

## Advantages of a PC Based HART Communicator

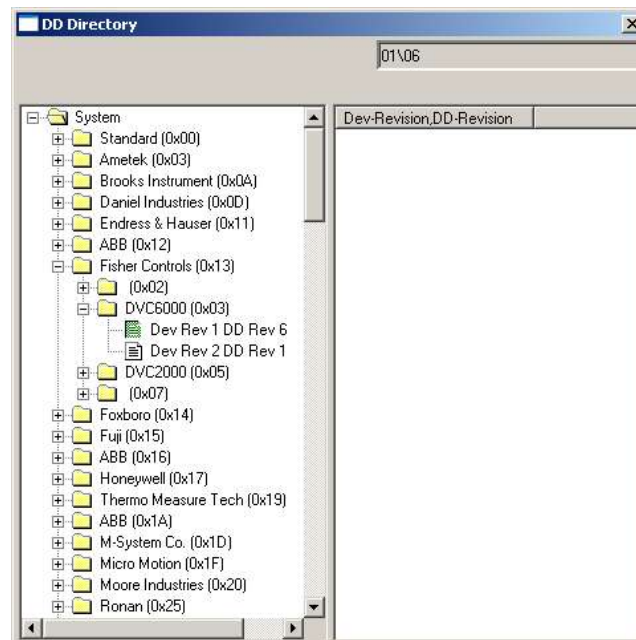
### Introduction

It's now time to upgrade to a new HART Communicator. Your old hand held HART Communicator is obsolete and receives limited support. You shop around and find that it costs between \$3000 and \$7000 for a new hand held HART Communicator. A Google search reveals a PC based alternative. Will the PC alternative perform as required? What should you look for?

The PC based HART Communicator has been around for many years, but until recently it has not been able to replace the hand held HART communicator. The main reason is that it could not communicate at the DD level with all the devices in the DD library. Recent developments have eliminated that problem and now is a good time to review the capabilities of a PC based HART Communicator.

### Device Descriptions (DD's) and the SDC-625

The key criterion is that the program must be "DD based". This means the software uses the HART Device's DD object file to present menus, variables, and methods. The device manufacture spent a considerable amount of time developing the DD so that the full functionality of the device is available to the user. The DD was tested extensively for release to the HART Foundation DD Library. This DD is the only approved way to interface to a HART device. Some programs use files that are derived from the DD. However, this approach is not safe because the device manufacture does not test the derived files. Only the compiled DD binary file is tested by the device manufacture.





The HART Communication Foundation (HCF) recognized the need for a standard PC based interface into the DD. They applied their expertise into the standard and in 2004 released the SDC-625 Smart Device Communicator. The SDC-625 uses the DD binary files just like the hand held HART communicator. An SDC-625 developers group was created, where member companies had access to the source code and could improve the software. All developer companies get access to the improved code, so the quality and functionality increases rapidly. This open source method of software development is quickly becoming a standard practice for software creation worldwide.

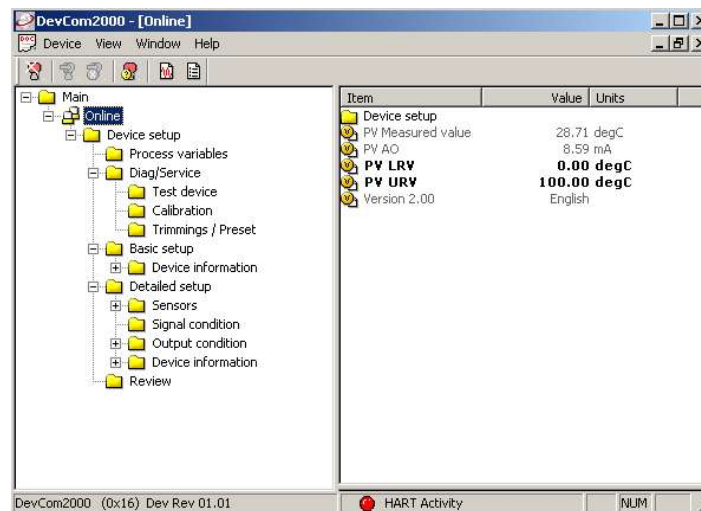
A new requirement by the HART Foundation is that all new DD's must pass a testing protocol using the SDC-625. This ensures all DD's are bug free and behave as expected. So any PC based communicator that is built using the SDC-625 is also guaranteed to work as the device manufacture intends.

