APPLICATION GUIDE

AG030616

SITRANS LR 200 and SIMATIC PDM

Connecting SITRANS LR 200 to SIMATIC PDM using HART[®] modem

Objective [.]	Become familiar with the SITRANS LR 200	wiring requirements and HART modem				
	 Become familiar with SIMATIC PDM config 	Become familiar with SIMATIC PDM configuration tool				
Fauinmont	SITRANS LR 200 instrument	HART modem interface				
Equipment:	 SITRANS LR 200 instruction manual 	Terminal screwdriver				
	SIMATIC PDM ver. 5.2 (SP. 1)	PC or Laptop				

While every effort was made to verify the following information, no warranty of accuracy or usability is expressed or implied.

Overview:

SIMATIC PDM is the Siemens configuration software used to set up the SITRANS LR 200. All parameters are accessed through PDM and projects containing configuration data are saved. SIMATIC PDM also provides diagnostic information, permitting the user to view echo profiles and check set points.

To ensure that SIMATIC PDM connects properly, please complete the two processes outlined in Initial Setup:

- Updating the Device Description
- De-activating Buffers

This Application Guide discusses the following

- setting up SIMATIC PDM
- setting up a HART network
- adding the SITRANS LR 200 HART to a project
- viewing and editing parameters
- using SIMATIC PDM LifeList for quick access

Siemens Milltronics Process Instruments Inc.

[®] HART is a registered trademark of the HART Communication Foundation.

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Innitial Setup

Updating the Device Descriptor

NOTE: Make sure that SIMATIC PDM software is not running while the device descriptor is updated.

The latest SITRANS LR 200 HART device description for Simatic PDM is available for free download on <u>www.siemens-</u> <u>milltronics.com</u>:

- 1. Go to **Downloads** on the SITRANS LR 200 product page and select **HART Device Descriptor version 1.95 for SIMATIC PDM**.
- 2. Save the ZIP file to a directory on your terminal and then double click to open it.
- 3. In the ZIP window, double click **DeviceInstall.exe** and follow the directions in the installation wizard.
- 4. After installation, close and delete ZIP file.
- 5. Open SIMATIC PDM.

De-Activating Buffers

This de-activation is required to align SIMATIC PDM with the HART modem for Windows 2000 $^{\circ}$ and Windows $^{\circ}$

XP operating Systems. (CAUTION: Professional version only. PDM does not operate in Windows XP Home version.)

- 1. Click Start/Settings/Control Panel to begin configuration.
- 2. Double click **System**, select the **Hardware** tab, and click the **Device Manager** button.
- 3. Open **Ports** folder and double click the COM Port used by the system to open the Device Manager window.
- 4. Select the **Port Settings** tab and double click the **Advanced** button.
- 5. If the Use FIFO buffers radio box is selected, click to unselect.

FIFO buffers	Use FIFO buffers (req	uires 16550	compatible UAR	IT)		ОК
	Select lower settings to	o correct co	nnection probler	ns.		Cancel
	Select higher settings I	for faster pe	rformance.			Defaults
	Receive Buffer: Low (1)	1			 (14)	
	Transmit Buffer: Low (1)		ï	i	 (16)	

6. Click **OK** to close out. Close all screens and then reboot.

[®] Windows is a registered trademark of the Microsoft Corporation

APPLICATION GUIDE

Procedures

Wiring in the HART Modem

- 1. Using the instruction manual as a guide, terminate the wires inside the LR 200 housing to the appropriate terminals.
- 2. Connect the HART modem across the wires powering the SITRANS LR 200. These wires must be terminated across a 250 Ohm resistor in series with the loop.



Configuring with SIMATIC PDM

- 1. Double click the SIMATIC manager icon.
- 2. Select FILE/NEW to open the New Project window and then enter the project name. Click OK.

	N	ew Project			×
		User projects	Libraries Multiprojects		
		Name sample project	Storage path C:\SIEMENS\STEP7\	S7proj\sample	P
project name 🛛		Name: another sample p Storage location (C:\SIEMENS\ST	roject path): EP7\S7proj		<u>T</u> ype: Project ▼ <u>B</u> rowse
		ОК		Cancel	Help

3. Select VIEW/Process Device Network View to access the Process Device Network View window.

🖅 🎒 another sample project	networks	

4. Right click **networks** and select **Insert New Object/HART modem**.

🖶 another sample project (Pr	ocess Device Netwo	ork ¥iew) C:\SIEMENS\.	
⊡-⊉) another sample project ⊕-क्षि networks	PA003446	📲 HART modem	

Verifying COM Port

If this is an initial setup, it is valuable to verify that PDM is using the correct COM Port.

- a. Open the Network tree in the left window pane by clicking the + sign.
- b. Click the computer icon to access **Com interface 1** in the right pane.
- c. Right click **Com interface 1** and select **Object Properties** to open the **COM interface** window.
- d. Select **Connection** tab to verify that the selected COM-Port matches the one used by the terminal. (If not, change the COM Port number.)
- e. Click **OK** to shut window and continue setting up HART modem.
- 5. Right click **HART modem** in Process Device Network View window and select **Insert New Object/HART device** to open the Insert Device Objects window.

