply pressure than required by the actuator (maximum spring pressure):
 - Supply pressure for single acting SVI II AP and AP High Flow:
20 -100 psi (1.4 - 6.9 bar) (138 - 690 kPa)
 - Supply pressure for double acting SVI II AP:
25 - 150 psi (1.73 - 10.3 bar) (172 - 1030 kPa)
 - Minimum tubing diameter 1/4" (6 mm x 4 mm)
 - √ Any other pneumatic accessories are correctly piped without restricting the SVI II AP output(s) to the actuator.

2. Software Install and Configuration

1. Download the SVI II AP DTM and ValVue 3 and install. See “Masoneilan Software” on page 13 for download site.
2. Download the Codewrights HART® Communication DTM and install. See “Code wrights HART® Communication DTM” on page 14 for download site.
3. Sign on to ValVue 3 with default values:
 - √ User name *admin*.
 - √ Password *ValVue 3*.

NOTE



For security purposes, you are forced to change your password during the first use.

The ValVue and SVI AP DTM license trial period works as follows:

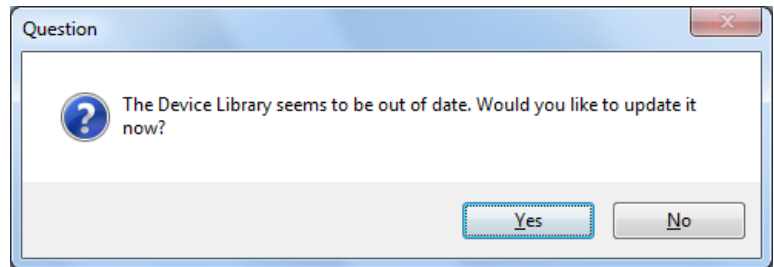
1. *Once you download and install the ValVue software, you are granted a 30 day trial period. During the 30 days, you have access to all the advanced features of ValVue and the SVI II AP DTM.*
2. *Once the first 30 days expires, you lose the advanced features of both ValVue and the SVI II AP DTM. You then have an additional 30 day period with just standard features, after which you must register to continue using the product. We strongly encourage you to register your license with us as soon as possible. Contact Baker Hughes at software.reg@bakerhughes.com.*

The evaluation periods for both are independent of each other and commence with first use.

NOTE



If you have updated ValVue, a dialog appears when you open ValVue3:



Click:

✓ **Yes** and the library is updated.

✓ **No** and you need to manually updated from the DTM Library Management dialog to access any new functionality.

ValVue version 3.30 or later and SVI II AP 2.20 or later. For earlier versions continue with manual DTM Library update.