### Ease of Updating

Once you have established that the candidate PC based HART Communicator is DD based, you can look deeper into other criteria. One is the DD Library itself. The DD Library is updated 4 times per year by the HART Communication Foundation (HCF). Does the software contain all devices released by the HART Foundation? Is it easy (and inexpensive) to update the library? Some hand held HART communicators are extremely difficult and expensive to update. PC Based HART Communicators can take advantage of the internet to maintain the library.

### Ease of Use

A very important advantage of a PC based HART communicator is that it has much more screen space to display information. The menu structure of the DD can be expanded or contracted as required. This enables you to jump directly to the information or function you are interested in. No more digging through menus to perform a task, then backtracking to the main menu to then dig down another path to do something else. In the PC communicator everything is available at a glance. With a full keyboard available, data entry is also much improved.





The Windows interface is known to everyone worldwide. Training time is thus greatly reduced. Menus allow functions to be readily available – again, no need to dig through pages of menus to find what you want.

### Single Function vs. Multi-function

Hand held HART Communicators can only perform one function - HART Communications. A PC based solution offers the advantage of having all your needs met with one tool: Email, user manuals, operating procedures, reports, contact database, etc. are all available on your PC. In fact HART Communications on your PC allows integrating the HART information easily into your report database, contact management, and email. This results in higher productivity for the engineer or instrument technician, and also eliminates one extra piece of equipment.

### Device Configurations

Documenting and managing device configurations are other important criteria. Some hand held HART communicators have memory limitations that limit the number of configurations you can save. Also, it may be difficult or impossible to transfer the configurations to the PC for archiving or viewing. PC based communicators have no practical memory limits. Configurations can be saved and viewed using standard programs. In a PC based communicator, make sure the saved configurations can be viewed in a user friendly way. PDF files make great looking reports possible. Customizable reports are also a nice touch.

### XYZ Calibration Service

DevCom2000, Rev 4.5, Device Configuration File

File: C:\Program Files\ProComSol\DevCom2000\IP-103 \_7356126-4.pdf  
Tag: P-103  
Device ID: 7356126  
DD: 26/06/03/06  
Date (yyyy-mm-dd): 2010-12-09  
Time (hr-mn-sc): 09:36:19 AM  
Tech: Joe Tech  
Notes: Transmitter Commissioning

Label	Value	Units
Sensor Temperature	23.0	degC
Sensor Temperature Units	degC	
DD Revision	5	
Manufacturer	Rosemount	
Model	3051	
Num req preams	5	
HART Universal	5	
Field Device	3	
Software	176	
Hardware	1	
Physicl signl code	Bell 202 current	
Dev flags	0x00	
Electronics S/N	7356126	
Polling Address(0-15)	0	
Tag	P-103	
Message		
Descriptor		
Date	04/09/2003	
Write Protect Status	No	
Distributor	Rosemount	
Transmitter Serial Number	1340939	
Status group 1	0x00	
Status group 2	0x00	
Status group 3	0x00	
Option	Primary Variable	
Mode	Off	
Pressure Units	inHg	
Pressure	0.43	inHg

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### Size and Mobility, Bluetooth as a Solution

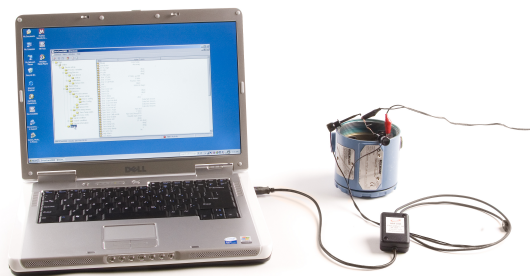
In the past it was difficult to use a PC based HART communicator in hard to reach places. Carrying a laptop up a ladder is dangerous. However, now there are Bluetooth based HART modems that provide great convenience. Connect the Bluetooth HART modem in the hard to reach location, and then climb back down to safety and use your PC based HART communicator safely from the ground.

### Conclusion

With the advent of the SDC-625, full featured PC based HART Communicators are now a reality. The SDC-625 uses the DD binary files supplied by the device manufacturer.

The DevCom2000 Smart Device Communicator software from ProComSol, Ltd is based on the SDC-625 software from the HART Communication Foundation. It was released in 2007 and has benefited from the open source development process and from user feedback. It is now feature rich, stable, and reliable. It offers full configuration saving and download. Configuration reports are easy to read and distribute via PDF files that are customizable. It can be used with either HART USB modems or HART Bluetooth modems, and the DD Library is easy to update.

The DevCom2000 Smart Device Communicator is a PC based HART Communicator that offers many advantages over hand held communicators: ease of updating, ease of use, multi-function capability, ability to document and manage device configurations, and most importantly – significant cost savings.



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