	Insert SIMAT	IC PDM HART device Object(s)		
	Name:	LR 200	•	Select object
Fill in Name field and	Address:	0 (0 to 15)		
leave the Address at 0	Number:	1 • (Maximum: 16)		
	Device type:			Assign
		C Automatic subnet configuration		
		Authorization information: 0 TAGs used		
	OK		Cancel	Help

6. Click **OK** to re-open Process Device Network View window.



7. Double click LR 200 to open the User ID window. Select Specialist and click OK.

User	<u>c</u>
C Maintenance engineer	OK
 Specialist 	Cancel
Password:	Help

8. Go to Sensors/Level/ Echo/SIEMENS MILLTRONICS and double click Sitrans LR 200 to open the device window.

Actuators		🔺 ОК
Electropheum	atic	
⊕ HCF		Cancel
Sensors		
🗄 Flow		
🖻 Level		Help
🕀 Capacitive	•	
🚊 Echo		
🗄 Endre	ss+Hauser	
	INE	
	ENS	
SIEMI	ENS MILLTRONICS	
- Si	trans LR 200	
Si Si	trans LR 300	
Si Si	trans LR 400	
🗄 VEGA		D
😟 Hydrostati	c	Device identificatio
🛨 Liquid Analysis	\$	
🕂 Pressure		Catalog import
· · · ·		
Description:	HART Echo Field Device Sitrans LR200	
Jrder No	7MI 542vvvv	



9. Click Display Process / Measured Value button to connect to the SITRANS LR 200 and display real time information.

Viewing and Editing Parameters and Application Review

SIMATIC PDM provides full access to the SITRANS LR 200 parameters and to PDM's features. The parameters used to operate the SITRANS LR 200 are accessed through the folder tree in the left pane of the LR 200 Project Manager window. The PDM application review features are accessed through the Project Manager Window menu bar.

Parameter Viewing and Editing

- active fields are white; static fields are gray
- whenever possible, use drop down arrows to select values
- basic, detailed, and quick setup information available
- review features gives parameter setting overview
- use upload and download buttons to change device settings and to store accumulated application data

Application Review Features

Use Menu bar features, including the following, to access application data and adjust LR 200 performance:

- auto TVT
- self test
- master reset
- display value
- echo profiles



APPLICATION GUIDE

SIMATIC PDM LifeList Access

PDM LifeList gives you immediate access to the instruments connected to your terminal. Settings can be monitored and parameters can be changed; however, these changes will not be reflected in the SITRANS LR 200 permanent project file. They can be saved upon exit and may then be used to change settings after PDM is accessed in the standard fashion.

- 1. In your Simatic program folder, select **Step 7** and then click **SIMARIC PDM LifeList** to select communication device.
- 2. In the LifeList setup window, select the following:
 - HART Modem
 - With Diagnostics
 - Scan subnets

SIMATIC PDM LifeList			×
Communication C PROFIBUS C HART Modem	Address COM port	0 … 126 СОМ1	
Scan Scan immediately after Star Scan cyclically	t (✓ With Diagnost✓ Scan subnets	ics
🔽 Display dialog during startup	p		
ОК		Cancel	Help

- 3. Click OK to open the access window.
- 4. Click the **Start** button (fourth from right) to access the LR 200. Note that the Device status can take several seconds to come online as it changes from **Not Validated** to **Good**.



5. Double click LR 200 to open the User ID box. Select Specialist and then click OK to open the LR 200 Temporary Project window.

SIMATIC PDM - LR200 [Temporary project]						
ne Device view Options Help						
E S Mulau C A: ∃-₩ Networks	Parameter	Value	Unit			
🛱 📇 FA003446	Sitrans L B200					
E COM Interface	» Identification	Julias Erzoo				
HART Modem	» » Operation Unit					
	Tag	LR200				
	Descriptor					
	Message	0				
	» » Device					
	Manufacturer	Milltronics				
	Model	LR 200				
	HART Dev ID	1				
	Universal Revision	1				
	Device Revision	1				
	Software Revision	1				
	Hardware Revision	1				
	P900- Software Revision	0				
	Final Assembly Number	1				
	Last config					
	P346-Serial Number	1				
	» Device Data					
	» » Basic Setup					
	» » » Standard Set	up				
	P709-Damping Filter	10	seconds			
	» » » Quick Setup					
	P001-Operation	Level				
	P003-Measurement Resp	Slow 0.1 m/min				
	•		•			

- 6. Open the LR 200 folder in the left pane and select the parameter values requiring adjustment.
- 7. Use the Menu options to access application data and to adjust LR 200 performance.
- 8. Use the **Upload** and **Download** buttons to configure the unit and to get data.



- 9. Upon completion, click **File** on the menu bar and then click **Exit**. Although LifeList does not work in the unit's project file, you have the option to save the changes as a PDM file and import it into a project file.
- 10. Click **File** and then **Exit** to close the LifeList window. You have the option of saving the data as a PDM file and import it into a project file.

NOTE For information on loading information into PDM, please consult PDM Help