4. Click **Settings > DTM Library** and Figure 2 appears.

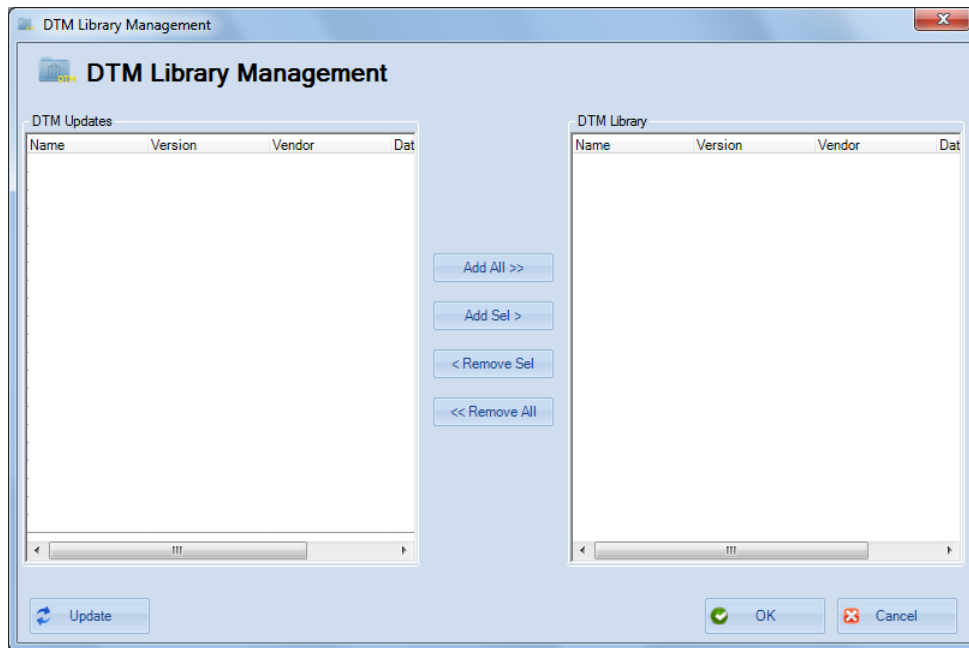


Figure 2 DTM Library Management: Before Update

- Click **Update** and once the *DTM Updates* list refreshes, select the **HART Communications** and the **SVI II AP HART 5**, **HART 6** or **HART 7**.

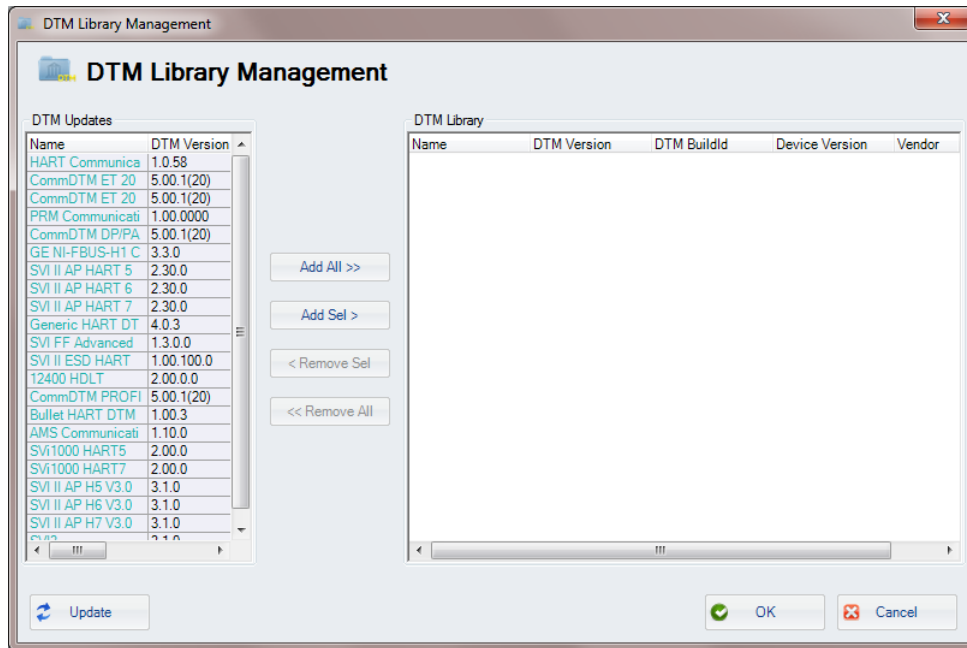


Figure 3 DTM Library Management: After Update

- Click **Add Sel** and then click **OK** to close *DTM Library Management* dialog.
- Click **Settings > Field Networks**, click **Add** and Figure 4 appears. Select **HART Modem** and click **OK**.

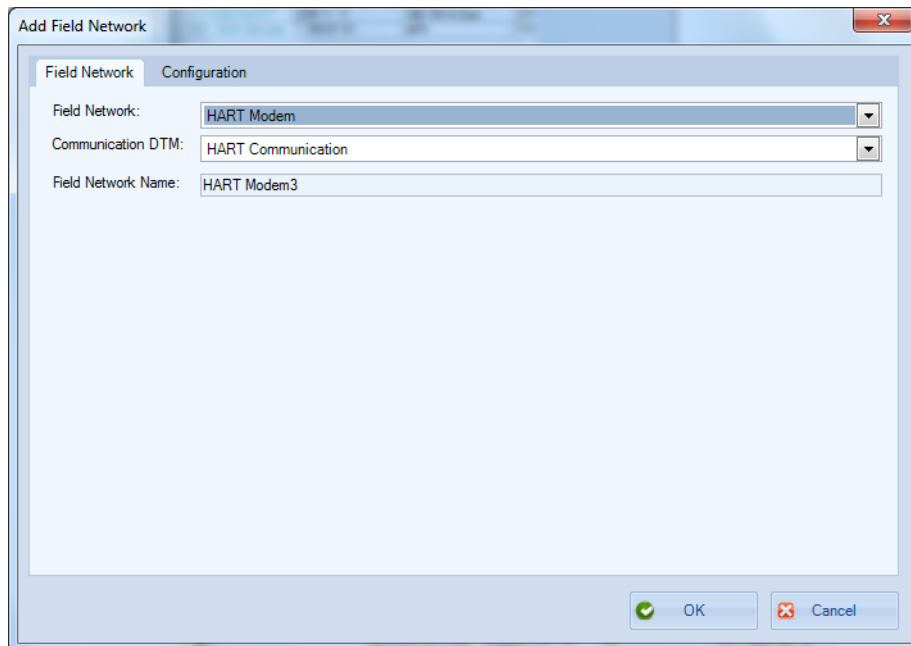


Figure 4 Add Field Network

8. Click **OK** again to add the *HART Modem* to *Network View* and Figure 5 appears.

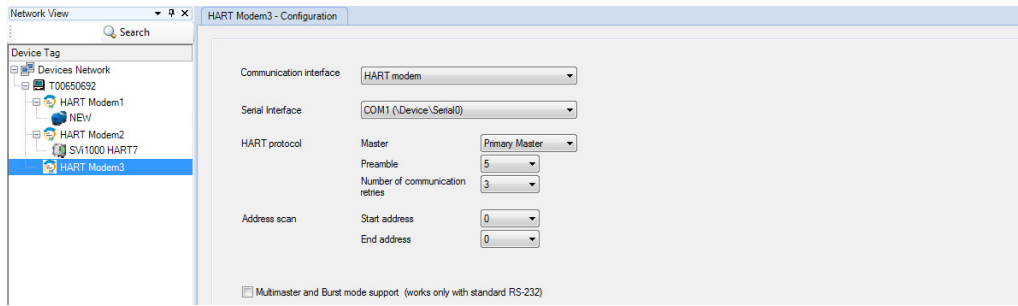


Figure 5 HART Modem Configuration Tab

9. Ensure the *Serial Interface* pulldown and the *Address scan* fields are correct. Click **Apply** and then **OK**.

NOTE



If device is connected (or powered through DCS), set Master to Secondary Master.

10. Right-click on the **HART Modem** and do one of the following:

✓ Selecting **Network > Rebuild Network**.

or

✓ Selecting **Find New Devices**.

or

✓ Clicking **Add New Device**, Figure 6 appears, highlighting **SVI II AP HART 5, 6 or 7** and clicking **OK**.

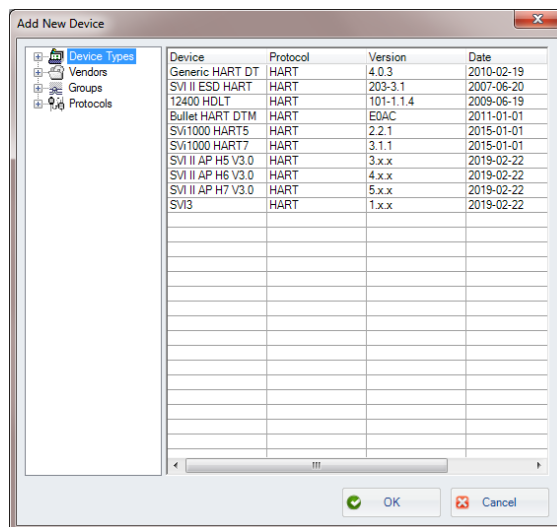


Figure 6 Add New Device

11. Right-click on the SVI II AP in the *Project* pane and click **Connect**.
12. Click **OK** to the DTM evaluation period warning, if it appears. The SVI II AP DTM opens.
If the SVI II AP DTM doesn't open automatically: Select the SVI II AP device you added, right-click and select **Online Parameter**.
13. Check that the SVI II AP is connected (see red oval in Figure 7).

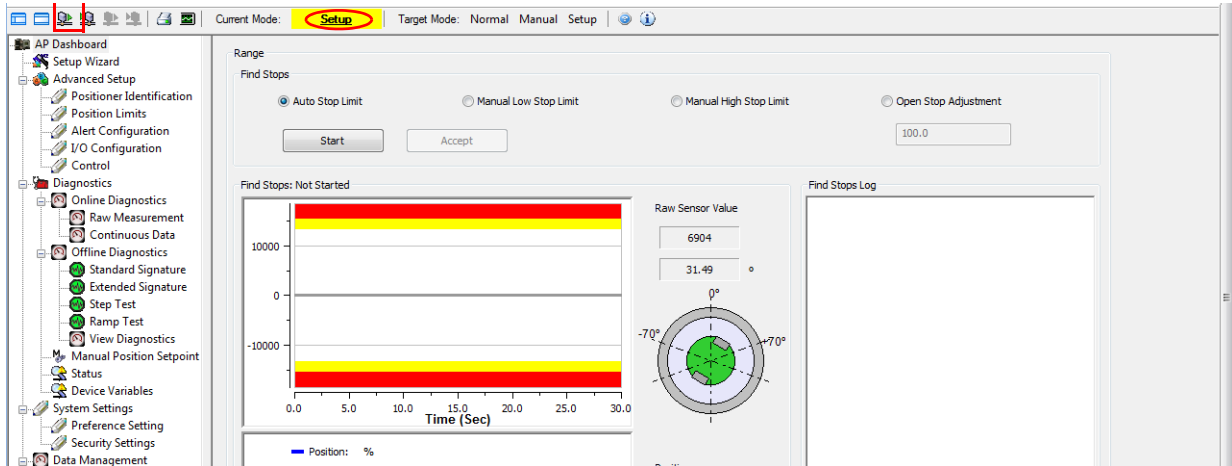


Figure 7 Connected

If not it does not connect:

- ✓ Right-click on the device in the topology pane, select **Additional Functions > DTM Address** and Figure 8 appears. Correct the *Polling Address* and click **Apply**. Disconnect and then reconnect.

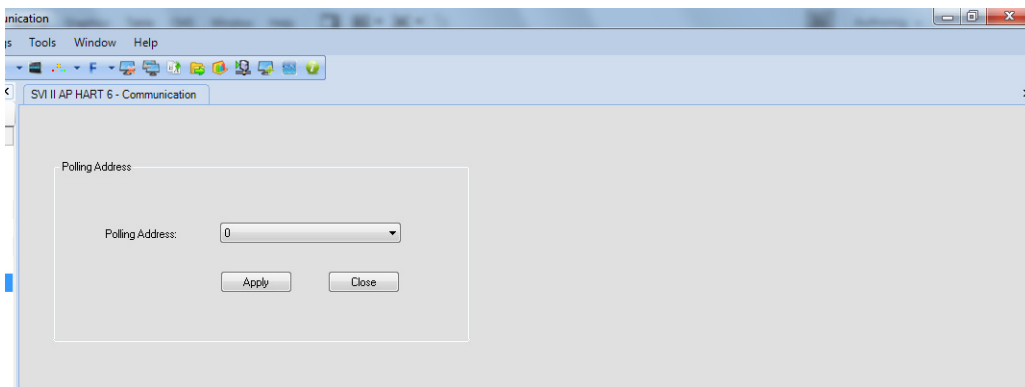


Figure 8 Communication Tab

14. Click **Upload All Parameters** icon (see red box in Figure 7).

NOTE



Upload means to pull data from the SVI II AP and load data into DTM onto the PC. Download puts data from the DTM into the SVI II AP.

3. Perform Setup Wizard

Use the *Setup Wizard* to configure the basic setup for the SVI II AP (Figure 9).

WARNING

This procedure moves the valve.



Before beginning, confirm that the valve is isolated from the process. This procedure exhausts and then fills the valve actuator to supply pressure and therefore strokes the valve over its full range.

*Supply pressure **MUST NOT** exceed the actuator pressure rating marked on the actuator. Positioner supply pressure **MUST BE** at least 5 psi higher than the upper spring range of the valve.*

CAUTION



*Procedures (e.g. Find Stops, Auto Tune, Step Test, Ramp Test, Signature) should **NOT be** invoked if the ValVue sequencer is running. For information on the sequencer, see ValVue 3's online help.*

Do not Auto Tune if manual tuning has been used. Auto Tune creates new parameters that override the manual tuning parameters.

For a successful Auto Tune process, the supply pressure must be at least 5 PSI (34.5 kPa) above the spring range.

1. Select the **Setup Wizard** tab and ensure the mode is in *Setup*.

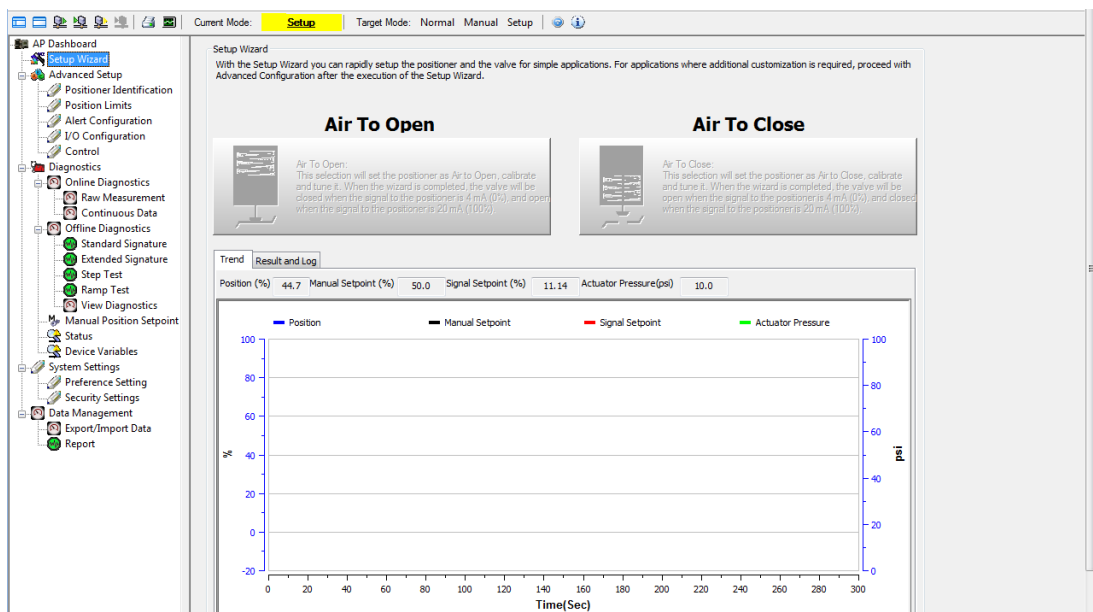


Figure 9 Setup Wizard Tab

2. Click either **Air To Open** or **Air To Close**, as appropriate.

4. Save Settings and Device Baseline

1. Perform any needed diagnostic tests and run tests. See the SVI II AP DTM online help for steps to configure and run diagnostic tests. Save the results.
2. After finishing with the control valve, make sure all saved reports contain all necessary order information, by:
 - a. Right-clicking the AP device in the *Project* pane and select **Additional Functions > Report** and the report appears.



General Information					
Device Tag	SVI TAG	Device S/N	9042009	Device ID	9042009
Long Tag	SVI POSITIONER LONG TAG		Model Code	Seelabel on positioner	
Dev. Type/Rev	00CE / 01	Polling Address	0	Date	6/19/2009
Diagnostics Level	Advanced Diagnostics		DTM Rev	3.1.0 Build 031220	
Descriptor	Descriptor		Firmware Rev	4.x.x	
Message	Message				
Option Config	Diagnostics Plus; Position Retransmit; Output Switches; Single Acting; Digital Input;				
Configuration Information					
Input Signal Range	Lower	4.00 mA	PosRetransmit	Lower	0.00 %
	Higher	20.00 mA		Higher	100.00 %
Position Error	On	Error Band	2.00 %	Deviation Time	3.00 Sec
User Interface	Language	English		Pressure Unit	psi
	Button Lock Level	Allow Local Buttons		Digital Input	On
Position Sensor	Internal Position Sensor				
DO SW #1	Function	Always Normal Position	Normally	Open	Value 0.00
DO SW #2	Function	Always Normal	Normally	Open	Value 0.00

Figure 10 Example Report

NOTE



Use the icon bar on the top of the report to export this to a Word or pdf file, which can be printed or saved.

- b. Clicking the *Disconnect* icon  on the ValVue 3 toolbar.
 - c. Clicking **Network > Exit** to close the DTM. If you have unsaved data, click the *Download Parameters to Device* icon  to save.
3. Connect the AP wires to next item on order. Click **Import and Add New**. Go to step 4 of “2. Software Install and Configuration” on page 6 and repeat.

Appendix A: Download Instructions

Masoneilan Software

Download and Install ValVue3

1. Go to the *Resource Library* (<https://valves.bakerhughes.com/resource-center>) and enter *ValVue* in the search field (arrow in Figure 11).

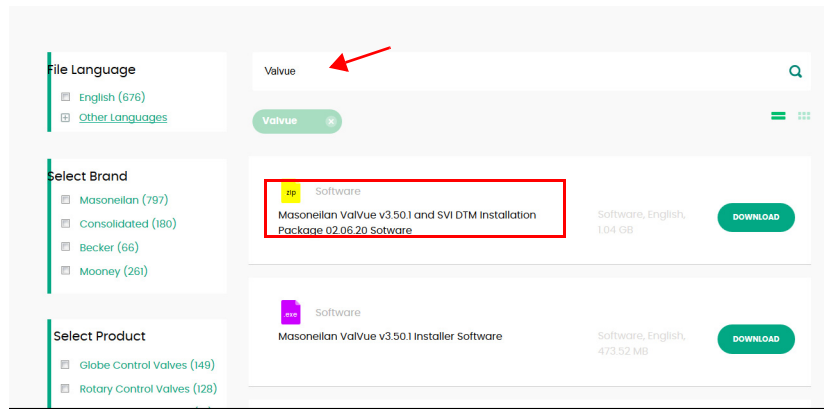


Figure 11 Resource Center: Search for Valve 3

The results appear (red box in Figure 11).

2. Use the arrows to move through the selections. Select **Download** below *ValVue V3.30 Installer Download* and Figure 12 appears.

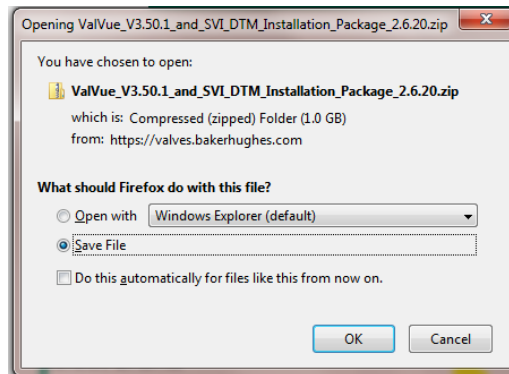


Figure 12 Opening Dialog

NOTE



The dialog that appears for download varies by the program used.

3. Click **Save File**, click **OK** and it saves to the *Windows Downloads* folder.



For fastest installation, save the download file to your laptop/PC. *Don't install from the website.*

4. Open *Windows Explorer* and click the **Windows Downloads** folder.



If you have a previous install of ValVue3 you are prompted to uninstall first and then you must run the installer again to finish the upgrade.



If you are upgrading from ValVue 2.x you must update the SQL database location to match ValVue3's.

5. Double-click on the installer and follow the instructions to install.

Code wrights HART[®] Communication DTM

You must download and install this DTM to use Masoneilan's HART[®]-based DTM.

Go to the link: <http://www.codewrights.biz/index.php/en/downloads/software> and follow instructions to download and install the CW_CommDTM_HART.

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